Annual Report Format

National Pollutant Discharge Elimination System Stormwater Program

MS4 Annual Report Format

Check box if you are submitting an individual Annual Report with one or more cooperative program elements. ☒

Check box if you are submitting an individual Annual Report with individual program elements only. ☐

Check box if this is a new name, address, etc. ☐

1. MS4(s) Information

NMR04A014 City of Albuquerque
Name of MS4

Kathleen | Verhage | Senior Engineer
Name of Contact Person (First) (Last) (Title)

(505) 768-3654 | kverhage@cabq.gov
Telephone (including area code) E-mail

PO Box 1293, City of Albuquerque, Dept of Municipal Development, Attn: Kathy Verhage Rm 301
Mailing Address

Albuquerque | NM | 87103
City State ZIP code

What size population does your MS4(s) serve? 546,000 NPDES number

What is the reporting period for this report? (mm/dd/yyyy) From Jul 1, 2016 to Jun 30, 2017

2. Water Quality Priorities

A. Does your MS4(s) discharge to waters listed as impaired on a state 303(d) list? ☒ Yes ☐ No

B. If yes, identify each impaired water, the impairment, whether a TMDL has been approved by EPA for each, and whether the TMDL assigns a wasteload allocation to your MS4(s). Use a new line for each impairment, and attach additional pages as necessary.

Impaired Water	Impairment	Approved TMDL		TMDL assigns WLA to MS4	
Middle Rio Grande	E-coli	☒ Yes	☐ No	☒ Yes	☐ No
Middle Rio Grande	Temperature	☐ Yes	☒ No	☐ Yes	☐ No
Middle Rio Grande	Polychlorinated Biphenyls in Fi	☐ Yes	☒ No	☐ Yes	☐ No
Middle Rio Grande	Dissolved Oxygen	☐ Yes	☒ No	☐ Yes	☐ No

2. B. Continued

Impaired Water	Impairment	Approved TMDL	TMDL assigns WLA to MS4
		☐ Yes ☐ No	☐ Yes ☐ No
		☐ Yes ☐ No	☐ Yes ☐ No
		☐ Yes ☐ No	☐ Yes ☐ No
		☐ Yes ☐ No	☐ Yes ☐ No

C. What specific sources contributing to the impairment(s) are you targeting in your stormwater program?

Pet waste, household hazardous waste, trash and debris (including natural vegetation), sediments, automotive fluids including oil and grease, detergents. A "floatables study" and source testing have been performed. Birds are primary

D. Do you discharge to any high-quality waters (e.g., Tier 2, Tier 3, outstanding natural resource waters, or other state or federal designation)? ☐ Yes ☒ No

E. Are you implementing additional specific provisions to ensure their continued integrity? ☐ Yes ☒ No

3. Public Education and Public Participation

A. Is your public education program targeting specific pollutants and sources of those pollutants? ☒ Yes ☐ No

B. If yes, what are the specific sources and/or pollutants addressed by your public education program?

Our public education program targets pet waste, household hazardous waste, trash and debris (including natural vegetation), sediments, automotive fluids, detergents, fertilizers, pesticides

C. Note specific successful outcome(s) (e.g., quantified reduction in fertilizer use; NOT tasks, events, publications) fully or partially attributable to your public education program during this reporting period.

Survey showed that over 90% of individuals understood the importance of pollution prevention and valued improved stormwater quality. Two household hazardous recycling events resulted in the participation of 700 individuals. See

D. Do you have an advisory committee or other body comprised of the public and other stakeholders that provides regular input on your stormwater program? ☒ Yes ☐ No

4. Construction

A. Do you have an ordinance or other regulatory mechanism stipulating:

Erosion and sediment control requirements? ☒ Yes ☐ No

Other construction waste control requirements? ☒ Yes ☐ No

Requirement to submit construction plans for review? ☒ Yes ☐ No

MS4 enforcement authority? ☒ Yes ☐ No

B. Do you have written procedures for:

Reviewing construction plans? ☒ Yes ☐ No

Performing inspections? ☒ Yes ☐ No

Responding to violations? ☒ Yes ☐ No

C. Identify the number of active construction sites ≥ 1 acre in operation in your jurisdiction at any time during the reporting period. 124

D. How many of the sites identified in 4.C did you inspect during this reporting period? 124

E. Describe, on average, the frequency with which your program conducts construction site inspections.

Each site greater than 1 ac is inspected at least once while active. Larger sites with longer active periods are inspected more frequently. On average, the COA performs 36 private development construction inspections per week.

F. Do you prioritize certain construction sites for more frequent inspections? ☒ Yes ☐ No

If Yes, based on what criteria? Size, length of time open, direct impervious connection to a water of the US

G. Identify which of the following types of enforcement actions you used during the reporting period for construction activities, indicate the number of actions, or note those for which you do not have authority:

☒ Yes	Notice of violation	222	No Authority	☐
☒ Yes	Administrative fines	7	No Authority	☐
☐ Yes	Stop Work Orders		No Authority	☒
☒ Yes	Civil penalties	0	No Authority	☐
☐ Yes	Criminal actions		No Authority	☒
☐ Yes	Administrative orders		No Authority	☒
☒ Yes	Other	Second notice of violation		

H. Do you use an electronic tool (e.g., GIS, data base, spreadsheet) to track the locations, inspection results, and enforcement actions of active construction sites in your jurisdiction? ☒ Yes ☐ No

I. What are the 3 most common types of violations documented during this reporting period?

1. Sediment BMPs installed incorrectly, not installed, or require maintenance; 2. Track-out, sediment in street or offsite; 3. Cement (concrete, stucco, mortar) pollution

J. How often do municipal employees receive training on the construction program? Annually

5. Illicit Discharge Elimination

A. Have you completed a map of all outfalls and receiving waters of your storm sewer system? ☒ Yes ☐ No

B. Have you completed a map of all storm drain pipes and other conveyances in the storm sewer system? ☒ Yes ☐ No

C. Identify the number of outfalls in your storm sewer system. 37 (see Item 10)

D. Do you have documented procedures, including frequency, for screening outfalls? ☒ Yes ☐ No

E. Of the outfalls identified in 5.C, how many were screened for dry weather discharges during this reporting period?

37

F. Of the outfalls identified in 5.C, how many have been screened for dry weather discharges at any time since you obtained MS4 permit coverage? see Item 10

G. What is your frequency for screening outfalls for illicit discharges? Describe any variation based on size/type.

Complaints regarding spills are investigated immediately (see item 10). The 37 Dry Weather Screening outfalls are screened annually during the Dry Season--typically sometime in November through March (see item 10 for more

H. Do you have an ordinance or other regulatory mechanism that effectively prohibits illicit discharges? ☒ Yes ☐ No

I. Do you have an ordinance or other regulatory mechanism that provides authority for you to take enforcement action and/or recover costs for addressing illicit discharges? ☒ Yes ☐ No

J. During this reporting period, how many illicit discharges/illegal connections have you discovered? see item 10

K. Of those illicit discharges/illegal connections that have been discovered or reported, how many have been eliminated? All Complaint

L. How often do municipal employees receive training on the illicit discharge program? Annually (appropriate de

6. Stormwater Management for Municipal Operations

A. Have stormwater pollution prevention plans (or an equivalent plan) been developed for:

All public parks, ball fields, other recreational facilities and other open spaces	☐ Yes	☒ No
All municipal construction activities, including those disturbing less than 1 acre	☐ Yes	☒ No
All municipal turf grass/landscape management activities	☒ Yes	☐ No
All municipal vehicle fueling, operation and maintenance activities	☒ Yes	☐ No
All municipal maintenance yards	☒ Yes	☐ No
All municipal waste handling and disposal areas	☒ Yes	☐ No

Other: All COA golf courses have SWPPPs for their operations. General Parks and Open Spaces do not.

B. Are stormwater inspections conducted at these facilities? ☒ Yes ☐ No

C. If Yes, at what frequency are inspections conducted? It depends. See Iter

D. List activities for which operating procedures or management practices specific to stormwater management have been developed (e.g., road repairs, catch basin cleaning).

Construction activities, detention pond cleaning, storm inlet and drain cleaning, fueling operations, storage of hazardous and non-hazardous materials, general good housekeeping operations, landfill operations

E. Do you prioritize certain municipal activities and/or facilities for more frequent inspection? ☒ Yes ☐ No

F. If Yes, which activities and/or facilities receive most frequent inspections?

Most frequent inspections occur at facilities that require a Multi Sector General Permit (Landfill and Transit). Good Housekeeping inspections are performed at general maintenance facilities quarterly and monthly if the facility has had

G. Do all municipal employees and contractors overseeing planning and implementation of stormwater-related activities receive comprehensive training on stormwater management? ☒ Yes ☐ No

H. If yes, do you also provide regular updates and refreshers? ☒ Yes ☐ No

I. If so, how frequently and/or under what circumstances?

Annual refreshers are provided. In addition, training materials have been provided to supervisors to be used when staff turns over and new employees are hired. On the spot training also occurs during inspections, as needed.

7. Long-term (Post-Construction) Stormwater Measures

A. Do you have an ordinance or other regulatory mechanism to require:

Site plan reviews for stormwater/water quality of all new and re-development projects?	☒ Yes	☐ No
Long-term operation and maintenance of stormwater management controls?	☐ Yes	☒ No
Retrofitting to incorporate long-term stormwater management controls?	☐ Yes	☒ No

B. If you have retrofit requirements, what are the circumstances/criteria?

None required at this time.

C What are your criteria for determining which new/re-development stormwater plans you will review (e.g., all projects, projects disturbing greater than one acre, etc.)?

Per COA ordinance the following projects are reviewed: 1. more than 500 cubic yards fill exported or impored ; 2. Commercial projects that disturb > 1000 sq ft , 3. Residential projects > 1 Ac, 4. Parking lots > 2000 sq ft, 5. grade change

D. Do you require water quality or quantity design standards or performance standards, either directly or by reference to a state or other standard, be met for new development and re-development? ☒ Yes ☐ No

E. Do these performance or design standards require that pre-development hydrology be met for:

Flow volumes	☒ Yes	☐ No
Peak discharge rates	☒ Yes	☐ No
Discharge frequency	☐ Yes	☒ No
Flow duration	☐ Yes	☒ No

F. Please provide the URL/reference where all post-construction stormwater management standards can be found.

www.amlegal.com/albuquerque_nm/

G. How many development and redevelopment project plans were reviewed during the reporting period to assess impacts to water quality and receiving stream protection? 393

H. How many of the plans identified in 7.G were approved? 136

I. How many privately owned permanent stormwater management practices/facilities were inspected during the reporting period? 129

J. How many of the practices/facilities identified in I were found to have inadequate maintenance? 0

K. How long do you give operators to remedy any operation and maintenance deficiencies identified during inspections? 30 days

L. Do you have authority to take enforcement action for failure to properly operate and maintain stormwater practices/facilities? ☒ Yes ☐ No

M. How many formal enforcement actions (i.e., more than a verbal or written warning) were taken for failure to adequately operate and/or maintain stormwater management practices? 0

N. Do you use an electronic tool (e.g., GIS, database, spreadsheet) to track post-construction BMPs, inspections and maintenance? ☒ Yes ☐ No

O. Do all municipal departments and/or staff (as relevant) have access to this tracking system? ☒ Yes ☐ No

P. How often do municipal employees receive training on the post-construction program? Monthly on overall

8. Program Resources

A. What was the annual expenditure to implement MS4 permit requirements this reporting period? $12 Million

B. What is next year's budget for implementing the requirements of your MS4 NPDES permit? $15 million

C. This year what is/are your source(s) of funding for the stormwater program, and annual revenue (amount or percentage) derived from each?

Source:	G.O. Bonds (NPDES, Water Quality Compliance)	Amount $	1.0 Millio	OR %
Source:	General Funds (Arroyo and Street Maintenance)	Amount $	9.8 Millio	OR %
Source:	Customer Billing (Household Hazardous Waste, Cl	Amount $	3.9 Millio	OR %

D. How many FTEs does your municipality devote to the stormwater program (specifically for implementing the stormwater program; not municipal employees with other primary responsibilities)? 27 see It

E. Do you share program implementation responsibilities with any other entities? ☒ Yes ☐ No

Entity	Activity/Task/Responsibility	Your Oversight/Accountability Mechanism
AMAFCA, SCAFC.	Sampling and Monitoring Wet Weather	Memo of Understanding
AMAFCA, SCAFC.	Education and Outreach	Memo of Understanding
AMAFCA, SCAFC.	General Watershed Based Permit Imple	Memo of Understanding

9. Evaluating/Measuring Progress

A. What indicators do you use to evaluate the overall effectiveness of your stormwater management program, how long have you been tracking them, and at what frequency? These are not measurable goals for individual management practices or tasks, but large-scale or long-term metrics for the overall program, such as macroinvertebrate community indices, measures of effective impervious cover in the watershed, indicators of in-stream hydrologic stability, etc.

Indicator	Began Tracking (year)	Frequency	Number of Locations
Example: E. coli	2003	Weekly April–September	20
Industrial Inspections	2014	MSGP required once per permit	76 in FY2017
Student and General Public Education anc	2006	Reporting Annually, Events Held	Varies
Dry Weather Screening	2003	Annually	37
Good Housekeeping Inspections	2012	Quarterly to Monthly (if needed)	30
Illicit Discharge Inspections	2016	Applicable businesses once per	301 in FY2017

B. What environmental quality trends have you documented over the duration of your stormwater program? Reports or summaries can be attached electronically, or provide the URL to where they may be found on the Web.

https://www.cabq.gov/municipaldevelopment/our-department/engineering/storm-water-management/municipal-separate-storm-sewer-system-ms4-permit.

10. Additional Information

Please attach any additional information on the performance of your MS4 program, including information required in Parts I.C, I.D, and III.B. If providing clarification to any of the questions above, please provide the question number (e.g., 2C) in your response.

Certification Statement and Signature

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

☒ Yes ☐ No

Federal regulations require this application to be signed as follows: **For a municipal, State, Federal, or other public facility**: by either a principal executive or ranking elected official.

Signature Robert J. Perry Digitally signed by Robert J. Perry DN: cn=Robert J. Perry, o=City of Albuquerque, ou=Municipal Government, email=rjperry@cabq.gov, c=US Date: 2017.11.14 15:47:01 -07'00'

Chief Administrative Officer — Name of Certifying Official, Title

11/14/2017 — Date (mm/dd/yyyy)

CITY OF ALBUQUERQUE

Annual Report for Fiscal Year 2017 (FY17)

July 1, 2016 to June 30, 2017

NPDES PERMIT NMR04A000, Effective Date December 22, 2014

eNOI Application Date June 21, 2015

ITEM 10 Additional Information

I.C. Special Conditions

1. Compliance with Water Quality Standards

d. Dissolved Oxygen (DO): The Arroyo Metropolitan Flood Control Authority (AMAFCA) continues to monitor the DO in the Rio Grande

e. Polychlorinated Biphenyls (PCBs): The COA began a sediment assessment study in FY16 which was completed in FY17. Under this study, soil samples were taken from the 5 outfall locations monitored under the former Phase 1 permit NMS000101 as well as from up and down stream locations along the Rio Grande. These samples were analyzed for PCBs using the Aroclor method. Detection of PCBs at any of these location resulted in further sampling and analysis of upstream areas. Twelve locations were ultimately screened for both PCBs and select metals based upon the results of the original study. The Synthetic Precipitation Leaching Procedure (SPLP) was used to analyze the following metals: aluminum, cadmium, chromium, lead, nickel, and zinc. Both studies are included in Attachment 1.

f. Temperature: AMAFCA continues to monitor temperature in the Rio Grande and at the North Diversion Channel through the deployment of sondes. Analysis of stormwater flows for temperature under the former Phase 1 permit indicates no contribution to temperature exceedances in the Middle Rio Grande and continues to indicate no contribution to any potential temperature exceedances.

2. Discharges to Impaired Waters with and without approved TMDLs

b.(i)(c)B: The Monitoring Cooperative has worked out most of the details of the sampling plan and sample collection. Access to the southernmost collection point, currently on the Isleta Pueblo is somewhat problematic in that it requires Pueblo consent. Access was denied during one rain event despite earlier permission. Hence the group collected an upstream sample but was unable to complete the downstream sampling.

The permittees under NMR04A000 have worked with the New Mexico Environment Department (NMED) staff on a methodology to calculate the bacterial load contributed by the source area during a storm event.

During FY2017, 3 qualifying events were sampled during the wet season from July 1 through October 31, 2016 and 1 qualifying event was sampled during the dry season from

November 1, 2016 through June 30, 2017. Reports that provide and summarize the results of wet and dry season sampling during storm events are included in Attachment 2. Copies of the Discharge Monitoring Reports (DMRs) submitted electronically in the NetDMR system and the results of the Total Maximum Daily Load (TMDL) calculations are also included in Attachment 2.

Potential e-coli exceedances occurred in both reaches (Angostura Diversion to Non-Pueblo Alameda Street Bridge and Alameda Street Bridge to Isleta Pueblo Boundary) during the wet season. During the dry season, a potential e-coli exceedance was noted in the southern reach from the Alameda Street Bridge to the Isleta Pueblo Boundary. The COA continues its work to reduce e-coli loads through the pet waste education and outreach program. Dog waste had been estimated to contribute about 22% of the bacteria to the MS4 in a previous bacterial source tracking (BST) study performed in 2004. It has also commissioned a new BST study at an estimated cost of $250,000 for which a Quality Assurance Program Plan (QAPP) and sampling and analysis plan (SAP) have already been prepared.

b.(i)(e)A,C,D,E: The COA continues to work with the Albuquerque Bernalillo County Water Utility Authority (WUA) to make improvements to its pump and lift stations. The COA repaired two residential cross connections that had been illegally discharging to the storm drain system in FY2017. A map showing the locations of the repaired cross connections is included in Attachment 3.

b(i)(e)C: The Environmental Health Department continues to work with restaurants to reduce waste sources of bacteria from grease traps.

b(i)(e)D. The storm drainage department continues to work with the Zoo in an effort to ensure that bacteria from animal waste are not discharged to the MS4.

b(i)(e)E. The COA contributes funding to and participates as a founding member of the Storm Water Quality Team. The Team continues education and outreach efforts to educate residents on bacteria associated with pet waste. The COA also works with the WUA on education of the public with regards to proper oil and grease disposal.

b(iii)(c): The COA continues to work with Bernalillo County (BernCo) and the NM Department of Transportation (NMDOT) on a joint sampling program in the Tijeras Arroyo. A total maximum daily load for nutrients was approved by the Water Quality Control Commission on September 12, 2017. As a result the COA will begin to develop Best Management Practice (BMP) to minimize impacts, if any, due to potential contributions from the urbanized area that makes up about 1% of the watershed.

3. Endangered Species Act (ESA) Requirements

a.(i) AMAFCA has filled in the former embayment reducing the potential for low DO waters to occur and subsequently discharge from the North Diversion Channel (NDC) to the Rio Grande. The COA continues to install water quality features, such as trash racks and water quality manholes in efforts to collect and reduce trash and debris that contribute to the DO problem.

a.(ii) AMAFCA has submitted a revised strategy for reduction of pollutants contributed by the embayment. As stated above, the embayment has been filled in. Annual Incident Take Reports are submitted by AMAFCA to the EPA and Fish and Wildlife Service (FWS).

b.(i) See also item 1.e. The COA performed 2 Sediment Assessment Studies that included an analysis of PCBs and SPLP metals in soils. The first, finalized in October 2016 assessed sediments from 5 major outfall locations. The second, completed in July 2017, further examined potential upstream sources, if any. No PCBs were reported. Metals in general, with the exceptions of Aluminum (Al) and Zinc (Zn) were present at concentrations below detection limits. Detected Al concentrations ranged from 1.9 to 11 mg/L. Detected Zn concentrations ranged from 0.022 to 0.048 mg/L. The reports are provided in Attachment 1.

I.D. Stormwater Management Program (SWMP)

A copy of the updated SWMP adapted for compliance under NMR04A000 was included with the first full Annual Report on December 1, 2016. A future update will be available on December 1, 2019, the "Year 4" Annual Report. The SWMP is available on the COA's DMD MS4 webpage. Copies are also available on compact disks that will be mailed to regulators, stakeholders, and others upon request.

5b. Post-Construction Stormwater Management in New Development and Redevelopment .

(x)(c)A. Fourteen stormwater quality features have been installed since the WBP effective date of December 22, 2014. Of these, 4 were installed during FY2017. A listing, map, and description of these features is included in Attachment 4.

(x)(c)B. Approximately 205 acres of impervious area (IA) was added to the Albuquerque Metropolitan area last year. Of this, roughly 36% or 74 acres was in residential areas contained by backyard walls and is considered to be disconnected. Therefore the directly connected impervious area (DCIA) added in FY16 was 205 acres minus 74 acres totalling 131 acres. The methodology for estimating impervious area is based on land use codes and was sent to EPA in its 2013 Annual report under the former Phase 1 permit NMS000101.

5d. Industrial and High Risk Runoff

(vi) The COA worked on updating their industrial and high risk program in FY2016. Computer staff created a computer application so that inspectors could download the forms onto cellular phones in the field. In addition, a stormwater quality ordinance was passed on June 20, 2016 that gives COA designated staff authorization to perform inspections as well as enforcement capability. Contractors and newly hired inspectors (1 supervisor and 3 inspectors) performed inspections of 76 facilities that require a Multi-Sector General Permit (MSGP) in FY2017.

5e. Illicit Discharges and Improper Disposal

(i)e The COA implemented a 311 complaint system to report illicit discharges in the mid-2000s. See Attachment 5 for a map showing the locations of discharges and associated inspection forms reported via this system in FY2017.

(iv)A,C The Storm Drainage Section of the Department of Municipal Development (DMD) coordinated with the Solid Waste Department to host 2 Household Hazardous Waste recycling events in FY2017. Seven hundred people participated in the 2 events, held in August 2016 and April 2017 during which approximately 50,000 pounds of materials were collected. In addition, over 10,800 COA residents recycled roughly

875,000 pounds of hazardous materials at the collection facility during FY2017 at a cost of $860,000.

(vii) In addition to utilizing the 311 complaint system to pinpoint illicit discharges, the COA implemented an Illicit Discharge Detection and Elimination (IDDE) inspection program in FY2016 in order to mitigate the influence of lower risk but potentially higher discharges. The automotive industry was chosen as the sector in which the inspection program was begun. A local environmental firm was hired to supply staff to perform inspections. Contractors performed over 300 IDDE inspections in FY2017. In addition, the COA has hired an inspector supervisor and 3 inspectors as permanent employees to assist in IDDE inspection and data tracking efforts in future years.

5f. Control of Floatables Discharges

(iii). Street Sweeping crews picked up 7100 cubic yards (6800 tons) of dirt and debris from 21,000 miles of COA Right of Way in FY2017. Dirt comprises about 65% of the material picked up by street sweepers with debris making up the remaining 35%. Of the debris, roughly 70% is vegetation. The remaining waste is comprised of plastics (bottles, bags, containers/lids) at 15%, paper and cardboard at 10% and metal at 5%.

In addition, Arroyo Maintenance cleaned 4800 cubic yards (3800 tons) of dirt, trash, debris, and vegetation from the storm drain system during FY2017.

III.A. Monitoring and Assessment

1. Wet Weather Reporting: The COA participates in the Middle Rio Grande monitoring cooperative. During FY2016, the monitoring cooperative, of which the COA is a part, prepared a sampling and analysis plan which was submitted to EPA Region 6 in June 2016 for approval. Permit requirements call for the submission of 7 samples by the end of the permit term. In FY2017, the monitoring cooperative collected 3 samples during the wet season and 1 sample during the dry. Sampling results and a short discussion of the results are provided in Attachment 2. As required in Sections D.1 and D.2, the monitoring results were submitted in the NetDMR system and hard copies are included in Attachment 2. Total Maximum Daily Load (TMDL) calculations and results are also included in Attachment 2.

2. Dry Weather Reporting: Dry weather screening is performed at 37 locations (25 direct discharge points to the Rio Grande and an additional 12 locations to assess subwatersheds). See Attachment 6 for results.

3. Floatables Reporting: See item 5f above. In addition an estimated 20 cubic yards of floatables were removed from the Barelas Pump Station in FY2017, the COA's selected floatables monitoring location. AMAFCA provides the information on floatables monitoring in the NDC.

4. Industrial and High Risk Reporting: The COA's landfills are located outside of the MS4 and drain to the Rio Puerco rather than the Rio Grande. Nonetheless, the landfills are permitted under the federal MSGP.

4.b COA's transfer stations, solid waste station at Pino Yards and transit stations, all located within the MS4, are classed as sector P and require quarterly visual monitoring only. Because of sporadic localized events that often occur during weekends and other non-work hours, it is often difficult to obtain results. Nonetheless quarterly visual

inspections have been scheduled and are completed when possible. See Attachment 7 for the visual monitoring results.

ADDITIONAL INFORMATION TO SUPPLEMENT REPORT FORM

Item 3. Public Participation and Education

C. The COA participates in and contributes $40,000 in dues to the Stormwater Quality Team (SWQT). Outreach activities performed by the 9 agencies that comprise the SWQT are provided in the Outcomes Report in Attachment 8.

Other education and outreach activities led by COA staff include the organization of 15,790 volunteers in cleanups, trail maintenance, trail building, tree planting and other conservation projects through the Parks and Recreation Department during FY2017. The Storm Drainage Section also provided monetary support to The Nature Conservancy and Earth Force ($20,000 to each agency) in their efforts to promote public education in the schools and in the adult community in the area of watershed health. In addition, the Storm Drainage Section contributed $45,000 to the River Xchange Program in an effort to expand the existing program by up to 30 5th grade classes.

Item 5. Illicit Discharges

C. There are 25 discharge points to the Rio Grande. Assessment of the subwatersheds and industry in the Albuquerque Metropolitan area led to the current selection of 12 additional dry weather screening locations. In total, 37 locations have been selected for dry weather screening. See Attachment 5, Dry Weather Screening for the results.

J. During the reporting period from July 1, 2016 through June 30, 2017, approximately 70 improper discharge related complaints were reported to the 311 system and investigated by a City storm drainage engineer. See Attachment 3 for a map indicating location of discharge. During this time period 1 cross connection into the storm drain was repaired.

Item 8. Program Resources

D. 27 full time employees that perform work related to the COA's MS4 include: 19 Arroyo/Storm Drainage Maintenance personnel, 8 Storm Drainage personnel (manager, 3 engineers, 1 supervisor inspector, and 3 inspectors), and 1 Stormwater Quality Engineer in Planning.

This 27 does not include 76 FTE's and 80 full time contractor positions in the Clean City Solid Waste program which picks up trash and floatables nor 21 employees in Street Maintenance that perform street sweeping. This also does not include Parks and Open Space personnel who perform restoration projects, host citizen clean up days, and perform education and outreach.

In addition to FTE's employed by the COA, the Department of Municipal Development, Storm Drainage Section budgets and spends approximately $600,000 per year on consultants hired solely to perform NPDES permit compliance. This is the equivalent of 6 FTE's.

Attachment 1

City of Albuquerque Sediment Assessments

City of Albuquerque

Sediment Assessment

Prepared for **City of Albuquerque, New Mexico**

October 17, 2016

Daniel B. Stephens & Associates, Inc.

6020 Academy NE, Suite 100 • Albuquerque, New Mexico 87109

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4b Total Aluminum, Outfall Locations

4c Dissolved Aluminum, Rio Grande Locations

4d Total Aluminum, Rio Grande Locations

5a Dissolved Cadmium, Outfall Locations

5b Total Cadmium, Outfall Locations

5c Dissolved Cadmium, Rio Grande Locations

5d Total Cadmium, Rio Grande Locations

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1 Outfall Water Quality Sampling Locations

2 Total Polychlorinated Biphenyl Concentrations

3 AMAFCA Total Sediment Removal, 2015

4 Sediment Removed from North Diversion Channel and South Diversion Channel, 2015

1. Introduction

The City of Albuquerque (COA) has retained Daniel B. Stephens & Associates, Inc. (DBS&A) to address the requirements of the Sediment Pollutant Load Reduction Strategy (the Strategy) in final watershed-based municipal separate storm sewer system (MS4) permit NMR04A000 (the Permit) (effective date December 22, 2014) and prepare this sediment assessment. The Strategy is to be developed, implemented, and evaluated by the COA to assess and reduce pollutant loads associated with sediment into the receiving water of the Rio Grande. The Strategy must include the following elements:

- Sediment assessment
- Baseline sediment loading estimates
- Targeted controls and best management practices (BMPs)
- Monitoring and interim reporting to assess progress
- Progress evaluation and reporting regarding overall success of the Strategy
- Verification of no adverse effect to the critical habitat of any threatened or endangered species

This report supports the first element of the Strategy, and is based on available data from federal, state, and local studies, supplemented as needed with data collected by COA. The sediment assessment has the following requirements:

- Identify and investigate areas within COA jurisdiction that may be contributing to excessive levels of pollutants in sediment entering the Rio Grande during stormwater discharges

- Identify structural elements, natural or man-made topographical and geographical formations, MS4 operations activities, and areas indicated as potential sources of sediment pollutants

- Record any observed erosion of soil or sediment along ephemeral channels, arroyos, or stream banks, noting as either scouring of sediment or deposition of sediment

Section 2 of this report contains a literature review regarding sediment loading and transport in the Middle Rio Grande. Available water quality and sediment removal data have been compiled, with the results reviewed in Section 3. Section 4 summarizes findings and recommendations for the required Strategy.

2. Background

The mean annual precipitation from 1980 to 2010 recorded at the Albuquerque International Airport weather station was 9.45 inches (WRCC, 2016). The majority of precipitation occurs during the months of July and August as sudden and intense thunderstorms. Elevation in the Albuquerque metropolitan area ranges from 5,000 feet above mean sea level (feet msl) near the Rio Grande to 7,000 feet msl near the Sandia Mountain foothills. Loss of sediment is a continual and natural process, but the approximate 2,000-foot elevational range often translates into massive amounts of sediment being eroded and mobilized during storm events within Albuquerque city limits.

2.1 Sediment Pollutant Loading

The Rio Grande is an alluvial river that has its headwaters in the San Juan Mountains of southwestern Colorado. From there it flows south through New Mexico, then marks the border between Texas and Mexico as it runs southeast toward the Gulf of Mexico.

Historically, the Middle Rio Grande (from Cochiti Dam to Elephant Butte Reservoir) was an aggrading river characterized by a wide, sandy, braided planform with a high sediment load (Scurlock, 1998; Lagasse, 1980). The long dry periods of low peak flows facilitated vegetation encroachment and narrowing, whereas large floods could widen the river channel as "channel reset" events. Today, operation of flood control dams has resulted in a permanently narrower active channel due to the decreased magnitude of upstream peak flows, together with channelization and bank stabilization activities (Makar et al., 2006).

The Middle Rio Grande has some of the most problematic sedimentation issues among rivers of the U.S. Cochiti Dam reduces the suspended sediment loading in the flows downstream of the dam by 87 to 98 percent (USACE et al., 2007; Novak, 2006). However, dam effects diminish downstream because of tributary sediment delivery and in-channel sources of sediment. Excessive channel degradation downstream of the dam can also disconnect the channel from the floodplain, thereby reducing the quality and quantity of in-stream and floodplain habitat and accelerating erosion of the bed and bank. Channel incision downstream of Cochiti Dam and

corresponding increases in the potential for bank collapse are therefore additional sources of sediment.

Sedimentation problems in the Middle Rio Grande also need to be examined in the light of land use, which itself is directly correlated with water quality, hydrologic function, ecosystem health, biodiversity, and the integrity of streams and wetlands. When natural landscapes are converted to urban use, permeable soils are covered with impervious surfaces such as roads, sidewalks, parking lots, and buildings. Increased imperviousness leads to higher volumes and flow velocities of stormwater runoff, often resulting in negative effects on local hydrology, including surface water pollution. Sedimentation from tributaries that drain lands within Albuquerque city limits must therefore be studied in association with potential surface water pollution.

The Permit stipulates that eligible Middle Rio Grande MS4 operators must, in consultation with the New Mexico Environment Department (NMED), the U.S. Environmental Protection Agency (EPA), and affected tribes (if monitoring locations are located on tribal lands), develop and implement a comprehensive monitoring and assessment program designed to meet the following objectives:

- Assess compliance with the permit
- Assess the effectiveness of the permittee's stormwater management program
- Assess the impacts to receiving waters resulting from stormwater discharges
- Characterize stormwater discharges
- Identify sources of elevated pollutant loads and specific pollutants
- Detect and eliminate illicit discharges and illegal connections to the MS4
- Assess the overall health and evaluate long-term trends in receiving water quality

Sedimentation data are valuable in quantifying impacts so that remedial plans can be developed. The terms of the Permit stipulate that "the permittee shall control the discharges of pollutant(s) of concern to impaired waters and waters with approved Total Maximum Daily Loads (TMDLs) . . ., and shall assess the success in controlling those pollutants."

2.2 Naturally Occurring Constituents

Natural drainage to the Rio Grande in the Albuquerque metropolitan area occurs through arroyos (typically dry channels that flow only in response to snowmelt or large rainstorms) that originate on alluvial fans at the foothills of the Sandia Mountains and flow westward to the Rio Grande (Figure 1). In areas west of the Rio Grande, arroyos originate along the West Mesa and flow eastward to the Rio Grande. Many of the arroyos are concrete lined to enhance their capacity to convey storm runoff and prevent erosion, while other arroyos, particularly in the western part of the city, remain natural.

The surface geology on the east side of the Rio Grande includes Sandia granite (pink megacrystic biotite monzogranite and granodiorite) in the higher elevations, and primarily Quaternary-aged sediments from tributary stream-valley alluvium and fluvial terrace deposits (Connell, 2006). The Quaternary deposits are typically composed of sand with varying amounts of clay and gravel. Quaternary alluvium deposits associated with Tijeras Arroyo are composed of variable proportions of subangular to subrounded granite, greenstone, gneiss, limestone, and sandstone derived from the eastern slope of the Sandia Mountains (Connell et al., 1998). The surface geology on the west side of the Rio Grande includes basaltic lavas of the Albuquerque volcanoes, and primarily Quaternary-aged sediments from tributary stream-valley alluvium and fluvial terrace deposits (Connell, 2006). Although metals occur naturally in local soils, concentrations from soil samples within city limits show a possible trend of increasing contamination from upstream sites to the more downstream sites (Martinez, 2015).

2.3 Current Metropolitan Area Stormwater Management

The primary purpose of the Sediment Pollutant Load Reduction Strategy, as required by the Permit, is to reduce pollutant loads associated with sediment in runoff reaching the Rio Grande. The COA and the Albuquerque Metropolitan Arroyo Flood Control Authority (AMAFCA) have a comprehensive Storm Water Management Program (SWMP) in place to reduce stormwater pollution to the maximum extent practicable and to eliminate prohibited non-stormwater discharges.

AMAFCA maintains the flood control system by routinely removing sediment from the many portions of the system that have been designed to capture sediment (i.e., detention basins shown on Figure 1). Many different types of detention basins have been put in place within the Albuquerque MS4 system, including some with wetland components that can slow the water down to reduce sediment loading to the Rio Grande. For example the North Pino Pond has a "secondary environmental pond," or an extended detention pond that slows down stormwater and, because it is lined by vegetation acting as a filter, increases sediment removal. AMAFCA has designed and built many structures that catch debris, sediment, and trash. These structural BMPs, which protect the Rio Grande from pollution, are often modeled in the University of New Mexico (UNM) Hydraulics Laboratory to enhance their debris-capturing capability. The reduction in sediment has resulted in downstream water quality improvements, as much of the pollutant load involved in urban waters is sediment related.

In addition, the COA has recently updated its drainage ordinance. Under the new drainage ordinance, a current stormwater control permit is now required for erosion and sediment control for all construction, demolition, clearing, and grading operations that disturb the soil on 1 acre or more of land. The permit requires submittal of an erosion sediment control plan prepared by a licensed New Mexico Professional Engineer to ensure that minimum design standards are met and to reduce potential pollutants that may result from the demolition and construction activities. The COA Stormwater Quality Planning Section reviews these plans prior to the start of grading and conducts inspections on all construction sites.

3. Data Review

In cooperation with the COA, AMAFCA, the New Mexico Department of Transportation, and UNM, the U.S. Geological Survey (USGS) conducted a sampling study of stormwater in the Albuquerque metropolitan area. The following sample outfall locations, all of which fall under COA jurisdiction, were selected for investigation as areas that could be contributing to pollutants in sediment entering the Rio Grande during stormwater discharges (Figure 1 and Table 1):

- North Diversion Channel (NDC) near Alameda (North Diversion Channel)
- Mariposa Diversion of San Antonio Arroyo (San Antonio Arroyo)
- COA Barelas Lift Station no. 32 (Barelas Pump Station)
- San Jose Drain at Woodward Road at Albuquerque (San Jose Drain)
- South Diversion Channel (SDC) above Tijeras Arroyo (South Diversion Channel)
- Tijeras Arroyo near Albuquerque (Tijeras Arroyo)

All of these outfalls discharge stormwater directly or indirectly to the Rio Grande. They are located at the downstream end of a drainage basin. Concentrations of pollutants measured at each outfall therefore reflect (1) the extent of sedimentation loading and surface water pollution within the corresponding drainage basin and (2) the effectiveness of sediment removal structures. For example, San Antonio Arroyo has a settling pond above the sampling location, while there is a detention pond right above the San Jose Drain sampling location. The NDC embayment at NDC reduces sediment. The baffle chute structure (along the SDC), the NDC embayment (where trash is collected manually by AMAFCA crews), and the Bear Arroyo debris screen represent three other structures designed to help with sediment removal. The USGS *Summary of Urban Stormwater Quality in Albuquerque, New Mexico, 2003–12* (Storms et al., 2015) was used to summarize and review total dissolved solids (TDS) (Section 3.1), total suspended solids (TSS) (Section 3.2), metal concentrations (Section 3.3), and polychlorinated biphenyl (PCB) congeners (Section 3.4). The USGS report concluded that stormwater samples from outfalls with more urban development (industrial, commercial, and residential) had higher median concentrations of selected physical and chemical constituents (e.g., pH, specific

conductance, TDS, TSS) than stormwater samples from outfalls with less urban development (Storms et al., 2015).

Additional available water quality data were downloaded from the online USGS National Water Information System (NWIS) database (USGS, 2016) for the discharge outfalls and for several stream gage locations along the Rio Grande within the greater Albuquerque area (Figure 1). 2015 sediment removal data from the metropolitan flood control system were obtained from AMAFCA, and are discussed in Section 3.5.

3.1 Total Dissolved Solids

Figure 2a shows recent TDS concentrations for samples collected at the six outfall locations. Figure 2b shows recent TDS concentrations for samples collected from the Rio Grande stream gage locations within the greater Albuquerque area.

3.1.1 Outfall Locations

Since 2003, the TDS concentrations in the sampled outfall locations have ranged from not detected (less than 10 milligrams per liter [mg/L], shown as open symbols in Figure 2a for several outfall locations) to 997 mg/L at the San Antonio Arroyo outfall (Figure 2a). The TDS concentrations are highly variable within each of the outfalls, but overall concentrations are generally below 400 mg/L. None of the measured values in the stormwater samples at the six outfalls exceeded the New Mexico water quality standard of 1,500 mg/L for the Rio Grande Basin.

3.1.2 Rio Grande Locations

TDS concentrations since 2003 in the Rio Grande have ranged from 126 mg/L at the Rio Grande at Albuquerque stream gage to 807 mg/L at the Rio Grande at Alameda Bridge stream gage (Figure 2b). TDS concentrations in the Rio Grande typically appear to be between 150 and 300 mg/L. No TDS concentration exceeded the New Mexico water quality standard of 1,500 mg/L for the Rio Grande Basin. Other than the greater number of outliers from outfall

sampling locations, TDS concentrations seem higher overall at Rio Grande sampling locations (more concentrations greater than 200 mg/L and no concentrations below 100 mg/L).

3.2 Total Suspended Solids and Suspended Sediment

Figure 3a shows recent total suspended solids (TSS) or suspended sediment concentrations from samples collected at the six outfall locations. Figure 3b shows recent TSS or suspended sediment concentrations from the Rio Grande within the greater Albuquerque area. Suspended solids can effectively transport sorbed chemicals such as trace elements and some organic compounds (Drever, 1997).

3.2.1 Outfall Locations

Since 2003, the TSS or suspended solids concentrations in the sampled outfall locations have ranged from not detected (less than 1 mg/L, shown as open symbols in Figure 3a for several outfall locations) to 55,300 mg/L at the Tijeras Arroyo outfall (Figure 3a). The outfalls are typically sampled during periods of high flow, which would generally be carrying higher sediment loads than lower flow (Storms et al., 2015). The TSS concentrations vary widely, but the higher sediment loads tend to be contributed by the Tijeras Arroyo, SDC, and NDC outfalls.

3.2.2 Rio Grande Locations

TSS or suspended sediment concentrations since 2003 in the Rio Grande have ranged from not detected (0.5 mg/L) at the Rio Grande at Isleta stream gage to 81,000 mg/L at the Rio Grande at Albuquerque stream gage (Figure 3b). Generally, the suspended sediment concentrations in the Rio Grande appear to range widely, between 100 and 10,000 mg/L, and likely vary based on the source and amount of stormwater contributed to each stream gage location.

3.3 Metal Concentrations

Based on data collected since 2003 from the outfalls and the Rio Grande, available sample data for dissolved and total concentrations were reviewed for the following metals: aluminum,

cadmium, chromium, lead, nickel, and zinc. Figures 4a through 9d show the total and dissolved concentrations for these selected metals.

3.3.1 Outfall Locations

The USGS report determined that stormwater from the Barelas Pump Station, San Jose Drain, and NDC outfalls generally had higher metal concentrations than the other sampled outfalls (Storms et al., 2015). Dissolved and total metal concentrations for the outfalls are presented individually in the following subsections.

3.3.1.1 Aluminum

Recent dissolved aluminum concentrations at the sampled outfall locations have ranged from 0.01 micrograms per liter (µg/L) at several outfall locations to 5,540 µg/L at the NDC (Figure 4a). With a few exceptions, the dissolved aluminum concentrations are typically below the New Mexico water quality standard of 87 µg/L for the Rio Grande Basin, but several high dissolved aluminum concentrations were measured, at the San Antonio Arroyo outfall in particular. Total aluminum concentrations have ranged from not detected for several outfall locations to 150,000 µg/L at the Tijeras Arroyo outfall (Figure 4b). The total aluminum concentrations vary widely, but the higher concentrations tend to be contributed by the Tijeras Arroyo, SDC, and NDC outfalls.

3.3.1.2 Cadmium

Recent dissolved cadmium concentrations at the sampled outfall locations have ranged from 0.03 µg/L at the SDC outfall to 2.78 µg/L at the San Jose Drain outfall (Figure 5a). The majority of outfall sample results for dissolved cadmium have been not detected at a detection limit of 0.1 µg/L or lower. Total cadmium concentrations have ranged from not detected at several outfall locations to 58.5 µg/L at the SDC outfall (Figure 5b).

3.3.1.3 Chromium

Recent dissolved chromium concentrations at the sampled outfall locations have ranged from not detected (below 1 or 2 µg/L) at several outfall locations to 12.99 µg/L at the NDC outfall (Figure 6a). With one exception, the dissolved chromium concentrations at all outfall locations

are all below 4 µg/L. Total chromium concentrations have ranged from not detected at several outfall locations to 129.57 µg/L at the Tijeras Arroyo outfall (Figure 6b).

3.3.1.4 Lead

Recent dissolved lead concentrations at the sampled outfall locations have ranged from not detected (below 2 µg/L) at all outfall locations to 6.932 µg/L at the NDC outfall (Figure 7a). A total of 11 stormwater samples had dissolved lead concentrations at or above the chronic aquatic life criterion of 2 µg/L. Total lead concentrations have ranged from 0.01 µg/L at several outfall locations to 345.66 µg/L at the SDC outfall (Figure 7b).

3.3.1.5 Nickel

Recent dissolved nickel concentrations at the sampled outfall locations have ranged from not detected (below 5 µg/L) at all outfall locations to 30.5 µg/L at the San Jose Drain (Figure 8a). Total nickel concentrations have ranged from not detected (below 5 or 15 µg/L) at several outfall locations to 244 µg/L at the Tijeras Arroyo outfall (Figure 8b).

3.3.1.6 Zinc

Recent dissolved zinc concentrations in the sampled outfall locations have ranged from not detected (below 5 µg/L) at all outfall locations to 1,380 µg/L at the Barelas Pump Station (Figure 9a). With a few exceptions, the dissolved zinc concentrations are typically below 100 µg/L. Total zinc concentrations have ranged from 0.01 to 2,060 µg/L (Figure 9b).

3.3.2 Rio Grande Locations

Available dissolved and total metal concentration data are summarized in the following subsections for several Rio Grande stream gage locations within the greater Albuquerque area. No total metals data have been collected at the Rio Grande at Albuquerque and Rio Grande at Isleta stream gage locations since prior to 2003.

3.3.2.1 Aluminum

Recent dissolved aluminum concentrations in the Rio Grande in the Albuquerque area have ranged from 1.4 µg/L at the Rio Grande at Albuquerque stream gage to 101 µg/L at the Rio Grande at Alameda Bridge stream gage (Figure 4c). With one exception, the dissolved

aluminum concentrations are all below the New Mexico water quality standard of 87 µg/L for the Rio Grande Basin. Total aluminum concentrations for the Rio Grande have ranged from 350 to 71,500 µg/L, and are typically between 1,000 and 10,000 µg/L (Figure 4d).

3.3.2.2 Cadmium

Recent dissolved cadmium concentrations in the Rio Grande in the Albuquerque area are typically below the detection limit (varied from 0.016 to 0.35 µg/L), and the detected concentrations have all been below 0.05 µg/L (Figure 5c). Total cadmium concentrations for the Rio Grande are typically below 0.1 µg/L, and have ranged from 0.023 to 1.78 µg/L (Figure 5d). Total cadmium concentrations appear lower for Rio Grande sampling locations than for the outfalls.

3.3.2.3 Chromium

Recent dissolved chromium concentrations in the Rio Grande in the Albuquerque area are typically below the detection limit (varied from 0.04 to 2.1 µg/L), and detected concentrations have been 1 µg/L or lower (Figure 6c). Total chromium concentrations for the Rio Grande have ranged from 0.5 to 29.4 µg/L (Figure 6d).

3.3.2.4 Lead

Recent dissolved lead concentrations in the Rio Grande in the Albuquerque area are typically below the detection limit (varied from 0.06 to 2.05 µg/L), and detected concentrations have all been below 0.3 µg/L (Figure 7c). Total lead concentrations for the Rio Grande have ranged from 0.48 to 119 µg/L (Figure 7d). Both dissolved and total lead concentrations at Rio Grande sample locations appear lower than those at outfall sample locations (Figures 7a and 7b).

3.3.2.5 Nickel

Recent dissolved nickel concentrations in the Rio Grande in the Albuquerque area are typically below the detection limit (varied from 0.75 to 5 µg/L), and the detected concentrations have all been below 3 µg/L (Figure 8c). Total nickel concentrations for the Rio Grande have ranged from 1.12 to 64.6 µg/L (Figure 8d).

3.3.2.6 Zinc

Recent dissolved zinc concentrations in the Rio Grande in the Albuquerque area are typically below the detection limit (varied from 0.5 to 90.6 µg/L), and detected concentrations have all been below 18 µg/L (Figure 9c). Total zinc concentrations for the Rio Grande have ranged from 4.2 to 279 µg/L (Figure 9d). Both dissolved and total zinc concentrations appear markedly lower from samples from the Rio Grande compared to those collected at the outfall locations.

3.4 Polychlorinated Biphenyl Congeners

There are 209 configurations (congeners) of PCBs that are synthetic organic compounds. Prior to their ban in 1979, PCBs were used in electrical transformers and condensers, paint, hydraulic fluid, pesticides, ink, carbonless paper, and toilet paper (U.S. EPA, 2016). The two common analytical tests for measuring PCB concentrations include the following (Storms et. al., 2015):

- EPA analytical test method 8082
  - Analyzes for aroclors
  - Laboratory detection limits of 0.3 µg/L or above
- EPA analytical test method 1668
  - Analyzes for congeners
  - Laboratory detection limits of 10 picograms per liter (pg/L) or above

Table 2 summarizes recent total PCB concentrations for samples collected from five of the six outfall locations and two Rio Grande locations. The total PCB concentration of the water samples was estimated by summing the individual congener concentrations using EPA method 1668. PCBs were not detected using EPA method 8082.

3.4.1 Outfall Locations

Recent total PCB concentrations in the sampled outfall locations have ranged from not detected at two outfall locations to 0.123699 µg/L at the North Diversion Channel (Table 2). Overall, the total PCB concentrations in stormwater are generally low, although higher concentrations are noted in the samples collected from the NDC and San Jose Drain outfall locations (Table 2).

3.4.2 Rio Grande Locations

Recent total PCB concentrations in the Rio Grande in the Albuquerque area have ranged from not detected at the Rio Grande upstream of the NDC location to 0.000276 µg/L at the Rio Grande near Isleta location (Table 2). The detected total PCB concentration was below the New Mexico and Pueblo of Isleta water quality standard of 0.014 µg/L.

3.5 Sediment Removal from Flood Control System

AMAFCA maintains the flood control system by routinely removing sediment from the many portions of the system that have been designed to capture sediment. Their currently maintained system includes the following (AMAFCA, 2015):

- 21 flood control dams
- 46 smaller flood control ponds
- 68 miles of arroyo channels
- 11 miles of underground conduit structures
- 10 miles of dikes and diversion structures
- 127 stormwater quality debris facilities

During 2015, AMAFCA removed a total of 34,976 cubic yards of sediment from their various channels, diversion structures, flood control dams, and stormwater quality facilities (Chavez, 2016) (Table 3). Approximately 46 percent of the total sediment removed by AMAFCA was taken from the SDC and Water Quality Structure during the months of January through April, July, October, and November (Table 4). The amount removed from the SDC and Water Quality Structure includes sediment collected from structures above and below the confluence of Tijeras Arroyo with the SDC. The amount of sediment removed has not been tracked separately for the two channels, but will be in the future.

In 2015, 2,735 cubic yards of sediment was removed from the NDC for several months during the spring and fall (Table 4). No sediment removal was documented during 2015 from the San Antonio Arroyo.

The Barelas Pump Station and San Jose Drain sites are maintained by COA and do not have documented sediment removal data. The COA employs several crews that routinely check and clean more than 30,000 storm drains within the city after large storm events. The 14 pump stations and 11 dams the COA maintains are inspected each year in May and June just prior to the monsoon season.

4. Conclusions and Recommendations

Erosion of sediment during storm events is a continual and natural process—especially in the Albuquerque metropolitan area, where stormwater flows toward the Rio Grande over the alluvial fans of the Sandia Mountain foothills and mostly unmodified sandy arroyos that drain the West Mesa. The COA and AMAFCA have a comprehensive plan in place to reduce stormwater pollution to the maximum extent practicable. Many different types of detention basins have been installed within the Albuquerque MS4 system to slow down stormwater and ultimately reduce the amount of sediment reaching the Rio Grande (Figure 1). AMAFCA has designed and built over a hundred water quality structures specifically to catch debris, sediment, and trash from stormwater prior to entering the Rio Grande. Sediment collected in these detention basins and water quality structures is routinely removed as part of ongoing operation and maintenance of these facilities by COA and AMAFCA. Recently completed projects include the following:

- Black Arroyo Dam east branch channel and regional water quality facility
- Boca Negra Dam project
- Calabacillas Arroyo grade control structures 3b and 3c and bank protection project
- East Amole surge pond
- Hahn Arroyo rehabilitation project Phase I
- La Presa Project (included 80 acre-foot detention facility)
- NDC sedimentation basin

The COA has recently updated its drainage ordinance with a significant change requiring a current stormwater control permit for erosion and sediment control for all construction, demolition, clearing, and grading operations that would disturb 1 acre or more of land. The result of this ordinance requirement will be a reduction in sediment erosion from construction sites under its jurisdiction.

In Section 3, recent water quality data for TDS, TSS, metal concentrations, and PCBs from discharge outfalls were reviewed and compared with corresponding data from the Rio Grande within the greater Albuquerque area. In general, TDS and TSS concentrations detected in stormwater samples were similar to those detected in the samples collected from the Rio Grande (Figures 2a through 3b). However, while TDS concentrations from Rio Grande sampling locations exhibited less variability compared to concentrations measured at the outfalls, TDS concentrations in the Rio Grande samples also appeared typically higher, indicating that the detention ponds and other BMPs to reduce sediment loading to the river are working and do reduce the amount of contaminants making it to the river. The TSS concentrations at the outfall locations varied widely, but more sediment was frequently contributed from the Tijeras Arroyo, SDC, and NDC outfalls. Therefore, implementation of additional sediment loading reduction BMPs should be targeted in these drainage areas. Concentrations of lead, cadmium (total concentrations), and zinc appeared higher in outfall samples than in Rio Grande samples, also suggesting that system-wide progress is still possible toward removing those pollutants. PCBs using EPA method 1668 were detected at low concentrations in stormwater samples. The highest PCB concentrations were detected in stormwater from the NDC and San Jose Drain outfalls, while the lowest concentrations were from the San Antonio Arroyo outfall.

The purpose and intent of the Sediment Pollutant Load Reduction Strategy is to encourage entities to look at how to reduce pollutants attached to sediments; based on the above conclusions, this appears to already be working. It is recommended that entities continue the BMPs already in place to reduce sediment loading, and also look into additional ways to reduce sediment loading. In cooperation with other stakeholders (e.g., COA, Bernalillo County), AMAFCA is currently planning the installation of the following infrastructure and/or the implementation of the following studies to improve stormwater quality and decrease the amount of sediment reaching the Rio Grande (AMAFCA, 2015):

- Adobe Acres pump station outfall (includes 10 acre-foot pond)
- Bosque surface water quality outfall improvements for Barelas Pump Station outfall [COA lead agency on this project]
- Barr Main Canal improvements (includes series of inline detention ponds)

- Black Mesa Pump Station outfall upgrade
- Black Mesa storm drain (McCoy)
- Bobby Foster storm drain
- Calabacillas Arroyo bank monitoring and enhancement
- Calabacillas Arroyo prudent line study
- Hahn Arroyo phase II
- Hamilton Dam
- Kirtland Air Force Base 30 acre-foot south detention basin [COA lead agency on this project]
- Karsten Area restudy
- Las Ventanas Dam stormwater quality upgrades
- Marble-Arno pond and pump station [COA lead agency on this project]
- NDC Indian School water quality pond
- NDC outfall stormwater quality facility improvements
- North Fourth Street storm drain
- North Geologic Window Dam (173 acre-foot detention pond)
- Old Coors ponding area
- Pond 2149
- SDC outfall water quality improvements
- Tijeras Arroyo facility plan
- Tijeras Arroyo sediment retention structure (to collect 15,000 to 30,000 cubic yards of sediment and debris before it enters the SDC)
- Upper Snow Vista Channel improvements study
- Valle de Oro drainage and water quality infrastructure
- West I-40 diversion channel

All of these planned infrastructure improvements and studies are recommended to further reduce sediment loading and improve stormwater quality in the Albuquerque metropolitan area.

It is further recommended that the City investigate several specific areas within its jurisdiction that may be contributing excessive levels of pollutants in sediment entering the Rio Grande during stormwater discharge events. The recommended investigation would target areas within Tijeras Arroyo (upstream of the concrete-lined area) and other arroyos that are contributing higher sediment loads (e.g., top ranked locations from Table 3). Analytical analyses would be conducted to determine the presence or absence of near-surface PCB and metal concentrations in the collected sediment. In addition, sediment samples should be collected from arroyo locations upgradient of the urbanized area for an estimate of background concentrations. This additional sediment sampling within COA jurisdiction would supplement historical stormwater analytical data, and allow for comparison of PCB and metal concentrations in sediment between the various arroyos and upgradient background locations. The field and laboratory data results could then be evaluated spatially within the City's jurisdiction and compared to the results of the previous investigations summarized in this assessment report.

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Figures

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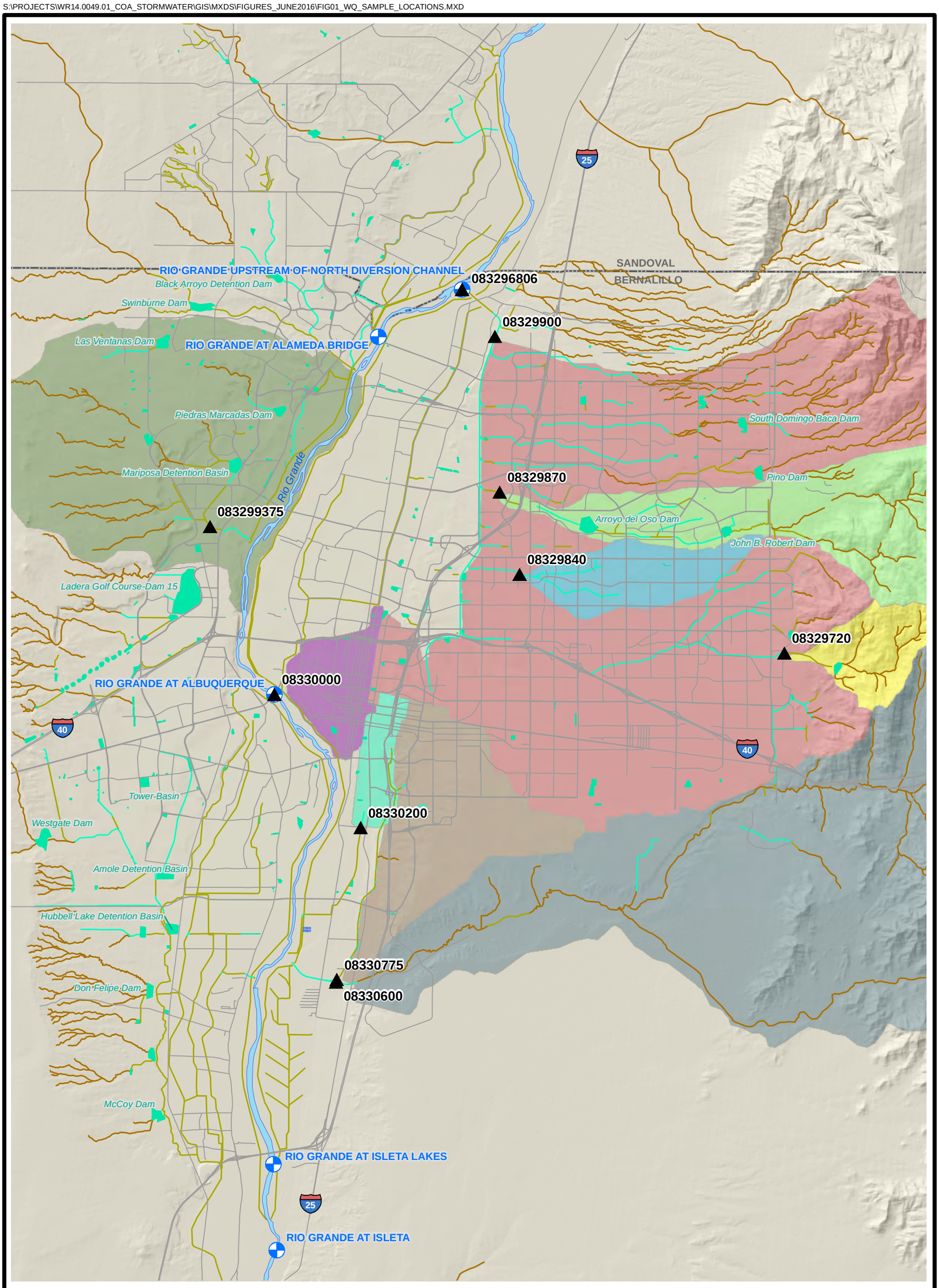


Figure 1

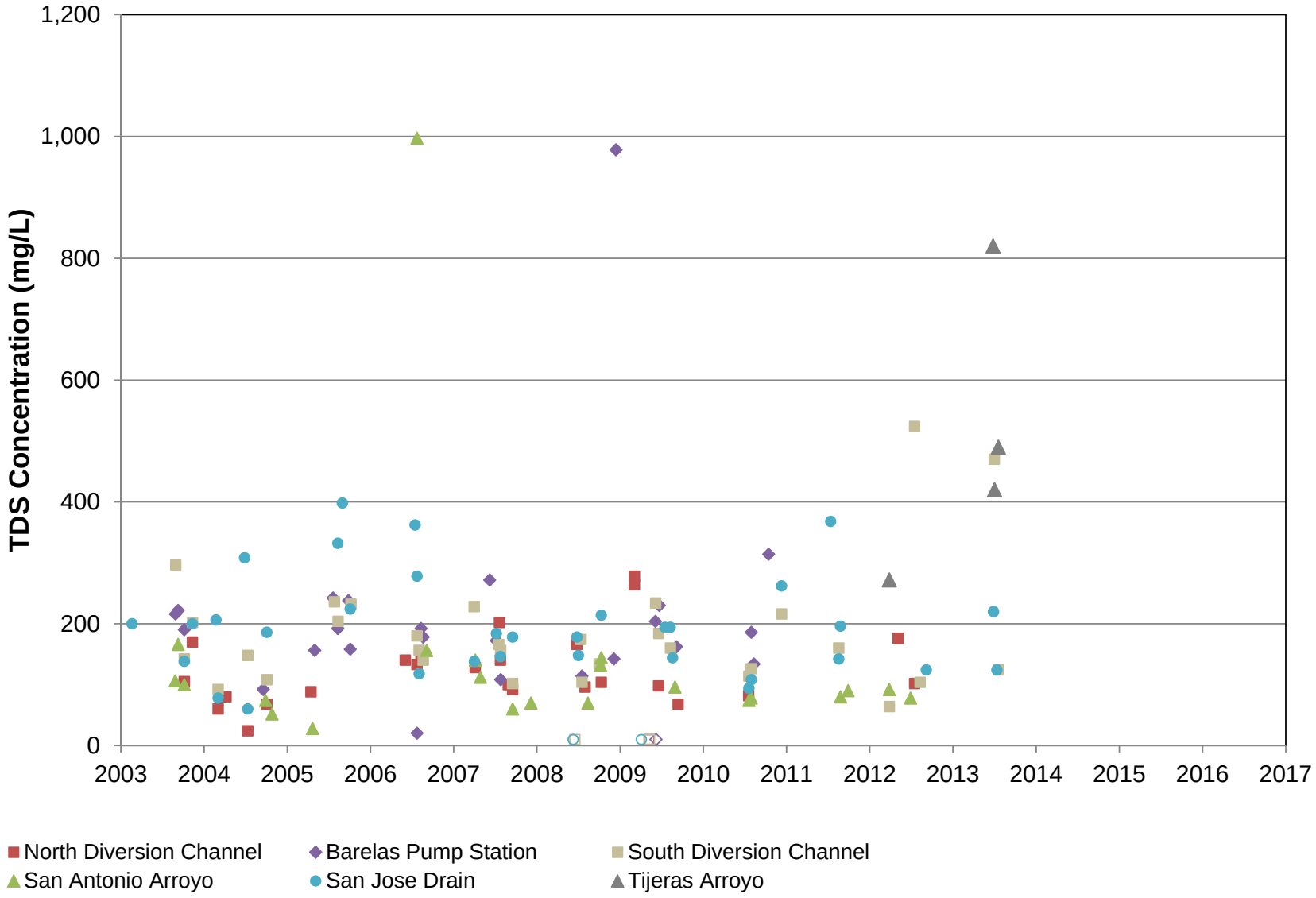
CITY OF ALBUQUERQUE

Outfall Sampling Location and Stream Gages

Daniel B. Stephens & Associates, Inc.

9/16/2016 JN WR14.0049

P:_WR14-049\Sediment Assmnt.9-16\Figures\Word\Fig02a_TDS-Outfalls.doc



Note: Open symbols denote non-detections (at detection limit).
Sources: Storms et al., 2015; USGS, 2016

Figure 2a

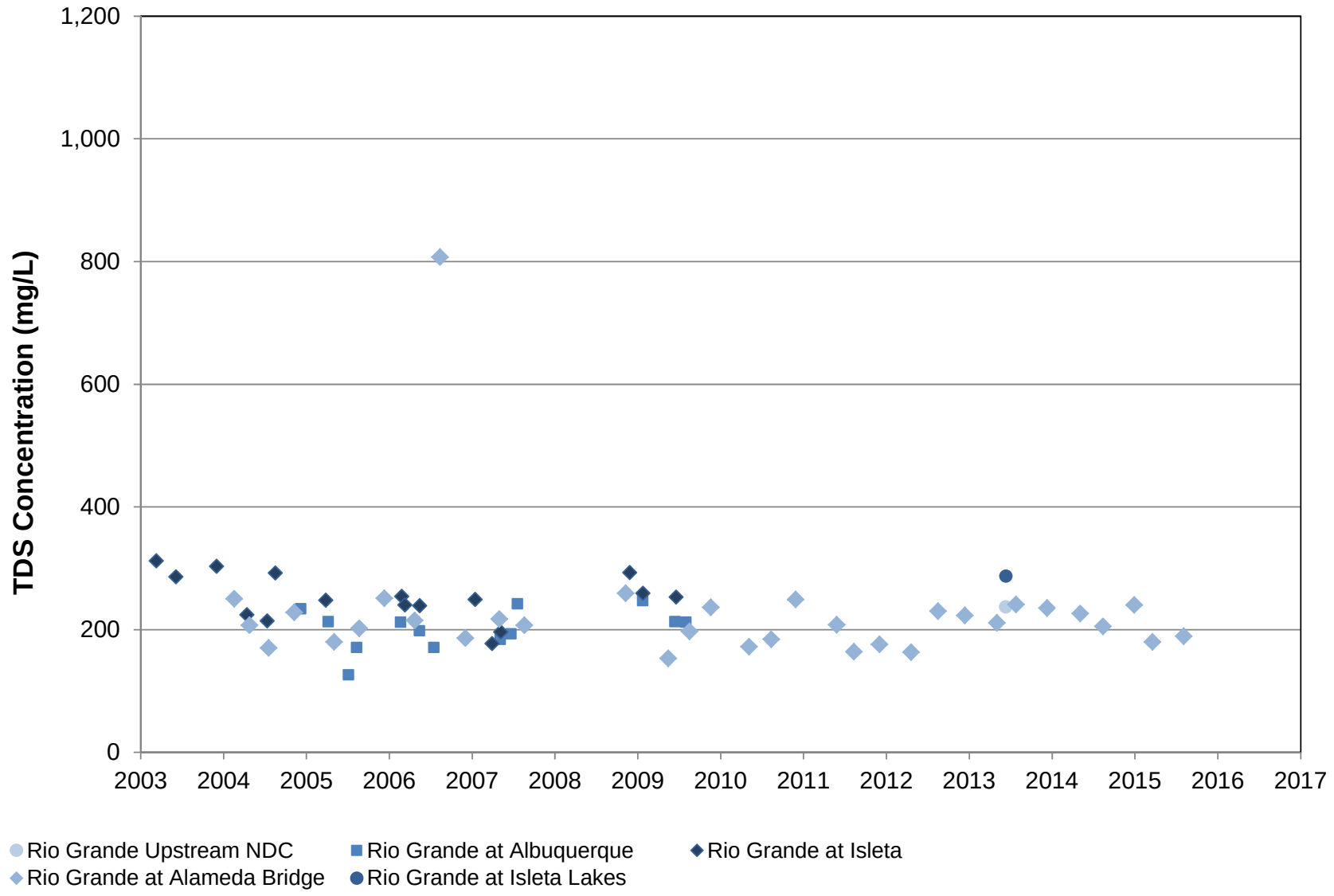
CITY OF ALBUQUERQUE

Total Dissolved Solids, Outfall Locations

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9/19/16

P:_WR14-049\Sediment Assmnt.9-16\Figures\Word\Fig02b_TDS-RG.doc



Sources: Storms et al., 2015; USGS, 2016

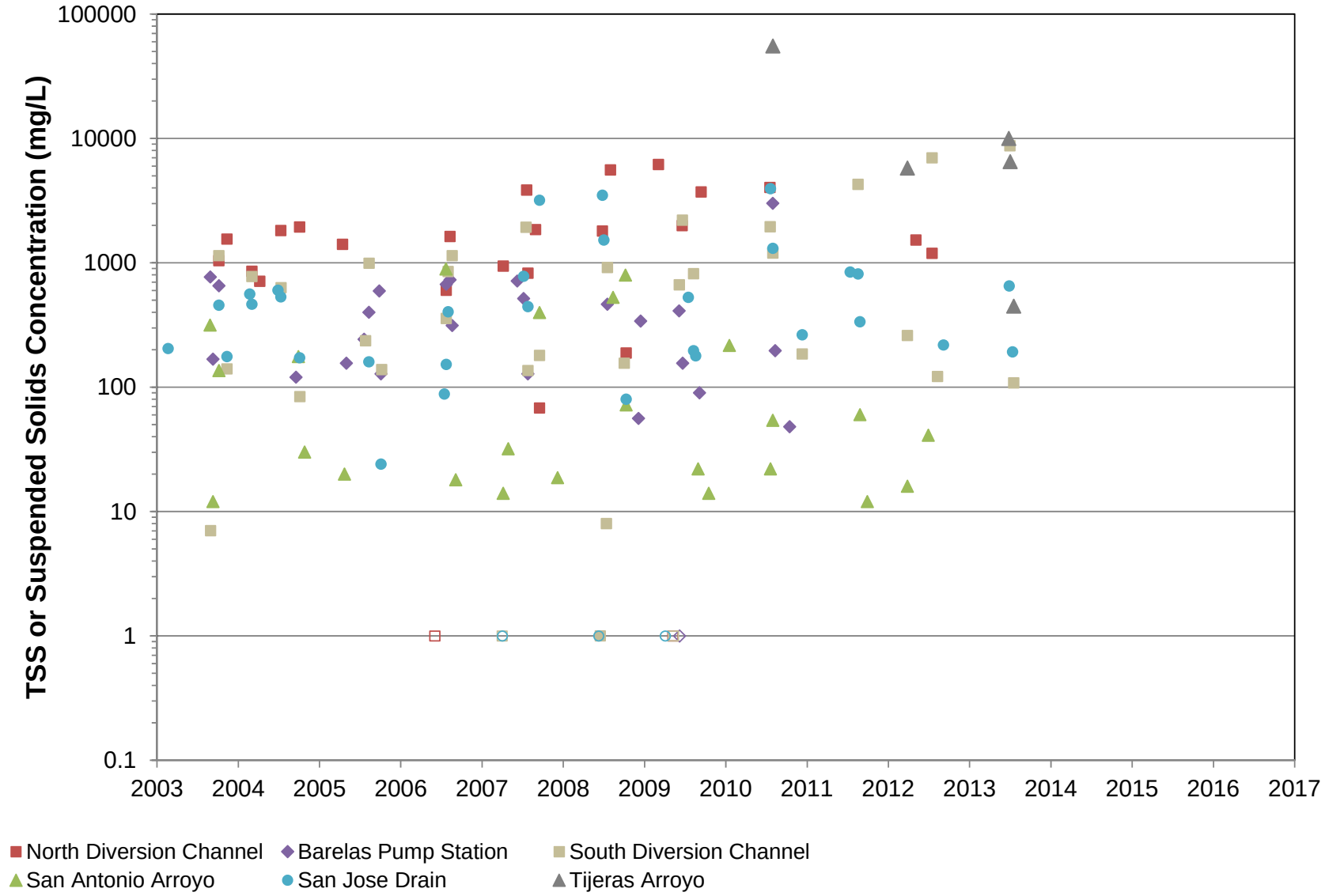
Figure 2b

CITY OF ALBUQUERQUE

Total Dissolved Solids, Rio Grande Locations

Daniel B. Stephens & Associates, Inc.

9/19/16



Note: Open symbols denote non-detections (at detection limit).
Sources: Storms et al., 2015; USGS, 2016

Figure 3a

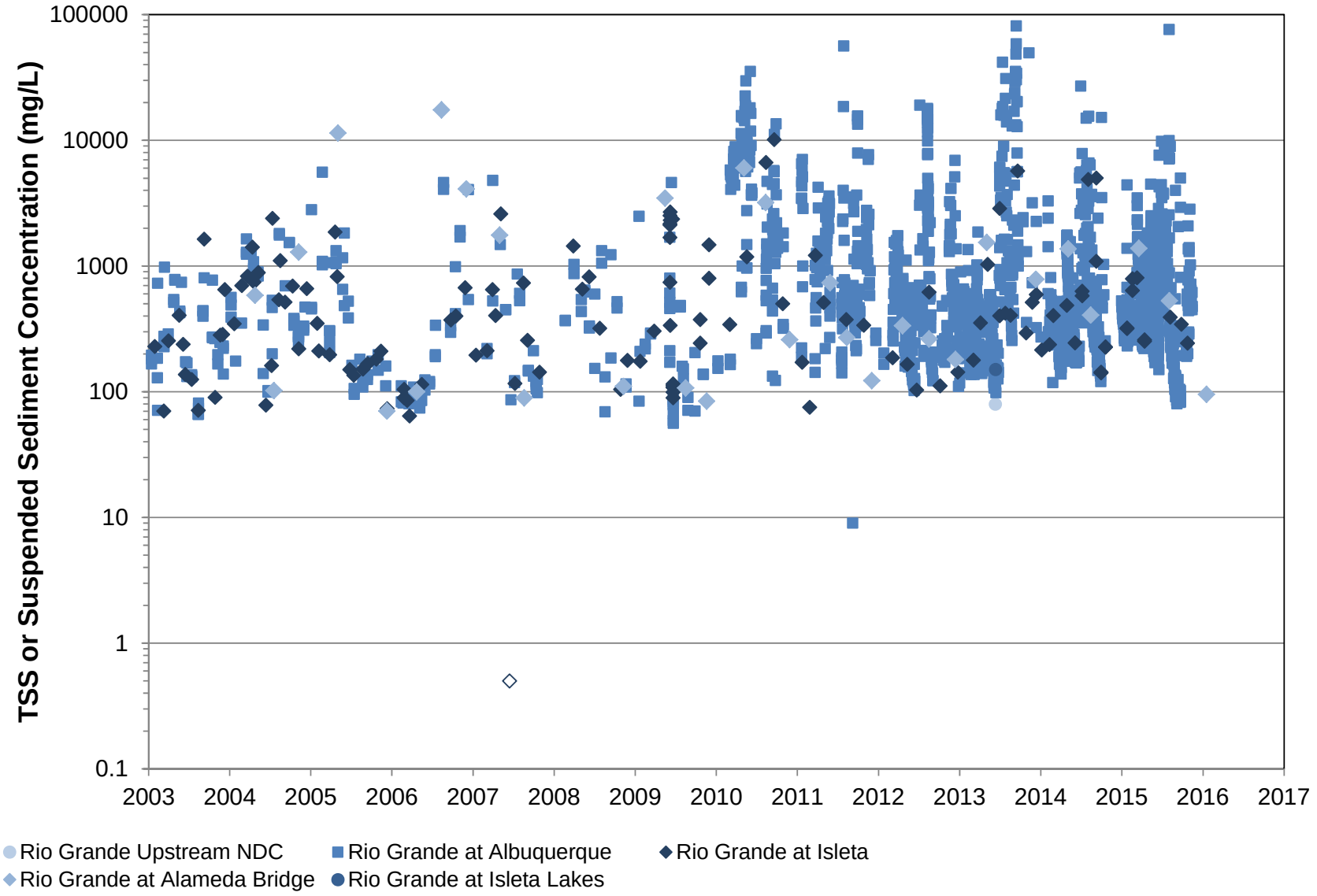
CITY OF ALBUQUERQUE

Total Suspended Solids or Suspended Sediment Outfall Locations

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9/19/16

P:_WR14-049\Sediment Assmnt.9-16\Figures\Word\Fig03b_TSS-RG.doc



Note: Open symbols denote non-detections (at detection limit).
Sources: Storms et al., 2015; USGS, 2016

Figure 3b

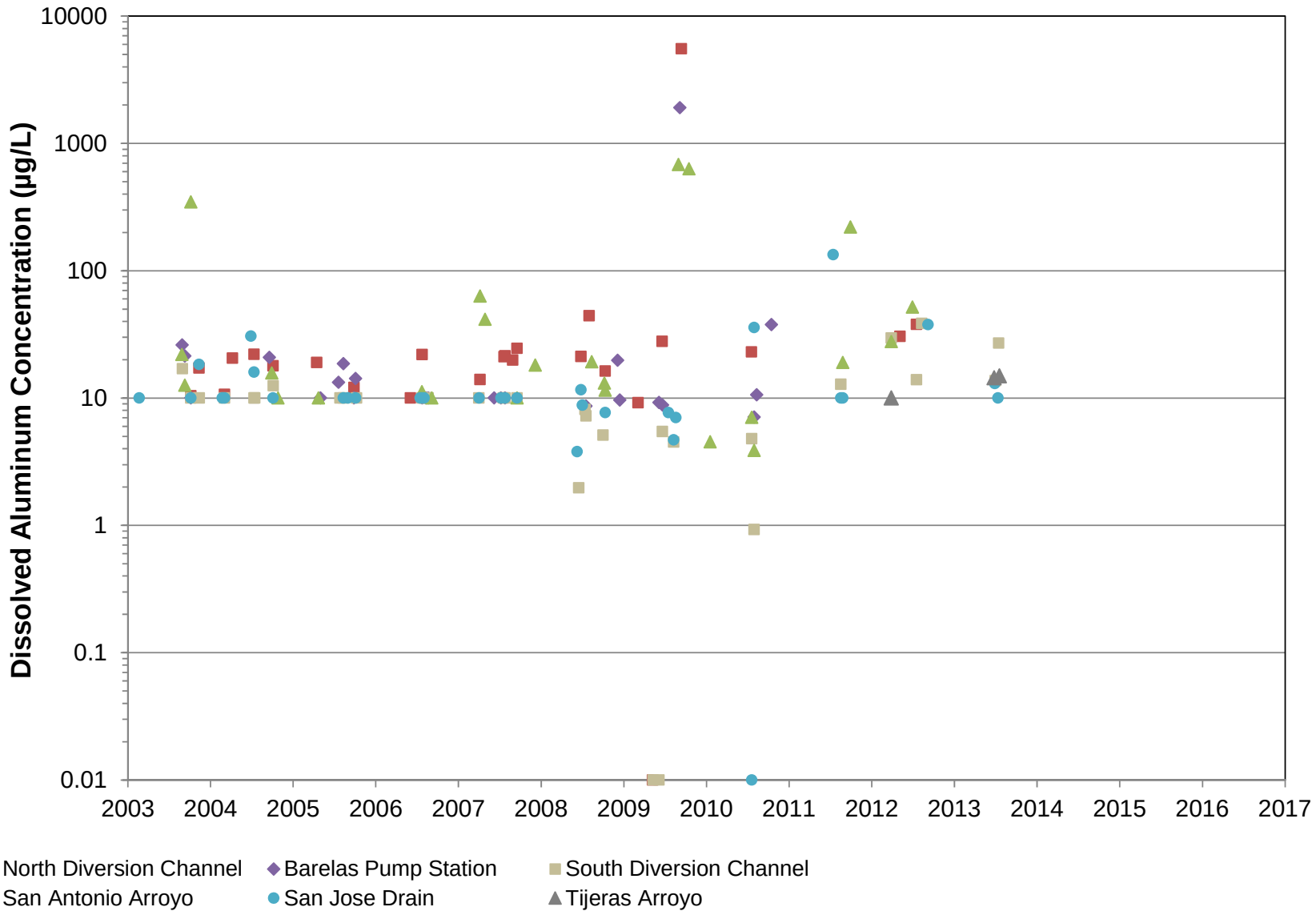
CITY OF ALBUQUERQUE

Total Suspended Solids or Suspended Sediment
Rio Grande Locations

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P:_WR14-049\Sediment Assmnt.9-16\Figures\Fig04a_Al-Diss-Outfalls.doc



Note: Non-detections plotted at detection limit.
Sources: Storms et al., 2015; USGS, 2016

Figure 4a

CITY OF ALBUQUERQUE

Dissolved Aluminum, Outfall Locations

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Note: Non-detections plotted at detection limit.
Sources: Storms et al., 2015; USGS, 2016

Figure 4b

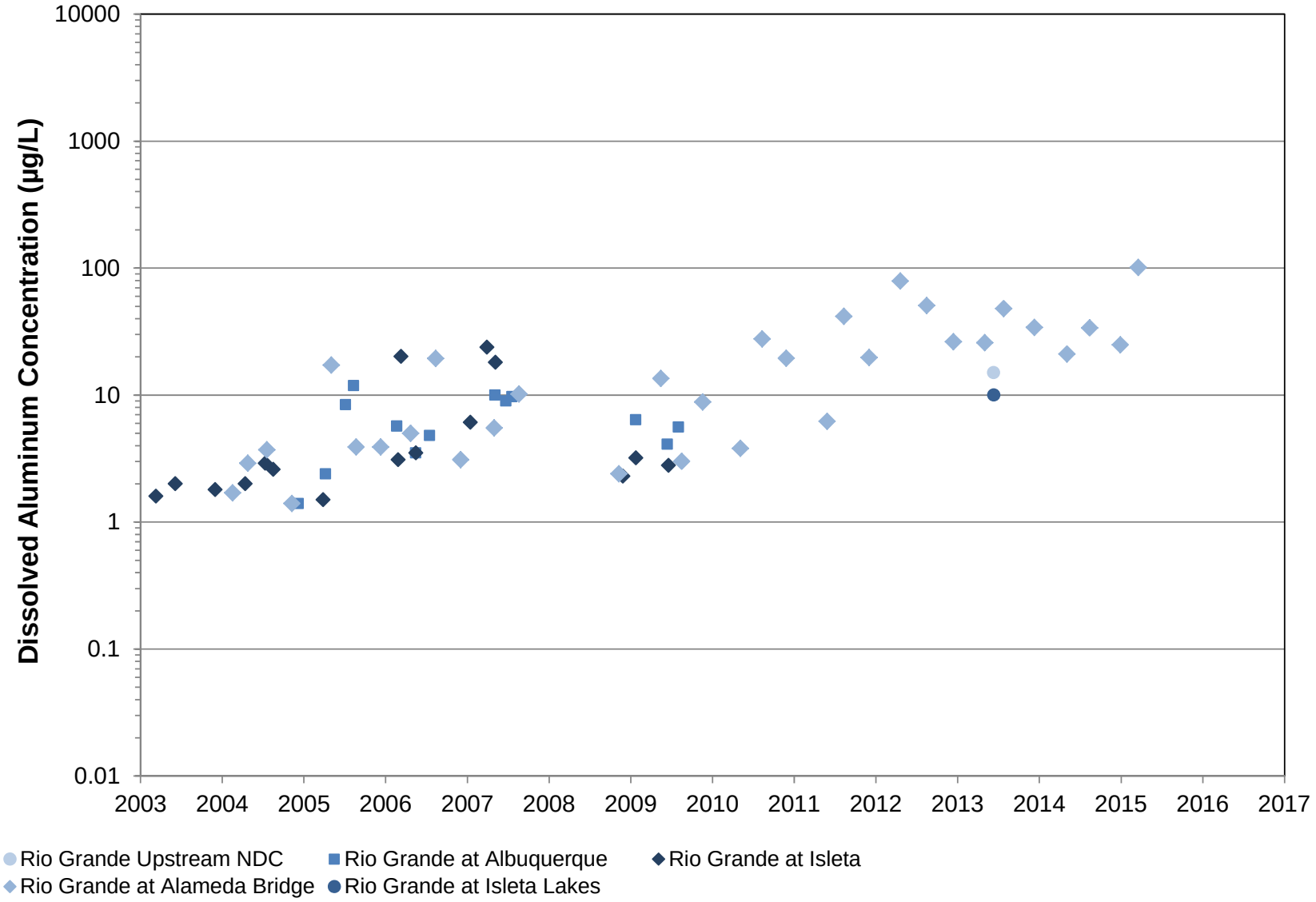
CITY OF ALBUQUERQUE

Total Aluminum, Outfall Locations

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P:_WR14-049\Sediment Assmnt.9-16\Figures\Fig04c_Al-Diss-RG.doc



Note: Non-detections plotted at detection limit.
Sources: Storms et al., 2015; USGS, 2016

Figure 4c

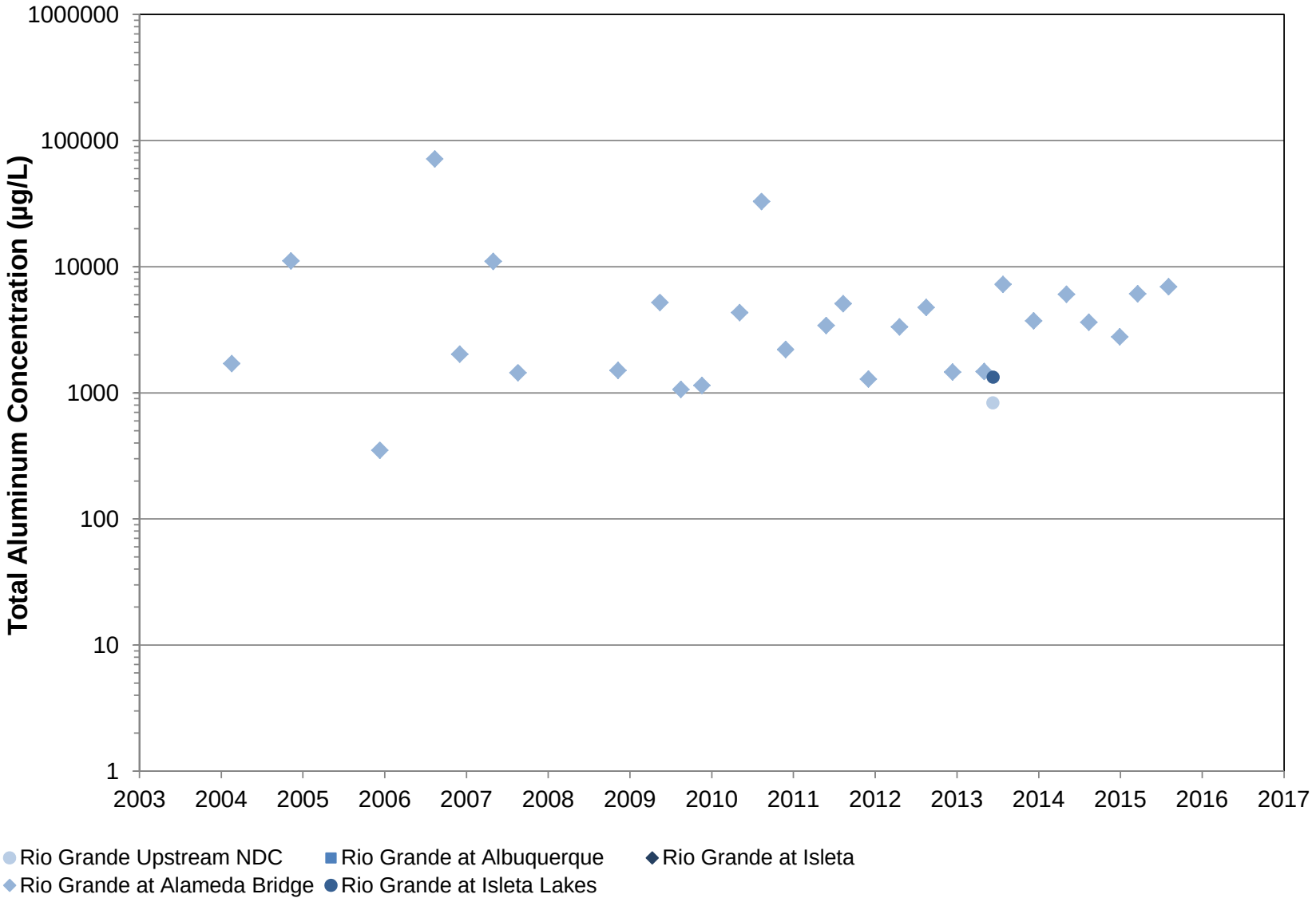
CITY OF ALBUQUERQUE

Dissolved Aluminum, Rio Grande Locations

Daniel B. Stephens & Associates, Inc.

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P:_WR14-049\Sediment Assmnt.9-16\Figures\Fig04d_Al-Tot-RG.doc



Note: Non-detections plotted at detection limit.
Sources: Storms et al., 2015; USGS, 2016

Figure 4d

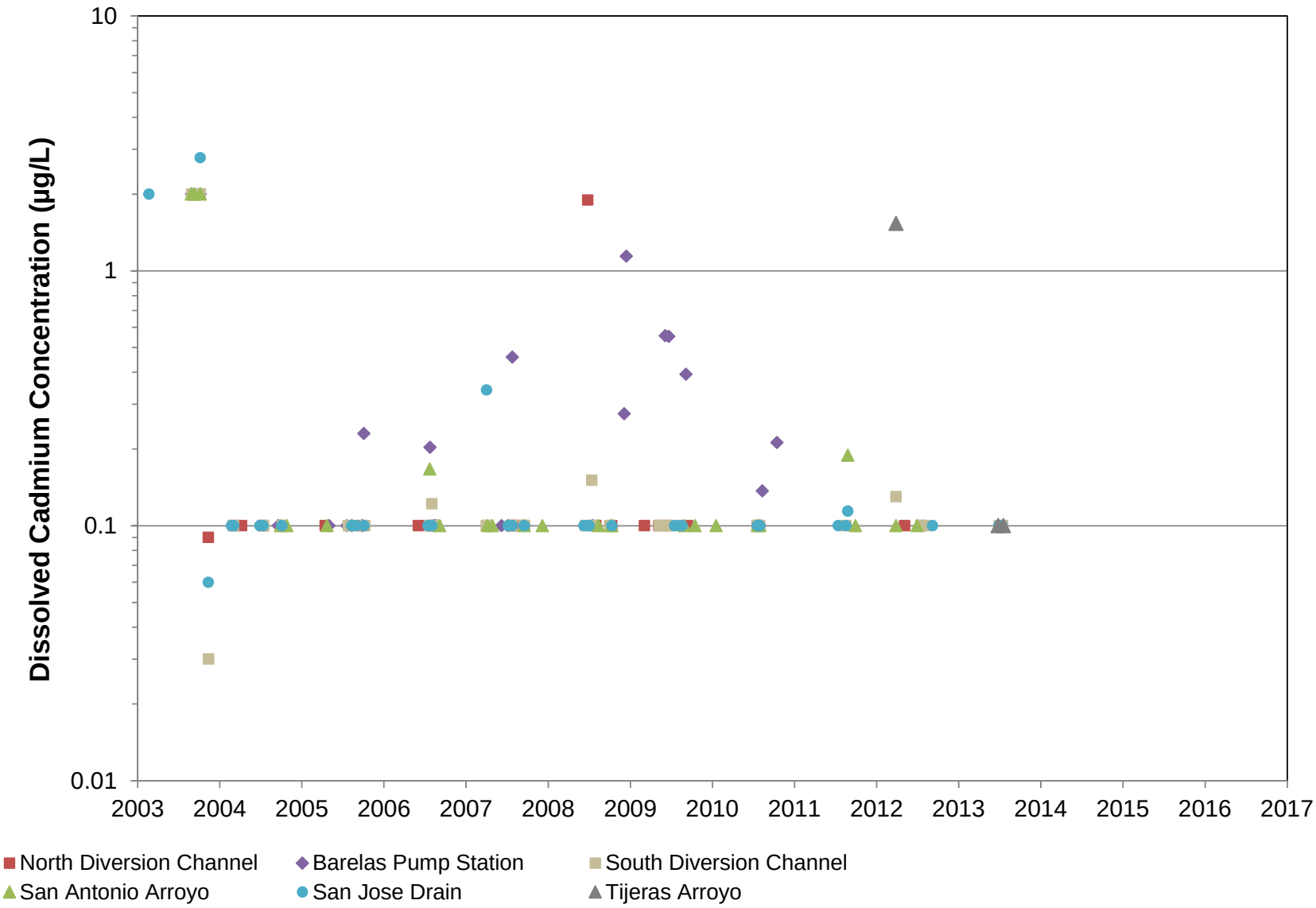
CITY OF ALBUQUERQUE

Total Aluminum, Rio Grande Locations

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P:_WR14-049\Sediment Assmnt.9-16\Figures\Fig05a_Cd-Diss-Outfalls.doc



Note: Non-detections plotted at detection limit.
Sources: Storms et al., 2015; USGS, 2016

Figure 5a

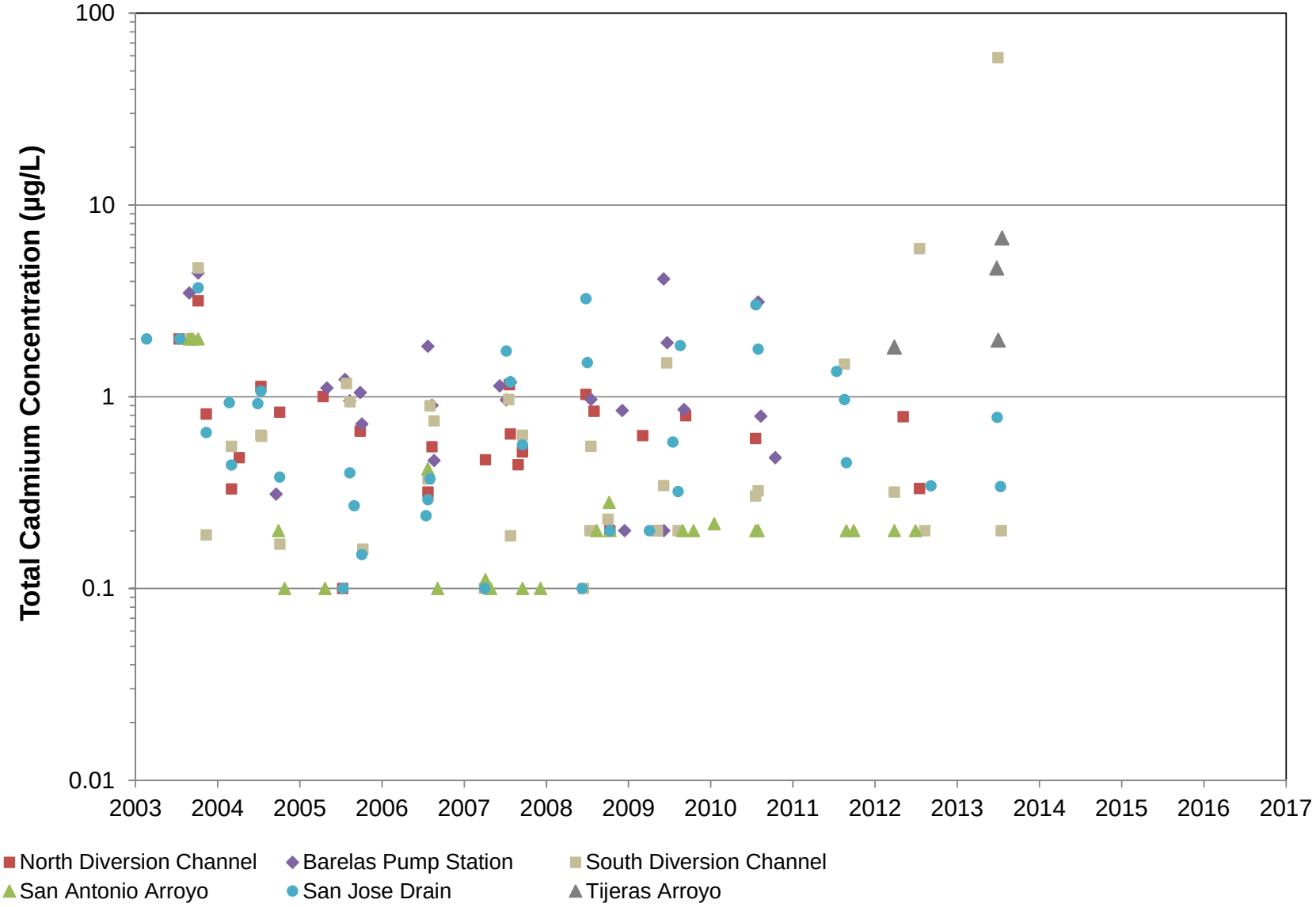
CITY OF ALBUQUERQUE

Dissolved Cadmium, Outfall Locations

Daniel B. Stephens & Associates, Inc.

9/19/16

P:_WR14-049\Sediment Assmnt.9-16\Figures\Fig05b_Cd-Tot-Outfalls.doc



Note: Non-detections plotted at detection limit.
Sources: Storms et al., 2015; USGS, 2016

Figure 5b

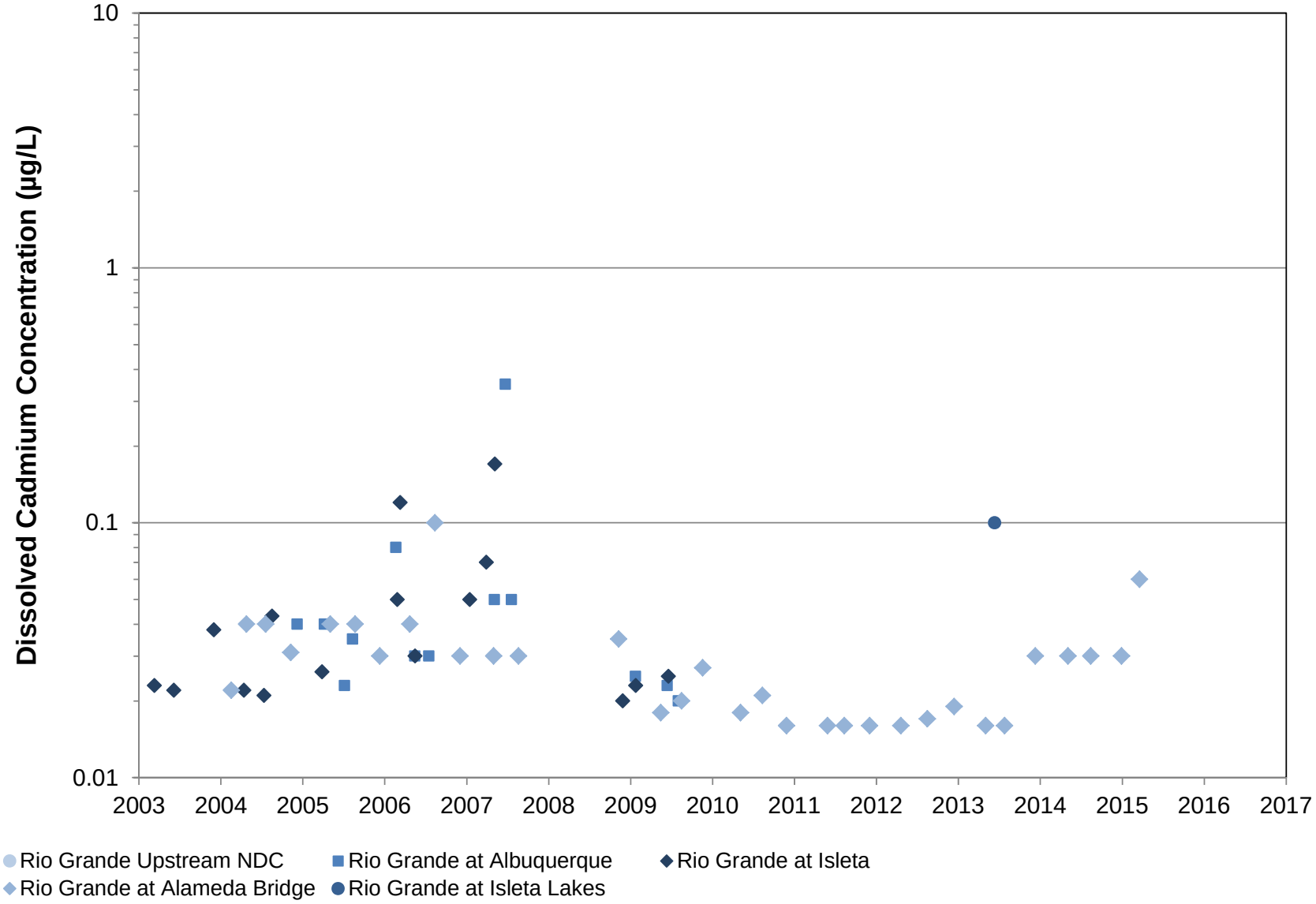
CITY OF ALBUQUERQUE

Total Cadmium, Outfall Locations

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9/19/16

P:_WR14-049\Sediment Assmnt.9-16\Figures\Fig05c_Cd-Diss-RG.doc



Note: Non-detections plotted at detection limit.
Sources: Storms et al., 2015; USGS, 2016

Figure 5c

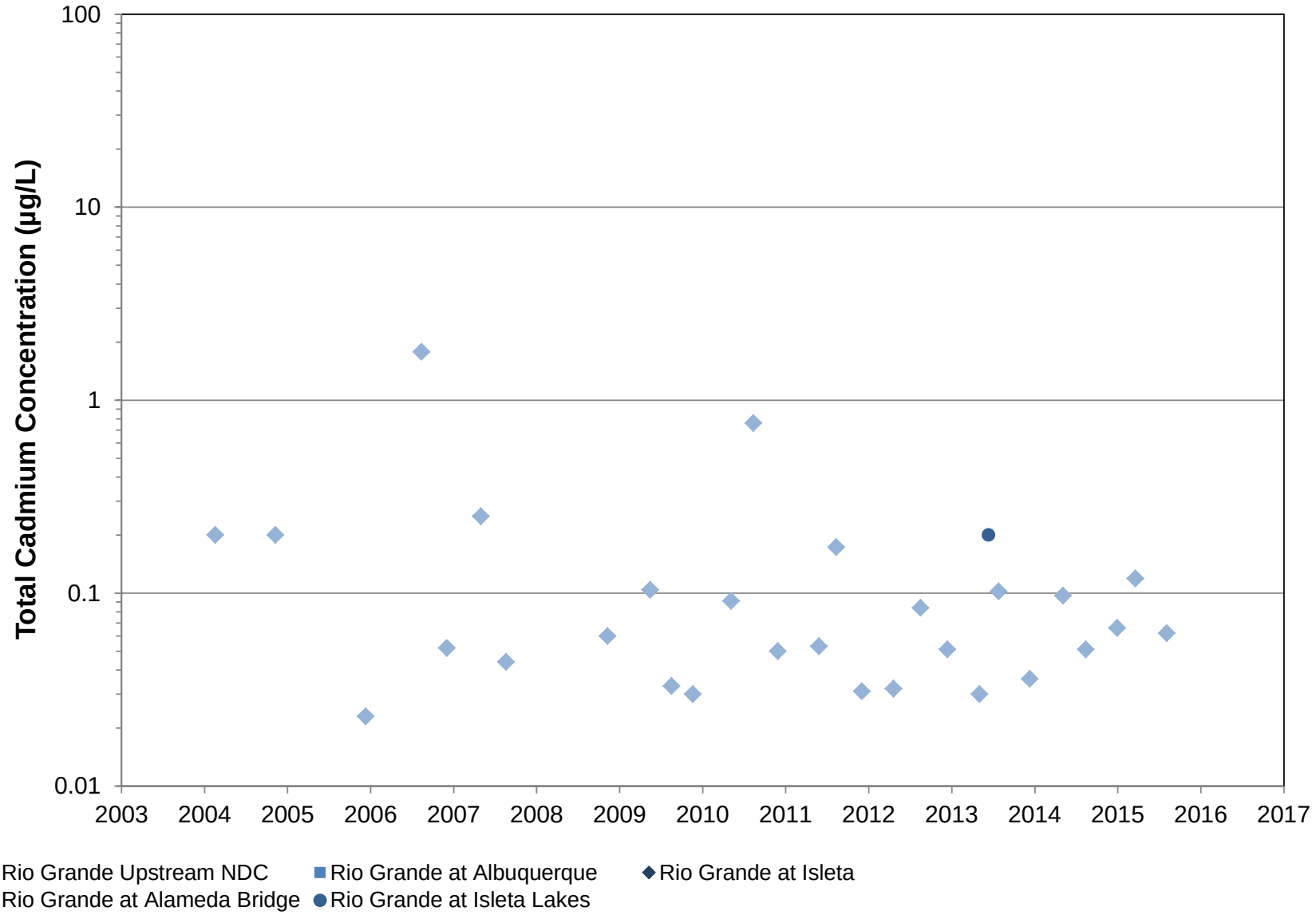
CITY OF ALBUQUERQUE

Dissolved Cadmium, Rio Grande Locations

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P:_WR14-049\Sediment Assmnt.9-16\Figures\Fig05d_Cd-Tot-RG.doc



Note: Non-detections plotted at detection limit.
Sources: Storms et al., 2015; USGS, 2016

Figure 5d

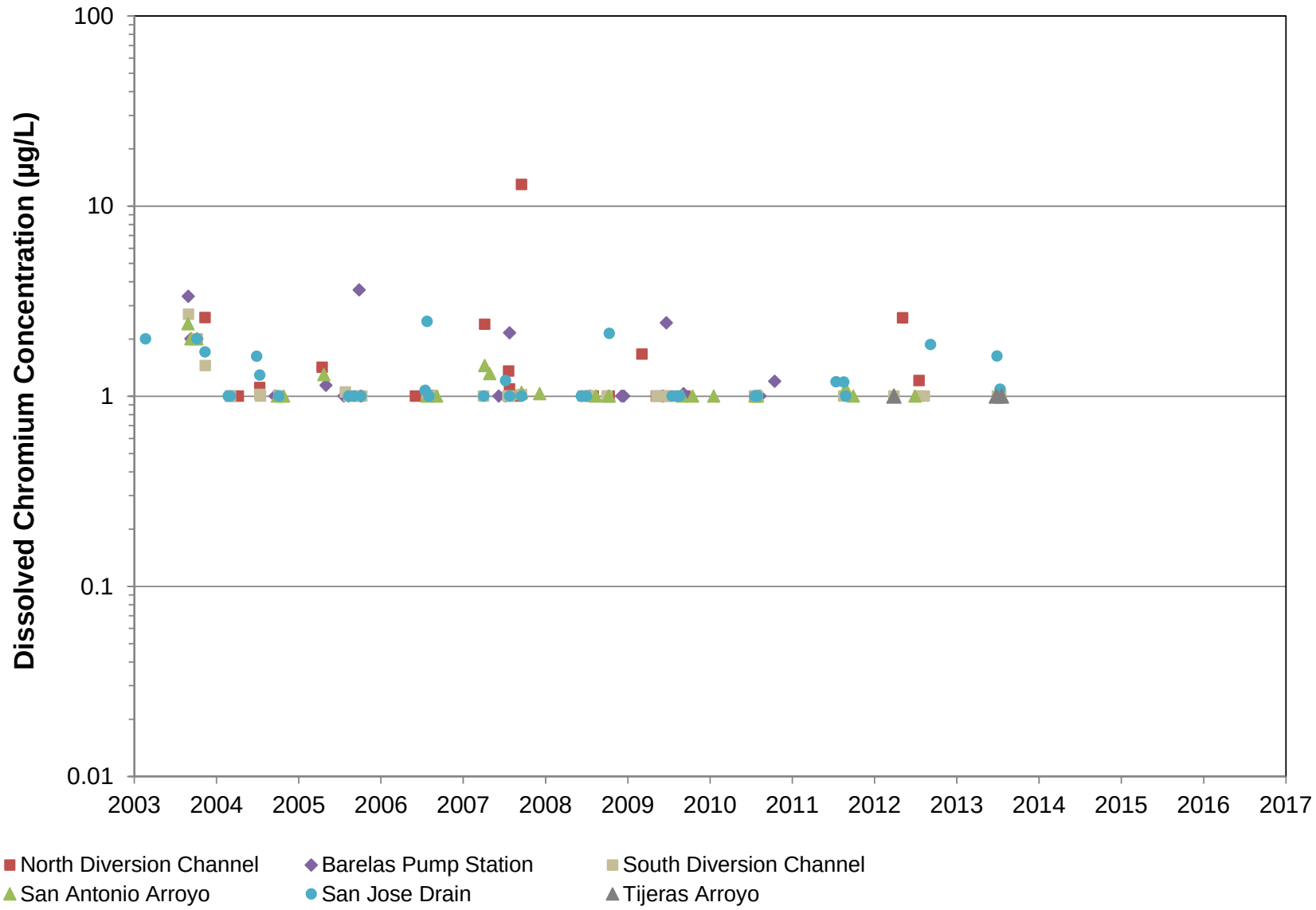
CITY OF ALBUQUERQUE

Total Cadmium, Rio Grande Locations

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P:_WR14-049\Sediment Assmnt.9-16\Figures\Fig06a_Cr-Diss-Outfalls.doc



Note: Non-detections plotted at detection limit.
Sources: Storms et al., 2015; USGS, 2016

Figure 6a

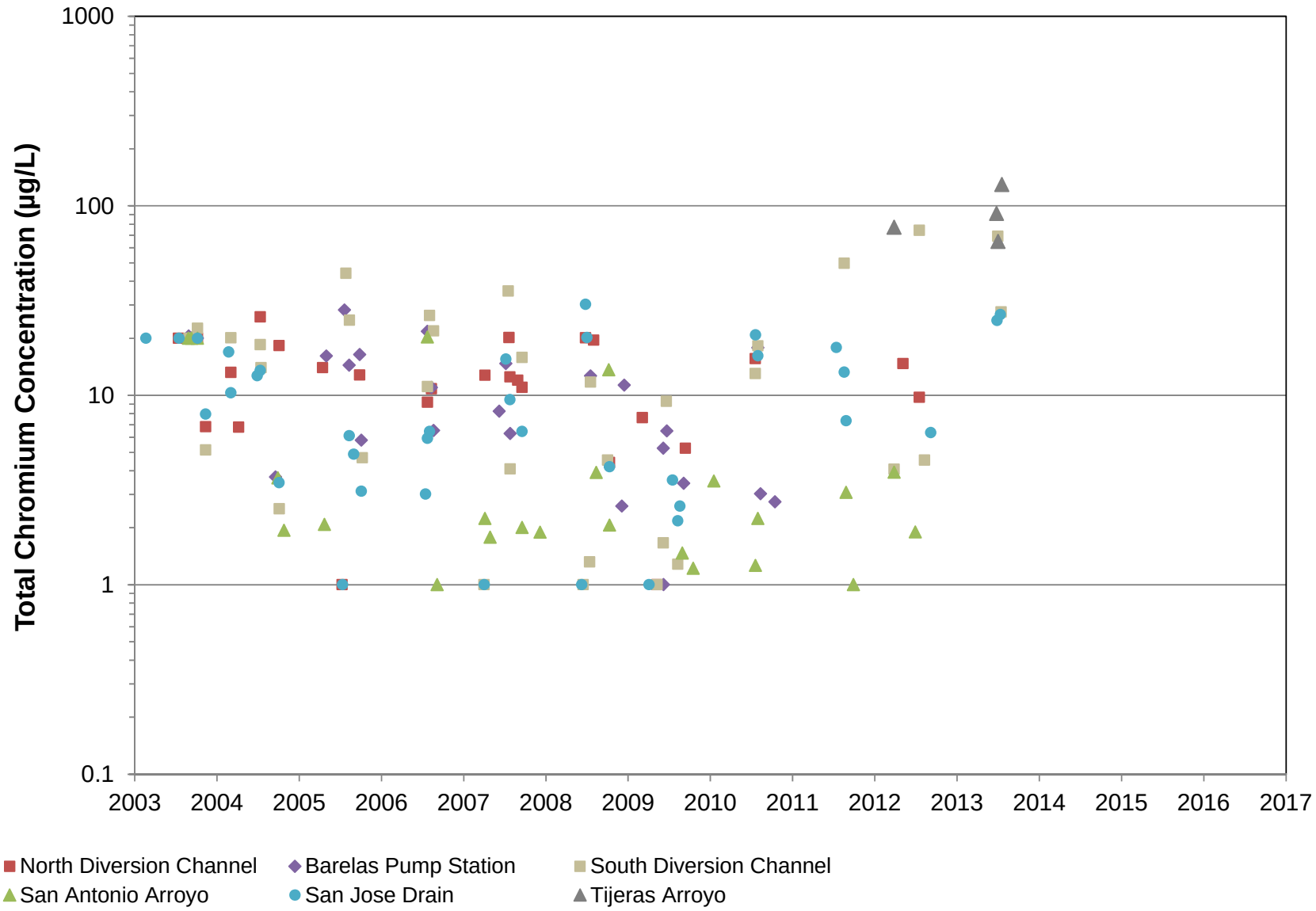
CITY OF ALBUQUERQUE

Dissolved Chromium, Outfall Locations

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P:_WR14-049\Sediment Assmnt.9-16\Figures\Fig06b_Cr-Tot-Outfalls.doc



Note: Non-detections plotted at detection limit.
Sources: Storms et al., 2015; USGS, 2016

Figure 6b

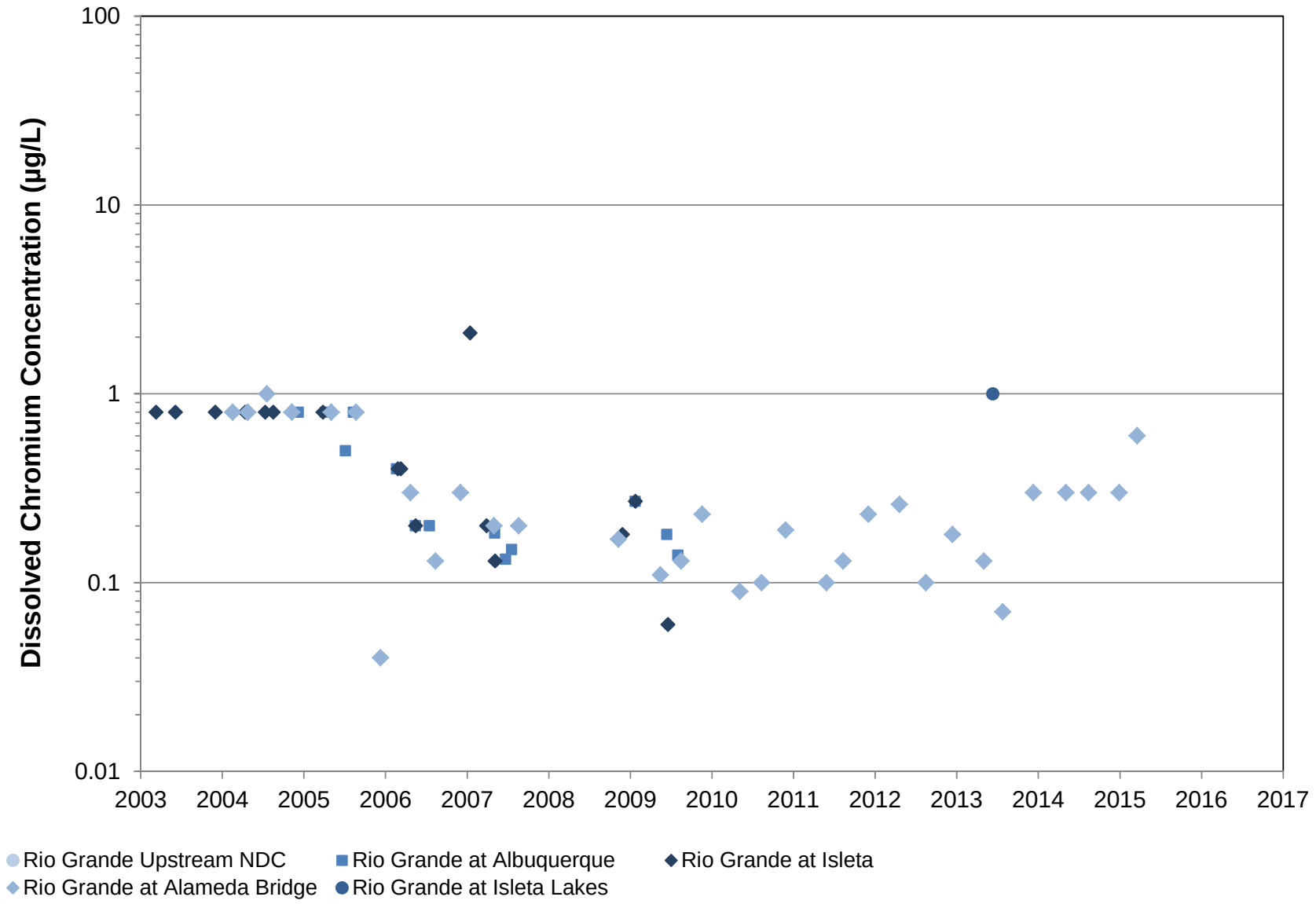
CITY OF ALBUQUERQUE

Total Chromium, Outfall Locations

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Note: Non-detections plotted at detection limit.
Sources: Storms et al., 2015; USGS, 2016

Figure 6c

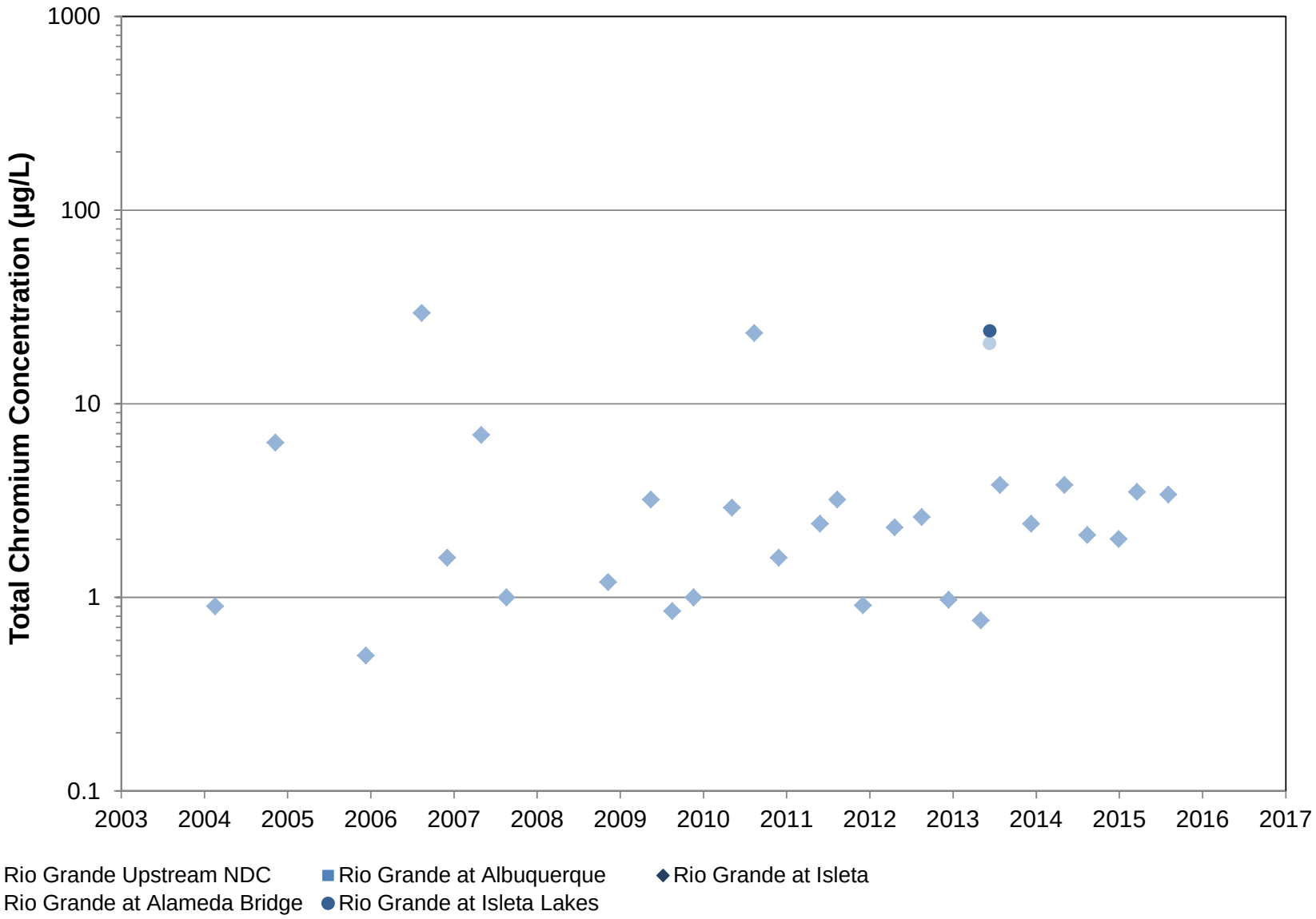
CITY OF ALBUQUERQUE

Dissolved Chromium, Rio Grande Locations

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Note: Non-detections plotted at detection limit.
Sources: Storms et al., 2015; USGS, 2016

Figure 6d

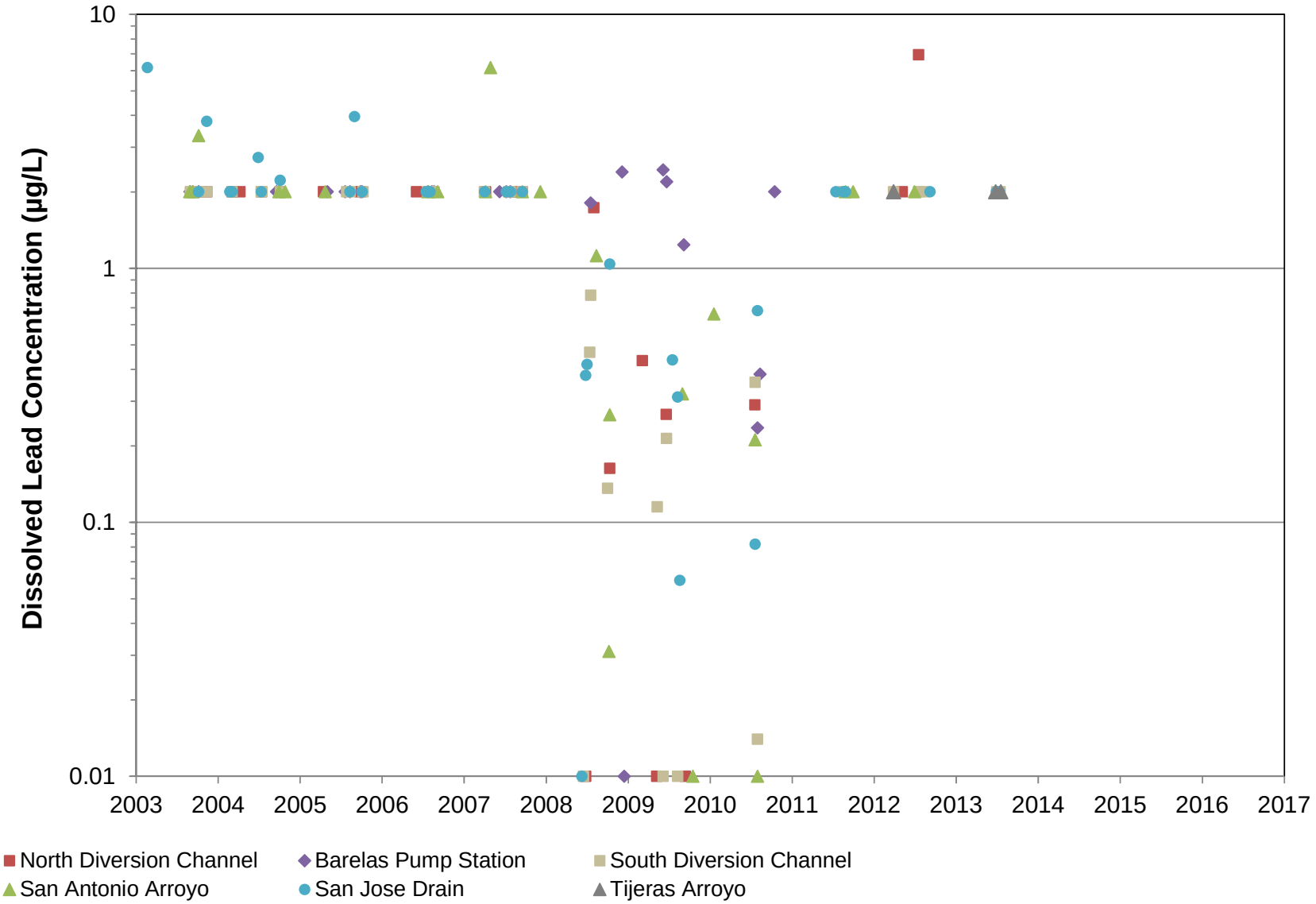
CITY OF ALBUQUERQUE

Total Chromium, Rio Grande Locations

Daniel B. Stephens & Associates, Inc.

9/19/16

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Note: Non-detections plotted at detection limit.
Sources: Storms et al., 2015; USGS, 2016

Figure 7a

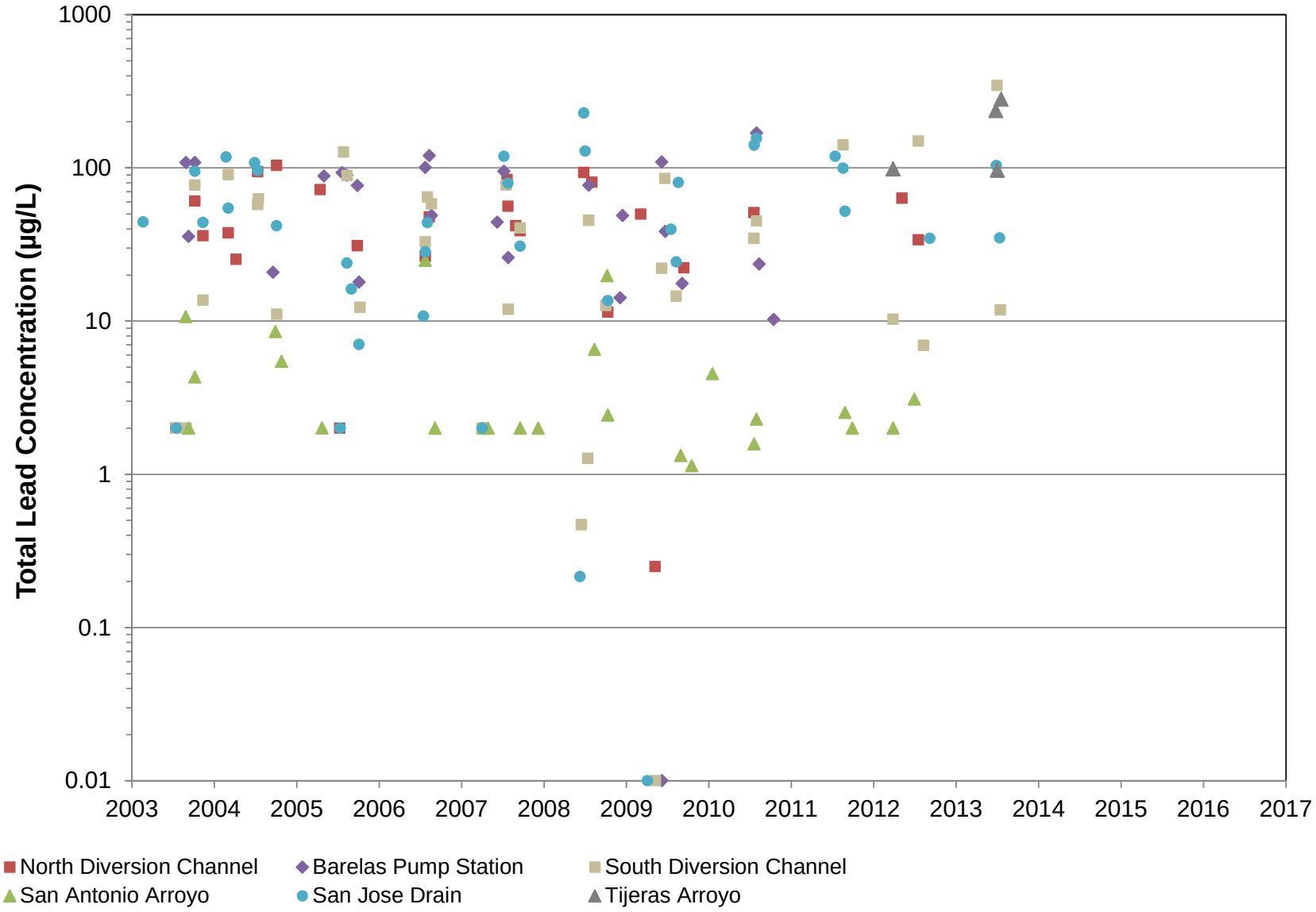
CITY OF ALBUQUERQUE

Dissolved Lead, Outfall Locations

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P:_WR14-049\Sediment Assmnt.9-16\Figures\Fig07b_Pb-Tot-Outfalls.doc



Note: Non-detections plotted at detection limit.
Sources: Storms et al., 2015; USGS, 2016

Figure 7b

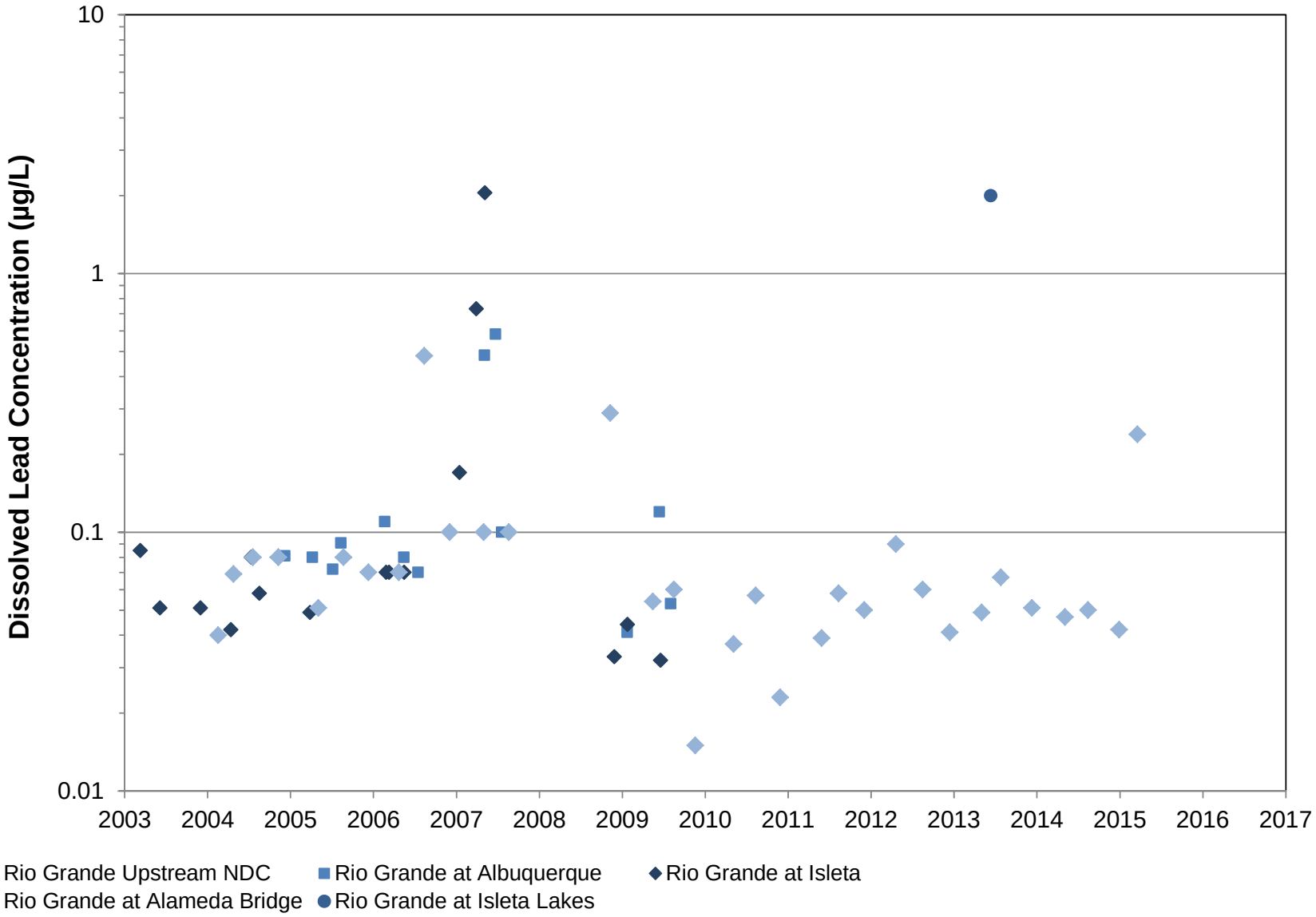
CITY OF ALBUQUERQUE

Total Lead, Outfall Locations

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9/19/16

P:_WR14-049\Sediment Assmnt.9-16\Figures\Fig07c_Pb-Diss-RG.doc



Note: Non-detections plotted at detection limit.
Sources: Storms et al., 2015; USGS, 2016

Figure 7c

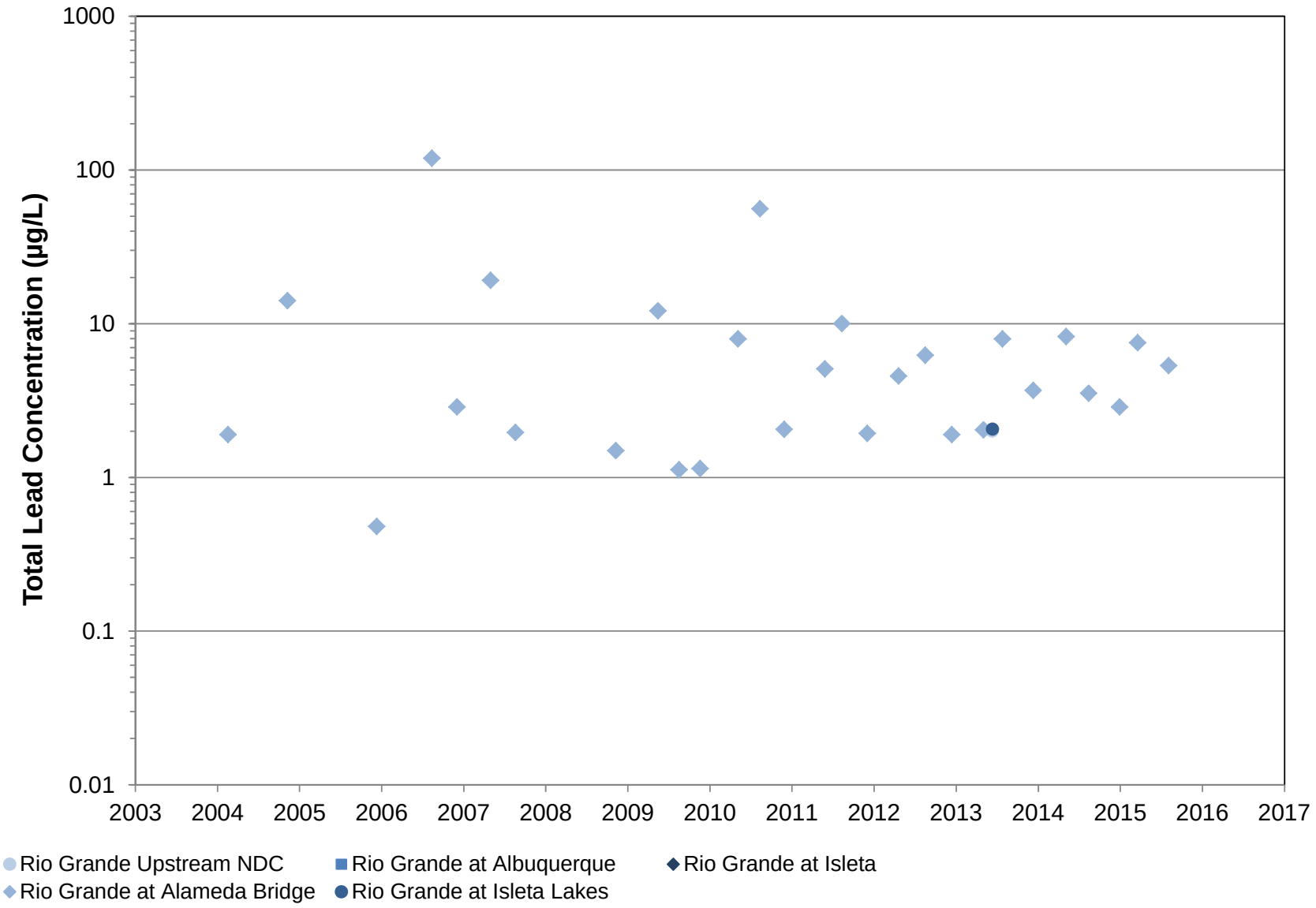
CITY OF ALBUQUERQUE

Dissolved Lead, Rio Grande Locations

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P:_WR14-049\Sediment Assmnt.9-16\Figures\Fig07d_Pb-Tot-RG.doc



Note: Non-detections plotted at detection limit.
Sources: Storms et al., 2015; USGS, 2016

Figure 7d

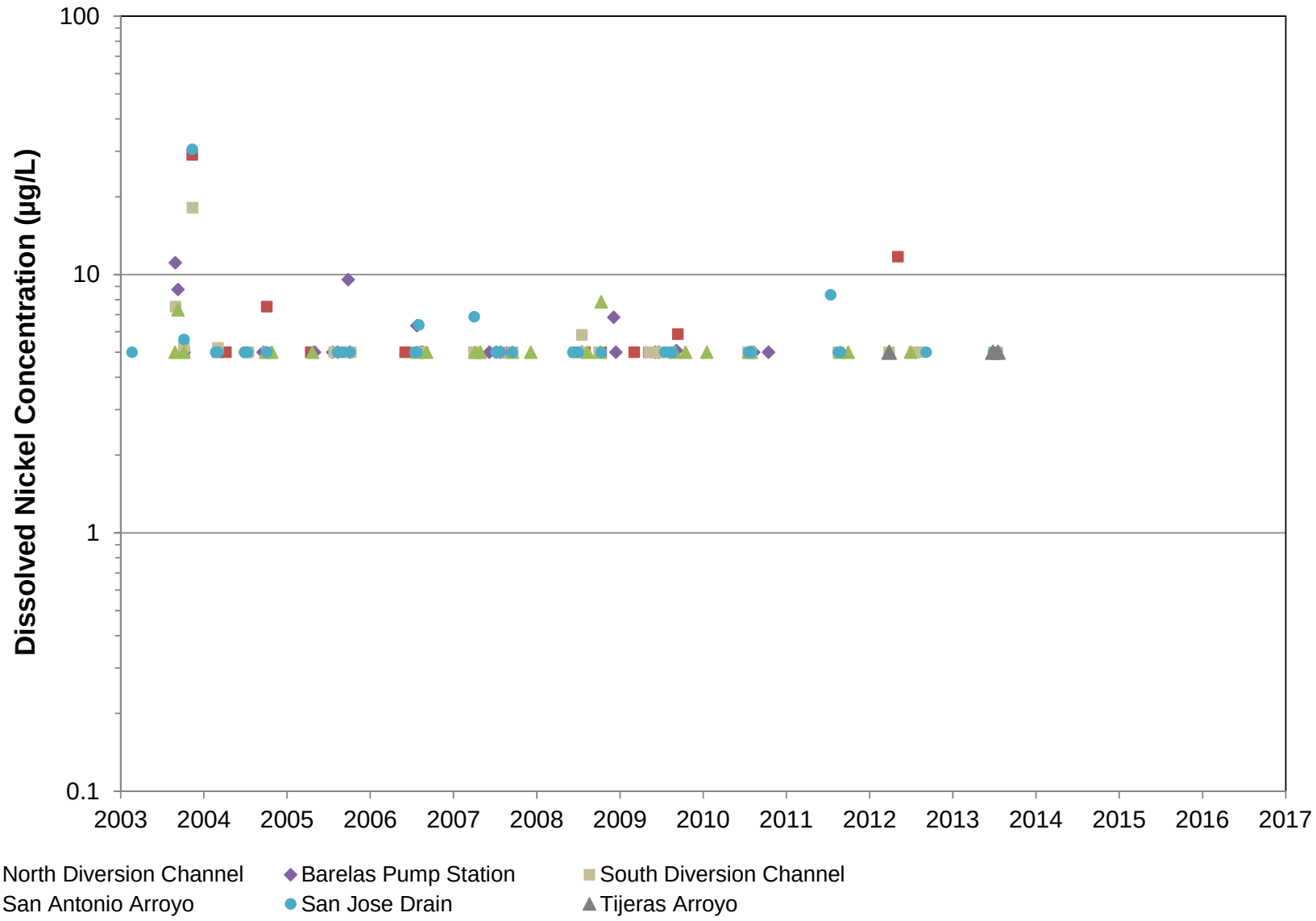
CITY OF ALBUQUERQUE

Total Lead, Rio Grande Locations

Daniel B. Stephens & Associates, Inc.

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P:_WR14-049\Sediment Assmnt.9-16\Figures\Fig08a_Ni-Diss-Outfalls.doc



Note: Non-detections plotted at detection limit.
Sources: Storms et al., 2015; USGS, 2016

Figure 8a

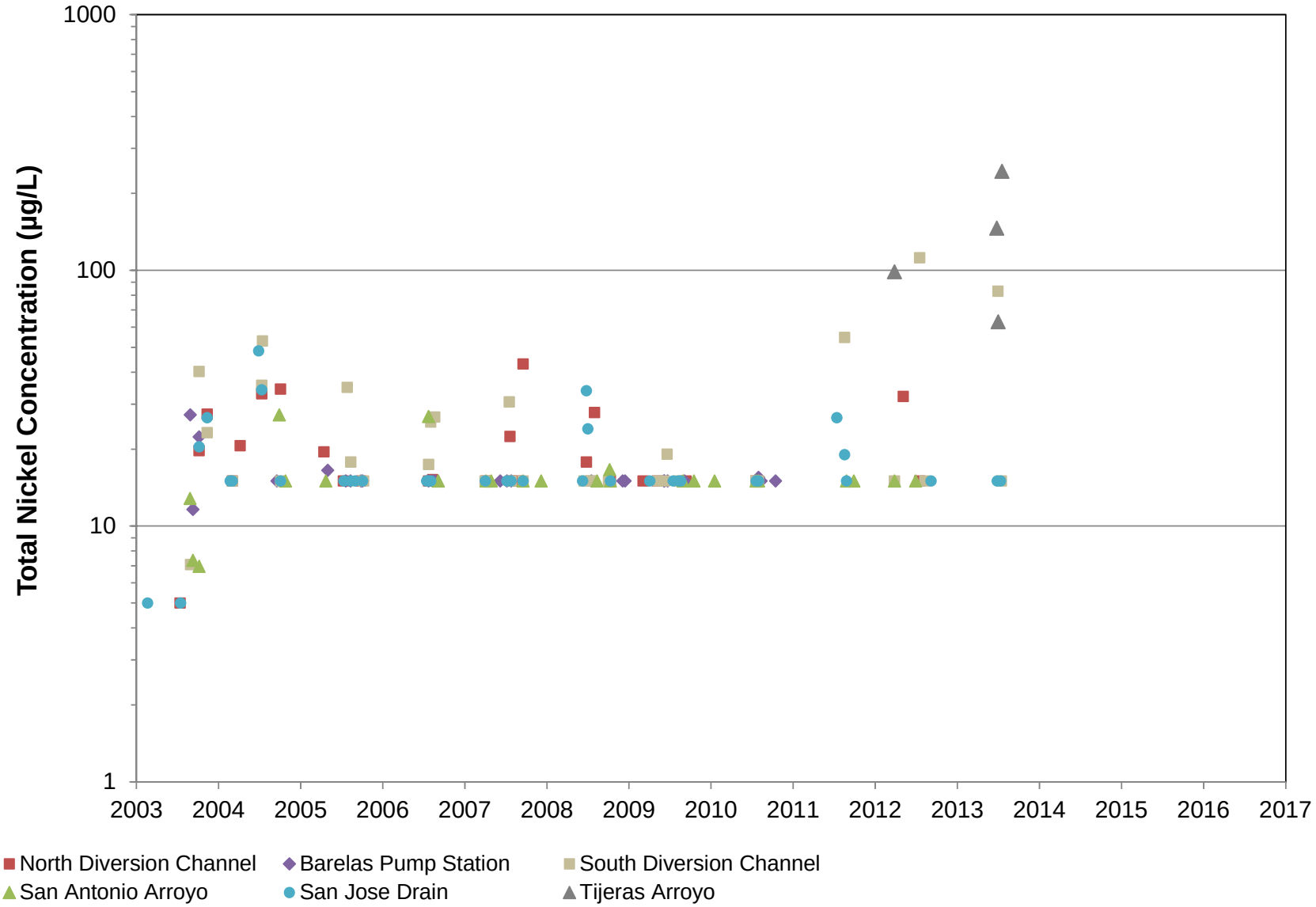
CITY OF ALBUQUERQUE

Dissolved Nickel, Outfall Locations

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P:_WR14-049\Sediment Assmnt.9-16\Figures\Fig08b_Ni-Tot-Outfalls.doc



Note: Non-detections plotted at detection limit.
Sources: Storms et al., 2015; USGS, 2016

Figure 8b

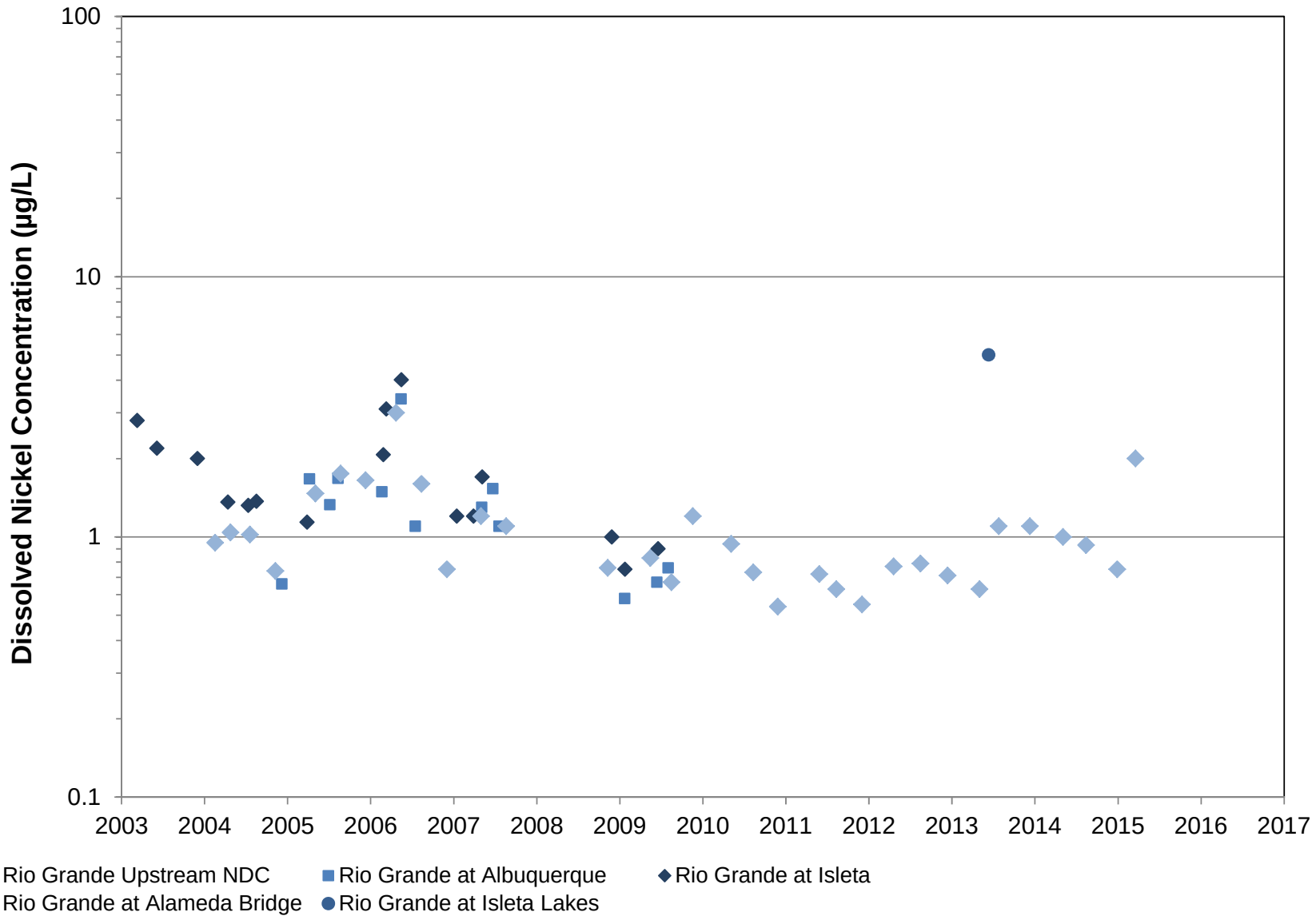
CITY OF ALBUQUERQUE

Total Nickel, Outfall Locations

Daniel B. Stephens & Associates, Inc.

9/19/16

P:_WR14-049\Sediment Assmnt.9-16\Figures\Fig08c_Ni-Diss-RG.doc



Note: Non-detections plotted at detection limit.
Sources: Storms et al., 2015; USGS, 2016

Figure 8c

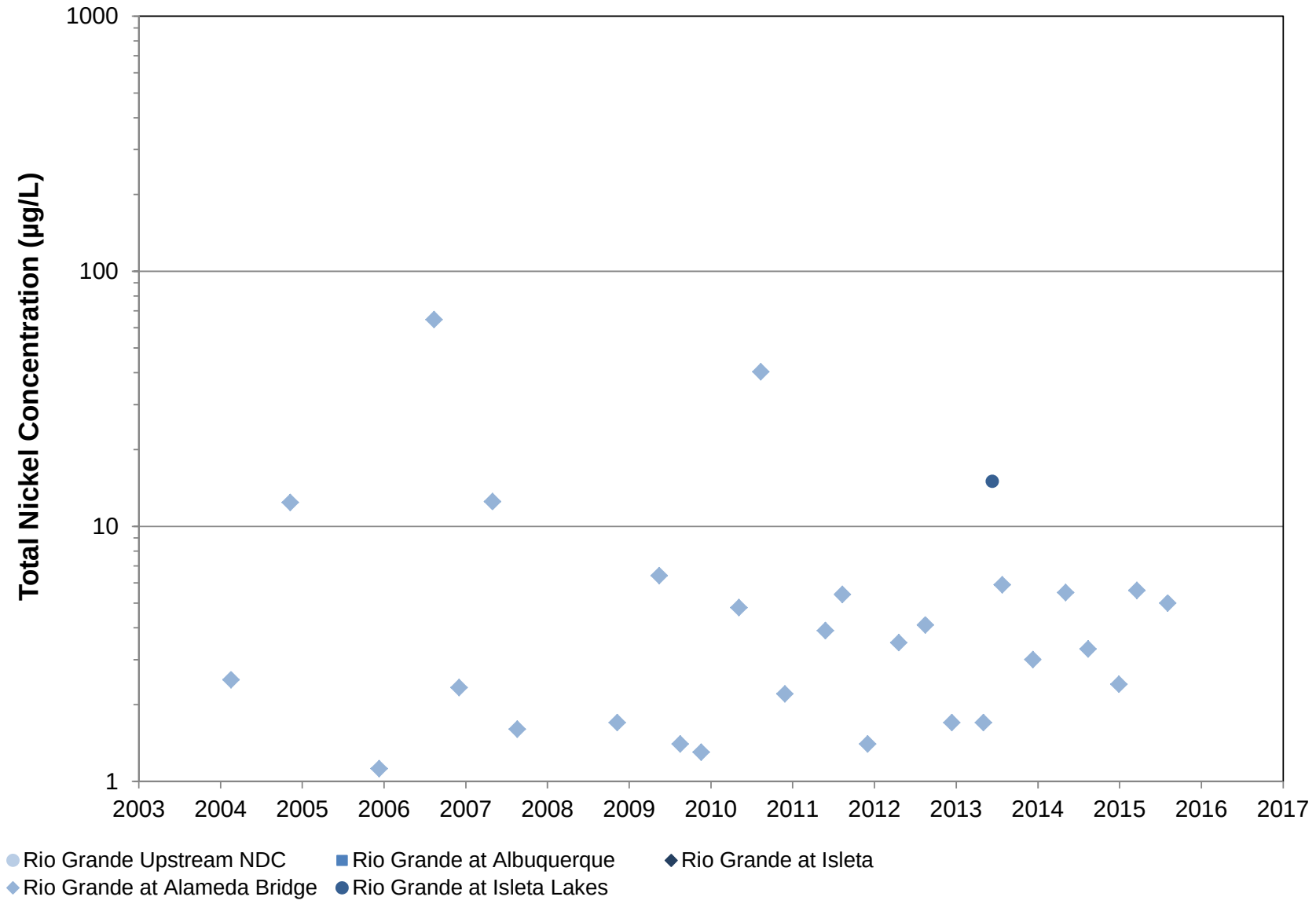
CITY OF ALBUQUERQUE

Dissolved Nickel, Rio Grande Locations

Daniel B. Stephens & Associates, Inc.

9/19/16

P:_WR14-049\Sediment Assmnt.9-16\Figures\Fig08d_Ni-Tot-RG.doc



Note: Non-detections plotted at detection limit.
Sources: Storms et al., 2015; USGS, 2016

Figure 8d

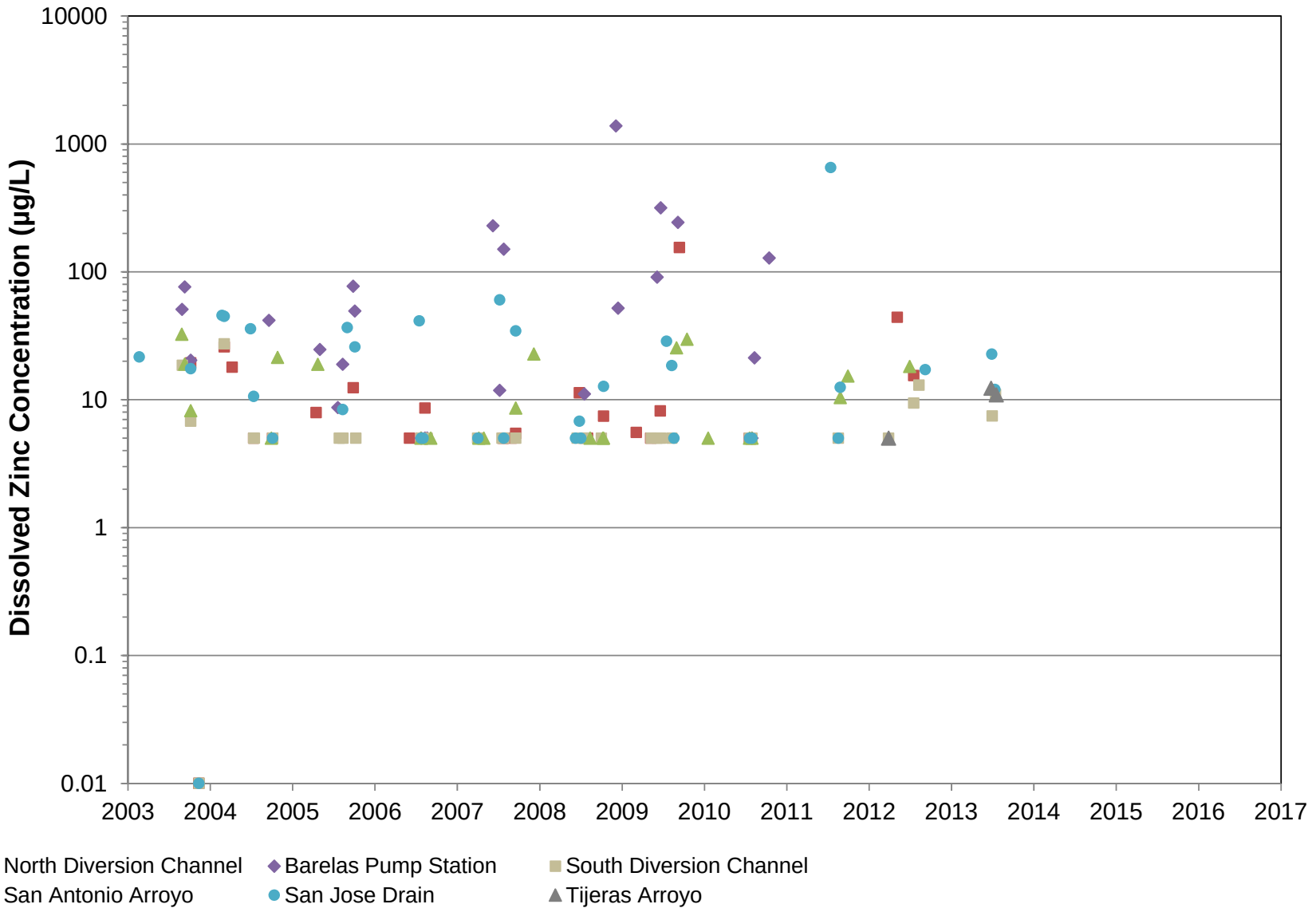
CITY OF ALBUQUERQUE

Total Nickel, Rio Grande Locations

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9/19/16

P:_WR14-049\Sediment Assmnt.9-16\Figures\Fig09a_Zn-Diss-Outfalls.doc



Note: Non-detections plotted at detection limit.
Sources: Storms et al., 2015; USGS, 2016

Figure 9a

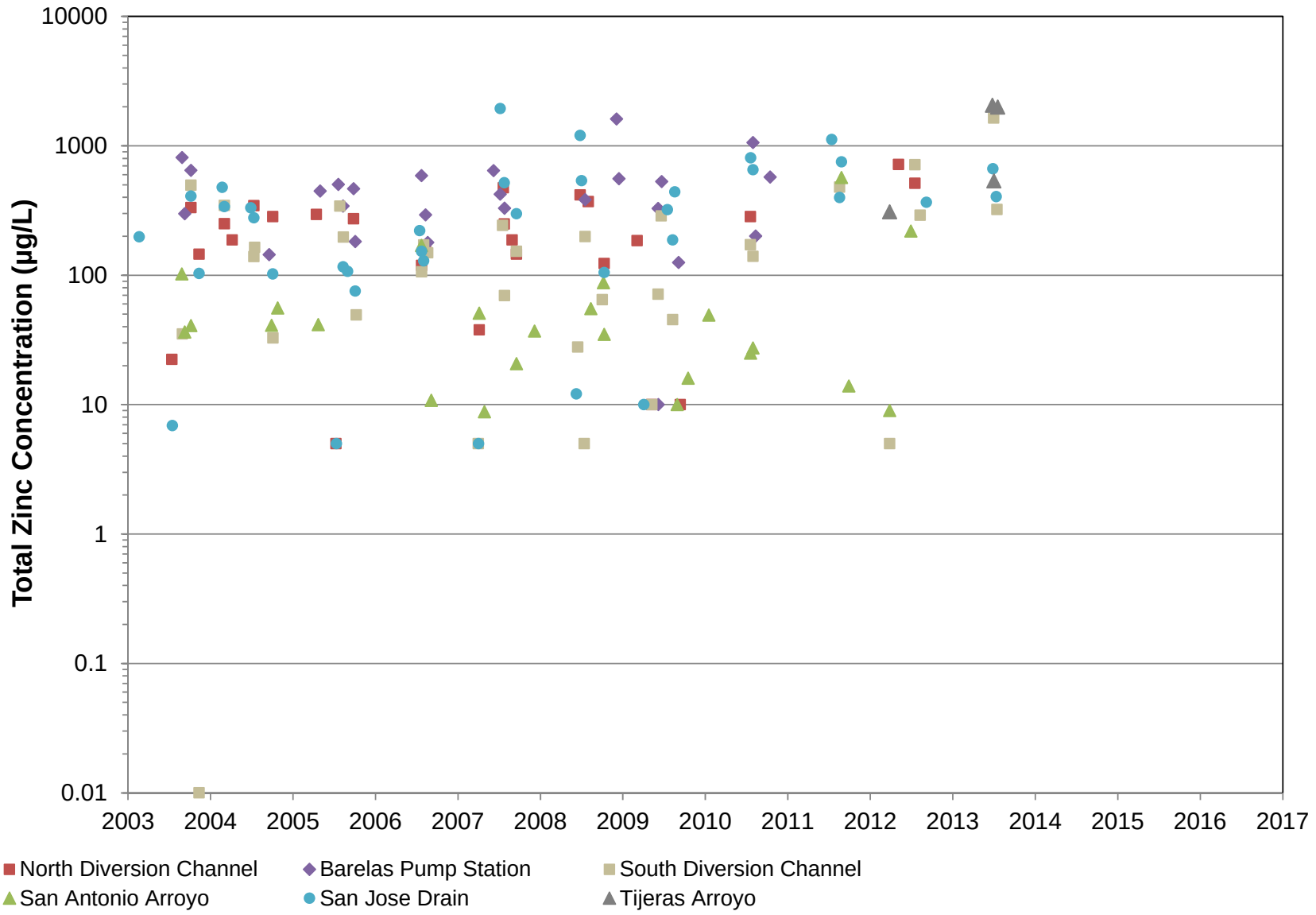
CITY OF ALBUQUERQUE

Dissolved Zinc, Outfall Locations

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P:_WR14-049\Sediment Assmnt.9-16\Figures\Fig09b_Zn-Tot-Outfalls.doc



Note: Non-detections plotted at detection limit.
Sources: Storms et al., 2015; USGS, 2016

Figure 9b

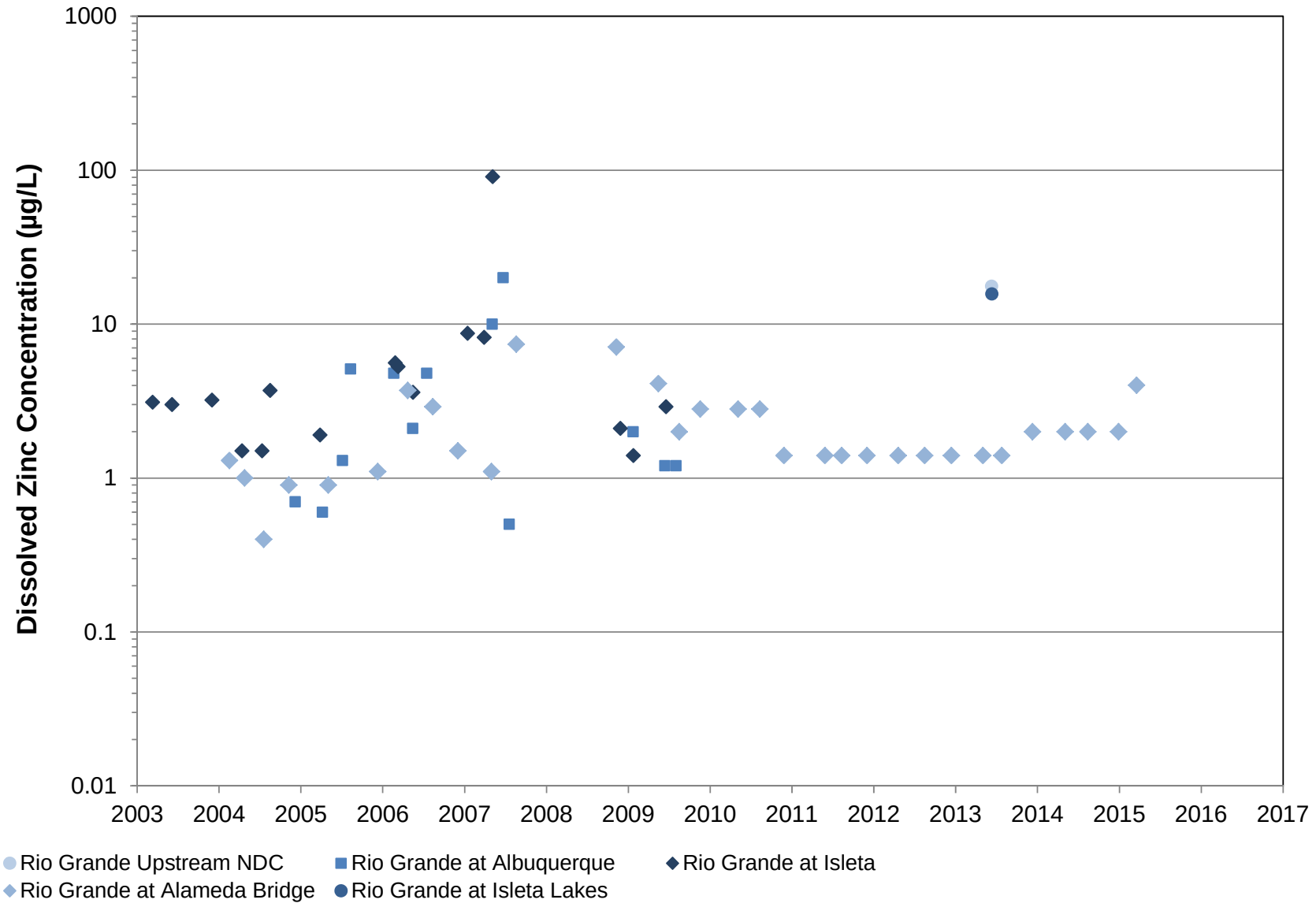
CITY OF ALBUQUERQUE

Total Zinc, Outfall Locations

Daniel B. Stephens & Associates, Inc.

9/19/16

P:_WR14-049\Sediment Assmnt.9-16\Figures\Fig09c_Zn-Diss-RG.doc



Note: Non-detections plotted at detection limit.
Sources: Storms et al., 2015; USGS, 2016

Figure 9c

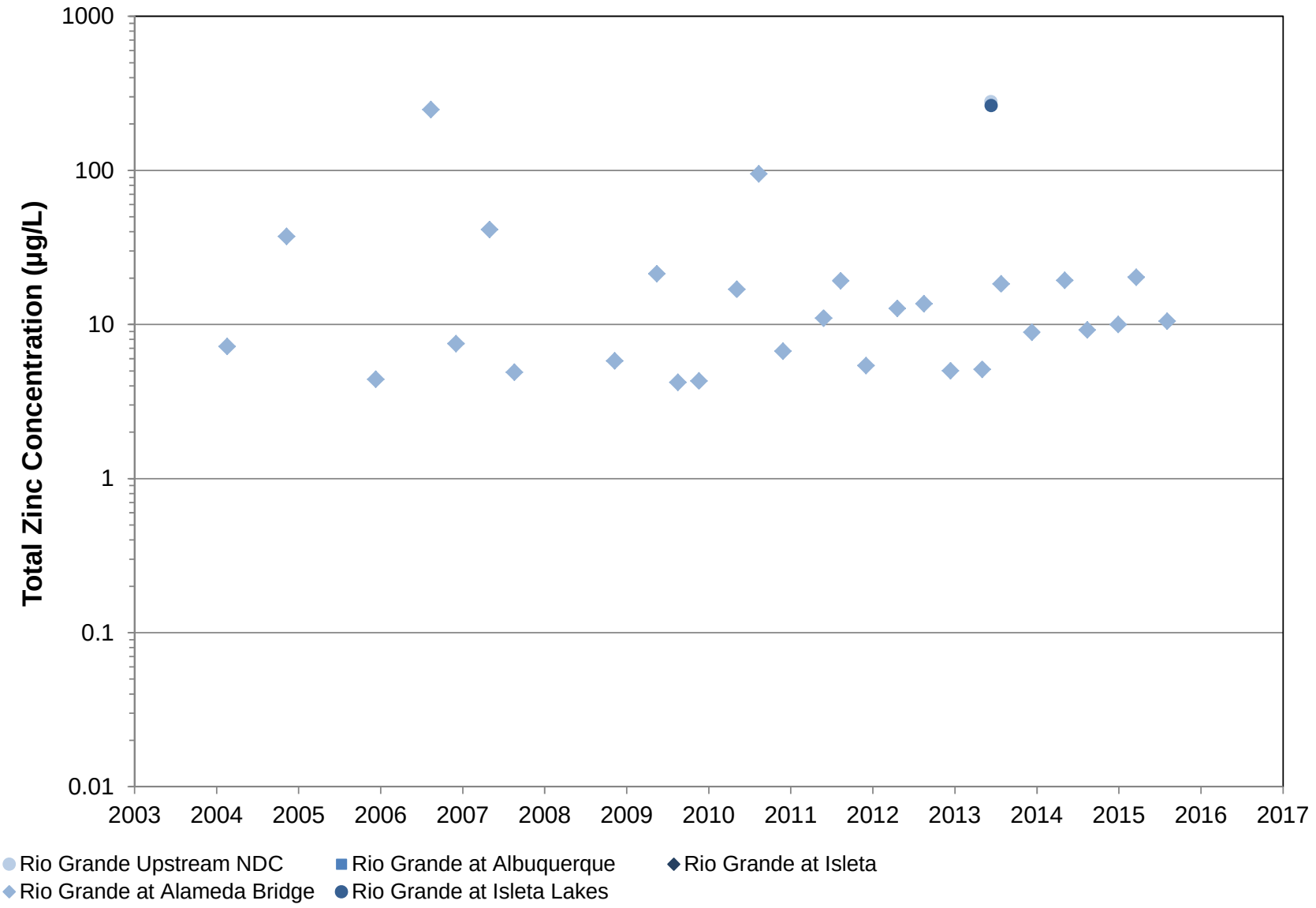
CITY OF ALBUQUERQUE

Dissolved Zinc, Rio Grande Locations

Daniel B. Stephens & Associates, Inc.

9/19/16

P:_WR14-049\Sediment Assmnt.9-16\Figures\Fig09d_Zn-Tot-RG.doc



Note: Non-detections plotted at detection limit.
Sources: Storms et al., 2015; USGS, 2016

Figure 9d

CITY OF ALBUQUERQUE

Total Zinc, Rio Grande Locations

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9/19/16

Tables

Table 1. Outfall Water Quality Sampling Locations

Site Name	Site Number	USGS Station Number	Drainage Area (mi^2)	Land Use (%)					Station Location
				Agricultural	Commercial	Industrial	Open Space	Residential	
North Diversion Channel	UR-9900	08329900	92	36	15	4	4	41	Concrete-lined channel
San Antonio Arroyo	UR-300	083299375	31	73	1	14	1	11	Natural unlined channel
Barelas Pump Station	UR-400B	NA	4	9	34	10	12	35	Stormwater pumping station
San Jose Drain	UR-500	08330200	2	18	30	9	2	41	Concrete-lined channel
South Diversion Channel	UR-200	08330775	11	30	28	21	8	13	Natural unlined channel
Tijeras Arroyo	UR-330600	08330600	135	—	—	—	90	—	Natural unlined channel

Source: Storms et al., 2015
USGS = U.S. Geological Survey
mi^2 = Square miles
NA = Not applicable
— = Not provided

Table 2. Total Polychlorinated Biphenyl Concentrations

Site	Sample Date	Total PCBs [a]		Data Source
		(pg/L)	(µg/L)	
Oufall Locations				
North Diversion Channel	7/20/2011	123,699	0.123699	USGS
	5/11/2012	7,836	0.007836	USGS
	7/23/2012	4,607	0.004607	USGS
	7/6/2015	10,500	0.0105	MS4 Cooperative
San Antonio Arroyo	9/1/2011	1,241	0.001241	USGS
	10/5/2011	ND		USGS
	4/3/2012	134	0.000134	USGS
	7/5/2012	147	0.000147	USGS
	6/10/2015	235	0.000235	MS4 Cooperative
San Jose Drain	7/20/2011	17,580	0.01758	USGS
	8/24/2011	229	0.000229	USGS
	9/1/2011	8,888	0.008888	USGS
	9/12/2012	33,503	0.033503	USGS
	7/6/2015	6,040	0.00604	MS4 Cooperative
South Diversion Channel	8/24/2011	73	0.000073	USGS
	4/3/2012	3,632	0.003632	USGS
	7/23/2012	4,277	0.004277	USGS
	8/16/2012	233	0.000233	USGS
	7/6/2015	7,580	0.00758	MS4 Cooperative
Tijeras Arroyo	8/3/2011	ND		USGS
	4/3/2012	1,583	0.001583	USGS
	7/7/2015	7,140	0.00714	MS4 Cooperative
Rio Grande Locations				
Rio Grande upstream of North Diversion Channel	7/29/2011	ND		USGS
	8/18/2011	ND		USGS
	9/22/2015	ND		MS4 Cooperative
Rio Grande near Isleta	9/22/2015	276	0.000276	MS4 Cooperative

[a] Sum of congeners
pg/L = Picograms per liter
µg/L = Micrograms per liter
USGS = U.S. Geological Survey
ND = Not detected

Table 3. AMAFCA Total Sediment Removal, 2015

AMAFCA Maintained Location	Rank	Sediment Removed (cubic yards)	Percent of Total (%)
Amole Dam	15	144	0.41
Bear Canyon Arroyo	28	6	0.02
Black Arroyo Dam	4	2,564	7.33
Cabezon Channel	18	117	0.33
Candelaria Inlet	27	12	0.03
Corrales Main	6	1,333	3.81
Domingo Baca Water Quality Structure	16	135	0.39
Hahn Channel	26	18	0.05
Hubbel Dam & Spillway	13	361	1.03
Kinney Dam	8	1,026	2.93
La Cueva System & Water Quality Features	24	36	0.10
Ladera System- Dams & Mirehaven	14	291	0.83
Los Padillas Spillway Diversion	25	24	0.07
Mariposa Diversion Channel	23	52	0.15
North Diversion Channel	3	2,735	7.82
North Domingo Baca Dam & Channel	2	3,803	10.87
North Domingo Baca Trailer Park Ponds	10	762	2.18
Piedras Marcadas Dam & Mid Branch PM Channel	7	1,107	3.17
Powerline Channel	19	91	0.26
Raymac Dam	9	869	2.48
Snow Vista Pond and Channel	12	486	1.39
South Diversion Channel & Water Quality Structure	1	16,127	46.11
South Domingo Baca Channel	20	76	0.22
South Pino Channel & Water Quality Facility	17	117	0.33
Southwest Valley Projects	22	52	0.15
Vineyard Channel & Water Quality Structure	21	52	0.15
West Bluff, Laurelwood Ponds & WQ Structure	11	620	1.77
West I-40 Channel & Storm Drains	5	1,960	5.60
Total		34,976	100.00

Source: Chavez, 2016

Table 4. Sediment Removed from North Diversion Channel and South Diversion Channel, 2015

Month	Sediment Removed (cubic yards)	
	North Diversion Channel	South Diversion Channel and Water Quality Structure
January	—	3,113
February	—	304
March	264	3,050
April	387	540
May	540	—
June	—	—
July	—	4,002
August	—	—
September	918	—
October	626	2,358
November	—	2,760
December	—	—
Total	2,735	16,127

Source: Chavez, 2016
— = No removal

July 10, 2017

Kathy Verhage
City of Albuquerque
Department of Municipal Development, Storm Drainage Design
P.O. Box 1293
Room 301
Albuquerque, New Mexico 87103

Re: Results of Sediment Sampling for PCBs and Metals along Stormwater Channels, Sediment Outfalls, and Upgradient Arroyo Locations, Albuquerque New Mexico

Dear Ms. Verhage:

Daniel B. Stephens & Associates, Inc. (DBS&A) has prepared this letter report for submittal to the City of Albuquerque (COA or the City) summarizing the sampling event to characterize the presence or absence of near-surface polychlorinated biphenyl (PCB) congeners and metal concentrations in sediment along stormwater channels and outfalls within the Albuquerque metropolitan area. DBS&A personnel conducted the sediment sampling upstream of the concrete-lined areas and in erosion control structures where sediment accumulates and would be in contact during discharge events with stormwater that potentially reaches the Rio Grande. The sampling effort included the collection of background sediment samples from natural arroyo locations upgradient of urbanized development. Pertinent background information, sample locations and collection methods, sample handling and analysis procedures, and reporting information were described in the November 2016 sampling plan.

Background

The City and Albuquerque Metropolitan Arroyo Flood Control Authority (AMAFCA) screen sediments for PCBs at their outfalls as required by the former Albuquerque Metropolitan Area Permit NMS000101 (2012) and the Watershed Based Permit (WBP) NMR04A000 (2014). The City has focused its efforts on the San Jose Drain and Tijeras Arroyo, while AMAFCA continues to conduct soil screening in arroyos that contribute to the North Diversion Channel (NDC). Past soil screening reports include those conducted along the San Jose Drain in 2012 (COA), the Tijeras Arroyo in 2013 (COA), the NDC in 2014 (AMAFCA), and North Camino Channel and the Grant Line Channel in 2016 (AMAFCA).

The purpose of the 2017 sampling event was to determine the presence or absence of near-surface PCBs and metal concentrations in sediment along the Tijeras Arroyo and other channels within the Albuquerque metropolitan area as required by Part 1C-special conditions of the WBP. The sediment sample locations were determined based on a visual screening that focused on areas of sediment deposition (e.g., areas behind erosion control structures and

areas of low flow velocities) or from areas that potentially contribute sediment during stormwater events to the Rio Grande. For comparison purposes, representative background sediment samples were collected from natural arroyo channels located upgradient of urbanized development.

Sample Collection

Sediment samples for PCB and metals analyses were collected at 12 locations (Figure 1 and Table 1) from channels, arroyos, and sediment outfalls maintained by AMAFCA. A total of 5 of these locations represented background samples collected from natural arroyos upgradient of urbanized development. Following field reconnaissance and discussion with AMAFCA, a sediment sample was not collected at the Alameda Drain location noted in the sampling and analysis plan (SAP). It was determined that the Alameda Drain does not discharge to the Rio Grande.

Sediment samples were collected at or immediately below ground surface, and were stored in sealed containers on ice until delivered to the analytical laboratory with full chain of custody documentation. Photographs and global positioning system coordinates (Table 1) of the sample locations were taken during the sampling event, and the surrounding land use was noted. Photographs of the sample locations are provided in Attachment 1.

Sample Analysis

All samples were submitted to Hall Environmental Analysis Laboratory (HEAL) in Albuquerque, New Mexico for analysis of PCBs and selected metals using U.S. Environmental Protection Agency (EPA) methods 8082 and 6010B, respectively. A synthetic precipitation leaching procedure (SPLP) was conducted on the sediment samples to determine the mobility of aluminum, cadmium, chromium, lead, nickel, and zinc. The SPLP simulates exposure of the sediment to rainfall, and is useful in estimating the leaching potential of metals moving from sediment into stormwater.

Sample Location Descriptions

Land use near the sample locations within the study area varies from industrial, undeveloped grass lands to publicly accessible open space properties (Table 1). Sampling locations in the North and South Diversion Channels were selected as close to the outfall to the Rio Grande as possible. Background sampling locations were selected in natural arroyos away from development. The sediment sample locations are described in the following subsections.

Tijeras Arroyo Sampling Location

The Tijeras Arroyo sampling location is located in the unlined section of the arroyo approximately 600 feet before the arroyo becomes concrete-lined, and is upstream of the automobile salvage yards located on Broadway. Upstream of the Tijeras Arroyo sampling to the east is Interstate 25 (I-25). Runoff from I-25 feeds into Tijeras Arroyo upgradient of the sampling location.

South Diversion Sampling Location

This sampling location is downstream of the South Diversion Channel where it crosses Murray Road SE. The sampling location is located in the unlined section of the arroyo approximately 800 feet before the arroyo becomes concrete-lined. The surrounding land use is primarily industrial.

San Jose Sampling Location

The sampling location for San Jose Drain is located along Route 303 in a natural channel approximately 900 feet before the channel enters the Albuquerque Bernalillo County Water Utility Authority (ABCWUA) wastewater treatment plant property and eventually the Rio Grande. The drain is located next to agricultural land to the west and Route 303 and railroad thruway to the east. Land use upstream of the sampling location is a mixture of industrial and urban development.

West I-40 Sampling Location

The sampling location for the West I-40 Diversion Channel is located beneath the I-40 Rio Grande overpass at the terminus where the lined channel discharges into the Rio Grande. Land use upstream of the sampling location is a mixture of industrial and urban development. Evidence of recent vandalism and human habitation was observed in the sampling area.

San Antonio Arroyo Sampling Location

The sampling location for San Antonio Arroyo is located in the Rio Grande Bosque at the terminus where the lined channel discharges into the Rio Grande. Several small sand and gravel sand bars were present in the lined channel above the terminus. Material from the sand bars and arroyo terminus were collected for sampling. Directly upstream of the sample location, several sediment holding basins capture runoff before discharging to the lined arroyo. The holding basins were filled with water at the time of sampling. Land use upstream of the sampling location is a mixture of commercial and urban development.

Calabacillas Arroyo Sampling Location

The sampling location for Calabacillas Arroyo is located in the Rio Grande Bosque Park approximately 200 feet above the terminus where the natural channel discharges into the Rio Grande. Land use upstream of the sampling location is a mixture of commercial and urban development.

North Diversion Channel Sampling Location

The sampling location for the NDC is located approximately 1,200 feet upstream of where the lined channel discharges into the Rio Grande, directly behind the newly constructed AMAFCA equipment crossing. The sample was collected approximately 30 feet behind the crossing, in the middle of the channel. The majority of the natural channel behind the equipment crossing at the time of sampling was submerged. The left bank downstream of the railroad crossing bridge did have sediment accessible for sampling, but it appeared to be

additional fill material, and trash has been dumped at the location. Land use upstream of the sampling location is a mixture of industrial and urban development.

Domingo Baca Arroyo

The location for the Domingo Baca Arroyo background sample is in the Far Northeast Heights of Albuquerque, near the City's boundary with the Sandia National Forest. The sample was collected in a natural arroyo that drains into the South Domingo Baca Channel, which eventually drains into the NDC. The sample was collected approximately 30 feet east of Bighorn Ridge Drive NE, upstream of urban development. Access farther up the arroyo, closer to the City boundary, was hampered by private property boundaries.

Embudo Arroyo

The location for the Embudo Arroyo background sample is in the Northeast Heights of Albuquerque, in the COA Sandia Foothills Open Space. The sample was collected in a natural arroyo that drains into the lined Embudo Arroyo, then the I-40 channel and eventually the NDC. The sample was collected approximately 4,000 feet upstream of the lined channel located near Monte Largo Drive NE.

Four Hills Arroyo

The location for the Four Hills Arroyo background sample is in the Far Southeast Heights of Albuquerque, near the City's boundary with Kirtland Air Force Base (AFB). The sample was collected in a natural arroyo directly above the lined Four Hills Arroyo, which eventually becomes the Tijeras Channel. Access farther up the arroyo, closer to the City boundary, was hampered by Kirtland AFB security fences.

Shamrock Channel

The location for the Shamrock Channel background sample is on Albuquerque's West Mesa, near Central Avenue and I-40. The sample was collected in a natural arroyo located in an undeveloped grassland area that drains directly to the West I-40 Channel. The Shamrock Foods Corporation and several trucking companies are located directly downstream.

North Boca Negra Arroyo

The location for the North Boca Negra Arroyo background sample is on Albuquerque's West Mesa, just east of Atrisco Vista Blvd, near the western extent of Paseo del Norte Boulevard. The sample was collected in a natural arroyo located in an undeveloped grassland area that drains directly to the Boca Negra Arroyo.

Results of Laboratory Analysis

The sediment samples were analyzed by HEAL for PCBs and selected metals using EPA methods 8082 and 6010B, respectively. The results of the laboratory analysis are presented in Table 2. Complete laboratory reports are provided as Attachment 2. For comparison purposes, the background locations have been listed in Table 2 just above the downstream

sample locations. The detection limits ranged from 0.019 to 0.2 milligrams per kilogram (mg/kg) for the six aroclors analyzed. No PCBs were present in any of the sediment samples at concentrations above these detection limits.

As mentioned above, the SPLP was conducted on the sediment samples to determine the potential release of metals from the sediment into stormwater. Of the six metals analyzed, only aluminum and zinc were detected in the sediment sample leachate. Cadmium, chromium, lead, and nickel concentrations were below the detection limits, which ranged from 0.002 to 5 milligrams per liter (mg/L).

Detected aluminum concentrations ranged from 2.4 to 9.2 mg/L in the background samples and 1.9 to 11 mg/L in the downstream outfall, channel, and arroyo samples. Zinc concentrations were above the detection limits at the Four Hills and Domingo Baca background sample locations only. Detected zinc concentrations ranged from 0.022 to 0.048 mg/L in the downstream outfall, channel, and arroyo samples. The highest concentrations of aluminum (11 mg/L) and zinc (0.048 mg/L) were detected in the San Jose Drain sediment sample leachate.

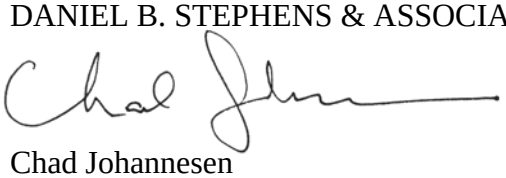
Conclusions

Review of the laboratory analytical data indicates that there are no PCBs present at detectable concentrations in the sediment samples collected along stormwater channels and outfalls within the Albuquerque metropolitan area. Aluminum and zinc were detected in the sediment sample leachate, and may be contributing to stormwater concentrations for these metals.

We appreciate the opportunity to serve COA on this important project. If you have any questions regarding this sediment sampling report, please call me at (505) 822-9400.

Sincerely,

DANIEL B. STEPHENS & ASSOCIATES, INC.



Chad Johannesen
Hydrogeologist

CJ/rpf
Attachments

Figure

SANDOVAL COUNTY

BERNALILLO COUNTY

PUEBLO OF SANDIA

Maintenance Responsibilities for Drainage Facilities in the Albuquerque Metropolitan Area

January 2014

0 0.5 1 2 3 4 5 Miles

Arroyo

Background arroyo

Channel

Sediment outfall

1 Location number

AMAFCA

Protecting Life and Property For Over 50 Years

www.amafca.org

Water Quality, AMAFCA
Water Quality, BC
Water Quality, COA
Water Quality, NMDOT
Water Quality, Private
Water Quality, Unknown
Grade Control Structure
Pump Station
ABCWUA Diversion
Crossing Structure, COA
Crossing Structure, NMDOT
Crossing Structure, Unknown
Dike or berm, AMAFCA
Dike or berm, BC or AMAFCA
Dike or berm, COA
Dike or berm, Unknown
Hard Channel, AMAFCA
Hard Channel, AMAFCA/MRGCD
Hard Channel, Unknown
Hard Channel, SSCAFCA
Hard channel, BC
Hard channel, COA
Hard channel, NMDOT
Natural Arroyo
Soft channel, AMAFCA
Soft channel, BC
Soft channel, COA
Soft channel, MRGCD
Soft channel, SSCAFCA
Soft channel, Private/Other
Soft channel, Unknown
Storm drain, AMAFCA
Storm drain, BC
Storm drain, COA
Storm drain, MRGCD
Storm drain, NMDOT
Storm drain, SSCAFCA
Storm drain, Unknown
Pipe or Culvert, VLR
Petroglyph Nat. Mon.
Pond, AMAFCA
Pond, AMAFCA/Corrales
Pond, BC
Pond, COA
Pond, NMDOT
Pond, Private
Pond, SSCAFCA
Detention Basin, VLR
Dam, AMAFCA
Dam, BC
Dam, COA
Dam, SSFAFCA
Pond, Unknown
AMAFCA Districts
Pueblo Lands
City of Albuquerque
City of Rio Rancho
Village of Los Ranchos
Unincorporated Areas
Village of Corrales

Sampling Locations

S:\PROJECTS\WR14.0049.01_COA_STORMWATER\GIS\MXDS\AMAFCA_FACILITIES_SAMPLING_LOCS_201701.MXD 1/31/2017

Figure 1

Tables

Table 1. Sample Locations

Location Number	Location Name	Location Type	Surrounding Land Use	Sample Date	Sample Name	UTM Coordinates (13 South)	
						X	Y
1	Tijeras Arroyo	Arroyo	Undeveloped, heavy equipment/ construction in area, evidence of off-road vehicular traffic	1/4/2017	Tijeras_Arroyo_010417	349611	3874573
2	South Diversion Channel	Channel	Industrial complexes	1/4/2017	SDC_010417	348923	3874776
3	San Jose Drain	Channel	Agricultural to west, Route 303 and railway to east	1/4/2017	San_Jose_010417	348653	3877060
4	West I-40 Diversion Channel	Sediment outfall	Urban development, below I-40 highway overpass	1/4/2017	WestI40DC_010417	345614	3886122
5	San Antonio Arroyo	Arroyo	Urban development, Rio Grande Bosque	1/4/2017	SanAntonio_010417	346083	3889473
6	Calabacillas Arroyo	Sediment outfall	Urban development, Rio Grande Bosque	1/5/2017	Calabacillas_010517	349730	3894981
7	North Diversion Channel	Sediment outfall	Urban development, Rio Grande Bosque	1/5/2017	NDC_EQPX_010517	353615	3897560
8	Domingo Baca Arroyo	Background arroyo	Undeveloped, homes located directly downstream	1/10/2017	DomingoBaca_011017	365124	3894029
9	Embudo Arroyo	Background arroyo	Undeveloped, hiking and recreational area	1/10/2017	Embudo_011017	365164	3885183
10	Four Hills Arroyo	Background arroyo	Undeveloped, homes located directly downstream	1/10/2017	Fourhills_011017	364128	3879035
11	Shamrock Channel	Background arroyo	Undeveloped grasslands	1/4/2017	Shamrock_010417	336177	3882048
12	North Boca Negra Arroyo	Background arroyo	Undeveloped grasslands, Atrisco Vista Blvd to west	1/5/2017	NorthBoca_010517	337634	3894860

Table 2. Sediment Analytical Results

Location Name	Location Type	PCBs (EPA Method 8082) (mg/kg)								SPLP Metals (EPA Method 6010B) (mg/L)					
		Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	Total PCBs	Aluminum	Cadmium	Chromium	Lead	Nickel	Zinc
Four Hills Arroyo	Background arroyo	<0.02	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	3.6	<0.002	<0.006	<0.005	<0.01	0.022
Tijeras Arroyo	Arroyo	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	8.6	<1.0	<5.0	<5.0	<0.01	0.022
South Diversion Channel	Channel	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	4.8	<1.0	<5.0	<5.0	<0.01	0.024
San Jose Drain	Channel	<0.02	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	11	<1.0	<5.0	<5.0	<0.01	0.048
Shamrock Channel	Background arroyo	<0.02	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019	2.4	<1.0	<5.0	<5.0	<0.01	<0.02
West 1-40 Diversion Channel	Sediment outfall	<0.02	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	5.1	<1.0	<5.0	<5.0	<0.01	0.038
North Boca Negra Arroyo	Background arroyo	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	9.2	<1.0	<5.0	<5.0	<0.01	<0.02
San Antonio Arroyo	Arroyo	<0.02	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	2.8	<1.0	<5.0	<5.0	<0.01	<0.02
Calabacillas Arroyo	Sediment outfall	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	1.9	<1.0	<5.0	<5.0	<0.01	<0.02
Embudo Arroyo	Background arroyo	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	3.7	<0.002	<0.006	<0.005	<0.01	<0.02
Domingo Baca Arroyo	Background arroyo	<0.02	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	8.0	<0.002	<0.006	<0.005	<0.01	0.030
North Diversion Channel	Sediment outfall	<0.02	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	4.9	<1.0	<5.0	<5.0	<0.01	0.030

PCBs = Polychlorinated biphenyls
EPA = U.S. Environmental Protection Agency
mg/kg = Milligrams per kilogram
SPLP = Synthetic precipitation leaching procedure
mg/L = Milligrams per liter

Attachment 1

Photographs



1. Tijeras Arroyo sample location, view to east



2. South Diversion Channel sample location, view to north



3. San Jose Drain sample location, view to west with sample location noted



4. San Jose Drain sample location, view to north



5. West I-40 Diversion Channel sampling location, view to east with sample location noted.



6. West I-40 Diversion Channel sampling location, view to north



7. San Antonio Arroyo sampling location, view to east



8. San Antonio Arroyo sampling location, view to west with sample location noted



9. San Antonio Arroyo sampling location: Sand-gravel bar located upstream of channel terminus, view to east



10. Calabacillas Arroyo sampling location, view to west



11. North Diversion Channel sampling location, view to east



12. Domingo Baca Arroyo sampling location, view to east



13. Embudo Arroyo sampling location, view to east



14. Four Hills sampling location, view to northeast with sample location noted



15. Shamrock Channel sampling location, view to west



16. North Boca Negra sampling location, view to east

Attachment 2

Laboratory Reports

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

January 24, 2017

Chad Johannesen
DBS
6020 Academy NE Suite 100
Albuquerque, NM 87109
TEL: (505) 822-9400
FAX (505) 822-8877

RE: PCB Sediment Sampling OrderNo.: 1701235

Dear Chad Johannesen:

Hall Environmental Analysis Laboratory received 18 sample(s) on 1/6/2017 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,



Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: DBS
Client Sample ID: Tijeras-Arroyo-010417
Project: PCB Sediment Sampling
Collection Date: 1/4/2017 10:30:00 AM
Lab ID: 1701235-001
Matrix: SOIL
Received Date: 1/6/2017 1:50:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8082: PCB'S						Analyst: **SCC**	
Aroclor 1016	ND	0.020		mg/Kg	1	1/16/2017 9:25:00 AM	29659
Aroclor 1221	ND	0.020		mg/Kg	1	1/16/2017 9:25:00 AM	29659
Aroclor 1232	ND	0.020		mg/Kg	1	1/16/2017 9:25:00 AM	29659
Aroclor 1242	ND	0.020		mg/Kg	1	1/16/2017 9:25:00 AM	29659
Aroclor 1248	ND	0.020		mg/Kg	1	1/16/2017 9:25:00 AM	29659
Aroclor 1254	ND	0.020		mg/Kg	1	1/16/2017 9:25:00 AM	29659
Aroclor 1260	ND	0.020		mg/Kg	1	1/16/2017 9:25:00 AM	29659
Surr: Decachlorobiphenyl	80.4	19.7-141		%Rec	1	1/16/2017 9:25:00 AM	29659
Surr: Tetrachloro-m-xylene	94.0	18.5-136		%Rec	1	1/16/2017 9:25:00 AM	29659

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: DBS
Client Sample ID: SDC-010417
Project: PCB Sediment Sampling
Collection Date: 1/4/2017 11:15:00 AM
Lab ID: 1701235-002
Matrix: SOIL
Received Date: 1/6/2017 1:50:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8082: PCB'S						Analyst: **SCC**	
Aroclor 1016	ND	0.020		mg/Kg	1	1/16/2017 9:58:00 AM	29659
Aroclor 1221	ND	0.020		mg/Kg	1	1/16/2017 9:58:00 AM	29659
Aroclor 1232	ND	0.020		mg/Kg	1	1/16/2017 9:58:00 AM	29659
Aroclor 1242	ND	0.020		mg/Kg	1	1/16/2017 9:58:00 AM	29659
Aroclor 1248	ND	0.020		mg/Kg	1	1/16/2017 9:58:00 AM	29659
Aroclor 1254	ND	0.020		mg/Kg	1	1/16/2017 9:58:00 AM	29659
Aroclor 1260	ND	0.020		mg/Kg	1	1/16/2017 9:58:00 AM	29659
Surr: Decachlorobiphenyl	63.6	19.7-141		%Rec	1	1/16/2017 9:58:00 AM	29659
Surr: Tetrachloro-m-xylene	69.2	18.5-136		%Rec	1	1/16/2017 9:58:00 AM	29659

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: DBS
Client Sample ID: San-Jose-010417
Project: PCB Sediment Sampling
Collection Date: 1/4/2017 11:45:00 AM
Lab ID: 1701235-003
Matrix: SOIL
Received Date: 1/6/2017 1:50:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8082: PCB'S						Analyst: **SCC**	
Aroclor 1016	ND	0.20	D	mg/Kg	1	1/16/2017 11:56:00 AM	29659
Aroclor 1221	ND	0.20	D	mg/Kg	1	1/16/2017 11:56:00 AM	29659
Aroclor 1232	ND	0.20	D	mg/Kg	1	1/16/2017 11:56:00 AM	29659
Aroclor 1242	ND	0.20	D	mg/Kg	1	1/16/2017 11:56:00 AM	29659
Aroclor 1248	ND	0.20	D	mg/Kg	1	1/16/2017 11:56:00 AM	29659
Aroclor 1254	ND	0.20	D	mg/Kg	1	1/16/2017 11:56:00 AM	29659
Aroclor 1260	ND	0.20	D	mg/Kg	1	1/16/2017 11:56:00 AM	29659
Surr: Decachlorobiphenyl	0	19.7-141	SD	%Rec	1	1/16/2017 11:56:00 AM	29659
Surr: Tetrachloro-m-xylene	0	18.5-136	SD	%Rec	1	1/16/2017 11:56:00 AM	29659

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: DBS
Client Sample ID: West I40 DC-010417
Project: PCB Sediment Sampling
Collection Date: 1/4/2017 1:45:00 PM
Lab ID: 1701235-004
Matrix: SOIL
Received Date: 1/6/2017 1:50:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8082: PCB'S						Analyst: **SCC**	
Aroclor 1016	ND	0.19	D	mg/Kg	1	1/16/2017 12:29:00 PM	29659
Aroclor 1221	ND	0.19	D	mg/Kg	1	1/16/2017 12:29:00 PM	29659
Aroclor 1232	ND	0.19	D	mg/Kg	1	1/16/2017 12:29:00 PM	29659
Aroclor 1242	ND	0.19	D	mg/Kg	1	1/16/2017 12:29:00 PM	29659
Aroclor 1248	ND	0.19	D	mg/Kg	1	1/16/2017 12:29:00 PM	29659
Aroclor 1254	ND	0.19	D	mg/Kg	1	1/16/2017 12:29:00 PM	29659
Aroclor 1260	ND	0.19	D	mg/Kg	1	1/16/2017 12:29:00 PM	29659
Surr: Decachlorobiphenyl	0	19.7-141	SD	%Rec	1	1/16/2017 12:29:00 PM	29659
Surr: Tetrachloro-m-xylene	0	18.5-136	SD	%Rec	1	1/16/2017 12:29:00 PM	29659

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: DBS
Client Sample ID: Shamrock-010417
Project: PCB Sediment Sampling
Collection Date: 1/4/2017 2:30:00 PM
Lab ID: 1701235-005
Matrix: SOIL
Received Date: 1/6/2017 1:50:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8082: PCB'S						Analyst: **SCC**	
Aroclor 1016	ND	0.019		mg/Kg	1	1/16/2017 1:02:00 PM	29659
Aroclor 1221	ND	0.019		mg/Kg	1	1/16/2017 1:02:00 PM	29659
Aroclor 1232	ND	0.019		mg/Kg	1	1/16/2017 1:02:00 PM	29659
Aroclor 1242	ND	0.019		mg/Kg	1	1/16/2017 1:02:00 PM	29659
Aroclor 1248	ND	0.019		mg/Kg	1	1/16/2017 1:02:00 PM	29659
Aroclor 1254	ND	0.019		mg/Kg	1	1/16/2017 1:02:00 PM	29659
Aroclor 1260	ND	0.019		mg/Kg	1	1/16/2017 1:02:00 PM	29659
Surr: Decachlorobiphenyl	81.2	19.7-141		%Rec	1	1/16/2017 1:02:00 PM	29659
Surr: Tetrachloro-m-xylene	88.0	18.5-136		%Rec	1	1/16/2017 1:02:00 PM	29659

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: DBS
Client Sample ID: San Antonio-010417
Project: PCB Sediment Sampling
Collection Date: 1/4/2017 3:00:00 PM
Lab ID: 1701235-006
Matrix: SOIL
Received Date: 1/6/2017 1:50:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8082: PCB'S						Analyst: **SCC**	
Aroclor 1016	ND	0.19	D	mg/Kg	1	1/16/2017 1:35:00 PM	29659
Aroclor 1221	ND	0.19	D	mg/Kg	1	1/16/2017 1:35:00 PM	29659
Aroclor 1232	ND	0.19	D	mg/Kg	1	1/16/2017 1:35:00 PM	29659
Aroclor 1242	ND	0.19	D	mg/Kg	1	1/16/2017 1:35:00 PM	29659
Aroclor 1248	ND	0.19	D	mg/Kg	1	1/16/2017 1:35:00 PM	29659
Aroclor 1254	ND	0.19	D	mg/Kg	1	1/16/2017 1:35:00 PM	29659
Aroclor 1260	ND	0.19	D	mg/Kg	1	1/16/2017 1:35:00 PM	29659
Surr: Decachlorobiphenyl	0	19.7-141	SD	%Rec	1	1/16/2017 1:35:00 PM	29659
Surr: Tetrachloro-m-xylene	0	18.5-136	SD	%Rec	1	1/16/2017 1:35:00 PM	29659

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: DBS
Client Sample ID: Calabacillas-010517
Project: PCB Sediment Sampling
Collection Date: 1/5/2017 2:00:00 PM
Lab ID: 1701235-007
Matrix: SOIL
Received Date: 1/6/2017 1:50:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8082: PCB'S						Analyst: **SCC**	
Aroclor 1016	ND	0.020		mg/Kg	1	1/16/2017 2:08:00 PM	29659
Aroclor 1221	ND	0.020		mg/Kg	1	1/16/2017 2:08:00 PM	29659
Aroclor 1232	ND	0.020		mg/Kg	1	1/16/2017 2:08:00 PM	29659
Aroclor 1242	ND	0.020		mg/Kg	1	1/16/2017 2:08:00 PM	29659
Aroclor 1248	ND	0.020		mg/Kg	1	1/16/2017 2:08:00 PM	29659
Aroclor 1254	ND	0.020		mg/Kg	1	1/16/2017 2:08:00 PM	29659
Aroclor 1260	ND	0.020		mg/Kg	1	1/16/2017 2:08:00 PM	29659
Surr: Decachlorobiphenyl	84.8	19.7-141		%Rec	1	1/16/2017 2:08:00 PM	29659
Surr: Tetrachloro-m-xylene	88.4	18.5-136		%Rec	1	1/16/2017 2:08:00 PM	29659

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: DBS
Client Sample ID: NDC-EQPX-010517
Project: PCB Sediment Sampling
Collection Date: 1/5/2017 2:45:00 PM
Lab ID: 1701235-008
Matrix: SOIL
Received Date: 1/6/2017 1:50:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8082: PCB'S						Analyst: **SCC**	
Aroclor 1016	ND	0.19	D	mg/Kg	1	1/16/2017 2:41:00 PM	29659
Aroclor 1221	ND	0.19	D	mg/Kg	1	1/16/2017 2:41:00 PM	29659
Aroclor 1232	ND	0.19	D	mg/Kg	1	1/16/2017 2:41:00 PM	29659
Aroclor 1242	ND	0.19	D	mg/Kg	1	1/16/2017 2:41:00 PM	29659
Aroclor 1248	ND	0.19	D	mg/Kg	1	1/16/2017 2:41:00 PM	29659
Aroclor 1254	ND	0.19	D	mg/Kg	1	1/16/2017 2:41:00 PM	29659
Aroclor 1260	ND	0.19	D	mg/Kg	1	1/16/2017 2:41:00 PM	29659
Surr: Decachlorobiphenyl	0	19.7-141	SD	%Rec	1	1/16/2017 2:41:00 PM	29659
Surr: Tetrachloro-m-xylene	0	18.5-136	SD	%Rec	1	1/16/2017 2:41:00 PM	29659

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: DBS
Client Sample ID: North Boca-010517
Project: PCB Sediment Sampling
Collection Date: 1/5/2017 3:45:00 PM
Lab ID: 1701235-009
Matrix: SOIL
Received Date: 1/6/2017 1:50:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8082: PCB'S						Analyst: **SCC**	
Aroclor 1016	ND	0.020		mg/Kg	1	1/16/2017 3:13:00 PM	29659
Aroclor 1221	ND	0.020		mg/Kg	1	1/16/2017 3:13:00 PM	29659
Aroclor 1232	ND	0.020		mg/Kg	1	1/16/2017 3:13:00 PM	29659
Aroclor 1242	ND	0.020		mg/Kg	1	1/16/2017 3:13:00 PM	29659
Aroclor 1248	ND	0.020		mg/Kg	1	1/16/2017 3:13:00 PM	29659
Aroclor 1254	ND	0.020		mg/Kg	1	1/16/2017 3:13:00 PM	29659
Aroclor 1260	ND	0.020		mg/Kg	1	1/16/2017 3:13:00 PM	29659
Surr: Decachlorobiphenyl	76.4	19.7-141		%Rec	1	1/16/2017 3:13:00 PM	29659
Surr: Tetrachloro-m-xylene	78.0	18.5-136		%Rec	1	1/16/2017 3:13:00 PM	29659

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: DBS
Client Sample ID: Tijeras-Arroyo-010417
Project: PCB Sediment Sampling
Collection Date: 1/4/2017 10:30:00 AM
Lab ID: 1701235-010
Matrix: LEACHATE
Received Date: 1/6/2017 1:50:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 6010B: SPLP METALS						Analyst: **pmf**	
Aluminum	8.6	0.10		mg/L	5	1/18/2017 4:02:04 PM	29670
Cadmium	ND	1.0		mg/L	1	1/18/2017 3:14:48 PM	29670
Chromium	ND	5.0		mg/L	1	1/18/2017 3:14:48 PM	29670
Lead	ND	5.0		mg/L	1	1/18/2017 3:14:48 PM	29670
Nickel	ND	0.010		mg/L	1	1/18/2017 3:14:48 PM	29670
Zinc	0.022	0.020		mg/L	1	1/18/2017 3:14:48 PM	29670

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: DBS
Client Sample ID: SDC-010417
Project: PCB Sediment Sampling
Collection Date: 1/4/2017 11:15:00 AM
Lab ID: 1701235-011
Matrix: LEACHATE
Received Date: 1/6/2017 1:50:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 6010B: SPLP METALS						Analyst: **pmf**	
Aluminum	4.8	0.10		mg/L	5	1/18/2017 4:03:35 PM	29670
Cadmium	ND	1.0		mg/L	1	1/18/2017 3:16:18 PM	29670
Chromium	ND	5.0		mg/L	1	1/18/2017 3:16:18 PM	29670
Lead	ND	5.0		mg/L	1	1/18/2017 3:16:18 PM	29670
Nickel	ND	0.010		mg/L	1	1/18/2017 3:16:18 PM	29670
Zinc	0.024	0.020		mg/L	1	1/18/2017 3:16:18 PM	29670

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: DBS
Client Sample ID: San-Jose-010417
Project: PCB Sediment Sampling
Collection Date: 1/4/2017 11:45:00 AM
Lab ID: 1701235-012
Matrix: LEACHATE
Received Date: 1/6/2017 1:50:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 6010B: SPLP METALS						Analyst: **pmf**	
Aluminum	11	0.10		mg/L	5	1/18/2017 4:11:27 PM	29670
Cadmium	ND	1.0		mg/L	1	1/18/2017 3:23:45 PM	29670
Chromium	ND	5.0		mg/L	1	1/18/2017 3:23:45 PM	29670
Lead	ND	5.0		mg/L	1	1/18/2017 3:23:45 PM	29670
Nickel	ND	0.010		mg/L	1	1/18/2017 3:23:45 PM	29670
Zinc	0.048	0.020		mg/L	1	1/18/2017 3:23:45 PM	29670

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: DBS
Client Sample ID: West I40 DC-010417
Project: PCB Sediment Sampling
Collection Date: 1/4/2017 1:45:00 PM
Lab ID: 1701235-013
Matrix: LEACHATE
Received Date: 1/6/2017 1:50:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 6010B: SPLP METALS						Analyst: **pmf**	
Aluminum	5.1	0.10		mg/L	5	1/18/2017 4:13:04 PM	29670
Cadmium	ND	1.0		mg/L	1	1/18/2017 3:25:21 PM	29670
Chromium	ND	5.0		mg/L	1	1/18/2017 3:25:21 PM	29670
Lead	ND	5.0		mg/L	1	1/18/2017 3:25:21 PM	29670
Nickel	ND	0.010		mg/L	1	1/18/2017 3:25:21 PM	29670
Zinc	0.038	0.020		mg/L	1	1/18/2017 3:25:21 PM	29670

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: DBS
Client Sample ID: Shamrock-010417
Project: PCB Sediment Sampling
Collection Date: 1/4/2017 2:30:00 PM
Lab ID: 1701235-014
Matrix: LEACHATE
Received Date: 1/6/2017 1:50:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 6010B: SPLP METALS						Analyst: **pmf**	
Aluminum	2.4	0.020		mg/L	1	1/18/2017 3:26:59 PM	29670
Cadmium	ND	1.0		mg/L	1	1/18/2017 3:26:59 PM	29670
Chromium	ND	5.0		mg/L	1	1/18/2017 3:26:59 PM	29670
Lead	ND	5.0		mg/L	1	1/18/2017 3:26:59 PM	29670
Nickel	ND	0.010		mg/L	1	1/18/2017 3:26:59 PM	29670
Zinc	ND	0.020		mg/L	1	1/18/2017 3:26:59 PM	29670

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: DBS
Client Sample ID: San Antonio-010417
Project: PCB Sediment Sampling
Collection Date: 1/4/2017 3:00:00 PM
Lab ID: 1701235-015
Matrix: LEACHATE
Received Date: 1/6/2017 1:50:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 6010B: SPLP METALS						Analyst: **pmf**	
Aluminum	2.8	0.020		mg/L	1	1/18/2017 3:28:36 PM	29670
Cadmium	ND	1.0		mg/L	1	1/18/2017 3:28:36 PM	29670
Chromium	ND	5.0		mg/L	1	1/18/2017 3:28:36 PM	29670
Lead	ND	5.0		mg/L	1	1/18/2017 3:28:36 PM	29670
Nickel	ND	0.010		mg/L	1	1/18/2017 3:28:36 PM	29670
Zinc	ND	0.020		mg/L	1	1/18/2017 3:28:36 PM	29670

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: DBS
Client Sample ID: Calabacillas-010517
Project: PCB Sediment Sampling
Collection Date: 1/5/2017 2:00:00 PM
Lab ID: 1701235-016
Matrix: LEACHATE
Received Date: 1/6/2017 1:50:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 6010B: SPLP METALS						Analyst: **pmf**	
Aluminum	1.9	0.020		mg/L	1	1/18/2017 3:35:31 PM	29670
Cadmium	ND	1.0		mg/L	1	1/18/2017 3:35:31 PM	29670
Chromium	ND	5.0		mg/L	1	1/18/2017 3:35:31 PM	29670
Lead	ND	5.0		mg/L	1	1/18/2017 3:35:31 PM	29670
Nickel	ND	0.010		mg/L	1	1/18/2017 3:35:31 PM	29670
Zinc	ND	0.020		mg/L	1	1/18/2017 3:35:31 PM	29670

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: DBS
Client Sample ID: NDC-EQPX-010517
Project: PCB Sediment Sampling
Collection Date: 1/5/2017 2:45:00 PM
Lab ID: 1701235-017
Matrix: LEACHATE
Received Date: 1/6/2017 1:50:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 6010B: SPLP METALS						Analyst: **pmf**	
Aluminum	4.9	0.020		mg/L	1	1/18/2017 3:37:07 PM	29670
Cadmium	ND	1.0		mg/L	1	1/18/2017 3:37:07 PM	29670
Chromium	ND	5.0		mg/L	1	1/18/2017 3:37:07 PM	29670
Lead	ND	5.0		mg/L	1	1/18/2017 3:37:07 PM	29670
Nickel	ND	0.010		mg/L	1	1/18/2017 3:37:07 PM	29670
Zinc	0.030	0.020		mg/L	1	1/18/2017 3:37:07 PM	29670

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: DBS
Client Sample ID: North Boca-010517
Project: PCB Sediment Sampling
Collection Date: 1/5/2017 3:45:00 PM
Lab ID: 1701235-018
Matrix: LEACHATE
Received Date: 1/6/2017 1:50:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 6010B: SPLP METALS						Analyst: **pmf**	
Aluminum	9.2	0.10		mg/L	5	1/18/2017 4:14:53 PM	29670
Cadmium	ND	1.0		mg/L	1	1/18/2017 3:38:44 PM	29670
Chromium	ND	5.0		mg/L	1	1/18/2017 3:38:44 PM	29670
Lead	ND	5.0		mg/L	1	1/18/2017 3:38:44 PM	29670
Nickel	ND	0.010		mg/L	1	1/18/2017 3:38:44 PM	29670
Zinc	ND	0.020		mg/L	1	1/18/2017 3:38:44 PM	29670

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1701235**

24-Jan-17

Client: DBS

Project: PCB Sediment Sampling

Sample ID **MB-29659**	SampType: **MBLK**	TestCode: **EPA Method 8082: PCB's**
Client ID: **PBS**	Batch ID: **29659**	RunNo: **40011**
Prep Date: **1/12/2017**	Analysis Date: **1/16/2017**	SeqNo: **1253839** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	ND	0.020								
Aroclor 1221	ND	0.020								
Aroclor 1232	ND	0.020								
Aroclor 1242	ND	0.020								
Aroclor 1248	ND	0.020								
Aroclor 1254	ND	0.020								
Aroclor 1260	ND	0.020								
Surr: Decachlorobiphenyl	0.034		0.06250		54.8	19.7	141			
Surr: Tetrachloro-m-xylene	0.034		0.06250		54.4	18.5	136			

Sample ID **LCS-29659**	SampType: **LCS**	TestCode: **EPA Method 8082: PCB's**
Client ID: **LCSS**	Batch ID: **29659**	RunNo: **40011**
Prep Date: **1/12/2017**	Analysis Date: **1/16/2017**	SeqNo: **1253940** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	0.069	0.020	0.1250	0	55.0	22.1	258			
Aroclor 1260	0.059	0.020	0.1250	0	47.0	15	217			
Surr: Decachlorobiphenyl	0.036		0.06250		56.8	19.7	141			
Surr: Tetrachloro-m-xylene	0.034		0.06250		54.8	18.5	136			

Sample ID **LCS-29659(1221)**	SampType: **LCS**	TestCode: **EPA Method 8082: PCB's**
Client ID: **LCSS**	Batch ID: **29659**	RunNo: **40011**
Prep Date: **1/12/2017**	Analysis Date: **1/17/2017**	SeqNo: **1255028** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1221	0.096	0.020	0.1250	0	77.0	22.1	258			
Surr: Decachlorobiphenyl	0.048		0.06250		76.8	19.7	141			
Surr: Tetrachloro-m-xylene	0.040		0.06250		64.4	18.5	136			

Sample ID **LCSD-29659(1221)**	SampType: **LCSD**	TestCode: **EPA Method 8082: PCB's**
Client ID: **LCSS02**	Batch ID: **29659**	RunNo: **40011**
Prep Date: **1/12/2017**	Analysis Date: **1/17/2017**	SeqNo: **1255030** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1221	0.079	0.020	0.1250	0	63.2	22.1	258	19.7	22.6	
Surr: Decachlorobiphenyl	0.046		0.06250		73.2	19.7	141	0	0	
Surr: Tetrachloro-m-xylene	0.038		0.06250		60.4	18.5	136	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1701235**

24-Jan-17

Client: DBS

Project: PCB Sediment Sampling

Sample ID	**LCS-29659(1232)**	SampType:	**LCS**		TestCode:	**EPA Method 8082: PCB's**				
Client ID:	**LCSS**	Batch ID:	**29659**		RunNo:	**40011**				
Prep Date:	**1/12/2017**	Analysis Date:	**1/17/2017**		SeqNo:	**1255048**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1232	0.12	0.020	0.1250	0	97.4	22.1	258			
Surr: Decachlorobiphenyl	0.046		0.06250		73.6	19.7	141			
Surr: Tetrachloro-m-xylene	0.042		0.06250		67.2	18.5	136			

Sample ID	**LCSD-29659(1232)**	SampType:	**LCSD**		TestCode:	**EPA Method 8082: PCB's**				
Client ID:	**LCSS02**	Batch ID:	**29659**		RunNo:	**40011**				
Prep Date:	**1/12/2017**	Analysis Date:	**1/17/2017**		SeqNo:	**1255050**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1232	0.15	0.020	0.1250	0	121	22.1	258	21.6	22.6	
Surr: Decachlorobiphenyl	0.046		0.06250		73.6	19.7	141	0	0	
Surr: Tetrachloro-m-xylene	0.041		0.06250		65.6	18.5	136	0	0	

Sample ID	**LCS-29659(1242)**	SampType:	**LCS**		TestCode:	**EPA Method 8082: PCB's**				
Client ID:	**LCSS**	Batch ID:	**29659**		RunNo:	**40011**				
Prep Date:	**1/12/2017**	Analysis Date:	**1/17/2017**		SeqNo:	**1255051**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1242	0.092	0.020	0.1250	0	73.8	22.1	258			
Surr: Decachlorobiphenyl	0.036		0.06250		56.8	19.7	141			
Surr: Tetrachloro-m-xylene	0.034		0.06250		54.0	18.5	136			

Sample ID	**LCSD-29659(1242)**	SampType:	**LCSD**		TestCode:	**EPA Method 8082: PCB's**				
Client ID:	**LCSS02**	Batch ID:	**29659**		RunNo:	**40011**				
Prep Date:	**1/12/2017**	Analysis Date:	**1/17/2017**		SeqNo:	**1255062**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1242	0.10	0.020	0.1250	0	83.0	22.1	258	11.7	22.6	
Surr: Decachlorobiphenyl	0.038		0.06250		61.6	19.7	141	0	0	
Surr: Tetrachloro-m-xylene	0.036		0.06250		58.0	18.5	136	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1701235**

24-Jan-17

Client: DBS

Project: PCB Sediment Sampling

Sample ID	**MB-29670**	SampType: **MBLK**		TestCode: **EPA Method 6010B: SPLP Metals**						
Client ID:	**PBW**	Batch ID: **29670**		RunNo: **40134**						
Prep Date:	**1/12/2017**	Analysis Date: **1/18/2017**		SeqNo: **1258060**		Units: **mg/L**				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Cadmium	ND	1.0								
Chromium	ND	5.0								
Lead	ND	5.0								
Nickel	ND	0.010								
Zinc	ND	0.020								

Sample ID	**LCS-29670**	SampType: **LCS**		TestCode: **EPA Method 6010B: SPLP Metals**						
Client ID:	**LCSW**	Batch ID: **29670**		RunNo: **40134**						
Prep Date:	**1/12/2017**	Analysis Date: **1/18/2017**		SeqNo: **1258061**		Units: **mg/L**				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.56	0.020	0.5000	0	113	80	120			
Cadmium	ND	1.0	0.5000	0	101	80	120			
Chromium	ND	5.0	0.5000	0	98.7	80	120			
Lead	ND	5.0	0.5000	0	100	80	120			
Nickel	0.48	0.010	0.5000	0	96.7	80	120			
Zinc	0.48	0.020	0.5000	0	96.2	80	120			

Sample ID	**1701235-015AMS**	SampType: **MS**		TestCode: **EPA Method 6010B: SPLP Metals**						
Client ID:	**San Antonio-010417**	Batch ID: **29670**		RunNo: **40134**						
Prep Date:	**1/12/2017**	Analysis Date: **1/18/2017**		SeqNo: **1258071**		Units: **mg/L**				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	4.0	0.020	0.5000	2.759	251	75	125			S
Cadmium	ND	1.0	0.5000	0	97.9	75	125			
Chromium	ND	5.0	0.5000	0	96.5	75	125			
Lead	ND	5.0	0.5000	0	97.7	75	125			
Nickel	0.47	0.010	0.5000	0	94.8	75	125			
Zinc	0.48	0.020	0.5000	0	96.7	75	125			

Sample ID	**1701235-015AMSD**	SampType: **MSD**		TestCode: **EPA Method 6010B: SPLP Metals**						
Client ID:	**San Antonio-010417**	Batch ID: **29670**		RunNo: **40134**						
Prep Date:	**1/12/2017**	Analysis Date: **1/18/2017**		SeqNo: **1258072**		Units: **mg/L**				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	4.0	0.020	0.5000	2.759	239	75	125	1.49	20	S
Cadmium	ND	1.0	0.5000	0	99.7	75	125	0	20	
Chromium	ND	5.0	0.5000	0	97.4	75	125	0	20	
Lead	ND	5.0	0.5000	0	97.9	75	125	0	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1701235**

24-Jan-17

Client: DBS

Project: PCB Sediment Sampling

Sample ID	**1701235-015AMSD**	SampType: **MSD**		TestCode: **EPA Method 6010B: SPLP Metals**						
Client ID:	**San Antonio-010417**	Batch ID: **29670**		RunNo: **40134**						
Prep Date:	**1/12/2017**	Analysis Date: **1/18/2017**		SeqNo: **1258072**		Units: **mg/L**				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nickel	0.48	0.010	0.5000	0	95.7	75	125	0.934	20	
Zinc	0.50	0.020	0.5000	0	99.1	75	125	2.45	20	

Sample ID	**1701235-015APS**	SampType: **PS**		TestCode: **EPA Method 6010B: SPLP Metals**						
Client ID:	**San Antonio-010417**	Batch ID: **29670**		RunNo: **40134**						
Prep Date:		Analysis Date: **1/18/2017**		SeqNo: **1258073**		Units: **mg/L**				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	3.6	0.020	0.5000	2.759	171	80	120			S

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: DBS | Work Order Number: 1701235 | RcptNo: 1

Received by/date: AJ 01/06/17

Logged By: **Anne Thorne** 1/6/2017 1:50:00 PM

Completed By: **Anne Thorne** 1/9/2017 8:18:58 AM

Reviewed By: 01/09/17

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	Client		

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
9. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
11. Were any sample containers received broken?	Yes ☐	No ☑	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)

Adjusted? _____

Checked by: _____

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.9	Good	Not Present			

Chain-of-Custody Record

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Client: Daniel B Stephens

Mailing Address: 6020 Academy NE ABQ, NM 87109

Phone #: 505-822-9400

Email or Fax#: cjohannesen@dbstephens.com

QA/QC Package: ☑ Standard ☐ Level 4 (Full Validation)

Accreditation: NELAP ☐ Other

EDD (Type)

Turn-Around Time: ☑ Standard ☐ Rush

Project Name: PCB Sediment Sampling

Project #: WR14.0049.01.0000014

Project Manager: Chad Johannesen

Sampler: Chad Johannesen

On Ice: ☑ Yes ☐ No

Sample Temperature: 3.9°C

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. (Rev 01/10/16) 1701235	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions ($F, Cl, NO_3, NO_2, PO_4, SO_4$)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	PCB's - 8082A (SW-846)	Metals - 6020A (aluminum, cadmium, chromium, nickel, lead and zinc)	Air Bubbles (Y or N)
~~1/7~~	~~1030~~																			
1/7	1050	Soil	Tijeras_Arroyo_010417	2x802	—	leachate -010 001												X	X	
↓	1115	↓	SDC_010417	↓	↓	011 002												X	X	
	1145		San_Jose_010417			012 003												X	X	
	1345		West_I40DC_010417			013 004												X	X	
	1430		Shamrock_010417			014 005												X	X	
↓	1500		SanAntonio_010417			015 006												X	X	
1/7	1400		Calabacillas_010517			016 007												X	X	
	1445		NDC_EQPX_010517			017 008												X	X	
↓	1545	↓	North Boca_010517	↓	↓	018 009												X	X	

Remarks: SPLP - Synthetic Precipitation leaching for metals

Date	Time	Relinquished by:	Received by:	Date	Time
1/7	1350			1/6/17	1350

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

January 23, 2017

Chad Johannesen

Daniel B. Stephens & Assoc.
6020 Academy NE Suite 100
Albuquerque, NM 87109
TEL: (505) 822-9400
FAX (505) 822-8877

RE: PCB Sediment Sampling OrderNo.: 1701387

Dear Chad Johannesen:

Hall Environmental Analysis Laboratory received 6 sample(s) on 1/10/2017 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,



Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1701387**
Date Reported: **1/23/2017**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Daniel B. Stephens & Assoc.
Client Sample ID: Domingo Baca-011017
Project: PCB Sediment Sampling
Collection Date: 1/10/2017 12:15:00 PM
Lab ID: 1701387-001 **Matrix:** SOIL **Received Date:** 1/10/2017 2:35:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8082: PCB'S						Analyst: **SCC**	
Aroclor 1016	ND	0.099	D	mg/Kg	1	1/16/2017 3:46:00 PM	29659
Aroclor 1221	ND	0.099	D	mg/Kg	1	1/16/2017 3:46:00 PM	29659
Aroclor 1232	ND	0.099	D	mg/Kg	1	1/16/2017 3:46:00 PM	29659
Aroclor 1242	ND	0.099	D	mg/Kg	1	1/16/2017 3:46:00 PM	29659
Aroclor 1248	ND	0.099	D	mg/Kg	1	1/16/2017 3:46:00 PM	29659
Aroclor 1254	ND	0.099	D	mg/Kg	1	1/16/2017 3:46:00 PM	29659
Aroclor 1260	ND	0.099	D	mg/Kg	1	1/16/2017 3:46:00 PM	29659
Surr: Decachlorobiphenyl	0	19.7-141	SD	%Rec	1	1/16/2017 3:46:00 PM	29659
Surr: Tetrachloro-m-xylene	0	18.5-136	SD	%Rec	1	1/16/2017 3:46:00 PM	29659

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Daniel B. Stephens & Assoc.
Client Sample ID: Embudo-011017
Project: PCB Sediment Sampling
Collection Date: 1/10/2017 1:00:00 PM
Lab ID: 1701387-002 **Matrix:** SOIL **Received Date:** 1/10/2017 2:35:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8082: PCB'S						Analyst: **SCC**	
Aroclor 1016	ND	0.020		mg/Kg	1	1/16/2017 4:19:00 PM	29659
Aroclor 1221	ND	0.020		mg/Kg	1	1/16/2017 4:19:00 PM	29659
Aroclor 1232	ND	0.020		mg/Kg	1	1/16/2017 4:19:00 PM	29659
Aroclor 1242	ND	0.020		mg/Kg	1	1/16/2017 4:19:00 PM	29659
Aroclor 1248	ND	0.020		mg/Kg	1	1/16/2017 4:19:00 PM	29659
Aroclor 1254	ND	0.020		mg/Kg	1	1/16/2017 4:19:00 PM	29659
Aroclor 1260	ND	0.020		mg/Kg	1	1/16/2017 4:19:00 PM	29659
Surr: Decachlorobiphenyl	94.8	19.7-141		%Rec	1	1/16/2017 4:19:00 PM	29659
Surr: Tetrachloro-m-xylene	101	18.5-136		%Rec	1	1/16/2017 4:19:00 PM	29659

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Daniel B. Stephens & Assoc.
Client Sample ID: Fourhills-011017
Project: PCB Sediment Sampling
Collection Date: 1/10/2017 2:00:00 PM
Lab ID: 1701387-003
Matrix: SOIL
Received Date: 1/10/2017 2:35:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8082: PCB'S						Analyst: **SCC**	
Aroclor 1016	ND	0.20	D	mg/Kg	1	1/16/2017 4:52:00 PM	29659
Aroclor 1221	ND	0.20	D	mg/Kg	1	1/16/2017 4:52:00 PM	29659
Aroclor 1232	ND	0.20	D	mg/Kg	1	1/16/2017 4:52:00 PM	29659
Aroclor 1242	ND	0.20	D	mg/Kg	1	1/16/2017 4:52:00 PM	29659
Aroclor 1248	ND	0.20	D	mg/Kg	1	1/16/2017 4:52:00 PM	29659
Aroclor 1254	ND	0.20	D	mg/Kg	1	1/16/2017 4:52:00 PM	29659
Aroclor 1260	ND	0.20	D	mg/Kg	1	1/16/2017 4:52:00 PM	29659
Surr: Decachlorobiphenyl	0	19.7-141	SD	%Rec	1	1/16/2017 4:52:00 PM	29659
Surr: Tetrachloro-m-xylene	0	18.5-136	SD	%Rec	1	1/16/2017 4:52:00 PM	29659

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Daniel B. Stephens & Assoc.
Client Sample ID: Domingo Baca-011017
Project: PCB Sediment Sampling
Collection Date: 1/10/2017 12:15:00 PM
Lab ID: 1701387-004
Matrix: LEACHATE
Received Date: 1/10/2017 2:35:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA 6010B: TOTAL RECOVERABLE METALS						Analyst: **pmf**	
Aluminum	8.0	0.20		mg/L	10	1/17/2017 6:53:21 PM	29691
Cadmium	ND	0.0020		mg/L	1	1/16/2017 8:05:33 PM	29691
Chromium	ND	0.0060		mg/L	1	1/16/2017 8:05:33 PM	29691
Lead	ND	0.0050		mg/L	1	1/16/2017 8:05:33 PM	29691
Nickel	ND	0.010		mg/L	1	1/16/2017 8:05:33 PM	29691
Zinc	0.030	0.020		mg/L	1	1/16/2017 8:05:33 PM	29691

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Daniel B. Stephens & Assoc.
Client Sample ID: Embudo-011017
Project: PCB Sediment Sampling
Collection Date: 1/10/2017 1:00:00 PM
Lab ID: 1701387-005
Matrix: LEACHATE
Received Date: 1/10/2017 2:35:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA 6010B: TOTAL RECOVERABLE METALS						Analyst: **pmf**	
Aluminum	3.7	0.10		mg/L	5	1/16/2017 8:09:46 PM	29691
Cadmium	ND	0.0020		mg/L	1	1/16/2017 8:08:28 PM	29691
Chromium	ND	0.0060		mg/L	1	1/16/2017 8:08:28 PM	29691
Lead	ND	0.0050		mg/L	1	1/16/2017 8:08:28 PM	29691
Nickel	ND	0.010		mg/L	1	1/16/2017 8:08:28 PM	29691
Zinc	ND	0.020		mg/L	1	1/16/2017 8:08:28 PM	29691

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Daniel B. Stephens & Assoc.
Client Sample ID: Fourhills-011017
Project: PCB Sediment Sampling
Collection Date: 1/10/2017 2:00:00 PM
Lab ID: 1701387-006
Matrix: LEACHATE
Received Date: 1/10/2017 2:35:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA 6010B: TOTAL RECOVERABLE METALS						Analyst: **pmf**	
Aluminum	3.6	0.10		mg/L	5	1/16/2017 8:17:35 PM	29691
Cadmium	ND	0.0020		mg/L	1	1/16/2017 8:16:13 PM	29691
Chromium	ND	0.0060		mg/L	1	1/16/2017 8:16:13 PM	29691
Lead	ND	0.0050		mg/L	1	1/16/2017 8:16:13 PM	29691
Nickel	ND	0.010		mg/L	1	1/16/2017 8:16:13 PM	29691
Zinc	0.022	0.020		mg/L	1	1/16/2017 8:16:13 PM	29691

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1701387**

23-Jan-17

Client: Daniel B. Stephens & Assoc.

Project: PCB Sediment Sampling

Sample ID **MB-29659**	SampType: **MBLK**	TestCode: **EPA Method 8082: PCB's**
Client ID: **PBS**	Batch ID: **29659**	RunNo: **40011**
Prep Date: **1/12/2017**	Analysis Date: **1/16/2017**	SeqNo: **1253839** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	ND	0.020								
Aroclor 1221	ND	0.020								
Aroclor 1232	ND	0.020								
Aroclor 1242	ND	0.020								
Aroclor 1248	ND	0.020								
Aroclor 1254	ND	0.020								
Aroclor 1260	ND	0.020								
Surr: Decachlorobiphenyl	0.034		0.06250		54.8	19.7	141			
Surr: Tetrachloro-m-xylene	0.034		0.06250		54.4	18.5	136			

Sample ID **LCS-29659**	SampType: **LCS**	TestCode: **EPA Method 8082: PCB's**
Client ID: **LCSS**	Batch ID: **29659**	RunNo: **40011**
Prep Date: **1/12/2017**	Analysis Date: **1/16/2017**	SeqNo: **1253940** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	0.069	0.020	0.1250	0	55.0	22.1	258			
Aroclor 1260	0.059	0.020	0.1250	0	47.0	15	217			
Surr: Decachlorobiphenyl	0.036		0.06250		56.8	19.7	141			
Surr: Tetrachloro-m-xylene	0.034		0.06250		54.8	18.5	136			

Sample ID **LCS-29659(1221)**	SampType: **LCS**	TestCode: **EPA Method 8082: PCB's**
Client ID: **LCSS**	Batch ID: **29659**	RunNo: **40011**
Prep Date: **1/12/2017**	Analysis Date: **1/17/2017**	SeqNo: **1255028** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1221	0.096	0.020	0.1250	0	77.0	22.1	258			
Surr: Decachlorobiphenyl	0.048		0.06250		76.8	19.7	141			
Surr: Tetrachloro-m-xylene	0.040		0.06250		64.4	18.5	136			

Sample ID **LCSD-29659(1221)**	SampType: **LCSD**	TestCode: **EPA Method 8082: PCB's**
Client ID: **LCSS02**	Batch ID: **29659**	RunNo: **40011**
Prep Date: **1/12/2017**	Analysis Date: **1/17/2017**	SeqNo: **1255030** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1221	0.079	0.020	0.1250	0	63.2	22.1	258	19.7	22.6	
Surr: Decachlorobiphenyl	0.046		0.06250		73.2	19.7	141	0	0	
Surr: Tetrachloro-m-xylene	0.038		0.06250		60.4	18.5	136	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1701387**

23-Jan-17

Client: Daniel B. Stephens & Assoc.

Project: PCB Sediment Sampling

Sample ID **LCS-29659(1232)** SampType: **LCS** TestCode: **EPA Method 8082: PCB's**

Client ID: **LCSS** Batch ID: **29659** RunNo: **40011**

Prep Date: **1/12/2017** Analysis Date: **1/17/2017** SeqNo: **1255048** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1232	0.12	0.020	0.1250	0	97.4	22.1	258			
Surr: Decachlorobiphenyl	0.046		0.06250		73.6	19.7	141			
Surr: Tetrachloro-m-xylene	0.042		0.06250		67.2	18.5	136			

Sample ID **LCSD-29659(1232)** SampType: **LCSD** TestCode: **EPA Method 8082: PCB's**

Client ID: **LCSS02** Batch ID: **29659** RunNo: **40011**

Prep Date: **1/12/2017** Analysis Date: **1/17/2017** SeqNo: **1255050** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1232	0.15	0.020	0.1250	0	121	22.1	258	21.6	22.6	
Surr: Decachlorobiphenyl	0.046		0.06250		73.6	19.7	141	0	0	
Surr: Tetrachloro-m-xylene	0.041		0.06250		65.6	18.5	136	0	0	

Sample ID **LCS-29659(1242)** SampType: **LCS** TestCode: **EPA Method 8082: PCB's**

Client ID: **LCSS** Batch ID: **29659** RunNo: **40011**

Prep Date: **1/12/2017** Analysis Date: **1/17/2017** SeqNo: **1255051** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1242	0.092	0.020	0.1250	0	73.8	22.1	258			
Surr: Decachlorobiphenyl	0.036		0.06250		56.8	19.7	141			
Surr: Tetrachloro-m-xylene	0.034		0.06250		54.0	18.5	136			

Sample ID **LCSD-29659(1242)** SampType: **LCSD** TestCode: **EPA Method 8082: PCB's**

Client ID: **LCSS02** Batch ID: **29659** RunNo: **40011**

Prep Date: **1/12/2017** Analysis Date: **1/17/2017** SeqNo: **1255062** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1242	0.10	0.020	0.1250	0	83.0	22.1	258	11.7	22.6	
Surr: Decachlorobiphenyl	0.038		0.06250		61.6	19.7	141	0	0	
Surr: Tetrachloro-m-xylene	0.036		0.06250		58.0	18.5	136	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1701387**

23-Jan-17

Client: Daniel B. Stephens & Assoc.

Project: PCB Sediment Sampling

Sample ID	**MB-29691**	SampType:	**MBLK**	TestCode:	**EPA 6010B: Total Recoverable Metals**				
Client ID:	**PBW**	Batch ID:	**29691**	RunNo:	**40089**				
Prep Date:	**1/13/2017**	Analysis Date:	**1/17/2017**	SeqNo:	**1256477**	Units:	**mg/L**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								

Sample ID	**LCS-29691**	SampType:	**LCS**	TestCode:	**EPA 6010B: Total Recoverable Metals**				
Client ID:	**LCSW**	Batch ID:	**29691**	RunNo:	**40089**				
Prep Date:	**1/13/2017**	Analysis Date:	**1/17/2017**	SeqNo:	**1256478**	Units:	**mg/L**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.57	0.020	0.5000	0	115	80	120			

Sample ID	**MB-29691**	SampType:	**MBLK**	TestCode:	**EPA 6010B: Total Recoverable Metals**				
Client ID:	**PBW**	Batch ID:	**29691**	RunNo:	**40062**				
Prep Date:	**1/13/2017**	Analysis Date:	**1/16/2017**	SeqNo:	**1259410**	Units:	**mg/L**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Lead	ND	0.0050								
Nickel	ND	0.010								
Zinc	ND	0.020								

Sample ID	**LCS-29691**	SampType:	**LCS**	TestCode:	**EPA 6010B: Total Recoverable Metals**				
Client ID:	**LCSW**	Batch ID:	**29691**	RunNo:	**40062**				
Prep Date:	**1/13/2017**	Analysis Date:	**1/16/2017**	SeqNo:	**1259411**	Units:	**mg/L**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.57	0.020	0.5000	0	113	80	120			
Cadmium	0.50	0.0020	0.5000	0	99.6	80	120			
Chromium	0.51	0.0060	0.5000	0	102	80	120			
Lead	0.51	0.0050	0.5000	0	101	80	120			
Nickel	0.49	0.010	0.5000	0	98.5	80	120			
Zinc	0.49	0.020	0.5000	0	97.5	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: DBS | Work Order Number: 1701387 | RcptNo: 1

Received by/date: AJ 01/10/17

Logged By: Anne Thorne 1/10/2017 2:35:00 PM Anne Thorne

Completed By: Anne Thorne 1/11/2017 9:39:15 AM Anne Thorne

Reviewed By: 01/11/17

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	Client		

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
9. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
11. Were any sample containers received broken?	Yes ☐	No ☑	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: 3 (<2 or >12 unless noted)

Adjusted? added 1mL HNO3 to TCLP leachate for acceptable pH

Checked by: ~~AT~~ 01/12/17 AT 01/12/17

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Not Present			

Chain-of-Custody Record

Client: Daniel B Stephens

Mailing Address: 6020 Academy NE ABQ NM 87109

Phone #: 505-822-9400

email or Fax#: CJohannesen@dbstephens.com

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation
☐ NELAP ☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:
☒ Standard ☐ Rush _____

Project Name: PCB Sediment Sampling

Project #: WR14.0049.01.0000014

Project Manager: Chad Johannesen

Sampler: C. Johannesen

On Ice: ☑ Yes ☐ No

Sample Temperature: 1.0

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1701387	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	PCB - 8082 A (SW-846)	Metals - 6020A (aluminum, cadium, chromium, nickel, lead and zinc)	Air Bubbles (Y or N)
10/17	1215	Soil	Domingo Baca_101017	2 8oz	—	Leachate -001												X	X	
10/17	1300	Soil	Embudo_101017	"	—	-002												X	X	
10/17	1400	Soil	Fourhills_101017	"	—	-003												X	X	

Date	Time	Relinquished by:	Received by:	Date	Time
10/17	1435			1/10/17	1435
		Relinquished by:	Received by:	Date	Time

Remarks: SPLP-Synthetic Precipitation leaching for metals

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Attachment 2

Wet and Dry Season Monitoring Results

Discharge Monitoring Reports (DMRs)

Waste Load Allocation Results

Bohannan Huston

Engineering
Spatial Data
Advanced Technologies

Courtyard I
7500 Jefferson St. NE
Albuquerque, NM
87109-4335
www.bhinc.com
voice: 505.823.1000
facsimile: 505.798.7988
toll free: 800.877.5332

MEMORANDUM

DATE: March 6, 2017

TO: Jerry Lovato, PE, AMAFCA
Patrick Chavez, PE, AMAFCA

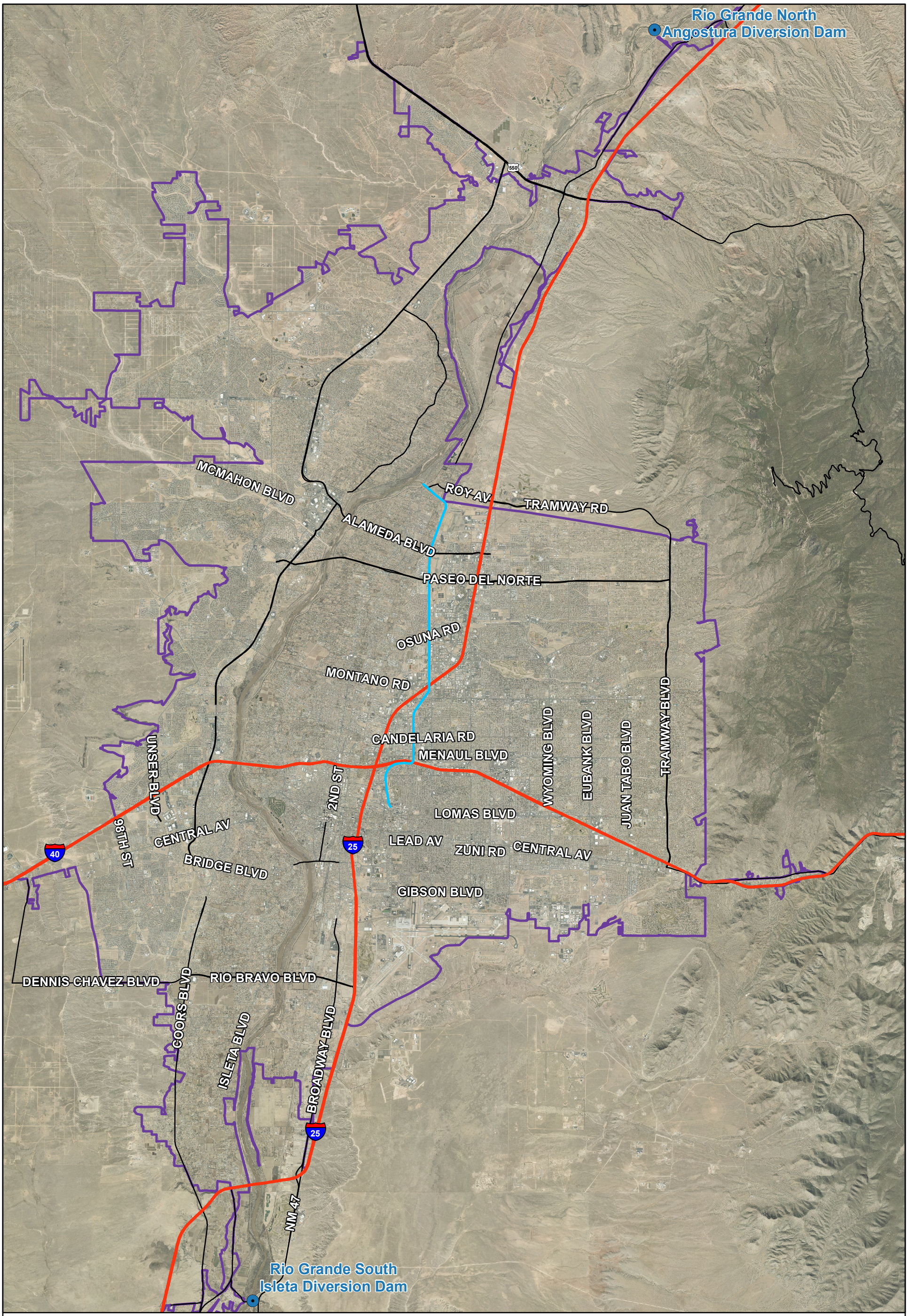
FROM: Craig Hoover, PE
Sarah Ganley, PE SJG
Angie Bacigalupa, EI AMB

SUBJECT: **CMC Wet Season, Wet Weather Stormwater Monitoring Data Verification, Analysis Results Database, and Reporting FY 2017 Wet Season (July 1 to October 31, 2016) Memo**

Overview of Stormwater Monitoring Activity

Bohannan Huston, Inc. (BHI) has been tasked to perform water quality services for the Compliance Monitoring Cooperative (CMC) Stormwater Data Verification, Database, and Reporting for the Wet Weather Stormwater Quality Monitoring Program for Fiscal Year (FY) 2017 (July 1, 2016 to June 30, 2017). The scope of work for this task includes data verification of the stormwater laboratory analysis results, compiling the analysis results into a database, and calculating the E. coli daily loading to compare with the Waste Load Allocation (WLA) for the qualifying storm events. The stormwater compliance monitoring is being conducted separately by Daniel B. Stephens & Associates, Inc. (DBS&A) and is not a part of this on-call task. This task is being conducted to assist the CMC members with their comprehensive monitoring and assessment program for compliance under the 2014 Middle Rio Grande Watershed Based Municipal Separate Storm Sewer System (MS4) Permit, NPDES Permit No. NMR04A000 ("WSB MS4 Permit").

As identified in the CMC Monitoring Plan, the WSB MS4 Permit requires that a minimum of seven (7) storm events be sampled at both the Rio Grande North and Rio Grande South locations (refer to Figure 1, page 2). During the 5-year WSB MS4 Permit term, at least three (3) events must be sampled in the wet season (between July 1 and October 31, 2016) and at least two (2) events in the dry season (between November and June). The remaining two (2) required events can be obtained during either the wet or dry seasons. During the FY 2017 wet season (July to October 2016) there were three (3) qualifying storm events where samples were collected for both the Rio Grande North and Rio Grande South locations.



AMAFCA

Bohannan Huston
www.bhinc.com 800.877.5332

Legend

- CMC Monitoring Locations
- North Diversion Channel
- Albuquerque Urbanized Area
- Interstate Highway
- U.S. Highway
- State Highway

N W E S

0 0.5 1 2
Miles

CMC Monitoring Locations

Figure 1

P:\20170386\WR\Reports\Preliminary & Draft\Figures\MXDs\Figure1-CMCMonitoringLocations.mxd
Author: gmaynard

January 2017

Summary of the CMC Sampling Plan

Sampling Parameters:

Samples from both the Rio Grande North and Rio Grande South monitoring locations were analyzed for the parameters defined in the EPA approved WSB MS4 CMC Monitoring Plan, May 5, 2016. The parameter list for both the locations, which is intended to characterize stormwater discharges into the river, is as follows:

Total Suspended Solids (TSS)
Total Dissolved Solids (TDS)
Chemical Oxygen Demand (COD)
Biological Oxygen Demand – 5-day (BOD_5)
Dissolved Oxygen (DO)
Oil & grease (N-Hexane Extractable Material)
E. coli
pH
Total Kjeldahl Nitrogen (TKN)
Nitrate plus Nitrite
Dissolved Phosphorus
Ammonia plus Organic Nitrogen (Nitrogen, Ammonia and Nitrogen, Total)
Phosphorous (Total Phosphorous)
Polychlorinated Biphenyls (PCBs - Method 1668A)
Gross Alpha
Tetrahydrofuran
Benzo(a)pyrene
Benzo(b)fluoranthene (3, 4 Benzofluoranthene)
Benzo(k)fluoranthene
Chrysene
lndeno(1 ,2,3-cd)pyrene
Dieldrin
Pentachlorophenol
Benzidine
Benzo(a)anthracene
Dibenzofuran
Dibenzo(a, h)anthracene
Chromium VI (Hexavalent)
Copper- Dissolved
Lead- Dissolved
Bis(2-ethylhexyl)phthalate
Conductivity
Temperature
Hardness (as CaCO3) – added to allow dissolved metal results to be compared to the applicable water quality standards

DO, pH, conductivity, and temperature are required by the WSB MS4 Permit to be analyzed in the field during sample collection, which was conducted by DBS&A, within fifteen (15) minutes of sample collection. All E. coli samples were submitted to the laboratory within six (6) hours of collection in order to meet the specified hold time.

Sampling Locations:

The sampling locations are shown in Figure 1, page 2.

Rio Grande North – Instream sampling within the Rio Grande was performed upstream of the Angostura Diversion Dam at the north end of the watershed. The location is upstream of all inputs from the Urban Area (UA) to the river and provides the background water conditions.

Rio Grande South – Instream sampling within the Rio Grande was performed at the Isleta Bridge at the south end of the watershed. The location is downstream of all inputs from the UA to the river and provides the downstream water conditions.

These locations have been accepted by EPA and New Mexico Environment Department (NMED) to meet the WSB MS4 Permit requirements in Part III.A. These North and South instream sample locations capture all inputs to the Rio Grande within the UA.

Sample Collection:

As mentioned previously, sample collection for the CMC is being conducted by DBS&A through a separate on-call contract. Since BHI was not involved, this task and memo do not address the details of the methodologies regarding sampling, determining if an event was a qualifying storm event, or determining the timing of the hydrograph at the Rio Grande South location.

DBS&A provided BHI with their field notes and field sample data (temperature, DO, specific conductivity, and pH) for the FY 2017 wet season sampling. AMAFCA provided BHI the completed laboratory analysis reports from Hall Environmental Analysis Laboratory (HEAL) for this monitoring season.

Quality Assurance Project Plan (QAPP):

AMAFCA provided BHI with the Draft Quality Assurance Project Plan (QAPP) for the CMC dated June 14, 2016. DBS&A followed this QAPP during sample collection. BHI used this QAPP and the included standard operating procedures (SOPs) for the data verification and validation.

Monitoring Activity & Lab Analysis Summary

The list below provides a chronological summary of the CMC comprehensive monitoring program activities completed by DBS&A for the FY 2017 wet season from July 2016 through October 2016. Three (3) qualifying storm events were sampled and analyzed during the FY 2017 wet season. In addition, there were four (4) other precipitation events during this wet season that did not evolve into qualifying storm events; however, an E. coli sample was still collected and field data was measured for the Rio Grande North location.

- **August 2 – Only E. coli for Rio Grande North.** A sample was collected at the Rio Grande North location and sent to the laboratory for an E. coli only test. Based on review of the storm event by the CMC, it was determined this was not a qualifying storm event; therefore, full parameter testing did not occur for the sample collected at the Rio Grande North location.
- **August 3 – Only E. coli for Rio Grande North.** A sample was collected at the Rio Grande North location and sent to the laboratory for an E. coli only test. Based on review

of the storm event by the CMC, it was determined this was not a qualifying storm event; therefore, full parameter testing did not occur for the sample collected at the Rio Grande North location.

- **August 10-11 – Qualifying Storm Event – Full Analysis of Samples**. A sample was collected at the Rio Grande North location beginning at noon on August 10 and sent to the laboratory for an E. coli only test. The CMC determined that the storm event beginning August 10 was a qualifying storm event. A Rio Grande South sample was collected beginning at 10:30 a.m. on August 11; the samples from the North (from August 10 collection) and South locations were taken to the laboratory for full parameter testing.

  Due to miscommunication with the laboratory, analysis for PCBs for the August 10-11 samples were conducted using EPA Method 608. The results from this qualifying event do not have EPA Method 1668 results for PCBs. A footnote in Appendix F of the WSB MS4 Permit states that "EPA Method 1668 should be utilized when PCB water column monitoring is conducted to determine compliance with Permit requirements."
- **August 31 – Only E. coli for Rio Grande North.** A sample was collected at the Rio Grande North location and sent to the laboratory for an E. coli only test. Based on review of the storm event by the CMC, it was determined this was not a qualifying storm event; therefore, full parameter testing did not occur for the sample collected at the Rio Grande North location.
- **September 7 – Only E. coli for Rio Grande North.** A sample was collected at the Rio Grande North location and sent to the laboratory for an E. coli only test. Based on review of the storm event by the CMC, it was determined this was not a qualifying storm event; therefore, full parameter testing did not occur for the sample collected at the Rio Grande North location
- **September 12-13 – Qualifying Storm Event – Full Analysis of Samples**. A sample was collected at the Rio Grande North location beginning at 11:00 a.m. on September 12 and sent to the laboratory for an E. coli only test. The CMC determined that the storm event beginning September 12 was a qualifying storm event. A Rio Grande South sample was collected beginning at 7:15 a.m. on September 13; the samples from the North (from September 12 collection) and South locations were taken to the laboratory for full parameter testing. Analysis for PCBs for the September 12-13 samples were conducted using both EPA Method 608 and Method 1668.
- **September 21-22 – Qualifying Storm Event – Full Analysis of Samples**. A sample was collected at the Rio Grande North location beginning at 12:15 p.m. on September 21 and sent to the laboratory for an E. coli only test. The CMC determined that the storm event beginning September 21 was a qualifying storm event. A Rio Grande South sample was collected beginning at 11:00 a.m. on September 22; the samples from the North (from September 21 collection) and South locations were taken to the laboratory for full parameter testing. Analysis for PCBs for the September 21-22 samples were conducted using both EPA Method 608 and Method 1668.

Stormwater Quality Database for CMC

As stated previously, there were three (3) qualifying storm events during the FY 2017 wet season, wet weather monitoring which occurred August 10-11, September 12-13, and September 21-22. DBS&A's field notes containing DO, pH, conductivity, and temperature measurements, as well as comments for the sampling done in August and September have been received, and field results

have been added to the database. Additionally, the HEAL reports for the corresponding time period have been received, added to the database, and are provided with this memo (Attachment 1). The laboratory reports attached to this memo have BHI added comments including the field parameter measurements and other relevant notes related to the laboratory report.

The HEAL analyses for these three (3) qualifying storm events contain the full parameter list for both the Rio Grande North and Rio Grande South sampling locations. There were several other precipitation events that did not evolve into qualifying storm events; however, an E. coli sample was still collected and field data was measured for the Rio Grande North location. These HEAL lab reports are also provided with this memo (Attachment 1). Despite not being qualifying storm events, the field and E. coli data collected were added to the database as they provide additional background data for the CMC program.

Database Creation and Data Entry:

An Excel database of the FY 2017 wet season, wet weather monitoring data was created for this Task. The database contains sample locations (Rio Grande North and Rio Grande South), sample date, analyses conducted, methods used, applicable surface water quality standards (WQS), WSB MS4 Permit required Minimum Quantification Levels (MQL), and analysis results. Applicable surface WQS found in New Mexico Administrative Code (NMAC) 20.6.4 as well as the Pueblo of Isleta and Pueblo of Sandia WQS are entered in the Excel database for comparison purposes with testing results. There is an indicator in the database to show if the monitoring results exceed the applicable surface WQS. An exceedance is not a violation of the WSB MS4 Permit, as the Permit does not have numeric discharge limitations. These ">WQ Standard" flags simply and quickly show the CMC members where the results of the lab data exceed the applicable WQS.

Upon receipt of the HEAL lab reports, water quality data was entered in to the database. All data entered in to the database is initially denoted with a "P" to indicate that it is provisional and has not been through the verification and validation process yet. Full parameter analyses of qualifying storm events for both Rio Grande North and Rio Grande South locations were entered respectively into the database. In addition, the E. coli and field data only samples from the Rio Grande North location, obtained during non-qualifying storm events, were also entered into the database. The database also contains Rio Grande monitoring results from two prior storm events occurring on July 15, 2014, and September 22, 2015, which were obtained during previous BHI/DBS&A tasks with AMAFCA. These were included in the database for comparison purposes, and they may assist the CMC with future analyses.

Data Verification and Validation:

The HEAL laboratory analysis reports were provided to BHI by AMAFCA. The lab reports also contain the Chain of Custody for the submitted samples. Field data was requested by and provided to BHI by DBS&A. Data verification and validation (V&V) was conducted by BHI on all field notes, lab reports, and Chain of Custody documents in accordance with the CMC Water Quality Standard Operating Procedure (SOP) #2, which is part of the existing CMC QAPP, Draft June 14, 2016. These procedures are based on EPA Guidance for Environmental Data Verification and Validation (U.S. EPA, 2008).

As stated in the QAPP, the V&V process was completed by a different person than the one who entered the data into the database. The V & V process included use of the *Data Verification and Validation Worksheet* (provided in the QAPP). For this task, field data was verified first, confirming that all field notes were complete. BHI handled field parameter questions directly with DBS&A. Chemical data verification began as soon as the lab reports were received, checking that all parameters were tested and looking for any obvious exceedances of WQS. Other steps listed on the *Data Verification and Validation Worksheet* were completed after all data from the laboratory was received and entered into the database. Sample blank results were reviewed to identify potential contamination during field processing or transport. Replica/duplicate samples were evaluated based on relative percent difference (as described in more detail in the QAPP) to determine the variability of the samples.

As the CMC members are aware, the August 10-11, 2016, sample was tested for PCBs using EPA Method 608 only. The other two qualifying storm event samples used both EPA Method 608 and Method 1668 for PCB testing.

In addition, in January 2017 the CMC members were made aware that the E. coli units reported in colony forming units (CFU)/100 milliliters (mL) in the HEAL reports should have been reported as most probable number (MPN) per 100 mL. The laboratory method used by HEAL is an EPA approved method that produces results in MPN/100 mL. After review and discussion with NMED, the units MPN/100 mL and CFU/100 mL are considered to be interchangeable for the purposes of this stormwater quality monitoring reporting. The New Mexico and Pueblo WQS for E. coli are currently in units of CFU/100 mL. Documentation related to the E. coli units is provided in Attachment 3 of this memo.

There were not any CMC FY 2017 wet season data that did not meet the appropriate QA/QC requirements. If there were any data that did not meet the appropriate QA/QC requirements, it would have been assigned an appropriate laboratory qualifier or validation codes. A summary of validation codes is provided in the QAPP.

Once the V&V process was completed, the worksheets were signed. Copies of the V&V worksheets are provided with this memo (Attachment 2). In the database, data that was checked during the V&V process was then changed from being denoted with a “P” for provisional to a “V” for verified, and laboratory qualifiers were added, as needed.

CMC FY 2017 Wet Season Assessment and Evaluation of Monitoring Results

The EPA approved WSB MS4 CMC Monitoring Plan, May 5, 2016, has thirty-four (34) parameters to monitor at the Rio Grande North and Rio Grande South monitoring locations. Of these thirty-four (34) parameters, over half of the parameters—eighteen (18) parameters—were not detected in any of the FY 2017 wet season samples at either the Rio Grande North or South locations. Refer to Table 1 for a list of the parameters that were not detected.

Table 1: Parameters Not Detected
CMC FY 2017 Wet Season Monitoring

Parameters Not Detected	
Oil and Grease (N-Hexane Extractable Material)	Dieldren
Total Kjedahl Nitrogen (TKN)	Pentachlorophenol
Ammonia (mg/L as N)	Benzidine
Tetrahydrofuran	Benzo(a)anthracene
Benzo(a)pyrene	Dibenzofuran
Benzo(b)fluoranthene (3, 4 Benzofluoranthene)	Dibenzo(a,h)anthracene
Benzo(k)fluoranthene	Chromium VI (Hexavalent)
Chrysene	Dissolved Lead
Indeno(1,2,3-cd)Pyrene	Bis (2-ethyhexyl) Phthalate

E. coli:

For the remaining sixteen (16) parameters on the CMC monitoring parameter list, only one parameter (E. coli) had exceedances of the applicable surface WQS found in New Mexico Administrative Code (NMAC) 20.6.4 and the Pueblo of Isleta and Pueblo of Sandia WQS during the FY 2017 wet season. At the Rio Grande North location (upstream of the Albuquerque UA, at the Angostura Diversion Dam), seven (7) samples were collected and tested for E. coli, and two (2) of the samples had results that exceeded the primary contact-single sample Pueblo of Isleta and Pueblo of Sandia WQS (88 CFU/100 mL). At the Rio Grande South location (downstream of the MS4 UA), three (3) samples were collected and tested for E. coli, and all of these samples had results that exceeded the primary contact-single sample NMAC WQS (410 CFU/100 ml) as well as the Pueblo of Isleta and Pueblo of Sandia WQS (88 CFU/100 mL). As a reminder, the E. coli units of MPN/100 mL and CFU/100 mL are considered to be interchangeable. The graphs presented in this section use units of CFU/100 mL to be consistent with the WQSs units. Refer to Figure 2 for a graphical representation of Wet Season E. coli results.

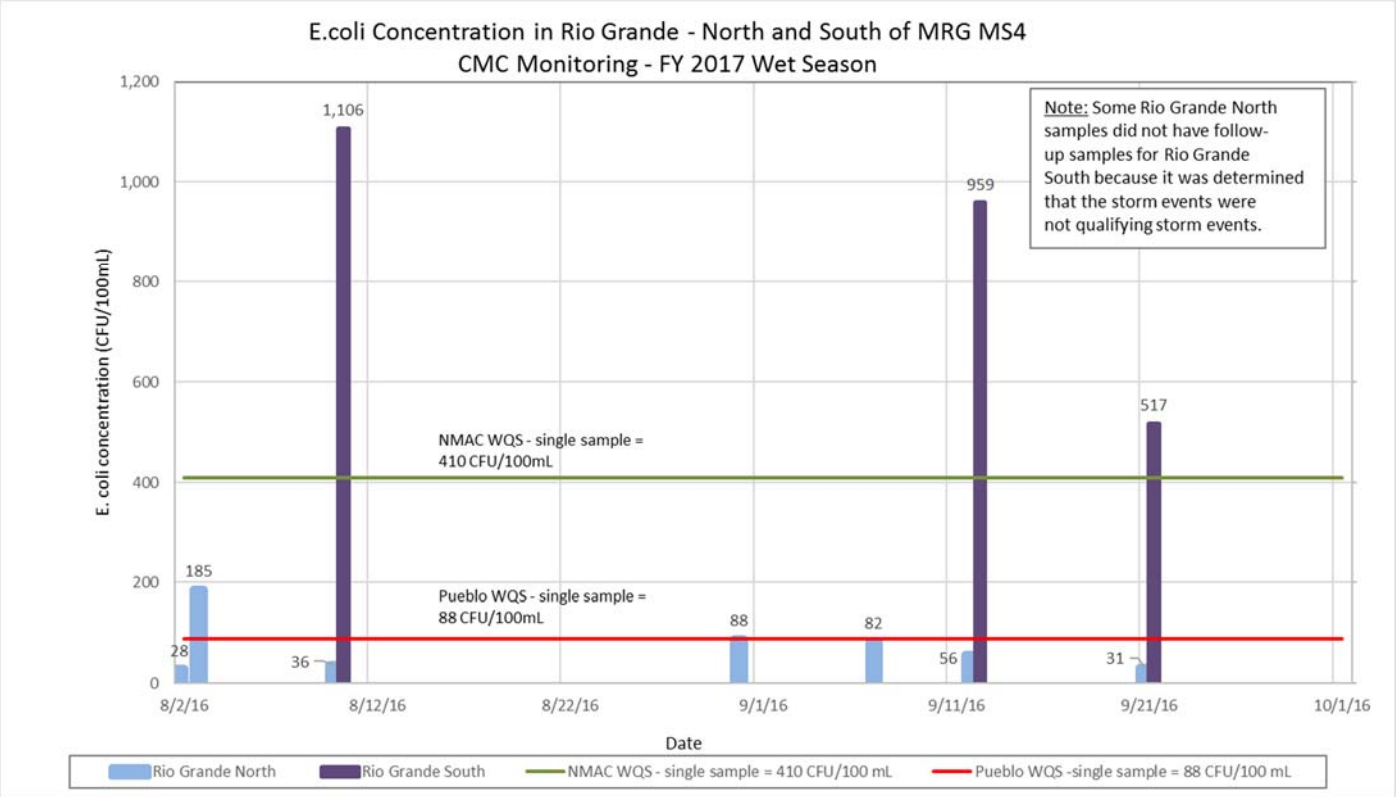


Figure 2: E. coli Results
CMC Monitoring – FY 2017 Wet Season

No E. coli samples in the Rio Grande under this monitoring program were obtained in July 2016 or October 2016. In August 2016, multiple samples were obtained for the Rio Grande North location and one (1) sample for the Rio Grande South location. In September 2016, multiple samples were obtained for the Rio Grande North and South locations. A geometric mean of the collected data was calculated for each month (August and September 2016), and these were compared to the E. coli monthly geometric mean WQS (NMAC monthly geometric mean = 126 CFU/100 mL and Pueblo monthly geometric mean = 47 CFU/100 mL). Refer to Figures 3 and 4 for the geometric mean results and comparison to applicable WQS.

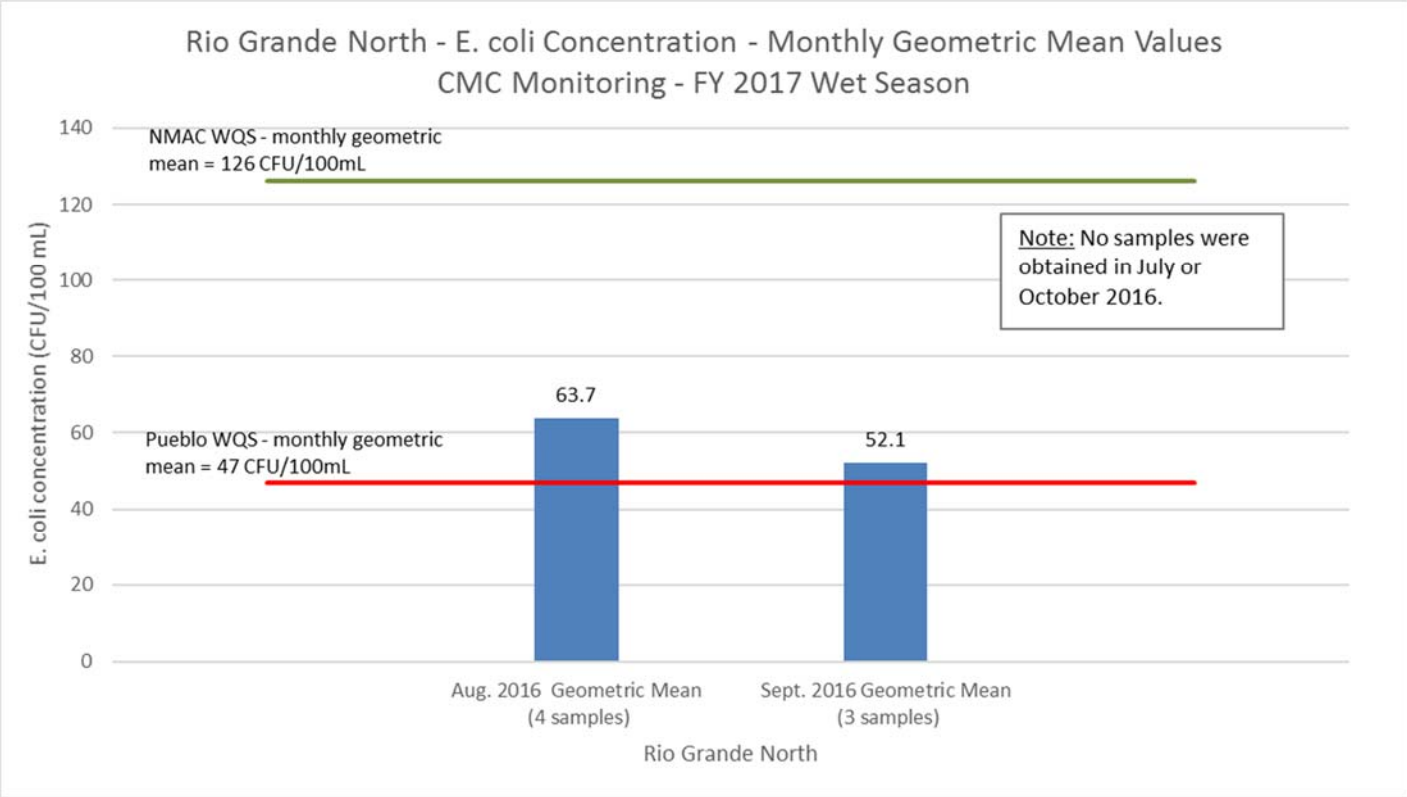


Figure 3: E. coli Geometric Mean Results for Rio Grande North CMC Monitoring – FY 2017 Wet Season

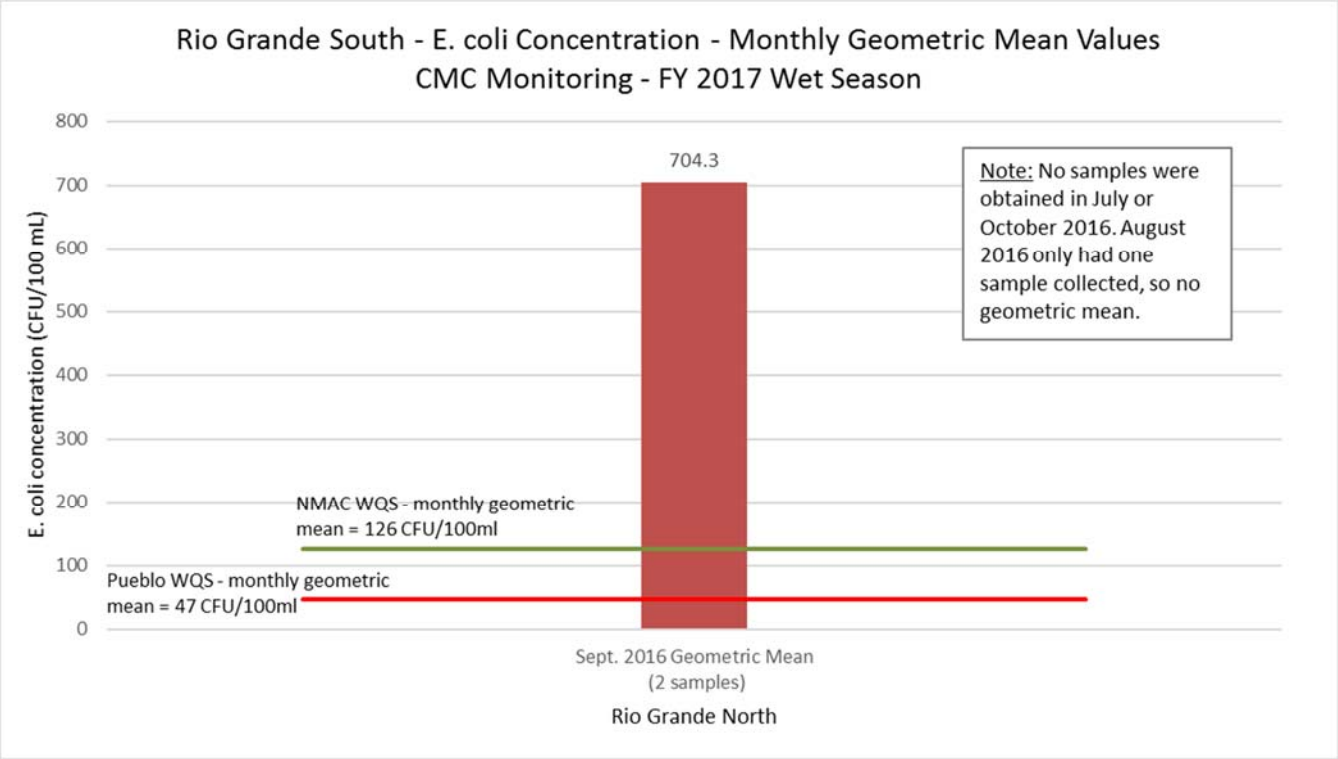


Figure 4: E. coli Geometric Mean Results for Rio Grande South CMC Monitoring – FY 2017 Wet Season

Dissolved Oxygen, PCB's and Temperature:

Three of the water quality parameters are specifically worth mentioning in this memo because they are listed in the WSB MS4 Permit, Part I.C.1 – Special Conditions: dissolved oxygen, PCBs, and temperature.

Dissolved oxygen is a water quality concern in the Rio Grande if it is below 5 mg/L. None of the samples taken from the Rio Grande during the FY 2017 wet season monitoring had dissolved oxygen values below 5 mg/L. This provides the MS4s with specific monitoring data showing that stormwater did not cause or contribute to exceedances of applicable dissolved oxygen water quality standards in the Rio Grande during the FY 2017 wet season. Refer to Figure 5 for dissolved oxygen results and comparison to applicable WQS.

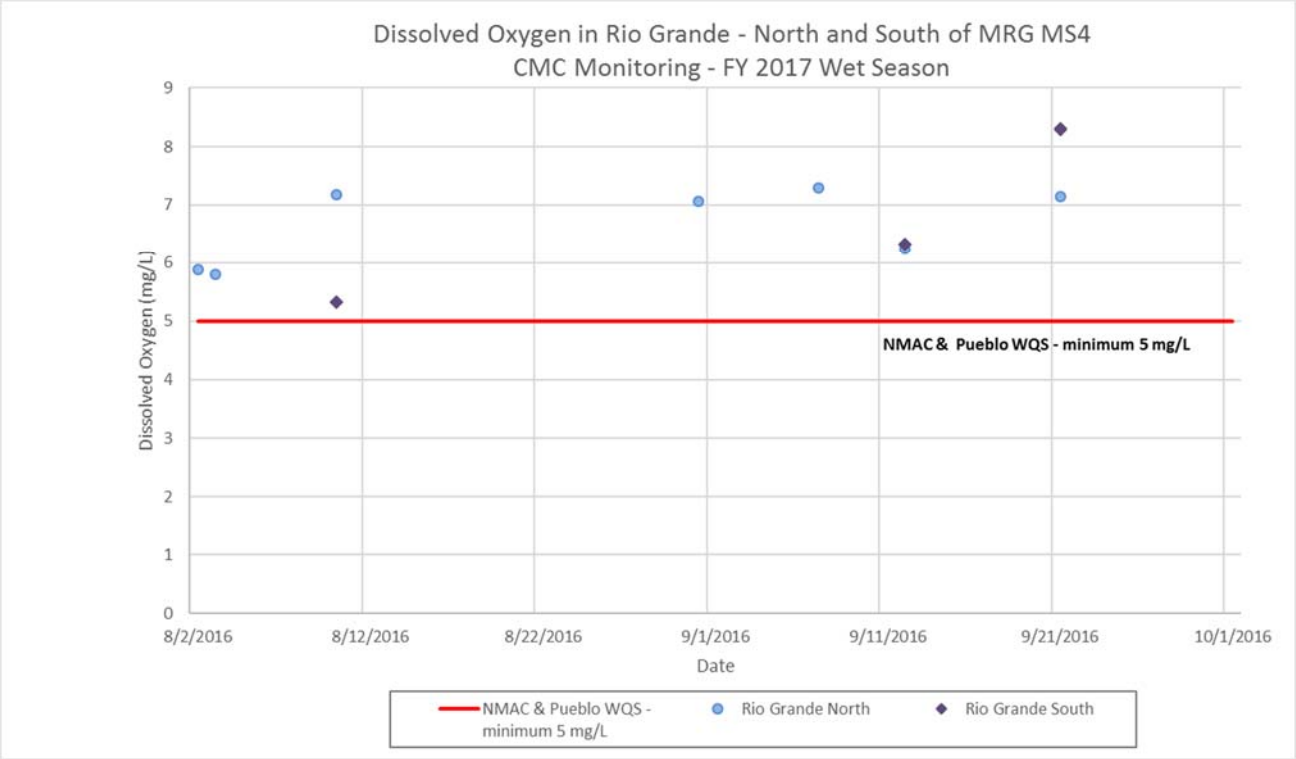


Figure 5: Dissolved Oxygen Results for Rio Grande
CMC Monitoring – FY 2017 Wet Season

For the CMC FY 2017 wet season samples, there were no exceedances of WQS for PCBs. This data can be used by the CMC members to demonstrate that stormwater discharges are not contributing to exceedances of applicable PCB water quality standards in the Rio Grande.

Temperature is listed in the WSB MS4 Permit as a special condition (only applicable to the City of Albuquerque and AMAFCA). Past data submitted to EPA and NMED has proven that stormwater discharges into the Rio Grande are not raising the Rio Grande temperature above the water quality standards. The data collected during this FY 2017 wet season monitoring supports this conclusion. All of the temperature field readings taken in the Rio Grande during the CMC FY 2017 wet season were below 32.2°C (90 °F) – the WQS for the State of New Mexico and for the Isleta and Sandia Pueblos. Refer to Figure 6 for temperature results and comparison to applicable WQS.

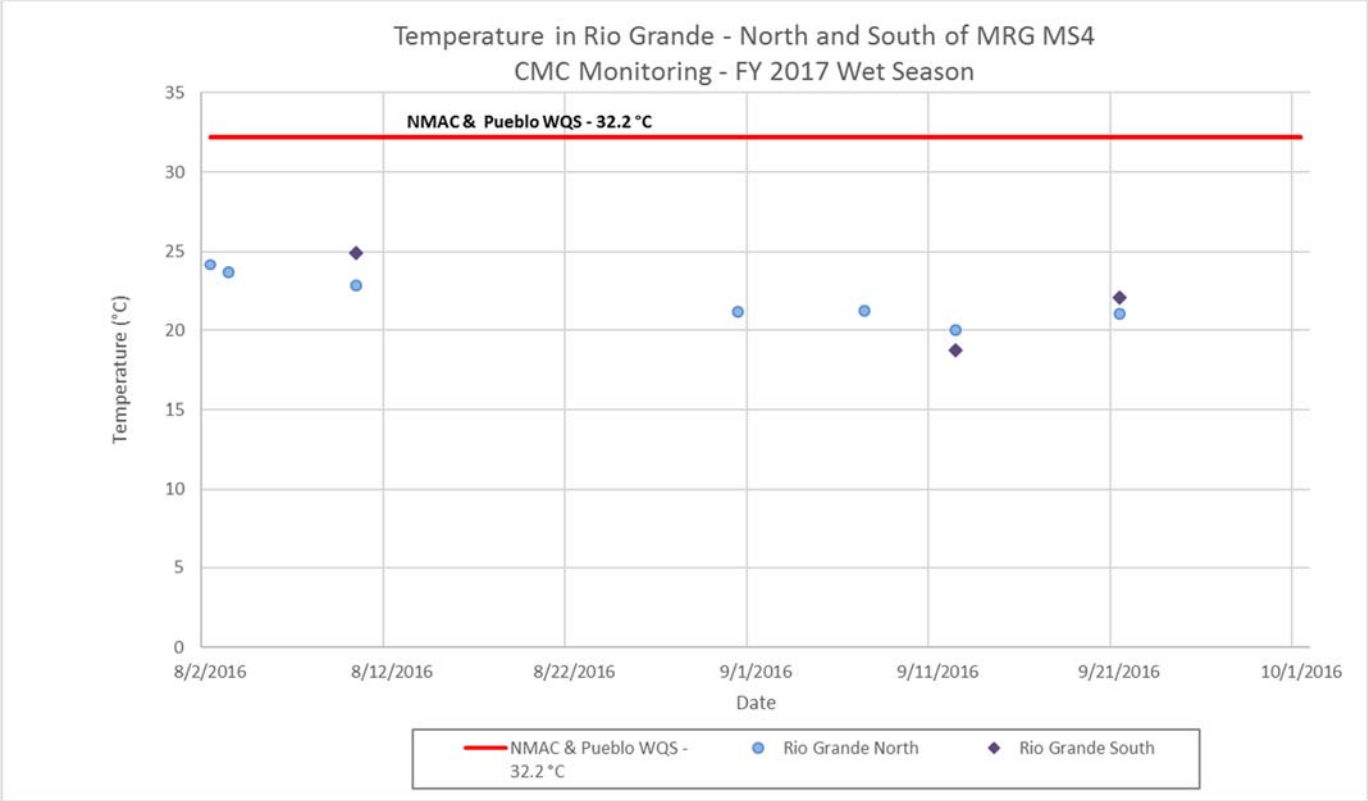


Figure 6: Temperature Monitoring Results in Rio Grande
CMC Monitoring – FY 2017 Wet Season

CMC FY 2017 Wet Season E. coli Loading Calculations and Waste Load Allocation (WLA)

Related to assessing the stormwater results, BHI has calculated the E. coli daily loading and compared it to the aggregate Total Maximum Daily Load (TMDL) Waste Load Allocation (WLA) for the CMC group. A TMDL is the maximum amount of a pollutant (E. coli in this case) that a water body (Rio Grande) can assimilate on a daily basis without violating applicable surface WQS. The total TMDL for a stream segment consists of the multiple WLA for point sources, non-point sources, and natural sources, plus a margin of safety. The CMC MS4 allotted WLA was determined in the US EPA Approved, Total Maximum Daily Load for the Middle Rio Grande Watershed, June 30, 2010, and subsequent communications with NMED. The WLA varies by flow condition in the Rio Grande and by stream segment.

E. coli loading calculations and comparison to the WLA follows the WSB MS4 Permit requirements in "Discharges to Water Quality Impaired Water Bodies with an Approved TMDL," Part I.C.2.b.(i).(c).B, Appendix B-Total Maximum Daily Loads (TMDLs) Tables of the WSB MS4 Permit, and the NMED guidance provided to the CMC. AMAFCA also provided guidance to BHI related to the E. coli loading calculation procedure and provided an example calculation from July 2016.

Attached to this memo is the WLA Calculation spreadsheet which steps through the E. coli daily loading calculations and assumptions comparing the calculated E. coli loading to the CMC aggregate WLA defined by NMED. BHI provided the draft calculations spreadsheet for review to AMAFCA, who shared this with other CMC members, in both December 2016 and February 2017. The CMC members also met to discuss the E. coli loading calculations with NMED on February 1, 2017. Meeting minutes are included as Attachment 4 to this memo. BHI followed up with NMED on February 16, 2017, regarding specific calculation details. The current spreadsheet includes the improvements discussed at the NMED meeting and follow-up phone call. An email summarizing the February 16, 2017, conference call was sent to NMED and EPA on March 2, 2017, and a copy of this is included in Attachment 4 to this memo.

There are two (2) stream segments defined in the WSB MS4 Permit (Appendix B): Isleta Pueblo Boundary to Alameda Street Bridge (Stream Segment 2105_50) and Non-Pueblo Alameda Bridge to Angostura Diversion (Stream Segment 2105.1_00). These stream segments differ from NMED's current stream segments defined in "2016-2018 State of New Mexico Clean Water Act Section 303(d)/Section 305(b) Integrated Report," September 23, 2016. NMED currently has four (4) stream segments instead of the two (2) WSB MS4 stream segments; of the four (4) segments, only one segment has an impairment for E. coli (2105_50 Isleta Pueblo Boundary to Tijeras Arroyo). These various stream segment designations are shown in Figure 7, page 15.

NMED provided clarification at the February 1, 2017, meeting regarding the various stream segment designations. The NMED 303(d)/305(b) 2016-2018 Integrated Report tables show the most recent assessment results, and currently there is only one segment of the Rio Grande (Isleta to Tijeras) that was found to be impaired for E. coli. However, the TMDL for the other stream segments do not go away even if they are no longer impaired – the TMDL remains in place as a protective measure. TMDLs remain in effect after impairments are removed as protective measures.

The E. coli daily loading associated with the CMC group and comparison to the NMED WLA was completed for the three (3) qualifying event wet season storm events – August 10-11, 2016, September 12-13, 2016, and September 21-22, 2016. Refer to Table 2 for a summary of the WLA comparison results. A spreadsheet is attached to this memo that provides the detailed calculations.

TMDL and MS4 Stream Segment
Alameda Bridge to Angostura Diversion
(2105.1_00)

NMED 303(d)/305(b) Stream Segment
US 550 to Angostura Diversion
(2105.1_02)

NMED 303(d)/305(b) Stream Segment
Alameda Bridge to US 550
(2105.1_00)

NMED 303(d)/305(b) Stream Segment
Tijeras Arroyo to Alameda Bridge
(2105_10)

Rio Grande Segment
with TMDL and Impairment
for E. Coli

NMED 303(d)/305(b) Stream Segment
Isleta Pueblo Boundary to Tijeras Arroyo
(2105_50)

TMDL and MS4 Stream Segment
Isleta Pueblo Boundary
to Alameda Bridge
(2105_50)

MCMAHON BLVD
ROY AV
TRAMWAY RD
ALAMEDA BLVD
PASEO DEL NORTE
OSUNA RD
MONTANO RD
CANDELARIA RD
MENAUL BLVD
LOMAS BLVD
LEAD AV
ZUNI RD
CENTRAL AV
BRIDGE BLVD
GIBSON BLVD
DENNIS CHAVEZ BLVD
UNSER BLVD
98TH ST
2ND ST
ISLETA BLVD
BROADWAY BLVD
COORS BLVD
WYOMING BLVD
EUBANK BLVD
JUAN TABO BLVD
TRAMWAY BLVD
NM 47
NM 147
Tijeras Arroyo
40
25
550

AMAFCA

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www.bhinc.com 800.877.5332

Legend

- TMDL/MS4 Stream Segments
- NMED Stream Segments
- North Diversion Channel
- Rio Grande Segment w/ TMDL and Impairment for E. Coli
- Interstate Highway
- U.S. Highway
- State Highway

N W E S

0 0.5 1 2
Miles

CMC Monitoring

Figure 7
Rio Grande
NMED and MS4 Permit
Stream Segments

P:\20170386\WR\Reports\Preliminary & Draft\Figures\MXDs\Figure7-TMDLStreamSegments.mxd
Author: gmaynard

February 2017

Table 2: Summary of CMC Daily E. Coli Loading Compared to WLA for the CMC

Date / Stream Segment	Daily Mean Flow (cfs)	Flow Conditions (cfs) *range defined by NMED*	CMC Daily E. coli Load-ing (CFU/day)	NMED WLA for CMC for Stream Segment and Flow Conditions	Loading Compared to WLA Potential Exceedance or Acceptable
August 10-11, 2016 – Rio Grande North E. coli concentration = 35.9 CFU/100 mL and Rio Grande South E. coli Concentration = 1,106 CFU/100 mL					
Alameda to Angostura	639	Dry	8.32E+11	3.24E+10	Potential Exceedance
Isleta to Alameda	703	Mid	2.34E+11	4.22E+10	Potential Exceedance
September 12-13, 2016 – Rio Grande North E. coli concentration = 55.6 CFU/100 mL and Rio Grande South E. coli Concentration = 959 CFU/100 mL					
Alameda to Angostura	435	Dry	4.67E+11	3.24E+10	Potential Exceedance
Isleta to Alameda	467	Dry	1.02E+11	1.57E+10	Potential Exceedance
September 21-22, 2016 – Rio Grande North E. coli concentration = 31.1 CFU/100 mL and Rio Grande South E. coli Concentration = 517 CFU/100 mL					
Alameda to Angostura	350	Low	1.29E+11	1.68E+10	Potential Exceedance
Isleta to Alameda	251	Low	1.22E+10	3.42E+09	Potential Exceedance

As Table 2 illustrates, the E. coli loading for the three wet season events all potentially exceeded the CMC allocated WLA. The WSB MS4 Permit implies that the WLA is a measurable goal for the MS4s related to E. coli. Based on extensive review of the US EPA Approved, Total Maximum Daily Load (TMDL) for the Middle Rio Grande Watershed, June 30, 2010, this seems to be an unattainable goal for MS4s. The 2010 TMDL Report states on page 40, "It is important to remember that the TMDL is a planning tool to be used to achieve water quality standards…Meeting the calculated TMDL may be a difficult objective." The TMDL/WLA was calculated by NMED to meet the Pueblo (Sandia and Isleta) geometric mean maximum of 47 CFU/100 mL which was done to be "protective of downstream waters" and "to provide an implicit margin of safety (MOS)." A single grab sample E. coli result meeting this very low geometric mean WQS will be very difficult for the MS4s to obtain.

The CMC members discussed the difficulty of using the WLA as a measurable goal with NMED on February 1, 2017. NMED explained that exceeding the WLA does not trigger enforcement. However, NMED strongly encouraged the MS4s to document what they are doing once they realize the WLA is potentially exceeded. The February 1, 2017, meeting and the February 16, 2017, CMC discussion with NMED demonstrate that CMC members are working toward understanding the WLA. In addition, the CMC members and NMED discussed potential

refinements to the sampling plan, demonstrating that the CMC is investigating the potential exceedances and improvements to monitor E. coli in the Rio Grande.

Data Entry for Discharge Monitoring Reports

As required in the WSB MS4 Permit, verified stormwater quality data must be submitted annually to the EPA using electronic Discharge Monitoring Report (DMR) forms. Data from the DMRs are uploaded to a comprehensive nation-wide database that contains discharge data for facilities and other point sources that discharge directly to receiving streams. Currently, the CMC members are working with the EPA regarding access and use of the NetDMR system. For this Task, BHI has not completed any data entry related to the EPA DMRs for the FY 2017 wet season.

Conclusions and Planning

During the FY 2017 wet season (July 1 to October 31, 2016), three (3) qualifying stormwater samples were obtained by the CMC. Lab results have been received for all of these samples. This data has been entered into the project Excel database. The lab data entered is marked in the spreadsheet as "V" (verified), and data V&V has been completed (refer to Attachment 2).

To summarize, monitoring results and E. coli loading calculations for the FY 2017 wet season show that:

- Three (3) of the seven (7) required samples in the WSB MS4 Permit Wet Weather Monitoring section were obtained. Seven (7) samples are required during the 5-year Permit term, so this is significant progress for the CMC. The CMC also met the required Permit minimum of three (3) events during the wet season.
- Over half of the parameters tested (18 of the 34) were not detected in any of the Rio Grande samples.
- Only E. coli was in exceedance of applicable New Mexico and Pueblos of Sandia and Isleta WQS.
    - All dissolved oxygen results were greater than 5 mg/L (minimum WQS).
    - All temperature results were less than 32.2 °C (maximum WQS).
    - There were no PCB test results exceeding the applicable WQS.
- The calculated E. coli loading for the three qualifying storm events show that the WLA for the CMC members is potentially exceeded for all three events.
    - Sources for the E. coli loading measured in the river are not solely attributable to the CMC MS4 members; the E. coli loading calculations serve to provide a reasonable estimate of the CMC contribution to the measured E. coli loading.
    - This sampling and calculation approach is only an estimate of the CMC contribution to the E. coli loading which is why the term "potential exceedance" is used.
    - The in-stream data does not provide the concentration of E. coli contributed by only the CMC MS4s, or any of the other potential sources. By using this percentage calculation approach, if other contributors are in exceedance of the WLA, then the CMC will likely also be in exceedance since this approach relies on a percentage of a total.

- A meeting was held with CMC members and NMED on February 1, 2017, to discuss the E. coli loading and WLA calculations.
- A follow-up conference call occurred with NMED on February 16, 2017, discussing details related to the E. coli loading calculations.

The dry season monitoring results and E. coli loading calculations will be summarized by BHI for the CMC in a memo due July 20, 2017.

SG/le

Attachments:

Attachment 1 – Hall Environmental Analysis Laboratory Reports with BHI Notes for FY 2017 Wet Season

Attachment 2 – FY 2017 Wet Season Completed Data Verification and Validation Forms

Attachment 3 – Documentation Related to E. coli Units MPN/100 mL and CFU/100 mL

Attachment 4 – Documentation of NMED Coordination Regarding E. coli Loading Calculations and CMC MS4 Waste Load Allocation

Spreadsheets Included Separately:

E. coli Loading and Comparison to Waste Load Allocation (WLA) Excel Spreadsheet

Excel CMC Spreadsheet with FY 2017 Wet Season Stormwater Quality Monitoring Results

ATTACHMENT 1

HALL ENVIRONMENTAL ANALYSIS LABORATORY REPORTS WITH BHI NOTES FOR FY 2017 WET SEASON

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

August 09, 2016

Patrick Chavez
AMAFCA
2600 Prospect Ave NE
Albuquerque, NM 87107
TEL: (505) 884-2215
FAX

RE: CMC OrderNo.: 1608105

Dear Patrick Chavez:

Hall Environmental Analysis Laboratory received 1 sample(s) on 8/2/2016 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

Field Data - Provided by DBS&A (field notebook & e-mails):
8/2/16 - Rio Grande North
DO = 5.89 mg/L, pH = 8.05, Conductivity = 256 umhos/cm, and Temperature = 24.15 °C

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report
Lab Order **1608105**
Date Reported: **8/9/2016**

CLIENT: AMAFCA
Client Sample ID: Rio Grande North
Project: CMC
Collection Date: 8/2/2016 1:10:00 PM
Lab ID: 1608105-001 **Matrix:** AQUEOUS **Received Date:** 8/2/2016 2:20:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
SM 9223B FECAL INDICATOR: E. COLI MPN						Analyst: **tnc**	
E. Coli	28.1	1.000		CFU/100ml	1	8/3/2016 5:16:00 PM	26757

Equivalent to MPN/100 mL

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

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Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: AMAFCA Work Order Number: 1608105 RcptNo: 1

Received by/date: 08/02/16

Logged By: Lindsay Mangin 8/2/2016 2:20:00 PM

Completed By: Lindsay Mangin 8/2/2016 2:21:10 PM

Reviewed By: 08/02/16 @ 1530

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☑
2. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
3. How was the sample delivered? Client

Log In

4. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C Yes ☐ No ☑ NA ☐
   Samples were collected the same day and chilled.
6. Sample(s) in proper container(s)? Yes ☑ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
9. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
10. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☑
11. Were any sample containers received broken? Yes ☐ No ☑
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes ☑ No ☐
13. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
14. Is it clear what analyses were requested? Yes ☑ No ☐
15. Were all holding times able to be met? (If no, notify customer for authorization.) Yes ☑ No ☐

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)
Adjusted? _____
Checked by: _____

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date _____
By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding: _____
Client Instructions: _____

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	24.2	Good	Not Present			

Chain-of-Custody Record

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Client: AMAFCA

Mailing Address:

Phone #:

Email or Fax#: pchavez@amafca.org

QA/QC Package: ☒ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ NELAP ☐ Other

EDD (Type)

Turn-Around Time: ☒ Standard ☐ Rush

Project Name: CMC

Project #:

Project Manager: Patrick Chavez

Sampler: C. Johannesen

On Ice: ☐ Yes ☐ No

Sample Temperature: 24.2

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.
			pct			1608105
8-2-16	1310	AQ	Rio Grande - North	1-poly	HNO3	-001

Analysis Request

BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions ($F, Cl, NO_3, NO_2, PO_4, SO_4$)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	E. Coli, Enterolert				Air Bubbles (Y or N)
											X				

Date	Time	Relinquished by	Received by	Date	Time
8-2-16	1420			8/2/16	1420

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
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August 09, 2016

Patrick Chavez
AMAFCA
2600 Prospect Ave NE
Albuquerque, NM 87107
TEL: (505) 884-2215
FAX

RE: AMAFCA-CMC OrderNo.: 1608171

Dear Patrick Chavez:

Hall Environmental Analysis Laboratory received 1 sample(s) on 8/3/2016 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Field Data - Provided by DBS&A (field notebook & e-mails):
8/3/16 - Rio Grande North
DO = 5.8 mg/L, pH = 8.6, Conductivity = 270 umhos/cm, and Temperature = 23.67 °C

Hall Environmental Analysis Laboratory, Inc.

Analytical Report
Lab Order **1608171**
Date Reported: **8/9/2016**

CLIENT: AMAFCA
Client Sample ID: Rio Grande-North
Project: AMAFCA-CMC
Collection Date: 8/3/2016 12:15:00 PM
Lab ID: 1608171-001 **Matrix:** AQUEOUS **Received Date:** 8/3/2016 1:15:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
SM 9223B FECAL INDICATOR: E. COLI MPN						Analyst: **tnc**	
E. Coli	185	10.00		CFU/100ml	10	8/4/2016 4:04:00 PM	26777

Equivalent to MPN/100 mL

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **AMAFCA** Work Order Number: **1608171** RcptNo: 1

Received by/date: AT 08/03/16

Logged By: **Lindsay Mangin** **8/3/2016 1:15:00 PM**

Completed By: **Lindsay Mangin** **8/3/2016 1:19:08 PM**

Reviewed By: JO 8/03/16 @ 1330

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	Client		

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☐	No ☑	NA ☐
Samples were collected the same day and chilled.			
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
9. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
11. Were any sample containers received broken?	Yes ☐	No ☑	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	# of preserved bottles checked for pH: (<2 or >12 unless noted)
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	Adjusted?
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	Checked by:

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	14.3	Good	Not Present			

Chain-of-Custody Record

Client: AMAFCA

Mailing Address:

Phone #:

email or Fax#: pchavez@amafca.org

QA/QC Package:

☒ Standard ☐ Level 4 (Full Validation)

Accreditation

☐ NELAP ☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:

☒ Standard ☐ Rush _____

Project Name: AMAFCA - CMC

Project #:

Project Manager: Patrick Chavez

Sampler: Chad Johannesen

On Ice: ☐ Yes ☒ No

Sample Temperature: 14.3

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1608171	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions ($F, Cl, NO_3, NO_2, PO_4, SO_4$)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	E. Coli				Air Bubbles (Y or N)
3-16	1215	AQ	Rio Grande-North	1-poly	–	-001												X				

Date: 3-16 Time: 1315 Relinquished by: _____ Received by: _____ Date: 08/03/16 Time: 1315

Date: _____ Time: _____ Relinquished by: _____ Received by: _____ Date: _____ Time: _____

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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4901 Hawkins NE
Albuquerque, NM 87109
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Website: www.hallenvironmental.com

August 16, 2016

Patrick Chavez
AMAFCA
2600 Prospect Ave NE
Albuquerque, NM 87107
TEL: (505) 884-2215
FAX

RE: CMC OrderNo.: 1608623

Dear Patrick Chavez:

Hall Environmental Analysis Laboratory received 1 sample(s) on 8/10/2016 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

Field Data - Provided by DBS&A (field notebook & e-mails):
8/10/16 - Rio Grande North
DO = 7.18 mg/L, pH = 8.73, Conductivity = 280 umhos/cm, and Temperature = 22.8 °C

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report
Lab Order **1608623**
Date Reported: **8/16/2016**

CLIENT: AMAFCA
Client Sample ID: Rio Grande North
Project: CMC
Collection Date: 8/10/2016 12:50:00 PM
Lab ID: 1608623-001
Matrix: AQUEOUS
Received Date: 8/10/2016 1:50:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
SM 9223B FECAL INDICATOR: E. COLI MPN						Analyst: **tnc**	
E. Coli	35.9	1.000		CFU/100ml	1	8/11/2016 3:35:00 PM	26899

Equivalent to MPN/100 mL

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

ENVIRONMENTAL ANALYSIS LABORATORY

4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: AMAFCA Work Order Number: 1608623 RcptNo: 1

Received by/date: 08/10/16

Logged By: Ashley Gallegos 8/10/2016 1:50:00 PM

Completed By: Ashley Gallegos 8/10/2016 2:04:58 PM

Reviewed By: 08/10/16 @ 1[illegible]

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	Client		

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
9. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
11. Were any sample containers received broken?	Yes ☐	No ☑	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)

Adjusted? _____

Checked by: _____

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	18.4	Good	Not Present			

Chain-of-Custody Record

Client: Patrick Chavez
AMAFCA
Mailing Address:
Phone #: pchavez@amafca.org
Email or Fax#:
QA/QC Package:
☐ Standard ☐ Level 4 (Full Validation)
Accreditation
☐ NELAP ☐ Other
☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush
Project Name: CMC
Project #:
Project Manager: Patrick Chavez
Sampler: C Johannesen
On Ice: ☒ Yes ☐ No
Sample Temperature: 18.4

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1608623	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	E. Coli num				Air Bubbles (Y or N)
10-6	1250	AQ	Rio Grande - North	1-poly		-001												X				

Date: 10-6 Time: 1350 Relinquished by:
Date: Time: Relinquished by:

Received by: Date: 08/10/16 Time: 1350
Received by: Date: Time:

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

November 29, 2016

Patrick Chavez
AMAFCA
2600 Prospect Ave NE
Albuquerque, NM 87107
TEL: (505) 884-2215
FAX

RE: CMC OrderNo.: 1608678

Dear Patrick Chavez:

Hall Environmental Analysis Laboratory received 5 sample(s) on 8/11/2016 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Field Data - Provided by DBS&A (field notebook & e-mails):
8/10/16 - Rio Grande North
DO = 7.18 mg/L, pH = 8.73, Conductivity = 280 umhos/cm, and Temperature = 22.8 °C
8/11/16 - Rio Grande South
DO = 5.33 mg/L, pH = 8.7, Conductivity = 326 umhos/cm, and Temperature = 24.9 °C

Hall Environmental Analysis Laboratory, Inc.

Analytical Report
Lab Order **1608678**
Date Reported: **11/29/2016**

CLIENT: AMAFCA
Client Sample ID: Rio Grande-North
Project: CMC
Collection Date: 8/10/2016 12:50:00 PM
Lab ID: 1608678-001
Matrix: AQUEOUS
Received Date: 8/11/2016 1:00:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA 200.8: DISSOLVED METALS						Analyst: **JLF**	
Copper	0.0012	0.0010		mg/L	1	8/24/2016 9:43:30 PM	C36740
Lead	ND	0.00050		mg/L	1	8/24/2016 9:43:30 PM	C36740
SM2340B: HARDNESS						Analyst: **MED**	
Hardness (As CaCO3)	110	6.6		mg/L	1	9/6/2016 11:18:00 AM	R37002
SM5210B: BOD						Analyst: **SMS**	
Biochemical Oxygen Demand	DO Depletion<2.0	2.0		mg/L	1	8/16/2016 3:42:00 PM	26933
EPA METHOD 1664A						Analyst: **tnc**	
N-Hexane Extractable Material	ND	11		mg/L	1	8/15/2016 11:15:00 AM	26986
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Nitrate+Nitrite as N	ND	1.0		mg/L	5	8/28/2016 6:49:42 PM	R36824
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **KS**	
Total Dissolved Solids	230	40.0	D	mg/L	1	8/16/2016 1:30:00 PM	26970
SM 4500 NH3: AMMONIA						Analyst: **CJS**	
Nitrogen, Ammonia	ND	1.0		mg/L	1	8/18/2016 2:36:00 PM	R36607
TOTAL NITROGEN						Analyst: **SRM**	
Nitrogen, Total	ND	1.0		mg/L	1	8/30/2016 11:53:00 AM	R36856
SM4500-H+B: PH						Analyst: **JRR**	
pH	8.20	1.68	H	pH units	1	8/15/2016 8:14:03 PM	R36527
EPA METHOD 365.1: TOTAL PHOSPHOROUS						Analyst: **JRR**	
Phosphorus, Total (As P)	0.081	0.010		mg/L	1	8/24/2016 11:37:37 AM	27121
SM 4500 NORG C: TKN						Analyst: **CJS**	
Nitrogen, Kjeldahl, Total	ND	1.0		mg/L	1	8/19/2016 2:28:00 PM	27057
SM 2540D: TSS						Analyst: **KS**	
Suspended Solids	41	4.0		mg/L	1	8/14/2016 12:11:00 PM	26969
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **MED**	
Calcium	36	1.0		mg/L	1	9/6/2016 7:41:04 PM	D37002
Magnesium	6.1	1.0		mg/L	1	9/6/2016 7:41:04 PM	D37002

See lab report 1608623 for Rio Grande North E. coli results.

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Client Sample ID: Rio Grande-South
Project: CMC
Collection Date: 8/11/2016 11:30:00 AM
Lab ID: 1608678-002
Matrix: AQUEOUS
Received Date: 8/11/2016 1:00:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA 200.8: DISSOLVED METALS						Analyst: **JLF**	
Copper	0.0012	0.0010		mg/L	1	8/24/2016 9:46:33 PM	C36740
Lead	ND	0.00050		mg/L	1	8/24/2016 9:46:33 PM	C36740
SM2340B: HARDNESS						Analyst: **MED**	
Hardness (As CaCO3)	130	6.6		mg/L	1	9/6/2016 11:18:00 AM	R37002
SM5210B: BOD						Analyst: **SMS**	
Biochemical Oxygen Demand	DO Depletion<2.0	2.0		mg/L	1	8/16/2016 3:42:00 PM	26933
SM 9223B FECAL INDICATOR: E. COLI MPN Equivalent to MPN/100 mL						Analyst: **tnc**	
E. Coli	1106	10.00		CFU/100ml	10	8/12/2016 3:37:00 PM	26941
EPA METHOD 1664A						Analyst: **tnc**	
N-Hexane Extractable Material	ND	10		mg/L	1	8/15/2016 11:15:00 AM	26986
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Nitrate+Nitrite as N	ND	1.0		mg/L	5	8/28/2016 7:02:07 PM	R36824
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **KS**	
Total Dissolved Solids	305	100	D	mg/L	1	8/16/2016 1:30:00 PM	26970
SM 4500 NH3: AMMONIA						Analyst: **CJS**	
Nitrogen, Ammonia	ND	2.0	D	mg/L	2	8/18/2016 2:36:00 PM	R36607
TOTAL NITROGEN						Analyst: **SRM**	
Nitrogen, Total	<2	1.0		mg/L	1	8/30/2016 11:53:00 AM	R36856
SM4500-H+B: PH						Analyst: **JRR**	
pH	8.24	1.68	H	pH units	1	8/15/2016 8:18:14 PM	R36527
EPA METHOD 365.1: TOTAL PHOSPHOROUS						Analyst: **JRR**	
Phosphorus, Total (As P)	0.38	0.010		mg/L	1	8/24/2016 11:42:07 AM	27121
SM 4500 NORG C: TKN						Analyst: **CJS**	
Nitrogen, Kjeldahl, Total	ND	2.0	D	mg/L	1	8/19/2016 2:28:00 PM	27057
SM 2540D: TSS						Analyst: **KS**	
Suspended Solids	330	4.0		mg/L	1	8/14/2016 12:11:00 PM	26969
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **MED**	
Calcium	40	1.0		mg/L	1	9/6/2016 7:53:00 PM	D37002
Magnesium	6.5	1.0		mg/L	1	9/6/2016 7:53:00 PM	D37002

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Client Sample ID: Rio Grande-North Filtered
Project: CMC
Collection Date: 8/10/2016 12:50:00 PM
Lab ID: 1608678-003
Matrix: AQUEOUS
Received Date: 8/11/2016 1:00:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 365.1: TOTAL PHOSPHOROUS						Analyst: **JRR**	
Phosphorus, Total (As P)	0.030	0.010		mg/L	1	8/24/2016 11:43:37 AM	27121

Dissolved Phosphorous

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Client Sample ID: Rio Grande-South Filtered
Project: CMC
Collection Date: 8/11/2016 11:30:00 AM
Lab ID: 1608678-004
Matrix: AQUEOUS
Received Date: 8/11/2016 1:00:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 365.1: TOTAL PHOSPHOROUS						Analyst: **JRR**	
Phosphorus, Total (As P)	0.17	0.010		mg/L	1	8/24/2016 11:45:07 AM	27121

Dissolved Phosphorous

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

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Client:	HALL ENVIRONMENTAL ANALYSIS LAB	**Batch #:**	160817078
Address:	4901 HAWKINS NE SUITE D ALBUQUERQUE, NM 87109	**Project Name:**	1608678
Attn:	ANDY FREEMAN		

Analytical Results Report

Sample Number	160817078-001	**Sampling Date**	8/10/2016	**Date/Time Received**	8/17/2016 1:30 PM
Client Sample ID	1608678-001C / RIO GRANDE-NORTH	**Sampling Time**	12:50 PM		
Matrix	Water				
Comments					

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Tetrahydrofuran	ND	ug/L	0.5	8/24/2016	SAT	EPA 8260C	

Surrogate Data

Sample Number 160817078-001

Surrogate Standard	Method	Percent Recovery	Control Limits
1,2-Dichlorobenzene-d4	EPA 8260C	99.2	70-130
4-Bromofluorobenzene	EPA 8260C	94.8	70-130
Toluene-d8	EPA 8260C	98.8	70-130

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Client:	HALL ENVIRONMENTAL ANALYSIS LAB	**Batch #:**	160817078
Address:	4901 HAWKINS NE SUITE D ALBUQUERQUE, NM 87109	**Project Name:**	1608678
Attn:	ANDY FREEMAN		

Analytical Results Report

Sample Number	160817078-004	**Sampling Date**	8/11/2016	**Date/Time Received**	8/17/2016 1:30 PM
Client Sample ID	1608678-002C / RIO GRANDE-SOUTH	**Sampling Time**	11:30 AM		
Matrix	Water				
Comments					

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Tetrahydrofuran	ND	ug/L	0.5	8/24/2016	SAT	EPA 8260C	

Surrogate Data

Sample Number 160817078-004

Surrogate Standard	Method	Percent Recovery	Control Limits
1,2-Dichlorobenzene-d4	EPA 8260C	101.2	70-130
4-Bromofluorobenzene	EPA 8260C	96.0	70-130
Toluene-d8	EPA 8260C	98.8	70-130

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Client:	HALL ENVIRONMENTAL ANALYSIS LAB	**Batch #:**	160817078
Address:	4901 HAWKINS NE SUITE D ALBUQUERQUE, NM 87109	**Project Name:**	1608678
Attn:	ANDY FREEMAN		

Analytical Results Report

Sample Number	160817078-007	**Sampling Date**	8/10/2016	**Date/Time Received**	8/17/2016	1:30 PM	
Client Sample ID	1608678-005A / TRIP BLANK	**Sampling Time**					
Matrix	Water						
Comments							

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Tetrahydrofuran	ND	ug/L	0.5	8/24/2016	SAT	EPA 8260C	

Surrogate Data

Sample Number 160817078-007

Surrogate Standard	Method	Percent Recovery	Control Limits
1,2-Dichlorobenzene-d4	EPA 8260C	100.4	70-130
4-Bromofluorobenzene	EPA 8260C	95.2	70-130
Toluene-d8	EPA 8260C	91.2	70-130

Authorized Signature

Todd Taruscio, Lab Manager

MCL EPA's Maximum Contaminant Level
ND Not Detected
PQL Practical Quantitation Limit

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Client:	HALL ENVIRONMENTAL ANALYSIS LAB	**Batch #:**	160817078
Address:	4901 HAWKINS NE SUITE D	**Project Name:**	1608678
	ALBUQUERQUE, NM 87109		
Attn:	ANDY FREEMAN		

Analytical Results Report

Quality Control Data

Lab Control Sample

Parameter	LCS Result	Units	LCS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
Tetrahydrofuran	8.46	ug/L	10	84.6	70-130	8/24/2016	8/24/2016

Method Blank

Parameter	Result	Units	PQL	Prep Date	Analysis Date
Tetrahydrofuran	ND	ug/L	0.5	8/24/2016	8/24/2016

AR	Acceptable Range
ND	Not Detected
PQL	Practical Quantitation Limit
RPD	Relative Percentage Difference

Comments:

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Client:	HALL ENVIRONMENTAL ANALYSIS LAB	**Batch #:**	160817078
Address:	4901 HAWKINS NE SUITE D ALBUQUERQUE, NM 87109	**Project Name:**	1608678
Attn:	ANDY FREEMAN		

Analytical Results Report

Sample Number	160817078-002	**Sampling Date**	8/10/2016	**Date/Time Received**	8/17/2016 1:30 PM
Client Sample ID	1608678-001G / RIO GRANDE-NORTH	**Sampling Time**	12:50 PM	**Extraction Date**	8/17/2016
Matrix	Water				
Comments					

Parameter	Result	Units	MDL	PQL	Analysis Date	Analyst	Method	Qualifier
Aroclor 1016 (PCB-1016)	ND	ug/L	0.1	0.2	8/31/2016	MAH	EPA 608	
Aroclor 1221 (PCB-1221)	ND	ug/L	0.1	0.2	8/31/2016	MAH	EPA 608	
Aroclor 1232 (PCB-1232)	ND	ug/L	0.1	0.2	8/31/2016	MAH	EPA 608	
Aroclor 1242 (PCB-1242)	ND	ug/L	0.1	0.2	8/31/2016	MAH	EPA 608	
Aroclor 1248 (PCB-1248)	ND	ug/L	0.1	0.2	8/31/2016	MAH	EPA 608	
Aroclor 1254 (PCB-1254)	ND	ug/L	0.1	0.2	8/31/2016	MAH	EPA 608	
Aroclor 1260 (PCB-1260)	ND	ug/L	0.1	0.2	8/31/2016	MAH	EPA 608	
Dieldrin	ND	ug/L	0.003	0.01	8/31/2016	MAH	EPA 608	

Surrogate Data

Sample Number 160817078-002

Surrogate Standard	Method	Percent Recovery	Control Limits
DCB	EPA 608	95.6	30-130

Screening Method for PCBS (Method 608) was used. There was not enough volume of sample remaining to test for PCBs using Method 1668.

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Client:	HALL ENVIRONMENTAL ANALYSIS LAB	**Batch #:**	160817078
Address:	4901 HAWKINS NE SUITE D ALBUQUERQUE, NM 87109	**Project Name:**	1608678
Attn:	ANDY FREEMAN		

Analytical Results Report

Sample Number	160817078-005	**Sampling Date**	8/11/2016	**Date/Time Received**	8/17/2016 1:30 PM
Client Sample ID	1608678-002G / RIO GRANDE-SOUTH	**Sampling Time**	11:30 AM	**Extraction Date**	8/17/2016
Matrix	Water				
Comments					

Parameter	Result	Units	MDL	PQL	Analysis Date	Analyst	Method	Qualifier
Aroclor 1016 (PCB-1016)	ND	ug/L	0.1	0.8	8/31/2016	MAH	EPA 608	
Aroclor 1221 (PCB-1221)	ND	ug/L	0.1	0.8	8/31/2016	MAH	EPA 608	
Aroclor 1232 (PCB-1232)	ND	ug/L	0.1	0.8	8/31/2016	MAH	EPA 608	
Aroclor 1242 (PCB-1242)	ND	ug/L	0.1	0.8	8/31/2016	MAH	EPA 608	
Aroclor 1248 (PCB-1248)	ND	ug/L	0.1	0.8	8/31/2016	MAH	EPA 608	
Aroclor 1254 (PCB-1254)	ND	ug/L	0.1	0.8	8/31/2016	MAH	EPA 608	
Aroclor 1260 (PCB-1260)	ND	ug/L	0.1	0.8	8/31/2016	MAH	EPA 608	
Dieldrin	ND	ug/L	0.003	0.04	8/31/2016	MAH	EPA 608	

Surrogate Data

Sample Number 160817078-005

Surrogate Standard	Method	Percent Recovery	Control Limits
DCB	EPA 608	92.2	30-130

Authorized Signature

Todd Taruscio, Lab Manager

Screening Method for PCBS (Method 608) was used. There was not enough volume of sample remaining to test for PCBs using Method 1668.

MCL EPA's Maximum Contaminant Level
ND Not Detected
PQL Practical Quantitation Limit

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Certifications held by Anatek Labs WA: EPA:WA00169; ID:WA00169; WA:C585; MT:Cert0095; FL(NELAP): E871099

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Client:	HALL ENVIRONMENTAL ANALYSIS LAB	**Batch #:**	160817078
Address:	4901 HAWKINS NE SUITE D	**Project Name:**	1608678
	ALBUQUERQUE, NM 87109		
Attn:	ANDY FREEMAN		

Analytical Results Report

Quality Control Data

Lab Control Sample

Parameter	LCS Result	Units	LCS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
Dieldrin	0.475	ug/L	0.5	95.0	30-130	8/17/2016	8/31/2016
Aroclor 1260 (PCB-1260)	6.33	ug/L	5	126.6	50-130	8/17/2016	8/31/2016
Aroclor 1016 (PCB-1016)	4.67	ug/L	5	93.4	50-130	8/17/2016	8/31/2016

Matrix Spike

Sample Number	Parameter	Sample Result	MS Result	Units	MS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
160817078-002	Dieldrin	ND	0.455	ug/L	0.5	91.0	30-150	8/17/2016	8/31/2016

Matrix Spike Duplicate

Parameter	MSD Result	Units	MSD Spike	%Rec	%RPD	AR %RPD	Prep Date	Analysis Date
Dieldrin	0.451	ug/L	0.5	90.2	0.9	0-30	8/17/2016	8/31/2016

Method Blank

Parameter	Result	Units	PQL	Prep Date	Analysis Date
Aroclor 1016 (PCB-1016)	ND	ug/L	0.2	8/17/2016	8/31/2016
Aroclor 1221 (PCB-1221)	ND	ug/L	0.2	8/17/2016	8/31/2016
Aroclor 1232 (PCB-1232)	ND	ug/L	0.2	8/17/2016	8/31/2016
Aroclor 1242 (PCB-1242)	ND	ug/L	0.2	8/17/2016	8/31/2016
Aroclor 1248 (PCB-1248)	ND	ug/L	0.2	8/17/2016	8/31/2016
Aroclor 1254 (PCB-1254)	ND	ug/L	0.2	8/17/2016	8/31/2016
Aroclor 1260 (PCB-1260)	ND	ug/L	0.2	8/17/2016	8/31/2016
Dieldrin	ND	ug/L	0.01	8/17/2016	8/31/2016

AR	Acceptable Range
ND	Not Detected
PQL	Practical Quantitation Limit
RPD	Relative Percentage Difference

Comments:

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; FL(NELAP):E87893; ID:ID00013; MT:CERT0028; NM: ID00013;NV:ID00013; OR:ID200001-002; WA:C595
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Client: HALL ENVIRONMENTAL ANALYSIS LAB
Address: 4901 HAWKINS NE SUITE D
ALBUQUERQUE, NM 87109
Attn: ANDY FREEMAN

Batch #: 160817078
Project Name: 1608678

Analytical Results Report

Sample Number 160817078-002 **Sampling Date** 8/10/2016 **Date/Time Received** 8/17/2016 1:30 PM
Client Sample ID 1608678-001G / RIO GRANDE-NORTH **Sampling Time** 12:50 PM
Matrix Water
Comments

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Benzidine	ND	ug/L	0.5	8/23/2016	HSW	EPA 625	
Benzo[a]anthracene	ND	ug/L	0.5	8/23/2016	HSW	EPA 625	
Benzo[a]pyrene	ND	ug/L	0.5	8/23/2016	HSW	EPA 625	
Benzo[b]fluoranthene	ND	ug/L	0.5	8/23/2016	HSW	EPA 625	
Benzo[k]fluoranthene	ND	ug/L	0.5	8/23/2016	HSW	EPA 625	
bis(2-Ethylhexyl)phthalate	ND	ug/L	0.5	8/23/2016	HSW	EPA 625	
Chrysene	ND	ug/L	0.5	8/23/2016	HSW	EPA 625	
Dibenz[a,h]anthracene	ND	ug/L	0.5	8/23/2016	HSW	EPA 625	
Dibenzofuran	ND	ug/L	0.5	8/23/2016	HSW	EPA 625	
Indeno[1,2,3-cd]pyrene	ND	ug/L	0.5	8/23/2016	HSW	EPA 625	
Pentachlorophenol	ND	ug/L	0.5	8/23/2016	HSW	EPA 625	

Surrogate Data

Sample Number 160817078-002

Surrogate Standard	Method	Percent Recovery	Control Limits
2,4,6-Tribromophenol	EPA 625	82.8	53-122
2-Fluorobiphenyl	EPA 625	94.4	12-116
2-Fluorophenol	EPA 625	85.4	10-139
Nitrobenzene-d5	EPA 625	95.2	54-118
Phenol-d5	EPA 625	73.0	28-154
Terphenyl-d14	EPA 625	54.8	20-137

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; FL(NELAP):E87893; ID:ID00013; MT:CERT0028; NM: ID00013;NV:ID00013; OR:ID200001-002; WA:C595
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Client: HALL ENVIRONMENTAL ANALYSIS LAB
Address: 4901 HAWKINS NE SUITE D
ALBUQUERQUE, NM 87109
Attn: ANDY FREEMAN

Batch #: 160817078
Project Name: 1608678

Analytical Results Report

Sample Number 160817078-005 **Sampling Date** 8/11/2016 **Date/Time Received** 8/17/2016 1:30 PM
Client Sample ID 1608678-002G / RIO GRANDE-SOUTH **Sampling Time** 11:30 AM
Matrix Water
Comments

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Benzidine	ND	ug/L	0.5	8/23/2016	HSW	EPA 625	
Benzo[a]anthracene	ND	ug/L	0.5	8/23/2016	HSW	EPA 625	
Benzo[a]pyrene	ND	ug/L	0.5	8/23/2016	HSW	EPA 625	
Benzo[b]fluoranthene	ND	ug/L	0.5	8/23/2016	HSW	EPA 625	
Benzo[k]fluoranthene	ND	ug/L	0.5	8/23/2016	HSW	EPA 625	
bis(2-Ethylhexyl)phthalate	ND	ug/L	0.5	8/23/2016	HSW	EPA 625	
Chrysene	ND	ug/L	0.5	8/23/2016	HSW	EPA 625	
Dibenz[a,h]anthracene	ND	ug/L	0.5	8/23/2016	HSW	EPA 625	
Dibenzofuran	ND	ug/L	0.5	8/23/2016	HSW	EPA 625	
Indeno[1,2,3-cd]pyrene	ND	ug/L	0.5	8/23/2016	HSW	EPA 625	
Pentachlorophenol	ND	ug/L	0.5	8/23/2016	HSW	EPA 625	

Surrogate Data

Sample Number 160817078-005

Surrogate Standard	Method	Percent Recovery	Control Limits
2,4,6-Tribromophenol	EPA 625	85.4	53-122
2-Fluorobiphenyl	EPA 625	96.0	12-116
2-Fluorophenol	EPA 625	90.6	10-139
Nitrobenzene-d5	EPA 625	99.2	54-118
Phenol-d5	EPA 625	78.8	28-154
Terphenyl-d14	EPA 625	47.6	20-137

Authorized Signature

Todd Taruscio, Lab Manager

MCL EPA's Maximum Contaminant Level
ND Not Detected
PQL Practical Quantitation Limit

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Client: HALL ENVIRONMENTAL ANALYSIS LAB
Address: 4901 HAWKINS NE SUITE D
ALBUQUERQUE, NM 87109
Attn: ANDY FREEMAN

Batch #: 160817078
Project Name: 1608678

Analytical Results Report

Quality Control Data

Lab Control Sample

Parameter	LCS Result	Units	LCS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
Pentachlorophenol	3.80	ug/L	5	76.0	22-138	8/16/2016	8/23/2016
bis(2-Ethylhexyl)phthalate	4.59	ug/L	5	91.8	51-149	8/16/2016	8/23/2016

Lab Control Sample Duplicate

Parameter	LCSD Result	Units	LCSD Spike	%Rec	%RPD	AR %RPD	Prep Date	Analysis Date
Pentachlorophenol	3.52	ug/L	5	70.4	7.7	0-47	8/16/2016	8/23/2016
bis(2-Ethylhexyl)phthalate	4.94	ug/L	5	98.8	7.3	0-50	8/16/2016	8/23/2016

Matrix Spike

Sample Number	Parameter	Sample Result	MS Result	Units	MS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
160816052-001	Pentachlorophenol	ND	4.34	ug/L	5	86.8	22-138	8/16/2016	8/23/2016
160816052-001	bis(2-Ethylhexyl)phthalate	ND	5.55	ug/L	5	111.0	51-149	8/16/2016	8/23/2016

Matrix Spike Duplicate

Parameter	MSD Result	Units	MSD Spike	%Rec	%RPD	AR %RPD	Prep Date	Analysis Date
Pentachlorophenol	4.37	ug/L	5	87.4	0.7	0-47	8/16/2016	8/23/2016
bis(2-Ethylhexyl)phthalate	5.12	ug/L	5	102.4	8.1	0-50	8/16/2016	8/23/2016

Method Blank

Parameter	Result	Units	PQL	Prep Date	Analysis Date
Benzidine	ND	ug/L	0.5	8/16/2016	8/23/2016
Benzo[a]anthracene	ND	ug/L	0.5	8/16/2016	8/23/2016
Benzo[a]pyrene	ND	ug/L	0.5	8/16/2016	8/23/2016
Benzo[b]fluoranthene	ND	ug/L	0.5	8/16/2016	8/23/2016
Benzo[k]fluoranthene	ND	ug/L	0.5	8/16/2016	8/23/2016
bis(2-Ethylhexyl)phthalate	ND	ug/L	0.5	8/16/2016	8/23/2016
Chrysene	ND	ug/L	0.5	8/16/2016	8/23/2016
Dibenz[a,h]anthracene	ND	ug/L	0.5	8/16/2016	8/23/2016
Dibenzofuran	ND	ug/L	0.5	8/16/2016	8/23/2016
Indeno[1,2,3-cd]pyrene	ND	ug/L	0.5	8/16/2016	8/23/2016

Comments:

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; FL(NELAP):E87893; ID:ID00013; MT:CERT0026; NM: ID00013;NV:ID00013; OR:ID200001-002; WA:C595
Certifications held by Anatek Labs WA: EPA:WA00169; ID:WA00169; WA:C585; MT:Cert0095; FL(NELAP): E871099

Anatek Labs, Inc.

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Client:	HALL ENVIRONMENTAL ANALYSIS LAB	**Batch #:**	160817078
Address:	4901 HAWKINS NE SUITE D ALBUQUERQUE, NM 87109	**Project Name:**	1608678
Attn:	ANDY FREEMAN		

Analytical Results Report

Quality Control Data

Method Blank

Parameter	Result	Units	PQL	Prep Date	Analysis Date
Pentachlorophenol	ND	ug/L	0.5	8/16/2016	8/23/2016

AR	Acceptable Range
ND	Not Detected
PQL	Practical Quantitation Limit
RPD	Relative Percentage Difference

Comments:

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; FL(NELAP):E87893; ID:ID00013; MT:CERT0028; NM: ID00013;NV:ID00013; OR:ID200001-002; WA:C595
Certifications held by Anatek Labs WA: EPA:WA00169; ID:WA00169; WA:C585; MT:Cert0095; FL(NELAP): E871099

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Client:	HALL ENVIRONMENTAL ANALYSIS LAB	**Batch #:**	160817078
Address:	4901 HAWKINS NE SUITE D ALBUQUERQUE, NM 87109	**Project Name:**	1608678
Attn:	ANDY FREEMAN		

Analytical Results Report

Sample Number	160817078-003	**Sampling Date**	8/10/2016	**Date/Time Received**	8/17/2016 1:30 PM
Client Sample ID	1608678-001I / RIO GRANDE-NORTH			**Sampling Time**	12:50 PM
Matrix	Water				
Comments					

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
COD	16.2	mg/L	5	8/22/2016 11:30:00 AM	JDB	EPA 410.4	

Sample Number	160817078-006	**Sampling Date**	8/11/2016	**Date/Time Received**	8/17/2016 1:30 PM
Client Sample ID	1608678-002I / RIO GRANDE-SOUTH			**Sampling Time**	11:30 AM
Matrix	Water				
Comments					

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
COD	17.0	mg/L	5	8/22/2016 11:30:00 AM	JDB	EPA 410.4	

Authorized Signature

Todd Taruscio, Lab Manager

MCL	EPA's Maximum Contaminant Level
ND	Not Detected
PQL	Practical Quantitation Limit

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The results reported relate only to the samples indicated.
Soil/solid results are reported on a dry-weight basis unless otherwise noted.

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Client: HALL ENVIRONMENTAL ANALYSIS LAB
Address: 4901 HAWKINS NE SUITE D
ALBUQUERQUE, NM 87109
Attn: ANDY FREEMAN

Batch #: 160817078
Project Name: 1608678

Analytical Results Report

Quality Control Data

Lab Control Sample

Parameter	LCS Result	Units	LCS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
COD	99.4	mg/L	100	99.4	90-110	8/22/2016	8/22/2016

Matrix Spike

Sample Number	Parameter	Sample Result	MS Result	Units	MS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
160817087-002	COD	6.75	103	mg/L	100	96.3	80-120	8/22/2016	8/22/2016

Matrix Spike Duplicate

Parameter	MSD Result	Units	MSD Spike	%Rec	%RPD	AR %RPD	Prep Date	Analysis Date
COD	108	mg/L	100	101.3	4.7	0-15	8/22/2016	8/22/2016

Method Blank

Parameter	Result	Units	PQL	Prep Date	Analysis Date
COD	<5	mg/L	5	8/22/2016	8/22/2016

Duplicate

Sample Number	Parameter	Sample Result	Duplicate Result	Units	%RPD	AR %RPD	Prep Date	Analysis Date
160817045-002	COD	13.2	13.9	mg/L	5.2	0-20	8/22/2016	8/22/2016

AR	Acceptable Range
ND	Not Detected
PQL	Practical Quantitation Limit
RPD	Relative Percentage Difference

Comments:

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; FL(NELAP):E87893; ID:ID00013; MT:CERT0028; NM: ID00013;NV:ID00013; OR:ID200001-002; WA:C595
Certifications held by Anatek Labs WA: EPA:WA00169; ID:WA00169; WA:C585; MT:Cert0095; FL(NELAP): E871099

Wet Chemistry by Method 3500Cr C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Hexavalent Chromium	ND		0.000500	1	08/18/2016 20:41	WG899360

Wet Chemistry by Method 3500Cr C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Hexavalent Chromium	ND		0.000500	1	08/18/2016 20:49	WG899360

Method Blank (MB)

(MB) R3157886-1 08/18/16 16:02

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	mg/l
Hexavalent Chromium	U		0.000150	0.000500

L853001-01 Original Sample (OS) • Duplicate (DUP)

(OS) L853001-01 08/18/16 16:46 • (DUP) R3157886-4 08/18/16 16:57

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
Hexavalent Chromium	ND	ND	1	0.000		20

L854015-02 Original Sample (OS) • Duplicate (DUP)

(OS) L854015-02 08/18/16 20:58 • (DUP) R3157886-7 08/18/16 21:06

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
Hexavalent Chromium	ND	ND	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3157886-2 08/18/16 16:10 • (LCSD) R3157886-3 08/18/16 16:19

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	%	%	%			%	%
Hexavalent Chromium	0.00200	0.00201	0.00200	100	100	90.0-110			0.000	20

L853262-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L853262-02 08/18/16 17:51 • (MS) R3157886-5 08/18/16 18:02 • (MSD) R3157886-6 08/18/16 18:10

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Hexavalent Chromium	0.0500	ND	0.0509	0.0506	102	101	1	90.0-110			1.00	20

Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Rec.	Recovery.

Qualifier	Description

The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 1608678
Pace Project No.: 30193392

Sample: 1608678-001J Rio- Grande-North **Lab ID: 30193392001** Collected: 08/10/16 12:50 Received: 08/17/16 10:10 Matrix: Water

PWS: Site ID: Sample Type:

Comments: • Sample Acceptance Policy Waiver on file from the client.

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0	**3.72 ± 1.97 (2.97) C:NA T:NA**	pCi/L	08/24/16 09:55	12587-46-1	

Sample: 1608678-002J Rio- Grande-South **Lab ID: 30193392002** Collected: 08/11/16 11:30 Received: 08/17/16 10:10 Matrix: Water

PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0	**10.6 ± 3.61 (2.54) C:NA T:NA**	pCi/L	08/26/16 18:05	12587-46-1	

REPORT OF LABORATORY ANALYSIS

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Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL - RADIOCHEMISTRY

Project: 1608678
Pace Project No.: 30193392

QC Batch: 231147
QC Batch Method: EPA 900.0
Analysis Method: EPA 900.0
Analysis Description: 900.0 Gross Alpha/Beta
Associated Lab Samples: 30193392002

METHOD BLANK: 1132561
Matrix: Water
Associated Lab Samples: 30193392002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Gross Alpha	0.417 ± 0.907 (2.12) C:NA T:NA	pCi/L	08/27/16 09:44	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 1608678
Pace Project No.: 30193392

QC Batch: 230572
QC Batch Method: EPA 900.0
Analysis Method: EPA 900.0
Analysis Description: 900.0 Gross Alpha/Beta
Associated Lab Samples: 30193392001

METHOD BLANK: 1129987
Matrix: Water
Associated Lab Samples: 30193392001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Gross Alpha	0.227 ± 0.547 (1.31) C:NA T:NA	pCi/L	08/24/16 09:51	

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REPORT OF LABORATORY ANALYSIS

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Greensburg, PA 15601
(724)850-5600

QUALIFIERS

Project: 1608678
Pace Project No.: 30193392

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval). Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

REPORT OF LABORATORY ANALYSIS

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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1608678**

29-Nov-16

Client: AMAFCA

Project: CMC

Sample ID	**MB-26986**	SampType:	**MBLK**	TestCode:	**EPA Method 1664A**					
Client ID:	**PBW**	Batch ID:	**26986**	RunNo:	**36530**					
Prep Date:	**8/15/2016**	Analysis Date:	**8/15/2016**	SeqNo:	**1131319**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
N-Hexane Extractable Material	ND	10								
Silica Gel Treated N-Hexane Extrac	ND	10								

Sample ID	**LCS-26986**	SampType:	**LCS**	TestCode:	**EPA Method 1664A**					
Client ID:	**LCSW**	Batch ID:	**26986**	RunNo:	**36530**					
Prep Date:	**8/15/2016**	Analysis Date:	**8/15/2016**	SeqNo:	**1131320**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
N-Hexane Extractable Material	40	10	40.00	0	100	78	114			
Silica Gel Treated N-Hexane Extrac	18	10	20.00	0	89.0	64	132			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1608678**

29-Nov-16

Client: AMAFCA

Project: CMC

Sample ID	**MB-D**	SampType:	**MBLK**	TestCode:	**EPA Method 200.7: Dissolved Metals**					
Client ID:	**PBW**	Batch ID:	**D37002**	RunNo:	**37002**					
Prep Date:		Analysis Date:	**9/6/2016**	SeqNo:	**1146735**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	ND	1.0								
Magnesium	ND	1.0								

Sample ID	**LCS-D**	SampType:	**LCS**	TestCode:	**EPA Method 200.7: Dissolved Metals**					
Client ID:	**LCSW**	Batch ID:	**D37002**	RunNo:	**37002**					
Prep Date:		Analysis Date:	**9/6/2016**	SeqNo:	**1146739**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	55	1.0	50.00	0	109	85	115			
Magnesium	55	1.0	50.00	0	109	85	115			

Sample ID	**LLLCS-D**	SampType:	**LCSLL**	TestCode:	**EPA Method 200.7: Dissolved Metals**					
Client ID:	**BatchQC**	Batch ID:	**D37002**	RunNo:	**37002**					
Prep Date:		Analysis Date:	**9/6/2016**	SeqNo:	**1146740**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	ND	1.0	0.5000	0	110	50	150			
Magnesium	ND	1.0	0.5000	0	110	50	150			

Sample ID	**1608678-001FMS**	SampType:	**MS**	TestCode:	**EPA Method 200.7: Dissolved Metals**					
Client ID:	**Rio Grande-North**	Batch ID:	**D37002**	RunNo:	**37002**					
Prep Date:		Analysis Date:	**9/6/2016**	SeqNo:	**1147153**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	85	1.0	50.00	35.97	98.9	70	130			
Magnesium	57	1.0	50.00	6.083	102	70	130			

Sample ID	**1608678-001FMSD**	SampType:	**MSD**	TestCode:	**EPA Method 200.7: Dissolved Metals**					
Client ID:	**Rio Grande-North**	Batch ID:	**D37002**	RunNo:	**37002**					
Prep Date:		Analysis Date:	**9/6/2016**	SeqNo:	**1147154**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	85	1.0	50.00	35.97	97.9	70	130	0.611	20	
Magnesium	57	1.0	50.00	6.083	101	70	130	1.14	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1608678**

29-Nov-16

Client: AMAFCA

Project: CMC

Sample ID	**LCS**	SampType: **LCS**			TestCode: **EPA 200.8: Dissolved Metals**					
Client ID:	**LCSW**	Batch ID: **C36740**			RunNo: **36740**					
Prep Date:		Analysis Date: **8/24/2016**			SeqNo: **1138765**		Units: **mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Copper	0.025	0.0010	0.02500	0	98.5	85	115			
Lead	0.012	0.00050	0.01250	0	98.3	85	115			

Sample ID	**LLLCS**	SampType: **LCSLL**			TestCode: **EPA 200.8: Dissolved Metals**					
Client ID:	**BatchQC**	Batch ID: **C36740**			RunNo: **36740**					
Prep Date:		Analysis Date: **8/24/2016**			SeqNo: **1138767**		Units: **mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Copper	0.0010	0.0010	0.001000	0	102	50	150			
Lead	ND	0.00050	0.0005000	0	99.3	50	150			

Sample ID	**MB**	SampType: **MBLK**			TestCode: **EPA 200.8: Dissolved Metals**					
Client ID:	**PBW**	Batch ID: **C36740**			RunNo: **36740**					
Prep Date:		Analysis Date: **8/24/2016**			SeqNo: **1138769**		Units: **mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Copper	ND	0.0010								
Lead	ND	0.00050								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1608678**

29-Nov-16

Client: AMAFCA

Project: CMC

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R36824**	RunNo: **36824**
Prep Date:	Analysis Date: **8/28/2016**	SeqNo: **1141482** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate+Nitrite as N	ND	0.20								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **R36824**	RunNo: **36824**
Prep Date:	Analysis Date: **8/28/2016**	SeqNo: **1141483** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate+Nitrite as N	3.4	0.20	3.500	0	98.5	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1608678**

29-Nov-16

Client: AMAFCA

Project: CMC

Sample ID	**MB-26933**	SampType:	**MBLK**		TestCode:	**SM5210B: BOD**				
Client ID:	**PBW**	Batch ID:	**26933**		RunNo:	**36639**				
Prep Date:	**8/11/2016**	Analysis Date:	**8/16/2016**		SeqNo:	**1134895**	Units:	**mg/L**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Biochemical Oxygen Demand	ND	2.0								

Sample ID	**MB--26933**	SampType:	**MBLK**		TestCode:	**SM5210B: BOD**				
Client ID:	**PBW**	Batch ID:	**26933**		RunNo:	**36639**				
Prep Date:	**8/11/2016**	Analysis Date:	**8/16/2016**		SeqNo:	**1134896**	Units:	**mg/L**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Biochemical Oxygen Demand	ND	2.0								

Sample ID	**LCS-26933**	SampType:	**LCS**		TestCode:	**SM5210B: BOD**				
Client ID:	**LCSW**	Batch ID:	**26933**		RunNo:	**36639**				
Prep Date:	**8/11/2016**	Analysis Date:	**8/16/2016**		SeqNo:	**1134897**	Units:	**mg/L**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Biochemical Oxygen Demand	190	2.0	198.0	0	94.8	56.9	131			

Sample ID	**LCSD-26933**	SampType:	**LCSD**		TestCode:	**SM5210B: BOD**				
Client ID:	**LCSS02**	Batch ID:	**26933**		RunNo:	**36639**				
Prep Date:	**8/11/2016**	Analysis Date:	**8/16/2016**		SeqNo:	**1134898**	Units:	**mg/L**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Biochemical Oxygen Demand	180	2.0	198.0	0	88.5	56.9	131	6.89	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1608678**

29-Nov-16

Client: AMAFCA

Project: CMC

Sample ID	**MB-26941**	SampType:	**MBLK**	TestCode:	**SM 9223B Fecal Indicator: E. coli MPN**				
Client ID:	**PBW**	Batch ID:	**26941**	RunNo:	**36490**				
Prep Date:	**8/11/2016**	Analysis Date:	**8/12/2016**	SeqNo:	**1130017**	Units:	**CFU/100ml**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
E. Coli	<1	1.000								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1608678**

29-Nov-16

Client: AMAFCA

Project: CMC

Sample ID **MB**	SampType: **MBLK**	TestCode: **SM 4500 NH3: Ammonia**
Client ID: **PBW**	Batch ID: **R36607**	RunNo: **36607**
Prep Date:	Analysis Date: **8/18/2016**	SeqNo: **1133963** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	1.0								

Sample ID **LCS**	SampType: **LCS**	TestCode: **SM 4500 NH3: Ammonia**
Client ID: **LCSW**	Batch ID: **R36607**	RunNo: **36607**
Prep Date:	Analysis Date: **8/18/2016**	SeqNo: **1133964** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	10	1.0	10.00	0	101	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1608678**

29-Nov-16

Client: AMAFCA

Project: CMC

Sample ID	**MB-27121**	SampType:	**MBLK**		TestCode:	**EPA Method 365.1: Total Phosphorous**				
Client ID:	**PBW**	Batch ID:	**27121**		RunNo:	**36723**				
Prep Date:	**8/23/2016**	Analysis Date:	**8/24/2016**		SeqNo:	**1138062**	Units:	**mg/L**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	ND	0.010								

Sample ID	**LCS-27121**	SampType:	**LCS**		TestCode:	**EPA Method 365.1: Total Phosphorous**				
Client ID:	**LCSW**	Batch ID:	**27121**		RunNo:	**36723**				
Prep Date:	**8/23/2016**	Analysis Date:	**8/24/2016**		SeqNo:	**1138063**	Units:	**mg/L**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	0.25	0.010	0.2500	0	98.6	90	110			

Sample ID	**1608678-001DMS**	SampType:	**MS**		TestCode:	**EPA Method 365.1: Total Phosphorous**				
Client ID:	**Rio Grande-North**	Batch ID:	**27121**		RunNo:	**36723**				
Prep Date:	**8/23/2016**	Analysis Date:	**8/24/2016**		SeqNo:	**1138065**	Units:	**mg/L**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	0.33	0.010	0.2500	0.08070	98.0	90	110			

Sample ID	**1608678-001DMSD**	SampType:	**MSD**		TestCode:	**EPA Method 365.1: Total Phosphorous**				
Client ID:	**Rio Grande-North**	Batch ID:	**27121**		RunNo:	**36723**				
Prep Date:	**8/23/2016**	Analysis Date:	**8/24/2016**		SeqNo:	**1138066**	Units:	**mg/L**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	0.33	0.010	0.2500	0.08070	99.1	90	110	0.825	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1608678**

29-Nov-16

Client: AMAFCA

Project: CMC

Sample ID	**MB-26970**	SampType:	**MBLK**	TestCode:	**SM2540C MOD: Total Dissolved Solids**					
Client ID:	**PBW**	Batch ID:	**26970**	RunNo:	**36538**					
Prep Date:	**8/14/2016**	Analysis Date:	**8/16/2016**	SeqNo:	**1131506**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	20.0								

Sample ID	**LCS-26970**	SampType:	**LCS**	TestCode:	**SM2540C MOD: Total Dissolved Solids**					
Client ID:	**LCSW**	Batch ID:	**26970**	RunNo:	**36538**					
Prep Date:	**8/14/2016**	Analysis Date:	**8/16/2016**	SeqNo:	**1131507**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	995	20.0	1000	0	99.5	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1608678**

29-Nov-16

Client: AMAFCA

Project: CMC

Sample ID **MB-27057**	SampType: **MBLK**	TestCode: **SM 4500 Norg C: TKN**							
Client ID: **PBW**	Batch ID: **27057**	RunNo: **36645**							
Prep Date: **8/18/2016**	Analysis Date: **8/19/2016**	SeqNo: **1134995**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Kjeldahl, Total	ND	1.0								

Sample ID **LCS-27057**	SampType: **LCS**	TestCode: **SM 4500 Norg C: TKN**							
Client ID: **LCSW**	Batch ID: **27057**	RunNo: **36645**							
Prep Date: **8/18/2016**	Analysis Date: **8/19/2016**	SeqNo: **1134996**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Kjeldahl, Total	10	1.0	10.00	0	105	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1608678**

29-Nov-16

Client: AMAFCA

Project: CMC

Sample ID	**MB-26969**	SampType:	**MBLK**	TestCode:	**SM 2540D: TSS**					
Client ID:	**PBW**	Batch ID:	**26969**	RunNo:	**36514**					
Prep Date:	**8/13/2016**	Analysis Date:	**8/14/2016**	SeqNo:	**1130650**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Suspended Solids	ND	4.0								

Sample ID	**LCS-26969**	SampType:	**LCS**	TestCode:	**SM 2540D: TSS**					
Client ID:	**LCSW**	Batch ID:	**26969**	RunNo:	**36514**					
Prep Date:	**8/13/2016**	Analysis Date:	**8/14/2016**	SeqNo:	**1130651**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Suspended Solids	94	4.0	92.50	0	102	83.35	118.92			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

ENVIRONMENTAL ANALYSIS LABORATORY

4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: AMAFCA Work Order Number: 1608678 RcptNo: 1

Received by/date: AF 08/11/16

Logged By: Ashley Gallegos 8/11/2016 1:00:00 PM AG

Completed By: Ashley Gallegos 8/11/2016 1:44:34 PM AG

Reviewed By: aJ/dg 08/11/16 @ 1455

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☑
2. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
3. How was the sample delivered? Client

Log In

4. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐

Samples were collected the same day and chilled.

6. Sample(s) in proper container(s)? Yes ☑ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
9. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
10. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☑
11. Were any sample containers received broken? Yes ☐ No ☑
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes ☑ No ☐
13. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
14. Is it clear what analyses were requested? Yes ☑ No ☐
15. Were all holding times able to be met? (If no, notify customer for authorization.) Yes ☑ No ☐

# of preserved bottles checked for pH: 12 (<2 or >12 unless noted)

Adjusted? NO

Checked by: JC

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: Date

By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.4	Good	Not Present			

Chain-of-Custody Record

Client: AMAFCA

Mailing Address:

Phone #:

email or Fax#: pchavez@amafca.org

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name: CMC

Project #:

Project Manager: Patrick Chavez

Sampler: C Johannesen

On Ice: ☒ Yes ☐ No

Sample Temperature: 5.9°C

HEAL No. 1608678 ~~1608309~~

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	See table	E. coli num	Diss Phos.		Air Bubbles (Y or N)
8-10-16	1250	AQ	Rio Grande-North	Numerous													X				
8-11-16	1130	AQ	Rio Grande-South	"													X	X			
—	—	AQ	Trip Blank	2 VOAs	HCL																
			Rio Grande-North	Filtered															X		
			Rio Grande-South																X		

Date:	Time:	Relinquished by:	Received by:	Date	Time
8-11-16	1300			8/11/16	1300
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks:

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

AMAFCA and CMC samples

Hardness
TSS
TDS
COD
BOD
DO
Oil & grease
E. coli
pH
Total kjeldahl nitrogen
Nitrate plus nitrite
Dissolved phosphorus
Ammonia plus organic nitrogen
Total Phosphorus
Chromium IV
Copper-dissolved
Lead-dissolved
PCBs
Gross Alpha
Tetrahydrofuran
Benzo(a)pyrene
Benzo(b)fluoranthene, alternate name 3, 4 Benzofluoranthene
Benzo(k)fluoranthene
Chrysene
Indeno(1,2,3-cd)pyrene
Dieldrin
Pentachlorophenol
Benzidine
Benzo(a)anthracene
Pentachlorophenol
Dibenzofuran
Dibenzo(a,h)anthracene
Bis(2-ethylhexyl)phthalate

AMAFCA E.Coli only sites:

- Bear Arroyo
- Main Hanh Arroyo
- Embudo

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

September 06, 2016

Patrick Chavez
AMAFCA
2600 Prospect Ave NE
Albuquerque, NM 87107
TEL: (505) 884-2215
FAX

RE: CMC OrderNo.: 1608H83

Dear Patrick Chavez:

Hall Environmental Analysis Laboratory received 1 sample(s) on 8/31/2016 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

Field Data - Provided by DBS&A (field notebook & e-mails):
8/31/16 - Rio Grande North
DO = 7.06 mg/L, pH = 9.03, Conductivity = 305 umhos/cm, and Temperature = 21.18 °C

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report
Lab Order **1608H83**
Date Reported: **9/6/2016**

CLIENT: AMAFCA
Project: CMC
Lab ID: 1608H83-001
Matrix: AQUEOUS
Client Sample ID: Rio Grande-North-0831-16
Collection Date: 8/31/2016 11:45:00 AM
Received Date: 8/31/2016 1:35:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
SM 9223B FECAL INDICATOR: E. COLI MPN						Analyst: **tnc**	
E. Coli	88.2	1.000		CFU/100ml	1	9/1/2016 4:31:00 PM	27292

Equivalent to MPN/100 mL

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **AMAFCA** Work Order Number: **1608H83** RcptNo: **1**

Received by/date: 08/31/16

Logged By: **Lindsay Mangin** **8/31/2016 1:35:00 PM**

Completed By: **Lindsay Mangin** **8/31/2016 2:39:04 PM**

Reviewed By: 08/31/16

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	Client		

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
9. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
11. Were any sample containers received broken?	Yes ☐	No ☑	# of preserved bottles checked for pH: (<2 or >12 unless noted)
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	Adjusted?
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	Checked by:

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.7	Good	Not Present			

Chain-of-Custody Record

ent: AMAFCA

iling Address:

one #:

ail or Fax#: pchavez@AMAFCA.ORG

/QC Package:

Standard ☐ Level 4 (Full Validation)

creditation

NELAP ☐ Other

EDD (Type)

Turn-Around Time:

☒ Standard ☐ Rush

Project Name: CMC

Project #:

Project Manager: Patrick Chavez

Sampler: C. Johannesen - PDSA

On Ice: ☒ Yes ☐ No

Sample Temperature: 3.7

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

ate	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1608H83	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	E. Coli - Num				Air Bubbles (Y or N)
-16	1145	AQ	Rio Grande - North - 0831-16	1 poly		-001												X				

te:	Time:	Relinquished by:	Received by:	Date	Time	Remarks:
-10	1535			08/31/16	1335	
te:	Time:	Relinquished by:	Received by:	Date	Time	

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

September 13, 2016

Patrick Chavez
AMAFCA
2600 Prospect Ave NE
Albuquerque, NM 87107
TEL: (505) 884-2215
FAX

RE: CMC OrderNo.: 1609289

Dear Patrick Chavez:

Hall Environmental Analysis Laboratory received 1 sample(s) on 9/7/2016 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,



Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Field Data - Provided by DBS&A (field notebook & e-mails):
9/7/16 - Rio Grande North
DO = 7.29 mg/L, pH = 8.07, Conductivity = 319 umhos/cm, and Temperature = 21.19 °C

Analytical Report
Lab Order **1609289**
Date Reported: **9/13/2016**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Client Sample ID: Rio Grande North 090716
Project: CMC
Collection Date: 9/7/2016 1:00:00 PM
Lab ID: 1609289-001
Matrix: AQUEOUS
Received Date: 9/7/2016 3:00:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
SM 9223B FECAL INDICATOR: E. COLI MPN						Analyst: **tnc**	
E. Coli	82.0	1.000		CFU/100ml	1	9/8/2016 4:56:00 PM	27390

Equivalent to MPN/100 mL

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **AMAFCA** Work Order Number: **1609289** RcptNo: **1**

Received by/date: LM 09/07/16

Logged By: **Ashley Gallegos** 9/7/2016 1:00:00 PM

Completed By: **Ashley Gallegos** 9/7/2016 3:02:19 PM

Reviewed By: JC 09/07/16 @ 1530

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	Client		

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☐	No ☑	NA ☐
Samples were collected the same day and chilled.			
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
9. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
11. Were any sample containers received broken?	Yes ☐	No ☑	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	# of preserved bottles checked for pH: (<2 or >12 unless noted)
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	Adjusted?
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	Checked by:

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	17.4	Good	Not Present			

Chain-of-Custody Record

Client: AMAFCA

Mailing Address:

Phone #:

Email or Fax#: pchavez@amafca.org

QA/QC Package:
☑ Standard ☐ Level 4 (Full Validation)

Accreditation
☐ NELAP ☐ Other

EDD (Type)

Turn-Around Time:
☑ Standard ☐ Rush

Project Name: CMC

Project #:

Project Manager: Patrick Chavez

Sampler: C. Johannesen

On Ice: ☑ Yes ☐ No

Sample Temperature: 17.4

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions ($F, Cl, NO_3, NO_2, PO_4, SO_4$)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	E. Coli - Num				Air Bubbles (Y or N)
9-16	1300	AQ	Rio Grande North-090716			1609289-001												X				

Relinquished by: Received by: Date 09/07/16 Time 1500

Relinquished by: Received by: Date Time

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

September 19, 2016

Patrick Chavez
AMAFCA
2600 Prospect Ave NE
Albuquerque, NM 87107
TEL: (505) 884-2215
FAX

RE: CMC OrderNo.: 1609527

Dear Patrick Chavez:

Hall Environmental Analysis Laboratory received 1 sample(s) on 9/12/2016 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

Field Data - Provided by DBS&A (field notebook & e-mails):
9/12/16 - Rio Grande North
DO = 6.24 mg/L, pH = 8.53, Conductivity = 318 umhos/cm, and Temperature = 20.01°C

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1609527**
Date Reported: **9/19/2016**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Client Sample ID: Rio Grande North 091216
Project: CMC
Collection Date: 9/12/2016 11:00:00 AM
Lab ID: 1609527-001
Matrix: AQUEOUS
Received Date: 9/12/2016 1:10:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
SM 9223B FECAL INDICATOR: E. COLI MPN						Analyst: **tnc**	
E. Coli	55.6	1.000		CFU/100ml	1	9/13/2016 5:02:00 PM	27458

Equivalent to MPN/100 mL

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **AMAFCA** Work Order Number: **1609527** RcptNo: **1**

Received by/date: AG 09/12/16
Logged By: **Lindsay Mangin** 9/12/2016 1:10:00 PM
Completed By: **Lindsay Mangin** 9/12/2016 1:35:49 PM
Reviewed By: AJS 09/12/16

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☑
2. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
3. How was the sample delivered? Client

Log In

4. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C Yes ☐ No ☑ NA ☐
   Samples were collected the same day and chilled.
6. Sample(s) in proper container(s)? Yes ☑ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
9. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
10. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☑
11. Were any sample containers received broken? Yes ☐ No ☑
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes ☑ No ☐
13. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
14. Is it clear what analyses were requested? Yes ☑ No ☐
15. Were all holding times able to be met? (If no, notify customer for authorization.) Yes ☑ No ☐

# of preserved bottles checked for pH: (<2 or >12 unless noted)
Adjusted?
Checked by:

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: Date:
By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:
Client Instructions:

17. Additional remarks:

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	7.0	Good	Not Present			

Chain-of-Custody Record

Client: AMAFCA

Mailing Address:

Phone #:

email or Fax#: pchavez@amafca.org

QA/QC Package:
☐ Standard ☐ Level 4 (Full Validation)

Accreditation
☐ NELAP ☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:
☒ Standard ☐ Rush _____

Project Name: CMC

Project #:

Project Manager: Patrick Chavez

Sampler:

On Ice: ☒ Yes ☐ No

Sample Temperature: 7.0

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	E. coli: - NUM				Air Bubbles (Y or N)
12-16	1100	AQ	Rio Grande-North-091216	1	HNO_3	1609527 -001												X				

Date	Time	Relinquished by:	Received by:	Date	Time
12-10	1310			09/12/16	1310
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

December 02, 2016

Patrick Chavez
AMAFCA
2600 Prospect Ave NE
Albuquerque, NM 87107
TEL: (505) 884-2215
FAX

RE: CMC OrderNo.: 1609609

Dear Patrick Chavez:

Hall Environmental Analysis Laboratory received 5 sample(s) on 9/13/2016 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued October 18, 2016.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,<<>>



Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Field Data - Provided by DBS&A (field notebook & e-mails):
9/12/16 - Rio Grande North
DO = 6.24 mg/L, pH = 8.53, Conductivity = 318 umhos/cm, and Temperature = 20.01°C
9/13/16 - Rio Grande South
DO = 6.32 mg/L, pH = 8.45, Conductivity = 412 umhos/cm, and Temperature = 18.7 °C

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Case Narrative

WO#: **1609609**
Date: **12/2/2016**

CLIENT: AMAFCA
Project: CMC

Analytical Notes Regarding EPA method 1668
The sample ID equivalents are listed below.
1609609-001G = Rio Grande-North 091216
1609609-002G = Rio Grande-South 091316

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Project: CMC
Lab ID: 1609609-001B

Client Sample ID: Rio Grande-North 091216
Collection Date: 9/12/2016 11:00:00 AM
Matrix: Aqueous

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
SM5210B: BOD						Analyst: **SMS**	
Biochemical Oxygen Demand	DO Depletion<2.0	2.0		mg/L	1	9/19/2016 12:12:00 PM	27487

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Client Sample ID: Rio Grande-North 091216
Project: CMC
Collection Date: 9/12/2016 11:00:00 AM
Lab ID: 1609609-001D
Matrix: Aqueous

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	9/13/2016 5:23:31 PM	R37171
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	9/13/2016 5:23:31 PM	R37171
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **KS**	
Total Dissolved Solids	201	20.0		mg/L	1	9/19/2016 11:25:00 AM	27539
SM 4500 NH3: AMMONIA						Analyst: **CJS**	
Nitrogen, Ammonia	ND	1.0		mg/L	1	10/4/2016 2:28:00 PM	R37673
TOTAL NITROGEN						Analyst: **SRM**	
Nitrogen, Total	ND	1.0		mg/L	1	10/6/2016 10:37:00 AM	R37732
SM4500-H+B: PH						Analyst: **JRR**	
pH	8.25	1.68	H	pH units	1	9/13/2016 2:02:43 PM	R37155
EPA METHOD 365.1: TOTAL PHOSPHOROUS						Analyst: **JRR**	
Phosphorus, Total (As P)	0.052	0.010		mg/L	1	9/27/2016 11:43:24 AM	27693
SM 4500 NORG C: TKN						Analyst: **CJS**	
Nitrogen, Kjeldahl, Total	ND	1.0		mg/L	1	10/3/2016 2:12:00 PM	27768
SM 2540D: TSS						Analyst: **KS**	
Suspended Solids	29	4.0		mg/L	1	9/16/2016 10:58:00 AM	27523

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Project: CMC
Lab ID: 1609609-001E

Client Sample ID: Rio Grande-North 091216
Collection Date: 9/12/2016 11:00:00 AM
Matrix: Aqueous

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 1664A						Analyst: **tnc**	
N-Hexane Extractable Material	ND	9.4		mg/L	1	9/14/2016 9:45:00 AM	27492

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Client Sample ID: Rio Grande-North 091216
Project: CMC
Collection Date: 9/12/2016 11:00:00 AM
Lab ID: 1609609-001F
Matrix: Aqueous

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: DISSOLVED METALS						Analyst: **JLF**	
Copper	0.0024	0.0010		mg/L	1	9/30/2016 4:35:12 PM	C37623
Lead	ND	0.00050		mg/L	1	9/30/2016 4:35:12 PM	C37623
SM2340B: HARDNESS						Analyst: **MED**	
Hardness (As CaCO3)	130	6.6		mg/L	1	10/5/2016 12:00:00 PM	R37699
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **ELS**	
Calcium	41	1.0		mg/L	1	10/4/2016 12:35:44 AM	D37643
Magnesium	6.7	1.0		mg/L	1	10/5/2016 8:28:16 PM	B37699

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Project: CMC
Lab ID: 1609609-002A

Client Sample ID: Rio Grande-South 091316
Collection Date: 9/13/2016 7:15:00 AM
Matrix: Aqueous

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
SM 9223B FECAL INDICATOR: E. COLI MPN						Analyst: **tnc**	
E. Coli	959	10.00		CFU/100ml	10	9/14/2016 1:25:00 PM	27474

Equivalent to MPN/100 mL

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Project: CMC
Lab ID: 1609609-002B

Client Sample ID: Rio Grande-South 091316
Collection Date: 9/13/2016 7:15:00 AM
Matrix: Aqueous

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
SM5210B: BOD						Analyst: **SMS**	
Biochemical Oxygen Demand	DO Depletion<2.0	2.0		mg/L	1	9/19/2016 12:12:00 PM	27487

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Client Sample ID: Rio Grande-South 091316
Project: CMC
Collection Date: 9/13/2016 7:15:00 AM
Lab ID: 1609609-002D
Matrix: Aqueous

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	9/13/2016 6:13:09 PM	R37171
Nitrogen, Nitrate (As N)	0.83	0.10		mg/L	1	9/13/2016 6:13:09 PM	R37171
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **KS**	
Total Dissolved Solids	288	40.0	D	mg/L	1	9/19/2016 11:25:00 AM	27539
SM 4500 NH3: AMMONIA						Analyst: **CJS**	
Nitrogen, Ammonia	ND	1.0		mg/L	1	10/4/2016 2:28:00 PM	R37673
TOTAL NITROGEN						Analyst: **SRM**	
Nitrogen, Total	ND	1.0		mg/L	1	10/6/2016 10:37:00 AM	R37732
SM4500-H+B: PH						Analyst: **JRR**	
pH	8.12	1.68	H	pH units	1	9/13/2016 2:06:57 PM	R37155
EPA METHOD 365.1: TOTAL PHOSPHOROUS						Analyst: **JRR**	
Phosphorus, Total (As P)	0.65	0.010		mg/L	1	9/27/2016 11:47:54 AM	27693
SM 4500 NORG C: TKN						Analyst: **CJS**	
Nitrogen, Kjeldahl, Total	ND	1.0		mg/L	1	10/3/2016 2:12:00 PM	27768
SM 2540D: TSS						Analyst: **KS**	
Suspended Solids	130	4.0		mg/L	1	9/16/2016 10:58:00 AM	27523

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Project: CMC
Lab ID: 1609609-002E

Client Sample ID: Rio Grande-South 091316
Collection Date: 9/13/2016 7:15:00 AM
Matrix: Aqueous

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 1664A						Analyst: **tnc**	
N-Hexane Extractable Material	ND	11		mg/L	1	9/14/2016 9:45:00 AM	27492

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Client Sample ID: Rio Grande-South 091316
Project: CMC
Collection Date: 9/13/2016 7:15:00 AM
Lab ID: 1609609-002F
Matrix: Aqueous

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: DISSOLVED METALS						Analyst: **JLF**	
Copper	0.0016	0.0010		mg/L	1	9/30/2016 4:38:16 PM	C37623
Lead	ND	0.00050		mg/L	1	9/30/2016 4:38:16 PM	C37623
SM2340B: HARDNESS						Analyst: **MED**	
Hardness (As CaCO3)	150	6.6		mg/L	1	10/5/2016 12:00:00 PM	R37699
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **ELS**	
Calcium	46	1.0		mg/L	1	10/4/2016 12:39:56 AM	D37643
Magnesium	7.3	1.0		mg/L	1	10/5/2016 8:32:03 PM	B37699

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Project: CMC
Lab ID: 1609609-003A

Client Sample ID: Rio Grande-North 091216 Filtere
Collection Date: 9/12/2016 11:00:00 AM
Matrix: Aqueous

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 365.1: TOTAL PHOSPHOROUS						Analyst: **JRR**	
Phosphorus, Total (As P)	0.018	0.010		mg/L	1	9/27/2016 11:49:24 AM	27693

Dissolved Phosphorous

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Project: CMC
Lab ID: 1609609-004A

Client Sample ID: Rio Grande-South 091316 Filtere
Collection Date: 9/13/2016 7:15:00 AM
Matrix: Aqueous

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 365.1: TOTAL PHOSPHOROUS						Analyst: **JRR**	
Phosphorus, Total (As P)	0.50	0.010		mg/L	1	9/27/2016 11:50:54 AM	27693

Dissolved Phosphorous

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

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Client:	HALL ENVIRONMENTAL ANALYSIS LAB	**Batch #:**	160915048
Address:	4901 HAWKINS NE SUITE D ALBUQUERQUE, NM 87109	**Project Name:**	1609609
Attn:	ANDY FREEMAN		

Analytical Results Report

Sample Number	160915048-001	**Sampling Date**	9/12/2016	**Date/Time Received**	9/15/2016 11:50 AM
Client Sample ID	1609609-001C / RIO GRANDE-NORTH 091216			**Sampling Time**	11:00 AM
Matrix	Water				
Comments					

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Tetrahydrofuran	ND	ug/L	0.5	9/20/2016	SAT	EPA 8260C	

Surrogate Data

Sample Number 160915048-001

Surrogate Standard	Method	Percent Recovery	Control Limits
1,2-Dichlorobenzene-d4	EPA 8260C	99.2	70-130
4-Bromofluorobenzene	EPA 8260C	99.2	70-130
Toluene-d8	EPA 8260C	102.0	70-130

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Client:	HALL ENVIRONMENTAL ANALYSIS LAB	**Batch #:**	160915048
Address:	4901 HAWKINS NE SUITE D	**Project Name:**	1609609
	ALBUQUERQUE, NM 87109		
Attn:	ANDY FREEMAN		

Analytical Results Report

Sample Number	160915048-004	**Sampling Date**	9/13/2016	**Date/Time Received**	9/15/2016 11:50 AM
Client Sample ID	1609609-002C / RIO GRANDE-SOUTH 091316			**Sampling Time**	7:15 AM
Matrix	Water				
Comments					

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Tetrahydrofuran	ND	ug/L	0.5	9/20/2016	SAT	EPA 8260C	

Surrogate Data

Sample Number 160915048-004

Surrogate Standard	Method	Percent Recovery	Control Limits
1,2-Dichlorobenzene-d4	EPA 8260C	98.0	70-130
4-Bromofluorobenzene	EPA 8260C	97.6	70-130
Toluene-d8	EPA 8260C	92.4	70-130

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Client:	HALL ENVIRONMENTAL ANALYSIS LAB	**Batch #:**	160915048
Address:	4901 HAWKINS NE SUITE D ALBUQUERQUE, NM 87109	**Project Name:**	1609609
Attn:	ANDY FREEMAN		

Analytical Results Report

Sample Number	160915048-007	**Sampling Date**	9/13/2016	**Date/Time Received**	9/15/2016 11:50 AM
Client Sample ID	1609609-005A / TRIP BLANK			**Sampling Time**	
Matrix	Water				
Comments					

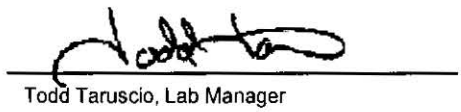
Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Tetrahydrofuran	ND	ug/L	0.5	9/20/2016	SAT	EPA 8260C	

Surrogate Data

Sample Number 160915048-007

Surrogate Standard	Method	Percent Recovery	Control Limits
1,2-Dichlorobenzene-d4	EPA 8260C	100.0	70-130
4-Bromofluorobenzene	EPA 8260C	99.6	70-130
Toluene-d8	EPA 8260C	99.2	70-130

Authorized Signature



Todd Taruscio, Lab Manager

MCL EPA's Maximum Contaminant Level
ND Not Detected
PQL Practical Quantitation Limit

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Client:	HALL ENVIRONMENTAL ANALYSIS LAB	**Batch #:**	160915048
Address:	4901 HAWKINS NE SUITE D ALBUQUERQUE, NM 87109	**Project Name:**	1609609
Attn:	ANDY FREEMAN		

Analytical Results Report

Quality Control Data

Lab Control Sample

Parameter	LCS Result	Units	LCS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
Tetrahydrofuran	11.4	ug/L	10	114.0	70-130	9/20/2016	9/20/2016

Method Blank

Parameter	Result	Units	PQL	Prep Date	Analysis Date
Tetrahydrofuran	ND	ug/L	0.5	9/20/2016	9/20/2016

AR	Acceptable Range
ND	Not Detected
PQL	Practical Quantitation Limit
RPD	Relative Percentage Difference

Comments:

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Client: HALL ENVIRONMENTAL ANALYSIS LAB
Address: 4901 HAWKINS NE SUITE D
ALBUQUERQUE, NM 87109
Attn: ANDY FREEMAN

Batch #: 160915048
Project Name: 1609609

Also tested with Method 1668 -results are included later in lab report

Analytical Results Report

Sample Number	160915048-002	**Sampling Date**	9/12/2016	**Date/Time Received**	9/15/2016	11:50 AM
Client Sample ID	1609609-001G / RIO GRANDE-NORTH 091216					
Matrix	Water	**Sampling Time**	11:00 AM	**Extraction Date**	9/19/2016	
Comments						

Parameter	Result	Units	MDL	PQL	Analysis Date	Analyst	Method	Qualifier
Aroclor 1016 (PCB-1016)	ND	ug/L	0.1	0.2	9/29/2016	MAH	EPA 608	
Aroclor 1221 (PCB-1221)	ND	ug/L	0.1	0.2	9/29/2016	MAH	EPA 608	
Aroclor 1232 (PCB-1232)	ND	ug/L	0.1	0.2	9/29/2016	MAH	EPA 608	
Aroclor 1242 (PCB-1242)	ND	ug/L	0.1	0.2	9/29/2016	MAH	EPA 608	
Aroclor 1248 (PCB-1248)	ND	ug/L	0.1	0.2	9/29/2016	MAH	EPA 608	
Aroclor 1254 (PCB-1254)	ND	ug/L	0.1	0.2	9/29/2016	MAH	EPA 608	
Aroclor 1260 (PCB-1260)	ND	ug/L	0.1	0.2	9/29/2016	MAH	EPA 608	
Dieldrin	ND	ug/L	0.003	0.01	9/29/2016	MAH	EPA 608	

Surrogate Data

Sample Number 160915048-002

Surrogate Standard	Method	Percent Recovery	Control Limits
DCB	EPA 608	97.2	30-130

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Client: HALL ENVIRONMENTAL ANALYSIS LAB
Address: 4901 HAWKINS NE SUITE D
ALBUQUERQUE, NM 87109
Attn: ANDY FREEMAN

Batch #: 160915048
Project Name: 1609609

Also tested with Method 1668 -results are included later in lab report

Analytical Results Report

Sample Number	160915048-005	**Sampling Date**	9/13/2016	**Date/Time Received**	9/15/2016 11:50 AM
Client Sample ID	1609609-002G / RIO GRANDE-SOUTH 091316				
Matrix	Water	**Sampling Time**	7:15 AM	**Extraction Date**	9/20/2016
Comments					

Parameter	Result	Units	MDL	PQL	Analysis Date	Analyst	Method	Qualifier
Aroclor 1016 (PCB-1016)	ND	ug/L	0.1	0.2	9/26/2016	MAH	EPA 608	
Aroclor 1221 (PCB-1221)	ND	ug/L	0.1	0.2	9/26/2016	MAH	EPA 608	
Aroclor 1232 (PCB-1232)	ND	ug/L	0.1	0.2	9/26/2016	MAH	EPA 608	
Aroclor 1242 (PCB-1242)	ND	ug/L	0.1	0.2	9/26/2016	MAH	EPA 608	
Aroclor 1248 (PCB-1248)	ND	ug/L	0.1	0.2	9/26/2016	MAH	EPA 608	
Aroclor 1254 (PCB-1254)	ND	ug/L	0.1	0.2	9/26/2016	MAH	EPA 608	
Aroclor 1260 (PCB-1260)	ND	ug/L	0.1	0.2	9/26/2016	MAH	EPA 608	
Dieldrin	ND	ug/L	0.003	0.01	9/26/2016	MAH	EPA 608	

Surrogate Data

Sample Number 160915048-005

Surrogate Standard	Method	Percent Recovery	Control Limits
DCB	EPA 608	71.2	30-130

Authorized Signature

Todd Taruscio, Lab Manager

MCL EPA's Maximum Contaminant Level
ND Not Detected
PQL Practical Quantitation Limit

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Client: HALL ENVIRONMENTAL ANALYSIS LAB
Address: 4901 HAWKINS NE SUITE D
ALBUQUERQUE, NM 87109
Attn: ANDY FREEMAN

Batch #: 160915048
Project Name: 1609609

Analytical Results Report

Quality Control Data

Lab Control Sample

Parameter	LCS Result	Units	LCS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
Dieldrin	0.420	ug/L	0.5	84.0	30-130	9/20/2016	9/26/2016
Aroclor 1260 (PCB-1260)	5.03	ug/L	5	100.6	50-130	9/20/2016	9/26/2016
Aroclor 1016 (PCB-1016)	4.79	ug/L	5	95.8	50-130	9/20/2016	9/26/2016
Dieldrin	0.472	ug/L	0.5	94.4	30-130	9/19/2016	9/28/2016
Aroclor 1260 (PCB-1260)	6.16	ug/L	5	123.2	50-130	9/19/2016	9/28/2016
Aroclor 1016 (PCB-1016)	4.73	ug/L	5	94.6	50-130	9/19/2016	9/28/2016

Matrix Spike

Sample Number	Parameter	Sample Result	MS Result	Units	MS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
160915048-005	Dieldrin	ND	0.420	ug/L	0.5	84.0	30-150	9/20/2016	9/26/2016
160915048-002	Dieldrin	ND	0.508	ug/L	0.5	101.6	30-150	9/19/2016	9/28/2016

Matrix Spike Duplicate

Parameter	MSD Result	Units	MSD Spike	%Rec	%RPD	AR %RPD	Prep Date	Analysis Date
Dieldrin	0.420	ug/L	0.5	84.0	0.0	0-30	9/20/2016	9/26/2016
Dieldrin	0.485	ug/L	0.5	97.0	4.6	0-30	9/19/2016	9/28/2016

Method Blank

Parameter	Result	Units	PQL	Prep Date	Analysis Date
Aroclor 1016 (PCB-1016)	ND	ug/L	0.2	9/20/2016	9/26/2016
Aroclor 1016 (PCB-1016)	ND	ug/L	0.2	9/19/2016	9/28/2016
Aroclor 1221 (PCB-1221)	ND	ug/L	0.2	9/19/2016	9/28/2016
Aroclor 1221 (PCB-1221)	ND	ug/L	0.2	9/20/2016	9/26/2016
Aroclor 1232 (PCB-1232)	ND	ug/L	0.2	9/19/2016	9/28/2016
Aroclor 1232 (PCB-1232)	ND	ug/L	0.2	9/20/2016	9/26/2016
Aroclor 1242 (PCB-1242)	ND	ug/L	0.2	9/20/2016	9/26/2016
Aroclor 1242 (PCB-1242)	ND	ug/L	0.2	9/19/2016	9/28/2016
Aroclor 1248 (PCB-1248)	ND	ug/L	0.2	9/20/2016	9/26/2016
Aroclor 1248 (PCB-1248)	ND	ug/L	0.2	9/19/2016	9/28/2016
Aroclor 1254 (PCB-1254)	ND	ug/L	0.2	9/19/2016	9/28/2016
Aroclor 1254 (PCB-1254)	ND	ug/L	0.2	9/20/2016	9/26/2016

Comments:

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; FL(NELAP):E87893; ID:ID00013; MT:CERT0028; NM: ID00013;NV:ID00013; OR:ID200001-002; WA:C595
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Client:	HALL ENVIRONMENTAL ANALYSIS LAB	**Batch #:**	160915048
Address:	4901 HAWKINS NE SUITE D	**Project Name:**	1609609
	ALBUQUERQUE, NM 87109		
Attn:	ANDY FREEMAN		

Analytical Results Report

Quality Control Data

Method Blank

Parameter	Result	Units	PQL	Prep Date	Analysis Date
Aroclor 1260 (PCB-1260)	ND	ug/L	0.2	9/19/2016	9/28/2016
Aroclor 1260 (PCB-1260)	ND	ug/L	0.2	9/20/2016	9/26/2016
Dieldrin	ND	ug/L	0.01	9/20/2016	9/26/2016
Dieldrin	ND	ug/L	0.01	9/19/2016	9/28/2016

AR	Acceptable Range
ND	Not Detected
PQL	Practical Quantitation Limit
RPD	Relative Percentage Difference

Comments:

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; FL(NELAP):E87893; ID:ID00013, MT:CERT0028; NM: ID00013;NV:ID00013; OR:ID200001-002; WA:C595
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Client:	HALL ENVIRONMENTAL ANALYSIS LAB	**Batch #:**	160915048
Address:	4901 HAWKINS NE SUITE D ALBUQUERQUE, NM 87109	**Project Name:**	1609609
Attn:	ANDY FREEMAN		

Analytical Results Report

Sample Number	160915048-002	**Sampling Date**	9/12/2016	**Date/Time Received**	9/15/2016	11:50 AM
Client Sample ID	1609609-001G / RIO GRANDE-NORTH 091216			**Extraction Date**	9/19/2016	
Matrix	Water	**Sampling Time**	11:00 AM			
Comments						

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Benzidine	ND	ug/L	0.5	9/23/2016	HSW	EPA 625	
Benzo[a]anthracene	ND	ug/L	0.5	9/23/2016	HSW	EPA 625	
Benzo[a]pyrene	ND	ug/L	0.5	9/23/2016	HSW	EPA 625	
Benzo[b]fluoranthene	ND	ug/L	0.5	9/23/2016	HSW	EPA 625	
Benzo[k]fluoranthene	ND	ug/L	0.5	9/23/2016	HSW	EPA 625	
bis(2-Ethylhexyl)phthalate	ND	ug/L	0.5	9/23/2016	HSW	EPA 625	
Chrysene	ND	ug/L	0.5	9/23/2016	HSW	EPA 625	
Dibenz[a,h]anthracene	ND	ug/L	0.5	9/23/2016	HSW	EPA 625	
Dibenzofuran	ND	ug/L	0.5	9/23/2016	HSW	EPA 625	
Indeno[1,2,3-cd]pyrene	ND	ug/L	0.5	9/23/2016	HSW	EPA 625	
Pentachlorophenol	ND	ug/L	0.5	9/23/2016	HSW	EPA 625	

Surrogate Data

Sample Number 160915048-002

Surrogate Standard	Method	Percent Recovery	Control Limits
2,4,6-Tribromophenol	EPA 625	78.8	53-122
2-Fluorobiphenyl	EPA 625	90.0	12-116
2-Fluorophenol	EPA 625	56.2	10-139
Nitrobenzene-d5	EPA 625	92.8	54-118
Phenol-d5	EPA 625	65.6	28-154
Terphenyl-d14	EPA 625	83.6	20-137

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Client:	HALL ENVIRONMENTAL ANALYSIS LAB	**Batch #:**	160915048
Address:	4901 HAWKINS NE SUITE D ALBUQUERQUE, NM 87109	**Project Name:**	1609609
Attn:	ANDY FREEMAN		

Analytical Results Report

Sample Number	160915048-005	**Sampling Date**	9/13/2016	**Date/Time Received**	9/15/2016	11:50 AM
Client Sample ID	1609609-002G / RIO GRANDE-SOUTH 091316			**Extraction Date**	9/19/2016	
Matrix	Water	**Sampling Time**	7:15 AM			
Comments						

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Benzidine	ND	ug/L	0.5	9/23/2016	HSW	EPA 625	
Benzo[a]anthracene	ND	ug/L	0.5	9/23/2016	HSW	EPA 625	
Benzo[a]pyrene	ND	ug/L	0.5	9/23/2016	HSW	EPA 625	
Benzo[b]fluoranthene	ND	ug/L	0.5	9/23/2016	HSW	EPA 625	
Benzo[k]fluoranthene	ND	ug/L	0.5	9/23/2016	HSW	EPA 625	
bis(2-Ethylhexyl)phthalate	ND	ug/L	0.5	9/23/2016	HSW	EPA 625	
Chrysene	ND	ug/L	0.5	9/23/2016	HSW	EPA 625	
Dibenz[a,h]anthracene	ND	ug/L	0.5	9/23/2016	HSW	EPA 625	
Dibenzofuran	ND	ug/L	0.5	9/23/2016	HSW	EPA 625	
Indeno[1,2,3-cd]pyrene	ND	ug/L	0.5	9/23/2016	HSW	EPA 625	
Pentachlorophenol	ND	ug/L	0.5	9/23/2016	HSW	EPA 625	

Surrogate Data

Sample Number 160915048-005

Surrogate Standard	Method	Percent Recovery	Control Limits
2,4,6-Tribromophenol	EPA 625	89.0	53-122
2-Fluorobiphenyl	EPA 625	94.4	12-116
2-Fluorophenol	EPA 625	63.2	10-139
Nitrobenzene-d5	EPA 625	94.4	54-118
Phenol-d5	EPA 625	76.0	28-154
Terphenyl-d14	EPA 625	81.2	20-137

Authorized Signature

Todd Taruscio, Lab Manager

MCL EPA's Maximum Contaminant Level
ND Not Detected
PQL Practical Quantitation Limit

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Client: HALL ENVIRONMENTAL ANALYSIS LAB
Address: 4901 HAWKINS NE SUITE D
ALBUQUERQUE, NM 87109
Attn: ANDY FREEMAN

Batch #: 160915048
Project Name: 1609609

Analytical Results Report

Quality Control Data

Lab Control Sample

Parameter	LCS Result	Units	LCS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
Pentachlorophenol	3.59	ug/L	5	71.8	22-138	9/19/2016	9/23/2016
bis(2-Ethylhexyl)phthalate	5.47	ug/L	5	109.4	43-148	9/19/2016	9/23/2016

Lab Control Sample Duplicate

Parameter	LCSD Result	Units	LCSD Spike	%Rec	%RPD	AR %RPD	Prep Date	Analysis Date
Pentachlorophenol	4.19	ug/L	5	83.8	15.4	0-47	9/19/2016	9/23/2016
bis(2-Ethylhexyl)phthalate	5.11	ug/L	5	102.2	6.8	0-50	9/19/2016	9/23/2016

Method Blank

Parameter	Result	Units	PQL	Prep Date	Analysis Date
Benzidine	ND	ug/L	0.5	9/19/2016	9/23/2016
Benzo[a]anthracene	ND	ug/L	0.5	9/19/2016	9/23/2016
Benzo[a]pyrene	ND	ug/L	0.5	9/19/2016	9/23/2016
Benzo[b]fluoranthene	ND	ug/L	0.5	9/19/2016	9/23/2016
Benzo[k]fluoranthene	ND	ug/L	0.5	9/19/2016	9/23/2016
bis(2-Ethylhexyl)phthalate	ND	ug/L	0.5	9/19/2016	9/23/2016
Chrysene	ND	ug/L	0.5	9/19/2016	9/23/2016
Dibenz[a,h]anthracene	ND	ug/L	0.5	9/19/2016	9/23/2016
Dibenzofuran	ND	ug/L	0.5	9/19/2016	9/23/2016
Indeno[1,2,3-cd]pyrene	ND	ug/L	0.5	9/19/2016	9/23/2016
Pentachlorophenol	ND	ug/L	0.5	9/19/2016	9/23/2016

AR	Acceptable Range
ND	Not Detected
PQL	Practical Quantitation Limit
RPD	Relative Percentage Difference

Comments:

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; FL(NELAP):E87893; ID:ID00013; MT:CERT0028; NM: ID00013;NV:ID00013; OR:ID200001-002; WA:C595
Certifications held by Anatek Labs WA: EPA:WA00169; ID:WA00169; WA:C585; MT:Cert0095; FL(NELAP): E871099

Anatek Labs, Inc.

1282 Alturas Drive • Moscow, ID 83843 • (208) 883-2839 • Fax (208) 882-9246 • email moscow@anateklabs.com
504 E Sprague Ste. D • Spokane WA 99202 • (509) 838-3999 • Fax (509) 838-4433 • email spokane@anateklabs.com

Client:	HALL ENVIRONMENTAL ANALYSIS LAB	**Batch #:**	160915048
Address:	4901 HAWKINS NE SUITE D ALBUQUERQUE, NM 87109	**Project Name:**	1609609
Attn:	ANDY FREEMAN		

Analytical Results Report

Sample Number	160915048-003	**Sampling Date**	9/12/2016	**Date/Time Received**	9/15/2016 11:50 AM
Client Sample ID	1609609-001I / RIO GRANDE-NORTH 091216			**Sampling Time**	11:00 AM
Matrix	Water				
Comments					

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
COD	12.3	mg/L	5	9/20/2016 1:30:00 PM	JDB	EPA 410.4	

Sample Number	160915048-006	**Sampling Date**	9/13/2016	**Date/Time Received**	9/15/2016 11:50 AM
Client Sample ID	1609609-002I / RIO GRANDE-SOUTH 091316			**Sampling Time**	7:15 AM
Matrix	Water				
Comments					

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
COD	18.6	mg/L	5	9/20/2016 1:30:00 PM	JDB	EPA 410.4	

Authorized Signature

Todd Taruscio, Lab Manager

MCL EPA's Maximum Contaminant Level
ND Not Detected
PQL Practical Quantitation Limit

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The results reported relate only to the samples indicated.
Soil/solid results are reported on a dry-weight basis unless otherwise noted.

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504 E Sprague Ste. D • Spokane WA 99202 • (509) 838-3999 • Fax (509) 838-4433 • email spokane@anateklabs.com

Client: HALL ENVIRONMENTAL ANALYSIS LAB
Address: 4901 HAWKINS NE SUITE D
ALBUQUERQUE, NM 87109
Attn: ANDY FREEMAN

Batch #: 160915048
Project Name: 1609609

Analytical Results Report

Quality Control Data

Lab Control Sample

Parameter	LCS Result	Units	LCS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
COD	100	mg/L	100	100.0	90-110	9/20/2016	9/20/2016

Matrix Spike

Sample Number	Parameter	Sample Result	MS Result	Units	MS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
160908039-002	COD	<5	105	mg/L	100	105.0	80-120	9/20/2016	9/20/2016

Matrix Spike Duplicate

Parameter	MSD Result	Units	MSD Spike	%Rec	%RPD	AR %RPD	Prep Date	Analysis Date
COD	101	mg/L	100	101.0	3.9	0-15	9/20/2016	9/20/2016

Method Blank

Parameter	Result	Units	PQL	Prep Date	Analysis Date
COD	<5	mg/L	5	9/20/2016	9/20/2016

Duplicate

Sample Number	Parameter	Sample Result	Duplicate Result	Units	%RPD	AR %RPD	Prep Date	Analysis Date
160908039-004	COD	<5	<5	mg/L	0.0	0-20	9/20/2016	9/20/2016

AR	Acceptable Range
ND	Not Detected
PQL	Practical Quantitation Limit
RPD	Relative Percentage Difference

Comments:

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; FL(NELAP):E87893; ID:ID00013; MT:CERT0028; NM: ID00013;NV:ID00013; OR:ID200001-002; WA:C595
Certifications held by Anatek Labs WA: EPA:WA00169; ID:WA00169; WA:C585; MT:Cert0095; FL(NELAP): E871099

Wet Chemistry by Method 3500Cr C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Hexavalent Chromium	ND		0.000500	1	09/21/2016 10:04	WG909188

Wet Chemistry by Method 3500Cr C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Hexavalent Chromium	ND		0.000500	1	09/21/2016 10:15	WG909188

Method Blank (MB)

(MB) R3165101-1 09/21/16 08:20

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/l		mg/l	mg/l
Hexavalent Chromium	U		0.000150	0.000500

L859362-02 Original Sample (OS) • Duplicate (DUP)

(OS) L859362-02 09/21/16 09:13 • (DUP) R3165101-4 09/21/16 09:21

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	mg/l	mg/l		%		%
Hexavalent Chromium	ND	ND	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3165101-2 09/21/16 08:29 • (LCSD) R3165101-3 09/21/16 08:37

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	%	%	%			%	%
Hexavalent Chromium	0.00200	0.00198	0.00199	99.0	100	90.0-110			0.000	20

L860098-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L860098-02 09/21/16 10:31 • (MS) R3165101-5 09/21/16 10:40 • (MSD) R3165101-6 09/21/16 10:48

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Hexavalent Chromium	0.0500	ND	0.0514	0.0507	103	101	1	90.0-110			1.00	20

Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Rec.	Recovery.

Qualifier	Description

The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 1609609
Pace Project No.: 30196687

Rio Grande North

Sample: 1609609-001J **Lab ID: 30196687001** Collected: 09/12/16 11:00 Received: 09/21/16 10:00 Matrix: Water
PWS: Site ID: Sample Type:

Comments: • Sample Acceptance Policy Waiver on file from the client.

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0	**2.32 ± 1.47 (1.84) C:NA T:NA**	pCi/L	10/14/16 08:15	12587-46-1	

Rio Grande South

Sample: 1609609-002J **Lab ID: 30196687002** Collected: 09/13/16 07:15 Received: 09/21/16 10:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0	**6.16 ± 2.62 (2.53) C:NA T:NA**	pCi/L	10/14/16 08:15	12587-46-1	

REPORT OF LABORATORY ANALYSIS

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Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL - RADIOCHEMISTRY

Project: 1609609
Pace Project No.: 30196687

QC Batch: 236514 Analysis Method: EPA 900.0
QC Batch Method: EPA 900.0 Analysis Description: 900.0 Gross Alpha/Beta
Associated Lab Samples: 30196687001, 30196687002

METHOD BLANK: 1161992 Matrix: Water
Associated Lab Samples: 30196687001, 30196687002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Gross Alpha	-0.388 ± 0.644 (1.98) C:NA T:NA	pCi/L	10/14/16 08:04	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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Greensburg, PA 15601
(724)850-5600

QUALIFIERS

Project: 1609609
Pace Project No.: 30196687

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval). Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

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CFA | Cape Fear Analytical LLC

an affiliate of **The GEL Group** INC

3306 Kitty Hawk Road, Suite 120 Wilmington, NC 28405
P 910.795.0421

www.capefearanalytical.com

November 18, 2016

Ms. Jodey Kougioulis
New Mexico Environment Department
121 Tijeras Avenue NE
Suite 1000
Albuquerque, New Mexico 87102

Re: HiSol PCB's and Dioxins
Work Order: 9998
SDG: 1609609_1609C98

Dear Ms. Kougioulis:

Cape Fear Analytical LLC (CFA) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on October 28, 2016. This original data report has been prepared and reviewed in accordance with CFA's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at 910-795-0421.

Sincerely,

Cynde Larkins

Cynde Larkins
Project Manager

Enclosures

problem solved

WO# 9998

Anatek Labs, Inc.

Chain of Custody Record

1282 Alturas Drive, Moscow ID 83843 (208) 883-2839 FAX 882-9246
504 E Sprague Ste D, Spokane WA 99202 (509) 838-3999 FAX 838-4433

Anatek Log-In #

Company Name: HALL ENVIRONMENTAL	Project Manager: ANDY FREEMAN
Address: 4901 HAWKINS NE SUITE D	Project Name & # :
City: ALBUQUERQUE State: NM Zip: 87109	Email Address : andy@hallenvironmental.com
Phone: (505) 345-3975	Purchase Order #:
Fax: (505) 345-4107	Sampler Name & phone:

Turn Around Time & Reporting

Please refer to our normal turn around times at:
http://www.anateklabs.com/services/guidelines/reporting.asp

✓ Normal
__ Next Day*
__ 2nd Day*
__ Other*_____

*All rush order requests must be prior approved.

__ Phone
× Mail
× Fax
× Email

Provide Sample Description / **List Analyses Requested** / **Note Special Instructions/Comments**

Preservative:

Lab ID	Sample Identification	Sampling Date/Time	Matrix	# of Containers	Sample Volume	PCB EPA1668
	1609609-001G	9/12/16 11:00am	WATER	1	1L	×
	1609609-002G	9/13/16 7:15am	WATER	1	1L	×
	1609C98-001G	9/21/16 12:15pm	WATER	1	1L	×
	1609C98-002G	9/22/16 11:00am	WATER	1	1L	×

CALL ANDY FREEMAN @ HALL ENVIRONMENTAL WITH QUESTIONS

REPORT AND BILL TO HALL ENVIRONMENTAL

Inspection Checklist

Received Intact?	Y	N
Labels & Chains Agree?	Y	N
Containers Sealed?	Y	N
VOC Head Space?	Y	N

Temperature (°C): 10.2°C
Preservative:
Date & Time:
Inspected By:

	Printed Name	Signature	Company	Date	Time
Relinquished by	Travis Hrcare		Anatek	10/27/16	11:45
Received by	Melissa O'Donnio		CFA	28Oct16	14:15
Relinquished by		MJO 28Oct16			
Received by					
Relinquished by					
Received by					

10.2°C

MJD 28Oct16

SAMPLE RECEIPT CHECKLIST

Cape Fear Analytical

Client: ~~HALL~~ NMED	Work Order: 9998
Shipping Company: Fed Ex	Date/Time Received: 28Oct2016 14:15

Suspected Hazard Information	Yes	NA	No
Shipped as DOT Hazardous?			✓
Samples identified as Foreign Soil?			✓

DOE Site Sample Packages	Yes	NA	No*
Screened <0.5 mR/hr?	MJD		
Samples < 2x background?	MJD		

* Notify RSO of any responses in this column immediately.

MJD 28Oct16

Air Sample Receipt Specifics	Yes	NA	No
Air sample in shipment?			✓

Air Witness: _____

	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	✓			Circle Applicable: seals broken damaged container leaking container other(describe)
2	Chain of Custody documents included with shipment?	✓			
3	Samples requiring cold preservation within 0-6°C?			✓	Preservation Method: ice bags blue ice dry ice none other (describe) 10.2° C
4	Aqueous samples found to have visible solids?	✓			Sample IDs, containers affected: c/i all samples
5	Samples requiring chemical preservation at proper pH?		✓		Sample IDs, containers affected and pH observed: pH=7 for all samples If preservative added, Lot#:
6	Samples requiring preservation have no residual chlorine?	✓			Sample IDs, containers affected: If preservative added, Lot#:
7	Samples received within holding time?	✓			Sample IDs, tests affected:
8	Sample IDs on COC match IDs on containers?	✓			Sample IDs, containers affected:
9	Date & time of COC match date & time on containers?	✓			Sample IDs, containers affected:
10	Number of containers received match number indicated on COC?	✓			List type and number of containers / Sample IDs, containers affected: 1-1L WMA each
11	COC form is properly signed in relinquished/received sections?	✓			

Comments:

Checklist performed by: Initials: MJD Date: 28Oct2016

CF-UD-F-7

Subject: RE: 1609609_1609C98
From: Anne Thorne <anne@hallenvironmental.com>
Date: 11/7/2016 9:36 AM
To: Cynde Larkins <cynde.larkins@cfanalytical.com>

Good morning Cynde

Please proceed with analysis.

at

From: Cynde Larkins [mailto:cynde.larkins@cfanalytical.com]
Sent: Friday, November 04, 2016 8:41 PM
To: Anne Thorne <anne@hallenvironmental.com>
Cc: Melissa O'Dorisio <mel00770@cfanalytical.com>
Subject: 1609609_1609C98

Anne,

The samples for 1609609_1609C98 were received at a temperature of 10.2°C. Do we have your permission to proceed with extraction and analysis?

Thanks,

--

Cynde Larkins
Project Manager
Cape Fear Analytical, LLC
3306 Kitty Hawk Road Suite 120
Wilmington, NC 28405
(910) 795-0421

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PCB Congeners Analysis

Case Narrative

PCBC Case Narrative
New Mexico Environment Department (NMED)
SDG 1609609_1609C98
Work Order 9998

Method/Analysis Information

Product:	**PCB Congeners Method 1668A High Solids Prep for Liquids**
Analytical Method:	EPA Method 1668A HS
Extraction Method:	SW846 3520C, 3540C
Analytical Batch Number:	33209
Clean Up Batch Number:	33208
Extraction Batch Number:	33207

Sample Analysis

The following samples were analyzed using the analytical protocol as established in EPA Method 1668A HS:

Sample ID	Client ID
9998001	1609609-001G
9998002	1609609-002G
9998003	1609C98-001G
9998004	1609C98-002G
12017259	Method Blank (MB)
12017260	Laboratory Control Sample (LCS)
12017261	Laboratory Control Sample Duplicate (LCSD)

The samples in this SDG were analyzed on an "as received" basis.

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by Cape Fear Analytical LLC (CFA) as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with CF-OA-E-003 REV# 6.

Raw data reports are processed and reviewed by the analyst using the TargetLynx software package.

Calibration Information

Initial Calibration

All initial calibration requirements have been met for this sample delivery group (SDG).

Continuing Calibration Verification (CCV) Requirements
All associated calibration verification standard(s) (ICV or CCV) met the acceptance criteria.

Quality Control (QC) Information

Certification Statement
The test results presented in this document are certified to meet all requirements of the 2009 TNI Standard.

Method Blank (MB) Statement
The MB(s) analyzed with this SDG met the acceptance criteria.

Surrogate Recoveries
Several surrogates recovered above the acceptance limits, however all native analytes still met acceptance criteria. 12017261 (LCSD).

Several surrogates recovered below the acceptance limits. Recovery issues may be matrix-related, as all other samples in the batch had acceptable recoveries. No further sample was available for re-extraction, therefore the data is reported. 9998001 (1609609-001G), 9998002 (1609609-002G), 9998003 (1609C98-001G) and 9998004 (1609C98-002G).

Laboratory Control Sample (LCS) Recovery
The LCS spike recoveries met the acceptance limits.

Laboratory Control Sample Duplicate (LCSD) Recovery
The LCSD spike recoveries met the acceptance limits.

LCS/LCSD Relative Percent Difference (RPD) Statement
The RPD(s) between the LCS and LCSD met the acceptance limits.

QC Sample Designation
A matrix spike and matrix spike duplicate analysis was not required for this SDG.

Technical Information

Holding Time Specifications
CFA assigns holding times based on the associated methodology, which assigns the date and time from sample collection. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration. All samples in this SDG met the specified holding time.

Preparation/Analytical Method Verification
All procedures were performed as stated in the SOP.

Sample Dilutions
The samples in this SDG did not require dilutions.

Sample Re-extraction/Re-analysis
Re-extractions or re-analyses were not required in this SDG.

Miscellaneous Information

Nonconformance (NCR) Documentation
A NCR was not required for this SDG.

Manual Integrations
Manual integrations were required for data files in this SDG. Certain standards and QC samples required manual integrations to correctly position the baseline as set in the calibration standard injections. Where manual integrations were performed, copies of all manual integration peak profiles are included in the raw data section of this fraction.

System Configuration
This analysis was performed on the following instrument configuration:

Instrument ID	Instrument	System Configuration	Column ID	Column Description
HRP791_1	PCB Analysis	PCB Analysis	SPB-Octyl	30m x 0.25mm, 0.25um

Electronic Packaging Comment

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted: Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative will include the data validator's signature and title. The signature page also includes the data qualifiers used in the fractional package. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Sample Data Summary

Cape Fear Analytical, LLC
3306 Kitty Hawk Road Suite 120, Wilmington, NC 28405 - (910) 795-0421 - www.capefearanalytical.com

Qualifier Definition Report
for

NMED001 New Mexico Environment Department

Client SDG: 1609609_1609C98 CFA Work Order: 9998

The Qualifiers in this report are defined as follows:

* A quality control analyte recovery is outside of specified acceptance criteria
** Analyte is a surrogate compound
B The target analyte was detected in the associated blank.
C Congener has coeluters. When Cxxx, refer to congener number xxx for data
J Value is estimated
K Estimated Maximum Possible Concentration
U Analyte was analyzed for, but not detected above the specified detection limit.
h Preparation or preservation holding time was exceeded

DL Indicates that sample is diluted.
RA Indicates that sample is re-analyzed without re-extraction.
RE Indicates that sample is re-extracted.

Review/Validation

Cape Fear Analytical requires all analytical data to be verified by a qualified data reviewer.

The following data validator verified the information presented in this case narrative:

Signature: Heather Patterson **Name: Heather Patterson**

Date: 18 NOV 2016 **Title: Group Leader**

Rio Grande North

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	1609609_1609C98	**Client:**	NMED001	**Project:**	NMED00113
Lab Sample ID:	9998001	**Date Collected:**	09/12/2016 11:00	**Matrix:**	WATER
Client Sample:	1668A Water	**Date Received:**	10/28/2016 14:15		
Client ID:	1609609-001G			**Prep Basis:**	As Received
Batch ID:	33209	**Method:**	EPA Method 1668A HS		
Run Date:	11/10/2016 06:06	**Analyst:**	MJC	**Instrument:**	HRP791
Data File:	c09nov16a_2-3			**Dilution:**	1
Prep Batch:	33207	**Prep Method:**	SW846 3520C	**Prep SOP Ref:**	CF-OA-E-001
Prep Date:	08-NOV-16	**Prep Aliquot:**	810.9 mL		

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
2051-60-7	PCB-1	BJ	21.1	17.3	pg/L	8.14	49.3
2051-61-8	PCB-2	J	15.7	12.8	pg/L	7.50	49.3
2051-62-9	PCB-3	J	22.5	19.9	pg/L	7.37	49.3
13029-08-8	PCB-4	J	46.5	37.3	pg/L	13.4	49.3
16605-91-7	PCB-5	U	8.19	8.19	pg/L	8.19	49.3
25569-80-6	PCB-6	J	12.2	8.12	pg/L	5.97	49.3
33284-50-3	PCB-7	U	6.76	6.76	pg/L	6.76	49.3
34883-43-7	PCB-8	BJ	38.5	34.7	pg/L	5.43	49.3
34883-39-1	PCB-9	U	6.71	6.71	pg/L	6.71	24.7
33146-45-1	PCB-10	U	4.56	4.56	pg/L	4.56	24.7
2050-67-1	PCB-11	B	808	803	pg/L	7.08	49.3
PCB-12/13	PCB-12/PCB-13	CU	7.35	7.35	pg/L	7.35	49.3
34883-41-5	PCB-14	U	6.61	6.61	pg/L	6.61	49.3
2050-68-2	PCB-15	J	40.1	34.9	pg/L	6.88	49.3
38444-78-9	PCB-16	J	10.1	6.84	pg/L	3.87	24.7
37680-66-3	PCB-17	BJ	11.8	8.62	pg/L	3.28	24.7
PCB-18/30	PCB-18/PCB-30	BCJ	25.2	22.8	pg/L	2.74	49.3
38444-73-4	PCB-19	J	23.3	19.8	pg/L	8.93	24.7
PCB-20/28	PCB-20/PCB-28	BCJ	46.9	44.5	pg/L	2.42	49.3
PCB-21/33	PCB-21/PCB-33	BCJ	22.6	20.4	pg/L	2.37	49.3
38444-85-8	PCB-22	J	17.1	14.6	pg/L	2.66	24.7
55720-44-0	PCB-23	U	2.44	2.44	pg/L	2.44	24.7
55702-45-9	PCB-24	U	2.52	2.52	pg/L	2.52	24.7
55712-37-3	PCB-25	U	2.32	2.32	pg/L	2.32	24.7
PCB-26/29	PCB-26/PCB-29	CJ	8.39	6.21	pg/L	2.24	49.3
38444-76-7	PCB-27	U	4.12	2.32	pg/L	2.32	24.7
16606-02-3	PCB-31		34.2	32.2	pg/L	2.20	24.7
38444-77-8	PCB-32	J	6.36	4.48	pg/L	2.12	24.7
37680-68-5	PCB-34	U	2.34	2.34	pg/L	2.34	24.7
37680-69-6	PCB-35	BJ	9.13	6.03	pg/L	4.61	49.3
38444-87-0	PCB-36	U	4.09	4.09	pg/L	4.09	24.7
38444-90-5	PCB-37	BJ	12.4	9.3	pg/L	4.22	24.7

Comments:

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Rio Grande North

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	1609609_1609C98	**Client:**	NMED001	**Project:**	NMED00113
Lab Sample ID:	9998001	**Date Collected:**	09/12/2016 11:00	**Matrix:**	WATER
Client Sample:	1668A Water	**Date Received:**	10/28/2016 14:15		
Client ID:	1609609-001G			**Prep Basis:**	As Received
Batch ID:	33209	**Method:**	EPA Method 1668A HS		
Run Date:	11/10/2016 06:06	**Analyst:**	MJC	**Instrument:**	HRP791
Data File:	c09nov16a_2-3			**Dilution:**	1
Prep Batch:	33207	**Prep Method:**	SW846 3520C	**Prep SOP Ref:**	CF-OA-E-001
Prep Date:	08-NOV-16	**Prep Aliquot:**	810.9 mL		

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
53555-66-1	PCB-38	U	4.17	4.17	pg/L	4.17	24.7
38444-88-1	PCB-39	U	4.29	4.29	pg/L	4.29	24.7
PCB-40/71	PCB-40/PCB-71	CU	5.23	2.44	pg/L	2.44	49.3
52663-59-9	PCB-41	U	3.6	3.6	pg/L	3.60	49.3
36559-22-5	PCB-42	U	3.01	3.01	pg/L	3.01	49.3
70362-46-8	PCB-43	U	3.38	3.38	pg/L	3.38	49.3
PCB-44/47/65	PCB-44/PCB-65/PCB-47	CJ	21.0	17.8	pg/L	2.61	74.0
PCB-45/51	PCB-45/PCB-51	BCJ	4.76	1.58	pg/L	1.41	49.3
41464-47-5	PCB-46	U	1.65	1.48	pg/L	1.48	24.7
70362-47-9	PCB-48	U	3.77	2.91	pg/L	2.91	24.7
PCB-49/69	PCB-49/PCB-69	BCJ	9.64	6.81	pg/L	2.44	49.3
PCB-50/53	PCB-50/PCB-53	BCU	2.66	1.31	pg/L	1.31	49.3
35693-99-3	PCB-52	J	23.1	19.9	pg/L	2.64	24.7
15968-05-5	PCB-54	U	5.72	5.72	pg/L	5.72	24.7
74338-24-2	PCB-55	U	2.15	2.15	pg/L	2.15	24.7
41464-43-1	PCB-56	BJK	6.34	3.13	pg/L	2.29	24.7
70424-67-8	PCB-57	U	1.9	1.9	pg/L	1.90	24.7
41464-49-7	PCB-58	U	2.1	2.1	pg/L	2.10	24.7
PCB-59/62/75	PCB-59/PCB-62/PCB-75	CU	2.07	2.07	pg/L	2.07	74.0
33025-41-1	PCB-60	U	4.27	2.15	pg/L	2.15	24.7
PCB-61-76	PCB-61/PCB-70/PCB-74/PCB-76	BCJ	25.0	22.2	pg/L	2.02	98.7
74472-34-7	PCB-63	U	1.8	1.8	pg/L	1.80	24.7
52663-58-8	PCB-64	J	6.29	3.61	pg/L	2.22	24.7
32598-10-0	PCB-66	BJ	11.7	8.89	pg/L	1.92	24.7
73575-53-8	PCB-67	U	1.7	1.7	pg/L	1.70	24.7
73575-52-7	PCB-68	KU	2.07	1.87	pg/L	1.87	24.7
41464-42-0	PCB-72	U	1.8	1.8	pg/L	1.80	24.7
74338-23-1	PCB-73	U	2.2	2.2	pg/L	2.20	24.7
32598-13-3	PCB-77	U	1.78	1.78	pg/L	1.78	24.7
70362-49-1	PCB-78	U	2.05	2.05	pg/L	2.05	24.7
41464-48-6	PCB-79	U	1.73	1.73	pg/L	1.73	24.7
33284-52-5	PCB-80	U	1.75	1.75	pg/L	1.75	24.7

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Rio Grande North

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	1609609_1609C98	**Client:**	NMED001	**Project:**	NMED00113
Lab Sample ID:	9998001	**Date Collected:**	09/12/2016 11:00	**Matrix:**	WATER
Client Sample:	1668A Water	**Date Received:**	10/28/2016 14:15		
Client ID:	1609609-001G			**Prep Basis:**	As Received
Batch ID:	33209	**Method:**	EPA Method 1668A HS		
Run Date:	11/10/2016 06:06	**Analyst:**	MJC	**Instrument:**	HRP791
Data File:	c09nov16a_2-3			**Dilution:**	1
Prep Batch:	33207	**Prep Method:**	SW846 3520C	**Prep SOP Ref:**	CF-OA-E-001
Prep Date:	08-NOV-16	**Prep Aliquot:**	810.9 mL		

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
70362-50-4	PCB-81	U	1.8	1.8	pg/L	1.80	24.7
52663-62-4	PCB-82	U	2.12	2.12	pg/L	2.12	24.7
60145-20-2	PCB-83	U	2.2	2.2	pg/L	2.20	24.7
52663-60-2	PCB-84	U	2.76	2.07	pg/L	2.07	24.7
PCB-85-117	PCB-85/PCB-116/PCB-117	CU	1.95	1.6	pg/L	1.60	74.0
PCB-86-125	PCB-86/PCB-87/PCB-97/PCB-109/PCB-119/PCB-	BCJ	8.21	5.1	pg/L	1.70	148
PCB-88/91	PCB-88/PCB-91	CU	2	2	pg/L	2.00	49.3
73575-57-2	PCB-89	U	1.97	1.97	pg/L	1.97	24.7
PCB-90-113	PCB-90/PCB-101/PCB-113	BCJ	8.26	5.21	pg/L	1.68	74.0
52663-61-3	PCB-92	U	1.9	1.9	pg/L	1.90	24.7
PCB-93/100	PCB-93/PCB-100	CU	2	2	pg/L	2.00	49.3
73575-55-0	PCB-94	U	2.2	2.2	pg/L	2.20	24.7
38379-99-6	PCB-95	BJ	5.85	2.77	pg/L	1.78	24.7
73575-54-9	PCB-96	U	.863	.863	pg/L	0.863	24.7
PCB-98/102	PCB-98/PCB-102	CU	2.05	2.05	pg/L	2.05	49.3
38380-01-7	PCB-99	BU	3.77	1.97	pg/L	1.97	24.7
60145-21-3	PCB-103	U	1.7	1.7	pg/L	1.70	24.7
56558-16-8	PCB-104	U	4.04	4.04	pg/L	4.04	24.7
32598-14-4	PCB-105	U	2.49	1.58	pg/L	1.58	24.7
70424-69-0	PCB-106	U	1.53	1.53	pg/L	1.53	24.7
70424-68-9	PCB-107	U	1.5	1.5	pg/L	1.50	24.7
PCB-108/124	PCB-108/PCB-124	CU	1.68	1.68	pg/L	1.68	49.3
PCB-110/115	PCB-110/PCB-115	BCJ	7.55	4.57	pg/L	1.60	49.3
39635-32-0	PCB-111	U	1.5	1.5	pg/L	1.50	24.7
74472-36-9	PCB-112	U	1.31	1.31	pg/L	1.31	24.7
74472-37-0	PCB-114	U	1.65	1.65	pg/L	1.65	24.7
31508-00-6	PCB-118	BU	4.41	1.53	pg/L	1.53	24.7
68194-12-7	PCB-120	U	1.26	1.26	pg/L	1.26	24.7
56558-18-0	PCB-121	U	1.53	1.53	pg/L	1.53	24.7
76842-07-4	PCB-122	U	1.7	1.7	pg/L	1.70	24.7
65510-44-3	PCB-123	U	1.6	1.6	pg/L	1.60	24.7
57465-28-8	PCB-126	U	1.7	1.7	pg/L	1.70	24.7

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Rio Grande North

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	1609609_1609C98	**Client:**	NMED001	**Project:**	NMED00113
Lab Sample ID:	9998001	**Date Collected:**	09/12/2016 11:00	**Matrix:**	WATER
Client Sample:	1668A Water	**Date Received:**	10/28/2016 14:15		
Client ID:	1609609-001G			**Prep Basis:**	As Received
Batch ID:	33209	**Method:**	EPA Method 1668A HS		
Run Date:	11/10/2016 06:06	**Analyst:**	MJC	**Instrument:**	HRP791
Data File:	c09nov16a_2-3			**Dilution:**	1
Prep Batch:	33207	**Prep Method:**	SW846 3520C	**Prep SOP Ref:**	CF-OA-E-001
Prep Date:	08-NOV-16	**Prep Aliquot:**	810.9 mL		

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
39635-33-1	PCB-127	U	1.63	1.63	pg/L	1.63	24.7
PCB-128/166	PCB-128/PCB-166	CU	1.48	1.48	pg/L	1.48	49.3
PCB-129-163	PCB-129/PCB-138/PCB-163	BCJ	6.56	2.34	pg/L	1.68	74.0
52663-66-8	PCB-130	U	1.8	1.8	pg/L	1.80	24.7
61798-70-7	PCB-131	U	2.12	2.12	pg/L	2.12	24.7
38380-05-1	PCB-132	BKU	2.17	1.95	pg/L	1.95	24.7
35694-04-3	PCB-133	U	1.73	1.73	pg/L	1.73	24.7
52704-70-8	PCB-134	U	2.2	2.2	pg/L	2.20	24.7
PCB-135/151	PCB-135/PCB-151	BCU	2.66	1.06	pg/L	1.06	49.3
38411-22-2	PCB-136	BU	1.23	.765	pg/L	0.765	24.7
35694-06-5	PCB-137	U	1.9	1.9	pg/L	1.90	24.7
PCB-139/140	PCB-139/PCB-140	CU	1.63	1.63	pg/L	1.63	49.3
52712-04-6	PCB-141	U	1.55	1.55	pg/L	1.55	24.7
41411-61-4	PCB-142	U	1.8	1.8	pg/L	1.80	24.7
68194-15-0	PCB-143	U	1.65	1.65	pg/L	1.65	24.7
68194-14-9	PCB-144	U	.937	.937	pg/L	0.937	24.7
74472-40-5	PCB-145	U	.863	.863	pg/L	0.863	24.7
51908-16-8	PCB-146	U	1.31	1.31	pg/L	1.31	24.7
PCB-147/149	PCB-147/PCB-149	BCU	4.88	1.6	pg/L	1.60	49.3
74472-41-6	PCB-148	U	1.01	1.01	pg/L	1.01	24.7
68194-08-1	PCB-150	U	.839	.839	pg/L	0.839	24.7
68194-09-2	PCB-152	U	.765	.765	pg/L	0.765	24.7
PCB-153/168	PCB-153/PCB-168	BCU	4.88	1.38	pg/L	1.38	49.3
60145-22-4	PCB-154	U	.839	.839	pg/L	0.839	24.7
33979-03-2	PCB-155	U	1.26	1.26	pg/L	1.26	24.7
PCB-156/157	PCB-156/PCB-157	BCKU	1.28	1.09	pg/L	1.09	49.3
74472-42-7	PCB-158	U	1.13	1.13	pg/L	1.13	24.7
39635-35-3	PCB-159	U	.863	.863	pg/L	0.863	24.7
41411-62-5	PCB-160	U	1.41	1.41	pg/L	1.41	24.7
74472-43-8	PCB-161	U	1.21	1.21	pg/L	1.21	24.7
39635-34-2	PCB-162	U	.937	.937	pg/L	0.937	24.7
74472-45-0	PCB-164	U	1.18	1.18	pg/L	1.18	24.7

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Rio Grande North

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	1609609_1609C98	**Client:**	NMED001	**Project:**	NMED00113
Lab Sample ID:	9998001	**Date Collected:**	09/12/2016 11:00	**Matrix:**	WATER
Client Sample:	1668A Water	**Date Received:**	10/28/2016 14:15		
Client ID:	1609609-001G			**Prep Basis:**	As Received
Batch ID:	33209	**Method:**	EPA Method 1668A HS		
Run Date:	11/10/2016 06:06	**Analyst:**	MJC	**Instrument:**	HRP791
Data File:	c09nov16a_2-3			**Dilution:**	1
Prep Batch:	33207	**Prep Method:**	SW846 3520C	**Prep SOP Ref:**	CF-OA-E-001
Prep Date:	08-NOV-16	**Prep Aliquot:**	810.9 mL		

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
74472-46-1	PCB-165	U	1.5	1.5	pg/L	1.50	24.7
52663-72-6	PCB-167	U	.814	.814	pg/L	0.814	24.7
32774-16-6	PCB-169	U	.913	.913	pg/L	0.913	24.7
35065-30-6	PCB-170	BU	1.31	1.09	pg/L	1.09	24.7
PCB-171/173	PCB-171/PCB-173	CU	1.09	1.09	pg/L	1.09	49.3
52663-74-8	PCB-172	U	1.11	1.11	pg/L	1.11	24.7
38411-25-5	PCB-174	BU	1.95	1.04	pg/L	1.04	24.7
40186-70-7	PCB-175	U	.913	.913	pg/L	0.913	24.7
52663-65-7	PCB-176	U	.715	.715	pg/L	0.715	24.7
52663-70-4	PCB-177	BU	1.28	1.11	pg/L	1.11	24.7
52663-67-9	PCB-178	U	.962	.962	pg/L	0.962	24.7
52663-64-6	PCB-179	BKU	1.06	.715	pg/L	0.715	24.7
PCB-180/193	PCB-180/PCB-193	CU	.962	.962	pg/L	0.962	49.3
74472-47-2	PCB-181	U	1.13	1.13	pg/L	1.13	24.7
60145-23-5	PCB-182	U	.888	.888	pg/L	0.888	24.7
PCB-183/185	PCB-183/PCB-185	BCU	1.87	1.04	pg/L	1.04	49.3
74472-48-3	PCB-184	U	.715	.715	pg/L	0.715	24.7
74472-49-4	PCB-186	U	.789	.789	pg/L	0.789	24.7
52663-68-0	PCB-187	BU	2.42	.937	pg/L	0.937	24.7
74487-85-7	PCB-188	U	.814	.814	pg/L	0.814	24.7
39635-31-9	PCB-189	U	.962	.962	pg/L	0.962	24.7
41411-64-7	PCB-190	U	.814	.814	pg/L	0.814	24.7
74472-50-7	PCB-191	U	.814	.814	pg/L	0.814	24.7
74472-51-8	PCB-192	U	.962	.962	pg/L	0.962	24.7
35694-08-7	PCB-194	BU	1.78	.814	pg/L	0.814	24.7
52663-78-2	PCB-195	U	.863	.863	pg/L	0.863	24.7
42740-50-1	PCB-196	U	1.04	.863	pg/L	0.863	24.7
PCB-197/200	PCB-197/PCB-200	CU	.715	.715	pg/L	0.715	49.3
PCB-198/199	PCB-198/PCB-199	BCU	2.07	.913	pg/L	0.913	49.3
40186-71-8	PCB-201	U	.666	.666	pg/L	0.666	24.7
2136-99-4	PCB-202	U	.715	.715	pg/L	0.715	24.7
52663-76-0	PCB-203	BU	0.913	.888	pg/L	0.888	24.7

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Rio Grande North

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	1609609_1609C98	**Client:**	NMED001	**Project:**	NMED00113
Lab Sample ID:	9998001	**Date Collected:**	09/12/2016 11:00	**Matrix:**	WATER
Client Sample:	1668A Water	**Date Received:**	10/28/2016 14:15		
Client ID:	1609609-001G			**Prep Basis:**	As Received
Batch ID:	33209	**Method:**	EPA Method 1668A HS		
Run Date:	11/10/2016 06:06	**Analyst:**	MJC	**Instrument:**	HRP791
Data File:	c09nov16a_2-3			**Dilution:**	1
Prep Batch:	33207	**Prep Method:**	SW846 3520C	**Prep SOP Ref:**	CF-OA-E-001
Prep Date:	08-NOV-16	**Prep Aliquot:**	810.9 mL		

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
74472-52-9	PCB-204	U	.691	.691	pg/L	0.691	24.7
74472-53-0	PCB-205	U	.691	.691	pg/L	0.691	24.7
40186-72-9	PCB-206	U	.913	.913	pg/L	0.913	24.7
52663-79-3	PCB-207	U	.666	.666	pg/L	0.666	24.7
52663-77-1	PCB-208	U	.691	.691	pg/L	0.691	24.7
2051-24-3	PCB-209	BU	2.32	.839	pg/L	0.839	24.7
27323-18-8	Total monoCB		59.4	50	pg/L		
25512-42-9	Total diCB		945	918	pg/L		
25323-68-6	Total triCB		232	196	pg/L		
26914-33-0	Total tetraCB		119	80.8	pg/L		
25429-29-2	Total pentaCB		45.3	17.6	pg/L		
26601-64-9	Total hexaCB		20.2	2.34	pg/L		
28655-71-2	Total heptaCB	U	8.83	0	pg/L		
55722-26-4	Total octaCB	U	5.80	0	pg/L		
53742-07-7	Total nonaCB	U	0	0	pg/L		
DECACB(Tot)	Total decaCB	U	2.32	0	pg/L		
1336-36-3	Total PCB		1440	1260	pg/L		
TEQ 7	TOTAL (TEQ ND=1/2 DL)_2005		0.0994		pg/L		
TEQ 8	TOTAL (TEQ ND=0)_2005		0.000207		pg/L		

=0.0014 ug/L

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%		Acceptable Limits
13C-1-MoCB		278	2470	pg/L	11.3	*	(15%-150%)
13C-3-MoCB		302	2470	pg/L	12.3	*	(15%-150%)
13C-4-DiCB		282	2470	pg/L	11.4	*	(25%-150%)
13C-15-DiCB		787	2470	pg/L	31.9		(25%-150%)
13C-19-TrCB		379	2470	pg/L	15.4	*	(25%-150%)
13C-37-TrCB		1030	2470	pg/L	41.7		(25%-150%)
13C-54-TeCB		182	2470	pg/L	7.40	*	(25%-150%)
13C-77-TeCB		2010	2470	pg/L	81.6		(25%-150%)
13C-81-TeCB		1870	2470	pg/L	75.6		(25%-150%)
13C-104-PeCB		243	2470	pg/L	9.85	*	(25%-150%)
13C-105-PeCB		1770	2470	pg/L	71.9		(25%-150%)
13C-114-PeCB		1620	2470	pg/L	65.7		(25%-150%)
13C-118-PeCB		1690	2470	pg/L	68.4		(25%-150%)
13C-123-PeCB		1670	2470	pg/L	67.9		(25%-150%)
13C-126-PeCB		1920	2470	pg/L	78.0		(25%-150%)
13C-155-HxCB		705	2470	pg/L	28.6		(25%-150%)
13C-156-HxCB	C	3470	4930	pg/L	70.4		(25%-150%)
13C-167-HxCB		1780	2470	pg/L	72.0		(25%-150%)
13C-169-HxCB		1820	2470	pg/L	73.8		(25%-150%)
13C-188-HpCB		1570	2470	pg/L	63.5		(25%-150%)
13C-189-HpCB		1950	2470	pg/L	79.1		(25%-150%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	1609609_1609C98	**Client:**	NMED001	**Project:**	NMED00113
Lab Sample ID:	9998001	**Date Collected:**	09/12/2016 11:00	**Matrix:**	WATER
Client Sample:	1668A Water	**Date Received:**	10/28/2016 14:15		
Client ID:	1609609-001G			**Prep Basis:**	As Received
Batch ID:	33209	**Method:**	EPA Method 1668A HS		
Run Date:	11/10/2016 06:06	**Analyst:**	MJC	**Instrument:**	HRP791
Data File:	c09nov16a_2-3			**Dilution:**	1
Prep Batch:	33207	**Prep Method:**	SW846 3520C	**Prep SOP Ref:**	CF-OA-E-001
Prep Date:	08-NOV-16	**Prep Aliquot:**	810.9 mL		

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-202-OcCB		1930	2470	pg/L	78.4	(25%-150%)
13C-205-OcCB		2210	2470	pg/L	89.7	(25%-150%)
13C-206-NoCB		2170	2470	pg/L	88.1	(25%-150%)
13C-208-NoCB		2050	2470	pg/L	83.0	(25%-150%)
13C-209-DeCB		2220	2470	pg/L	89.8	(25%-150%)
13C-28-TrCB		1520	2470	pg/L	61.7	(30%-135%)
13C-111-PeCB		2020	2470	pg/L	81.8	(30%-135%)
13C-178-HpCB		2070	2470	pg/L	84.0	(30%-135%)

Comments:

B The target analyte was detected in the associated blank.
C Congener has coeluters. When Cxxx, refer to congener number xxx for data
J Value is estimated
K Estimated Maximum Possible Concentration
U Analyte was analyzed for, but not detected above the specified detection limit.

Rio Grande South

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	1609609_1609C98	**Client:**	NMED001	**Project:**	NMED00113
Lab Sample ID:	9998002	**Date Collected:**	09/13/2016 07:15	**Matrix:**	WATER
Client Sample:	1668A Water	**Date Received:**	10/28/2016 14:15		
Client ID:	1609609-002G			**Prep Basis:**	As Received
Batch ID:	33209	**Method:**	EPA Method 1668A HS		
Run Date:	11/10/2016 07:13	**Analyst:**	MJC	**Instrument:**	HRP791
Data File:	c09nov16a_2-4			**Dilution:**	1
Prep Batch:	33207	**Prep Method:**	SW846 3520C	**Prep SOP Ref:**	CF-OA-E-001
Prep Date:	08-NOV-16	**Prep Aliquot:**	777.8 mL		

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
2051-60-7	PCB-1	BJ	21.3	17.5	pg/L	8.95	51.4
2051-61-8	PCB-2	J	15.1	12.2	pg/L	8.56	51.4
2051-62-9	PCB-3	J	15.3	12.6	pg/L	8.72	51.4
13029-08-8	PCB-4	J	48.3	39.2	pg/L	12.5	51.4
16605-91-7	PCB-5	C	9.08	9.08	pg/L	9.08	51.4
25569-80-6	PCB-6	J	12.7	8.62	pg/L	6.61	51.4
33284-50-3	PCB-7	U	7.51	7.51	pg/L	7.51	51.4
34883-43-7	PCB-8	BJ	36.7	33	pg/L	6.02	51.4
34883-39-1	PCB-9	U	7.43	7.43	pg/L	7.43	25.7
33146-45-1	PCB-10	U	4.27	4.27	pg/L	4.27	25.7
2050-67-1	PCB-11	B	863	859	pg/L	7.84	51.4
PCB-12/13	PCB-12/PCB-13	CU	8.15	8.15	pg/L	8.15	51.4
34883-41-5	PCB-14	U	7.33	7.33	pg/L	7.33	51.4
2050-68-2	PCB-15	BJ	34.1	28.8	pg/L	7.79	51.4
38444-78-9	PCB-16	J	10.6	7.35	pg/L	3.39	25.7
37680-66-3	PCB-17	BJ	14.0	10.8	pg/L	2.88	25.7
PCB-18/30	PCB-18/PCB-30	BCJ	26.8	24.5	pg/L	2.39	51.4
38444-73-4	PCB-19	J	11.6	8.1	pg/L	7.74	25.7
PCB-20/28	PCB-20/PCB-28	BCJ	51.9	49.6	pg/L	2.11	51.4
PCB-21/33	PCB-21/PCB-33	BCJ	21.3	19.2	pg/L	2.08	51.4
38444-85-8	PCB-22	J	18.0	15.5	pg/L	2.31	25.7
55720-44-0	PCB-23	U	2.13	2.13	pg/L	2.13	25.7
55702-45-9	PCB-24	U	2.21	2.21	pg/L	2.21	25.7
55712-37-3	PCB-25	U	2.03	2.03	pg/L	2.03	25.7
PCB-26/29	PCB-26/PCB-29	CJ	8.00	5.82	pg/L	1.98	51.4
38444-76-7	PCB-27	U	2.03	2.03	pg/L	2.03	25.7
16606-02-3	PCB-31		36.1	34.1	pg/L	1.93	25.7
38444-77-8	PCB-32	J	7.17	5.29	pg/L	1.88	25.7
37680-68-5	PCB-34	U	2.06	2.06	pg/L	2.06	25.7
37680-69-6	PCB-35	BJ	9.85	6.75	pg/L	5.50	51.4
38444-87-0	PCB-36	U	4.91	4.91	pg/L	4.91	25.7
38444-90-5	PCB-37	BJ	17.8	14.8	pg/L	5.12	25.7

Comments:

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Rio Grande South

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	1609609_1609C98	**Client:**	NMED001	**Project:**	NMED00113
Lab Sample ID:	9998002	**Date Collected:**	09/13/2016 07:15	**Matrix:**	WATER
Client Sample:	1668A Water	**Date Received:**	10/28/2016 14:15		
Client ID:	1609609-002G			**Prep Basis:**	As Received
Batch ID:	33209	**Method:**	EPA Method 1668A HS		
Run Date:	11/10/2016 07:13	**Analyst:**	MJC	**Instrument:**	HRP791
Data File:	c09nov16a_2-4			**Dilution:**	1
Prep Batch:	33207	**Prep Method:**	SW846 3520C	**Prep SOP Ref:**	CF-OA-E-001
Prep Date:	08-NOV-16	**Prep Aliquot:**	777.8 mL		

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
53555-66-1	PCB-38	U	4.99	4.99	pg/L	4.99	25.7
38444-88-1	PCB-39	U	5.12	5.12	pg/L	5.12	25.7
PCB-40/71	PCB-40/PCB-71	CJ	7.82	4.58	pg/L	2.06	51.4
52663-59-9	PCB-41	U	3.01	3.01	pg/L	3.01	51.4
36559-22-5	PCB-42	J	7.64	3.95	pg/L	2.52	51.4
70362-46-8	PCB-43	U	2.83	2.83	pg/L	2.83	51.4
PCB-44/47/65	PCB-44/PCB-65/PCB-47	CU	2.19	2.19	pg/L	2.19	77.1
PCB-45/51	PCB-45/PCB-51	BCJ	5.50	2.32	pg/L	1.34	51.4
41464-47-5	PCB-46	U	1.41	1.41	pg/L	1.41	25.7
70362-47-9	PCB-48	U	5.35	2.42	pg/L	2.42	25.7
PCB-49/69	PCB-49/PCB-69	BCJ	15.3	12.5	pg/L	2.06	51.4
PCB-50/53	PCB-50/PCB-53	BCU	3.11	1.26	pg/L	1.26	51.4
35693-99-3	PCB-52		42.1	38.9	pg/L	2.21	25.7
15968-05-5	PCB-54	U	5.14	5.14	pg/L	5.14	25.7
74338-24-2	PCB-55	U	1.83	1.83	pg/L	1.83	25.7
41464-43-1	PCB-56	BJ	12.2	8.96	pg/L	1.98	25.7
70424-67-8	PCB-57	U	1.62	1.62	pg/L	1.62	25.7
41464-49-7	PCB-58	U	1.88	1.8	pg/L	1.80	25.7
PCB-59/62/75	PCB-59/PCB-62/PCB-75	CU	2.78	1.72	pg/L	1.72	77.1
33025-41-1	PCB-60	J	7.64	4.5	pg/L	1.85	25.7
PCB-61-76	PCB-61/PCB-70/PCB-74/PCB-76	BCJ	50.3	47.5	pg/L	1.75	103
74472-34-7	PCB-63	U	1.54	1.54	pg/L	1.54	25.7
52663-58-8	PCB-64	J	11.3	8.61	pg/L	1.85	25.7
32598-10-0	PCB-66	BJ	22.8	20	pg/L	1.65	25.7
73575-53-8	PCB-67	U	1.47	1.47	pg/L	1.47	25.7
73575-52-7	PCB-68	U	1.62	1.62	pg/L	1.62	25.7
41464-42-0	PCB-72	U	1.54	1.54	pg/L	1.54	25.7
74338-23-1	PCB-73	U	1.83	1.83	pg/L	1.83	25.7
32598-13-3	PCB-77	BU	3.88	1.54	pg/L	1.54	25.7
70362-49-1	PCB-78	U	1.75	1.75	pg/L	1.75	25.7
41464-48-6	PCB-79	U	1.49	1.49	pg/L	1.49	25.7
33284-52-5	PCB-80	U	1.52	1.52	pg/L	1.52	25.7

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Rio Grande South

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	1609609_1609C98	**Client:**	NMED001	**Project:**	NMED00113
Lab Sample ID:	9998002	**Date Collected:**	09/13/2016 07:15	**Matrix:**	WATER
Client Sample:	1668A Water	**Date Received:**	10/28/2016 14:15		
Client ID:	1609609-002G			**Prep Basis:**	As Received
Batch ID:	33209	**Method:**	EPA Method 1668A HS		
Run Date:	11/10/2016 07:13	**Analyst:**	MJC	**Instrument:**	HRP791
Data File:	c09nov16a_2-4			**Dilution:**	1
Prep Batch:	33207	**Prep Method:**	SW846 3520C	**Prep SOP Ref:**	CF-OA-E-001
Prep Date:	08-NOV-16	**Prep Aliquot:**	777.8 mL		

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
70362-50-4	PCB-81	U	1.57	1.57	pg/L	1.57	25.7
52663-62-4	PCB-82	U	4.83	2.7	pg/L	2.70	25.7
60145-20-2	PCB-83	U	2.8	2.8	pg/L	2.80	25.7
52663-60-2	PCB-84	J	9.51	5.51	pg/L	2.62	25.7
PCB-85-117	PCB-85/PCB-116/PCB-117	CJ	8.18	5	pg/L	2.03	77.1
PCB-86-125	PCB-86/PCB-87/PCB-97/PCB-109/PCB-119/PCB-	CJ	32.3	29.2	pg/L	2.19	154
PCB-88/91	PCB-88/PCB-91	CU	5.25	2.52	pg/L	2.52	51.4
73575-57-2	PCB-89	U	2.49	2.49	pg/L	2.49	25.7
PCB-90-113	PCB-90/PCB-101/PCB-113	CJ	52.5	49.5	pg/L	2.13	77.1
52663-61-3	PCB-92	J	8.90	5.4	pg/L	2.39	25.7
PCB-93/100	PCB-93/PCB-100	CU	2.52	2.52	pg/L	2.52	51.4
73575-55-0	PCB-94	U	2.78	2.78	pg/L	2.78	25.7
38379-99-6	PCB-95		31.8	28.8	pg/L	2.26	25.7
73575-54-9	PCB-96	U	.746	.746	pg/L	0.746	25.7
PCB-98/102	PCB-98/PCB-102	CU	2.6	2.6	pg/L	2.60	51.4
38380-01-7	PCB-99	J	18.9	15.4	pg/L	2.52	25.7
60145-21-3	PCB-103	U	2.16	2.16	pg/L	2.16	25.7
56558-16-8	PCB-104	U	3.34	3.34	pg/L	3.34	25.7
32598-14-4	PCB-105	J	15.0	11.4	pg/L	1.77	25.7
70424-69-0	PCB-106	U	1.72	1.72	pg/L	1.72	25.7
70424-68-9	PCB-107	U	3.39	1.67	pg/L	1.67	25.7
PCB-108/124	PCB-108/PCB-124	CU	2.60	1.88	pg/L	1.88	51.4
PCB-110/115	PCB-110/PCB-115	C	65.4	62.4	pg/L	2.03	51.4
39635-32-0	PCB-111	U	1.9	1.9	pg/L	1.90	25.7
74472-36-9	PCB-112	U	1.67	1.67	pg/L	1.67	25.7
74472-37-0	PCB-114	U	1.88	1.88	pg/L	1.88	25.7
31508-00-6	PCB-118		34.4	31.1	pg/L	1.67	25.7
68194-12-7	PCB-120	U	1.62	1.62	pg/L	1.62	25.7
56558-18-0	PCB-121	U	1.93	1.93	pg/L	1.93	25.7
76842-07-4	PCB-122	U	1.9	1.9	pg/L	1.90	25.7
65510-44-3	PCB-123	U	1.77	1.77	pg/L	1.77	25.7
57465-28-8	PCB-126	U	1.93	1.93	pg/L	1.93	25.7

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Rio Grande South

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	1609609_1609C98	**Client:**	NMED001	**Project:**	NMED00113
Lab Sample ID:	9998002	**Date Collected:**	09/13/2016 07:15	**Matrix:**	WATER
Client Sample:	1668A Water	**Date Received:**	10/28/2016 14:15		
Client ID:	1609609-002G			**Prep Basis:**	As Received
Batch ID:	33209	**Method:**	EPA Method 1668A HS		
Run Date:	11/10/2016 07:13	**Analyst:**	MJC	**Instrument:**	HRP791
Data File:	c09nov16a_2-4			**Dilution:**	1
Prep Batch:	33207	**Prep Method:**	SW846 3520C	**Prep SOP Ref:**	CF-OA-E-001
Prep Date:	08-NOV-16	**Prep Aliquot:**	777.8 mL		

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
39635-33-1	PCB-127	U	1.83	1.83	pg/L	1.83	25.7
PCB-128/166	PCB-128/PCB-166	CJ	11.8	7.84	pg/L	1.29	51.4
PCB-129-163	PCB-129/PCB-138/PCB-163	C	138	134	pg/L	1.47	77.1
52663-66-8	PCB-130	U	5.45	1.59	pg/L	1.59	25.7
61798-70-7	PCB-131	U	1.85	1.85	pg/L	1.85	25.7
38380-05-1	PCB-132		35.5	30	pg/L	1.70	25.7
35694-04-3	PCB-133	U	1.52	1.52	pg/L	1.52	25.7
52704-70-8	PCB-134	U	4.91	1.93	pg/L	1.93	25.7
PCB-135/151	PCB-135/PCB-151	CJ	41.5	36	pg/L	1.08	51.4
38411-22-2	PCB-136	J	12.7	9.08	pg/L	0.797	25.7
35694-06-5	PCB-137	U	3.11	1.67	pg/L	1.67	25.7
PCB-139/140	PCB-139/PCB-140	CU	1.41	1.41	pg/L	1.41	51.4
52712-04-6	PCB-141	J	24.8	19.7	pg/L	1.36	25.7
41411-61-4	PCB-142	U	1.57	1.57	pg/L	1.57	25.7
68194-15-0	PCB-143	U	1.44	1.44	pg/L	1.44	25.7
68194-14-9	PCB-144	U	5.37	.977	pg/L	0.977	25.7
74472-40-5	PCB-145	U	.9	.9	pg/L	0.900	25.7
51908-16-8	PCB-146	J	14.4	10.1	pg/L	1.13	25.7
PCB-147/149	PCB-147/PCB-149	C	95.5	90.8	pg/L	1.41	51.4
74472-41-6	PCB-148	U	1.03	1.03	pg/L	1.03	25.7
68194-08-1	PCB-150	U	.849	.849	pg/L	0.849	25.7
68194-09-2	PCB-152	U	.771	.771	pg/L	0.771	25.7
PCB-153/168	PCB-153/PCB-168	C	116	112	pg/L	1.21	51.4
60145-22-4	PCB-154	KU	1.31	.849	pg/L	0.849	25.7
33979-03-2	PCB-155	U	1.21	1.21	pg/L	1.21	25.7
PCB-156/157	PCB-156/PCB-157	BCJ	9.36	4.44	pg/L	1.44	51.4
74472-42-7	PCB-158	J	11.3	7.75	pg/L	1.00	25.7
39635-35-3	PCB-159	U	1.13	1.13	pg/L	1.13	25.7
41411-62-5	PCB-160	U	1.23	1.23	pg/L	1.23	25.7
74472-43-8	PCB-161	U	1.05	1.05	pg/L	1.05	25.7
39635-34-2	PCB-162	U	1.23	1.23	pg/L	1.23	25.7
74472-45-0	PCB-164	J	8.49	4.74	pg/L	1.03	25.7

Comments:

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Rio Grande South

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	1609609_1609C98	**Client:**	NMED001	**Project:**	NMED00113
Lab Sample ID:	9998002	**Date Collected:**	09/13/2016 07:15	**Matrix:**	WATER
Client Sample:	1668A Water	**Date Received:**	10/28/2016 14:15		
Client ID:	1609609-002G			**Prep Basis:**	As Received
Batch ID:	33209	**Method:**	EPA Method 1668A HS		
Run Date:	11/10/2016 07:13	**Analyst:**	MJC	**Instrument:**	HRP791
Data File:	c09nov16a_2-4			**Dilution:**	1
Prep Batch:	33207	**Prep Method:**	SW846 3520C	**Prep SOP Ref:**	CF-OA-E-001
Prep Date:	08-NOV-16	**Prep Aliquot:**	777.8 mL		

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
74472-46-1	PCB-165	U	1.31	1.31	pg/L	1.31	25.7
52663-72-6	PCB-167	BU	4.50	1.11	pg/L	1.11	25.7
32774-16-6	PCB-169	U	1.18	1.18	pg/L	1.18	25.7
35065-30-6	PCB-170		46.6	42.4	pg/L	1.34	25.7
PCB-171/173	PCB-171/PCB-173	CJ	14.9	10.4	pg/L	1.34	51.4
52663-74-8	PCB-172	J	9.36	5.01	pg/L	1.36	25.7
38411-25-5	PCB-174		49.8	45.2	pg/L	1.26	25.7
40186-70-7	PCB-175	U	2.39	.9	pg/L	0.900	25.7
52663-65-7	PCB-176	J	5.37	1.56	pg/L	0.694	25.7
52663-70-4	PCB-177	J	29.8	25.4	pg/L	1.36	25.7
52663-67-9	PCB-178	J	10.2	5.01	pg/L	0.951	25.7
52663-64-6	PCB-179	J	18.0	14.1	pg/L	0.694	25.7
PCB-180/193	PCB-180/PCB-193	CU	1.16	1.16	pg/L	1.16	51.4
74472-47-2	PCB-181	U	1.39	1.39	pg/L	1.39	25.7
60145-23-5	PCB-182	U	.9	.9	pg/L	0.900	25.7
PCB-183/185	PCB-183/PCB-185	CJ	34.7	30.7	pg/L	1.29	51.4
74472-48-3	PCB-184	U	.72	.72	pg/L	0.720	25.7
74472-49-4	PCB-186	U	.797	.797	pg/L	0.797	25.7
52663-68-0	PCB-187		63.4	58.4	pg/L	0.951	25.7
74487-85-7	PCB-188	U	.797	.797	pg/L	0.797	25.7
39635-31-9	PCB-189	BU	2.34	.977	pg/L	0.977	25.7
41411-64-7	PCB-190	J	10.2	7.03	pg/L	1.00	25.7
74472-50-7	PCB-191	U	1.90	.977	pg/L	0.977	25.7
74472-51-8	PCB-192	U	1.18	1.18	pg/L	1.18	25.7
35694-08-7	PCB-194	J	20.8	16.5	pg/L	0.771	25.7
52663-78-2	PCB-195	J	9.44	4.8	pg/L	0.849	25.7
42740-50-1	PCB-196	J	11.5	6.04	pg/L	1.08	25.7
PCB-197/200	PCB-197/PCB-200	CU	4.11	.9	pg/L	0.900	51.4
PCB-198/199	PCB-198/PCB-199	CJ	24.3	18.4	pg/L	1.16	51.4
40186-71-8	PCB-201	U	2.93	.849	pg/L	0.849	25.7
2136-99-4	PCB-202	U	4.63	.926	pg/L	0.926	25.7
52663-76-0	PCB-203	J	15.0	9.46	pg/L	1.11	25.7

Comments:

B The target analyte was detected in the associated blank.
C Congener has coeluters. When Cxxx, refer to congener number xxx for data
J Value is estimated
K Estimated Maximum Possible Concentration
U Analyte was analyzed for, but not detected above the specified detection limit.

Rio Grande South

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	1609609_1609C98	**Client:**	NMED001	**Project:**	NMED00113
Lab Sample ID:	9998002	**Date Collected:**	09/13/2016 07:15	**Matrix:**	WATER
Client Sample:	1668A Water	**Date Received:**	10/28/2016 14:15		
Client ID:	1609609-002G			**Prep Basis:**	As Received
Batch ID:	33209	**Method:**	EPA Method 1668A HS		
Run Date:	11/10/2016 07:13	**Analyst:**	MJC	**Instrument:**	HRP791
Data File:	c09nov16a_2-4			**Dilution:**	1
Prep Batch:	33207	**Prep Method:**	SW846 3520C	**Prep SOP Ref:**	CF-OA-E-001
Prep Date:	08-NOV-16	**Prep Aliquot:**	777.8 mL		

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL	
74472-52-9	PCB-204	U	.874	.874	pg/L	0.874	25.7	
74472-53-0	PCB-205	BU	1.57	.669	pg/L	0.669	25.7	
40186-72-9	PCB-206	U	6.53	1.21	pg/L	1.21	25.7	
52663-79-3	PCB-207	U	1.34	.9	pg/L	0.900	25.7	
52663-77-1	PCB-208	U	1.83	.951	pg/L	0.951	25.7	
2051-24-3	PCB-209	BU	2.96	.926	pg/L	0.926	25.7	
27323-18-8	Total monoCB		51.7	42.3	pg/L			
25512-42-9	Total diCB		995	968	pg/L			
25323-68-6	Total triCB		233	202	pg/L			
26914-33-0	Total tetraCB		200	152	pg/L			
25429-29-2	Total pentaCB		293	244	pg/L			
26601-64-9	Total hexaCB		543	466	pg/L			
28655-71-2	Total heptaCB		299	245	pg/L			
55722-26-4	Total octaCB		94.3	55.2	pg/L			
53742-07-7	Total nonaCB	U	9.69	0	pg/L			
DECACB(Tot)	Total decaCB	U	2.96	0	pg/L			
1336-36-3	Total PCB		2720	2370	pg/L			=0.0027 ug/L
TEQ 7	TOTAL (TEQ ND=1/2 DL)_2005		0.117		pg/L			
TEQ 8	TOTAL (TEQ ND=0)_2005		0.00235		pg/L			

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%		Acceptable Limits
13C-1-MoCB		296	2570	pg/L	11.5	*	(15%-150%)
13C-3-MoCB		325	2570	pg/L	12.7	*	(15%-150%)
13C-4-DiCB		307	2570	pg/L	11.9	*	(25%-150%)
13C-15-DiCB		927	2570	pg/L	36.0		(25%-150%)
13C-19-TrCB		452	2570	pg/L	17.6	*	(25%-150%)
13C-37-TrCB		1180	2570	pg/L	46.1		(25%-150%)
13C-54-TeCB		216	2570	pg/L	8.41	*	(25%-150%)
13C-77-TeCB		2310	2570	pg/L	89.8		(25%-150%)
13C-81-TeCB		2150	2570	pg/L	83.6		(25%-150%)
13C-104-PeCB		310	2570	pg/L	12.1	*	(25%-150%)
13C-105-PeCB		2040	2570	pg/L	79.2		(25%-150%)
13C-114-PeCB		1870	2570	pg/L	72.5		(25%-150%)
13C-118-PeCB		1930	2570	pg/L	75.2		(25%-150%)
13C-123-PeCB		1930	2570	pg/L	75.2		(25%-150%)
13C-126-PeCB		2170	2570	pg/L	84.4		(25%-150%)
13C-155-HxCB		849	2570	pg/L	33.0		(25%-150%)
13C-156-HxCB	C	3800	5140	pg/L	73.9		(25%-150%)
13C-167-HxCB		1950	2570	pg/L	75.9		(25%-150%)
13C-169-HxCB		1990	2570	pg/L	77.4		(25%-150%)
13C-188-HpCB		1760	2570	pg/L	68.4		(25%-150%)
13C-189-HpCB		2130	2570	pg/L	82.9		(25%-150%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	1609609_1609C98	**Client:**	NMED001	**Project:**	NMED00113
Lab Sample ID:	9998002	**Date Collected:**	09/13/2016 07:15	**Matrix:**	WATER
Client Sample:	1668A Water	**Date Received:**	10/28/2016 14:15		
Client ID:	1609609-002G			**Prep Basis:**	As Received
Batch ID:	33209	**Method:**	EPA Method 1668A HS		
Run Date:	11/10/2016 07:13	**Analyst:**	MJC	**Instrument:**	HRP791
Data File:	c09nov16a_2-4			**Dilution:**	1
Prep Batch:	33207	**Prep Method:**	SW846 3520C	**Prep SOP Ref:**	CF-OA-E-001
Prep Date:	08-NOV-16	**Prep Aliquot:**	777.8 mL		

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-202-OcCB		2100	2570	pg/L	81.7	(25%-150%)
13C-205-OcCB		2400	2570	pg/L	93.4	(25%-150%)
13C-206-NoCB		2320	2570	pg/L	90.4	(25%-150%)
13C-208-NoCB		2210	2570	pg/L	86.0	(25%-150%)
13C-209-DeCB		2370	2570	pg/L	92.1	(25%-150%)
13C-28-TrCB		1640	2570	pg/L	63.8	(30%-135%)
13C-111-PeCB		2210	2570	pg/L	86.0	(30%-135%)
13C-178-HpCB		2240	2570	pg/L	87.1	(30%-135%)

Comments:

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J Value is estimated
K Estimated Maximum Possible Concentration
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PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	1609609_1609C98	**Client:**	NMED001	**Project:**	NMED00113
Lab Sample ID:	9998003	**Date Collected:**	09/21/2016 12:15	**Matrix:**	WATER
Client Sample:	1668A Water	**Date Received:**	10/28/2016 14:15		
Client ID:	1609C98-001G			**Prep Basis:**	As Received
Batch ID:	33209	**Method:**	EPA Method 1668A HS		
Run Date:	11/10/2016 08:19	**Analyst:**	MJC	**Instrument:**	HRP791
Data File:	c09nov16a_2-5			**Dilution:**	1
Prep Batch:	33207	**Prep Method:**	SW846 3520C	**Prep SOP Ref:**	CF-OA-E-001
Prep Date:	08-NOV-16	**Prep Aliquot:**	852.9 mL		

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
2051-60-7	PCB-1	BJ	26.9	23.1	pg/L	8.65	46.9
2051-61-8	PCB-2	U	8.14	8.14	pg/L	8.14	46.9
2051-62-9	PCB-3	J	18.4	15.7	pg/L	8.16	46.9
13029-08-8	PCB-4	J	44.9	35.7	pg/L	12.8	46.9
16605-91-7	PCB-5	U	9.15	9.15	pg/L	9.15	46.9
25569-80-6	PCB-6	JK	13.5	9.35	pg/L	6.66	46.9
33284-50-3	PCB-7	U	7.55	7.55	pg/L	7.55	46.9
34883-43-7	PCB-8	BJ	36.0	32.2	pg/L	6.05	46.9
34883-39-1	PCB-9	U	7.48	7.48	pg/L	7.48	23.4
33146-45-1	PCB-10	U	4.34	4.34	pg/L	4.34	23.4
2050-67-1	PCB-11	B	852	847	pg/L	7.90	46.9
PCB-12/13	PCB-12/PCB-13	CU	8.21	8.21	pg/L	8.21	46.9
34883-41-5	PCB-14	U	7.36	7.36	pg/L	7.36	46.9
2050-68-2	PCB-15	J	44.9	39.7	pg/L	7.81	46.9
38444-78-9	PCB-16	J	10.2	6.96	pg/L	3.85	23.4
37680-66-3	PCB-17	BJ	13.8	10.6	pg/L	3.26	23.4
PCB-18/30	PCB-18/PCB-30	BCJ	27.6	25.3	pg/L	2.72	46.9
38444-73-4	PCB-19	JK	26.5	23	pg/L	8.86	23.4
PCB-20/28	PCB-20/PCB-28	BC	49.6	47.2	pg/L	2.39	46.9
PCB-21/33	PCB-21/PCB-33	BCJ	23.0	20.8	pg/L	2.34	46.9
38444-85-8	PCB-22	J	18.6	16.1	pg/L	2.65	23.4
55720-44-0	PCB-23	U	2.42	2.42	pg/L	2.42	23.4
55702-45-9	PCB-24	U	2.51	2.51	pg/L	2.51	23.4
55712-37-3	PCB-25	U	2.3	2.3	pg/L	2.30	23.4
PCB-26/29	PCB-26/PCB-29	CJ	8.11	5.94	pg/L	2.25	46.9
38444-76-7	PCB-27	U	3.87	2.32	pg/L	2.32	23.4
16606-02-3	PCB-31	U	2.2	2.2	pg/L	2.20	23.4
38444-77-8	PCB-32	J	6.54	4.66	pg/L	2.11	23.4
37680-68-5	PCB-34	U	2.32	2.32	pg/L	2.32	23.4
37680-69-6	PCB-35	BU	7.81	4.99	pg/L	4.99	46.9
38444-87-0	PCB-36	U	4.43	4.43	pg/L	4.43	23.4
38444-90-5	PCB-37	BJ	14.5	11.5	pg/L	4.57	23.4

Comments:

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PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**1609609_1609C98**	**Client:**	**NMED001**	**Project:**	**NMED00113**
Lab Sample ID:	**9998003**	**Date Collected:**	**09/21/2016 12:15**	**Matrix:**	**WATER**
Client Sample:	**1668A Water**	**Date Received:**	**10/28/2016 14:15**		
Client ID:	**1609C98-001G**			**Prep Basis:**	**As Received**
Batch ID:	**33209**	**Method:**	**EPA Method 1668A HS**		
Run Date:	**11/10/2016 08:19**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c09nov16a_2-5**			**Dilution:**	**1**
Prep Batch:	**33207**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**08-NOV-16**	**Prep Aliquot:**	**852.9 mL**		

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
53555-66-1	PCB-38	U	4.53	4.53	pg/L	4.53	23.4
38444-88-1	PCB-39	U	4.64	4.64	pg/L	4.64	23.4
PCB-40/71	PCB-40/PCB-71	CJ	5.49	2.25	pg/L	1.69	46.9
52663-59-9	PCB-41	U	2.49	2.49	pg/L	2.49	46.9
36559-22-5	PCB-42	U	4.41	2.06	pg/L	2.06	46.9
70362-46-8	PCB-43	U	2.34	2.34	pg/L	2.34	46.9
PCB-44/47/65	PCB-44/PCB-65/PCB-47	CJ	24.3	21.1	pg/L	1.81	70.3
PCB-45/51	PCB-45/PCB-51	BCJ	4.99	1.82	pg/L	1.24	46.9
41464-47-5	PCB-46	U	1.31	1.31	pg/L	1.31	23.4
70362-47-9	PCB-48	U	3.66	1.99	pg/L	1.99	23.4
PCB-49/69	PCB-49/PCB-69	BCJ	9.36	6.52	pg/L	1.69	46.9
PCB-50/53	PCB-50/PCB-53	BCU	1.83	1.17	pg/L	1.17	46.9
35693-99-3	PCB-52	J	23.4	20.2	pg/L	1.83	23.4
15968-05-5	PCB-54	U	5.49	5.49	pg/L	5.49	23.4
74338-24-2	PCB-55	U	1.59	1.59	pg/L	1.59	23.4
41464-43-1	PCB-56	BJ	7.08	3.88	pg/L	1.71	23.4
70424-67-8	PCB-57	U	1.41	1.41	pg/L	1.41	23.4
41464-49-7	PCB-58	U	1.57	1.57	pg/L	1.57	23.4
PCB-59/62/75	PCB-59/PCB-62/PCB-75	CU	1.43	1.43	pg/L	1.43	70.3
33025-41-1	PCB-60	U	3.68	1.59	pg/L	1.59	23.4
PCB-61-76	PCB-61/PCB-70/PCB-74/PCB-76	BCJ	28.8	26	pg/L	1.52	93.8
74472-34-7	PCB-63	U	1.34	1.34	pg/L	1.34	23.4
52663-58-8	PCB-64	J	6.68	4.01	pg/L	1.52	23.4
32598-10-0	PCB-66	BJ	13.2	10.5	pg/L	1.43	23.4
73575-53-8	PCB-67	U	1.27	1.27	pg/L	1.27	23.4
73575-52-7	PCB-68	U	2.09	1.41	pg/L	1.41	23.4
41464-42-0	PCB-72	U	1.36	1.36	pg/L	1.36	23.4
74338-23-1	PCB-73	U	1.52	1.52	pg/L	1.52	23.4
32598-13-3	PCB-77	BKU	1.66	1.29	pg/L	1.29	23.4
70362-49-1	PCB-78	U	1.52	1.52	pg/L	1.52	23.4
41464-48-6	PCB-79	U	1.29	1.29	pg/L	1.29	23.4
33284-52-5	PCB-80	U	1.31	1.31	pg/L	1.31	23.4

Comments:

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K Estimated Maximum Possible Concentration
U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	1609609_1609C98	**Client:**	NMED001	**Project:**	NMED00113
Lab Sample ID:	9998003	**Date Collected:**	09/21/2016 12:15	**Matrix:**	WATER
Client Sample:	1668A Water	**Date Received:**	10/28/2016 14:15		
Client ID:	1609C98-001G			**Prep Basis:**	As Received
Batch ID:	33209	**Method:**	EPA Method 1668A HS		
Run Date:	11/10/2016 08:19	**Analyst:**	MJC	**Instrument:**	HRP791
Data File:	c09nov16a_2-5			**Dilution:**	1
Prep Batch:	33207	**Prep Method:**	SW846 3520C	**Prep SOP Ref:**	CF-OA-E-001
Prep Date:	08-NOV-16	**Prep Aliquot:**	852.9 mL		

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
70362-50-4	PCB-81	U	1.38	1.38	pg/L	1.38	23.4
52663-62-4	PCB-82	U	1.78	1.5	pg/L	1.50	23.4
60145-20-2	PCB-83	U	1.57	1.57	pg/L	1.57	23.4
52663-60-2	PCB-84	U	3.26	1.48	pg/L	1.48	23.4
PCB-85-117	PCB-85/PCB-116/PCB-117	CU	1.45	1.15	pg/L	1.15	70.3
PCB-86-125	PCB-86/PCB-87/PCB-97/PCB-109/PCB-119/PCB-	BCJ	8.14	5.02	pg/L	1.22	141
PCB-88/91	PCB-88/PCB-91	CU	1.85	1.41	pg/L	1.41	46.9
73575-57-2	PCB-89	U	1.41	1.41	pg/L	1.41	23.4
PCB-90-113	PCB-90/PCB-101/PCB-113	BCJ	11.4	8.32	pg/L	1.20	70.3
52663-61-3	PCB-92	U	2.02	1.34	pg/L	1.34	23.4
PCB-93/100	PCB-93/PCB-100	CU	1.41	1.41	pg/L	1.41	46.9
73575-55-0	PCB-94	U	1.55	1.55	pg/L	1.55	23.4
38379-99-6	PCB-95	BJ	8.56	5.48	pg/L	1.27	23.4
73575-54-9	PCB-96	U	.633	.633	pg/L	0.633	23.4
PCB-98/102	PCB-98/PCB-102	CU	1.45	1.45	pg/L	1.45	46.9
38380-01-7	PCB-99	BU	4.83	1.41	pg/L	1.41	23.4
60145-21-3	PCB-103	U	1.22	1.22	pg/L	1.22	23.4
56558-16-8	PCB-104	U	5.02	5.02	pg/L	5.02	23.4
32598-14-4	PCB-105	U	3.63	1.57	pg/L	1.57	23.4
70424-69-0	PCB-106	U	1.59	1.59	pg/L	1.59	23.4
70424-68-9	PCB-107	U	1.57	1.57	pg/L	1.57	23.4
PCB-108/124	PCB-108/PCB-124	CU	1.76	1.76	pg/L	1.76	46.9
PCB-110/115	PCB-110/PCB-115	BCJ	12.7	9.71	pg/L	1.15	46.9
39635-32-0	PCB-111	U	1.08	1.08	pg/L	1.08	23.4
74472-36-9	PCB-112	U	.938	.938	pg/L	0.938	23.4
74472-37-0	PCB-114	U	1.71	1.71	pg/L	1.71	23.4
31508-00-6	PCB-118	BJ	8.00	4.77	pg/L	1.57	23.4
68194-12-7	PCB-120	U	.891	.891	pg/L	0.891	23.4
56558-18-0	PCB-121	U	1.08	1.08	pg/L	1.08	23.4
76842-07-4	PCB-122	U	1.81	1.81	pg/L	1.81	23.4
65510-44-3	PCB-123	U	1.69	1.69	pg/L	1.69	23.4
57465-28-8	PCB-126	U	1.62	1.62	pg/L	1.62	23.4

Comments:

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U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**1609609_1609C98**	**Client:**	**NMED001**	**Project:**	**NMED00113**
Lab Sample ID:	**9998003**	**Date Collected:**	**09/21/2016 12:15**	**Matrix:**	**WATER**
Client Sample:	**1668A Water**	**Date Received:**	**10/28/2016 14:15**		
Client ID:	**1609C98-001G**			**Prep Basis:**	**As Received**
Batch ID:	**33209**	**Method:**	**EPA Method 1668A HS**		
Run Date:	**11/10/2016 08:19**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c09nov16a_2-5**			**Dilution:**	**1**
Prep Batch:	**33207**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**08-NOV-16**	**Prep Aliquot:**	**852.9 mL**		

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
39635-33-1	PCB-127	U	1.71	1.71	pg/L	1.71	23.4
PCB-128/166	PCB-128/PCB-166	CU	1.45	1.34	pg/L	1.34	46.9
PCB-129-163	PCB-129/PCB-138/PCB-163	BCJ	9.07	4.86	pg/L	1.52	70.3
52663-66-8	PCB-130	U	1.64	1.64	pg/L	1.64	23.4
61798-70-7	PCB-131	U	1.92	1.92	pg/L	1.92	23.4
38380-05-1	PCB-132	BU	2.81	1.76	pg/L	1.76	23.4
35694-04-3	PCB-133	U	1.57	1.57	pg/L	1.57	23.4
52704-70-8	PCB-134	U	1.99	1.99	pg/L	1.99	23.4
PCB-135/151	PCB-135/PCB-151	BCU	3.21	.868	pg/L	0.868	46.9
38411-22-2	PCB-136	BU	1.34	.633	pg/L	0.633	23.4
35694-06-5	PCB-137	U	1.71	1.71	pg/L	1.71	23.4
PCB-139/140	PCB-139/PCB-140	CU	1.48	1.48	pg/L	1.48	46.9
52712-04-6	PCB-141	KU	1.62	1.41	pg/L	1.41	23.4
41411-61-4	PCB-142	U	1.64	1.64	pg/L	1.64	23.4
68194-15-0	PCB-143	U	1.5	1.5	pg/L	1.50	23.4
68194-14-9	PCB-144	U	0.844	.774	pg/L	0.774	23.4
74472-40-5	PCB-145	U	.727	.727	pg/L	0.727	23.4
51908-16-8	PCB-146	U	1.17	1.17	pg/L	1.17	23.4
PCB-147/149	PCB-147/PCB-149	BCJ	6.43	1.74	pg/L	1.45	46.9
74472-41-6	PCB-148	U	.844	.844	pg/L	0.844	23.4
68194-08-1	PCB-150	U	.68	.68	pg/L	0.680	23.4
68194-09-2	PCB-152	U	.61	.61	pg/L	0.610	23.4
PCB-153/168	PCB-153/PCB-168	BCJ	7.13	3.43	pg/L	1.24	46.9
60145-22-4	PCB-154	U	.68	.68	pg/L	0.680	23.4
33979-03-2	PCB-155	U	1.55	1.55	pg/L	1.55	23.4
PCB-156/157	PCB-156/PCB-157	BCU	1.22	1.03	pg/L	1.03	46.9
74472-42-7	PCB-158	U	1.03	1.03	pg/L	1.03	23.4
39635-35-3	PCB-159	U	.868	.868	pg/L	0.868	23.4
41411-62-5	PCB-160	U	1.27	1.27	pg/L	1.27	23.4
74472-43-8	PCB-161	U	1.08	1.08	pg/L	1.08	23.4
39635-34-2	PCB-162	U	.938	.938	pg/L	0.938	23.4
74472-45-0	PCB-164	U	1.08	1.08	pg/L	1.08	23.4

Comments:

B The target analyte was detected in the associated blank.
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U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	1609609_1609C98	**Client:**	NMED001	**Project:**	NMED00113
Lab Sample ID:	9998003	**Date Collected:**	09/21/2016 12:15	**Matrix:**	WATER
Client Sample:	1668A Water	**Date Received:**	10/28/2016 14:15		
Client ID:	1609C98-001G			**Prep Basis:**	As Received
Batch ID:	33209	**Method:**	EPA Method 1668A HS		
Run Date:	11/10/2016 08:19	**Analyst:**	MJC	**Instrument:**	HRP791
Data File:	c09nov16a_2-5			**Dilution:**	1
Prep Batch:	33207	**Prep Method:**	SW846 3520C	**Prep SOP Ref:**	CF-OA-E-001
Prep Date:	08-NOV-16	**Prep Aliquot:**	852.9 mL		

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
74472-46-1	PCB-165	U	1.36	1.36	pg/L	1.36	23.4
52663-72-6	PCB-167	U	.774	.774	pg/L	0.774	23.4
32774-16-6	PCB-169	U	.844	.844	pg/L	0.844	23.4
35065-30-6	PCB-170	BU	1.83	1.15	pg/L	1.15	23.4
PCB-171/173	PCB-171/PCB-173	CU	1.15	1.15	pg/L	1.15	46.9
52663-74-8	PCB-172	U	1.17	1.17	pg/L	1.17	23.4
38411-25-5	PCB-174	BU	2.44	1.08	pg/L	1.08	23.4
40186-70-7	PCB-175	U	.821	.821	pg/L	0.821	23.4
52663-65-7	PCB-176	U	.633	.633	pg/L	0.633	23.4
52663-70-4	PCB-177	BU	1.27	1.15	pg/L	1.15	23.4
52663-67-9	PCB-178	U	.868	.868	pg/L	0.868	23.4
52663-64-6	PCB-179	BU	1.03	.633	pg/L	0.633	23.4
PCB-180/193	PCB-180/PCB-193	CU	.985	.985	pg/L	0.985	46.9
74472-47-2	PCB-181	U	1.2	1.2	pg/L	1.20	23.4
60145-23-5	PCB-182	U	.821	.821	pg/L	0.821	23.4
PCB-183/185	PCB-183/PCB-185	BCU	1.95	1.1	pg/L	1.10	46.9
74472-48-3	PCB-184	U	.657	.657	pg/L	0.657	23.4
74472-49-4	PCB-186	U	.727	.727	pg/L	0.727	23.4
52663-68-0	PCB-187	BU	3.02	.868	pg/L	0.868	23.4
74487-85-7	PCB-188	U	.774	.774	pg/L	0.774	23.4
39635-31-9	PCB-189	U	.844	.844	pg/L	0.844	23.4
41411-64-7	PCB-190	U	.868	.868	pg/L	0.868	23.4
74472-50-7	PCB-191	U	.844	.844	pg/L	0.844	23.4
74472-51-8	PCB-192	U	1.01	1.01	pg/L	1.01	23.4
35694-08-7	PCB-194	BU	1.10	.68	pg/L	0.680	23.4
52663-78-2	PCB-195	U	.727	.727	pg/L	0.727	23.4
42740-50-1	PCB-196	U	.68	.68	pg/L	0.680	23.4
PCB-197/200	PCB-197/PCB-200	CU	.563	.563	pg/L	0.563	46.9
PCB-198/199	PCB-198/PCB-199	BCU	1.13	.75	pg/L	0.750	46.9
40186-71-8	PCB-201	U	.539	.539	pg/L	0.539	23.4
2136-99-4	PCB-202	U	.586	.586	pg/L	0.586	23.4
52663-76-0	PCB-203	BU	0.961	.703	pg/L	0.703	23.4

Comments:

B The target analyte was detected in the associated blank.
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J Value is estimated
K Estimated Maximum Possible Concentration
U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**1609609_1609C98**	**Client:**	**NMED001**	**Project:**	**NMED00113**
Lab Sample ID:	**9998003**	**Date Collected:**	**09/21/2016 12:15**	**Matrix:**	**WATER**
Client Sample:	**1668A Water**	**Date Received:**	**10/28/2016 14:15**		
Client ID:	**1609C98-001G**			**Prep Basis:**	**As Received**
Batch ID:	**33209**	**Method:**	**EPA Method 1668A HS**		
Run Date:	**11/10/2016 08:19**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c09nov16a_2-5**			**Dilution:**	**1**
Prep Batch:	**33207**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**08-NOV-16**	**Prep Aliquot:**	**852.9 mL**		

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
74472-52-9	PCB-204	U	.563	.563	pg/L	0.563	23.4
74472-53-0	PCB-205	U	.563	.563	pg/L	0.563	23.4
40186-72-9	PCB-206	U	.797	.797	pg/L	0.797	23.4
52663-79-3	PCB-207	U	.586	.586	pg/L	0.586	23.4
52663-77-1	PCB-208	U	.633	.633	pg/L	0.633	23.4
2051-24-3	PCB-209	BU	1.78	.703	pg/L	0.703	23.4
27323-18-8	Total monoCB		45.3	38.8	pg/L		
25512-42-9	Total diCB		978	955	pg/L		
25323-68-6	Total triCB		184	149	pg/L		
26914-33-0	Total tetraCB		139	96.2	pg/L		
25429-29-2	Total pentaCB		67.6	33.3	pg/L		
26601-64-9	Total hexaCB		33.5	10	pg/L		
28655-71-2	Total heptaCB	U	11.5	0	pg/L		
55722-26-4	Total octaCB	U	3.19	0	pg/L		
53742-07-7	Total nonaCB	U	0	0	pg/L		
DECACB(Tot)	Total decaCB	U	1.78	0	pg/L		
1336-36-3	Total PCB		1460	1280	pg/L		
TEQ 7	TOTAL (TEQ ND=1/2 DL)_2005		0.0943		pg/L		
TEQ 8	TOTAL (TEQ ND=0)_2005		0.000386		pg/L		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%		Acceptable Limits
13C-1-MoCB		230	2340	pg/L	9.80	*	(15%-150%)
13C-3-MoCB		262	2340	pg/L	11.2	*	(15%-150%)
13C-4-DiCB		240	2340	pg/L	10.2	*	(25%-150%)
13C-15-DiCB		710	2340	pg/L	30.3		(25%-150%)
13C-19-TrCB		336	2340	pg/L	14.3	*	(25%-150%)
13C-37-TrCB		839	2340	pg/L	35.8		(25%-150%)
13C-54-TeCB		150	2340	pg/L	6.41	*	(25%-150%)
13C-77-TeCB		1860	2340	pg/L	79.4		(25%-150%)
13C-81-TeCB		1650	2340	pg/L	70.6		(25%-150%)
13C-104-PeCB		138	2340	pg/L	5.91	*	(25%-150%)
13C-105-PeCB		1680	2340	pg/L	71.8		(25%-150%)
13C-114-PeCB		1470	2340	pg/L	62.6		(25%-150%)
13C-118-PeCB		1540	2340	pg/L	65.6		(25%-150%)
13C-123-PeCB		1510	2340	pg/L	64.4		(25%-150%)
13C-126-PeCB		1890	2340	pg/L	80.6		(25%-150%)
13C-155-HxCB		452	2340	pg/L	19.3	*	(25%-150%)
13C-156-HxCB	C	3350	4690	pg/L	71.5		(25%-150%)
13C-167-HxCB		1690	2340	pg/L	72.0		(25%-150%)
13C-169-HxCB		1790	2340	pg/L	76.1		(25%-150%)
13C-188-HpCB		1340	2340	pg/L	57.1		(25%-150%)
13C-189-HpCB		1920	2340	pg/L	81.8		(25%-150%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	1609609_1609C98	**Client:**	NMED001	**Project:**	NMED00113
Lab Sample ID:	9998003	**Date Collected:**	09/21/2016 12:15	**Matrix:**	WATER
Client Sample:	1668A Water	**Date Received:**	10/28/2016 14:15		
Client ID:	1609C98-001G			**Prep Basis:**	As Received
Batch ID:	33209	**Method:**	EPA Method 1668A HS		
Run Date:	11/10/2016 08:19	**Analyst:**	MJC	**Instrument:**	HRP791
Data File:	c09nov16a_2-5			**Dilution:**	1
Prep Batch:	33207	**Prep Method:**	SW846 3520C	**Prep SOP Ref:**	CF-OA-E-001
Prep Date:	08-NOV-16	**Prep Aliquot:**	852.9 mL		

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-202-OcCB		1800	2340	pg/L	76.7	(25%-150%)
13C-205-OcCB		2150	2340	pg/L	91.6	(25%-150%)
13C-206-NoCB		2130	2340	pg/L	90.9	(25%-150%)
13C-208-NoCB		1940	2340	pg/L	82.8	(25%-150%)
13C-209-DeCB		2180	2340	pg/L	93.1	(25%-150%)
13C-28-TrCB		1430	2340	pg/L	61.0	(30%-135%)
13C-111-PeCB		1920	2340	pg/L	81.9	(30%-135%)
13C-178-HpCB		1950	2340	pg/L	83.1	(30%-135%)

Comments:

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U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	1609609_1609C98	**Client:**	NMED001	**Project:**	NMED00113
Lab Sample ID:	9998004	**Date Collected:**	09/22/2016 11:00	**Matrix:**	WATER
Client Sample:	1668A Water	**Date Received:**	10/28/2016 14:15		
Client ID:	1609C98-002G			**Prep Basis:**	As Received
Batch ID:	33209	**Method:**	EPA Method 1668A HS		
Run Date:	11/10/2016 09:25	**Analyst:**	MJC	**Instrument:**	HRP791
Data File:	c09nov16a_2-6			**Dilution:**	1
Prep Batch:	33207	**Prep Method:**	SW846 3520C	**Prep SOP Ref:**	CF-OA-E-001
Prep Date:	08-NOV-16	**Prep Aliquot:**	929.1 mL		

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
2051-60-7	PCB-1	BJ	22.5	18.7	pg/L	11.2	43.1
2051-61-8	PCB-2	J	14.0	11.1	pg/L	10.2	43.1
2051-62-9	PCB-3	JK	27.7	25	pg/L	9.90	43.1
13029-08-8	PCB-4		53.9	44.8	pg/L	14.3	43.1
16605-91-7	PCB-5	U	10.1	10.1	pg/L	10.1	43.1
25569-80-6	PCB-6	JK	12.8	8.72	pg/L	7.34	43.1
33284-50-3	PCB-7	U	8.31	8.31	pg/L	8.31	43.1
34883-43-7	PCB-8	BJ	36.2	32.4	pg/L	6.67	43.1
34883-39-1	PCB-9	U	8.24	8.24	pg/L	8.24	21.5
33146-45-1	PCB-10	U	4.69	4.69	pg/L	4.69	21.5
2050-67-1	PCB-11	B	1100	1100	pg/L	8.70	43.1
PCB-12/13	PCB-12/PCB-13	CU	9.04	9.04	pg/L	9.04	43.1
34883-41-5	PCB-14	U	8.12	8.12	pg/L	8.12	43.1
2050-68-2	PCB-15	BJ	32.7	27.4	pg/L	8.52	43.1
38444-78-9	PCB-16	J	15.5	12.3	pg/L	4.82	21.5
37680-66-3	PCB-17	BJ	12.9	9.7	pg/L	4.09	21.5
PCB-18/30	PCB-18/PCB-30	BCJ	23.2	20.9	pg/L	3.40	43.1
38444-73-4	PCB-19	J	14.2	10.7	pg/L	9.15	21.5
PCB-20/28	PCB-20/PCB-28	BC	62.5	60.2	pg/L	3.01	43.1
PCB-21/33	PCB-21/PCB-33	BCJ	28.7	26.5	pg/L	2.95	43.1
38444-85-8	PCB-22	J	22.2	19.7	pg/L	3.32	21.5
55720-44-0	PCB-23	U	3.04	3.04	pg/L	3.04	21.5
55702-45-9	PCB-24	U	3.14	3.14	pg/L	3.14	21.5
55712-37-3	PCB-25	J	5.23	3.26	pg/L	2.88	21.5
PCB-26/29	PCB-26/PCB-29	CU	2.82	2.82	pg/L	2.82	43.1
38444-76-7	PCB-27	U	3.90	2.91	pg/L	2.91	21.5
16606-02-3	PCB-31	U	2.76	2.76	pg/L	2.76	21.5
38444-77-8	PCB-32	J	8.63	6.75	pg/L	2.65	21.5
37680-68-5	PCB-34	U	2.93	2.93	pg/L	2.93	21.5
37680-69-6	PCB-35	BJ	11.5	8.4	pg/L	6.54	43.1
38444-87-0	PCB-36	U	5.83	5.83	pg/L	5.83	21.5
38444-90-5	PCB-37	BJ	22.0	19	pg/L	6.29	21.5

Comments:

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K Estimated Maximum Possible Concentration
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PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**1609609_1609C98**	**Client:**	**NMED001**	**Project:**	**NMED00113**
Lab Sample ID:	**9998004**	**Date Collected:**	**09/22/2016 11:00**	**Matrix:**	**WATER**
Client Sample:	**1668A Water**	**Date Received:**	**10/28/2016 14:15**		
Client ID:	**1609C98-002G**			**Prep Basis:**	**As Received**
Batch ID:	**33209**	**Method:**	**EPA Method 1668A HS**		
Run Date:	**11/10/2016 09:25**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c09nov16a_2-6**			**Dilution:**	**1**
Prep Batch:	**33207**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**08-NOV-16**	**Prep Aliquot:**	**929.1 mL**		

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
53555-66-1	PCB-38	U	5.92	5.92	pg/L	5.92	21.5
38444-88-1	PCB-39	U	6.09	6.09	pg/L	6.09	21.5
PCB-40/71	PCB-40/PCB-71	CJ	9.00	5.76	pg/L	2.13	43.1
52663-59-9	PCB-41	U	3.14	3.14	pg/L	3.14	43.1
36559-22-5	PCB-42	U	5.92	2.6	pg/L	2.60	43.1
70362-46-8	PCB-43	U	2.95	2.95	pg/L	2.95	43.1
PCB-44/47/65	PCB-44/PCB-65/PCB-47	CU	2.28	2.28	pg/L	2.28	64.6
PCB-45/51	PCB-45/PCB-51	BCJ	6.46	3.28	pg/L	1.40	43.1
41464-47-5	PCB-46	U	1.49	1.49	pg/L	1.49	21.5
70362-47-9	PCB-48	U	2.54	2.54	pg/L	2.54	21.5
PCB-49/69	PCB-49/PCB-69	BCJ	15.0	12.2	pg/L	2.13	43.1
PCB-50/53	PCB-50/PCB-53	BCU	2.88	1.31	pg/L	1.31	43.1
35693-99-3	PCB-52		38.3	35.1	pg/L	2.30	21.5
15968-05-5	PCB-54	U	6.05	6.05	pg/L	6.05	21.5
74338-24-2	PCB-55	U	2.32	2.32	pg/L	2.32	21.5
41464-43-1	PCB-56	BJ	11.6	8.42	pg/L	2.50	21.5
70424-67-8	PCB-57	U	2.07	2.07	pg/L	2.07	21.5
41464-49-7	PCB-58	U	2.28	2.28	pg/L	2.28	21.5
PCB-59/62/75	PCB-59/PCB-62/PCB-75	CU	1.79	1.79	pg/L	1.79	64.6
33025-41-1	PCB-60	J	6.50	3.36	pg/L	2.32	21.5
PCB-61-76	PCB-61/PCB-70/PCB-74/PCB-76	BCJ	46.2	43.4	pg/L	2.20	86.1
74472-34-7	PCB-63	U	1.96	1.96	pg/L	1.96	21.5
52663-58-8	PCB-64	J	10.6	7.96	pg/L	1.94	21.5
32598-10-0	PCB-66	BJ	20.6	17.9	pg/L	2.09	21.5
73575-53-8	PCB-67	U	1.83	1.83	pg/L	1.83	21.5
73575-52-7	PCB-68	U	2.04	2.04	pg/L	2.04	21.5
41464-42-0	PCB-72	U	1.96	1.96	pg/L	1.96	21.5
74338-23-1	PCB-73	U	1.92	1.92	pg/L	1.92	21.5
32598-13-3	PCB-77	BU	3.19	1.83	pg/L	1.83	21.5
70362-49-1	PCB-78	U	2.22	2.22	pg/L	2.22	21.5
41464-48-6	PCB-79	U	1.89	1.89	pg/L	1.89	21.5
33284-52-5	PCB-80	U	1.92	1.92	pg/L	1.92	21.5

Comments:

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PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	1609609_1609C98	**Client:**	NMED001	**Project:**	NMED00113
Lab Sample ID:	9998004	**Date Collected:**	09/22/2016 11:00	**Matrix:**	WATER
Client Sample:	1668A Water	**Date Received:**	10/28/2016 14:15		
Client ID:	1609C98-002G			**Prep Basis:**	As Received
Batch ID:	33209	**Method:**	EPA Method 1668A HS		
Run Date:	11/10/2016 09:25	**Analyst:**	MJC	**Instrument:**	HRP791
Data File:	c09nov16a_2-6			**Dilution:**	1
Prep Batch:	33207	**Prep Method:**	SW846 3520C	**Prep SOP Ref:**	CF-OA-E-001
Prep Date:	08-NOV-16	**Prep Aliquot:**	929.1 mL		

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
70362-50-4	PCB-81	U	2.11	2.11	pg/L	2.11	21.5
52663-62-4	PCB-82	U	3.21	2.3	pg/L	2.30	21.5
60145-20-2	PCB-83	KU	2.76	2.39	pg/L	2.39	21.5
52663-60-2	PCB-84	U	5.60	2.24	pg/L	2.24	21.5
PCB-85-117	PCB-85/PCB-116/PCB-117	CU	4.50	1.74	pg/L	1.74	64.6
PCB-86-125	PCB-86/PCB-87/PCB-97/PCB-109/PCB-119/PCB-	BCJ	18.6	15.5	pg/L	1.85	129
PCB-88/91	PCB-88/PCB-91	CU	3.75	2.15	pg/L	2.15	43.1
73575-57-2	PCB-89	U	2.13	2.13	pg/L	2.13	21.5
PCB-90-113	PCB-90/PCB-101/PCB-113	CJ	29.0	26	pg/L	1.83	64.6
52663-61-3	PCB-92	U	5.14	2.04	pg/L	2.04	21.5
PCB-93/100	PCB-93/PCB-100	CU	2.17	2.17	pg/L	2.17	43.1
73575-55-0	PCB-94	U	2.39	2.39	pg/L	2.39	21.5
38379-99-6	PCB-95	J	17.1	14.1	pg/L	1.94	21.5
73575-54-9	PCB-96	U	.818	.818	pg/L	0.818	21.5
PCB-98/102	PCB-98/PCB-102	CU	2.24	2.24	pg/L	2.24	43.1
38380-01-7	PCB-99	BJ	11.5	8.02	pg/L	2.15	21.5
60145-21-3	PCB-103	U	1.85	1.85	pg/L	1.85	21.5
56558-16-8	PCB-104	U	8.59	8.59	pg/L	8.59	21.5
32598-14-4	PCB-105	J	7.32	3.7	pg/L	1.83	21.5
70424-69-0	PCB-106	U	1.96	1.96	pg/L	1.96	21.5
70424-68-9	PCB-107	U	1.92	1.92	pg/L	1.92	21.5
PCB-108/124	PCB-108/PCB-124	CU	2.13	2.13	pg/L	2.13	43.1
PCB-110/115	PCB-110/PCB-115	CJ	33.3	30.3	pg/L	1.74	43.1
39635-32-0	PCB-111	U	1.64	1.64	pg/L	1.64	21.5
74472-36-9	PCB-112	U	1.42	1.42	pg/L	1.42	21.5
74472-37-0	PCB-114	U	2.09	2.09	pg/L	2.09	21.5
31508-00-6	PCB-118	BJ	18.6	15.4	pg/L	1.92	21.5
68194-12-7	PCB-120	U	1.38	1.38	pg/L	1.38	21.5
56558-18-0	PCB-121	U	1.66	1.66	pg/L	1.66	21.5
76842-07-4	PCB-122	U	2.17	2.17	pg/L	2.17	21.5
65510-44-3	PCB-123	U	2.07	2.07	pg/L	2.07	21.5
57465-28-8	PCB-126	U	1.85	1.85	pg/L	1.85	21.5

Comments:

B The target analyte was detected in the associated blank.
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J Value is estimated
K Estimated Maximum Possible Concentration
U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	1609609_1609C98	**Client:**	NMED001	**Project:**	NMED00113
Lab Sample ID:	9998004	**Date Collected:**	09/22/2016 11:00	**Matrix:**	WATER
Client Sample:	1668A Water	**Date Received:**	10/28/2016 14:15		
Client ID:	1609C98-002G			**Prep Basis:**	As Received
Batch ID:	33209	**Method:**	EPA Method 1668A HS		
Run Date:	11/10/2016 09:25	**Analyst:**	MJC	**Instrument:**	HRP791
Data File:	c09nov16a_2-6			**Dilution:**	1
Prep Batch:	33207	**Prep Method:**	SW846 3520C	**Prep SOP Ref:**	CF-OA-E-001
Prep Date:	08-NOV-16	**Prep Aliquot:**	929.1 mL		

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
39635-33-1	PCB-127	U	2.09	2.09	pg/L	2.09	21.5
PCB-128/166	PCB-128/PCB-166	CJ	5.34	1.4	pg/L	1.23	43.1
PCB-129-163	PCB-129/PCB-138/PCB-163	CJ	53.3	49.1	pg/L	1.40	64.6
52663-66-8	PCB-130	U	2.48	1.51	pg/L	1.51	21.5
61798-70-7	PCB-131	U	1.77	1.77	pg/L	1.77	21.5
38380-05-1	PCB-132	J	13.8	8.32	pg/L	1.61	21.5
35694-04-3	PCB-133	U	1.44	1.44	pg/L	1.44	21.5
52704-70-8	PCB-134	U	2.35	1.83	pg/L	1.83	21.5
PCB-135/151	PCB-135/PCB-151	CJ	15.9	10.4	pg/L	1.08	43.1
38411-22-2	PCB-136	J	5.53	1.91	pg/L	0.796	21.5
35694-06-5	PCB-137	U	1.79	1.57	pg/L	1.57	21.5
PCB-139/140	PCB-139/PCB-140	CU	1.36	1.36	pg/L	1.36	43.1
52712-04-6	PCB-141	J	8.52	3.43	pg/L	1.29	21.5
41411-61-4	PCB-142	U	1.51	1.51	pg/L	1.51	21.5
68194-15-0	PCB-143	U	1.38	1.38	pg/L	1.38	21.5
68194-14-9	PCB-144	U	1.96	.969	pg/L	0.969	21.5
74472-40-5	PCB-145	U	.883	.883	pg/L	0.883	21.5
51908-16-8	PCB-146	J	5.83	1.51	pg/L	1.10	21.5
PCB-147/149	PCB-147/PCB-149	CJ	38.0	33.3	pg/L	1.33	43.1
74472-41-6	PCB-148	U	1.1	1.1	pg/L	1.10	21.5
68194-08-1	PCB-150	U	.861	.861	pg/L	0.861	21.5
68194-09-2	PCB-152	U	.775	.775	pg/L	0.775	21.5
PCB-153/168	PCB-153/PCB-168	CJ	43.4	39.7	pg/L	1.14	43.1
60145-22-4	PCB-154	U	.861	.861	pg/L	0.861	21.5
33979-03-2	PCB-155	U	3.1	3.1	pg/L	3.10	21.5
PCB-156/157	PCB-156/PCB-157	BCU	3.92	1.27	pg/L	1.27	43.1
74472-42-7	PCB-158	J	4.54	1.03	pg/L	0.947	21.5
39635-35-3	PCB-159	U	1.1	1.1	pg/L	1.10	21.5
41411-62-5	PCB-160	U	1.16	1.16	pg/L	1.16	21.5
74472-43-8	PCB-161	U	.99	.99	pg/L	0.990	21.5
39635-34-2	PCB-162	U	1.18	1.18	pg/L	1.18	21.5
74472-45-0	PCB-164	U	3.40	.99	pg/L	0.990	21.5

Comments:

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K Estimated Maximum Possible Concentration
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PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	1609609_1609C98	**Client:**	NMED001	**Project:**	NMED00113
Lab Sample ID:	9998004	**Date Collected:**	09/22/2016 11:00	**Matrix:**	WATER
Client Sample:	1668A Water	**Date Received:**	10/28/2016 14:15		
Client ID:	1609C98-002G			**Prep Basis:**	As Received
Batch ID:	33209	**Method:**	EPA Method 1668A HS		
Run Date:	11/10/2016 09:25	**Analyst:**	MJC	**Instrument:**	HRP791
Data File:	c09nov16a_2-6			**Dilution:**	1
Prep Batch:	33207	**Prep Method:**	SW846 3520C	**Prep SOP Ref:**	CF-OA-E-001
Prep Date:	08-NOV-16	**Prep Aliquot:**	929.1 mL		

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
74472-46-1	PCB-165	U	1.25	1.25	pg/L	1.25	21.5
52663-72-6	PCB-167	BU	1.66	.947	pg/L	0.947	21.5
32774-16-6	PCB-169	U	1.01	1.01	pg/L	1.01	21.5
35065-30-6	PCB-170	J	17.0	12.7	pg/L	1.68	21.5
PCB-171/173	PCB-171/PCB-173	CJ	6.67	2.2	pg/L	1.70	43.1
52663-74-8	PCB-172	U	3.70	1.72	pg/L	1.72	21.5
38411-25-5	PCB-174	J	19.1	14.4	pg/L	1.59	21.5
40186-70-7	PCB-175	U	1.05	1.05	pg/L	1.05	21.5
52663-65-7	PCB-176	U	1.87	.818	pg/L	0.818	21.5
52663-70-4	PCB-177	J	11.8	7.42	pg/L	1.70	21.5
52663-67-9	PCB-178	U	3.94	1.12	pg/L	1.12	21.5
52663-64-6	PCB-179	J	7.47	3.56	pg/L	0.818	21.5
PCB-180/193	PCB-180/PCB-193	CU	1.46	1.46	pg/L	1.46	43.1
74472-47-2	PCB-181	U	1.77	1.77	pg/L	1.77	21.5
60145-23-5	PCB-182	U	1.03	1.03	pg/L	1.03	21.5
PCB-183/185	PCB-183/PCB-185	CJ	13.3	9.24	pg/L	1.61	43.1
74472-48-3	PCB-184	U	.84	.84	pg/L	0.840	21.5
74472-49-4	PCB-186	U	.926	.926	pg/L	0.926	21.5
52663-68-0	PCB-187	J	24.7	19.7	pg/L	1.10	21.5
74487-85-7	PCB-188	U	1.1	1.1	pg/L	1.10	21.5
39635-31-9	PCB-189	U	.861	.861	pg/L	0.861	21.5
41411-64-7	PCB-190	U	3.66	1.27	pg/L	1.27	21.5
74472-50-7	PCB-191	U	1.25	1.25	pg/L	1.25	21.5
74472-51-8	PCB-192	U	1.49	1.49	pg/L	1.49	21.5
35694-08-7	PCB-194	BJ	6.46	2.2	pg/L	0.883	21.5
52663-78-2	PCB-195	U	3.32	.947	pg/L	0.947	21.5
42740-50-1	PCB-196	U	3.62	.99	pg/L	0.990	21.5
PCB-197/200	PCB-197/PCB-200	CU	1.46	.818	pg/L	0.818	43.1
PCB-198/199	PCB-198/PCB-199	CJ	8.57	2.64	pg/L	1.05	43.1
40186-71-8	PCB-201	U	1.21	.775	pg/L	0.775	21.5
2136-99-4	PCB-202	U	1.72	.883	pg/L	0.883	21.5
52663-76-0	PCB-203	U	4.63	1.01	pg/L	1.01	21.5

Comments:

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PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	1609609_1609C98	**Client:**	NMED001	**Project:**	NMED00113
Lab Sample ID:	9998004	**Date Collected:**	09/22/2016 11:00	**Matrix:**	WATER
Client Sample:	1668A Water	**Date Received:**	10/28/2016 14:15		
Client ID:	1609C98-002G			**Prep Basis:**	As Received
Batch ID:	33209	**Method:**	EPA Method 1668A HS		
Run Date:	11/10/2016 09:25	**Analyst:**	MJC	**Instrument:**	HRP791
Data File:	c09nov16a_2-6			**Dilution:**	1
Prep Batch:	33207	**Prep Method:**	SW846 3520C	**Prep SOP Ref:**	CF-OA-E-001
Prep Date:	08-NOV-16	**Prep Aliquot:**	929.1 mL		

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
74472-52-9	PCB-204	U	.796	.796	pg/L	0.796	21.5
74472-53-0	PCB-205	U	.71	.71	pg/L	0.710	21.5
40186-72-9	PCB-206	U	2.30	.861	pg/L	0.861	21.5
52663-79-3	PCB-207	U	.646	.646	pg/L	0.646	21.5
52663-77-1	PCB-208	U	1.01	.689	pg/L	0.689	21.5
2051-24-3	PCB-209	BU	2.69	.689	pg/L	0.689	21.5
27323-18-8	Total monoCB		36.5	29.8	pg/L		
25512-42-9	Total diCB		1230	1200	pg/L		
25323-68-6	Total triCB		231	197	pg/L		
26914-33-0	Total tetraCB		176	137	pg/L		
25429-29-2	Total pentaCB		158	113	pg/L		
26601-64-9	Total hexaCB		212	150	pg/L		
28655-71-2	Total heptaCB		113	69.3	pg/L		
55722-26-4	Total octaCB		31.0	4.84	pg/L		
53742-07-7	Total nonaCB	U	3.32	0	pg/L		
DECACB(Tot)	Total decaCB	U	2.69	0	pg/L		
1336-36-3	Total PCB		2190	1910	pg/L		
TEQ 7	TOTAL (TEQ ND=1/2 DL)_2005		0.109		pg/L		
TEQ 8	TOTAL (TEQ ND=0)_2005		0.00126		pg/L		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%		Acceptable Limits
13C-1-MoCB		175	2150	pg/L	8.15	*	(15%-150%)
13C-3-MoCB		190	2150	pg/L	8.84	*	(15%-150%)
13C-4-DiCB		184	2150	pg/L	8.56	*	(25%-150%)
13C-15-DiCB		566	2150	pg/L	26.3		(25%-150%)
13C-19-TrCB		270	2150	pg/L	12.5	*	(25%-150%)
13C-37-TrCB		572	2150	pg/L	26.6		(25%-150%)
13C-54-TeCB		113	2150	pg/L	5.25	*	(25%-150%)
13C-77-TeCB		1440	2150	pg/L	66.8		(25%-150%)
13C-81-TeCB		1200	2150	pg/L	55.6		(25%-150%)
13C-104-PeCB		84.4	2150	pg/L	3.92	*	(25%-150%)
13C-105-PeCB		1410	2150	pg/L	65.5		(25%-150%)
13C-114-PeCB		1180	2150	pg/L	54.6		(25%-150%)
13C-118-PeCB		1230	2150	pg/L	57.2		(25%-150%)
13C-123-PeCB		1190	2150	pg/L	55.5		(25%-150%)
13C-126-PeCB		1650	2150	pg/L	76.7		(25%-150%)
13C-155-HxCB		232	2150	pg/L	10.8	*	(25%-150%)
13C-156-HxCB	C	2920	4310	pg/L	67.8		(25%-150%)
13C-167-HxCB		1470	2150	pg/L	68.2		(25%-150%)
13C-169-HxCB		1560	2150	pg/L	72.7		(25%-150%)
13C-188-HpCB		979	2150	pg/L	45.5		(25%-150%)
13C-189-HpCB		1670	2150	pg/L	77.8		(25%-150%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	1609609_1609C98	**Client:**	NMED001	**Project:**	NMED00113
Lab Sample ID:	9998004	**Date Collected:**	09/22/2016 11:00	**Matrix:**	WATER
Client Sample:	1668A Water	**Date Received:**	10/28/2016 14:15		
Client ID:	1609C98-002G			**Prep Basis:**	As Received
Batch ID:	33209	**Method:**	EPA Method 1668A HS		
Run Date:	11/10/2016 09:25	**Analyst:**	MJC	**Instrument:**	HRP791
Data File:	c09nov16a_2-6			**Dilution:**	1
Prep Batch:	33207	**Prep Method:**	SW846 3520C	**Prep SOP Ref:**	CF-OA-E-001
Prep Date:	08-NOV-16	**Prep Aliquot:**	929.1 mL		

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-202-OcCB		1530	2150	pg/L	71.0	(25%-150%)
13C-205-OcCB		1900	2150	pg/L	88.3	(25%-150%)
13C-206-NoCB		1850	2150	pg/L	86.0	(25%-150%)
13C-208-NoCB		1720	2150	pg/L	80.1	(25%-150%)
13C-209-DeCB		1910	2150	pg/L	88.7	(25%-150%)
13C-28-TrCB		1290	2150	pg/L	59.8	(30%-135%)
13C-111-PeCB		1930	2150	pg/L	89.7	(30%-135%)
13C-178-HpCB		1930	2150	pg/L	89.8	(30%-135%)

Comments:

B The target analyte was detected in the associated blank.
C Congener has coeluters. When Cxxx, refer to congener number xxx for data
J Value is estimated
K Estimated Maximum Possible Concentration
U Analyte was analyzed for, but not detected above the specified detection limit.

Quality Control Summary

PCB Congeners

Surrogate Recovery Report

SDG Number: 1609609_1609C98

Matrix Type: LIQUID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12017260	LCS for batch 33207	13C-1-MoCB		55.0	(15%-140%)
		13C-3-MoCB		51.8	(15%-140%)
		13C-4-DiCB		52.1	(30%-140%)
		13C-15-DiCB		89.3	(30%-140%)
		13C-19-TrCB		81.3	(30%-140%)
		13C-37-TrCB		72.9	(30%-140%)
		13C-54-TeCB		54.8	(30%-140%)
		13C-77-TeCB		94.6	(30%-140%)
		13C-81-TeCB		95.3	(30%-140%)
		13C-104-PeCB		58.4	(30%-140%)
		13C-105-PeCB		82.9	(30%-140%)
		13C-114-PeCB		80.7	(30%-140%)
		13C-118-PeCB		82.8	(30%-140%)
		13C-123-PeCB		84.1	(30%-140%)
		13C-126-PeCB		85.5	(30%-140%)
		13C-155-HxCB		66.4	(30%-140%)
		13C-156-HxCB	C	74.3	(30%-140%)
		13C-167-HxCB		76.9	(30%-140%)
		13C-169-HxCB		77.2	(30%-140%)
		13C-188-HpCB		77.6	(30%-140%)
		13C-189-HpCB		78.5	(30%-140%)
		13C-202-OcCB		84.9	(30%-140%)
		13C-205-OcCB		97.1	(30%-140%)
		13C-206-NoCB		101	(30%-140%)
		13C-208-NoCB		90.5	(30%-140%)
		13C-209-DeCB		108	(30%-140%)
		13C-28-TrCB		63.8	(40%-125%)
		13C-111-PeCB		81.4	(40%-125%)
		13C-178-HpCB		85.5	(40%-125%)
12017261	LCSD for batch 33207	13C-1-MoCB		52.3	(15%-140%)
		13C-3-MoCB		48.6	(15%-140%)
		13C-4-DiCB		49.2	(30%-140%)
		13C-15-DiCB		153 *	(30%-140%)
		13C-19-TrCB		97.5	(30%-140%)
		13C-37-TrCB		110	(30%-140%)
		13C-54-TeCB		55.8	(30%-140%)
		13C-77-TeCB		146 *	(30%-140%)
		13C-81-TeCB		146 *	(30%-140%)
		13C-104-PeCB		75.8	(30%-140%)
		13C-105-PeCB		126	(30%-140%)
		13C-114-PeCB		122	(30%-140%)
		13C-118-PeCB		124	(30%-140%)
		13C-123-PeCB		126	(30%-140%)
		13C-126-PeCB		134	(30%-140%)
		13C-155-HxCB		87.5	(30%-140%)
		13C-156-HxCB	C	110	(30%-140%)
		13C-167-HxCB		114	(30%-140%)
		13C-169-HxCB		117	(30%-140%)
		13C-188-HpCB		108	(30%-140%)
		13C-189-HpCB		116	(30%-140%)
		13C-202-OcCB		122	(30%-140%)
		13C-205-OcCB		140	(30%-140%)

PCB Congeners

Surrogate Recovery Report

SDG Number: 1609609_1609C98

Matrix Type: LIQUID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12017261	LCSD for batch 33207	13C-206-NoCB		146 *	(30%-140%)
		13C-208-NoCB		131	(30%-140%)
		13C-209-DeCB		158 *	(30%-140%)
		13C-28-TrCB		72.9	(40%-125%)
		13C-111-PeCB		101	(40%-125%)
		13C-178-HpCB		104	(40%-125%)
12017259	MB for batch 33207	13C-1-MoCB		33.1	(15%-150%)
		13C-3-MoCB		33.0	(15%-150%)
		13C-4-DiCB		31.7	(25%-150%)
		13C-15-DiCB		83.7	(25%-150%)
		13C-19-TrCB		59.1	(25%-150%)
		13C-37-TrCB		64.3	(25%-150%)
		13C-54-TeCB		36.1	(25%-150%)
		13C-77-TeCB		86.3	(25%-150%)
		13C-81-TeCB		85.3	(25%-150%)
		13C-104-PeCB		45.4	(25%-150%)
		13C-105-PeCB		75.7	(25%-150%)
		13C-114-PeCB		72.4	(25%-150%)
		13C-118-PeCB		74.1	(25%-150%)
		13C-123-PeCB		74.2	(25%-150%)
		13C-126-PeCB		81.2	(25%-150%)
		13C-155-HxCB		53.4	(25%-150%)
		13C-156-HxCB	C	67.7	(25%-150%)
		13C-167-HxCB		69.6	(25%-150%)
		13C-169-HxCB		72.5	(25%-150%)
		13C-188-HpCB		66.4	(25%-150%)
		13C-189-HpCB		71.0	(25%-150%)
		13C-202-OcCB		75.9	(25%-150%)
		13C-205-OcCB		86.1	(25%-150%)
		13C-206-NoCB		89.2	(25%-150%)
		13C-208-NoCB		80.8	(25%-150%)
		13C-209-DeCB		96.6	(25%-150%)
		13C-28-TrCB		60.9	(30%-135%)
		13C-111-PeCB		81.0	(30%-135%)
		13C-178-HpCB		84.7	(30%-135%)
9998001	1609609-001G	13C-1-MoCB		11.3 *	(15%-150%)
		13C-3-MoCB		12.3 *	(15%-150%)
		13C-4-DiCB		11.4 *	(25%-150%)
		13C-15-DiCB		31.9	(25%-150%)
		13C-19-TrCB		15.4 *	(25%-150%)
		13C-37-TrCB		41.7	(25%-150%)
		13C-54-TeCB		7.40 *	(25%-150%)
		13C-77-TeCB		81.6	(25%-150%)
		13C-81-TeCB		75.6	(25%-150%)
		13C-104-PeCB		9.85 *	(25%-150%)
		13C-105-PeCB		71.9	(25%-150%)
		13C-114-PeCB		65.7	(25%-150%)
		13C-118-PeCB		68.4	(25%-150%)
		13C-123-PeCB		67.9	(25%-150%)
		13C-126-PeCB		78.0	(25%-150%)
		13C-155-HxCB		28.6	(25%-150%)

Surrogate Recovery Report

SDG Number: 1609609_1609C98

Matrix Type: LIQUID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
9998001	1609609-001G	13C-156-HxCB	C	70.4	(25%-150%)
		13C-167-HxCB		72.0	(25%-150%)
		13C-169-HxCB		73.8	(25%-150%)
		13C-188-HpCB		63.5	(25%-150%)
		13C-189-HpCB		79.1	(25%-150%)
		13C-202-OcCB		78.4	(25%-150%)
		13C-205-OcCB		89.7	(25%-150%)
		13C-206-NoCB		88.1	(25%-150%)
		13C-208-NoCB		83.0	(25%-150%)
		13C-209-DeCB		89.8	(25%-150%)
		13C-28-TrCB		61.7	(30%-135%)
		13C-111-PeCB		81.8	(30%-135%)
		13C-178-HpCB		84.0	(30%-135%)
9998002	1609609-002G	13C-1-MoCB		11.5 *	(15%-150%)
		13C-3-MoCB		12.7 *	(15%-150%)
		13C-4-DiCB		11.9 *	(25%-150%)
		13C-15-DiCB		36.0	(25%-150%)
		13C-19-TrCB		17.6 *	(25%-150%)
		13C-37-TrCB		46.1	(25%-150%)
		13C-54-TeCB		8.41 *	(25%-150%)
		13C-77-TeCB		89.8	(25%-150%)
		13C-81-TeCB		83.6	(25%-150%)
		13C-104-PeCB		12.1 *	(25%-150%)
		13C-105-PeCB		79.2	(25%-150%)
		13C-114-PeCB		72.5	(25%-150%)
		13C-118-PeCB		75.2	(25%-150%)
		13C-123-PeCB		75.2	(25%-150%)
		13C-126-PeCB		84.4	(25%-150%)
		13C-155-HxCB		33.0	(25%-150%)
		13C-156-HxCB	C	73.9	(25%-150%)
		13C-167-HxCB		75.9	(25%-150%)
		13C-169-HxCB		77.4	(25%-150%)
		13C-188-HpCB		68.4	(25%-150%)
		13C-189-HpCB		82.9	(25%-150%)
		13C-202-OcCB		81.7	(25%-150%)
		13C-205-OcCB		93.4	(25%-150%)
		13C-206-NoCB		90.4	(25%-150%)
		13C-208-NoCB		86.0	(25%-150%)
		13C-209-DeCB		92.1	(25%-150%)
		13C-28-TrCB		63.8	(30%-135%)
		13C-111-PeCB		86.0	(30%-135%)
		13C-178-HpCB		87.1	(30%-135%)
9998003	1609C98-001G	13C-1-MoCB		9.80 *	(15%-150%)
		13C-3-MoCB		11.2 *	(15%-150%)
		13C-4-DiCB		10.2 *	(25%-150%)
		13C-15-DiCB		30.3	(25%-150%)
		13C-19-TrCB		14.3 *	(25%-150%)
		13C-37-TrCB		35.8	(25%-150%)
		13C-54-TeCB		6.41 *	(25%-150%)
		13C-77-TeCB		79.4	(25%-150%)
		13C-81-TeCB		70.6	(25%-150%)

PCB Congeners
Surrogate Recovery Report

SDG Number: 1609609_1609C98

Matrix Type: LIQUID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
9998003	1609C98-001G	13C-104-PeCB		5.91 *	(25%-150%)
		13C-105-PeCB		71.8	(25%-150%)
		13C-114-PeCB		62.6	(25%-150%)
		13C-118-PeCB		65.6	(25%-150%)
		13C-123-PeCB		64.4	(25%-150%)
		13C-126-PeCB		80.6	(25%-150%)
		13C-155-HxCB		19.3 *	(25%-150%)
		13C-156-HxCB	C	71.5	(25%-150%)
		13C-167-HxCB		72.0	(25%-150%)
		13C-169-HxCB		76.1	(25%-150%)
		13C-188-HpCB		57.1	(25%-150%)
		13C-189-HpCB		81.8	(25%-150%)
		13C-202-OcCB		76.7	(25%-150%)
		13C-205-OcCB		91.6	(25%-150%)
		13C-206-NoCB		90.9	(25%-150%)
		13C-208-NoCB		82.8	(25%-150%)
		13C-209-DeCB		93.1	(25%-150%)
		13C-28-TrCB		61.0	(30%-135%)
		13C-111-PeCB		81.9	(30%-135%)
		13C-178-HpCB		83.1	(30%-135%)
9998004	1609C98-002G	13C-1-MoCB		8.15 *	(15%-150%)
		13C-3-MoCB		8.84 *	(15%-150%)
		13C-4-DiCB		8.56 *	(25%-150%)
		13C-15-DiCB		26.3	(25%-150%)
		13C-19-TrCB		12.5 *	(25%-150%)
		13C-37-TrCB		26.6	(25%-150%)
		13C-54-TeCB		5.25 *	(25%-150%)
		13C-77-TeCB		66.8	(25%-150%)
		13C-81-TeCB		55.6	(25%-150%)
		13C-104-PeCB		3.92 *	(25%-150%)
		13C-105-PeCB		65.5	(25%-150%)
		13C-114-PeCB		54.6	(25%-150%)
		13C-118-PeCB		57.2	(25%-150%)
		13C-123-PeCB		55.5	(25%-150%)
		13C-126-PeCB		76.7	(25%-150%)
		13C-155-HxCB		10.8 *	(25%-150%)
		13C-156-HxCB	C	67.8	(25%-150%)
		13C-167-HxCB		68.2	(25%-150%)
		13C-169-HxCB		72.7	(25%-150%)
		13C-188-HpCB		45.5	(25%-150%)
		13C-189-HpCB		77.8	(25%-150%)
		13C-202-OcCB		71.0	(25%-150%)
		13C-205-OcCB		88.3	(25%-150%)
		13C-206-NoCB		86.0	(25%-150%)
		13C-208-NoCB		80.1	(25%-150%)
		13C-209-DeCB		88.7	(25%-150%)
		13C-28-TrCB		59.8	(30%-135%)
		13C-111-PeCB		89.7	(30%-135%)
		13C-178-HpCB		89.8	(30%-135%)

* Recovery outside Acceptance Limits

PCB Congeners

Surrogate Recovery Report

SDG Number: 1609609_1609C98

Matrix Type: LIQUID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits

* Recovery outside Acceptance Limits
# Column to be used to flag recovery values
D Sample Diluted

PCB Congeners

Quality Control Summary
Spike Recovery Report

SDG Number: 1609609_1609C98 **Sample Type:** Laboratory Control Sample
Client ID: LCS for batch 33207 **Matrix:** WATER
Lab Sample ID: 12017260
Instrument: HRP791 **Analysis Date:** 11/09/2016 16:41 **Dilution:** 1
Analyst: MJC **Prep Batch ID:** 33207
Batch ID: 33209

CAS No.		Parmname	Amount Added pg/L		Spike Conc. pg/L	Recovery %	Acceptance Limits
2051-60-7	LCS	PCB-1	500		518	104	50-150
2051-62-9	LCS	PCB-3	500		604	121	50-150
13029-08-8	LCS	PCB-4	500		499	99.7	50-150
2050-68-2	LCS	PCB-15	500		523	105	50-150
38444-73-4	LCS	PCB-19	500		494	98.8	50-150
38444-90-5	LCS	PCB-37	500		484	96.8	50-150
15968-05-5	LCS	PCB-54	1000		1000	100	50-150
32598-13-3	LCS	PCB-77	1000		942	94.2	50-150
70362-50-4	LCS	PCB-81	1000		1120	112	50-150
56558-16-8	LCS	PCB-104	1000		1060	106	50-150
32598-14-4	LCS	PCB-105	1000		1180	118	50-150
74472-37-0	LCS	PCB-114	1000		1020	102	50-150
31508-00-6	LCS	PCB-118	1000		977	97.7	50-150
65510-44-3	LCS	PCB-123	1000		916	91.6	50-150
57465-28-8	LCS	PCB-126	1000		1010	101	50-150
33979-03-2	LCS	PCB-155	1000		980	98	50-150
38380-08-4	LCS	PCB-156/PCB-157	2000	C	2230	111	50-150
52663-72-6	LCS	PCB-167	1000		1150	115	50-150
32774-16-6	LCS	PCB-169	1000		1010	101	50-150
74487-85-7	LCS	PCB-188	1000		972	97.2	50-150
39635-31-9	LCS	PCB-189	1000		971	97.1	50-150
2136-99-4	LCS	PCB-202	1500		1430	95	50-150
74472-53-0	LCS	PCB-205	1500		1290	85.7	50-150
40186-72-9	LCS	PCB-206	1500		1410	93.7	50-150
52663-77-1	LCS	PCB-208	1500		1490	99.4	50-150
2051-24-3	LCS	PCB-209	1500		1380	91.8	50-150

PCB Congeners

Quality Control Summary
Spike Recovery Report

SDG Number: 1609609_1609C98
Client ID: LCSD for batch 33207
Lab Sample ID: 12017261
Instrument: HRP791
Analyst: MJC

Sample Type: Laboratory Control Sample Duplicate
Matrix: WATER
Analysis Date: 11/09/2016 17:47 **Dilution:** 1
Prep Batch ID: 33207
Batch ID: 33209

CAS No.		Parmname	Amount Added pg/L		Spike Conc. pg/L	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
2051-60-7	LCSD	PCB-1	500		454	90.9	50-150	13.2	0-20
2051-62-9	LCSD	PCB-3	500		544	109	50-150	10.5	0-20
13029-08-8	LCSD	PCB-4	500		424	84.7	50-150	16.2	0-20
2050-68-2	LCSD	PCB-15	500		473	94.6	50-150	9.99	0-20
38444-73-4	LCSD	PCB-19	500		447	89.5	50-150	9.89	0-20
38444-90-5	LCSD	PCB-37	500		420	84.1	50-150	14.1	0-20
15968-05-5	LCSD	PCB-54	1000		876	87.6	50-150	13.3	0-20
32598-13-3	LCSD	PCB-77	1000		826	82.6	50-150	13.2	0-20
70362-50-4	LCSD	PCB-81	1000		968	96.8	50-150	14.7	0-20
56558-16-8	LCSD	PCB-104	1000		920	92	50-150	13.9	0-20
32598-14-4	LCSD	PCB-105	1000		1030	103	50-150	12.9	0-20
74472-37-0	LCSD	PCB-114	1000		888	88.8	50-150	13.9	0-20
31508-00-6	LCSD	PCB-118	1000		842	84.2	50-150	14.9	0-20
65510-44-3	LCSD	PCB-123	1000		793	79.3	50-150	14.4	0-20
57465-28-8	LCSD	PCB-126	1000		906	90.6	50-150	10.9	0-20
33979-03-2	LCSD	PCB-155	1000		873	87.3	50-150	11.6	0-20
38380-08-4	LCSD	PCB-156/PCB-157	2000	C	1920	95.9	50-150	14.9	0-20
52663-72-6	LCSD	PCB-167	1000		996	99.6	50-150	14.4	0-20
32774-16-6	LCSD	PCB-169	1000		864	86.4	50-150	15.6	0-20
74487-85-7	LCSD	PCB-188	1000		834	83.4	50-150	15.3	0-20
39635-31-9	LCSD	PCB-189	1000		831	83.1	50-150	15.5	0-20
2136-99-4	LCSD	PCB-202	1500		1220	81.3	50-150	15.5	0-20
74472-53-0	LCSD	PCB-205	1500		1110	74.2	50-150	14.4	0-20
40186-72-9	LCSD	PCB-206	1500		1200	79.8	50-150	16.1	0-20
52663-77-1	LCSD	PCB-208	1500		1290	85.7	50-150	14.8	0-20
2051-24-3	LCSD	PCB-209	1500		1190	79.2	50-150	14.8	0-20

Method Blank Summary

SDG Number:	**1609609_1609C98**	**Client:**	**NMED001**	**Matrix:**	**WATER**
Client ID:	**MB for batch 33207**	**Instrument ID:**	**HRP791**	**Data File:**	**c09nov16a-4**
Lab Sample ID:	**12017259**	**Prep Date:**	**08-NOV-16**	**Analyzed:**	**11/09/16 18:53**
Column:					

This method blank applies to the following samples and quality control samples:

	Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed
01	LCS for batch 33207	12017260	c09nov16a-2	11/09/16	1641
02	LCSD for batch 33207	12017261	c09nov16a-3	11/09/16	1747
03	1609609-001G	9998001	c09nov16a_2-3	11/10/16	0606
04	1609609-002G	9998002	c09nov16a_2-4	11/10/16	0713
05	1609C98-001G	9998003	c09nov16a_2-5	11/10/16	0819
06	1609C98-002G	9998004	c09nov16a_2-6	11/10/16	0925

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**1609609_1609C98**	**Client:**	**NMED001**	**Project:**	**NMED00113**
Lab Sample ID:	**12017259**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 33207**				
Client ID:	**MB for batch 33207**			**Prep Basis:**	**As Received**
Batch ID:	**33209**	**Method:**	**EPA Method 1668A HS**		
Run Date:	**11/09/2016 18:53**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c09nov16a-4**			**Dilution:**	**1**
Prep Batch:	**33207**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**08-NOV-16**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
2051-60-7	PCB-1	KU	5.92	4.76	pg/L	4.76	40.0
2051-61-8	PCB-2	U	4.74	4.74	pg/L	4.74	40.0
2051-62-9	PCB-3	U	4.62	4.62	pg/L	4.62	40.0
13029-08-8	PCB-4	U	5.28	5.28	pg/L	5.28	40.0
16605-91-7	PCB-5	U	4.24	4.24	pg/L	4.24	40.0
25569-80-6	PCB-6	U	3.04	3.04	pg/L	3.04	40.0
33284-50-3	PCB-7	U	3.44	3.44	pg/L	3.44	40.0
34883-43-7	PCB-8	J	10.3	6.58	pg/L	2.76	40.0
34883-39-1	PCB-9	U	3.44	3.44	pg/L	3.44	20.0
33146-45-1	PCB-10	U	1.86	1.86	pg/L	1.86	20.0
2050-67-1	PCB-11		317	312	pg/L	3.70	40.0
PCB-12/13	PCB-12/PCB-13	CU	3.88	3.88	pg/L	3.88	40.0
34883-41-5	PCB-14	U	3.44	3.44	pg/L	3.44	40.0
2050-68-2	PCB-15	U	7.74	3.36	pg/L	3.36	40.0
38444-78-9	PCB-16	U	1.98	1.98	pg/L	1.98	20.0
37680-66-3	PCB-17	U	4.12	1.74	pg/L	1.74	20.0
PCB-18/30	PCB-18/PCB-30	CJ	6.62	4.31	pg/L	1.46	40.0
38444-73-4	PCB-19	U	2.36	2.36	pg/L	2.36	20.0
PCB-20/28	PCB-20/PCB-28	CJ	17.6	15.2	pg/L	1.30	40.0
PCB-21/33	PCB-21/PCB-33	CJ	10.3	8.17	pg/L	1.34	40.0
38444-85-8	PCB-22	U	1.44	1.44	pg/L	1.44	20.0
55720-44-0	PCB-23	U	1.36	1.36	pg/L	1.36	20.0
55702-45-9	PCB-24	U	2.92	1.4	pg/L	1.40	20.0
55712-37-3	PCB-25	U	1.26	1.26	pg/L	1.26	20.0
PCB-26/29	PCB-26/PCB-29	CU	1.26	1.26	pg/L	1.26	40.0
38444-76-7	PCB-27	U	1.26	1.26	pg/L	1.26	20.0
16606-02-3	PCB-31	U	1.18	1.18	pg/L	1.18	20.0
38444-77-8	PCB-32	U	1.14	1.14	pg/L	1.14	20.0
37680-68-5	PCB-34	U	1.3	1.3	pg/L	1.30	20.0
37680-69-6	PCB-35	U	3.66	2.76	pg/L	2.76	40.0
38444-87-0	PCB-36	U	3.20	2.44	pg/L	2.44	20.0
38444-90-5	PCB-37	U	4.98	2.64	pg/L	2.64	20.0

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data
J Value is estimated
K Estimated Maximum Possible Concentration
U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**1609609_1609C98**	**Client:**	**NMED001**	**Project:**	**NMED00113**
Lab Sample ID:	**12017259**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 33207**				
Client ID:	**MB for batch 33207**			**Prep Basis:**	**As Received**
Batch ID:	**33209**	**Method:**	**EPA Method 1668A HS**		
Run Date:	**11/09/2016 18:53**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c09nov16a-4**			**Dilution:**	**1**
Prep Batch:	**33207**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**08-NOV-16**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
53555-66-1	PCB-38	U	2.52	2.52	pg/L	2.52	20.0
38444-88-1	PCB-39	U	2.56	2.56	pg/L	2.56	20.0
PCB-40/71	PCB-40/PCB-71	CU	2.32	2.32	pg/L	2.32	40.0
52663-59-9	PCB-41	U	3.1	3.1	pg/L	3.10	40.0
36559-22-5	PCB-42	U	2.9	2.9	pg/L	2.90	40.0
70362-46-8	PCB-43	U	2.98	2.98	pg/L	2.98	40.0
PCB-44/47/65	PCB-44/PCB-65/PCB-47	CU	2.4	2.4	pg/L	2.40	60.0
PCB-45/51	PCB-45/PCB-51	CU	2.26	1.1	pg/L	1.10	40.0
41464-47-5	PCB-46	U	1.16	1.16	pg/L	1.16	20.0
70362-47-9	PCB-48	U	2.72	2.72	pg/L	2.72	20.0
PCB-49/69	PCB-49/PCB-69	CU	4.96	2.24	pg/L	2.24	40.0
PCB-50/53	PCB-50/PCB-53	CU	1.08	1.04	pg/L	1.04	40.0
35693-99-3	PCB-52	U	2.38	2.38	pg/L	2.38	20.0
15968-05-5	PCB-54	U	1.4	1.4	pg/L	1.40	20.0
74338-24-2	PCB-55	U	1.52	1.52	pg/L	1.52	20.0
41464-43-1	PCB-56	U	4.32	1.58	pg/L	1.58	20.0
70424-67-8	PCB-57	U	1.34	1.34	pg/L	1.34	20.0
41464-49-7	PCB-58	U	1.5	1.5	pg/L	1.50	20.0
PCB-59/62/75	PCB-59/PCB-62/PCB-75	CU	1.9	1.9	pg/L	1.90	60.0
33025-41-1	PCB-60	U	1.5	1.5	pg/L	1.50	20.0
PCB-61-76	PCB-61/PCB-70/PCB-74/PCB-76	CJ	16.0	13.2	pg/L	1.42	80.0
74472-34-7	PCB-63	U	1.28	1.28	pg/L	1.28	20.0
52663-58-8	PCB-64	U	2.04	2.04	pg/L	2.04	20.0
32598-10-0	PCB-66	J	7.58	4.8	pg/L	1.34	20.0
73575-53-8	PCB-67	U	1.2	1.2	pg/L	1.20	20.0
73575-52-7	PCB-68	U	1.32	1.32	pg/L	1.32	20.0
41464-42-0	PCB-72	U	1.26	1.26	pg/L	1.26	20.0
74338-23-1	PCB-73	U	2.1	2.1	pg/L	2.10	20.0
32598-13-3	PCB-77	U	1.68	1.32	pg/L	1.32	20.0
70362-49-1	PCB-78	U	1.44	1.44	pg/L	1.44	20.0
41464-48-6	PCB-79	U	1.22	1.22	pg/L	1.22	20.0
33284-52-5	PCB-80	U	1.2	1.2	pg/L	1.20	20.0

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

K Estimated Maximum Possible Concentration

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**1609609_1609C98**	**Client:**	**NMED001**	**Project:**	**NMED00113**
Lab Sample ID:	**12017259**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 33207**				
Client ID:	**MB for batch 33207**			**Prep Basis:**	**As Received**
Batch ID:	**33209**	**Method:**	**EPA Method 1668A HS**		
Run Date:	**11/09/2016 18:53**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c09nov16a-4**			**Dilution:**	**1**
Prep Batch:	**33207**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**08-NOV-16**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
70362-50-4	PCB-81	U	1.28	1.28	pg/L	1.28	20.0
52663-62-4	PCB-82	U	1.62	1.62	pg/L	1.62	20.0
60145-20-2	PCB-83	U	1.74	1.74	pg/L	1.74	20.0
52663-60-2	PCB-84	U	1.6	1.6	pg/L	1.60	20.0
PCB-85-117	PCB-85/PCB-116/PCB-117	CU	1.22	1.22	pg/L	1.22	60.0
PCB-86-125	PCB-86/PCB-87/PCB-97/PCB-109/PCB-119/PCB-	CJ	4.42	1.3	pg/L	1.30	120
PCB-88/91	PCB-88/PCB-91	CU	1.52	1.52	pg/L	1.52	40.0
73575-57-2	PCB-89	U	1.52	1.52	pg/L	1.52	20.0
PCB-90-113	PCB-90/PCB-101/PCB-113	CJ	5.62	2.56	pg/L	1.28	60.0
52663-61-3	PCB-92	U	1.46	1.46	pg/L	1.46	20.0
PCB-93/100	PCB-93/PCB-100	CU	1.5	1.5	pg/L	1.50	40.0
73575-55-0	PCB-94	U	1.66	1.66	pg/L	1.66	20.0
38379-99-6	PCB-95	U	3.20	1.4	pg/L	1.40	20.0
73575-54-9	PCB-96	U	.68	.68	pg/L	0.680	20.0
PCB-98/102	PCB-98/PCB-102	CU	1.6	1.6	pg/L	1.60	40.0
38380-01-7	PCB-99	U	2.48	1.42	pg/L	1.42	20.0
60145-21-3	PCB-103	U	1.32	1.32	pg/L	1.32	20.0
56558-16-8	PCB-104	U	.94	.94	pg/L	0.940	20.0
32598-14-4	PCB-105	U	1.84	1.84	pg/L	1.84	20.0
70424-69-0	PCB-106	U	1.66	1.66	pg/L	1.66	20.0
70424-68-9	PCB-107	U	1.56	1.56	pg/L	1.56	20.0
PCB-108/124	PCB-108/PCB-124	CU	1.78	1.78	pg/L	1.78	40.0
PCB-110/115	PCB-110/PCB-115	CJ	4.54	1.57	pg/L	1.22	40.0
39635-32-0	PCB-111	U	1.16	1.16	pg/L	1.16	20.0
74472-36-9	PCB-112	U	1.04	1.04	pg/L	1.04	20.0
74472-37-0	PCB-114	U	1.8	1.8	pg/L	1.80	20.0
31508-00-6	PCB-118	U	4.12	1.7	pg/L	1.70	20.0
68194-12-7	PCB-120	U	1.04	1.04	pg/L	1.04	20.0
56558-18-0	PCB-121	U	1.18	1.18	pg/L	1.18	20.0
76842-07-4	PCB-122	U	1.78	1.78	pg/L	1.78	20.0
65510-44-3	PCB-123	U	1.76	1.76	pg/L	1.76	20.0
57465-28-8	PCB-126	U	1.98	1.98	pg/L	1.98	20.0

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

K Estimated Maximum Possible Concentration

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	1609609_1609C98	**Client:**	NMED001	**Project:**	NMED00113
Lab Sample ID:	12017259			**Matrix:**	WATER
Client Sample:	QC for batch 33207				
Client ID:	MB for batch 33207			**Prep Basis:**	As Received
Batch ID:	33209	**Method:**	EPA Method 1668A HS		
Run Date:	11/09/2016 18:53	**Analyst:**	MJC	**Instrument:**	HRP791
Data File:	c09nov16a-4			**Dilution:**	1
Prep Batch:	33207	**Prep Method:**	SW846 3520C	**Prep SOP Ref:**	CF-OA-E-001
Prep Date:	08-NOV-16	**Prep Aliquot:**	1000 mL		

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
39635-33-1	PCB-127	U	1.68	1.68	pg/L	1.68	20.0
PCB-128/166	PCB-128/PCB-166	CU	1.3	1.3	pg/L	1.30	40.0
PCB-129-163	PCB-129/PCB-138/PCB-163	CJ	6.20	1.98	pg/L	1.46	60.0
52663-66-8	PCB-130	U	1.58	1.58	pg/L	1.58	20.0
61798-70-7	PCB-131	U	1.9	1.9	pg/L	1.90	20.0
38380-05-1	PCB-132	U	2.36	1.72	pg/L	1.72	20.0
35694-04-3	PCB-133	U	1.52	1.52	pg/L	1.52	20.0
52704-70-8	PCB-134	U	2.14	2.14	pg/L	2.14	20.0
PCB-135/151	PCB-135/PCB-151	CU	2.82	1.04	pg/L	1.04	40.0
38411-22-2	PCB-136	U	0.860	.76	pg/L	0.760	20.0
35694-06-5	PCB-137	U	1.64	1.64	pg/L	1.64	20.0
PCB-139/140	PCB-139/PCB-140	CU	1.46	1.46	pg/L	1.46	40.0
52712-04-6	PCB-141	U	1.4	1.4	pg/L	1.40	20.0
41411-61-4	PCB-142	U	1.62	1.62	pg/L	1.62	20.0
68194-15-0	PCB-143	U	1.44	1.44	pg/L	1.44	20.0
68194-14-9	PCB-144	U	.96	.96	pg/L	0.960	20.0
74472-40-5	PCB-145	U	.84	.84	pg/L	0.840	20.0
51908-16-8	PCB-146	U	1.2	1.2	pg/L	1.20	20.0
PCB-147/149	PCB-147/PCB-149	CU	4.98	1.44	pg/L	1.44	40.0
74472-41-6	PCB-148	U	.96	.96	pg/L	0.960	20.0
68194-08-1	PCB-150	U	.82	.82	pg/L	0.820	20.0
68194-09-2	PCB-152	U	.72	.72	pg/L	0.720	20.0
PCB-153/168	PCB-153/PCB-168	CU	4.28	1.22	pg/L	1.22	40.0
60145-22-4	PCB-154	U	.86	.86	pg/L	0.860	20.0
33979-03-2	PCB-155	U	.76	.76	pg/L	0.760	20.0
PCB-156/157	PCB-156/PCB-157	CU	2.14	1.48	pg/L	1.48	40.0
74472-42-7	PCB-158	U	1	1	pg/L	1.00	20.0
39635-35-3	PCB-159	U	1.1	1.1	pg/L	1.10	20.0
41411-62-5	PCB-160	U	1.26	1.26	pg/L	1.26	20.0
74472-43-8	PCB-161	U	1.06	1.06	pg/L	1.06	20.0
39635-34-2	PCB-162	U	1.16	1.16	pg/L	1.16	20.0
74472-45-0	PCB-164	U	1.08	1.08	pg/L	1.08	20.0

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

K Estimated Maximum Possible Concentration

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	1609609_1609C98	**Client:**	NMED001	**Project:**	NMED00113
Lab Sample ID:	12017259			**Matrix:**	WATER
Client Sample:	QC for batch 33207				
Client ID:	MB for batch 33207			**Prep Basis:**	As Received
Batch ID:	33209	**Method:**	EPA Method 1668A HS		
Run Date:	11/09/2016 18:53	**Analyst:**	MJC	**Instrument:**	HRP791
Data File:	c09nov16a-4			**Dilution:**	1
Prep Batch:	33207	**Prep Method:**	SW846 3520C	**Prep SOP Ref:**	CF-OA-E-001
Prep Date:	08-NOV-16	**Prep Aliquot:**	1000 mL		

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
74472-46-1	PCB-165	U	1.32	1.32	pg/L	1.32	20.0
52663-72-6	PCB-167	U	1.14	1.1	pg/L	1.10	20.0
32774-16-6	PCB-169	U	1.2	1.2	pg/L	1.20	20.0
35065-30-6	PCB-170	U	2.24	1.08	pg/L	1.08	20.0
PCB-171/173	PCB-171/PCB-173	CU	1.20	1.1	pg/L	1.10	40.0
52663-74-8	PCB-172	U	1.1	1.1	pg/L	1.10	20.0
38411-25-5	PCB-174	U	3.08	1.04	pg/L	1.04	20.0
40186-70-7	PCB-175	U	.8	.8	pg/L	0.800	20.0
52663-65-7	PCB-176	U	.64	.64	pg/L	0.640	20.0
52663-70-4	PCB-177	U	1.22	1.12	pg/L	1.12	20.0
52663-67-9	PCB-178	U	.84	.84	pg/L	0.840	20.0
52663-64-6	PCB-179	U	0.660	.64	pg/L	0.640	20.0
PCB-180/193	PCB-180/PCB-193	CU	.92	.92	pg/L	0.920	40.0
74472-47-2	PCB-181	U	1.14	1.14	pg/L	1.14	20.0
60145-23-5	PCB-182	U	.78	.78	pg/L	0.780	20.0
PCB-183/185	PCB-183/PCB-185	CU	1.78	1.06	pg/L	1.06	40.0
74472-48-3	PCB-184	U	.64	.64	pg/L	0.640	20.0
74472-49-4	PCB-186	U	.72	.72	pg/L	0.720	20.0
52663-68-0	PCB-187	U	3.04	.84	pg/L	0.840	20.0
74487-85-7	PCB-188	U	.68	.68	pg/L	0.680	20.0
39635-31-9	PCB-189	U	1.30	1.08	pg/L	1.08	20.0
41411-64-7	PCB-190	U	.82	.82	pg/L	0.820	20.0
74472-50-7	PCB-191	U	.8	.8	pg/L	0.800	20.0
74472-51-8	PCB-192	U	.96	.96	pg/L	0.960	20.0
35694-08-7	PCB-194	U	1.52	.72	pg/L	0.720	20.0
52663-78-2	PCB-195	U	.78	.78	pg/L	0.780	20.0
42740-50-1	PCB-196	U	.8	.8	pg/L	0.800	20.0
PCB-197/200	PCB-197/PCB-200	CU	.66	.66	pg/L	0.660	40.0
PCB-198/199	PCB-198/PCB-199	CKU	1.18	.84	pg/L	0.840	40.0
40186-71-8	PCB-201	U	.64	.64	pg/L	0.640	20.0
2136-99-4	PCB-202	U	.7	.7	pg/L	0.700	20.0
52663-76-0	PCB-203	U	0.920	.82	pg/L	0.820	20.0

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data
J Value is estimated
K Estimated Maximum Possible Concentration
U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**1609609_1609C98**	**Client:**	**NMED001**	**Project:**	**NMED00113**
Lab Sample ID:	**12017259**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 33207**				
Client ID:	**MB for batch 33207**			**Prep Basis:**	**As Received**
Batch ID:	**33209**	**Method:**	**EPA Method 1668A HS**		
Run Date:	**11/09/2016 18:53**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c09nov16a-4**			**Dilution:**	**1**
Prep Batch:	**33207**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**08-NOV-16**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
74472-52-9	PCB-204	U	.64	.64	pg/L	0.640	20.0
74472-53-0	PCB-205	U	0.640	.62	pg/L	0.620	20.0
40186-72-9	PCB-206	U	1.06	1.06	pg/L	1.06	20.0
52663-79-3	PCB-207	U	.78	.78	pg/L	0.780	20.0
52663-77-1	PCB-208	U	.84	.84	pg/L	0.840	20.0
2051-24-3	PCB-209	U	1.22	.68	pg/L	0.680	20.0
27323-18-8	Total monoCB	U	0	0	pg/L		
25512-42-9	Total diCB		335	319	pg/L		
25323-68-6	Total triCB		53.5	27.7	pg/L		
26914-33-0	Total tetraCB		37.9	18	pg/L		
25429-29-2	Total pentaCB		24.4	5.43	pg/L		
26601-64-9	Total hexaCB		24.8	1.98	pg/L		
28655-71-2	Total heptaCB	U	14.5	0	pg/L		
55722-26-4	Total octaCB	U	3.08	0	pg/L		
53742-07-7	Total nonaCB	U	0	0	pg/L		
DECACB(Tot)	Total decaCB	U	1.22	0	pg/L		
1336-36-3	Total PCB		495	372	pg/L		
TEQ 7	TOTAL (TEQ ND=1/2 DL)_2005		0.118		pg/L		
TEQ 8	TOTAL (TEQ ND=0)_2005		0.000429		pg/L		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		661	2000	pg/L	33.1	(15%-150%)
13C-3-MoCB		660	2000	pg/L	33.0	(15%-150%)
13C-4-DiCB		635	2000	pg/L	31.7	(25%-150%)
13C-15-DiCB		1670	2000	pg/L	83.7	(25%-150%)
13C-19-TrCB		1180	2000	pg/L	59.1	(25%-150%)
13C-37-TrCB		1290	2000	pg/L	64.3	(25%-150%)
13C-54-TeCB		721	2000	pg/L	36.1	(25%-150%)
13C-77-TeCB		1730	2000	pg/L	86.3	(25%-150%)
13C-81-TeCB		1710	2000	pg/L	85.3	(25%-150%)
13C-104-PeCB		908	2000	pg/L	45.4	(25%-150%)
13C-105-PeCB		1510	2000	pg/L	75.7	(25%-150%)
13C-114-PeCB		1450	2000	pg/L	72.4	(25%-150%)
13C-118-PeCB		1480	2000	pg/L	74.1	(25%-150%)
13C-123-PeCB		1480	2000	pg/L	74.2	(25%-150%)
13C-126-PeCB		1620	2000	pg/L	81.2	(25%-150%)
13C-155-HxCB		1070	2000	pg/L	53.4	(25%-150%)
13C-156-HxCB	C	2710	4000	pg/L	67.7	(25%-150%)
13C-167-HxCB		1390	2000	pg/L	69.6	(25%-150%)
13C-169-HxCB		1450	2000	pg/L	72.5	(25%-150%)
13C-188-HpCB		1330	2000	pg/L	66.4	(25%-150%)
13C-189-HpCB		1420	2000	pg/L	71.0	(25%-150%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	1609609_1609C98	**Client:**	NMED001	**Project:**	NMED00113
Lab Sample ID:	12017259			**Matrix:**	WATER
Client Sample:	QC for batch 33207				
Client ID:	MB for batch 33207			**Prep Basis:**	As Received
Batch ID:	33209	**Method:**	EPA Method 1668A HS		
Run Date:	11/09/2016 18:53	**Analyst:**	MJC	**Instrument:**	HRP791
Data File:	c09nov16a-4			**Dilution:**	1
Prep Batch:	33207	**Prep Method:**	SW846 3520C	**Prep SOP Ref:**	CF-OA-E-001
Prep Date:	08-NOV-16	**Prep Aliquot:**	1000 mL		

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-202-OcCB		1520	2000	pg/L	75.9	(25%-150%)
13C-205-OcCB		1720	2000	pg/L	86.1	(25%-150%)
13C-206-NoCB		1780	2000	pg/L	89.2	(25%-150%)
13C-208-NoCB		1620	2000	pg/L	80.8	(25%-150%)
13C-209-DeCB		1930	2000	pg/L	96.6	(25%-150%)
13C-28-TrCB		1220	2000	pg/L	60.9	(30%-135%)
13C-111-PeCB		1620	2000	pg/L	81.0	(30%-135%)
13C-178-HpCB		1690	2000	pg/L	84.7	(30%-135%)

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data
J Value is estimated
K Estimated Maximum Possible Concentration
U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**1609609_1609C98**	**Client:**	**NMED001**	**Project:**	**NMED00113**
Lab Sample ID:	**12017260**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 33207**				
Client ID:	**LCS for batch 33207**			**Prep Basis:**	**As Received**
Batch ID:	**33209**	**Method:**	**EPA Method 1668A HS**		
Run Date:	**11/09/2016 16:41**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c09nov16a-2**			**Dilution:**	**1**
Prep Batch:	**33207**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**08-NOV-16**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
2051-60-7	PCB-1		522	518	pg/L	5.74	40.0
2051-62-9	PCB-3		606	604	pg/L	4.96	40.0
13029-08-8	PCB-4		508	499	pg/L	4.28	40.0
2050-68-2	PCB-15		528	523	pg/L	4.74	40.0
38444-73-4	PCB-19		497	494	pg/L	2.40	20.0
38444-90-5	PCB-37		487	484	pg/L	6.88	20.0
15968-05-5	PCB-54		1000	1000	pg/L	1.16	20.0
32598-13-3	PCB-77		945	942	pg/L	4.18	20.0
70362-50-4	PCB-81		1120	1120	pg/L	3.92	20.0
56558-16-8	PCB-104		1060	1060	pg/L	1.18	20.0
32598-14-4	PCB-105		1180	1180	pg/L	5.10	20.0
74472-37-0	PCB-114		1020	1020	pg/L	5.02	20.0
31508-00-6	PCB-118		981	977	pg/L	4.70	20.0
65510-44-3	PCB-123		920	916	pg/L	4.86	20.0
57465-28-8	PCB-126		1020	1010	pg/L	5.84	20.0
33979-03-2	PCB-155		983	980	pg/L	0.720	20.0
PCB-156/157	PCB-156/PCB-157	C	2230	2230	pg/L	6.24	40.0
52663-72-6	PCB-167		1150	1150	pg/L	4.52	20.0
32774-16-6	PCB-169		1020	1010	pg/L	5.24	20.0
74487-85-7	PCB-188		975	972	pg/L	0.920	20.0
39635-31-9	PCB-189		977	971	pg/L	2.34	20.0
2136-99-4	PCB-202		1430	1430	pg/L	1.02	20.0
74472-53-0	PCB-205		1290	1290	pg/L	1.32	20.0
40186-72-9	PCB-206		1410	1410	pg/L	1.42	20.0
52663-77-1	PCB-208		1500	1490	pg/L	1.12	20.0
2051-24-3	PCB-209		1380	1380	pg/L	0.880	20.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		1100	2000	pg/L	55.0	(15%-140%)
13C-3-MoCB		1040	2000	pg/L	51.8	(15%-140%)
13C-4-DiCB		1040	2000	pg/L	52.1	(30%-140%)
13C-15-DiCB		1790	2000	pg/L	89.3	(30%-140%)
13C-19-TrCB		1630	2000	pg/L	81.3	(30%-140%)
13C-37-TrCB		1460	2000	pg/L	72.9	(30%-140%)
13C-54-TeCB		1100	2000	pg/L	54.8	(30%-140%)
13C-77-TeCB		1890	2000	pg/L	94.6	(30%-140%)
13C-81-TeCB		1910	2000	pg/L	95.3	(30%-140%)
13C-104-PeCB		1170	2000	pg/L	58.4	(30%-140%)
13C-105-PeCB		1660	2000	pg/L	82.9	(30%-140%)
13C-114-PeCB		1610	2000	pg/L	80.7	(30%-140%)
13C-118-PeCB		1660	2000	pg/L	82.8	(30%-140%)
13C-123-PeCB		1680	2000	pg/L	84.1	(30%-140%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	1609609_1609C98	**Client:**	NMED001	**Project:**	NMED00113
Lab Sample ID:	12017260			**Matrix:**	WATER
Client Sample:	QC for batch 33207				
Client ID:	LCS for batch 33207			**Prep Basis:**	As Received
Batch ID:	33209	**Method:**	EPA Method 1668A HS		
Run Date:	11/09/2016 16:41	**Analyst:**	MJC	**Instrument:**	HRP791
Data File:	c09nov16a-2			**Dilution:**	1
Prep Batch:	33207	**Prep Method:**	SW846 3520C	**Prep SOP Ref:**	CF-OA-E-001
Prep Date:	08-NOV-16	**Prep Aliquot:**	1000 mL		

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-126-PeCB		1710	2000	pg/L	85.5	(30%-140%)
13C-155-HxCB		1330	2000	pg/L	66.4	(30%-140%)
13C-156-HxCB	C	2970	4000	pg/L	74.3	(30%-140%)
13C-167-HxCB		1540	2000	pg/L	76.9	(30%-140%)
13C-169-HxCB		1540	2000	pg/L	77.2	(30%-140%)
13C-188-HpCB		1550	2000	pg/L	77.6	(30%-140%)
13C-189-HpCB		1570	2000	pg/L	78.5	(30%-140%)
13C-202-OcCB		1700	2000	pg/L	84.9	(30%-140%)
13C-205-OcCB		1940	2000	pg/L	97.1	(30%-140%)
13C-206-NoCB		2010	2000	pg/L	101	(30%-140%)
13C-208-NoCB		1810	2000	pg/L	90.5	(30%-140%)
13C-209-DeCB		2160	2000	pg/L	108	(30%-140%)
13C-28-TrCB		1280	2000	pg/L	63.8	(40%-125%)
13C-111-PeCB		1630	2000	pg/L	81.4	(40%-125%)
13C-178-HpCB		1710	2000	pg/L	85.5	(40%-125%)

Comments:

B The target analyte was detected in the associated blank.

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	1609609_1609C98	**Client:**	NMED001	**Project:**	NMED00113
Lab Sample ID:	12017261			**Matrix:**	WATER
Client Sample:	QC for batch 33207				
Client ID:	LCSD for batch 33207			**Prep Basis:**	As Received
Batch ID:	33209	**Method:**	EPA Method 1668A HS		
Run Date:	11/09/2016 17:47	**Analyst:**	MJC	**Instrument:**	HRP791
Data File:	c09nov16a-3			**Dilution:**	1
Prep Batch:	33207	**Prep Method:**	SW846 3520C	**Prep SOP Ref:**	CF-OA-E-001
Prep Date:	08-NOV-16	**Prep Aliquot:**	1000 mL		

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
2051-60-7	PCB-1		458	454	pg/L	5.08	40.0
2051-62-9	PCB-3		546	544	pg/L	4.68	40.0
13029-08-8	PCB-4		433	424	pg/L	5.84	40.0
2050-68-2	PCB-15		478	473	pg/L	3.62	40.0
38444-73-4	PCB-19		451	447	pg/L	2.06	20.0
38444-90-5	PCB-37		423	420	pg/L	2.02	20.0
15968-05-5	PCB-54		879	876	pg/L	1.08	20.0
32598-13-3	PCB-77		829	826	pg/L	2.42	20.0
70362-50-4	PCB-81		970	968	pg/L	2.34	20.0
56558-16-8	PCB-104		923	920	pg/L	0.680	20.0
32598-14-4	PCB-105		1040	1030	pg/L	3.62	20.0
74472-37-0	PCB-114		892	888	pg/L	3.56	20.0
31508-00-6	PCB-118		845	842	pg/L	3.34	20.0
65510-44-3	PCB-123		797	793	pg/L	3.50	20.0
57465-28-8	PCB-126		910	906	pg/L	3.98	20.0
33979-03-2	PCB-155		876	873	pg/L	0.540	20.0
PCB-156/157	PCB-156/PCB-157	C	1920	1920	pg/L	3.62	40.0
52663-72-6	PCB-167		999	996	pg/L	2.72	20.0
32774-16-6	PCB-169		869	864	pg/L	3.00	20.0
74487-85-7	PCB-188		837	834	pg/L	0.560	20.0
39635-31-9	PCB-189		837	831	pg/L	1.20	20.0
2136-99-4	PCB-202		1220	1220	pg/L	0.680	20.0
74472-53-0	PCB-205		1120	1110	pg/L	0.800	20.0
40186-72-9	PCB-206		1200	1200	pg/L	0.900	20.0
52663-77-1	PCB-208		1290	1290	pg/L	0.740	20.0
2051-24-3	PCB-209		1200	1190	pg/L	0.500	20.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%		Acceptable Limits
13C-1-MoCB		1050	2000	pg/L	52.3		(15%-140%)
13C-3-MoCB		971	2000	pg/L	48.6		(15%-140%)
13C-4-DiCB		984	2000	pg/L	49.2		(30%-140%)
13C-15-DiCB		3070	2000	pg/L	153	*	(30%-140%)
13C-19-TrCB		1950	2000	pg/L	97.5		(30%-140%)
13C-37-TrCB		2200	2000	pg/L	110		(30%-140%)
13C-54-TeCB		1120	2000	pg/L	55.8		(30%-140%)
13C-77-TeCB		2920	2000	pg/L	146	*	(30%-140%)
13C-81-TeCB		2920	2000	pg/L	146	*	(30%-140%)
13C-104-PeCB		1520	2000	pg/L	75.8		(30%-140%)
13C-105-PeCB		2520	2000	pg/L	126		(30%-140%)
13C-114-PeCB		2440	2000	pg/L	122		(30%-140%)
13C-118-PeCB		2480	2000	pg/L	124		(30%-140%)
13C-123-PeCB		2510	2000	pg/L	126		(30%-140%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	1609609_1609C98	**Client:**	NMED001	**Project:**	NMED00113
Lab Sample ID:	12017261			**Matrix:**	WATER
Client Sample:	QC for batch 33207				
Client ID:	LCSD for batch 33207			**Prep Basis:**	As Received
Batch ID:	33209	**Method:**	EPA Method 1668A HS		
Run Date:	11/09/2016 17:47	**Analyst:**	MJC	**Instrument:**	HRP791
Data File:	c09nov16a-3			**Dilution:**	1
Prep Batch:	33207	**Prep Method:**	SW846 3520C	**Prep SOP Ref:**	CF-OA-E-001
Prep Date:	08-NOV-16	**Prep Aliquot:**	1000 mL		

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%		Acceptable Limits
13C-126-PeCB		2680	2000	pg/L	134		(30%-140%)
13C-155-HxCB		1750	2000	pg/L	87.5		(30%-140%)
13C-156-HxCB	C	4400	4000	pg/L	110		(30%-140%)
13C-167-HxCB		2290	2000	pg/L	114		(30%-140%)
13C-169-HxCB		2340	2000	pg/L	117		(30%-140%)
13C-188-HpCB		2170	2000	pg/L	108		(30%-140%)
13C-189-HpCB		2320	2000	pg/L	116		(30%-140%)
13C-202-OcCB		2440	2000	pg/L	122		(30%-140%)
13C-205-OcCB		2800	2000	pg/L	140		(30%-140%)
13C-206-NoCB		2920	2000	pg/L	146	*	(30%-140%)
13C-208-NoCB		2620	2000	pg/L	131		(30%-140%)
13C-209-DeCB		3150	2000	pg/L	158	*	(30%-140%)
13C-28-TrCB		1460	2000	pg/L	72.9		(40%-125%)
13C-111-PeCB		2010	2000	pg/L	101		(40%-125%)
13C-178-HpCB		2080	2000	pg/L	104		(40%-125%)

Comments:

B The target analyte was detected in the associated blank.

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1609609**

02-Dec-16

Client: AMAFCA

Project: CMC

Sample ID	**MB-27492**	SampType:	**MBLK**	TestCode:	**EPA Method 1664A**					
Client ID:	**PBW**	Batch ID:	**27492**	RunNo:	**37211**					
Prep Date:	**9/14/2016**	Analysis Date:	**9/14/2016**	SeqNo:	**1154883**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
N-Hexane Extractable Material	ND	10								

Sample ID	**LCS-27492**	SampType:	**LCS**	TestCode:	**EPA Method 1664A**					
Client ID:	**LCSW**	Batch ID:	**27492**	RunNo:	**37211**					
Prep Date:	**9/14/2016**	Analysis Date:	**9/14/2016**	SeqNo:	**1154884**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
N-Hexane Extractable Material	39	10	40.00	0	98.0	78	114			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1609609**

02-Dec-16

Client: AMAFCA

Project: CMC

Sample ID	**MBLK-D**	SampType:	**MBLK**	TestCode:	**EPA Method 200.7: Dissolved Metals**				
Client ID:	**PBW**	Batch ID:	**D37643**	RunNo:	**37643**				
Prep Date:		Analysis Date:	**10/3/2016**	SeqNo:	**1171903**	Units:	**mg/L**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	ND	1.0								

Sample ID	**MB-B**	SampType:	**MBLK**	TestCode:	**EPA Method 200.7: Dissolved Metals**				
Client ID:	**PBW**	Batch ID:	**B37699**	RunNo:	**37699**				
Prep Date:		Analysis Date:	**10/5/2016**	SeqNo:	**1174283**	Units:	**mg/L**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Magnesium	ND	1.0								

Sample ID	**LCS-B**	SampType:	**LCS**	TestCode:	**EPA Method 200.7: Dissolved Metals**				
Client ID:	**LCSW**	Batch ID:	**B37699**	RunNo:	**37699**				
Prep Date:		Analysis Date:	**10/5/2016**	SeqNo:	**1174284**	Units:	**mg/L**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Magnesium	52	1.0	50.00	0	104	85	115			

Sample ID	**LLLCS-B**	SampType:	**LCSLL**	TestCode:	**EPA Method 200.7: Dissolved Metals**				
Client ID:	**BatchQC**	Batch ID:	**B37699**	RunNo:	**37699**				
Prep Date:		Analysis Date:	**10/5/2016**	SeqNo:	**1174285**	Units:	**mg/L**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Magnesium	ND	1.0	0.5000	0	113	50	150			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1609609**

02-Dec-16

Client: AMAFCA

Project: CMC

Sample ID	**LCS**	SampType: **LCS**			TestCode: **EPA 200.8: Dissolved Metals**					
Client ID:	**LCSW**	Batch ID: **C37623**			RunNo: **37623**					
Prep Date:		Analysis Date: **9/30/2016**			SeqNo: **1171239**		Units: **mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Copper	0.024	0.0010	0.02500	0	95.1	85	115			
Lead	0.012	0.00050	0.01250	0	94.9	85	115			

Sample ID	**LLLCS**	SampType: **LCSLL**			TestCode: **EPA 200.8: Dissolved Metals**					
Client ID:	**BatchQC**	Batch ID: **C37623**			RunNo: **37623**					
Prep Date:		Analysis Date: **9/30/2016**			SeqNo: **1171246**		Units: **mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Copper	0.0011	0.0010	0.001000	0	114	50	150			
Lead	0.00050	0.00050	0.0005000	0	100	50	150			

Sample ID	**MB**	SampType: **MBLK**			TestCode: **EPA 200.8: Dissolved Metals**					
Client ID:	**PBW**	Batch ID: **C37623**			RunNo: **37623**					
Prep Date:		Analysis Date: **9/30/2016**			SeqNo: **1171252**		Units: **mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Copper	ND	0.0010								
Lead	ND	0.00050								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1609609**

02-Dec-16

Client: AMAFCA

Project: CMC

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R37171**	RunNo: **37171**
Prep Date:	Analysis Date: **9/13/2016**	SeqNo: **1153024** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Nitrite (As N)	ND	0.10								
Nitrogen, Nitrate (As N)	ND	0.10								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **R37171**	RunNo: **37171**
Prep Date:	Analysis Date: **9/13/2016**	SeqNo: **1153025** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Nitrite (As N)	0.95	0.10	1.000	0	95.2	90	110			
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0	99.2	90	110			

Sample ID **1609609-001DMS**	SampType: **MS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **Rio Grande-North 0**	Batch ID: **R37171**	RunNo: **37171**
Prep Date:	Analysis Date: **9/13/2016**	SeqNo: **1153037** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Nitrite (As N)	0.94	0.10	1.000	0	94.0	79.8	108			
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0.08590	97.5	82.9	118			

Sample ID **1609609-001DMSD**	SampType: **MSD**	TestCode: **EPA Method 300.0: Anions**
Client ID: **Rio Grande-North 0**	Batch ID: **R37171**	RunNo: **37171**
Prep Date:	Analysis Date: **9/13/2016**	SeqNo: **1153038** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Nitrite (As N)	0.95	0.10	1.000	0	94.6	79.8	108	0.636	20	
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0.08590	98.0	82.9	118	0.569	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1609609**

02-Dec-16

Client: AMAFCA

Project: CMC

Sample ID	**MB-27487**	SampType:	**MBLK**		TestCode:	**SM5210B: BOD**				
Client ID:	**PBW**	Batch ID:	**27487**		RunNo:	**37444**				
Prep Date:	**9/14/2016**	Analysis Date:	**9/19/2016**		SeqNo:	**1164081**	Units:	**mg/L**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Biochemical Oxygen Demand	ND	2.0								

Sample ID	**MB--27487**	SampType:	**MBLK**		TestCode:	**SM5210B: BOD**				
Client ID:	**PBW**	Batch ID:	**27487**		RunNo:	**37444**				
Prep Date:	**9/14/2016**	Analysis Date:	**9/19/2016**		SeqNo:	**1164082**	Units:	**mg/L**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Biochemical Oxygen Demand	ND	2.0								

Sample ID	**LCS-27487**	SampType:	**LCS**		TestCode:	**SM5210B: BOD**				
Client ID:	**LCSW**	Batch ID:	**27487**		RunNo:	**37444**				
Prep Date:	**9/14/2016**	Analysis Date:	**9/19/2016**		SeqNo:	**1164083**	Units:	**mg/L**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Biochemical Oxygen Demand	180	2.0	198.0	0	88.7	56.9	131			

Sample ID	**LCSD-27487**	SampType:	**LCSD**		TestCode:	**SM5210B: BOD**				
Client ID:	**LCSS02**	Batch ID:	**27487**		RunNo:	**37444**				
Prep Date:	**9/14/2016**	Analysis Date:	**9/19/2016**		SeqNo:	**1164084**	Units:	**mg/L**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Biochemical Oxygen Demand	170	2.0	198.0	0	84.7	56.9	131	4.66	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1609609**

02-Dec-16

Client: AMAFCA

Project: CMC

Sample ID	**MB-27474**	SampType:	**MBLK**	TestCode:	**SM 9223B Fecal Indicator: E. coli MPN**					
Client ID:	**PBW**	Batch ID:	**27474**	RunNo:	**37218**					
Prep Date:	**9/13/2016**	Analysis Date:	**9/14/2016**	SeqNo:	**1154952**	Units:	**CFU/100ml**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
E. Coli	<1	1.000								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1609609**

02-Dec-16

Client: AMAFCA

Project: CMC

Sample ID **MB**	SampType: **MBLK**	TestCode: **SM 4500 NH3: Ammonia**
Client ID: **PBW**	Batch ID: **R37673**	RunNo: **37673**
Prep Date:	Analysis Date: **10/4/2016**	SeqNo: **1173090** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	1.0								

Sample ID **LCS**	SampType: **LCS**	TestCode: **SM 4500 NH3: Ammonia**
Client ID: **LCSW**	Batch ID: **R37673**	RunNo: **37673**
Prep Date:	Analysis Date: **10/4/2016**	SeqNo: **1173091** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	9.7	1.0	10.00	0	96.6	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1609609**

02-Dec-16

Client: AMAFCA

Project: CMC

Sample ID	**MB-27693**	SampType:	**MBLK**	TestCode:	**EPA Method 365.1: Total Phosphorous**					
Client ID:	**PBW**	Batch ID:	**27693**	RunNo:	**37505**					
Prep Date:	**9/26/2016**	Analysis Date:	**9/27/2016**	SeqNo:	**1166156**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	ND	0.010								

Sample ID	**LCS-27693**	SampType:	**LCS**	TestCode:	**EPA Method 365.1: Total Phosphorous**					
Client ID:	**LCSW**	Batch ID:	**27693**	RunNo:	**37505**					
Prep Date:	**9/26/2016**	Analysis Date:	**9/27/2016**	SeqNo:	**1166157**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	0.25	0.010	0.2500	0	98.0	90	110			

Sample ID	**1609609-001DMS**	SampType:	**MS**	TestCode:	**EPA Method 365.1: Total Phosphorous**					
Client ID:	**Rio Grande-North 0**	Batch ID:	**27693**	RunNo:	**37505**					
Prep Date:	**9/26/2016**	Analysis Date:	**9/27/2016**	SeqNo:	**1166159**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	0.30	0.010	0.2500	0.05240	99.5	90	110			

Sample ID	**1609609-001DMSD**	SampType:	**MSD**	TestCode:	**EPA Method 365.1: Total Phosphorous**					
Client ID:	**Rio Grande-North 0**	Batch ID:	**27693**	RunNo:	**37505**					
Prep Date:	**9/26/2016**	Analysis Date:	**9/27/2016**	SeqNo:	**1166160**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	0.30	0.010	0.2500	0.05240	100	90	110	0.530	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1609609**

02-Dec-16

Client: AMAFCA

Project: CMC

Sample ID	**MB-27539**	SampType:	**MBLK**	TestCode:	**SM2540C MOD: Total Dissolved Solids**					
Client ID:	**PBW**	Batch ID:	**27539**	RunNo:	**37290**					
Prep Date:	**9/16/2016**	Analysis Date:	**9/19/2016**	SeqNo:	**1157797**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	20.0								

Sample ID	**LCS-27539**	SampType:	**LCS**	TestCode:	**SM2540C MOD: Total Dissolved Solids**					
Client ID:	**LCSW**	Batch ID:	**27539**	RunNo:	**37290**					
Prep Date:	**9/16/2016**	Analysis Date:	**9/19/2016**	SeqNo:	**1157798**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1020	20.0	1000	0	102	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1609609**

02-Dec-16

Client: AMAFCA

Project: CMC

Sample ID **MB-27768**	SampType: **MBLK**	TestCode: **SM 4500 Norg C: TKN**							
Client ID: **PBW**	Batch ID: **27768**	RunNo: **37637**							
Prep Date: **9/28/2016**	Analysis Date: **10/3/2016**	SeqNo: **1171460**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Kjeldahl, Total	ND	1.0								

Sample ID **LCS-27768**	SampType: **LCS**	TestCode: **SM 4500 Norg C: TKN**							
Client ID: **LCSW**	Batch ID: **27768**	RunNo: **37637**							
Prep Date: **9/28/2016**	Analysis Date: **10/3/2016**	SeqNo: **1171461**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Kjeldahl, Total	9.8	1.0	10.00	0	98.0	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1609609**

02-Dec-16

Client: AMAFCA

Project: CMC

Sample ID	**MB-27523**	SampType:	**MBLK**	TestCode:	**SM 2540D: TSS**					
Client ID:	**PBW**	Batch ID:	**27523**	RunNo:	**37265**					
Prep Date:	**9/15/2016**	Analysis Date:	**9/16/2016**	SeqNo:	**1157022**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Suspended Solids	ND	4.0								

Sample ID	**LCS-27523**	SampType:	**LCS**	TestCode:	**SM 2540D: TSS**					
Client ID:	**LCSW**	Batch ID:	**27523**	RunNo:	**37265**					
Prep Date:	**9/15/2016**	Analysis Date:	**9/16/2016**	SeqNo:	**1157023**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Suspended Solids	110	4.0	92.50	0	114	83.35	118.92			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: AMAFCA Work Order Number: 1609609 RcptNo: 1

Received by/date: AF 09/13/16

Logged By: Ashley Gallegos 9/13/2016 10:35:00 AM

Completed By: Ashley Gallegos 9/13/2016 12:09:06 PM

Reviewed By: AF 09/13/16 @ 1230

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	Client		

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
9. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10. VOA vials have zero headspace?	Yes ☑	No ☐	No VOA Vials ☐
11. Were any sample containers received broken?	Yes ☐	No ☑	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)

Adjusted? _____

Checked by: _____

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.6	Good	Not Present			

Chain-of-Custody Record

Client: AMAFCA

Mailing Address:

Phone #:

email or Fax#: pchavez@amafca.org

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name: CMC

Project #:

Project Manager: Patrick Chavez

Sampler: C. Johannesen

On Ice: ☒ Yes ☐ No

Sample Temperature: 2.1 + 0.5 = 2.6

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1609109	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	See attached table	E. coli, -num	Diss Phos		Air Bubbles (Y or N)
9-12-16	1100	AQ	Rio Grande-North-091216		NAMINOS	-001												X				
9-13-16	0715	AQ	Rio Grande-South-091316			-002												X	X			
—	—	AQ	Tr. blank	3	HCL	-003												X				
09/12	1100	AQ	Rio Grande North 091216 Filtered			-004	JU													X		
09/13	0715	AQ	Rio Grande South 091316 Filtered			-005	9/13/16													X		

Date:	Time:	Relinquished by:	Received by:	Date	Time
9-13-16	1030			9/13/16	10:35
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

AMAFCA and CMC samples

Hardness
TSS
TDS
COD
BOD
DO
Oil & grease
E. coli
pH
Total kjeldahl nitrogen
Nitrate plus nitrite
Dissolved phosphorus
Ammonia plus organic nitrogen
Total Phosphorus
Chromium IV
Copper-dissolved
Lead-dissolved
PCBs
Gross Alpha
Tetrahydrofuran
Benzo(a)pyrene
Benzo(b)fluoranthene, alternate name 3, 4 Benzofluoranthene
Benzo(k)fluoranthene
Chrysene
Indeno(1,2,3-cd)pyrene
Dieldrin
Pentachlorophenol
Benzidine
Benzo(a)anthracene
Pentachlorophenol
Dibenzofuran
Dibenzo(a,h)anthracene
Bis(2-ethylhexyl)phthalate

AMAFCA E.Coli only sites:

- Bear Arroyo
- Main Hanh Arroyo
- Embudo

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

October 03, 2016

Patrick Chavez
AMAFCA
2600 Prospect Ave NE
Albuquerque, NM 87107
TEL: (505) 884-2215
FAX

RE: CMC OrderNo.: 1609B94

Dear Patrick Chavez:

Hall Environmental Analysis Laboratory received 1 sample(s) on 9/21/2016 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,



Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Field Data - Provided by DBS&A (field notebook & e-mails):
9/21/16 - Rio Grande North
DO = 7.14 mg/L, pH = 8.96, Conductivity = 298 umhos/cm, and Temperature = 20.99°C

Hall Environmental Analysis Laboratory, Inc.

Analytical Report
Lab Order **1609B94**
Date Reported: **10/3/2016**

CLIENT: AMAFCA
Client Sample ID: Rio Grande-North-092116
Project: CMC
Collection Date: 9/21/2016 12:15:00 PM
Lab ID: 1609B94-001 **Matrix:** AQUEOUS **Received Date:** 9/21/2016 2:00:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
SM 9223B FECAL INDICATOR: E. COLI MPN						Analyst: **tnc**	
E. Coli	31.1	1.000		CFU/100ml	1	9/22/2016 3:52:00 PM	27644

Equivalent to MPN/100 mL

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: AMAFCA | Work Order Number: 1609B94 | RcptNo: 1

Received by/date: AF 09/21/16

Logged By: **Michelle Garcia** 9/21/2016 2:00:00 PM Michelle Garcia

Completed By: **Michelle Garcia** 9/21/2016 2:30:00 PM Michelle Garcia

Reviewed By: AJ 09/21/16

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	Client		

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☐	No ☑	NA ☐
Samples were collected the same day and chilled.			
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
9. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
11. Were any sample containers received broken?	Yes ☐	No ☑	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)

Adjusted? _____

Checked by: _____

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	18	Good	Not Present			

Chain-of-Custody Record

ient: AMAFCA

ailing Address:

one #:

nail or Fax#: pchavez@amafca.org

A/QC Package:
Standard ☐ Level 4 (Full Validation)

ccreditation
NELAP ☐ Other

EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name:
CMC

Project #:

Project Manager:
Patrick Chavez

Sampler: C. Johannesen

On Ice: ☒ Yes ☐ No

Sample Temperature: 18°C

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.
9-16	12:15	AQ	Rio Grande-North-092116	1		1609B94-001

Analysis Request

BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	E coli; Nam				Air Bubbles (Y or N)
											X				

Date	Time	Relinquished by:	Received by:	Date	Time
9-21-16	1400			9/21/16	1400

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

December 02, 2016

Patrick Chavez
AMAFCA
2600 Prospect Ave NE
Albuquerque, NM 87107
TEL: (505) 884-2215
FAX

RE: CMC OrderNo.: 1609C98

Dear Patrick Chavez:

Hall Environmental Analysis Laboratory received 3 sample(s) on 9/22/2016 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued October 27, 2016.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,<<>>



Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Field Data - Provided by DBS&A (field notebook & e-mails):
9/21/16 - Rio Grande North
DO = 7.14 mg/L, pH = 8.96, Conductivity = 298 umhos/cm, and Temperature = 20.99°C
9/22/16 - Rio Grande South
DO = 8.29 mg/L, pH = 9.03, Conductivity = 436 umhos/cm, and Temperature = 22.03 °C

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Case Narrative

WO#: **1609C98**
Date: **12/2/2016**

CLIENT: AMAFCA
Project: CMC

Analytical Notes Regarding EPA method 1668
The sample ID equivalents are listed below.
1609C98-001G =Rio Grande-North-092116
1609C98-002G = Rio Grande-South-092216

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Client Sample ID: Rio Grande-North-092116
Project: CMC
Collection Date: 9/21/2016 12:15:00 PM
Lab ID: 1609C98-001B
Matrix: Aqueous

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
SM5210B: BOD						Analyst: **SMS**	
Biochemical Oxygen Demand	DO Depletion<2.0	2.0		mg/L	1	9/27/2016 2:30:00 PM	27653

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Client Sample ID: Rio Grande-North-092116
Project: CMC
Collection Date: 9/21/2016 12:15:00 PM
Lab ID: 1609C98-001D
Matrix: Aqueous

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	9/23/2016 11:28:54 AM	A37430
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	9/23/2016 11:28:54 AM	A37430
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **SRM**	
Total Dissolved Solids	215	20.0		mg/L	1	9/30/2016 12:29:00 PM	27761
SM 4500 NH3: AMMONIA						Analyst: **CJS**	
Nitrogen, Ammonia	ND	1.0		mg/L	1	10/12/2016 2:42:00 PM	R37892
TOTAL NITROGEN						Analyst: **SRM**	
Nitrogen, Total	ND	1.0		mg/L	1	10/25/2016 10:29:00 AM	R38181
SM4500-H+B: PH						Analyst: **JRR**	
pH	8.46	1.68	H	pH units	1	9/23/2016 1:22:25 PM	R37460
EPA METHOD 365.1: TOTAL PHOSPHOROUS						Analyst: **JRR**	
Phosphorus, Total (As P)	0.042	0.010		mg/L	1	10/12/2016 3:53:36 PM	28009
SM 4500 NORG C: TKN						Analyst: **CJS**	
Nitrogen, Kjeldahl, Total	ND	1.0		mg/L	1	10/13/2016 10:18:00 AM	28008
SM 2540D: TSS						Analyst: **KS**	
Suspended Solids	26	4.0		mg/L	1	9/29/2016 4:56:00 PM	27741

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Project: CMC
Lab ID: 1609C98-001E

Client Sample ID: Rio Grande-North-092116
Collection Date: 9/21/2016 12:15:00 PM
Matrix: Aqueous

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 1664A						Analyst: **tnc**	
N-Hexane Extractable Material	ND	9.5		mg/L	1	9/26/2016 10:34:00 AM	27691

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Client Sample ID: Rio Grande-North-092116
Project: CMC
Collection Date: 9/21/2016 12:15:00 PM
Lab ID: 1609C98-001F
Matrix: Aqueous

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: DISSOLVED METALS						Analyst: **JLF**	
Copper	0.0013	0.0010		mg/L	1	10/13/2016 8:24:11 PM	B37945
Lead	ND	0.00050		mg/L	1	10/13/2016 8:24:11 PM	B37945
SM2340B: HARDNESS						Analyst: **ELS**	
Hardness (As CaCO3)	130	6.6		mg/L	1	10/3/2016 12:20:00 PM	R37643
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **ELS**	
Calcium	42	1.0		mg/L	1	10/4/2016 1:25:20 AM	D37643
Magnesium	7.1	1.0		mg/L	1	10/4/2016 1:25:20 AM	D37643

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Project: CMC
Lab ID: 1609C98-001K

Client Sample ID: Rio Grande-North-092116
Collection Date: 9/21/2016 12:15:00 PM
Matrix: Aqueous

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 365.1: TOTAL PHOSPHOROUS						Analyst: **JRR**	
Phosphorus, Total (As P)	0.016	0.010		mg/L	1	10/12/2016 3:58:06 PM	28009

Dissolved Phosphorous

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Project: CMC
Lab ID: 1609C98-002A

Client Sample ID: Rio Grande-South-092216
Collection Date: 9/22/2016 11:00:00 AM
Matrix: Aqueous

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
SM 9223B FECAL INDICATOR: E. COLI MPN						Analyst: **tnc**	
E. Coli	517.2	1.000		CFU/100ml	1	9/23/2016 5:15:00 PM	27666

Equivalent to MPN/100 mL

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Project: CMC
Lab ID: 1609C98-002B

Client Sample ID: Rio Grande-South-092216
Collection Date: 9/22/2016 11:00:00 AM
Matrix: Aqueous

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
SM5210B: BOD						Analyst: **SMS**	
Biochemical Oxygen Demand	DO Depletion<2.0	2.0		mg/L	1	9/28/2016 3:30:00 PM	27670

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Client Sample ID: Rio Grande-South-092216
Project: CMC
Collection Date: 9/22/2016 11:00:00 AM
Lab ID: 1609C98-002D
Matrix: Aqueous

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	9/23/2016 9:02:48 AM	B37435
Nitrogen, Nitrate (As N)	0.95	0.10		mg/L	1	9/23/2016 9:02:48 AM	B37435
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **SRM**	
Total Dissolved Solids	301	20.0		mg/L	1	9/30/2016 12:29:00 PM	27761
SM 4500 NH3: AMMONIA						Analyst: **CJS**	
Nitrogen, Ammonia	ND	1.0		mg/L	1	10/12/2016 2:42:00 PM	R37892
TOTAL NITROGEN						Analyst: **SRM**	
Nitrogen, Total	ND	1.0		mg/L	1	10/25/2016 10:29:00 AM	R38181
SM4500-H+B: PH						Analyst: **JRR**	
pH	8.41	1.68	H	pH units	1	9/23/2016 1:26:43 PM	R37460
EPA METHOD 365.1: TOTAL PHOSPHOROUS						Analyst: **JRR**	
Phosphorus, Total (As P)	0.42	0.010		mg/L	1	10/12/2016 3:59:36 PM	28009
SM 4500 NORG C: TKN						Analyst: **CJS**	
Nitrogen, Kjeldahl, Total	ND	1.0		mg/L	1	10/13/2016 10:18:00 AM	28008
SM 2540D: TSS						Analyst: **KS**	
Suspended Solids	60	4.0		mg/L	1	9/29/2016 4:56:00 PM	27741

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Project: CMC
Lab ID: 1609C98-002E

Client Sample ID: Rio Grande-South-092216
Collection Date: 9/22/2016 11:00:00 AM
Matrix: Aqueous

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 1664A						Analyst: **tnc**	
N-Hexane Extractable Material	ND	9.6		mg/L	1	9/26/2016 10:34:00 AM	27691

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Client Sample ID: Rio Grande-South-092216
Project: CMC
Collection Date: 9/22/2016 11:00:00 AM
Lab ID: 1609C98-002F
Matrix: Aqueous

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: DISSOLVED METALS						Analyst: **JLF**	
Copper	0.0012	0.0010		mg/L	1	10/13/2016 8:29:19 PM	B37945
Lead	ND	0.00050		mg/L	1	10/13/2016 8:29:19 PM	B37945
SM2340B: HARDNESS						Analyst: **ELS**	
Hardness (As CaCO3)	150	6.6		mg/L	1	10/3/2016 12:20:00 PM	R37643
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **ELS**	
Calcium	48	1.0		mg/L	1	10/4/2016 1:29:32 AM	D37643
Magnesium	8.1	1.0		mg/L	1	10/4/2016 1:29:32 AM	D37643

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Project: CMC
Lab ID: 1609C98-002L

Client Sample ID: Rio Grande-South-092216
Collection Date: 9/22/2016 11:00:00 AM
Matrix: Aqueous

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 365.1: TOTAL PHOSPHOROUS						Analyst: **JRR**	
Phosphorus, Total (As P)	0.32	0.010		mg/L	1	10/12/2016 4:01:06 PM	28009

Dissolved Phosphorous

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

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Client:	HALL ENVIRONMENTAL ANALYSIS LAB	**Batch #:**	160929003
Address:	4901 HAWKINS NE SUITE D ALBUQUERQUE, NM 87109	**Project Name:**	1609C98
Attn:	ANDY FREEMAN		

Analytical Results Report

Sample Number	160929003-001	**Sampling Date**	9/21/2016	**Date/Time Received**	9/27/2016 11:10 AM
Client Sample ID	1609C98-001C / RIO GRANDE-NORTH-092116			**Sampling Time**	12:15 PM
Matrix	Water				
Comments					

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Tetrahydrofuran	ND	ug/L	0.5	10/4/2016	SAT	EPA 8260C	

Surrogate Data

Sample Number 160929003-001

Surrogate Standard	Method	Percent Recovery	Control Limits
1,2-Dichlorobenzene-d4	EPA 8260C	97.6	70-130
4-Bromofluorobenzene	EPA 8260C	94.8	70-130
Toluene-d8	EPA 8260C	99.2	70-130

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Client:	HALL ENVIRONMENTAL ANALYSIS LAB	**Batch #:**	160929003
Address:	4901 HAWKINS NE SUITE D ALBUQUERQUE, NM 87109	**Project Name:**	1609C98
Attn:	ANDY FREEMAN		

Analytical Results Report

Sample Number	160929003-004	**Sampling Date**	9/22/2016	**Date/Time Received**	9/27/2016 11:10 AM
Client Sample ID	1609C98-002C / RIO GRANDE-SOUTH-092216			**Sampling Time**	11:00 AM
Matrix	Water				
Comments					

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Tetrahydrofuran	ND	ug/L	0.5	10/4/2016	SAT	EPA 8260C	

Surrogate Data

Sample Number 160929003-004

Surrogate Standard	Method	Percent Recovery	Control Limits
1,2-Dichlorobenzene-d4	EPA 8260C	96.0	70-130
4-Bromofluorobenzene	EPA 8260C	90.0	70-130
Toluene-d8	EPA 8260C	99.2	70-130

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Client:	HALL ENVIRONMENTAL ANALYSIS LAB	**Batch #:**	160929003
Address:	4901 HAWKINS NE SUITE D ALBUQUERQUE, NM 87109	**Project Name:**	1609C98
Attn:	ANDY FREEMAN		

Analytical Results Report

Sample Number	160929003-007	**Sampling Date**	9/22/2016	**Date/Time Received**	9/27/2016	11:10 AM
Client Sample ID	1609C98-003A / TRIP BLANK			**Sampling Time**		
Matrix	Water					
Comments						

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Tetrahydrofuran	0.90	ug/L	0.5	10/4/2016	SAT	EPA 8260C	

Surrogate Data

Sample Number 160929003-007

Surrogate Standard	Method	Percent Recovery	Control Limits
1,2-Dichlorobenzene-d4	EPA 8260C	98.8	70-130
4-Bromofluorobenzene	EPA 8260C	94.0	70-130
Toluene-d8	EPA 8260C	98.8	70-130

Authorized Signature

Todd Taruscio, Lab Manager

MCL EPA's Maximum Contaminant Level
ND Not Detected
PQL Practical Quantitation Limit

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Client:	HALL ENVIRONMENTAL ANALYSIS LAB	**Batch #:**	160929003
Address:	4901 HAWKINS NE SUITE D ALBUQUERQUE, NM 87109	**Project Name:**	1609C98
Attn:	ANDY FREEMAN		

Analytical Results Report

Quality Control Data

Lab Control Sample

Parameter	LCS Result	Units	LCS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
Tetrahydrofuran	9.12	ug/L	10	91.2	70-130	10/5/2016	10/5/2016

Lab Control Sample Duplicate

Parameter	LCSD Result	Units	LCSD Spike	%Rec	%RPD	AR %RPD	Prep Date	Analysis Date
Tetrahydrofuran	9.53	ug/L	10	95.3	4.4	0-25	10/5/2016	10/5/2016

Method Blank

Parameter	Result	Units	PQL	Prep Date	Analysis Date
Tetrahydrofuran	ND	ug/L	0.5	10/5/2016	10/5/2016

AR	Acceptable Range
ND	Not Detected
PQL	Practical Quantitation Limit
RPD	Relative Percentage Difference

Comments:

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; FL(NELAP):E87893; ID:ID00013; MT:CERT0028; NM: ID00013;NV:ID00013; OR:ID200001-002; WA:C595
Certifications held by Anatek Labs WA: EPA:WA00169; ID:WA00169; WA:C585; MT:Cert0095; FL(NELAP): E871099

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Client:	HALL ENVIRONMENTAL ANALYSIS LAB	**Batch #:**	160929003
Address:	4901 HAWKINS NE SUITE D ALBUQUERQUE, NM 87109	**Project Name:**	1609C98
Attn:	ANDY FREEMAN		

Analytical Results Report

Sample Number	160929003-002	**Sampling Date**	9/21/2016	**Date/Time Received**	9/27/2016 11:10 AM
Client Sample ID	1609C98-001G / RIO GRANDE-NORTH-092116				
Matrix	Water	**Sampling Time**	12:15 PM	**Extraction Date**	9/29/2016
Comments					

Parameter	Result	Units	MDL	PQL	Analysis Date	Analyst	Method	Qualifier
Aroclor 1016 (PCB-1016)	ND	ug/L	0.1	0.2	10/10/2016	MAH	EPA 608	H6
Aroclor 1221 (PCB-1221)	ND	ug/L	0.1	0.2	10/10/2016	MAH	EPA 608	H6
Aroclor 1232 (PCB-1232)	ND	ug/L	0.1	0.2	10/10/2016	MAH	EPA 608	H6
Aroclor 1242 (PCB-1242)	ND	ug/L	0.1	0.2	10/10/2016	MAH	EPA 608	H6
Aroclor 1248 (PCB-1248)	ND	ug/L	0.1	0.2	10/10/2016	MAH	EPA 608	H6
Aroclor 1254 (PCB-1254)	ND	ug/L	0.1	0.2	10/10/2016	MAH	EPA 608	H6
Aroclor 1260 (PCB-1260)	ND	ug/L	0.1	0.2	10/10/2016	MAH	EPA 608	H6
Dieldrin	ND	ug/L	0.003	0.01	10/10/2016	MAH	EPA 608	H6

Surrogate Data

Sample Number 160929003-002

Surrogate Standard	Method	Percent Recovery	Control Limits
DCB	EPA 608	102.6	30-130

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Client:	HALL ENVIRONMENTAL ANALYSIS LAB	**Batch #:**	160929003
Address:	4901 HAWKINS NE SUITE D ALBUQUERQUE, NM 87109	**Project Name:**	1609C98
Attn:	ANDY FREEMAN		

Analytical Results Report

Sample Number	160929003-005	**Sampling Date**	9/22/2016	**Date/Time Received**	9/27/2016 11:10 AM
Client Sample ID	1609C98-002G / RIO GRANDE-SOUTH-092216				
Matrix	Water	**Sampling Time**	11:00 AM	**Extraction Date**	9/29/2016
Comments					

Parameter	Result	Units	MDL	PQL	Analysis Date	Analyst	Method	Qualifier
Aroclor 1016 (PCB-1016)	ND	ug/L	0.1	0.2	10/10/2016	MAH	EPA 608	
Aroclor 1221 (PCB-1221)	ND	ug/L	0.1	0.2	10/10/2016	MAH	EPA 608	
Aroclor 1232 (PCB-1232)	ND	ug/L	0.1	0.2	10/10/2016	MAH	EPA 608	
Aroclor 1242 (PCB-1242)	ND	ug/L	0.1	0.2	10/10/2016	MAH	EPA 608	
Aroclor 1248 (PCB-1248)	ND	ug/L	0.1	0.2	10/10/2016	MAH	EPA 608	
Aroclor 1254 (PCB-1254)	ND	ug/L	0.1	0.2	10/10/2016	MAH	EPA 608	
Aroclor 1260 (PCB-1260)	ND	ug/L	0.1	0.2	10/10/2016	MAH	EPA 608	
Dieldrin	ND	ug/L	0.003	0.01	10/10/2016	MAH	EPA 608	

Surrogate Data

Sample Number 160929003-005

Surrogate Standard	Method	Percent Recovery	Control Limits
DCB	EPA 608	108.4	30-130

Authorized Signature

Todd Taruscio, Lab Manager

H6	Sample was received and extracted past extraction holding time, but analyzed within analysis hold time.
MCL	EPA's Maximum Contaminant Level
ND	Not Detected
PQL	Practical Quantitation Limit

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Client: HALL ENVIRONMENTAL ANALYSIS LAB
Address: 4901 HAWKINS NE SUITE D
ALBUQUERQUE, NM 87109
Attn: ANDY FREEMAN

Batch #: 160929003
Project Name: 1609C98

Analytical Results Report

Quality Control Data

Lab Control Sample

Parameter	LCS Result	Units	LCS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
Dieldrin	0.510	ug/L	0.5	102.0	30-130	9/29/2016	10/10/2016
Aroclor 1260 (PCB-1260)	4.55	ug/L	5	91.0	50-130	9/29/2016	10/10/2016
Aroclor 1016 (PCB-1016)	5.00	ug/L	5	100.0	50-130	9/29/2016	10/10/2016

Matrix Spike

Sample Number	Parameter	Sample Result	MS Result	Units	MS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
160929003-002	Dieldrin	ND	0.498	ug/L	0.5	99.6	30-150	9/29/2016	10/10/2016

Matrix Spike Duplicate

Parameter	MSD Result	Units	MSD Spike	%Rec	%RPD	AR %RPD	Prep Date	Analysis Date
Dieldrin	0.508	ug/L	0.5	101.6	2.0	0-30	9/29/2016	10/10/2016

Method Blank

Parameter	Result	Units	PQL	Prep Date	Analysis Date
Aroclor 1016 (PCB-1016)	ND	ug/L	0.2	9/29/2016	10/10/2016
Aroclor 1221 (PCB-1221)	ND	ug/L	0.2	9/29/2016	10/10/2016
Aroclor 1232 (PCB-1232)	ND	ug/L	0.2	9/29/2016	10/10/2016
Aroclor 1242 (PCB-1242)	ND	ug/L	0.2	9/29/2016	10/10/2016
Aroclor 1248 (PCB-1248)	ND	ug/L	0.2	9/29/2016	10/10/2016
Aroclor 1254 (PCB-1254)	ND	ug/L	0.2	9/29/2016	10/10/2016
Aroclor 1260 (PCB-1260)	ND	ug/L	0.2	9/29/2016	10/10/2016
Dieldrin	ND	ug/L	0.01	9/29/2016	10/10/2016

AR Acceptable Range
ND Not Detected
PQL Practical Quantitation Limit
RPD Relative Percentage Difference

Comments:

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; FL(NELAP):E87893; ID:ID00013; MT:CERT0028; NM: ID00013,NV:ID00013; OR:ID200001-002; WA:C595
Certifications held by Anatek Labs WA: EPA:WA00169; ID:WA00169; WA:C585; MT:Cert0095; FL(NELAP): E871099

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Client:	HALL ENVIRONMENTAL ANALYSIS LAB	**Batch #:**	160929003
Address:	4901 HAWKINS NE SUITE D ALBUQUERQUE, NM 87109	**Project Name:**	1609C98
Attn:	ANDY FREEMAN		

Analytical Results Report

Sample Number	160929003-002	**Sampling Date**	9/21/2016	**Date/Time Received**	9/27/2016	11:10 AM
Client Sample ID	1609C98-001G / RIO GRANDE-NORTH-092116			**Extraction Date**	9/27/2016	
Matrix	Water	**Sampling Time**	12:15 PM			
Comments						

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Benzidine	ND	ug/L	0.5	10/1/2016	HSW	EPA 625	
Benzo[a]anthracene	ND	ug/L	0.5	10/1/2016	HSW	EPA 625	
Benzo[a]pyrene	ND	ug/L	0.5	10/1/2016	HSW	EPA 625	
Benzo[b]fluoranthene	ND	ug/L	0.5	10/1/2016	HSW	EPA 625	
Benzo[k]fluoranthene	ND	ug/L	0.5	10/1/2016	HSW	EPA 625	
bis(2-Ethylhexyl)phthalate	ND	ug/L	0.5	10/1/2016	HSW	EPA 625	
Chrysene	ND	ug/L	0.5	10/1/2016	HSW	EPA 625	
Dibenz[a,h]anthracene	ND	ug/L	0.5	10/1/2016	HSW	EPA 625	
Dibenzofuran	ND	ug/L	0.5	10/1/2016	HSW	EPA 625	
Indeno[1,2,3-cd]pyrene	ND	ug/L	0.5	10/1/2016	HSW	EPA 625	
Pentachlorophenol	ND	ug/L	0.5	10/1/2016	HSW	EPA 625	

Surrogate Data

Sample Number 160929003-002

Surrogate Standard	Method	Percent Recovery	Control Limits
2,4,6-Tribromophenol	EPA 625	77.2	53-122
2-Fluorobiphenyl	EPA 625	94.0	12-116
2-Fluorophenol	EPA 625	33.8	10-139
Nitrobenzene-d5	EPA 625	92.4	54-118
Phenol-d5	EPA 625	50.0	28-154
Terphenyl-d14	EPA 625	84.0	20-137

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Client: HALL ENVIRONMENTAL ANALYSIS LAB
Address: 4901 HAWKINS NE SUITE D
ALBUQUERQUE, NM 87109
Attn: ANDY FREEMAN

Batch #: 160929003
Project Name: 1609C98

Analytical Results Report

Sample Number	160929003-005	**Sampling Date**	9/22/2016	**Date/Time Received**	9/27/2016 11:10 AM
Client Sample ID	1609C98-002G / RIO GRANDE-SOUTH-092216			**Extraction Date**	09/29/2016
Matrix	Water	**Sampling Time**	11:00 AM		
Comments					

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Benzidine	ND	ug/L	0.5	10/14/2016	HSW	EPA 625	
Benzo[a]anthracene	ND	ug/L	0.5	10/14/2016	HSW	EPA 625	
Benzo[a]pyrene	ND	ug/L	0.5	10/14/2016	HSW	EPA 625	
Benzo[b]fluoranthene	ND	ug/L	0.5	10/14/2016	HSW	EPA 625	
Benzo[k]fluoranthene	ND	ug/L	0.5	10/14/2016	HSW	EPA 625	
bis(2-Ethylhexyl)phthalate	ND	ug/L	0.5	10/14/2016	HSW	EPA 625	
Chrysene	ND	ug/L	0.5	10/14/2016	HSW	EPA 625	
Dibenz[a,h]anthracene	ND	ug/L	0.5	10/14/2016	HSW	EPA 625	
Dibenzofuran	ND	ug/L	0.5	10/14/2016	HSW	EPA 625	
Indeno[1,2,3-cd]pyrene	ND	ug/L	0.5	10/14/2016	HSW	EPA 625	
Pentachlorophenol	ND	ug/L	0.5	10/14/2016	HSW	EPA 625	

Surrogate Data

Sample Number 160929003-005

Surrogate Standard	Method	Percent Recovery	Control Limits
2,4,6-Tribromophenol	EPA 625	77.2	53-122
2-Fluorobiphenyl	EPA 625	74.8	12-116
2-Fluorophenol	EPA 625	33.8	10-139
Nitrobenzene-d5	EPA 625	62.4	54-118
Phenol-d5	EPA 625	50.2	28-154
Terphenyl-d14	EPA 625	96.4	20-137

Authorized Signature

Todd Taruscio, Lab Manager

MCL EPA's Maximum Contaminant Level
ND Not Detected
PQL Practical Quantitation Limit

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Soil/solid results are reported on a dry-weight basis unless otherwise noted.

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Certifications held by Anatek Labs WA: EPA:WA00169; ID:WA00169; WA:C585; MT:Cert0095; FL(NELAP): E871099

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Client:	HALL ENVIRONMENTAL ANALYSIS LAB	**Batch #:**	160929003
Address:	4901 HAWKINS NE SUITE D ALBUQUERQUE, NM 87109	**Project Name:**	1609C98
Attn:	ANDY FREEMAN		

Analytical Results Report

Quality Control Data

Lab Control Sample

Parameter	LCS Result	Units	LCS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
Pentachlorophenol	3.49	ug/L	5	69.8	22-138	9/27/2016	10/1/2016
bis(2-Ethylhexyl)phthalate	5.15	ug/L	5	103.0	43-148	9/27/2016	10/1/2016

Lab Control Sample Duplicate

Parameter	LCSD Result	Units	LCSD Spike	%Rec	%RPD	AR %RPD	Prep Date	Analysis Date
Pentachlorophenol	3.36	ug/L	5	67.2	3.8	0-47	9/27/2016	10/1/2016
bis(2-Ethylhexyl)phthalate	4.97	ug/L	5	99.4	3.6	0-50	9/27/2016	10/1/2016

Method Blank

Parameter	Result	Units	PQL	Prep Date	Analysis Date
Benzidine	ND	ug/L	0.5	9/27/2016	10/1/2016
Benzo[a]anthracene	ND	ug/L	0.5	9/27/2016	10/1/2016
Benzo[a]pyrene	ND	ug/L	0.5	9/27/2016	10/1/2016
Benzo[b]fluoranthene	ND	ug/L	0.5	9/27/2016	10/1/2016
Benzo[k]fluoranthene	ND	ug/L	0.5	9/27/2016	10/1/2016
bis(2-Ethylhexyl)phthalate	ND	ug/L	0.5	9/27/2016	10/1/2016
Chrysene	ND	ug/L	0.5	9/27/2016	10/1/2016
Dibenz[a,h]anthracene	ND	ug/L	0.5	9/27/2016	10/1/2016
Dibenzofuran	ND	ug/L	0.5	9/27/2016	10/1/2016
Indeno[1,2,3-cd]pyrene	ND	ug/L	0.5	9/27/2016	10/1/2016
Pentachlorophenol	ND	ug/L	0.5	9/27/2016	10/1/2016

AR	Acceptable Range
ND	Not Detected
PQL	Practical Quantitation Limit
RPD	Relative Percentage Difference

Comments:

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; FL(NELAP):E87893; ID:ID00013; MT:CERT0028; NM: ID00013;NV:ID00013; OR:ID200001-002; WA:C595
Certifications held by Anatek Labs WA: EPA:WA00169; ID:WA00169; WA:C585; MT:Cert0095; FL(NELAP): E871099

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Client: HALL ENVIRONMENTAL ANALYSIS LAB
Address: 4901 HAWKINS NE SUITE D
ALBUQUERQUE, NM 87109
Attn: ANDY FREEMAN

Batch #: 160929003
Project Name: 1609C98

Analytical Results Report

Quality Control Data

Lab Control Sample

Parameter	LCS Result	Units	LCS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
Pentachlorophenol	4.53	ug/L	5	90.6	22-138	9/29/2016	10/14/2016
bis(2-Ethylhexyl)phthalate	4.59	ug/L	5	91.8	43-148	9/29/2016	10/14/2016

Lab Control Sample Duplicate

Parameter	LCSD Result	Units	LCSD Spike	%Rec	%RPD	AR %RPD	Prep Date	Analysis Date
Pentachlorophenol	4.34	ug/L	5	86.8	4.3	0-47	9/29/2016	10/14/2016
bis(2-Ethylhexyl)phthalate	4.50	ug/L	5	90.0	2.0	0-50	9/29/2016	10/14/2016

Method Blank

Parameter	Result	Units	PQL	Prep Date	Analysis Date
Benzidine	ND	ug/L	0.5	9/29/2016	10/14/2016
Benzo[a]anthracene	ND	ug/L	0.5	9/29/2016	10/14/2016
Benzo[a]pyrene	ND	ug/L	0.5	9/29/2016	10/14/2016
Benzo[b]fluoranthene	ND	ug/L	0.5	9/29/2016	10/14/2016
Benzo[k]fluoranthene	ND	ug/L	0.5	9/29/2016	10/14/2016
bis(2-Ethylhexyl)phthalate	ND	ug/L	0.5	9/29/2016	10/14/2016
Chrysene	ND	ug/L	0.5	9/29/2016	10/14/2016
Dibenz[a,h]anthracene	ND	ug/L	0.5	9/29/2016	10/14/2016
Dibenzofuran	ND	ug/L	0.5	9/29/2016	10/14/2016
Indeno[1,2,3-cd]pyrene	ND	ug/L	0.5	9/29/2016	10/14/2016
Pentachlorophenol	ND	ug/L	0.5	9/29/2016	10/14/2016

AR	Acceptable Range
ND	Not Detected
PQL	Practical Quantitation Limit
RPD	Relative Percentage Difference

Comments:

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; FL(NELAP):E87893; ID:ID00013; MT:CERT0028; NM: ID00013;NV:ID00013; OR:ID200001-002; WA:C595
Certifications held by Anatek Labs WA: EPA:WA00169; ID:WA00169; WA:C585; MT:Cert0095; FL(NELAP): E871099

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Client:	HALL ENVIRONMENTAL ANALYSIS LAB	**Batch #:**	160929003
Address:	4901 HAWKINS NE SUITE D ALBUQUERQUE, NM 87109	**Project Name:**	1609C98
Attn:	ANDY FREEMAN		

Analytical Results Report

Sample Number	160929003-003	**Sampling Date**	9/21/2016	**Date/Time Received**	9/27/2016 11:10 AM
Client Sample ID	1609C98-001I / RIO GRANDE-NORTH-092116			**Sampling Time**	12:15 PM
Matrix	Water				
Comments					

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
COD	8.49	mg/L	5	10/6/2016 3:00:00 PM	JDB	EPA 410.4	

Sample Number	160929003-006	**Sampling Date**	9/22/2016	**Date/Time Received**	9/27/2016 11:10 AM
Client Sample ID	1609C98-002I / RIO GRANDE-SOUTH-092216			**Sampling Time**	11:00 AM
Matrix	Water				
Comments					

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
COD	10.6	mg/L	5	10/6/2016 3:00:00 PM	JDB	EPA 410.4	

Authorized Signature

Todd Taruscio, Lab Manager

MCL EPA's Maximum Contaminant Level
ND Not Detected
PQL Practical Quantitation Limit

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Client: HALL ENVIRONMENTAL ANALYSIS LAB
Address: 4901 HAWKINS NE SUITE D
ALBUQUERQUE, NM 87109
Attn: ANDY FREEMAN

Batch #: 160929003
Project Name: 1609C98

Analytical Results Report

Quality Control Data

Lab Control Sample

Parameter	LCS Result	Units	LCS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
COD	99.8	mg/L	100	99.8	90-110	10/6/2016	10/6/2016

Matrix Spike

Sample Number	Parameter	Sample Result	MS Result	Units	MS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
161004080-002	COD	<1.84	99.7	mg/L	100	99.7	80-120	10/6/2016	10/6/2016

Matrix Spike Duplicate

Parameter	MSD Result	Units	MSD Spike	%Rec	%RPD	AR %RPD	Prep Date	Analysis Date
COD	96.6	mg/L	100	96.6	3.2	0-15	10/6/2016	10/6/2016

Method Blank

Parameter	Result	Units	PQL	Prep Date	Analysis Date
COD	<5	mg/L	5	10/6/2016	10/6/2016

Duplicate

Sample Number	Parameter	Sample Result	Duplicate Result	Units	%RPD	AR %RPD	Prep Date	Analysis Date
161005042-002	COD	<1.84	<5	mg/L	0.0	0-20	10/6/2016	10/6/2016

AR	Acceptable Range
ND	Not Detected
PQL	Practical Quantitation Limit
RPD	Relative Percentage Difference

Comments:

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; FL(NELAP):E87893; ID:ID00013; MT:CERT0028; NM: ID00013;NV:ID00013; OR:ID200001-002; WA:C595
Certifications held by Anatek Labs WA: EPA:WA00169; ID:WA00169; WA:C585; MT:Cert0095; FL(NELAP): E871099

Wet Chemistry by Method 3500Cr C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Hexavalent Chromium	ND		0.000500	1	09/28/2016 14:03	WG911779

Wet Chemistry by Method 3500Cr C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Hexavalent Chromium	ND		0.000500	1	09/28/2016 14:11	WG911779

Method Blank (MB)

(MB) R3166742-1 09/28/16 10:25

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	mg/l
Hexavalent Chromium	U		0.000150	0.000500

L861521-01 Original Sample (OS) • Duplicate (DUP)

(OS) L861521-01 09/28/16 11:26 • (DUP) R3166742-4 09/28/16 11:35

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
Hexavalent Chromium	U	ND	1	0.000		20

L862074-02 Original Sample (OS) • Duplicate (DUP)

(OS) L862074-02 09/28/16 14:11 • (DUP) R3166742-7 09/28/16 14:19

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
Hexavalent Chromium	ND	ND	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3166742-2 09/28/16 10:33 • (LCSD) R3166742-3 09/28/16 10:41

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	%	%	%			%	%
Hexavalent Chromium	0.00200	0.00199	0.00198	100	99.0	90.0-110			0.000	20

L861789-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L861789-01 09/28/16 12:21 • (MS) R3166742-5 09/28/16 12:29 • (MSD) R3166742-6 09/28/16 12:38

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Hexavalent Chromium	0.0500	ND	0.0502	0.0512	100	102	1	90.0-110			2.00	20

Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Rec.	Recovery.

Qualifier	Description

The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 1609C98
Pace Project No.: 30197182

Sample: 1609C98-001J Rio Grande-North **Lab ID: 30197182001** Collected: 09/21/16 12:15 Received: 09/27/16 09:50 Matrix: Water

PWS: Site ID: Sample Type:

Comments: • Sample Acceptance Policy Waiver on file from the client.

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0	**5.68 ± 2.38 (2.78) C:NA T:NA**	pCi/L	10/19/16 09:58	12587-46-1	

Based on ID - Assumed this is South and Lad Report is mislabeled

Sample: 1609C98-002J Rio Grande-North **Lab ID: 30197182002** Collected: 09/22/16 11:00 Received: 09/27/16 09:50 Matrix: Water

PWS: Site ID: Sample Type:

Comments: • Sample Acceptance Policy Waiver on file from the client.

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0	**2.25 ± 1.60 (2.84) C:NA T:NA**	pCi/L	10/19/16 09:58	12587-46-1	

REPORT OF LABORATORY ANALYSIS

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Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL - RADIOCHEMISTRY

Project: 1609C98
Pace Project No.: 30197182

QC Batch: 236518 Analysis Method: EPA 900.0
QC Batch Method: EPA 900.0 Analysis Description: 900.0 Gross Alpha/Beta
Associated Lab Samples: 30197182001, 30197182002

METHOD BLANK: 1161996 Matrix: Water
Associated Lab Samples: 30197182001, 30197182002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Gross Alpha	-0.045 ± 0.657 (1.80) C:NA T:NA	pCi/L	10/19/16 09:57	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALIFIERS

Project: 1609C98
Pace Project No.: 30197182

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval). Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

REPORT OF LABORATORY ANALYSIS

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3306 Kitty Hawk Road, Suite 120 Wilmington, NC 28405
P 910.795.0421

www.capefearanalytical.com

November 18, 2016

Ms. Jodey Kougioulis
New Mexico Environment Department
121 Tijeras Avenue NE
Suite 1000
Albuquerque, New Mexico 87102

Re: HiSol PCB's and Dioxins
Work Order: 9998
SDG: 1609609_1609C98

Dear Ms. Kougioulis:

Cape Fear Analytical LLC (CFA) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on October 28, 2016. This original data report has been prepared and reviewed in accordance with CFA's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at 910-795-0421.

Sincerely,

Cynde Larkins

Cynde Larkins
Project Manager

Enclosures

problem solved

WO# 9998

Anatek Labs, Inc.

Chain of Custody Record

1282 Alturas Drive, Moscow ID 83843 (208) 883-2839 FAX 882-9246
504 E Sprague Ste D, Spokane WA 99202 (509) 838-3999 FAX 838-4433

Anatek Log-In #

Company Name:	HALL ENVIRONMENTAL	Project Manager:	ANDY FREEMAN
Address:	4901 HAWKINS NE SUITE D	Project Name & # :	
City: ALBUQUERQUE State: NM Zip: 87109		Email Address :	andy@hallenvironmental.com
Phone:	(505) 345-3975	Purchase Order #:	
Fax:	(505) 345-4107	Sampler Name & phone:	

Turn Around Time & Reporting

Please refer to our normal turn around times at: http://www.anateklabs.com/services/guidelines/reporting.asp

✓ Normal
__ Next Day*
__ 2nd Day*
__ Other*_____

*All rush order requests must be prior approved.

__ Phone
x Mail
x Fax
x Email

Provide Sample Description

List Analyses Requested

Note Special Instructions/Comments

CALL ANDY FREEMAN @ HALL ENVIRONMENTAL WITH QUESTIONS

Lab ID	Sample Identification	Sampling Date/Time	Matrix	# of Containers	Sample Volume	Preservative:	PCB EPA1668									
	1609S09-001G	9/12/16 11:00am	WATER	1	1L		x									
	1609S09-002G	9/13/16 7:15am	WATER	1	1L		x									
	1609C98-001G	9/21/16 12:15pm	WATER	1	1L		x									
	1609C98-002G	9/22/16 11:00am	WATER	1	1L		x									

REPORT AND BILL TO HALL ENVIRONMENTAL

Inspection Checklist

	Y	N
Received Intact?	Y	N
Labels & Chains Agree?	Y	N
Containers Sealed?	Y	N
VOC Head Space?	Y	N

Temperature (°C): 10.2°C
Preservative:
Date & Time:
Inspected By:

	Printed Name	Signature	Company	Date	Time
Relinquished by	Travis Kreage		Anatek	10/27/16	11:45
Received by	Melissa ODonnell		CFA	28Oct16	14:15
Relinquished by					
Received by					
Relinquished by					
Received by					

10.2°C

MJD 28Oct16

SAMPLE RECEIPT CHECKLIST

Cape Fear Analytical

Client: ~~HALL~~ NMED	Work Order: 9998
Shipping Company: Fed Ex	Date/Time Received: 28 Oct 2016 14:15

Suspected Hazard Information	Yes	NA	No
Shipped as DOT Hazardous?			✓
Samples identified as Foreign Soil?			✓

DOE Site Sample Packages	Yes	NA	No*
Screened <0.5 mR/hr?	MJD		
Samples < 2x background?	MJD		

* Notify RSO of any responses in this column immediately.

MJD 28Oct16

Air Sample Receipt Specifics	Yes	NA	No
Air sample in shipment?			✓

Air Witness: _____

	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	✓			Circle Applicable: seals broken damaged container leaking container other(describe)
2	Chain of Custody documents included with shipment?	✓			
3	Samples requiring cold preservation within 0-6°C?			✓	Preservation Method: ~~Ice bags~~ blue ice dry ice none other (describe) 10.2° C
4	Aqueous samples found to have visible solids?	✓			Sample IDs, containers affected: <1% all samples
5	Samples requiring chemical preservation at proper pH?		✓		Sample IDs, containers affected and pH observed: pH=7 for all samples If preservative added, Lot#:
6	Samples requiring preservation have no residual chlorine?	✓			Sample IDs, containers affected: If preservative added, Lot#:
7	Samples received within holding time?	✓			Sample IDs, tests affected:
8	Sample IDs on COC match IDs on containers?	✓			Sample IDs, containers affected:
9	Date & time of COC match date & time on containers?	✓			Sample IDs, containers affected:
10	Number of containers received match number indicated on COC?	✓			List type and number of containers / Sample IDs, containers affected: 1-1L WMA each
11	COC form is properly signed in relinquished/received sections?	✓			

Comments:

Checklist performed by: Initials: MJD Date: 28Oct2016

CF-UD-F-7

Subject: RE: 1609609_1609C98
From: Anne Thorne <anne@hallenvironmental.com>
Date: 11/7/2016 9:36 AM
To: Cynde Larkins <cynde.larkins@cfanalytical.com>

Good morning Cynde

Please proceed with analysis.

at

From: Cynde Larkins [mailto:cynde.larkins@cfanalytical.com]
Sent: Friday, November 04, 2016 8:41 PM
To: Anne Thorne <anne@hallenvironmental.com>
Cc: Melissa O'Dorisio <mel00770@cfanalytical.com>
Subject: 1609609_1609C98

Anne,

The samples for 1609609_1609C98 were received at a temperature of 10.2°C. Do we have your permission to proceed with extraction and analysis?

Thanks,

--

Cynde Larkins
Project Manager
Cape Fear Analytical, LLC
3306 Kitty Hawk Road Suite 120
Wilmington, NC 28405
(910) 795-0421

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PCB Congeners Analysis

Case Narrative

PCBC Case Narrative
New Mexico Environment Department (NMED)
SDG 1609609_1609C98
Work Order 9998

Method/Analysis Information

Product:	**PCB Congeners Method 1668A High Solids Prep for Liquids**
Analytical Method:	EPA Method 1668A HS
Extraction Method:	SW846 3520C, 3540C
Analytical Batch Number:	33209
Clean Up Batch Number:	33208
Extraction Batch Number:	33207

Sample Analysis

The following samples were analyzed using the analytical protocol as established in EPA Method 1668A HS:

Sample ID	Client ID
9998001	1609609-001G
9998002	1609609-002G
9998003	1609C98-001G
9998004	1609C98-002G
12017259	Method Blank (MB)
12017260	Laboratory Control Sample (LCS)
12017261	Laboratory Control Sample Duplicate (LCSD)

The samples in this SDG were analyzed on an "as received" basis.

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by Cape Fear Analytical LLC (CFA) as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with CF-OA-E-003 REV# 6.

Raw data reports are processed and reviewed by the analyst using the TargetLynx software package.

Calibration Information

Initial Calibration

All initial calibration requirements have been met for this sample delivery group (SDG).

Continuing Calibration Verification (CCV) Requirements
All associated calibration verification standard(s) (ICV or CCV) met the acceptance criteria.

Quality Control (QC) Information

Certification Statement
The test results presented in this document are certified to meet all requirements of the 2009 TNI Standard.

Method Blank (MB) Statement
The MB(s) analyzed with this SDG met the acceptance criteria.

Surrogate Recoveries
Several surrogates recovered above the acceptance limits, however all native analytes still met acceptance criteria. 12017261 (LCSD).

Several surrogates recovered below the acceptance limits. Recovery issues may be matrix-related, as all other samples in the batch had acceptable recoveries. No further sample was available for re-extraction, therefore the data is reported. 9998001 (1609609-001G), 9998002 (1609609-002G), 9998003 (1609C98-001G) and 9998004 (1609C98-002G).

Laboratory Control Sample (LCS) Recovery
The LCS spike recoveries met the acceptance limits.

Laboratory Control Sample Duplicate (LCSD) Recovery
The LCSD spike recoveries met the acceptance limits.

LCS/LCSD Relative Percent Difference (RPD) Statement
The RPD(s) between the LCS and LCSD met the acceptance limits.

QC Sample Designation
A matrix spike and matrix spike duplicate analysis was not required for this SDG.

Technical Information

Holding Time Specifications
CFA assigns holding times based on the associated methodology, which assigns the date and time from sample collection. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration. All samples in this SDG met the specified holding time.

Preparation/Analytical Method Verification
All procedures were performed as stated in the SOP.

Sample Dilutions
The samples in this SDG did not require dilutions.

Sample Re-extraction/Re-analysis
Re-extractions or re-analyses were not required in this SDG.

Miscellaneous Information

Nonconformance (NCR) Documentation
A NCR was not required for this SDG.

Manual Integrations
Manual integrations were required for data files in this SDG. Certain standards and QC samples required manual integrations to correctly position the baseline as set in the calibration standard injections. Where manual integrations were performed, copies of all manual integration peak profiles are included in the raw data section of this fraction.

System Configuration
This analysis was performed on the following instrument configuration:

Instrument ID	Instrument	System Configuration	Column ID	Column Description
HRP791_1	PCB Analysis	PCB Analysis	SPB-Octyl	30m x 0.25mm, 0.25um

Electronic Packaging Comment

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted: Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative will include the data validator's signature and title. The signature page also includes the data qualifiers used in the fractional package. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Sample Data Summary

Cape Fear Analytical, LLC
3306 Kitty Hawk Road Suite 120, Wilmington, NC 28405 - (910) 795-0421 - www.capefearanalytical.com

Qualifier Definition Report
for

NMED001 New Mexico Environment Department

Client SDG: 1609609_1609C98 CFA Work Order: 9998

The Qualifiers in this report are defined as follows:

* A quality control analyte recovery is outside of specified acceptance criteria
** Analyte is a surrogate compound
B The target analyte was detected in the associated blank.
C Congener has coeluters. When Cxxx, refer to congener number xxx for data
J Value is estimated
K Estimated Maximum Possible Concentration
U Analyte was analyzed for, but not detected above the specified detection limit.
h Preparation or preservation holding time was exceeded

DL Indicates that sample is diluted.
RA Indicates that sample is re-analyzed without re-extraction.
RE Indicates that sample is re-extracted.

Review/Validation

Cape Fear Analytical requires all analytical data to be verified by a qualified data reviewer.

The following data validator verified the information presented in this case narrative:

Signature: Heather Patterson **Name: Heather Patterson**

Date: 18 NOV 2016 **Title: Group Leader**

For prior lab sample - 9/12/16

Rio Grande North

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	1609609_1609C98	**Client:**	NMED001	**Project:**	NMED00113
Lab Sample ID:	9998001	**Date Collected:**	09/12/2016 11:00	**Matrix:**	WATER
Client Sample:	1668A Water	**Date Received:**	10/28/2016 14:15		
Client ID:	1609609-001G			**Prep Basis:**	As Received
Batch ID:	33209	**Method:**	EPA Method 1668A HS		
Run Date:	11/10/2016 06:06	**Analyst:**	MJC	**Instrument:**	HRP791
Data File:	c09nov16a_2-3			**Dilution:**	1
Prep Batch:	33207	**Prep Method:**	SW846 3520C	**Prep SOP Ref:**	CF-OA-E-001
Prep Date:	08-NOV-16	**Prep Aliquot:**	810.9 mL		

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
2051-60-7	PCB-1	BJ	21.1	17.3	pg/L	8.14	49.3
2051-61-8	PCB-2	J	15.7	12.8	pg/L	7.50	49.3
2051-62-9	PCB-3	J	22.5	19.9	pg/L	7.37	49.3
13029-08-8	PCB-4	J	46.5	37.3	pg/L	13.4	49.3
16605-91-7	PCB-5	U	8.19	8.19	pg/L	8.19	49.3
25569-80-6	PCB-6	J	12.2	8.12	pg/L	5.97	49.3
33284-50-3	PCB-7	U	6.76	6.76	pg/L	6.76	49.3
34883-43-7	PCB-8	BJ	38.5	34.7	pg/L	5.43	49.3
34883-39-1	PCB-9	U	6.71	6.71	pg/L	6.71	24.7
33146-45-1	PCB-10	U	4.56	4.56	pg/L	4.56	24.7
2050-67-1	PCB-11	B	808	803	pg/L	7.08	49.3
PCB-12/13	PCB-12/PCB-13	CU	7.35	7.35	pg/L	7.35	49.3
34883-41-5	PCB-14	U	6.61	6.61	pg/L	6.61	49.3
2050-68-2	PCB-15	J	40.1	34.9	pg/L	6.88	49.3
38444-78-9	PCB-16	J	10.1	6.84	pg/L	3.87	24.7
37680-66-3	PCB-17	BJ	11.8	8.62	pg/L	3.28	24.7
PCB-18/30	PCB-18/PCB-30	BCJ	25.2	22.8	pg/L	2.74	49.3
38444-73-4	PCB-19	J	23.3	19.8	pg/L	8.93	24.7
PCB-20/28	PCB-20/PCB-28	BCJ	46.9	44.5	pg/L	2.42	49.3
PCB-21/33	PCB-21/PCB-33	BCJ	22.6	20.4	pg/L	2.37	49.3
38444-85-8	PCB-22	J	17.1	14.6	pg/L	2.66	24.7
55720-44-0	PCB-23	U	2.44	2.44	pg/L	2.44	24.7
55702-45-9	PCB-24	U	2.52	2.52	pg/L	2.52	24.7
55712-37-3	PCB-25	U	2.32	2.32	pg/L	2.32	24.7
PCB-26/29	PCB-26/PCB-29	CJ	8.39	6.21	pg/L	2.24	49.3
38444-76-7	PCB-27	U	4.12	2.32	pg/L	2.32	24.7
16606-02-3	PCB-31		34.2	32.2	pg/L	2.20	24.7
38444-77-8	PCB-32	J	6.36	4.48	pg/L	2.12	24.7
37680-68-5	PCB-34	U	2.34	2.34	pg/L	2.34	24.7
37680-69-6	PCB-35	BJ	9.13	6.03	pg/L	4.61	49.3
38444-87-0	PCB-36	U	4.09	4.09	pg/L	4.09	24.7
38444-90-5	PCB-37	BJ	12.4	9.3	pg/L	4.22	24.7

Comments:

B The target analyte was detected in the associated blank.
C Congener has coeluters. When Cxxx, refer to congener number xxx for data
J Value is estimated
K Estimated Maximum Possible Concentration
U Analyte was analyzed for, but not detected above the specified detection limit.

Rio Grande North

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	1609609_1609C98	**Client:**	NMED001	**Project:**	NMED00113
Lab Sample ID:	9998001	**Date Collected:**	09/12/2016 11:00	**Matrix:**	WATER
Client Sample:	1668A Water	**Date Received:**	10/28/2016 14:15		
Client ID:	1609609-001G			**Prep Basis:**	As Received
Batch ID:	33209	**Method:**	EPA Method 1668A HS		
Run Date:	11/10/2016 06:06	**Analyst:**	MJC	**Instrument:**	HRP791
Data File:	c09nov16a_2-3			**Dilution:**	1
Prep Batch:	33207	**Prep Method:**	SW846 3520C	**Prep SOP Ref:**	CF-OA-E-001
Prep Date:	08-NOV-16	**Prep Aliquot:**	810.9 mL		

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
53555-66-1	PCB-38	U	4.17	4.17	pg/L	4.17	24.7
38444-88-1	PCB-39	U	4.29	4.29	pg/L	4.29	24.7
PCB-40/71	PCB-40/PCB-71	CU	5.23	2.44	pg/L	2.44	49.3
52663-59-9	PCB-41	U	3.6	3.6	pg/L	3.60	49.3
36559-22-5	PCB-42	U	3.01	3.01	pg/L	3.01	49.3
70362-46-8	PCB-43	U	3.38	3.38	pg/L	3.38	49.3
PCB-44/47/65	PCB-44/PCB-65/PCB-47	CJ	21.0	17.8	pg/L	2.61	74.0
PCB-45/51	PCB-45/PCB-51	BCJ	4.76	1.58	pg/L	1.41	49.3
41464-47-5	PCB-46	U	1.65	1.48	pg/L	1.48	24.7
70362-47-9	PCB-48	U	3.77	2.91	pg/L	2.91	24.7
PCB-49/69	PCB-49/PCB-69	BCJ	9.64	6.81	pg/L	2.44	49.3
PCB-50/53	PCB-50/PCB-53	BCU	2.66	1.31	pg/L	1.31	49.3
35693-99-3	PCB-52	J	23.1	19.9	pg/L	2.64	24.7
15968-05-5	PCB-54	U	5.72	5.72	pg/L	5.72	24.7
74338-24-2	PCB-55	U	2.15	2.15	pg/L	2.15	24.7
41464-43-1	PCB-56	BJK	6.34	3.13	pg/L	2.29	24.7
70424-67-8	PCB-57	U	1.9	1.9	pg/L	1.90	24.7
41464-49-7	PCB-58	U	2.1	2.1	pg/L	2.10	24.7
PCB-59/62/75	PCB-59/PCB-62/PCB-75	CU	2.07	2.07	pg/L	2.07	74.0
33025-41-1	PCB-60	U	4.27	2.15	pg/L	2.15	24.7
PCB-61-76	PCB-61/PCB-70/PCB-74/PCB-76	BCJ	25.0	22.2	pg/L	2.02	98.7
74472-34-7	PCB-63	U	1.8	1.8	pg/L	1.80	24.7
52663-58-8	PCB-64	J	6.29	3.61	pg/L	2.22	24.7
32598-10-0	PCB-66	BJ	11.7	8.89	pg/L	1.92	24.7
73575-53-8	PCB-67	U	1.7	1.7	pg/L	1.70	24.7
73575-52-7	PCB-68	KU	2.07	1.87	pg/L	1.87	24.7
41464-42-0	PCB-72	U	1.8	1.8	pg/L	1.80	24.7
74338-23-1	PCB-73	U	2.2	2.2	pg/L	2.20	24.7
32598-13-3	PCB-77	U	1.78	1.78	pg/L	1.78	24.7
70362-49-1	PCB-78	U	2.05	2.05	pg/L	2.05	24.7
41464-48-6	PCB-79	U	1.73	1.73	pg/L	1.73	24.7
33284-52-5	PCB-80	U	1.75	1.75	pg/L	1.75	24.7

Comments:

B The target analyte was detected in the associated blank.
C Congener has coeluters. When Cxxx, refer to congener number xxx for data
J Value is estimated
K Estimated Maximum Possible Concentration
U Analyte was analyzed for, but not detected above the specified detection limit.

For prior lab sample - 9/12/16

Rio Grande North

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	1609609_1609C98	**Client:**	NMED001	**Project:**	NMED00113
Lab Sample ID:	9998001	**Date Collected:**	09/12/2016 11:00	**Matrix:**	WATER
Client Sample:	1668A Water	**Date Received:**	10/28/2016 14:15		
Client ID:	1609609-001G			**Prep Basis:**	As Received
Batch ID:	33209	**Method:**	EPA Method 1668A HS		
Run Date:	11/10/2016 06:06	**Analyst:**	MJC	**Instrument:**	HRP791
Data File:	c09nov16a_2-3			**Dilution:**	1
Prep Batch:	33207	**Prep Method:**	SW846 3520C	**Prep SOP Ref:**	CF-OA-E-001
Prep Date:	08-NOV-16	**Prep Aliquot:**	810.9 mL		

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
70362-50-4	PCB-81	U	1.8	1.8	pg/L	1.80	24.7
52663-62-4	PCB-82	U	2.12	2.12	pg/L	2.12	24.7
60145-20-2	PCB-83	U	2.2	2.2	pg/L	2.20	24.7
52663-60-2	PCB-84	U	2.76	2.07	pg/L	2.07	24.7
PCB-85-117	PCB-85/PCB-116/PCB-117	CU	1.95	1.6	pg/L	1.60	74.0
PCB-86-125	PCB-86/PCB-87/PCB-97/PCB-109/PCB-119/PCB-	BCJ	8.21	5.1	pg/L	1.70	148
PCB-88/91	PCB-88/PCB-91	CU	2	2	pg/L	2.00	49.3
73575-57-2	PCB-89	U	1.97	1.97	pg/L	1.97	24.7
PCB-90-113	PCB-90/PCB-101/PCB-113	BCJ	8.26	5.21	pg/L	1.68	74.0
52663-61-3	PCB-92	U	1.9	1.9	pg/L	1.90	24.7
PCB-93/100	PCB-93/PCB-100	CU	2	2	pg/L	2.00	49.3
73575-55-0	PCB-94	U	2.2	2.2	pg/L	2.20	24.7
38379-99-6	PCB-95	BJ	5.85	2.77	pg/L	1.78	24.7
73575-54-9	PCB-96	U	.863	.863	pg/L	0.863	24.7
PCB-98/102	PCB-98/PCB-102	CU	2.05	2.05	pg/L	2.05	49.3
38380-01-7	PCB-99	BU	3.77	1.97	pg/L	1.97	24.7
60145-21-3	PCB-103	U	1.7	1.7	pg/L	1.70	24.7
56558-16-8	PCB-104	U	4.04	4.04	pg/L	4.04	24.7
32598-14-4	PCB-105	U	2.49	1.58	pg/L	1.58	24.7
70424-69-0	PCB-106	U	1.53	1.53	pg/L	1.53	24.7
70424-68-9	PCB-107	U	1.5	1.5	pg/L	1.50	24.7
PCB-108/124	PCB-108/PCB-124	CU	1.68	1.68	pg/L	1.68	49.3
PCB-110/115	PCB-110/PCB-115	BCJ	7.55	4.57	pg/L	1.60	49.3
39635-32-0	PCB-111	U	1.5	1.5	pg/L	1.50	24.7
74472-36-9	PCB-112	U	1.31	1.31	pg/L	1.31	24.7
74472-37-0	PCB-114	U	1.65	1.65	pg/L	1.65	24.7
31508-00-6	PCB-118	BU	4.41	1.53	pg/L	1.53	24.7
68194-12-7	PCB-120	U	1.26	1.26	pg/L	1.26	24.7
56558-18-0	PCB-121	U	1.53	1.53	pg/L	1.53	24.7
76842-07-4	PCB-122	U	1.7	1.7	pg/L	1.70	24.7
65510-44-3	PCB-123	U	1.6	1.6	pg/L	1.60	24.7
57465-28-8	PCB-126	U	1.7	1.7	pg/L	1.70	24.7

Comments:

B The target analyte was detected in the associated blank.
C Congener has coeluters. When Cxxx, refer to congener number xxx for data
J Value is estimated
K Estimated Maximum Possible Concentration
U Analyte was analyzed for, but not detected above the specified detection limit.

Rio Grande North

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	1609609_1609C98	**Client:**	NMED001	**Project:**	NMED00113
Lab Sample ID:	9998001	**Date Collected:**	09/12/2016 11:00	**Matrix:**	WATER
Client Sample:	1668A Water	**Date Received:**	10/28/2016 14:15		
Client ID:	1609609-001G			**Prep Basis:**	As Received
Batch ID:	33209	**Method:**	EPA Method 1668A HS		
Run Date:	11/10/2016 06:06	**Analyst:**	MJC	**Instrument:**	HRP791
Data File:	c09nov16a_2-3			**Dilution:**	1
Prep Batch:	33207	**Prep Method:**	SW846 3520C	**Prep SOP Ref:**	CF-OA-E-001
Prep Date:	08-NOV-16	**Prep Aliquot:**	810.9 mL		

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
39635-33-1	PCB-127	U	1.63	1.63	pg/L	1.63	24.7
PCB-128/166	PCB-128/PCB-166	CU	1.48	1.48	pg/L	1.48	49.3
PCB-129-163	PCB-129/PCB-138/PCB-163	BCJ	6.56	2.34	pg/L	1.68	74.0
52663-66-8	PCB-130	U	1.8	1.8	pg/L	1.80	24.7
61798-70-7	PCB-131	U	2.12	2.12	pg/L	2.12	24.7
38380-05-1	PCB-132	BKU	2.17	1.95	pg/L	1.95	24.7
35694-04-3	PCB-133	U	1.73	1.73	pg/L	1.73	24.7
52704-70-8	PCB-134	U	2.2	2.2	pg/L	2.20	24.7
PCB-135/151	PCB-135/PCB-151	BCU	2.66	1.06	pg/L	1.06	49.3
38411-22-2	PCB-136	BU	1.23	.765	pg/L	0.765	24.7
35694-06-5	PCB-137	U	1.9	1.9	pg/L	1.90	24.7
PCB-139/140	PCB-139/PCB-140	CU	1.63	1.63	pg/L	1.63	49.3
52712-04-6	PCB-141	U	1.55	1.55	pg/L	1.55	24.7
41411-61-4	PCB-142	U	1.8	1.8	pg/L	1.80	24.7
68194-15-0	PCB-143	U	1.65	1.65	pg/L	1.65	24.7
68194-14-9	PCB-144	U	.937	.937	pg/L	0.937	24.7
74472-40-5	PCB-145	U	.863	.863	pg/L	0.863	24.7
51908-16-8	PCB-146	U	1.31	1.31	pg/L	1.31	24.7
PCB-147/149	PCB-147/PCB-149	BCU	4.88	1.6	pg/L	1.60	49.3
74472-41-6	PCB-148	U	1.01	1.01	pg/L	1.01	24.7
68194-08-1	PCB-150	U	.839	.839	pg/L	0.839	24.7
68194-09-2	PCB-152	U	.765	.765	pg/L	0.765	24.7
PCB-153/168	PCB-153/PCB-168	BCU	4.88	1.38	pg/L	1.38	49.3
60145-22-4	PCB-154	U	.839	.839	pg/L	0.839	24.7
33979-03-2	PCB-155	U	1.26	1.26	pg/L	1.26	24.7
PCB-156/157	PCB-156/PCB-157	BCKU	1.28	1.09	pg/L	1.09	49.3
74472-42-7	PCB-158	U	1.13	1.13	pg/L	1.13	24.7
39635-35-3	PCB-159	U	.863	.863	pg/L	0.863	24.7
41411-62-5	PCB-160	U	1.41	1.41	pg/L	1.41	24.7
74472-43-8	PCB-161	U	1.21	1.21	pg/L	1.21	24.7
39635-34-2	PCB-162	U	.937	.937	pg/L	0.937	24.7
74472-45-0	PCB-164	U	1.18	1.18	pg/L	1.18	24.7

Comments:

B The target analyte was detected in the associated blank.
C Congener has coeluters. When Cxxx, refer to congener number xxx for data
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Rio Grande North

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	1609609_1609C98	**Client:**	NMED001	**Project:**	NMED00113
Lab Sample ID:	9998001	**Date Collected:**	09/12/2016 11:00	**Matrix:**	WATER
Client Sample:	1668A Water	**Date Received:**	10/28/2016 14:15		
Client ID:	1609609-001G			**Prep Basis:**	As Received
Batch ID:	33209	**Method:**	EPA Method 1668A HS		
Run Date:	11/10/2016 06:06	**Analyst:**	MJC	**Instrument:**	HRP791
Data File:	c09nov16a_2-3			**Dilution:**	1
Prep Batch:	33207	**Prep Method:**	SW846 3520C	**Prep SOP Ref:**	CF-OA-E-001
Prep Date:	08-NOV-16	**Prep Aliquot:**	810.9 mL		

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
74472-46-1	PCB-165	U	1.5	1.5	pg/L	1.50	24.7
52663-72-6	PCB-167	U	.814	.814	pg/L	0.814	24.7
32774-16-6	PCB-169	U	.913	.913	pg/L	0.913	24.7
35065-30-6	PCB-170	BU	1.31	1.09	pg/L	1.09	24.7
PCB-171/173	PCB-171/PCB-173	CU	1.09	1.09	pg/L	1.09	49.3
52663-74-8	PCB-172	U	1.11	1.11	pg/L	1.11	24.7
38411-25-5	PCB-174	BU	1.95	1.04	pg/L	1.04	24.7
40186-70-7	PCB-175	U	.913	.913	pg/L	0.913	24.7
52663-65-7	PCB-176	U	.715	.715	pg/L	0.715	24.7
52663-70-4	PCB-177	BU	1.28	1.11	pg/L	1.11	24.7
52663-67-9	PCB-178	U	.962	.962	pg/L	0.962	24.7
52663-64-6	PCB-179	BKU	1.06	.715	pg/L	0.715	24.7
PCB-180/193	PCB-180/PCB-193	CU	.962	.962	pg/L	0.962	49.3
74472-47-2	PCB-181	U	1.13	1.13	pg/L	1.13	24.7
60145-23-5	PCB-182	U	.888	.888	pg/L	0.888	24.7
PCB-183/185	PCB-183/PCB-185	BCU	1.87	1.04	pg/L	1.04	49.3
74472-48-3	PCB-184	U	.715	.715	pg/L	0.715	24.7
74472-49-4	PCB-186	U	.789	.789	pg/L	0.789	24.7
52663-68-0	PCB-187	BU	2.42	.937	pg/L	0.937	24.7
74487-85-7	PCB-188	U	.814	.814	pg/L	0.814	24.7
39635-31-9	PCB-189	U	.962	.962	pg/L	0.962	24.7
41411-64-7	PCB-190	U	.814	.814	pg/L	0.814	24.7
74472-50-7	PCB-191	U	.814	.814	pg/L	0.814	24.7
74472-51-8	PCB-192	U	.962	.962	pg/L	0.962	24.7
35694-08-7	PCB-194	BU	1.78	.814	pg/L	0.814	24.7
52663-78-2	PCB-195	U	.863	.863	pg/L	0.863	24.7
42740-50-1	PCB-196	U	1.04	.863	pg/L	0.863	24.7
PCB-197/200	PCB-197/PCB-200	CU	.715	.715	pg/L	0.715	49.3
PCB-198/199	PCB-198/PCB-199	BCU	2.07	.913	pg/L	0.913	49.3
40186-71-8	PCB-201	U	.666	.666	pg/L	0.666	24.7
2136-99-4	PCB-202	U	.715	.715	pg/L	0.715	24.7
52663-76-0	PCB-203	BU	0.913	.888	pg/L	0.888	24.7

Comments:

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K Estimated Maximum Possible Concentration
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Rio Grande North

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	1609609_1609C98	**Client:**	NMED001	**Project:**	NMED00113
Lab Sample ID:	9998001	**Date Collected:**	09/12/2016 11:00	**Matrix:**	WATER
Client Sample:	1668A Water	**Date Received:**	10/28/2016 14:15		
Client ID:	1609609-001G			**Prep Basis:**	As Received
Batch ID:	33209	**Method:**	EPA Method 1668A HS		
Run Date:	11/10/2016 06:06	**Analyst:**	MJC	**Instrument:**	HRP791
Data File:	c09nov16a_2-3			**Dilution:**	1
Prep Batch:	33207	**Prep Method:**	SW846 3520C	**Prep SOP Ref:**	CF-OA-E-001
Prep Date:	08-NOV-16	**Prep Aliquot:**	810.9 mL		

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
74472-52-9	PCB-204	U	.691	.691	pg/L	0.691	24.7
74472-53-0	PCB-205	U	.691	.691	pg/L	0.691	24.7
40186-72-9	PCB-206	U	.913	.913	pg/L	0.913	24.7
52663-79-3	PCB-207	U	.666	.666	pg/L	0.666	24.7
52663-77-1	PCB-208	U	.691	.691	pg/L	0.691	24.7
2051-24-3	PCB-209	BU	2.32	.839	pg/L	0.839	24.7
27323-18-8	Total monoCB		59.4	50	pg/L		
25512-42-9	Total diCB		945	918	pg/L		
25323-68-6	Total triCB		232	196	pg/L		
26914-33-0	Total tetraCB		119	80.8	pg/L		
25429-29-2	Total pentaCB		45.3	17.6	pg/L		
26601-64-9	Total hexaCB		20.2	2.34	pg/L		
28655-71-2	Total heptaCB	U	8.83	0	pg/L		
55722-26-4	Total octaCB	U	5.80	0	pg/L		
53742-07-7	Total nonaCB	U	0	0	pg/L		
DECACB(Tot)	Total decaCB	U	2.32	0	pg/L		
1336-36-3	Total PCB		1440	1260	pg/L		
TEQ 7	TOTAL (TEQ ND=1/2 DL)_2005		0.0994		pg/L		
TEQ 8	TOTAL (TEQ ND=0)_2005		0.000207		pg/L		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%		Acceptable Limits
13C-1-MoCB		278	2470	pg/L	11.3	*	(15%-150%)
13C-3-MoCB		302	2470	pg/L	12.3	*	(15%-150%)
13C-4-DiCB		282	2470	pg/L	11.4	*	(25%-150%)
13C-15-DiCB		787	2470	pg/L	31.9		(25%-150%)
13C-19-TrCB		379	2470	pg/L	15.4	*	(25%-150%)
13C-37-TrCB		1030	2470	pg/L	41.7		(25%-150%)
13C-54-TeCB		182	2470	pg/L	7.40	*	(25%-150%)
13C-77-TeCB		2010	2470	pg/L	81.6		(25%-150%)
13C-81-TeCB		1870	2470	pg/L	75.6		(25%-150%)
13C-104-PeCB		243	2470	pg/L	9.85	*	(25%-150%)
13C-105-PeCB		1770	2470	pg/L	71.9		(25%-150%)
13C-114-PeCB		1620	2470	pg/L	65.7		(25%-150%)
13C-118-PeCB		1690	2470	pg/L	68.4		(25%-150%)
13C-123-PeCB		1670	2470	pg/L	67.9		(25%-150%)
13C-126-PeCB		1920	2470	pg/L	78.0		(25%-150%)
13C-155-HxCB		705	2470	pg/L	28.6		(25%-150%)
13C-156-HxCB	C	3470	4930	pg/L	70.4		(25%-150%)
13C-167-HxCB		1780	2470	pg/L	72.0		(25%-150%)
13C-169-HxCB		1820	2470	pg/L	73.8		(25%-150%)
13C-188-HpCB		1570	2470	pg/L	63.5		(25%-150%)
13C-189-HpCB		1950	2470	pg/L	79.1		(25%-150%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	1609609_1609C98	**Client:**	NMED001	**Project:**	NMED00113
Lab Sample ID:	9998001	**Date Collected:**	09/12/2016 11:00	**Matrix:**	WATER
Client Sample:	1668A Water	**Date Received:**	10/28/2016 14:15		
Client ID:	1609609-001G			**Prep Basis:**	As Received
Batch ID:	33209	**Method:**	EPA Method 1668A HS		
Run Date:	11/10/2016 06:06	**Analyst:**	MJC	**Instrument:**	HRP791
Data File:	c09nov16a_2-3			**Dilution:**	1
Prep Batch:	33207	**Prep Method:**	SW846 3520C	**Prep SOP Ref:**	CF-OA-E-001
Prep Date:	08-NOV-16	**Prep Aliquot:**	810.9 mL		

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-202-OcCB		1930	2470	pg/L	78.4	(25%-150%)
13C-205-OcCB		2210	2470	pg/L	89.7	(25%-150%)
13C-206-NoCB		2170	2470	pg/L	88.1	(25%-150%)
13C-208-NoCB		2050	2470	pg/L	83.0	(25%-150%)
13C-209-DeCB		2220	2470	pg/L	89.8	(25%-150%)
13C-28-TrCB		1520	2470	pg/L	61.7	(30%-135%)
13C-111-PeCB		2020	2470	pg/L	81.8	(30%-135%)
13C-178-HpCB		2070	2470	pg/L	84.0	(30%-135%)

Comments:

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Rio Grande South

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	1609609_1609C98	**Client:**	NMED001	**Project:**	NMED00113
Lab Sample ID:	9998002	**Date Collected:**	09/13/2016 07:15	**Matrix:**	WATER
Client Sample:	1668A Water	**Date Received:**	10/28/2016 14:15		
Client ID:	1609609-002G			**Prep Basis:**	As Received
Batch ID:	33209	**Method:**	EPA Method 1668A HS		
Run Date:	11/10/2016 07:13	**Analyst:**	MJC	**Instrument:**	HRP791
Data File:	c09nov16a_2-4			**Dilution:**	1
Prep Batch:	33207	**Prep Method:**	SW846 3520C	**Prep SOP Ref:**	CF-OA-E-001
Prep Date:	08-NOV-16	**Prep Aliquot:**	777.8 mL		

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
2051-60-7	PCB-1	BJ	21.3	17.5	pg/L	8.95	51.4
2051-61-8	PCB-2	J	15.1	12.2	pg/L	8.56	51.4
2051-62-9	PCB-3	J	15.3	12.6	pg/L	8.72	51.4
13029-08-8	PCB-4	J	48.3	39.2	pg/L	12.5	51.4
16605-91-7	PCB-5	U	9.08	9.08	pg/L	9.08	51.4
25569-80-6	PCB-6	J	12.7	8.62	pg/L	6.61	51.4
33284-50-3	PCB-7	U	7.51	7.51	pg/L	7.51	51.4
34883-43-7	PCB-8	BJ	36.7	33	pg/L	6.02	51.4
34883-39-1	PCB-9	U	7.43	7.43	pg/L	7.43	25.7
33146-45-1	PCB-10	U	4.27	4.27	pg/L	4.27	25.7
2050-67-1	PCB-11	B	863	859	pg/L	7.84	51.4
PCB-12/13	PCB-12/PCB-13	CU	8.15	8.15	pg/L	8.15	51.4
34883-41-5	PCB-14	U	7.33	7.33	pg/L	7.33	51.4
2050-68-2	PCB-15	BJ	34.1	28.8	pg/L	7.79	51.4
38444-78-9	PCB-16	J	10.6	7.35	pg/L	3.39	25.7
37680-66-3	PCB-17	BJ	14.0	10.8	pg/L	2.88	25.7
PCB-18/30	PCB-18/PCB-30	BCJ	26.8	24.5	pg/L	2.39	51.4
38444-73-4	PCB-19	J	11.6	8.1	pg/L	7.74	25.7
PCB-20/28	PCB-20/PCB-28	BCJ	51.9	49.6	pg/L	2.11	51.4
PCB-21/33	PCB-21/PCB-33	BCJ	21.3	19.2	pg/L	2.08	51.4
38444-85-8	PCB-22	J	18.0	15.5	pg/L	2.31	25.7
55720-44-0	PCB-23	U	2.13	2.13	pg/L	2.13	25.7
55702-45-9	PCB-24	U	2.21	2.21	pg/L	2.21	25.7
55712-37-3	PCB-25	U	2.03	2.03	pg/L	2.03	25.7
PCB-26/29	PCB-26/PCB-29	CJ	8.00	5.82	pg/L	1.98	51.4
38444-76-7	PCB-27	U	2.03	2.03	pg/L	2.03	25.7
16606-02-3	PCB-31		36.1	34.1	pg/L	1.93	25.7
38444-77-8	PCB-32	J	7.17	5.29	pg/L	1.88	25.7
37680-68-5	PCB-34	U	2.06	2.06	pg/L	2.06	25.7
37680-69-6	PCB-35	BJ	9.85	6.75	pg/L	5.50	51.4
38444-87-0	PCB-36	U	4.91	4.91	pg/L	4.91	25.7
38444-90-5	PCB-37	BJ	17.8	14.8	pg/L	5.12	25.7

Comments:

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Rio Grande South

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	1609609_1609C98	**Client:**	NMED001	**Project:**	NMED00113
Lab Sample ID:	9998002	**Date Collected:**	09/13/2016 07:15	**Matrix:**	WATER
Client Sample:	1668A Water	**Date Received:**	10/28/2016 14:15		
Client ID:	1609609-002G			**Prep Basis:**	As Received
Batch ID:	33209	**Method:**	EPA Method 1668A HS		
Run Date:	11/10/2016 07:13	**Analyst:**	MJC	**Instrument:**	HRP791
Data File:	c09nov16a_2-4			**Dilution:**	1
Prep Batch:	33207	**Prep Method:**	SW846 3520C	**Prep SOP Ref:**	CF-OA-E-001
Prep Date:	08-NOV-16	**Prep Aliquot:**	777.8 mL		

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
53555-66-1	PCB-38	U	4.99	4.99	pg/L	4.99	25.7
38444-88-1	PCB-39	U	5.12	5.12	pg/L	5.12	25.7
PCB-40/71	PCB-40/PCB-71	CJ	7.82	4.58	pg/L	2.06	51.4
52663-59-9	PCB-41	U	3.01	3.01	pg/L	3.01	51.4
36559-22-5	PCB-42	J	7.64	3.95	pg/L	2.52	51.4
70362-46-8	PCB-43	U	2.83	2.83	pg/L	2.83	51.4
PCB-44/47/65	PCB-44/PCB-65/PCB-47	CU	2.19	2.19	pg/L	2.19	77.1
PCB-45/51	PCB-45/PCB-51	BCJ	5.50	2.32	pg/L	1.34	51.4
41464-47-5	PCB-46	U	1.41	1.41	pg/L	1.41	25.7
70362-47-9	PCB-48	U	5.35	2.42	pg/L	2.42	25.7
PCB-49/69	PCB-49/PCB-69	BCJ	15.3	12.5	pg/L	2.06	51.4
PCB-50/53	PCB-50/PCB-53	BCU	3.11	1.26	pg/L	1.26	51.4
35693-99-3	PCB-52		42.1	38.9	pg/L	2.21	25.7
15968-05-5	PCB-54	U	5.14	5.14	pg/L	5.14	25.7
74338-24-2	PCB-55	U	1.83	1.83	pg/L	1.83	25.7
41464-43-1	PCB-56	BJ	12.2	8.96	pg/L	1.98	25.7
70424-67-8	PCB-57	U	1.62	1.62	pg/L	1.62	25.7
41464-49-7	PCB-58	U	1.88	1.8	pg/L	1.80	25.7
PCB-59/62/75	PCB-59/PCB-62/PCB-75	CU	2.78	1.72	pg/L	1.72	77.1
33025-41-1	PCB-60	J	7.64	4.5	pg/L	1.85	25.7
PCB-61-76	PCB-61/PCB-70/PCB-74/PCB-76	BCJ	50.3	47.5	pg/L	1.75	103
74472-34-7	PCB-63	U	1.54	1.54	pg/L	1.54	25.7
52663-58-8	PCB-64	J	11.3	8.61	pg/L	1.85	25.7
32598-10-0	PCB-66	BJ	22.8	20	pg/L	1.65	25.7
73575-53-8	PCB-67	U	1.47	1.47	pg/L	1.47	25.7
73575-52-7	PCB-68	U	1.62	1.62	pg/L	1.62	25.7
41464-42-0	PCB-72	U	1.54	1.54	pg/L	1.54	25.7
74338-23-1	PCB-73	U	1.83	1.83	pg/L	1.83	25.7
32598-13-3	PCB-77	BU	3.88	1.54	pg/L	1.54	25.7
70362-49-1	PCB-78	U	1.75	1.75	pg/L	1.75	25.7
41464-48-6	PCB-79	U	1.49	1.49	pg/L	1.49	25.7
33284-52-5	PCB-80	U	1.52	1.52	pg/L	1.52	25.7

Comments:

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Rio Grande South

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	1609609_1609C98	**Client:**	NMED001	**Project:**	NMED00113
Lab Sample ID:	9998002	**Date Collected:**	09/13/2016 07:15	**Matrix:**	WATER
Client Sample:	1668A Water	**Date Received:**	10/28/2016 14:15		
Client ID:	1609609-002G			**Prep Basis:**	As Received
Batch ID:	33209	**Method:**	EPA Method 1668A HS		
Run Date:	11/10/2016 07:13	**Analyst:**	MJC	**Instrument:**	HRP791
Data File:	c09nov16a_2-4			**Dilution:**	1
Prep Batch:	33207	**Prep Method:**	SW846 3520C	**Prep SOP Ref:**	CF-OA-E-001
Prep Date:	08-NOV-16	**Prep Aliquot:**	777.8 mL		

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
70362-50-4	PCB-81	U	1.57	1.57	pg/L	1.57	25.7
52663-62-4	PCB-82	U	4.83	2.7	pg/L	2.70	25.7
60145-20-2	PCB-83	U	2.8	2.8	pg/L	2.80	25.7
52663-60-2	PCB-84	J	9.51	5.51	pg/L	2.62	25.7
PCB-85-117	PCB-85/PCB-116/PCB-117	CJ	8.18	5	pg/L	2.03	77.1
PCB-86-125	PCB-86/PCB-87/PCB-97/PCB-109/PCB-119/PCB-	CJ	32.3	29.2	pg/L	2.19	154
PCB-88/91	PCB-88/PCB-91	CU	5.25	2.52	pg/L	2.52	51.4
73575-57-2	PCB-89	U	2.49	2.49	pg/L	2.49	25.7
PCB-90-113	PCB-90/PCB-101/PCB-113	CJ	52.5	49.5	pg/L	2.13	77.1
52663-61-3	PCB-92	J	8.90	5.4	pg/L	2.39	25.7
PCB-93/100	PCB-93/PCB-100	CU	2.52	2.52	pg/L	2.52	51.4
73575-55-0	PCB-94	U	2.78	2.78	pg/L	2.78	25.7
38379-99-6	PCB-95		31.8	28.8	pg/L	2.26	25.7
73575-54-9	PCB-96	U	.746	.746	pg/L	0.746	25.7
PCB-98/102	PCB-98/PCB-102	CU	2.6	2.6	pg/L	2.60	51.4
38380-01-7	PCB-99	J	18.9	15.4	pg/L	2.52	25.7
60145-21-3	PCB-103	U	2.16	2.16	pg/L	2.16	25.7
56558-16-8	PCB-104	U	3.34	3.34	pg/L	3.34	25.7
32598-14-4	PCB-105	J	15.0	11.4	pg/L	1.77	25.7
70424-69-0	PCB-106	U	1.72	1.72	pg/L	1.72	25.7
70424-68-9	PCB-107	U	3.39	1.67	pg/L	1.67	25.7
PCB-108/124	PCB-108/PCB-124	CU	2.60	1.88	pg/L	1.88	51.4
PCB-110/115	PCB-110/PCB-115	C	65.4	62.4	pg/L	2.03	51.4
39635-32-0	PCB-111	U	1.9	1.9	pg/L	1.90	25.7
74472-36-9	PCB-112	U	1.67	1.67	pg/L	1.67	25.7
74472-37-0	PCB-114	U	1.88	1.88	pg/L	1.88	25.7
31508-00-6	PCB-118		34.4	31.1	pg/L	1.67	25.7
68194-12-7	PCB-120	U	1.62	1.62	pg/L	1.62	25.7
56558-18-0	PCB-121	U	1.93	1.93	pg/L	1.93	25.7
76842-07-4	PCB-122	U	1.9	1.9	pg/L	1.90	25.7
65510-44-3	PCB-123	U	1.77	1.77	pg/L	1.77	25.7
57465-28-8	PCB-126	U	1.93	1.93	pg/L	1.93	25.7

Comments:

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Rio Grande South

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	1609609_1609C98	**Client:**	NMED001	**Project:**	NMED00113
Lab Sample ID:	9998002	**Date Collected:**	09/13/2016 07:15	**Matrix:**	WATER
Client Sample:	1668A Water	**Date Received:**	10/28/2016 14:15		
Client ID:	1609609-002G			**Prep Basis:**	As Received
Batch ID:	33209	**Method:**	EPA Method 1668A HS		
Run Date:	11/10/2016 07:13	**Analyst:**	MJC	**Instrument:**	HRP791
Data File:	c09nov16a_2-4			**Dilution:**	1
Prep Batch:	33207	**Prep Method:**	SW846 3520C	**Prep SOP Ref:**	CF-OA-E-001
Prep Date:	08-NOV-16	**Prep Aliquot:**	777.8 mL		

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
39635-33-1	PCB-127	U	1.83	1.83	pg/L	1.83	25.7
PCB-128/166	PCB-128/PCB-166	CJ	11.8	7.84	pg/L	1.29	51.4
PCB-129-163	PCB-129/PCB-138/PCB-163	C	138	134	pg/L	1.47	77.1
52663-66-8	PCB-130	U	5.45	1.59	pg/L	1.59	25.7
61798-70-7	PCB-131	U	1.85	1.85	pg/L	1.85	25.7
38380-05-1	PCB-132		35.5	30	pg/L	1.70	25.7
35694-04-3	PCB-133	U	1.52	1.52	pg/L	1.52	25.7
52704-70-8	PCB-134	U	4.91	1.93	pg/L	1.93	25.7
PCB-135/151	PCB-135/PCB-151	CJ	41.5	36	pg/L	1.08	51.4
38411-22-2	PCB-136	J	12.7	9.08	pg/L	0.797	25.7
35694-06-5	PCB-137	U	3.11	1.67	pg/L	1.67	25.7
PCB-139/140	PCB-139/PCB-140	CU	1.41	1.41	pg/L	1.41	51.4
52712-04-6	PCB-141	J	24.8	19.7	pg/L	1.36	25.7
41411-61-4	PCB-142	U	1.57	1.57	pg/L	1.57	25.7
68194-15-0	PCB-143	U	1.44	1.44	pg/L	1.44	25.7
68194-14-9	PCB-144	U	5.37	.977	pg/L	0.977	25.7
74472-40-5	PCB-145	U	.9	.9	pg/L	0.900	25.7
51908-16-8	PCB-146	J	14.4	10.1	pg/L	1.13	25.7
PCB-147/149	PCB-147/PCB-149	C	95.5	90.8	pg/L	1.41	51.4
74472-41-6	PCB-148	U	1.03	1.03	pg/L	1.03	25.7
68194-08-1	PCB-150	U	.849	.849	pg/L	0.849	25.7
68194-09-2	PCB-152	U	.771	.771	pg/L	0.771	25.7
PCB-153/168	PCB-153/PCB-168	C	116	112	pg/L	1.21	51.4
60145-22-4	PCB-154	KU	1.31	.849	pg/L	0.849	25.7
33979-03-2	PCB-155	U	1.21	1.21	pg/L	1.21	25.7
PCB-156/157	PCB-156/PCB-157	BCJ	9.36	4.44	pg/L	1.44	51.4
74472-42-7	PCB-158	J	11.3	7.75	pg/L	1.00	25.7
39635-35-3	PCB-159	U	1.13	1.13	pg/L	1.13	25.7
41411-62-5	PCB-160	U	1.23	1.23	pg/L	1.23	25.7
74472-43-8	PCB-161	U	1.05	1.05	pg/L	1.05	25.7
39635-34-2	PCB-162	U	1.23	1.23	pg/L	1.23	25.7
74472-45-0	PCB-164	J	8.49	4.74	pg/L	1.03	25.7

Comments:

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Rio Grande South

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	1609609_1609C98	**Client:**	NMED001	**Project:**	NMED00113
Lab Sample ID:	9998002	**Date Collected:**	09/13/2016 07:15	**Matrix:**	WATER
Client Sample:	1668A Water	**Date Received:**	10/28/2016 14:15		
Client ID:	1609609-002G			**Prep Basis:**	As Received
Batch ID:	33209	**Method:**	EPA Method 1668A HS		
Run Date:	11/10/2016 07:13	**Analyst:**	MJC	**Instrument:**	HRP791
Data File:	c09nov16a_2-4			**Dilution:**	1
Prep Batch:	33207	**Prep Method:**	SW846 3520C	**Prep SOP Ref:**	CF-OA-E-001
Prep Date:	08-NOV-16	**Prep Aliquot:**	777.8 mL		

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
74472-46-1	PCB-165	U	1.31	1.31	pg/L	1.31	25.7
52663-72-6	PCB-167	BU	4.50	1.11	pg/L	1.11	25.7
32774-16-6	PCB-169	U	1.18	1.18	pg/L	1.18	25.7
35065-30-6	PCB-170		46.6	42.4	pg/L	1.34	25.7
PCB-171/173	PCB-171/PCB-173	CJ	14.9	10.4	pg/L	1.34	51.4
52663-74-8	PCB-172	J	9.36	5.01	pg/L	1.36	25.7
38411-25-5	PCB-174		49.8	45.2	pg/L	1.26	25.7
40186-70-7	PCB-175	U	2.39	.9	pg/L	0.900	25.7
52663-65-7	PCB-176	J	5.37	1.56	pg/L	0.694	25.7
52663-70-4	PCB-177	J	29.8	25.4	pg/L	1.36	25.7
52663-67-9	PCB-178	J	10.2	5.01	pg/L	0.951	25.7
52663-64-6	PCB-179	J	18.0	14.1	pg/L	0.694	25.7
PCB-180/193	PCB-180/PCB-193	CU	1.16	1.16	pg/L	1.16	51.4
74472-47-2	PCB-181	U	1.39	1.39	pg/L	1.39	25.7
60145-23-5	PCB-182	U	.9	.9	pg/L	0.900	25.7
PCB-183/185	PCB-183/PCB-185	CJ	34.7	30.7	pg/L	1.29	51.4
74472-48-3	PCB-184	U	.72	.72	pg/L	0.720	25.7
74472-49-4	PCB-186	U	.797	.797	pg/L	0.797	25.7
52663-68-0	PCB-187		63.4	58.4	pg/L	0.951	25.7
74487-85-7	PCB-188	U	.797	.797	pg/L	0.797	25.7
39635-31-9	PCB-189	BU	2.34	.977	pg/L	0.977	25.7
41411-64-7	PCB-190	J	10.2	7.03	pg/L	1.00	25.7
74472-50-7	PCB-191	U	1.90	.977	pg/L	0.977	25.7
74472-51-8	PCB-192	U	1.18	1.18	pg/L	1.18	25.7
35694-08-7	PCB-194	J	20.8	16.5	pg/L	0.771	25.7
52663-78-2	PCB-195	J	9.44	4.8	pg/L	0.849	25.7
42740-50-1	PCB-196	J	11.5	6.04	pg/L	1.08	25.7
PCB-197/200	PCB-197/PCB-200	CU	4.11	.9	pg/L	0.900	51.4
PCB-198/199	PCB-198/PCB-199	CJ	24.3	18.4	pg/L	1.16	51.4
40186-71-8	PCB-201	U	2.93	.849	pg/L	0.849	25.7
2136-99-4	PCB-202	U	4.63	.926	pg/L	0.926	25.7
52663-76-0	PCB-203	J	15.0	9.46	pg/L	1.11	25.7

Comments:

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Rio Grande South

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	1609609_1609C98	**Client:**	NMED001	**Project:**	NMED00113
Lab Sample ID:	9998002	**Date Collected:**	09/13/2016 07:15	**Matrix:**	WATER
Client Sample:	1668A Water	**Date Received:**	10/28/2016 14:15		
Client ID:	1609609-002G			**Prep Basis:**	As Received
Batch ID:	33209	**Method:**	EPA Method 1668A HS		
Run Date:	11/10/2016 07:13	**Analyst:**	MJC	**Instrument:**	HRP791
Data File:	c09nov16a_2-4			**Dilution:**	1
Prep Batch:	33207	**Prep Method:**	SW846 3520C	**Prep SOP Ref:**	CF-OA-E-001
Prep Date:	08-NOV-16	**Prep Aliquot:**	777.8 mL		

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
74472-52-9	PCB-204	U	.874	.874	pg/L	0.874	25.7
74472-53-0	PCB-205	BU	1.57	.669	pg/L	0.669	25.7
40186-72-9	PCB-206	U	6.53	1.21	pg/L	1.21	25.7
52663-79-3	PCB-207	U	1.34	.9	pg/L	0.900	25.7
52663-77-1	PCB-208	U	1.83	.951	pg/L	0.951	25.7
2051-24-3	PCB-209	BU	2.96	.926	pg/L	0.926	25.7
27323-18-8	Total monoCB		51.7	42.3	pg/L		
25512-42-9	Total diCB		995	968	pg/L		
25323-68-6	Total triCB		233	202	pg/L		
26914-33-0	Total tetraCB		200	152	pg/L		
25429-29-2	Total pentaCB		293	244	pg/L		
26601-64-9	Total hexaCB		543	466	pg/L		
28655-71-2	Total heptaCB		299	245	pg/L		
55722-26-4	Total octaCB		94.3	55.2	pg/L		
53742-07-7	Total nonaCB	U	9.69	0	pg/L		
DECACB(Tot)	Total decaCB	U	2.96	0	pg/L		
1336-36-3	Total PCB		2720	2370	pg/L		
TEQ 7	TOTAL (TEQ ND=1/2 DL)_2005		0.117		pg/L		
TEQ 8	TOTAL (TEQ ND=0)_2005		0.00235		pg/L		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%		Acceptable Limits
13C-1-MoCB		296	2570	pg/L	11.5	*	(15%-150%)
13C-3-MoCB		325	2570	pg/L	12.7	*	(15%-150%)
13C-4-DiCB		307	2570	pg/L	11.9	*	(25%-150%)
13C-15-DiCB		927	2570	pg/L	36.0		(25%-150%)
13C-19-TrCB		452	2570	pg/L	17.6	*	(25%-150%)
13C-37-TrCB		1180	2570	pg/L	46.1		(25%-150%)
13C-54-TeCB		216	2570	pg/L	8.41	*	(25%-150%)
13C-77-TeCB		2310	2570	pg/L	89.8		(25%-150%)
13C-81-TeCB		2150	2570	pg/L	83.6		(25%-150%)
13C-104-PeCB		310	2570	pg/L	12.1	*	(25%-150%)
13C-105-PeCB		2040	2570	pg/L	79.2		(25%-150%)
13C-114-PeCB		1870	2570	pg/L	72.5		(25%-150%)
13C-118-PeCB		1930	2570	pg/L	75.2		(25%-150%)
13C-123-PeCB		1930	2570	pg/L	75.2		(25%-150%)
13C-126-PeCB		2170	2570	pg/L	84.4		(25%-150%)
13C-155-HxCB		849	2570	pg/L	33.0		(25%-150%)
13C-156-HxCB	C	3800	5140	pg/L	73.9		(25%-150%)
13C-167-HxCB		1950	2570	pg/L	75.9		(25%-150%)
13C-169-HxCB		1990	2570	pg/L	77.4		(25%-150%)
13C-188-HpCB		1760	2570	pg/L	68.4		(25%-150%)
13C-189-HpCB		2130	2570	pg/L	82.9		(25%-150%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	1609609_1609C98	**Client:**	NMED001	**Project:**	NMED00113
Lab Sample ID:	9998002	**Date Collected:**	09/13/2016 07:15	**Matrix:**	WATER
Client Sample:	1668A Water	**Date Received:**	10/28/2016 14:15		
Client ID:	1609609-002G			**Prep Basis:**	As Received
Batch ID:	33209	**Method:**	EPA Method 1668A HS		
Run Date:	11/10/2016 07:13	**Analyst:**	MJC	**Instrument:**	HRP791
Data File:	c09nov16a_2-4			**Dilution:**	1
Prep Batch:	33207	**Prep Method:**	SW846 3520C	**Prep SOP Ref:**	CF-OA-E-001
Prep Date:	08-NOV-16	**Prep Aliquot:**	777.8 mL		

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-202-OcCB		2100	2570	pg/L	81.7	(25%-150%)
13C-205-OcCB		2400	2570	pg/L	93.4	(25%-150%)
13C-206-NoCB		2320	2570	pg/L	90.4	(25%-150%)
13C-208-NoCB		2210	2570	pg/L	86.0	(25%-150%)
13C-209-DeCB		2370	2570	pg/L	92.1	(25%-150%)
13C-28-TrCB		1640	2570	pg/L	63.8	(30%-135%)
13C-111-PeCB		2210	2570	pg/L	86.0	(30%-135%)
13C-178-HpCB		2240	2570	pg/L	87.1	(30%-135%)

Comments:

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Rio Grande North

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	1609609_1609C98	**Client:**	NMED001	**Project:**	NMED00113
Lab Sample ID:	9998003	**Date Collected:**	09/21/2016 12:15	**Matrix:**	WATER
Client Sample:	1668A Water	**Date Received:**	10/28/2016 14:15		
Client ID:	1609C98-001G			**Prep Basis:**	As Received
Batch ID:	33209	**Method:**	EPA Method 1668A HS		
Run Date:	11/10/2016 08:19	**Analyst:**	MJC	**Instrument:**	HRP791
Data File:	c09nov16a_2-5			**Dilution:**	1
Prep Batch:	33207	**Prep Method:**	SW846 3520C	**Prep SOP Ref:**	CF-OA-E-001
Prep Date:	08-NOV-16	**Prep Aliquot:**	852.9 mL		

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
2051-60-7	PCB-1	BJ	26.9	23.1	pg/L	8.65	46.9
2051-61-8	PCB-2	U	8.14	8.14	pg/L	8.14	46.9
2051-62-9	PCB-3	J	18.4	15.7	pg/L	8.16	46.9
13029-08-8	PCB-4	J	44.9	35.7	pg/L	12.8	46.9
16605-91-7	PCB-5	U	9.15	9.15	pg/L	9.15	46.9
25569-80-6	PCB-6	JK	13.5	9.35	pg/L	6.66	46.9
33284-50-3	PCB-7	U	7.55	7.55	pg/L	7.55	46.9
34883-43-7	PCB-8	BJ	36.0	32.2	pg/L	6.05	46.9
34883-39-1	PCB-9	U	7.48	7.48	pg/L	7.48	23.4
33146-45-1	PCB-10	U	4.34	4.34	pg/L	4.34	23.4
2050-67-1	PCB-11	B	852	847	pg/L	7.90	46.9
PCB-12/13	PCB-12/PCB-13	CU	8.21	8.21	pg/L	8.21	46.9
34883-41-5	PCB-14	U	7.36	7.36	pg/L	7.36	46.9
2050-68-2	PCB-15	J	44.9	39.7	pg/L	7.81	46.9
38444-78-9	PCB-16	J	10.2	6.96	pg/L	3.85	23.4
37680-66-3	PCB-17	BJ	13.8	10.6	pg/L	3.26	23.4
PCB-18/30	PCB-18/PCB-30	BCJ	27.6	25.3	pg/L	2.72	46.9
38444-73-4	PCB-19	JK	26.5	23	pg/L	8.86	23.4
PCB-20/28	PCB-20/PCB-28	BC	49.6	47.2	pg/L	2.39	46.9
PCB-21/33	PCB-21/PCB-33	BCJ	23.0	20.8	pg/L	2.34	46.9
38444-85-8	PCB-22	J	18.6	16.1	pg/L	2.65	23.4
55720-44-0	PCB-23	U	2.42	2.42	pg/L	2.42	23.4
55702-45-9	PCB-24	U	2.51	2.51	pg/L	2.51	23.4
55712-37-3	PCB-25	U	2.3	2.3	pg/L	2.30	23.4
PCB-26/29	PCB-26/PCB-29	CJ	8.11	5.94	pg/L	2.25	46.9
38444-76-7	PCB-27	U	3.87	2.32	pg/L	2.32	23.4
16606-02-3	PCB-31	U	2.2	2.2	pg/L	2.20	23.4
38444-77-8	PCB-32	J	6.54	4.66	pg/L	2.11	23.4
37680-68-5	PCB-34	U	2.32	2.32	pg/L	2.32	23.4
37680-69-6	PCB-35	BU	7.81	4.99	pg/L	4.99	46.9
38444-87-0	PCB-36	U	4.43	4.43	pg/L	4.43	23.4
38444-90-5	PCB-37	BJ	14.5	11.5	pg/L	4.57	23.4

Comments:

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Rio Grande North

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	1609609_1609C98	**Client:**	NMED001	**Project:**	NMED00113
Lab Sample ID:	9998003	**Date Collected:**	09/21/2016 12:15	**Matrix:**	WATER
Client Sample:	1668A Water	**Date Received:**	10/28/2016 14:15		
Client ID:	1609C98-001G			**Prep Basis:**	As Received
Batch ID:	33209	**Method:**	EPA Method 1668A HS		
Run Date:	11/10/2016 08:19	**Analyst:**	MJC	**Instrument:**	HRP791
Data File:	c09nov16a_2-5			**Dilution:**	1
Prep Batch:	33207	**Prep Method:**	SW846 3520C	**Prep SOP Ref:**	CF-OA-E-001
Prep Date:	08-NOV-16	**Prep Aliquot:**	852.9 mL		

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
53555-66-1	PCB-38	U	4.53	4.53	pg/L	4.53	23.4
38444-88-1	PCB-39	U	4.64	4.64	pg/L	4.64	23.4
PCB-40/71	PCB-40/PCB-71	CJ	5.49	2.25	pg/L	1.69	46.9
52663-59-9	PCB-41	U	2.49	2.49	pg/L	2.49	46.9
36559-22-5	PCB-42	U	4.41	2.06	pg/L	2.06	46.9
70362-46-8	PCB-43	U	2.34	2.34	pg/L	2.34	46.9
PCB-44/47/65	PCB-44/PCB-65/PCB-47	CJ	24.3	21.1	pg/L	1.81	70.3
PCB-45/51	PCB-45/PCB-51	BCJ	4.99	1.82	pg/L	1.24	46.9
41464-47-5	PCB-46	U	1.31	1.31	pg/L	1.31	23.4
70362-47-9	PCB-48	U	3.66	1.99	pg/L	1.99	23.4
PCB-49/69	PCB-49/PCB-69	BCJ	9.36	6.52	pg/L	1.69	46.9
PCB-50/53	PCB-50/PCB-53	BCU	1.83	1.17	pg/L	1.17	46.9
35693-99-3	PCB-52	J	23.4	20.2	pg/L	1.83	23.4
15968-05-5	PCB-54	U	5.49	5.49	pg/L	5.49	23.4
74338-24-2	PCB-55	U	1.59	1.59	pg/L	1.59	23.4
41464-43-1	PCB-56	BJ	7.08	3.88	pg/L	1.71	23.4
70424-67-8	PCB-57	U	1.41	1.41	pg/L	1.41	23.4
41464-49-7	PCB-58	U	1.57	1.57	pg/L	1.57	23.4
PCB-59/62/75	PCB-59/PCB-62/PCB-75	CU	1.43	1.43	pg/L	1.43	70.3
33025-41-1	PCB-60	U	3.68	1.59	pg/L	1.59	23.4
PCB-61-76	PCB-61/PCB-70/PCB-74/PCB-76	BCJ	28.8	26	pg/L	1.52	93.8
74472-34-7	PCB-63	U	1.34	1.34	pg/L	1.34	23.4
52663-58-8	PCB-64	J	6.68	4.01	pg/L	1.52	23.4
32598-10-0	PCB-66	BJ	13.2	10.5	pg/L	1.43	23.4
73575-53-8	PCB-67	U	1.27	1.27	pg/L	1.27	23.4
73575-52-7	PCB-68	U	2.09	1.41	pg/L	1.41	23.4
41464-42-0	PCB-72	U	1.36	1.36	pg/L	1.36	23.4
74338-23-1	PCB-73	U	1.52	1.52	pg/L	1.52	23.4
32598-13-3	PCB-77	BKU	1.66	1.29	pg/L	1.29	23.4
70362-49-1	PCB-78	U	1.52	1.52	pg/L	1.52	23.4
41464-48-6	PCB-79	U	1.29	1.29	pg/L	1.29	23.4
33284-52-5	PCB-80	U	1.31	1.31	pg/L	1.31	23.4

Comments:

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K Estimated Maximum Possible Concentration
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Rio Grande North

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	1609609_1609C98	**Client:**	NMED001	**Project:**	NMED00113
Lab Sample ID:	9998003	**Date Collected:**	09/21/2016 12:15	**Matrix:**	WATER
Client Sample:	1668A Water	**Date Received:**	10/28/2016 14:15		
Client ID:	1609C98-001G			**Prep Basis:**	As Received
Batch ID:	33209	**Method:**	EPA Method 1668A HS		
Run Date:	11/10/2016 08:19	**Analyst:**	MJC	**Instrument:**	HRP791
Data File:	c09nov16a_2-5			**Dilution:**	1
Prep Batch:	33207	**Prep Method:**	SW846 3520C	**Prep SOP Ref:**	CF-OA-E-001
Prep Date:	08-NOV-16	**Prep Aliquot:**	852.9 mL		

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
70362-50-4	PCB-81	U	1.38	1.38	pg/L	1.38	23.4
52663-62-4	PCB-82	U	1.78	1.5	pg/L	1.50	23.4
60145-20-2	PCB-83	U	1.57	1.57	pg/L	1.57	23.4
52663-60-2	PCB-84	U	3.26	1.48	pg/L	1.48	23.4
PCB-85-117	PCB-85/PCB-116/PCB-117	CU	1.45	1.15	pg/L	1.15	70.3
PCB-86-125	PCB-86/PCB-87/PCB-97/PCB-109/PCB-119/PCB-	BCJ	8.14	5.02	pg/L	1.22	141
PCB-88/91	PCB-88/PCB-91	CU	1.85	1.41	pg/L	1.41	46.9
73575-57-2	PCB-89	U	1.41	1.41	pg/L	1.41	23.4
PCB-90-113	PCB-90/PCB-101/PCB-113	BCJ	11.4	8.32	pg/L	1.20	70.3
52663-61-3	PCB-92	U	2.02	1.34	pg/L	1.34	23.4
PCB-93/100	PCB-93/PCB-100	CU	1.41	1.41	pg/L	1.41	46.9
73575-55-0	PCB-94	U	1.55	1.55	pg/L	1.55	23.4
38379-99-6	PCB-95	BJ	8.56	5.48	pg/L	1.27	23.4
73575-54-9	PCB-96	U	.633	.633	pg/L	0.633	23.4
PCB-98/102	PCB-98/PCB-102	CU	1.45	1.45	pg/L	1.45	46.9
38380-01-7	PCB-99	BU	4.83	1.41	pg/L	1.41	23.4
60145-21-3	PCB-103	U	1.22	1.22	pg/L	1.22	23.4
56558-16-8	PCB-104	U	5.02	5.02	pg/L	5.02	23.4
32598-14-4	PCB-105	U	3.63	1.57	pg/L	1.57	23.4
70424-69-0	PCB-106	U	1.59	1.59	pg/L	1.59	23.4
70424-68-9	PCB-107	U	1.57	1.57	pg/L	1.57	23.4
PCB-108/124	PCB-108/PCB-124	CU	1.76	1.76	pg/L	1.76	46.9
PCB-110/115	PCB-110/PCB-115	BCJ	12.7	9.71	pg/L	1.15	46.9
39635-32-0	PCB-111	U	1.08	1.08	pg/L	1.08	23.4
74472-36-9	PCB-112	U	.938	.938	pg/L	0.938	23.4
74472-37-0	PCB-114	U	1.71	1.71	pg/L	1.71	23.4
31508-00-6	PCB-118	BJ	8.00	4.77	pg/L	1.57	23.4
68194-12-7	PCB-120	U	.891	.891	pg/L	0.891	23.4
56558-18-0	PCB-121	U	1.08	1.08	pg/L	1.08	23.4
76842-07-4	PCB-122	U	1.81	1.81	pg/L	1.81	23.4
65510-44-3	PCB-123	U	1.69	1.69	pg/L	1.69	23.4
57465-28-8	PCB-126	U	1.62	1.62	pg/L	1.62	23.4

Comments:

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Rio Grande North

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	1609609_1609C98	**Client:**	NMED001	**Project:**	NMED00113
Lab Sample ID:	9998003	**Date Collected:**	09/21/2016 12:15	**Matrix:**	WATER
Client Sample:	1668A Water	**Date Received:**	10/28/2016 14:15		
Client ID:	1609C98-001G			**Prep Basis:**	As Received
Batch ID:	33209	**Method:**	EPA Method 1668A HS		
Run Date:	11/10/2016 08:19	**Analyst:**	MJC	**Instrument:**	HRP791
Data File:	c09nov16a_2-5			**Dilution:**	1
Prep Batch:	33207	**Prep Method:**	SW846 3520C	**Prep SOP Ref:**	CF-OA-E-001
Prep Date:	08-NOV-16	**Prep Aliquot:**	852.9 mL		

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
39635-33-1	PCB-127	U	1.71	1.71	pg/L	1.71	23.4
PCB-128/166	PCB-128/PCB-166	CU	1.45	1.34	pg/L	1.34	46.9
PCB-129-163	PCB-129/PCB-138/PCB-163	BCJ	9.07	4.86	pg/L	1.52	70.3
52663-66-8	PCB-130	U	1.64	1.64	pg/L	1.64	23.4
61798-70-7	PCB-131	U	1.92	1.92	pg/L	1.92	23.4
38380-05-1	PCB-132	BU	2.81	1.76	pg/L	1.76	23.4
35694-04-3	PCB-133	U	1.57	1.57	pg/L	1.57	23.4
52704-70-8	PCB-134	U	1.99	1.99	pg/L	1.99	23.4
PCB-135/151	PCB-135/PCB-151	BCU	3.21	.868	pg/L	0.868	46.9
38411-22-2	PCB-136	BU	1.34	.633	pg/L	0.633	23.4
35694-06-5	PCB-137	U	1.71	1.71	pg/L	1.71	23.4
PCB-139/140	PCB-139/PCB-140	CU	1.48	1.48	pg/L	1.48	46.9
52712-04-6	PCB-141	KU	1.62	1.41	pg/L	1.41	23.4
41411-61-4	PCB-142	U	1.64	1.64	pg/L	1.64	23.4
68194-15-0	PCB-143	U	1.5	1.5	pg/L	1.50	23.4
68194-14-9	PCB-144	U	0.844	.774	pg/L	0.774	23.4
74472-40-5	PCB-145	U	.727	.727	pg/L	0.727	23.4
51908-16-8	PCB-146	U	1.17	1.17	pg/L	1.17	23.4
PCB-147/149	PCB-147/PCB-149	BCJ	6.43	1.74	pg/L	1.45	46.9
74472-41-6	PCB-148	U	.844	.844	pg/L	0.844	23.4
68194-08-1	PCB-150	U	.68	.68	pg/L	0.680	23.4
68194-09-2	PCB-152	U	.61	.61	pg/L	0.610	23.4
PCB-153/168	PCB-153/PCB-168	BCJ	7.13	3.43	pg/L	1.24	46.9
60145-22-4	PCB-154	U	.68	.68	pg/L	0.680	23.4
33979-03-2	PCB-155	U	1.55	1.55	pg/L	1.55	23.4
PCB-156/157	PCB-156/PCB-157	BCU	1.22	1.03	pg/L	1.03	46.9
74472-42-7	PCB-158	U	1.03	1.03	pg/L	1.03	23.4
39635-35-3	PCB-159	U	.868	.868	pg/L	0.868	23.4
41411-62-5	PCB-160	U	1.27	1.27	pg/L	1.27	23.4
74472-43-8	PCB-161	U	1.08	1.08	pg/L	1.08	23.4
39635-34-2	PCB-162	U	.938	.938	pg/L	0.938	23.4
74472-45-0	PCB-164	U	1.08	1.08	pg/L	1.08	23.4

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Rio Grande North

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	1609609_1609C98	**Client:**	NMED001	**Project:**	NMED00113
Lab Sample ID:	9998003	**Date Collected:**	09/21/2016 12:15	**Matrix:**	WATER
Client Sample:	1668A Water	**Date Received:**	10/28/2016 14:15		
Client ID:	1609C98-001G			**Prep Basis:**	As Received
Batch ID:	33209	**Method:**	EPA Method 1668A HS		
Run Date:	11/10/2016 08:19	**Analyst:**	MJC	**Instrument:**	HRP791
Data File:	c09nov16a_2-5			**Dilution:**	1
Prep Batch:	33207	**Prep Method:**	SW846 3520C	**Prep SOP Ref:**	CF-OA-E-001
Prep Date:	08-NOV-16	**Prep Aliquot:**	852.9 mL		

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
74472-46-1	PCB-165	U	1.36	1.36	pg/L	1.36	23.4
52663-72-6	PCB-167	U	.774	.774	pg/L	0.774	23.4
32774-16-6	PCB-169	U	.844	.844	pg/L	0.844	23.4
35065-30-6	PCB-170	BU	1.83	1.15	pg/L	1.15	23.4
PCB-171/173	PCB-171/PCB-173	CU	1.15	1.15	pg/L	1.15	46.9
52663-74-8	PCB-172	U	1.17	1.17	pg/L	1.17	23.4
38411-25-5	PCB-174	BU	2.44	1.08	pg/L	1.08	23.4
40186-70-7	PCB-175	U	.821	.821	pg/L	0.821	23.4
52663-65-7	PCB-176	U	.633	.633	pg/L	0.633	23.4
52663-70-4	PCB-177	BU	1.27	1.15	pg/L	1.15	23.4
52663-67-9	PCB-178	U	.868	.868	pg/L	0.868	23.4
52663-64-6	PCB-179	BU	1.03	.633	pg/L	0.633	23.4
PCB-180/193	PCB-180/PCB-193	CU	.985	.985	pg/L	0.985	46.9
74472-47-2	PCB-181	U	1.2	1.2	pg/L	1.20	23.4
60145-23-5	PCB-182	U	.821	.821	pg/L	0.821	23.4
PCB-183/185	PCB-183/PCB-185	BCU	1.95	1.1	pg/L	1.10	46.9
74472-48-3	PCB-184	U	.657	.657	pg/L	0.657	23.4
74472-49-4	PCB-186	U	.727	.727	pg/L	0.727	23.4
52663-68-0	PCB-187	BU	3.02	.868	pg/L	0.868	23.4
74487-85-7	PCB-188	U	.774	.774	pg/L	0.774	23.4
39635-31-9	PCB-189	U	.844	.844	pg/L	0.844	23.4
41411-64-7	PCB-190	U	.868	.868	pg/L	0.868	23.4
74472-50-7	PCB-191	U	.844	.844	pg/L	0.844	23.4
74472-51-8	PCB-192	U	1.01	1.01	pg/L	1.01	23.4
35694-08-7	PCB-194	BU	1.10	.68	pg/L	0.680	23.4
52663-78-2	PCB-195	U	.727	.727	pg/L	0.727	23.4
42740-50-1	PCB-196	U	.68	.68	pg/L	0.680	23.4
PCB-197/200	PCB-197/PCB-200	CU	.563	.563	pg/L	0.563	46.9
PCB-198/199	PCB-198/PCB-199	BCU	1.13	.75	pg/L	0.750	46.9
40186-71-8	PCB-201	U	.539	.539	pg/L	0.539	23.4
2136-99-4	PCB-202	U	.586	.586	pg/L	0.586	23.4
52663-76-0	PCB-203	BU	0.961	.703	pg/L	0.703	23.4

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Rio Grande North

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	1609609_1609C98	**Client:**	NMED001	**Project:**	NMED00113
Lab Sample ID:	9998003	**Date Collected:**	09/21/2016 12:15	**Matrix:**	WATER
Client Sample:	1668A Water	**Date Received:**	10/28/2016 14:15		
Client ID:	1609C98-001G			**Prep Basis:**	As Received
Batch ID:	33209	**Method:**	EPA Method 1668A HS		
Run Date:	11/10/2016 08:19	**Analyst:**	MJC	**Instrument:**	HRP791
Data File:	c09nov16a_2-5			**Dilution:**	1
Prep Batch:	33207	**Prep Method:**	SW846 3520C	**Prep SOP Ref:**	CF-OA-E-001
Prep Date:	08-NOV-16	**Prep Aliquot:**	852.9 mL		

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
74472-52-9	PCB-204	U	.563	.563	pg/L	0.563	23.4
74472-53-0	PCB-205	U	.563	.563	pg/L	0.563	23.4
40186-72-9	PCB-206	U	.797	.797	pg/L	0.797	23.4
52663-79-3	PCB-207	U	.586	.586	pg/L	0.586	23.4
52663-77-1	PCB-208	U	.633	.633	pg/L	0.633	23.4
2051-24-3	PCB-209	BU	1.78	.703	pg/L	0.703	23.4
27323-18-8	Total monoCB		45.3	38.8	pg/L		
25512-42-9	Total diCB		978	955	pg/L		
25323-68-6	Total triCB		184	149	pg/L		
26914-33-0	Total tetraCB		139	96.2	pg/L		
25429-29-2	Total pentaCB		67.6	33.3	pg/L		
26601-64-9	Total hexaCB		33.5	10	pg/L		
28655-71-2	Total heptaCB	U	11.5	0	pg/L		
55722-26-4	Total octaCB	U	3.19	0	pg/L		
53742-07-7	Total nonaCB	U	0	0	pg/L		
DECACB(Tot)	Total decaCB	U	1.78	0	pg/L		
1336-36-3	Total PCB		1460	1280	pg/L		
TEQ 7	TOTAL (TEQ ND=1/2 DL)_2005		0.0943		pg/L		
TEQ 8	TOTAL (TEQ ND=0)_2005		0.000386		pg/L		

=0.00146 ug/L

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%		Acceptable Limits
13C-1-MoCB		230	2340	pg/L	9.80	*	(15%-150%)
13C-3-MoCB		262	2340	pg/L	11.2	*	(15%-150%)
13C-4-DiCB		240	2340	pg/L	10.2	*	(25%-150%)
13C-15-DiCB		710	2340	pg/L	30.3		(25%-150%)
13C-19-TrCB		336	2340	pg/L	14.3	*	(25%-150%)
13C-37-TrCB		839	2340	pg/L	35.8		(25%-150%)
13C-54-TeCB		150	2340	pg/L	6.41	*	(25%-150%)
13C-77-TeCB		1860	2340	pg/L	79.4		(25%-150%)
13C-81-TeCB		1650	2340	pg/L	70.6		(25%-150%)
13C-104-PeCB		138	2340	pg/L	5.91	*	(25%-150%)
13C-105-PeCB		1680	2340	pg/L	71.8		(25%-150%)
13C-114-PeCB		1470	2340	pg/L	62.6		(25%-150%)
13C-118-PeCB		1540	2340	pg/L	65.6		(25%-150%)
13C-123-PeCB		1510	2340	pg/L	64.4		(25%-150%)
13C-126-PeCB		1890	2340	pg/L	80.6		(25%-150%)
13C-155-HxCB		452	2340	pg/L	19.3	*	(25%-150%)
13C-156-HxCB	C	3350	4690	pg/L	71.5		(25%-150%)
13C-167-HxCB		1690	2340	pg/L	72.0		(25%-150%)
13C-169-HxCB		1790	2340	pg/L	76.1		(25%-150%)
13C-188-HpCB		1340	2340	pg/L	57.1		(25%-150%)
13C-189-HpCB		1920	2340	pg/L	81.8		(25%-150%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	1609609_1609C98	**Client:**	NMED001	**Project:**	NMED00113
Lab Sample ID:	9998003	**Date Collected:**	09/21/2016 12:15	**Matrix:**	WATER
Client Sample:	1668A Water	**Date Received:**	10/28/2016 14:15		
Client ID:	1609C98-001G			**Prep Basis:**	As Received
Batch ID:	33209	**Method:**	EPA Method 1668A HS		
Run Date:	11/10/2016 08:19	**Analyst:**	MJC	**Instrument:**	HRP791
Data File:	c09nov16a_2-5			**Dilution:**	1
Prep Batch:	33207	**Prep Method:**	SW846 3520C	**Prep SOP Ref:**	CF-OA-E-001
Prep Date:	08-NOV-16	**Prep Aliquot:**	852.9 mL		

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-202-OcCB		1800	2340	pg/L	76.7	(25%-150%)
13C-205-OcCB		2150	2340	pg/L	91.6	(25%-150%)
13C-206-NoCB		2130	2340	pg/L	90.9	(25%-150%)
13C-208-NoCB		1940	2340	pg/L	82.8	(25%-150%)
13C-209-DeCB		2180	2340	pg/L	93.1	(25%-150%)
13C-28-TrCB		1430	2340	pg/L	61.0	(30%-135%)
13C-111-PeCB		1920	2340	pg/L	81.9	(30%-135%)
13C-178-HpCB		1950	2340	pg/L	83.1	(30%-135%)

Comments:

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Rio Grande South

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	1609609_1609C98	**Client:**	NMED001	**Project:**	NMED00113
Lab Sample ID:	9998004	**Date Collected:**	09/22/2016 11:00	**Matrix:**	WATER
Client Sample:	1668A Water	**Date Received:**	10/28/2016 14:15		
Client ID:	1609C98-002G			**Prep Basis:**	As Received
Batch ID:	33209	**Method:**	EPA Method 1668A HS		
Run Date:	11/10/2016 09:25	**Analyst:**	MJC	**Instrument:**	HRP791
Data File:	c09nov16a_2-6			**Dilution:**	1
Prep Batch:	33207	**Prep Method:**	SW846 3520C	**Prep SOP Ref:**	CF-OA-E-001
Prep Date:	08-NOV-16	**Prep Aliquot:**	929.1 mL		

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
2051-60-7	PCB-1	BJ	22.5	18.7	pg/L	11.2	43.1
2051-61-8	PCB-2	J	14.0	11.1	pg/L	10.2	43.1
2051-62-9	PCB-3	JK	27.7	25	pg/L	9.90	43.1
13029-08-8	PCB-4		53.9	44.8	pg/L	14.3	43.1
16605-91-7	PCB-5	U	10.1	10.1	pg/L	10.1	43.1
25569-80-6	PCB-6	JK	12.8	8.72	pg/L	7.34	43.1
33284-50-3	PCB-7	U	8.31	8.31	pg/L	8.31	43.1
34883-43-7	PCB-8	BJ	36.2	32.4	pg/L	6.67	43.1
34883-39-1	PCB-9	U	8.24	8.24	pg/L	8.24	21.5
33146-45-1	PCB-10	U	4.69	4.69	pg/L	4.69	21.5
2050-67-1	PCB-11	B	1100	1100	pg/L	8.70	43.1
PCB-12/13	PCB-12/PCB-13	CU	9.04	9.04	pg/L	9.04	43.1
34883-41-5	PCB-14	U	8.12	8.12	pg/L	8.12	43.1
2050-68-2	PCB-15	BJ	32.7	27.4	pg/L	8.52	43.1
38444-78-9	PCB-16	J	15.5	12.3	pg/L	4.82	21.5
37680-66-3	PCB-17	BJ	12.9	9.7	pg/L	4.09	21.5
PCB-18/30	PCB-18/PCB-30	BCJ	23.2	20.9	pg/L	3.40	43.1
38444-73-4	PCB-19	J	14.2	10.7	pg/L	9.15	21.5
PCB-20/28	PCB-20/PCB-28	BC	62.5	60.2	pg/L	3.01	43.1
PCB-21/33	PCB-21/PCB-33	BCJ	28.7	26.5	pg/L	2.95	43.1
38444-85-8	PCB-22	J	22.2	19.7	pg/L	3.32	21.5
55720-44-0	PCB-23	U	3.04	3.04	pg/L	3.04	21.5
55702-45-9	PCB-24	U	3.14	3.14	pg/L	3.14	21.5
55712-37-3	PCB-25	J	5.23	3.26	pg/L	2.88	21.5
PCB-26/29	PCB-26/PCB-29	CU	2.82	2.82	pg/L	2.82	43.1
38444-76-7	PCB-27	U	3.90	2.91	pg/L	2.91	21.5
16606-02-3	PCB-31	U	2.76	2.76	pg/L	2.76	21.5
38444-77-8	PCB-32	J	8.63	6.75	pg/L	2.65	21.5
37680-68-5	PCB-34	U	2.93	2.93	pg/L	2.93	21.5
37680-69-6	PCB-35	BJ	11.5	8.4	pg/L	6.54	43.1
38444-87-0	PCB-36	U	5.83	5.83	pg/L	5.83	21.5
38444-90-5	PCB-37	BJ	22.0	19	pg/L	6.29	21.5

Comments:

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Rio Grande South

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	1609609_1609C98	**Client:**	NMED001	**Project:**	NMED00113
Lab Sample ID:	9998004	**Date Collected:**	09/22/2016 11:00	**Matrix:**	WATER
Client Sample:	1668A Water	**Date Received:**	10/28/2016 14:15		
Client ID:	1609C98-002G			**Prep Basis:**	As Received
Batch ID:	33209	**Method:**	EPA Method 1668A HS		
Run Date:	11/10/2016 09:25	**Analyst:**	MJC	**Instrument:**	HRP791
Data File:	c09nov16a_2-6			**Dilution:**	1
Prep Batch:	33207	**Prep Method:**	SW846 3520C	**Prep SOP Ref:**	CF-OA-E-001
Prep Date:	08-NOV-16	**Prep Aliquot:**	929.1 mL		

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
53555-66-1	PCB-38	U	5.92	5.92	pg/L	5.92	21.5
38444-88-1	PCB-39	U	6.09	6.09	pg/L	6.09	21.5
PCB-40/71	PCB-40/PCB-71	CJ	9.00	5.76	pg/L	2.13	43.1
52663-59-9	PCB-41	U	3.14	3.14	pg/L	3.14	43.1
36559-22-5	PCB-42	U	5.92	2.6	pg/L	2.60	43.1
70362-46-8	PCB-43	U	2.95	2.95	pg/L	2.95	43.1
PCB-44/47/65	PCB-44/PCB-65/PCB-47	CU	2.28	2.28	pg/L	2.28	64.6
PCB-45/51	PCB-45/PCB-51	BCJ	6.46	3.28	pg/L	1.40	43.1
41464-47-5	PCB-46	U	1.49	1.49	pg/L	1.49	21.5
70362-47-9	PCB-48	U	2.54	2.54	pg/L	2.54	21.5
PCB-49/69	PCB-49/PCB-69	BCJ	15.0	12.2	pg/L	2.13	43.1
PCB-50/53	PCB-50/PCB-53	BCU	2.88	1.31	pg/L	1.31	43.1
35693-99-3	PCB-52		38.3	35.1	pg/L	2.30	21.5
15968-05-5	PCB-54	U	6.05	6.05	pg/L	6.05	21.5
74338-24-2	PCB-55	U	2.32	2.32	pg/L	2.32	21.5
41464-43-1	PCB-56	BJ	11.6	8.42	pg/L	2.50	21.5
70424-67-8	PCB-57	U	2.07	2.07	pg/L	2.07	21.5
41464-49-7	PCB-58	U	2.28	2.28	pg/L	2.28	21.5
PCB-59/62/75	PCB-59/PCB-62/PCB-75	CU	1.79	1.79	pg/L	1.79	64.6
33025-41-1	PCB-60	J	6.50	3.36	pg/L	2.32	21.5
PCB-61-76	PCB-61/PCB-70/PCB-74/PCB-76	BCJ	46.2	43.4	pg/L	2.20	86.1
74472-34-7	PCB-63	U	1.96	1.96	pg/L	1.96	21.5
52663-58-8	PCB-64	J	10.6	7.96	pg/L	1.94	21.5
32598-10-0	PCB-66	BJ	20.6	17.9	pg/L	2.09	21.5
73575-53-8	PCB-67	U	1.83	1.83	pg/L	1.83	21.5
73575-52-7	PCB-68	U	2.04	2.04	pg/L	2.04	21.5
41464-42-0	PCB-72	U	1.96	1.96	pg/L	1.96	21.5
74338-23-1	PCB-73	U	1.92	1.92	pg/L	1.92	21.5
32598-13-3	PCB-77	BU	3.19	1.83	pg/L	1.83	21.5
70362-49-1	PCB-78	U	2.22	2.22	pg/L	2.22	21.5
41464-48-6	PCB-79	U	1.89	1.89	pg/L	1.89	21.5
33284-52-5	PCB-80	U	1.92	1.92	pg/L	1.92	21.5

Comments:

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Rio Grande South

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	1609609_1609C98	**Client:**	NMED001	**Project:**	NMED00113
Lab Sample ID:	9998004	**Date Collected:**	09/22/2016 11:00	**Matrix:**	WATER
Client Sample:	1668A Water	**Date Received:**	10/28/2016 14:15		
Client ID:	1609C98-002G			**Prep Basis:**	As Received
Batch ID:	33209	**Method:**	EPA Method 1668A HS		
Run Date:	11/10/2016 09:25	**Analyst:**	MJC	**Instrument:**	HRP791
Data File:	c09nov16a_2-6			**Dilution:**	1
Prep Batch:	33207	**Prep Method:**	SW846 3520C	**Prep SOP Ref:**	CF-OA-E-001
Prep Date:	08-NOV-16	**Prep Aliquot:**	929.1 mL		

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
70362-50-4	PCB-81	U	2.11	2.11	pg/L	2.11	21.5
52663-62-4	PCB-82	U	3.21	2.3	pg/L	2.30	21.5
60145-20-2	PCB-83	KU	2.76	2.39	pg/L	2.39	21.5
52663-60-2	PCB-84	U	5.60	2.24	pg/L	2.24	21.5
PCB-85-117	PCB-85/PCB-116/PCB-117	CU	4.50	1.74	pg/L	1.74	64.6
PCB-86-125	PCB-86/PCB-87/PCB-97/PCB-109/PCB-119/PCB-	BCJ	18.6	15.5	pg/L	1.85	129
PCB-88/91	PCB-88/PCB-91	CU	3.75	2.15	pg/L	2.15	43.1
73575-57-2	PCB-89	U	2.13	2.13	pg/L	2.13	21.5
PCB-90-113	PCB-90/PCB-101/PCB-113	CJ	29.0	26	pg/L	1.83	64.6
52663-61-3	PCB-92	U	5.14	2.04	pg/L	2.04	21.5
PCB-93/100	PCB-93/PCB-100	CU	2.17	2.17	pg/L	2.17	43.1
73575-55-0	PCB-94	U	2.39	2.39	pg/L	2.39	21.5
38379-99-6	PCB-95	J	17.1	14.1	pg/L	1.94	21.5
73575-54-9	PCB-96	U	.818	.818	pg/L	0.818	21.5
PCB-98/102	PCB-98/PCB-102	CU	2.24	2.24	pg/L	2.24	43.1
38380-01-7	PCB-99	BJ	11.5	8.02	pg/L	2.15	21.5
60145-21-3	PCB-103	U	1.85	1.85	pg/L	1.85	21.5
56558-16-8	PCB-104	U	8.59	8.59	pg/L	8.59	21.5
32598-14-4	PCB-105	J	7.32	3.7	pg/L	1.83	21.5
70424-69-0	PCB-106	U	1.96	1.96	pg/L	1.96	21.5
70424-68-9	PCB-107	U	1.92	1.92	pg/L	1.92	21.5
PCB-108/124	PCB-108/PCB-124	CU	2.13	2.13	pg/L	2.13	43.1
PCB-110/115	PCB-110/PCB-115	CJ	33.3	30.3	pg/L	1.74	43.1
39635-32-0	PCB-111	U	1.64	1.64	pg/L	1.64	21.5
74472-36-9	PCB-112	U	1.42	1.42	pg/L	1.42	21.5
74472-37-0	PCB-114	U	2.09	2.09	pg/L	2.09	21.5
31508-00-6	PCB-118	BJ	18.6	15.4	pg/L	1.92	21.5
68194-12-7	PCB-120	U	1.38	1.38	pg/L	1.38	21.5
56558-18-0	PCB-121	U	1.66	1.66	pg/L	1.66	21.5
76842-07-4	PCB-122	U	2.17	2.17	pg/L	2.17	21.5
65510-44-3	PCB-123	U	2.07	2.07	pg/L	2.07	21.5
57465-28-8	PCB-126	U	1.85	1.85	pg/L	1.85	21.5

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Rio Grande South

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	1609609_1609C98	**Client:**	NMED001	**Project:**	NMED00113
Lab Sample ID:	9998004	**Date Collected:**	09/22/2016 11:00	**Matrix:**	WATER
Client Sample:	1668A Water	**Date Received:**	10/28/2016 14:15		
Client ID:	1609C98-002G			**Prep Basis:**	As Received
Batch ID:	33209	**Method:**	EPA Method 1668A HS		
Run Date:	11/10/2016 09:25	**Analyst:**	MJC	**Instrument:**	HRP791
Data File:	c09nov16a_2-6			**Dilution:**	1
Prep Batch:	33207	**Prep Method:**	SW846 3520C	**Prep SOP Ref:**	CF-OA-E-001
Prep Date:	08-NOV-16	**Prep Aliquot:**	929.1 mL		

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
39635-33-1	PCB-127	U	2.09	2.09	pg/L	2.09	21.5
PCB-128/166	PCB-128/PCB-166	CJ	5.34	1.4	pg/L	1.23	43.1
PCB-129-163	PCB-129/PCB-138/PCB-163	CJ	53.3	49.1	pg/L	1.40	64.6
52663-66-8	PCB-130	U	2.48	1.51	pg/L	1.51	21.5
61798-70-7	PCB-131	U	1.77	1.77	pg/L	1.77	21.5
38380-05-1	PCB-132	J	13.8	8.32	pg/L	1.61	21.5
35694-04-3	PCB-133	U	1.44	1.44	pg/L	1.44	21.5
52704-70-8	PCB-134	U	2.35	1.83	pg/L	1.83	21.5
PCB-135/151	PCB-135/PCB-151	CJ	15.9	10.4	pg/L	1.08	43.1
38411-22-2	PCB-136	J	5.53	1.91	pg/L	0.796	21.5
35694-06-5	PCB-137	U	1.79	1.57	pg/L	1.57	21.5
PCB-139/140	PCB-139/PCB-140	CU	1.36	1.36	pg/L	1.36	43.1
52712-04-6	PCB-141	J	8.52	3.43	pg/L	1.29	21.5
41411-61-4	PCB-142	U	1.51	1.51	pg/L	1.51	21.5
68194-15-0	PCB-143	U	1.38	1.38	pg/L	1.38	21.5
68194-14-9	PCB-144	U	1.96	.969	pg/L	0.969	21.5
74472-40-5	PCB-145	U	.883	.883	pg/L	0.883	21.5
51908-16-8	PCB-146	J	5.83	1.51	pg/L	1.10	21.5
PCB-147/149	PCB-147/PCB-149	CJ	38.0	33.3	pg/L	1.33	43.1
74472-41-6	PCB-148	U	1.1	1.1	pg/L	1.10	21.5
68194-08-1	PCB-150	U	.861	.861	pg/L	0.861	21.5
68194-09-2	PCB-152	U	.775	.775	pg/L	0.775	21.5
PCB-153/168	PCB-153/PCB-168	CJ	43.4	39.7	pg/L	1.14	43.1
60145-22-4	PCB-154	U	.861	.861	pg/L	0.861	21.5
33979-03-2	PCB-155	U	3.1	3.1	pg/L	3.10	21.5
PCB-156/157	PCB-156/PCB-157	BCU	3.92	1.27	pg/L	1.27	43.1
74472-42-7	PCB-158	J	4.54	1.03	pg/L	0.947	21.5
39635-35-3	PCB-159	U	1.1	1.1	pg/L	1.10	21.5
41411-62-5	PCB-160	U	1.16	1.16	pg/L	1.16	21.5
74472-43-8	PCB-161	U	.99	.99	pg/L	0.990	21.5
39635-34-2	PCB-162	U	1.18	1.18	pg/L	1.18	21.5
74472-45-0	PCB-164	U	3.40	.99	pg/L	0.990	21.5

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Rio Grande South

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	1609609_1609C98	**Client:**	NMED001	**Project:**	NMED00113
Lab Sample ID:	9998004	**Date Collected:**	09/22/2016 11:00	**Matrix:**	WATER
Client Sample:	1668A Water	**Date Received:**	10/28/2016 14:15		
Client ID:	1609C98-002G			**Prep Basis:**	As Received
Batch ID:	33209	**Method:**	EPA Method 1668A HS		
Run Date:	11/10/2016 09:25	**Analyst:**	MJC	**Instrument:**	HRP791
Data File:	c09nov16a_2-6			**Dilution:**	1
Prep Batch:	33207	**Prep Method:**	SW846 3520C	**Prep SOP Ref:**	CF-OA-E-001
Prep Date:	08-NOV-16	**Prep Aliquot:**	929.1 mL		

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
74472-46-1	PCB-165	U	1.25	1.25	pg/L	1.25	21.5
52663-72-6	PCB-167	BU	1.66	.947	pg/L	0.947	21.5
32774-16-6	PCB-169	U	1.01	1.01	pg/L	1.01	21.5
35065-30-6	PCB-170	J	17.0	12.7	pg/L	1.68	21.5
PCB-171/173	PCB-171/PCB-173	CJ	6.67	2.2	pg/L	1.70	43.1
52663-74-8	PCB-172	U	3.70	1.72	pg/L	1.72	21.5
38411-25-5	PCB-174	J	19.1	14.4	pg/L	1.59	21.5
40186-70-7	PCB-175	U	1.05	1.05	pg/L	1.05	21.5
52663-65-7	PCB-176	U	1.87	.818	pg/L	0.818	21.5
52663-70-4	PCB-177	J	11.8	7.42	pg/L	1.70	21.5
52663-67-9	PCB-178	U	3.94	1.12	pg/L	1.12	21.5
52663-64-6	PCB-179	J	7.47	3.56	pg/L	0.818	21.5
PCB-180/193	PCB-180/PCB-193	CU	1.46	1.46	pg/L	1.46	43.1
74472-47-2	PCB-181	U	1.77	1.77	pg/L	1.77	21.5
60145-23-5	PCB-182	U	1.03	1.03	pg/L	1.03	21.5
PCB-183/185	PCB-183/PCB-185	CJ	13.3	9.24	pg/L	1.61	43.1
74472-48-3	PCB-184	U	.84	.84	pg/L	0.840	21.5
74472-49-4	PCB-186	U	.926	.926	pg/L	0.926	21.5
52663-68-0	PCB-187	J	24.7	19.7	pg/L	1.10	21.5
74487-85-7	PCB-188	U	1.1	1.1	pg/L	1.10	21.5
39635-31-9	PCB-189	U	.861	.861	pg/L	0.861	21.5
41411-64-7	PCB-190	U	3.66	1.27	pg/L	1.27	21.5
74472-50-7	PCB-191	U	1.25	1.25	pg/L	1.25	21.5
74472-51-8	PCB-192	U	1.49	1.49	pg/L	1.49	21.5
35694-08-7	PCB-194	BJ	6.46	2.2	pg/L	0.883	21.5
52663-78-2	PCB-195	U	3.32	.947	pg/L	0.947	21.5
42740-50-1	PCB-196	U	3.62	.99	pg/L	0.990	21.5
PCB-197/200	PCB-197/PCB-200	CU	1.46	.818	pg/L	0.818	43.1
PCB-198/199	PCB-198/PCB-199	CJ	8.57	2.64	pg/L	1.05	43.1
40186-71-8	PCB-201	U	1.21	.775	pg/L	0.775	21.5
2136-99-4	PCB-202	U	1.72	.883	pg/L	0.883	21.5
52663-76-0	PCB-203	U	4.63	1.01	pg/L	1.01	21.5

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Rio Grande South

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	1609609_1609C98	**Client:**	NMED001	**Project:**	NMED00113
Lab Sample ID:	9998004	**Date Collected:**	09/22/2016 11:00	**Matrix:**	WATER
Client Sample:	1668A Water	**Date Received:**	10/28/2016 14:15		
Client ID:	1609C98-002G			**Prep Basis:**	As Received
Batch ID:	33209	**Method:**	EPA Method 1668A HS		
Run Date:	11/10/2016 09:25	**Analyst:**	MJC	**Instrument:**	HRP791
Data File:	c09nov16a_2-6			**Dilution:**	1
Prep Batch:	33207	**Prep Method:**	SW846 3520C	**Prep SOP Ref:**	CF-OA-E-001
Prep Date:	08-NOV-16	**Prep Aliquot:**	929.1 mL		

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	FQL
74472-52-9	PCB-204	U	.796	.796	pg/L	0.796	21.5
74472-53-0	PCB-205	U	.71	.71	pg/L	0.710	21.5
40186-72-9	PCB-206	U	2.30	.861	pg/L	0.861	21.5
52663-79-3	PCB-207	U	.646	.646	pg/L	0.646	21.5
52663-77-1	PCB-208	U	1.01	.689	pg/L	0.689	21.5
2051-24-3	PCB-209	BU	2.69	.689	pg/L	0.689	21.5
27323-18-8	Total monoCB		36.5	29.8	pg/L		
25512-42-9	Total diCB		1230	1200	pg/L		
25323-68-6	Total triCB		231	197	pg/L		
26914-33-0	Total tetraCB		176	137	pg/L		
25429-29-2	Total pentaCB		158	113	pg/L		
26601-64-9	Total hexaCB		212	150	pg/L		
28655-71-2	Total heptaCB		113	69.3	pg/L		
55722-26-4	Total octaCB		31.0	4.84	pg/L		
53742-07-7	Total nonaCB	U	3.52	0	pg/L		
DECACB(Tot)	Total decaCB	U	2.69	0	pg/L		
1336-36-3	Total PCB		2190	1910	pg/L		
TEQ 7	TOTAL (TEQ ND=1/2 DL)_2005		0.109		pg/L		
TEQ 8	TOTAL (TEQ ND=0)_2005		0.00126		pg/L		

=0.00219 ug/L

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%		Acceptable Limits
13C-1-MoCB		175	2150	pg/L	8.15	*	(15%-150%)
13C-3-MoCB		190	2150	pg/L	8.84	*	(15%-150%)
13C-4-DiCB		184	2150	pg/L	8.56	*	(25%-150%)
13C-15-DiCB		566	2150	pg/L	26.3		(25%-150%)
13C-19-TrCB		270	2150	pg/L	12.5	*	(25%-150%)
13C-37-TrCB		572	2150	pg/L	26.6		(25%-150%)
13C-54-TeCB		113	2150	pg/L	5.25	*	(25%-150%)
13C-77-TeCB		1440	2150	pg/L	66.8		(25%-150%)
13C-81-TeCB		1200	2150	pg/L	55.6		(25%-150%)
13C-104-PeCB		84.4	2150	pg/L	3.92	*	(25%-150%)
13C-105-PeCB		1410	2150	pg/L	65.5		(25%-150%)
13C-114-PeCB		1180	2150	pg/L	54.6		(25%-150%)
13C-118-PeCB		1230	2150	pg/L	57.2		(25%-150%)
13C-123-PeCB		1190	2150	pg/L	55.5		(25%-150%)
13C-126-PeCB		1650	2150	pg/L	76.7		(25%-150%)
13C-155-HxCB		232	2150	pg/L	10.8	*	(25%-150%)
13C-156-HxCB	C	2920	4310	pg/L	67.8		(25%-150%)
13C-167-HxCB		1470	2150	pg/L	68.2		(25%-150%)
13C-169-HxCB		1560	2150	pg/L	72.7		(25%-150%)
13C-188-HpCB		979	2150	pg/L	45.5		(25%-150%)
13C-189-HpCB		1670	2150	pg/L	77.8		(25%-150%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	1609609_1609C98	**Client:**	NMED001	**Project:**	NMED00113
Lab Sample ID:	9998004	**Date Collected:**	09/22/2016 11:00	**Matrix:**	WATER
Client Sample:	1668A Water	**Date Received:**	10/28/2016 14:15		
Client ID:	1609C98-002G			**Prep Basis:**	As Received
Batch ID:	33209	**Method:**	EPA Method 1668A HS		
Run Date:	11/10/2016 09:25	**Analyst:**	MJC	**Instrument:**	HRP791
Data File:	c09nov16a_2-6			**Dilution:**	1
Prep Batch:	33207	**Prep Method:**	SW846 3520C	**Prep SOP Ref:**	CF-OA-E-001
Prep Date:	08-NOV-16	**Prep Aliquot:**	929.1 mL		

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-202-OcCB		1530	2150	pg/L	71.0	(25%-150%)
13C-205-OcCB		1900	2150	pg/L	88.3	(25%-150%)
13C-206-NoCB		1850	2150	pg/L	86.0	(25%-150%)
13C-208-NoCB		1720	2150	pg/L	80.1	(25%-150%)
13C-209-DeCB		1910	2150	pg/L	88.7	(25%-150%)
13C-28-TrCB		1290	2150	pg/L	59.8	(30%-135%)
13C-111-PeCB		1930	2150	pg/L	89.7	(30%-135%)
13C-178-HpCB		1930	2150	pg/L	89.8	(30%-135%)

Comments:

B The target analyte was detected in the associated blank.
C Congener has coeluters. When Cxxx, refer to congener number xxx for data
J Value is estimated
K Estimated Maximum Possible Concentration
U Analyte was analyzed for, but not detected above the specified detection limit.

Quality Control Summary

PCB Congeners

Surrogate Recovery Report

SDG Number: 1609609_1609C98

Matrix Type: LIQUID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12017260	LCS for batch 33207	13C-1-MoCB		55.0	(15%-140%)
		13C-3-MoCB		51.8	(15%-140%)
		13C-4-DiCB		52.1	(30%-140%)
		13C-15-DiCB		89.3	(30%-140%)
		13C-19-TrCB		81.3	(30%-140%)
		13C-37-TrCB		72.9	(30%-140%)
		13C-54-TeCB		54.8	(30%-140%)
		13C-77-TeCB		94.6	(30%-140%)
		13C-81-TeCB		95.3	(30%-140%)
		13C-104-PeCB		58.4	(30%-140%)
		13C-105-PeCB		82.9	(30%-140%)
		13C-114-PeCB		80.7	(30%-140%)
		13C-118-PeCB		82.8	(30%-140%)
		13C-123-PeCB		84.1	(30%-140%)
		13C-126-PeCB		85.5	(30%-140%)
		13C-155-HxCB		66.4	(30%-140%)
		13C-156-HxCB	C	74.3	(30%-140%)
		13C-167-HxCB		76.9	(30%-140%)
		13C-169-HxCB		77.2	(30%-140%)
		13C-188-HpCB		77.6	(30%-140%)
		13C-189-HpCB		78.5	(30%-140%)
		13C-202-OcCB		84.9	(30%-140%)
		13C-205-OcCB		97.1	(30%-140%)
		13C-206-NoCB		101	(30%-140%)
		13C-208-NoCB		90.5	(30%-140%)
		13C-209-DeCB		108	(30%-140%)
		13C-28-TrCB		63.8	(40%-125%)
		13C-111-PeCB		81.4	(40%-125%)
		13C-178-HpCB		85.5	(40%-125%)
12017261	LCSD for batch 33207	13C-1-MoCB		52.3	(15%-140%)
		13C-3-MoCB		48.6	(15%-140%)
		13C-4-DiCB		49.2	(30%-140%)
		13C-15-DiCB		153 *	(30%-140%)
		13C-19-TrCB		97.5	(30%-140%)
		13C-37-TrCB		110	(30%-140%)
		13C-54-TeCB		55.8	(30%-140%)
		13C-77-TeCB		146 *	(30%-140%)
		13C-81-TeCB		146 *	(30%-140%)
		13C-104-PeCB		75.8	(30%-140%)
		13C-105-PeCB		126	(30%-140%)
		13C-114-PeCB		122	(30%-140%)
		13C-118-PeCB		124	(30%-140%)
		13C-123-PeCB		126	(30%-140%)
		13C-126-PeCB		134	(30%-140%)
		13C-155-HxCB		87.5	(30%-140%)
		13C-156-HxCB	C	110	(30%-140%)
		13C-167-HxCB		114	(30%-140%)
		13C-169-HxCB		117	(30%-140%)
		13C-188-HpCB		108	(30%-140%)
		13C-189-HpCB		116	(30%-140%)
		13C-202-OcCB		122	(30%-140%)
		13C-205-OcCB		140	(30%-140%)

PCB Congeners

Surrogate Recovery Report

SDG Number: 1609609_1609C98

Matrix Type: LIQUID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12017261	LCSD for batch 33207	13C-206-NoCB		146 *	(30%-140%)
		13C-208-NoCB		131	(30%-140%)
		13C-209-DeCB		158 *	(30%-140%)
		13C-28-TrCB		72.9	(40%-125%)
		13C-111-PeCB		101	(40%-125%)
		13C-178-HpCB		104	(40%-125%)
12017259	MB for batch 33207	13C-1-MoCB		33.1	(15%-150%)
		13C-3-MoCB		33.0	(15%-150%)
		13C-4-DiCB		31.7	(25%-150%)
		13C-15-DiCB		83.7	(25%-150%)
		13C-19-TrCB		59.1	(25%-150%)
		13C-37-TrCB		64.3	(25%-150%)
		13C-54-TeCB		36.1	(25%-150%)
		13C-77-TeCB		86.3	(25%-150%)
		13C-81-TeCB		85.3	(25%-150%)
		13C-104-PeCB		45.4	(25%-150%)
		13C-105-PeCB		75.7	(25%-150%)
		13C-114-PeCB		72.4	(25%-150%)
		13C-118-PeCB		74.1	(25%-150%)
		13C-123-PeCB		74.2	(25%-150%)
		13C-126-PeCB		81.2	(25%-150%)
		13C-155-HxCB		53.4	(25%-150%)
		13C-156-HxCB	C	67.7	(25%-150%)
		13C-167-HxCB		69.6	(25%-150%)
		13C-169-HxCB		72.5	(25%-150%)
		13C-188-HpCB		66.4	(25%-150%)
		13C-189-HpCB		71.0	(25%-150%)
		13C-202-OcCB		75.9	(25%-150%)
		13C-205-OcCB		86.1	(25%-150%)
		13C-206-NoCB		89.2	(25%-150%)
		13C-208-NoCB		80.8	(25%-150%)
		13C-209-DeCB		96.6	(25%-150%)
		13C-28-TrCB		60.9	(30%-135%)
		13C-111-PeCB		81.0	(30%-135%)
		13C-178-HpCB		84.7	(30%-135%)
9998001	1609609-001G	13C-1-MoCB		11.3 *	(15%-150%)
		13C-3-MoCB		12.3 *	(15%-150%)
		13C-4-DiCB		11.4 *	(25%-150%)
		13C-15-DiCB		31.9	(25%-150%)
		13C-19-TrCB		15.4 *	(25%-150%)
		13C-37-TrCB		41.7	(25%-150%)
		13C-54-TeCB		7.40 *	(25%-150%)
		13C-77-TeCB		81.6	(25%-150%)
		13C-81-TeCB		75.6	(25%-150%)
		13C-104-PeCB		9.85 *	(25%-150%)
		13C-105-PeCB		71.9	(25%-150%)
		13C-114-PeCB		65.7	(25%-150%)
		13C-118-PeCB		68.4	(25%-150%)
		13C-123-PeCB		67.9	(25%-150%)
		13C-126-PeCB		78.0	(25%-150%)
		13C-155-HxCB		28.6	(25%-150%)

PCB Congeners

Surrogate Recovery Report

SDG Number: 1609609_1609C98

Matrix Type: LIQUID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
9998001	1609609-001G	13C-156-HxCB	C	70.4	(25%-150%)
		13C-167-HxCB		72.0	(25%-150%)
		13C-169-HxCB		73.8	(25%-150%)
		13C-188-HpCB		63.5	(25%-150%)
		13C-189-HpCB		79.1	(25%-150%)
		13C-202-OcCB		78.4	(25%-150%)
		13C-205-OcCB		89.7	(25%-150%)
		13C-206-NoCB		88.1	(25%-150%)
		13C-208-NoCB		83.0	(25%-150%)
		13C-209-DeCB		89.8	(25%-150%)
		13C-28-TrCB		61.7	(30%-135%)
		13C-111-PeCB		81.8	(30%-135%)
		13C-178-HpCB		84.0	(30%-135%)
9998002	1609609-002G	13C-1-MoCB		11.5 *	(15%-150%)
		13C-3-MoCB		12.7 *	(15%-150%)
		13C-4-DiCB		11.9 *	(25%-150%)
		13C-15-DiCB		36.0	(25%-150%)
		13C-19-TrCB		17.6 *	(25%-150%)
		13C-37-TrCB		46.1	(25%-150%)
		13C-54-TeCB		8.41 *	(25%-150%)
		13C-77-TeCB		89.8	(25%-150%)
		13C-81-TeCB		83.6	(25%-150%)
		13C-104-PeCB		12.1 *	(25%-150%)
		13C-105-PeCB		79.2	(25%-150%)
		13C-114-PeCB		72.5	(25%-150%)
		13C-118-PeCB		75.2	(25%-150%)
		13C-123-PeCB		75.2	(25%-150%)
		13C-126-PeCB		84.4	(25%-150%)
		13C-155-HxCB		33.0	(25%-150%)
		13C-156-HxCB	C	73.9	(25%-150%)
		13C-167-HxCB		75.9	(25%-150%)
		13C-169-HxCB		77.4	(25%-150%)
		13C-188-HpCB		68.4	(25%-150%)
		13C-189-HpCB		82.9	(25%-150%)
		13C-202-OcCB		81.7	(25%-150%)
		13C-205-OcCB		93.4	(25%-150%)
		13C-206-NoCB		90.4	(25%-150%)
		13C-208-NoCB		86.0	(25%-150%)
		13C-209-DeCB		92.1	(25%-150%)
		13C-28-TrCB		63.8	(30%-135%)
		13C-111-PeCB		86.0	(30%-135%)
		13C-178-HpCB		87.1	(30%-135%)
9998003	1609C98-001G	13C-1-MoCB		9.80 *	(15%-150%)
		13C-3-MoCB		11.2 *	(15%-150%)
		13C-4-DiCB		10.2 *	(25%-150%)
		13C-15-DiCB		30.3	(25%-150%)
		13C-19-TrCB		14.3 *	(25%-150%)
		13C-37-TrCB		35.8	(25%-150%)
		13C-54-TeCB		6.41 *	(25%-150%)
		13C-77-TeCB		79.4	(25%-150%)
		13C-81-TeCB		70.6	(25%-150%)

PCB Congeners

Surrogate Recovery Report

SDG Number: 1609609_1609C98

Matrix Type: LIQUID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
9998003	1609C98-001G	13C-104-PeCB		5.91 *	(25%-150%)
		13C-105-PeCB		71.8	(25%-150%)
		13C-114-PeCB		62.6	(25%-150%)
		13C-118-PeCB		65.6	(25%-150%)
		13C-123-PeCB		64.4	(25%-150%)
		13C-126-PeCB		80.6	(25%-150%)
		13C-155-HxCB		19.3 *	(25%-150%)
		13C-156-HxCB	C	71.5	(25%-150%)
		13C-167-HxCB		72.0	(25%-150%)
		13C-169-HxCB		76.1	(25%-150%)
		13C-188-HpCB		57.1	(25%-150%)
		13C-189-HpCB		81.8	(25%-150%)
		13C-202-OcCB		76.7	(25%-150%)
		13C-205-OcCB		91.6	(25%-150%)
		13C-206-NoCB		90.9	(25%-150%)
		13C-208-NoCB		82.8	(25%-150%)
		13C-209-DeCB		93.1	(25%-150%)
		13C-28-TrCB		61.0	(30%-135%)
		13C-111-PeCB		81.9	(30%-135%)
		13C-178-HpCB		83.1	(30%-135%)
9998004	1609C98-002G	13C-1-MoCB		8.15 *	(15%-150%)
		13C-3-MoCB		8.84 *	(15%-150%)
		13C-4-DiCB		8.56 *	(25%-150%)
		13C-15-DiCB		26.3	(25%-150%)
		13C-19-TrCB		12.5 *	(25%-150%)
		13C-37-TrCB		26.6	(25%-150%)
		13C-54-TeCB		5.25 *	(25%-150%)
		13C-77-TeCB		66.8	(25%-150%)
		13C-81-TeCB		55.6	(25%-150%)
		13C-104-PeCB		3.92 *	(25%-150%)
		13C-105-PeCB		65.5	(25%-150%)
		13C-114-PeCB		54.6	(25%-150%)
		13C-118-PeCB		57.2	(25%-150%)
		13C-123-PeCB		55.5	(25%-150%)
		13C-126-PeCB		76.7	(25%-150%)
		13C-155-HxCB		10.8 *	(25%-150%)
		13C-156-HxCB	C	67.8	(25%-150%)
		13C-167-HxCB		68.2	(25%-150%)
		13C-169-HxCB		72.7	(25%-150%)
		13C-188-HpCB		45.5	(25%-150%)
		13C-189-HpCB		77.8	(25%-150%)
		13C-202-OcCB		71.0	(25%-150%)
		13C-205-OcCB		88.3	(25%-150%)
		13C-206-NoCB		86.0	(25%-150%)
		13C-208-NoCB		80.1	(25%-150%)
		13C-209-DeCB		88.7	(25%-150%)
		13C-28-TrCB		59.8	(30%-135%)
		13C-111-PeCB		89.7	(30%-135%)
		13C-178-HpCB		89.8	(30%-135%)

* Recovery outside Acceptance Limits

PCB Congeners

Surrogate Recovery Report

SDG Number: 1609609_1609C98

Matrix Type: LIQUID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits

* Recovery outside Acceptance Limits
# Column to be used to flag recovery values
D Sample Diluted

PCB Congeners

Quality Control Summary
Spike Recovery Report

SDG Number: 1609609_1609C98
Sample Type: Laboratory Control Sample
Client ID: LCS for batch 33207
Matrix: WATER
Lab Sample ID: 12017260
Instrument: HRP791
Analysis Date: 11/09/2016 16:41
Dilution: 1
Analyst: MJC
Prep Batch ID: 33207
Batch ID: 33209

CAS No.		Parmname	Amount Added pg/L		Spike Conc. pg/L	Recovery %	Acceptance Limits
2051-60-7	LCS	PCB-1	500		518	104	50-150
2051-62-9	LCS	PCB-3	500		604	121	50-150
13029-08-8	LCS	PCB-4	500		499	99.7	50-150
2050-68-2	LCS	PCB-15	500		523	105	50-150
38444-73-4	LCS	PCB-19	500		494	98.8	50-150
38444-90-5	LCS	PCB-37	500		484	96.8	50-150
15968-05-5	LCS	PCB-54	1000		1000	100	50-150
32598-13-3	LCS	PCB-77	1000		942	94.2	50-150
70362-50-4	LCS	PCB-81	1000		1120	112	50-150
56558-16-8	LCS	PCB-104	1000		1060	106	50-150
32598-14-4	LCS	PCB-105	1000		1180	118	50-150
74472-37-0	LCS	PCB-114	1000		1020	102	50-150
31508-00-6	LCS	PCB-118	1000		977	97.7	50-150
65510-44-3	LCS	PCB-123	1000		916	91.6	50-150
57465-28-8	LCS	PCB-126	1000		1010	101	50-150
33979-03-2	LCS	PCB-155	1000		980	98	50-150
38380-08-4	LCS	PCB-156/PCB-157	2000	C	2230	111	50-150
52663-72-6	LCS	PCB-167	1000		1150	115	50-150
32774-16-6	LCS	PCB-169	1000		1010	101	50-150
74487-85-7	LCS	PCB-188	1000		972	97.2	50-150
39635-31-9	LCS	PCB-189	1000		971	97.1	50-150
2136-99-4	LCS	PCB-202	1500		1430	95	50-150
74472-53-0	LCS	PCB-205	1500		1290	85.7	50-150
40186-72-9	LCS	PCB-206	1500		1410	93.7	50-150
52663-77-1	LCS	PCB-208	1500		1490	99.4	50-150
2051-24-3	LCS	PCB-209	1500		1380	91.8	50-150

PCB Congeners

Quality Control Summary
Spike Recovery Report

SDG Number: 1609609_1609C98 **Sample Type:** Laboratory Control Sample Duplicate
Client ID: LCSD for batch 33207 **Matrix:** WATER
Lab Sample ID: 12017261
Instrument: HRP791 **Analysis Date:** 11/09/2016 17:47 **Dilution:** 1
Analyst: MJC **Prep Batch ID:** 33207
Batch ID: 33209

CAS No.		Parmname	Amount Added pg/L		Spike Conc. pg/L	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
2051-60-7	LCSD	PCB-1	500		454	90.9	50-150	13.2	0-20
2051-62-9	LCSD	PCB-3	500		544	109	50-150	10.5	0-20
13029-08-8	LCSD	PCB-4	500		424	84.7	50-150	16.2	0-20
2050-68-2	LCSD	PCB-15	500		473	94.6	50-150	9.99	0-20
38444-73-4	LCSD	PCB-19	500		447	89.5	50-150	9.89	0-20
38444-90-5	LCSD	PCB-37	500		420	84.1	50-150	14.1	0-20
15968-05-5	LCSD	PCB-54	1000		876	87.6	50-150	13.3	0-20
32598-13-3	LCSD	PCB-77	1000		826	82.6	50-150	13.2	0-20
70362-50-4	LCSD	PCB-81	1000		968	96.8	50-150	14.7	0-20
56558-16-8	LCSD	PCB-104	1000		920	92	50-150	13.9	0-20
32598-14-4	LCSD	PCB-105	1000		1030	103	50-150	12.9	0-20
74472-37-0	LCSD	PCB-114	1000		888	88.8	50-150	13.9	0-20
31508-00-6	LCSD	PCB-118	1000		842	84.2	50-150	14.9	0-20
65510-44-3	LCSD	PCB-123	1000		793	79.3	50-150	14.4	0-20
57465-28-8	LCSD	PCB-126	1000		906	90.6	50-150	10.9	0-20
33979-03-2	LCSD	PCB-155	1000		873	87.3	50-150	11.6	0-20
38380-08-4	LCSD	PCB-156/PCB-157	2000	C	1920	95.9	50-150	14.9	0-20
52663-72-6	LCSD	PCB-167	1000		996	99.6	50-150	14.4	0-20
32774-16-6	LCSD	PCB-169	1000		864	86.4	50-150	15.6	0-20
74487-85-7	LCSD	PCB-188	1000		834	83.4	50-150	15.3	0-20
39635-31-9	LCSD	PCB-189	1000		831	83.1	50-150	15.5	0-20
2136-99-4	LCSD	PCB-202	1500		1220	81.3	50-150	15.5	0-20
74472-53-0	LCSD	PCB-205	1500		1110	74.2	50-150	14.4	0-20
40186-72-9	LCSD	PCB-206	1500		1200	79.8	50-150	16.1	0-20
52663-77-1	LCSD	PCB-208	1500		1290	85.7	50-150	14.8	0-20
2051-24-3	LCSD	PCB-209	1500		1190	79.2	50-150	14.8	0-20

Method Blank Summary

SDG Number:	**1609609_1609C98**	**Client:**	**NMED001**	**Matrix:**	**WATER**
Client ID:	**MB for batch 33207**	**Instrument ID:**	**HRP791**	**Data File:**	**c09nov16a-4**
Lab Sample ID:	**12017259**	**Prep Date:**	**08-NOV-16**	**Analyzed:**	**11/09/16 18:53**
Column:					

This method blank applies to the following samples and quality control samples:

	Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed
01	LCS for batch 33207	12017260	c09nov16a-2	11/09/16	1641
02	LCSD for batch 33207	12017261	c09nov16a-3	11/09/16	1747
03	1609609-001G	9998001	c09nov16a_2-3	11/10/16	0606
04	1609609-002G	9998002	c09nov16a_2-4	11/10/16	0713
05	1609C98-001G	9998003	c09nov16a_2-5	11/10/16	0819
06	1609C98-002G	9998004	c09nov16a_2-6	11/10/16	0925

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	1609609_1609C98	**Client:**	NMED001	**Project:**	NMED00113
Lab Sample ID:	12017259			**Matrix:**	WATER
Client Sample:	QC for batch 33207				
Client ID:	MB for batch 33207			**Prep Basis:**	As Received
Batch ID:	33209	**Method:**	EPA Method 1668A HS		
Run Date:	11/09/2016 18:53	**Analyst:**	MJC	**Instrument:**	HRP791
Data File:	c09nov16a-4			**Dilution:**	1
Prep Batch:	33207	**Prep Method:**	SW846 3520C	**Prep SOP Ref:**	CF-OA-E-001
Prep Date:	08-NOV-16	**Prep Aliquot:**	1000 mL		

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
2051-60-7	PCB-1	KU	5.92	4.76	pg/L	4.76	40.0
2051-61-8	PCB-2	U	4.74	4.74	pg/L	4.74	40.0
2051-62-9	PCB-3	U	4.62	4.62	pg/L	4.62	40.0
13029-08-8	PCB-4	U	5.28	5.28	pg/L	5.28	40.0
16605-91-7	PCB-5	U	4.24	4.24	pg/L	4.24	40.0
25569-80-6	PCB-6	U	3.04	3.04	pg/L	3.04	40.0
33284-50-3	PCB-7	U	3.44	3.44	pg/L	3.44	40.0
34883-43-7	PCB-8	J	10.3	6.58	pg/L	2.76	40.0
34883-39-1	PCB-9	U	3.44	3.44	pg/L	3.44	20.0
33146-45-1	PCB-10	U	1.86	1.86	pg/L	1.86	20.0
2050-67-1	PCB-11		317	312	pg/L	3.70	40.0
PCB-12/13	PCB-12/PCB-13	CU	3.88	3.88	pg/L	3.88	40.0
34883-41-5	PCB-14	U	3.44	3.44	pg/L	3.44	40.0
2050-68-2	PCB-15	U	7.74	3.36	pg/L	3.36	40.0
38444-78-9	PCB-16	U	1.98	1.98	pg/L	1.98	20.0
37680-66-3	PCB-17	U	4.12	1.74	pg/L	1.74	20.0
PCB-18/30	PCB-18/PCB-30	CJ	6.62	4.31	pg/L	1.46	40.0
38444-73-4	PCB-19	U	2.36	2.36	pg/L	2.36	20.0
PCB-20/28	PCB-20/PCB-28	CJ	17.6	15.2	pg/L	1.30	40.0
PCB-21/33	PCB-21/PCB-33	CJ	10.3	8.17	pg/L	1.34	40.0
38444-85-8	PCB-22	U	1.44	1.44	pg/L	1.44	20.0
55720-44-0	PCB-23	U	1.36	1.36	pg/L	1.36	20.0
55702-45-9	PCB-24	U	2.92	1.4	pg/L	1.40	20.0
55712-37-3	PCB-25	U	1.26	1.26	pg/L	1.26	20.0
PCB-26/29	PCB-26/PCB-29	CU	1.26	1.26	pg/L	1.26	40.0
38444-76-7	PCB-27	U	1.26	1.26	pg/L	1.26	20.0
16606-02-3	PCB-31	U	1.18	1.18	pg/L	1.18	20.0
38444-77-8	PCB-32	U	1.14	1.14	pg/L	1.14	20.0
37680-68-5	PCB-34	U	1.3	1.3	pg/L	1.30	20.0
37680-69-6	PCB-35	U	3.66	2.76	pg/L	2.76	40.0
38444-87-0	PCB-36	U	3.20	2.44	pg/L	2.44	20.0
38444-90-5	PCB-37	U	4.98	2.64	pg/L	2.64	20.0

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

K Estimated Maximum Possible Concentration

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	1609609_1609C98	**Client:**	NMED001	**Project:**	NMED00113
Lab Sample ID:	12017259			**Matrix:**	WATER
Client Sample:	QC for batch 33207				
Client ID:	MB for batch 33207			**Prep Basis:**	As Received
Batch ID:	33209	**Method:**	EPA Method 1668A HS		
Run Date:	11/09/2016 18:53	**Analyst:**	MJC	**Instrument:**	HRP791
Data File:	c09nov16a-4			**Dilution:**	1
Prep Batch:	33207	**Prep Method:**	SW846 3520C	**Prep SOP Ref:**	CF-OA-E-001
Prep Date:	08-NOV-16	**Prep Aliquot:**	1000 mL		

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
53555-66-1	PCB-38	U	2.52	2.52	pg/L	2.52	20.0
38444-88-1	PCB-39	U	2.56	2.56	pg/L	2.56	20.0
PCB-40/71	PCB-40/PCB-71	CU	2.32	2.32	pg/L	2.32	40.0
52663-59-9	PCB-41	U	3.1	3.1	pg/L	3.10	40.0
36559-22-5	PCB-42	U	2.9	2.9	pg/L	2.90	40.0
70362-46-8	PCB-43	U	2.98	2.98	pg/L	2.98	40.0
PCB-44/47/65	PCB-44/PCB-65/PCB-47	CU	2.4	2.4	pg/L	2.40	60.0
PCB-45/51	PCB-45/PCB-51	CU	2.26	1.1	pg/L	1.10	40.0
41464-47-5	PCB-46	U	1.16	1.16	pg/L	1.16	20.0
70362-47-9	PCB-48	U	2.72	2.72	pg/L	2.72	20.0
PCB-49/69	PCB-49/PCB-69	CU	4.96	2.24	pg/L	2.24	40.0
PCB-50/53	PCB-50/PCB-53	CU	1.08	1.04	pg/L	1.04	40.0
35693-99-3	PCB-52	U	2.38	2.38	pg/L	2.38	20.0
15968-05-5	PCB-54	U	1.4	1.4	pg/L	1.40	20.0
74338-24-2	PCB-55	U	1.52	1.52	pg/L	1.52	20.0
41464-43-1	PCB-56	U	4.32	1.58	pg/L	1.58	20.0
70424-67-8	PCB-57	U	1.34	1.34	pg/L	1.34	20.0
41464-49-7	PCB-58	U	1.5	1.5	pg/L	1.50	20.0
PCB-59/62/75	PCB-59/PCB-62/PCB-75	CU	1.9	1.9	pg/L	1.90	60.0
33025-41-1	PCB-60	U	1.5	1.5	pg/L	1.50	20.0
PCB-61-76	PCB-61/PCB-70/PCB-74/PCB-76	CJ	16.0	13.2	pg/L	1.42	80.0
74472-34-7	PCB-63	U	1.28	1.28	pg/L	1.28	20.0
52663-58-8	PCB-64	U	2.04	2.04	pg/L	2.04	20.0
32598-10-0	PCB-66	J	7.58	4.8	pg/L	1.34	20.0
73575-53-8	PCB-67	U	1.2	1.2	pg/L	1.20	20.0
73575-52-7	PCB-68	U	1.32	1.32	pg/L	1.32	20.0
41464-42-0	PCB-72	U	1.26	1.26	pg/L	1.26	20.0
74338-23-1	PCB-73	U	2.1	2.1	pg/L	2.10	20.0
32598-13-3	PCB-77	U	1.68	1.32	pg/L	1.32	20.0
70362-49-1	PCB-78	U	1.44	1.44	pg/L	1.44	20.0
41464-48-6	PCB-79	U	1.22	1.22	pg/L	1.22	20.0
33284-52-5	PCB-80	U	1.2	1.2	pg/L	1.20	20.0

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

K Estimated Maximum Possible Concentration

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	1609609_1609C98	**Client:**	NMED001	**Project:**	NMED00113
Lab Sample ID:	12017259			**Matrix:**	WATER
Client Sample:	QC for batch 33207				
Client ID:	MB for batch 33207			**Prep Basis:**	As Received
Batch ID:	33209	**Method:**	EPA Method 1668A HS		
Run Date:	11/09/2016 18:53	**Analyst:**	MJC	**Instrument:**	HRP791
Data File:	c09nov16a-4			**Dilution:**	1
Prep Batch:	33207	**Prep Method:**	SW846 3520C	**Prep SOP Ref:**	CF-OA-E-001
Prep Date:	08-NOV-16	**Prep Aliquot:**	1000 mL		

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
70362-50-4	PCB-81	U	1.28	1.28	pg/L	1.28	20.0
52663-62-4	PCB-82	U	1.62	1.62	pg/L	1.62	20.0
60145-20-2	PCB-83	U	1.74	1.74	pg/L	1.74	20.0
52663-60-2	PCB-84	U	1.6	1.6	pg/L	1.60	20.0
PCB-85-117	PCB-85/PCB-116/PCB-117	CU	1.22	1.22	pg/L	1.22	60.0
PCB-86-125	PCB-86/PCB-87/PCB-97/PCB-109/PCB-119/PCB-	CJ	4.42	1.3	pg/L	1.30	120
PCB-88/91	PCB-88/PCB-91	CU	1.52	1.52	pg/L	1.52	40.0
73575-57-2	PCB-89	U	1.52	1.52	pg/L	1.52	20.0
PCB-90-113	PCB-90/PCB-101/PCB-113	CJ	5.62	2.56	pg/L	1.28	60.0
52663-61-3	PCB-92	U	1.46	1.46	pg/L	1.46	20.0
PCB-93/100	PCB-93/PCB-100	CU	1.5	1.5	pg/L	1.50	40.0
73575-55-0	PCB-94	U	1.66	1.66	pg/L	1.66	20.0
38379-99-6	PCB-95	U	3.20	1.4	pg/L	1.40	20.0
73575-54-9	PCB-96	U	.68	.68	pg/L	0.680	20.0
PCB-98/102	PCB-98/PCB-102	CU	1.6	1.6	pg/L	1.60	40.0
38380-01-7	PCB-99	U	2.48	1.42	pg/L	1.42	20.0
60145-21-3	PCB-103	U	1.32	1.32	pg/L	1.32	20.0
56558-16-8	PCB-104	U	.94	.94	pg/L	0.940	20.0
32598-14-4	PCB-105	U	1.84	1.84	pg/L	1.84	20.0
70424-69-0	PCB-106	U	1.66	1.66	pg/L	1.66	20.0
70424-68-9	PCB-107	U	1.56	1.56	pg/L	1.56	20.0
PCB-108/124	PCB-108/PCB-124	CU	1.78	1.78	pg/L	1.78	40.0
PCB-110/115	PCB-110/PCB-115	CJ	4.54	1.57	pg/L	1.22	40.0
39635-32-0	PCB-111	U	1.16	1.16	pg/L	1.16	20.0
74472-36-9	PCB-112	U	1.04	1.04	pg/L	1.04	20.0
74472-37-0	PCB-114	U	1.8	1.8	pg/L	1.80	20.0
31508-00-6	PCB-118	U	4.12	1.7	pg/L	1.70	20.0
68194-12-7	PCB-120	U	1.04	1.04	pg/L	1.04	20.0
56558-18-0	PCB-121	U	1.18	1.18	pg/L	1.18	20.0
76842-07-4	PCB-122	U	1.78	1.78	pg/L	1.78	20.0
65510-44-3	PCB-123	U	1.76	1.76	pg/L	1.76	20.0
57465-28-8	PCB-126	U	1.98	1.98	pg/L	1.98	20.0

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data
J Value is estimated
K Estimated Maximum Possible Concentration
U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	1609609_1609C98	**Client:**	NMED001	**Project:**	NMED00113
Lab Sample ID:	12017259			**Matrix:**	WATER
Client Sample:	QC for batch 33207				
Client ID:	MB for batch 33207			**Prep Basis:**	As Received
Batch ID:	33209	**Method:**	EPA Method 1668A HS		
Run Date:	11/09/2016 18:53	**Analyst:**	MJC	**Instrument:**	HRP791
Data File:	c09nov16a-4			**Dilution:**	1
Prep Batch:	33207	**Prep Method:**	SW846 3520C	**Prep SOP Ref:**	CF-OA-E-001
Prep Date:	08-NOV-16	**Prep Aliquot:**	1000 mL		

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
39635-33-1	PCB-127	U	1.68	1.68	pg/L	1.68	20.0
PCB-128/166	PCB-128/PCB-166	CU	1.3	1.3	pg/L	1.30	40.0
PCB-129-163	PCB-129/PCB-138/PCB-163	CJ	6.20	1.98	pg/L	1.46	60.0
52663-66-8	PCB-130	U	1.58	1.58	pg/L	1.58	20.0
61798-70-7	PCB-131	U	1.9	1.9	pg/L	1.90	20.0
38380-05-1	PCB-132	U	2.36	1.72	pg/L	1.72	20.0
35694-04-3	PCB-133	U	1.52	1.52	pg/L	1.52	20.0
52704-70-8	PCB-134	U	2.14	2.14	pg/L	2.14	20.0
PCB-135/151	PCB-135/PCB-151	CU	2.82	1.04	pg/L	1.04	40.0
38411-22-2	PCB-136	U	0.860	.76	pg/L	0.760	20.0
35694-06-5	PCB-137	U	1.64	1.64	pg/L	1.64	20.0
PCB-139/140	PCB-139/PCB-140	CU	1.46	1.46	pg/L	1.46	40.0
52712-04-6	PCB-141	U	1.4	1.4	pg/L	1.40	20.0
41411-61-4	PCB-142	U	1.62	1.62	pg/L	1.62	20.0
68194-15-0	PCB-143	U	1.44	1.44	pg/L	1.44	20.0
68194-14-9	PCB-144	U	.96	.96	pg/L	0.960	20.0
74472-40-5	PCB-145	U	.84	.84	pg/L	0.840	20.0
51908-16-8	PCB-146	U	1.2	1.2	pg/L	1.20	20.0
PCB-147/149	PCB-147/PCB-149	CU	4.98	1.44	pg/L	1.44	40.0
74472-41-6	PCB-148	U	.96	.96	pg/L	0.960	20.0
68194-08-1	PCB-150	U	.82	.82	pg/L	0.820	20.0
68194-09-2	PCB-152	U	.72	.72	pg/L	0.720	20.0
PCB-153/168	PCB-153/PCB-168	CU	4.28	1.22	pg/L	1.22	40.0
60145-22-4	PCB-154	U	.86	.86	pg/L	0.860	20.0
33979-03-2	PCB-155	U	.76	.76	pg/L	0.760	20.0
PCB-156/157	PCB-156/PCB-157	CU	2.14	1.48	pg/L	1.48	40.0
74472-42-7	PCB-158	U	1	1	pg/L	1.00	20.0
39635-35-3	PCB-159	U	1.1	1.1	pg/L	1.10	20.0
41411-62-5	PCB-160	U	1.26	1.26	pg/L	1.26	20.0
74472-43-8	PCB-161	U	1.06	1.06	pg/L	1.06	20.0
39635-34-2	PCB-162	U	1.16	1.16	pg/L	1.16	20.0
74472-45-0	PCB-164	U	1.08	1.08	pg/L	1.08	20.0

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

K Estimated Maximum Possible Concentration

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	1609609_1609C98	**Client:**	NMED001	**Project:**	NMED00113
Lab Sample ID:	12017259			**Matrix:**	WATER
Client Sample:	QC for batch 33207				
Client ID:	MB for batch 33207			**Prep Basis:**	As Received
Batch ID:	33209	**Method:**	EPA Method 1668A HS		
Run Date:	11/09/2016 18:53	**Analyst:**	MJC	**Instrument:**	HRP791
Data File:	c09nov16a-4			**Dilution:**	1
Prep Batch:	33207	**Prep Method:**	SW846 3520C	**Prep SOP Ref:**	CF-OA-E-001
Prep Date:	08-NOV-16	**Prep Aliquot:**	1000 mL		

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
74472-46-1	PCB-165	U	1.32	1.32	pg/L	1.32	20.0
52663-72-6	PCB-167	U	1.14	1.1	pg/L	1.10	20.0
32774-16-6	PCB-169	U	1.2	1.2	pg/L	1.20	20.0
35065-30-6	PCB-170	U	2.24	1.08	pg/L	1.08	20.0
PCB-171/173	PCB-171/PCB-173	CU	1.20	1.1	pg/L	1.10	40.0
52663-74-8	PCB-172	U	1.1	1.1	pg/L	1.10	20.0
38411-25-5	PCB-174	U	3.08	1.04	pg/L	1.04	20.0
40186-70-7	PCB-175	U	.8	.8	pg/L	0.800	20.0
52663-65-7	PCB-176	U	.64	.64	pg/L	0.640	20.0
52663-70-4	PCB-177	U	1.22	1.12	pg/L	1.12	20.0
52663-67-9	PCB-178	U	.84	.84	pg/L	0.840	20.0
52663-64-6	PCB-179	U	0.660	.64	pg/L	0.640	20.0
PCB-180/193	PCB-180/PCB-193	CU	.92	.92	pg/L	0.920	40.0
74472-47-2	PCB-181	U	1.14	1.14	pg/L	1.14	20.0
60145-23-5	PCB-182	U	.78	.78	pg/L	0.780	20.0
PCB-183/185	PCB-183/PCB-185	CU	1.78	1.06	pg/L	1.06	40.0
74472-48-3	PCB-184	U	.64	.64	pg/L	0.640	20.0
74472-49-4	PCB-186	U	.72	.72	pg/L	0.720	20.0
52663-68-0	PCB-187	U	3.04	.84	pg/L	0.840	20.0
74487-85-7	PCB-188	U	.68	.68	pg/L	0.680	20.0
39635-31-9	PCB-189	U	1.30	1.08	pg/L	1.08	20.0
41411-64-7	PCB-190	U	.82	.82	pg/L	0.829	20.0
74472-50-7	PCB-191	U	.8	.8	pg/L	0.800	20.0
74472-51-8	PCB-192	U	.96	.96	pg/L	0.960	20.0
35694-08-7	PCB-194	U	1.52	.72	pg/L	0.720	20.0
52663-78-2	PCB-195	U	.78	.78	pg/L	0.780	20.0
42740-50-1	PCB-196	U	.8	.8	pg/L	0.800	20.0
PCB-197/200	PCB-197/PCB-200	CU	.66	.66	pg/L	0.660	40.0
PCB-198/199	PCB-198/PCB-199	CKU	1.18	.84	pg/L	0.840	40.0
40186-71-8	PCB-201	U	.64	.64	pg/L	0.640	20.0
2136-99-4	PCB-202	U	.7	.7	pg/L	0.700	20.0
52663-76-0	PCB-203	U	0.920	.82	pg/L	0.820	20.0

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data
J Value is estimated
K Estimated Maximum Possible Concentration
U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	1609609_1609C98	**Client:**	NMED001	**Project:**	NMED00113
Lab Sample ID:	12017259			**Matrix:**	WATER
Client Sample:	QC for batch 33207				
Client ID:	MB for batch 33207			**Prep Basis:**	As Received
Batch ID:	33209	**Method:**	EPA Method 1668A HS		
Run Date:	11/09/2016 18:53	**Analyst:**	MJC	**Instrument:**	HRP791
Data File:	c09nov16a-4			**Dilution:**	1
Prep Batch:	33207	**Prep Method:**	SW846 3520C	**Prep SOP Ref:**	CF-OA-E-001
Prep Date:	08-NOV-16	**Prep Aliquot:**	1000 mL		

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
74472-52-9	PCB-204	U	.64	.64	pg/L	0.640	20.0
74472-53-0	PCB-205	U	0.640	.62	pg/L	0.620	20.0
40186-72-9	PCB-206	U	1.06	1.06	pg/L	1.06	20.0
52663-79-3	PCB-207	U	.78	.78	pg/L	0.780	20.0
52663-77-1	PCB-208	U	.84	.84	pg/L	0.840	20.0
2051-24-3	PCB-209	U	1.22	.68	pg/L	0.680	20.0
27323-18-8	Total monoCB	U	0	0	pg/L		
25512-42-9	Total diCB		335	319	pg/L		
25323-68-6	Total triCB		53.5	27.7	pg/L		
26914-33-0	Total tetraCB		37.9	18	pg/L		
25429-29-2	Total pentaCB		24.4	5.43	pg/L		
26601-64-9	Total hexaCB		24.8	1.98	pg/L		
28655-71-2	Total heptaCB	U	14.5	0	pg/L		
55722-26-4	Total octaCB	U	3.08	0	pg/L		
53742-07-7	Total nonaCB	U	0	0	pg/L		
DECACB(Tot)	Total decaCB	U	1.22	0	pg/L		
1336-36-3	Total PCB		495	372	pg/L		
TEQ 7	TOTAL (TEQ ND=1/2 DL)_2005		0.118		pg/L		
TEQ 8	TOTAL (TEQ ND=0)_2005		0.000429		pg/L		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		661	2000	pg/L	33.1	(15%-150%)
13C-3-MoCB		660	2000	pg/L	33.0	(15%-150%)
13C-4-DiCB		635	2000	pg/L	31.7	(25%-150%)
13C-15-DiCB		1670	2000	pg/L	83.7	(25%-150%)
13C-19-TrCB		1180	2000	pg/L	59.1	(25%-150%)
13C-37-TrCB		1290	2000	pg/L	64.3	(25%-150%)
13C-54-TeCB		721	2000	pg/L	36.1	(25%-150%)
13C-77-TeCB		1730	2000	pg/L	86.3	(25%-150%)
13C-81-TeCB		1710	2000	pg/L	85.3	(25%-150%)
13C-104-PeCB		908	2000	pg/L	45.4	(25%-150%)
13C-105-PeCB		1510	2000	pg/L	75.7	(25%-150%)
13C-114-PeCB		1450	2000	pg/L	72.4	(25%-150%)
13C-118-PeCB		1480	2000	pg/L	74.1	(25%-150%)
13C-123-PeCB		1480	2000	pg/L	74.2	(25%-150%)
13C-126-PeCB		1620	2000	pg/L	81.2	(25%-150%)
13C-155-HxCB		1070	2000	pg/L	53.4	(25%-150%)
13C-156-HxCB	C	2710	4000	pg/L	67.7	(25%-150%)
13C-167-HxCB		1390	2000	pg/L	69.6	(25%-150%)
13C-169-HxCB		1450	2000	pg/L	72.5	(25%-150%)
13C-188-HpCB		1330	2000	pg/L	66.4	(25%-150%)
13C-189-HpCB		1420	2000	pg/L	71.0	(25%-150%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	1609609_1609C98	**Client:**	NMED001	**Project:**	NMED00113
Lab Sample ID:	12017259			**Matrix:**	WATER
Client Sample:	QC for batch 33207				
Client ID:	MB for batch 33207			**Prep Basis:**	As Received
Batch ID:	33209	**Method:**	EPA Method 1668A HS		
Run Date:	11/09/2016 18:53	**Analyst:**	MJC	**Instrument:**	HRP791
Data File:	c09nov16a-4			**Dilution:**	1
Prep Batch:	33207	**Prep Method:**	SW846 3520C	**Prep SOP Ref:**	CF-OA-E-001
Prep Date:	08-NOV-16	**Prep Aliquot:**	1000 mL		

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-202-OcCB		1520	2000	pg/L	75.9	(25%-150%)
13C-205-OcCB		1720	2000	pg/L	86.1	(25%-150%)
13C-206-NoCB		1780	2000	pg/L	89.2	(25%-150%)
13C-208-NoCB		1620	2000	pg/L	80.8	(25%-150%)
13C-209-DeCB		1930	2000	pg/L	96.6	(25%-150%)
13C-28-TrCB		1220	2000	pg/L	60.9	(30%-135%)
13C-111-PeCB		1620	2000	pg/L	81.0	(30%-135%)
13C-178-HpCB		1690	2000	pg/L	84.7	(30%-135%)

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data
J Value is estimated
K Estimated Maximum Possible Concentration
U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	1609609_1609C98	**Client:**	NMED001	**Project:**	NMED00113
Lab Sample ID:	12017260			**Matrix:**	WATER
Client Sample:	QC for batch 33207				
Client ID:	LCS for batch 33207			**Prep Basis:**	As Received
Batch ID:	33209	**Method:**	EPA Method 1668A HS		
Run Date:	11/09/2016 16:41	**Analyst:**	MJC	**Instrument:**	HRP791
Data File:	c09nov16a-2			**Dilution:**	1
Prep Batch:	33207	**Prep Method:**	SW846 3520C	**Prep SOP Ref:**	CF-OA-E-001
Prep Date:	08-NOV-16	**Prep Aliquot:**	1000 mL		

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
2051-60-7	PCB-1		522	518	pg/L	5.74	40.0
2051-62-9	PCB-3		606	604	pg/L	4.96	40.0
13029-08-8	PCB-4		508	499	pg/L	4.28	40.0
2050-68-2	PCB-15		528	523	pg/L	4.74	40.0
38444-73-4	PCB-19		497	494	pg/L	2.40	20.0
38444-90-5	PCB-37		487	484	pg/L	6.88	20.0
15968-05-5	PCB-54		1000	1000	pg/L	1.16	20.0
32598-13-3	PCB-77		945	942	pg/L	4.18	20.0
70362-50-4	PCB-81		1120	1120	pg/L	3.92	20.0
56558-16-8	PCB-104		1060	1060	pg/L	1.18	20.0
32598-14-4	PCB-105		1180	1180	pg/L	5.10	20.0
74472-37-0	PCB-114		1020	1020	pg/L	5.02	20.0
31508-00-6	PCB-118		981	977	pg/L	4.70	20.0
65510-44-3	PCB-123		920	916	pg/L	4.86	20.0
57465-28-8	PCB-126		1020	1010	pg/L	5.84	20.0
33979-03-2	PCB-155		983	980	pg/L	0.720	20.0
PCB-156/157	PCB-156/PCB-157	C	2230	2230	pg/L	6.24	40.0
52663-72-6	PCB-167		1150	1150	pg/L	4.52	20.0
32774-16-6	PCB-169		1020	1010	pg/L	5.24	20.0
74487-85-7	PCB-188		975	972	pg/L	0.920	20.0
39635-31-9	PCB-189		977	971	pg/L	2.34	20.0
2136-99-4	PCB-202		1430	1430	pg/L	1.02	20.0
74472-53-0	PCB-205		1290	1290	pg/L	1.32	20.0
40186-72-9	PCB-206		1410	1410	pg/L	1.42	20.0
52663-77-1	PCB-208		1500	1490	pg/L	1.12	20.0
2051-24-3	PCB-209		1380	1380	pg/L	0.880	20.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		1100	2000	pg/L	55.0	(15%-140%)
13C-3-MoCB		1040	2000	pg/L	51.8	(15%-140%)
13C-4-DiCB		1040	2000	pg/L	52.1	(30%-140%)
13C-15-DiCB		1790	2000	pg/L	89.3	(30%-140%)
13C-19-TrCB		1630	2000	pg/L	81.3	(30%-140%)
13C-37-TrCB		1460	2000	pg/L	72.9	(30%-140%)
13C-54-TeCB		1100	2000	pg/L	54.8	(30%-140%)
13C-77-TeCB		1890	2000	pg/L	94.6	(30%-140%)
13C-81-TeCB		1910	2000	pg/L	95.3	(30%-140%)
13C-104-PeCB		1170	2000	pg/L	58.4	(30%-140%)
13C-105-PeCB		1660	2000	pg/L	82.9	(30%-140%)
13C-114-PeCB		1610	2000	pg/L	80.7	(30%-140%)
13C-118-PeCB		1660	2000	pg/L	82.8	(30%-140%)
13C-123-PeCB		1680	2000	pg/L	84.1	(30%-140%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	1609609_1609C98	**Client:**	NMED001	**Project:**	NMED00113
Lab Sample ID:	12017260			**Matrix:**	WATER
Client Sample:	QC for batch 33207				
Client ID:	LCS for batch 33207			**Prep Basis:**	As Received
Batch ID:	33209	**Method:**	EPA Method 1668A HS		
Run Date:	11/09/2016 16:41	**Analyst:**	MJC	**Instrument:**	HRP791
Data File:	c09nov16a-2			**Dilution:**	1
Prep Batch:	33207	**Prep Method:**	SW846 3520C	**Prep SOP Ref:**	CF-OA-E-001
Prep Date:	08-NOV-16	**Prep Aliquot:**	1000 mL		

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-126-PeCB		1710	2000	pg/L	85.5	(30%-140%)
13C-155-HxCB		1330	2000	pg/L	66.4	(30%-140%)
13C-156-HxCB	C	2970	4000	pg/L	74.3	(30%-140%)
13C-167-HxCB		1540	2000	pg/L	76.9	(30%-140%)
13C-169-HxCB		1540	2000	pg/L	77.2	(30%-140%)
13C-188-HpCB		1550	2000	pg/L	77.6	(30%-140%)
13C-189-HpCB		1570	2000	pg/L	78.5	(30%-140%)
13C-202-OcCB		1700	2000	pg/L	84.9	(30%-140%)
13C-205-OcCB		1940	2000	pg/L	97.1	(30%-140%)
13C-206-NoCB		2010	2000	pg/L	101	(30%-140%)
13C-208-NoCB		1810	2000	pg/L	90.5	(30%-140%)
13C-209-DeCB		2160	2000	pg/L	108	(30%-140%)
13C-28-TrCB		1280	2000	pg/L	63.8	(40%-125%)
13C-111-PeCB		1630	2000	pg/L	81.4	(40%-125%)
13C-178-HpCB		1710	2000	pg/L	85.5	(40%-125%)

Comments:

B The target analyte was detected in the associated blank.

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	1609609_1609C98	**Client:**	NMED001	**Project:**	NMED00113
Lab Sample ID:	12017261			**Matrix:**	WATER
Client Sample:	QC for batch 33207				
Client ID:	LCSD for batch 33207			**Prep Basis:**	As Received
Batch ID:	33209	**Method:**	EPA Method 1668A HS		
Run Date:	11/09/2016 17:47	**Analyst:**	MJC	**Instrument:**	HRP791
Data File:	c09nov16a-3			**Dilution:**	1
Prep Batch:	33207	**Prep Method:**	SW846 3520C	**Prep SOP Ref:**	CF-OA-E-001
Prep Date:	08-NOV-16	**Prep Aliquot:**	1000 mL		

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
2051-60-7	PCB-1		458	454	pg/L	5.08	40.0
2051-62-9	PCB-3		546	544	pg/L	4.68	40.0
13029-08-8	PCB-4		433	424	pg/L	5.84	40.0
2050-68-2	PCB-15		478	473	pg/L	3.62	40.0
38444-73-4	PCB-19		451	447	pg/L	2.06	20.0
38444-90-5	PCB-37		423	420	pg/L	2.02	20.0
15968-05-5	PCB-54		879	876	pg/L	1.08	20.0
32598-13-3	PCB-77		829	826	pg/L	2.42	20.0
70362-50-4	PCB-81		970	968	pg/L	2.34	20.0
56558-16-8	PCB-104		923	920	pg/L	0.680	20.0
32598-14-4	PCB-105		1040	1030	pg/L	3.62	20.0
74472-37-0	PCB-114		892	888	pg/L	3.56	20.0
31508-00-6	PCB-118		845	842	pg/L	3.34	20.0
65510-44-3	PCB-123		797	793	pg/L	3.50	20.0
57465-28-8	PCB-126		910	906	pg/L	3.98	20.0
33979-03-2	PCB-155		876	873	pg/L	0.540	20.0
PCB-156/157	PCB-156/PCB-157	C	1920	1920	pg/L	3.62	40.0
52663-72-6	PCB-167		999	996	pg/L	2.72	20.0
32774-16-6	PCB-169		869	864	pg/L	3.00	20.0
74487-85-7	PCB-188		837	834	pg/L	0.560	20.0
39635-31-9	PCB-189		837	831	pg/L	1.20	20.0
2136-99-4	PCB-202		1220	1220	pg/L	0.680	20.0
74472-53-0	PCB-205		1120	1110	pg/L	0.800	20.0
40186-72-9	PCB-206		1200	1200	pg/L	0.900	20.0
52663-77-1	PCB-208		1290	1290	pg/L	0.740	20.0
2051-24-3	PCB-209		1200	1190	pg/L	0.500	20.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%		Acceptable Limits
13C-1-MoCB		1050	2000	pg/L	52.3		(15%-140%)
13C-3-MoCB		971	2000	pg/L	48.6		(15%-140%)
13C-4-DiCB		984	2000	pg/L	49.2		(30%-140%)
13C-15-DiCB		3070	2000	pg/L	153	*	(30%-140%)
13C-19-TrCB		1950	2000	pg/L	97.5		(30%-140%)
13C-37-TrCB		2200	2000	pg/L	110		(30%-140%)
13C-54-TeCB		1120	2000	pg/L	55.8		(30%-140%)
13C-77-TeCB		2920	2000	pg/L	146	*	(30%-140%)
13C-81-TeCB		2920	2000	pg/L	146	*	(30%-140%)
13C-104-PeCB		1520	2000	pg/L	75.8		(30%-140%)
13C-105-PeCB		2520	2000	pg/L	126		(30%-140%)
13C-114-PeCB		2440	2000	pg/L	122		(30%-140%)
13C-118-PeCB		2480	2000	pg/L	124		(30%-140%)
13C-123-PeCB		2510	2000	pg/L	126		(30%-140%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	1609609_1609C98	**Client:**	NMED001	**Project:**	NMED00113
Lab Sample ID:	12017261			**Matrix:**	WATER
Client Sample:	QC for batch 33207				
Client ID:	LCSD for batch 33207			**Prep Basis:**	As Received
Batch ID:	33209	**Method:**	EPA Method 1668A HS		
Run Date:	11/09/2016 17:47	**Analyst:**	MJC	**Instrument:**	HRP791
Data File:	c09nov16a-3			**Dilution:**	1
Prep Batch:	33207	**Prep Method:**	SW846 3520C	**Prep SOP Ref:**	CF-OA-E-001
Prep Date:	08-NOV-16	**Prep Aliquot:**	1000 mL		

CAS No.	Parmname	Qual	Result	MBCR	Units		EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%		Acceptable Limits
13C-126-PeCB		2680	2000	pg/L	134		(30%-140%)
13C-155-HxCB		1750	2000	pg/L	87.5		(30%-140%)
13C-156-HxCB	C	4400	4000	pg/L	110		(30%-140%)
13C-167-HxCB		2290	2000	pg/L	114		(30%-140%)
13C-169-HxCB		2340	2000	pg/L	117		(30%-140%)
13C-188-HpCB		2170	2000	pg/L	108		(30%-140%)
13C-189-HpCB		2320	2000	pg/L	116		(30%-140%)
13C-202-OcCB		2440	2000	pg/L	122		(30%-140%)
13C-205-OcCB		2800	2000	pg/L	140		(30%-140%)
13C-206-NoCB		2920	2000	pg/L	146	*	(30%-140%)
13C-208-NoCB		2620	2000	pg/L	131		(30%-140%)
13C-209-DeCB		3150	2000	pg/L	158	*	(30%-140%)
13C-28-TrCB		1460	2000	pg/L	72.9		(40%-125%)
13C-111-PeCB		2010	2000	pg/L	101		(40%-125%)
13C-178-HpCB		2080	2000	pg/L	104		(40%-125%)

Comments:

B The target analyte was detected in the associated blank.

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1609C98**

02-Dec-16

Client: AMAFCA

Project: CMC

Sample ID	**MB-27691**	SampType:	**MBLK**	TestCode:	**EPA Method 1664A**					
Client ID:	**PBW**	Batch ID:	**27691**	RunNo:	**37504**					
Prep Date:	**9/26/2016**	Analysis Date:	**9/26/2016**	SeqNo:	**1166137**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
N-Hexane Extractable Material	ND	10								
Silica Gel Treated N-Hexane Extrac	ND	10								

Sample ID	**LCS-27691**	SampType:	**LCS**	TestCode:	**EPA Method 1664A**					
Client ID:	**LCSW**	Batch ID:	**27691**	RunNo:	**37504**					
Prep Date:	**9/26/2016**	Analysis Date:	**9/26/2016**	SeqNo:	**1166138**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
N-Hexane Extractable Material	41	10	40.00	0	103	78	114			
Silica Gel Treated N-Hexane Extrac	20	10	20.00	0	100	64	132			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1609C98**

02-Dec-16

Client: AMAFCA

Project: CMC

Sample ID	**MBLK-D**	SampType:	**MBLK**	TestCode:	**EPA Method 200.7: Dissolved Metals**		
Client ID:	**PBW**	Batch ID:	**D37643**	RunNo:	**37643**		
Prep Date:		Analysis Date:	**10/3/2016**	SeqNo:	**1171903**	Units:	**mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	ND	1.0								
Magnesium	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1609C98**

02-Dec-16

Client: AMAFCA

Project: CMC

Sample ID	**LCS**	SampType: **LCS**			TestCode: **EPA 200.8: Dissolved Metals**					
Client ID:	**LCSW**	Batch ID: **B37945**			RunNo: **37945**					
Prep Date:		Analysis Date: **10/13/2016**			SeqNo: **1182520**		Units: **mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Copper	0.024	0.0010	0.02500	0	95.0	85	115			
Lead	0.012	0.00050	0.01250	0	97.3	85	115			

Sample ID	**LLLCS**	SampType: **LCSLL**			TestCode: **EPA 200.8: Dissolved Metals**					
Client ID:	**BatchQC**	Batch ID: **B37945**			RunNo: **37945**					
Prep Date:		Analysis Date: **10/13/2016**			SeqNo: **1182521**		Units: **mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Copper	0.0012	0.0010	0.001000	0	117	50	150			
Lead	0.00057	0.00050	0.0005000	0	113	50	150			

Sample ID	**MB**	SampType: **MBLK**			TestCode: **EPA 200.8: Dissolved Metals**					
Client ID:	**PBW**	Batch ID: **B37945**			RunNo: **37945**					
Prep Date:		Analysis Date: **10/13/2016**			SeqNo: **1182522**		Units: **mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Copper	ND	0.0010								
Lead	ND	0.00050								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1609C98**

02-Dec-16

Client: AMAFCA

Project: CMC

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **A37430**	RunNo: **37430**
Prep Date:	Analysis Date: **9/23/2016**	SeqNo: **1163546** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Nitrite (As N)	ND	0.10								
Nitrogen, Nitrate (As N)	ND	0.10								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **A37430**	RunNo: **37430**
Prep Date:	Analysis Date: **9/23/2016**	SeqNo: **1163547** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Nitrite (As N)	0.95	0.10	1.000	0	94.9	90	110			
Nitrogen, Nitrate (As N)	2.6	0.10	2.500	0	103	90	110			

Sample ID **MB**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **B37435**	RunNo: **37435**
Prep Date:	Analysis Date: **9/23/2016**	SeqNo: **1163875** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Nitrite (As N)	ND	0.10								
Nitrogen, Nitrate (As N)	ND	0.10								

Sample ID **LCS**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **B37435**	RunNo: **37435**
Prep Date:	Analysis Date: **9/23/2016**	SeqNo: **1163876** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Nitrite (As N)	0.96	0.10	1.000	0	95.5	90	110			
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0	101	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1609C98**

02-Dec-16

Client: AMAFCA

Project: CMC

Sample ID	**MB-27653**	SampType:	**MBLK**		TestCode:	**SM5210B: BOD**				
Client ID:	**PBW**	Batch ID:	**27653**		RunNo:	**37534**				
Prep Date:	**9/22/2016**	Analysis Date:	**9/27/2016**		SeqNo:	**1167364**	Units:	**mg/L**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Biochemical Oxygen Demand	ND	2.0								

Sample ID	**MB--27653**	SampType:	**MBLK**		TestCode:	**SM5210B: BOD**				
Client ID:	**PBW**	Batch ID:	**27653**		RunNo:	**37534**				
Prep Date:	**9/22/2016**	Analysis Date:	**9/27/2016**		SeqNo:	**1167365**	Units:	**mg/L**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Biochemical Oxygen Demand	ND	2.0								

Sample ID	**LCS-27653**	SampType:	**LCS**		TestCode:	**SM5210B: BOD**				
Client ID:	**LCSW**	Batch ID:	**27653**		RunNo:	**37534**				
Prep Date:	**9/22/2016**	Analysis Date:	**9/27/2016**		SeqNo:	**1167366**	Units:	**mg/L**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Biochemical Oxygen Demand	170	2.0	198.0	0	83.4	56.9	131			

Sample ID	**LCSD-27653**	SampType:	**LCSD**		TestCode:	**SM5210B: BOD**				
Client ID:	**LCSS02**	Batch ID:	**27653**		RunNo:	**37534**				
Prep Date:	**9/22/2016**	Analysis Date:	**9/27/2016**		SeqNo:	**1167367**	Units:	**mg/L**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Biochemical Oxygen Demand	190	2.0	198.0	0	97.2	56.9	131	15.4	20	

Sample ID	**MB-27670**	SampType:	**MBLK**		TestCode:	**SM5210B: BOD**				
Client ID:	**PBW**	Batch ID:	**27670**		RunNo:	**37641**				
Prep Date:	**9/23/2016**	Analysis Date:	**9/28/2016**		SeqNo:	**1171545**	Units:	**mg/L**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Biochemical Oxygen Demand	ND	2.0								

Sample ID	**MB--27670**	SampType:	**MBLK**		TestCode:	**SM5210B: BOD**				
Client ID:	**PBW**	Batch ID:	**27670**		RunNo:	**37641**				
Prep Date:	**9/23/2016**	Analysis Date:	**9/28/2016**		SeqNo:	**1171546**	Units:	**mg/L**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Biochemical Oxygen Demand	ND	2.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1609C98**

02-Dec-16

Client: AMAFCA

Project: CMC

Sample ID	**LCS-27670**	SampType:	**LCS**		TestCode:	**SM5210B: BOD**					
Client ID:	**LCSW**	Batch ID:	**27670**		RunNo:	**37641**					
Prep Date:	**9/23/2016**	Analysis Date:	**9/28/2016**		SeqNo:	**1171547**	Units:	**mg/L**			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Biochemical Oxygen Demand		180	2.0	198.0	0	91.4	56.9	131			

Sample ID	**LCSD-27670**	SampType:	**LCSD**		TestCode:	**SM5210B: BOD**					
Client ID:	**LCSS02**	Batch ID:	**27670**		RunNo:	**37641**					
Prep Date:	**9/23/2016**	Analysis Date:	**9/28/2016**		SeqNo:	**1171548**	Units:	**mg/L**			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Biochemical Oxygen Demand		170	2.0	198.0	0	86.8	56.9	131	5.10	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1609C98**

02-Dec-16

Client: AMAFCA

Project: CMC

Sample ID	**MB-27666**	SampType:	**MBLK**	TestCode:	**SM 9223B Fecal Indicator: E. coli MPN**					
Client ID:	**PBW**	Batch ID:	**27666**	RunNo:	**37450**					
Prep Date:	**9/22/2016**	Analysis Date:	**9/23/2016**	SeqNo:	**1164161**	Units:	**CFU/100ml**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
E. Coli	<1	1.000								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1609C98**

02-Dec-16

Client: AMAFCA

Project: CMC

Sample ID **MB**	SampType: **MBLK**	TestCode: **SM 4500 NH3: Ammonia**
Client ID: **PBW**	Batch ID: **R37892**	RunNo: **37892**
Prep Date:	Analysis Date: **10/12/2016**	SeqNo: **1180229** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	1.0								

Sample ID **LCS**	SampType: **LCS**	TestCode: **SM 4500 NH3: Ammonia**
Client ID: **LCSW**	Batch ID: **R37892**	RunNo: **37892**
Prep Date:	Analysis Date: **10/12/2016**	SeqNo: **1180230** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	10	1.0	10.00	0	101	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1609C98**

02-Dec-16

Client: AMAFCA

Project: CMC

Sample ID	**MB-28009**	SampType:	**MBLK**	TestCode:	**EPA Method 365.1: Total Phosphorous**					
Client ID:	**PBW**	Batch ID:	**28009**	RunNo:	**37907**					
Prep Date:	**10/11/2016**	Analysis Date:	**10/12/2016**	SeqNo:	**1180912**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	ND	0.010								

Sample ID	**LCS-28009**	SampType:	**LCS**	TestCode:	**EPA Method 365.1: Total Phosphorous**					
Client ID:	**LCSW**	Batch ID:	**28009**	RunNo:	**37907**					
Prep Date:	**10/11/2016**	Analysis Date:	**10/12/2016**	SeqNo:	**1180913**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	0.25	0.010	0.2500	0	101	90	110			

Sample ID	**1609C98-001DMS**	SampType:	**MS**	TestCode:	**EPA Method 365.1: Total Phosphorous**					
Client ID:	**Rio Grande-North-0**	Batch ID:	**28009**	RunNo:	**37907**					
Prep Date:	**10/11/2016**	Analysis Date:	**10/12/2016**	SeqNo:	**1180916**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	0.29	0.010	0.2500	0.04220	99.3	90	110			

Sample ID	**1609C98-001DMSD**	SampType:	**MSD**	TestCode:	**EPA Method 365.1: Total Phosphorous**					
Client ID:	**Rio Grande-North-0**	Batch ID:	**28009**	RunNo:	**37907**					
Prep Date:	**10/11/2016**	Analysis Date:	**10/12/2016**	SeqNo:	**1180917**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	0.28	0.010	0.2500	0.04220	96.6	90	110	2.37	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1609C98**

02-Dec-16

Client: AMAFCA

Project: CMC

Sample ID	**MB-27761**	SampType:	**MBLK**	TestCode:	**SM2540C MOD: Total Dissolved Solids**					
Client ID:	**PBW**	Batch ID:	**27761**	RunNo:	**37597**					
Prep Date:	**9/28/2016**	Analysis Date:	**9/30/2016**	SeqNo:	**1170153**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	20.0								

Sample ID	**LCS-27761**	SampType:	**LCS**	TestCode:	**SM2540C MOD: Total Dissolved Solids**					
Client ID:	**LCSW**	Batch ID:	**27761**	RunNo:	**37597**					
Prep Date:	**9/28/2016**	Analysis Date:	**9/30/2016**	SeqNo:	**1170154**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1000	20.0	1000	0	100	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1609C98**

02-Dec-16

Client: AMAFCA

Project: CMC

Sample ID **MB-28008**	SampType: **MBLK**	TestCode: **SM 4500 Norg C: TKN**
Client ID: **PBW**	Batch ID: **28008**	RunNo: **37920**
Prep Date: **10/11/2016**	Analysis Date: **10/13/2016**	SeqNo: **1181637** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Kjeldahl, Total	ND	1.0								

Sample ID **LCS-28008**	SampType: **LCS**	TestCode: **SM 4500 Norg C: TKN**
Client ID: **LCSW**	Batch ID: **28008**	RunNo: **37920**
Prep Date: **10/11/2016**	Analysis Date: **10/13/2016**	SeqNo: **1181638** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Kjeldahl, Total	9.9	1.0	10.00	0	99.4	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1609C98**

02-Dec-16

Client: AMAFCA

Project: CMC

Sample ID	**MB-27741**	SampType:	**MBLK**	TestCode:	**SM 2540D: TSS**					
Client ID:	**PBW**	Batch ID:	**27741**	RunNo:	**37575**					
Prep Date:	**9/27/2016**	Analysis Date:	**9/29/2016**	SeqNo:	**1169096**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Suspended Solids	ND	4.0								

Sample ID	**LCS-27741**	SampType:	**LCS**	TestCode:	**SM 2540D: TSS**					
Client ID:	**LCSW**	Batch ID:	**27741**	RunNo:	**37575**					
Prep Date:	**9/27/2016**	Analysis Date:	**9/29/2016**	SeqNo:	**1169097**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Suspended Solids	93	4.0	92.50	0	101	83.35	118.92			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: AMAFCA Work Order Number: 1609C98 RcptNo: 1

Received by/date: AT 09/22/16

Logged By: Lindsay Mangin 9/22/2016 1:50:00 PM

Completed By: Lindsay Mangin 9/22/2016 2:27:47 PM

Reviewed By: 09/22/16 @ 1600

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	Client		

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☐	No ☑	NA ☐
Samples were collected the same day and chilled.			
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
9. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
11. Were any sample containers received broken?	Yes ☐	No ☑	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: 12 (<2 or >12 unless noted)

Adjusted? NO

Checked by:

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: Date

By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	6.3	Good	Not Present			

Chain-of-Custody Record

Client: AMAFCA

Mailing Address:

Phone #:

Email or Fax#: pchavez@amafca.org

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation
NELAP ☐ Other

EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name: CMC

Project #:

Project Manager: Patrick Chavez

Sampler: C. Johannesen

On Ice: ☒ Yes ☐ No

Sample Temperature: 6.3

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1609C98	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	See Attached Table	E. Coli Num			Air Bubbles (Y or N)
9/16	1215	AQ	Rio Grande - North - 092116	Numerous		-001												X				
9/16	1100	AQ	Rio Grande - South - 092216			-002												X	X			
—	—	AQ	Trip Blank	2	HCl	-003												X				

Date: 9/16 Time: 1550 Relinquished by: Received by: Date Time: 09/22/16 1850

Date: Time: Relinquished by: Received by: Date Time:

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

AMAFCA and CMC samples

- Hardness
- TSS
- TDS
- COD
- BOD
- DO
- Oil & grease
- E. coli
- pH
- Total kjeldahl nitrogen
- Nitrate plus nitrite
- Dissolved phosphorus
- Ammonia plus organic nitrogen
- Total Phosphorus
- Chromium IV
- Copper-dissolved
- Lead-dissolved
- PCBs
- Gross Alpha
- Tetrahydrofuran
- Benzo(a)pyrene
- Benzo(b)fluoranthene, alternate name 3, 4 Benzofluoranthene
- Benzo(k)fluoranthene
- Chrysene
- Indeno(1,2,3-cd)pyrene
- Dieldrin
- Pentachlorophenol
- Benzidine
- Benzo(a)anthracene
- Pentachlorophenol
- Dibenzofuran
- Dibenzo(a,h)anthracene
- Bis(2-ethylhexyl)phthalate

AMAFCA E.Coli only sites:

- Bear Arroyo
- Main Hanh Arroyo
- Embudo

ATTACHMENT 2

FY 2017 WET SEASON COMPLETED DATA VERIFICATION AND VALIDATION FORMS

Attachment 1.1 Water Quality Sample Data Verification and Validation Worksheet

Study Name: Compliance Monitoring Cooperative (CMC)
Year: FY 2017 (August 2016 – Wet Season Sample)
Project Coordinator: For Data Review and Reporting – SJG, BHI
V&V Reviewer: SJG
Data covered by this worksheet: Rio Grande North – 8/2/16 – E. coli Only Sample – Was Not Qualifying Storm Event
Version of Verification/Validation Procedures: QAPP – SOP #2 (2/2015)

Step 1: Verify Field Data

A. Are all Field Data forms present and complete? ☒ Yes ☐ No
*Note – Field Data for DO (mg/L) was recalculated by DBS&A and provided to BHI, e-mail 12-21-16. Corrected Field Notebook not provided to BHI. Database has the recalculated DO from the 12-21-16 e-mail.

If yes, proceed; if no, attempt to locate missing forms, then indicate any remaining missing forms and action taken.

Missing Field Data Forms	Action Taken

Total number of occurrences: 0

B. Are station name and ID, and sampling date and time on forms consistent with database? ☒ Yes ☐ No
If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify.

Station and Parameter	Action Taken	Re-verified?

Total number of occurrences: 0

C. Are field data on forms consistent with database? ☒ Yes ☐ No
If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify.

Station	Sampling Date	Parameter(s) Corrected	Re-verified?

Total number of occurrences: 0

D. Are RIDs correct and associated with the correct analytical suite, media subdivision (e.g. surface water, municipal waste, etc.) and activity type (e.g. Field observation, Routine sample, QA sample etc.)?
☒ Yes ☐ No

If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify

Station/RID	Sampling Date	RID Corrected	Re-verified?
_____	_____	_____	_____
_____	_____	_____	_____

Total number of occurrences: 0

☒ **Step 1 Completed** ***Initials:*** SJG ***Date:*** 1/13/17

- -

Step 2: Verify Data Deliverables
A. Have all data in question been delivered? ☒ Yes ☐ No

If yes, proceed; if no, indicate RIDs with missing data (samples or blanks) or attach report with applicable RIDs highlighted. Contact data source and indicate action taken. Complete this step upon receipt of all missing data.

RID	Submittal Date	Missing Data/Parameters	Date of Initial Verification	Date Missing Data Were Received
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

Total number of occurrences: 0

B. Do all of the analytical suites have the correct number and type of analytes. ☒ Yes ☐ No

If yes, proceed; if no, indicate RIDs with missing or incorrect analyte(s) or attach report with applicable RIDs highlighted. Contact data source and indicate action taken.

RID	Submittal Date	Missing or Incorrect Parameters	Action Taken	Re-verified?
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

☒ **Step 2 Completed** ***Initials:*** SJG ***Date:*** 1/13/17

- -

Step 3: Verify Flow Data

*Note – Not Applicable – no flow data provided with CMC sample collection

A. Identify incorrect or missing data on the flow calculation spreadsheet and correct errors.

Station	Sampling Date	Flow data missing or incorrect?
_____	_____	_____
_____	_____	_____

Total number of occurrences: 0

B. Identify incorrect or missing discharge measurements, correct errors in database and re-verify.

Station	Sampling Date	Flow data missing or incorrect?	Re-verified?
_____	_____	_____	_____
_____	_____	_____	_____

Total number of occurrences: 0

Not Applicable

☐ **Step 3 Completed** ***Initials:*** SJG ***Date:*** 1/13/17

- -

Step 4: Verify Analytical Results for Missing Information or Questionable Results

Were any results with missing/questionable information identified? ☒ Yes ☐ No

If no, proceed; if yes, indicate results with missing information or questionable results or attach report. Contact data source and indicate action taken. Complete this step upon receipt of missing information or clarification of questionable results (clarify questionable results only, DO NOT change results without written approval (from lab or QA officer) and associated documentation).

RID	Sample Date	Missing or Questionable Information/Results	Action Taken

*Note – HEAL Lab report order number – 1608105_v1
Total number of occurrences: 0

☒ **Step 4 Completed** ***Initials:*** SJG ***Date:*** 1/13/17

- -

Step 5: Validate Blanks Results
Were any analytes of concern detected in blank samples? ☐ Yes ☒ No

If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager, with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes have been added to database correctly.

RID	Sample Date	Parameter	[Blank]	[Sample]	Validation Code/Flag Applied	Code/Flag verified in database? *

*See validation procedures to determine which associated data need to be flagged and include on *Validation Codes Form*.

Total number of occurrences: 0

☒ **Step 5 Completed** ***Initials:*** SJG ***Date:*** 1/13/17

- -

Step 6: Validate Holding Times Violations
Were any samples submitted that did not meet specified holding times? ☐ Yes ☒ No

If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes/flags have been added to database.

RID	Sample Date	Parameter	[Blank]	[Sample]	Validation Code/Flag Applied	Code/Flag verified in database to ALL associated data?*
_____	_____	_____	_____	_____		_____
_____	_____	_____	_____	_____		_____

*See validation procedures to determine which associated data need to be flagged.
Total number of occurrences: 0

☒ **Step 6 Completed** ***Initials:*** SJG ***Date:*** 1/13/17

- -

Step 7: Validate Replicate/Duplicate Results (if applicable)
Were any replicate/duplicate pairs submitted outside of the established control limit of 20%?
☐ Yes ☒ No
If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes/flags have been added to database.

RID Pairs		Replicate or Duplicate?	Sample Date	Parameter	RPD	Validation Code/Flag Applied	Code/Flag verified in database applied?*
_____	_____	_____	_____	_____	_____		_____
_____	_____	_____	_____	_____	_____		_____

*See validation procedures to determine which associated data need to be flagged.

Total number of occurrences: 0

☒ **Step 7 Completed** ***Initials:*** SJG ***Date:*** 1/13/16

****

After all of the above steps have been completed, save and print the worksheet, attach all applicable supplemental information and sign below.

I acknowledge that the data verification and validation process has been completed for the data identified above in accordance with the procedures described in the CMC QAPP, SOP #2



1/13/17

Data Verifier/Validator Signature Date

COMPLETION OF DATA VERIFICATION AND VALIDATION PROCESS

Once the data verification and validation process has been completed for the entire study (note: if the worksheet is for a subset of the data from a study, be sure ALL the data for the entire study is included before final completion of the data verification and validation process), notify the NMSQUID administrator that the process is complete and request that “V V in STORET” be added to the project title.

Once all data have been verified and validated for a study provide copies of ALL *Data Verification and Validation Worksheets* and attachments associated with the study to the Quality Assurance Officer and retain originals in the project binder.

Attachment 1.2 SWQB Validation Codes

When deficiencies are identified through the data verification and validation process, AMAFCA documents or "flags" the deficiencies by assigning validation codes. All data collected from the last compliant QC sample and up to the next compliant QC sample are assigned validation codes. The validation code alerts the data user that the results are outside QA control limits and may require re-sampling or a separate, qualitative analysis based on professional judgment.

Validation Code	Definition	WQX Equivalent
A1	Sample not collected according to SOP	
B1	Chemical was detected in the field blank at a concentration less than 5% of the sample concentration.	
BN	Blanks NOT collected during sampling run	
BU	Detection in blank. Analyte was not detected in this sample above the method's sample detection limit.	BU
RB1	Chemical was detected in the field blank at a concentration greater than or equal to 5% of the sample concentration. Results for this sample are rejected because they may be the result of contamination; the results may not be reported or used for regulatory compliance purposes.	B
R1	Rejected due to incorrect sample preservation	R
R2	Rejected due to equipment failure in the field	R
R3	Rejected based on best professional judgment	R
D1	Spike recovery not within method acceptance limits	
F1	Sample filter time exceeded	
J1	Estimated: the analyte was positively identified and the associated value is an approximate concentration of the analyte in the sample	J
K1	Holding time violation	H
Ea	Estimated-Incubation temperature between 35.5 and 38.0° Celsius	
Er	Rejected-Incubation temperature < 34.5 or >38.0° Celsius	
PD1	Percent difference between duplicate samples excessive	
S1	Per SLD, uncertainties (sigmas) are expressed as one standard deviation, i.e. one standard error. Small negative or positive values that are less than two standard deviations should be interpreted as "less than the detection limit."	
S2	Data are suspect but deemed usable based on best professional judgment; documentation of justification is required and should be included in the Data Verification and Validation Packet and reported with results	
Z1	Macroinvertebrate data did not meet QC criteria specified in Section 2.5 of QAPP	
H1	Habitat data did not meet QC criteria specified in Section 2.5 of QAPP	

Attachment 1.1 Water Quality Sample Data Verification and Validation Worksheet

Study Name: Compliance Monitoring Cooperative (CMC)
Year: FY 2017 (August 2016 – Wet Season Sample)
Project Coordinator: For Data Review and Reporting – SJG, BHI
V&V Reviewer: SJG
Data covered by this worksheet: Rio Grande North – 8/3/16 – E. coli Only Sample – Was Not Qualifying Storm Event
Version of Verification/Validation Procedures: QAPP – SOP #2 (2/2015)

Step 1: Verify Field Data

A. Are all Field Data forms present and complete? ☒ Yes ☐ No
*Note – Field Data for DO (mg/L) was recalculated by DBS&A and provided to BHI, e-mail 12-21-16. Corrected Field Notebook not provided to BHI. Database has the recalculated DO from the 12-21-16 e-mail.

If yes, proceed; if no, attempt to locate missing forms, then indicate any remaining missing forms and action taken.

Missing Field Data Forms	Action Taken
_____	_____
_____	_____

Total number of occurrences: 0

B. Are station name and ID, and sampling date and time on forms consistent with database? ☒ Yes ☐ No
If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify.

Station and Parameter	Action Taken	Re-verified?
_____	_____	_____
_____	_____	_____

Total number of occurrences: 0

C. Are field data on forms consistent with database? ☒ Yes ☐ No
If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify.

Station	Sampling Date	Parameter(s) Corrected	Re-verified?
_____	_____	_____	_____
_____	_____	_____	_____

Total number of occurrences: 0

D. Are RIDs correct and associated with the correct analytical suite, media subdivision (e.g. surface water, municipal waste, etc.) and activity type (e.g. Field observation, Routine sample, QA sample etc.)?
☒ Yes ☐ No

If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify

Station/RID	Sampling Date	RID Corrected	Re-verified?
_____	_____	_____	_____
_____	_____	_____	_____

Total number of occurrences: 0

☒ **Step 1 Completed** ***Initials:*** SJG ***Date:*** 1/13/17

- -

Step 2: Verify Data Deliverables
A. Have all data in question been delivered? ☒ Yes ☐ No

If yes, proceed; if no, indicate RIDs with missing data (samples or blanks) or attach report with applicable RIDs highlighted. Contact data source and indicate action taken. Complete this step upon receipt of all missing data.

RID	Submittal Date	Missing Data/Parameters	Date of Initial Verification	Date Missing Data Were Received
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

Total number of occurrences: 0

B. Do all of the analytical suites have the correct number and type of analytes. ☒ Yes ☐ No

If yes, proceed; if no, indicate RIDs with missing or incorrect analyte(s) or attach report with applicable RIDs highlighted. Contact data source and indicate action taken.

RID	Submittal Date	Missing or Incorrect Parameters	Action Taken	Re-verified?
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

☒ **Step 2 Completed** ***Initials:*** SJG ***Date:*** 1/13/17

- -

Step 3: Verify Flow Data

*Note – Not Applicable – no flow data provided with CMC sample collection

A. Identify incorrect or missing data on the flow calculation spreadsheet and correct errors.

Station	Sampling Date	Flow data missing or incorrect?
_____	_____	_____
_____	_____	_____

Total number of occurrences: 0

B. Identify incorrect or missing discharge measurements, correct errors in database and re-verify.

Station	Sampling Date	Flow data missing or incorrect?	Re-verified?
_____	_____	_____	_____
_____	_____	_____	_____

Total number of occurrences: 0

Not Applicable

☐ **Step 3 Completed** ***Initials:*** SJG ***Date:*** 1/13/17

- -

Step 4: Verify Analytical Results for Missing Information or Questionable Results

Were any results with missing/questionable information identified? ☒ Yes ☐ No

If no, proceed; if yes, indicate results with missing information or questionable results or attach report. Contact data source and indicate action taken. Complete this step upon receipt of missing information or clarification of questionable results (clarify questionable results only, DO NOT change results without written approval (from lab or QA officer) and associated documentation).

RID	Sample Date	Missing or Questionable Information/Results	Action Taken

*Note – HEAL Lab report order number – 1608171_v1
Total number of occurrences: 0

☒ **Step 4 Completed** ***Initials:*** SJG ***Date:*** 1/13/17

- -

Step 5: Validate Blanks Results
Were any analytes of concern detected in blank samples? ☐ Yes ☒ No

If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager, with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes have been added to database correctly.

RID	Sample Date	Parameter	[Blank]	[Sample]	Validation Code/Flag Applied	Code/Flag verified in database? *

*See validation procedures to determine which associated data need to be flagged and include on *Validation Codes Form*.

Total number of occurrences: 0

☒ **Step 5 Completed** ***Initials:*** SJG ***Date:*** 1/13/17

- -

Step 6: Validate Holding Times Violations
Were any samples submitted that did not meet specified holding times? ☐ Yes ☒ No

If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes/flags have been added to database.

RID	Sample Date	Parameter	[Blank]	[Sample]	Validation Code/Flag Applied	Code/Flag verified in database to ALL associated data?*
_____	_____	_____	_____	_____		_____
_____	_____	_____	_____	_____		_____

*See validation procedures to determine which associated data need to be flagged.
Total number of occurrences: 0

☒ **Step 6 Completed** ***Initials:*** SJG ***Date:*** 1/13/17

- -

Step 7: Validate Replicate/Duplicate Results (if applicable)
Were any replicate/duplicate pairs submitted outside of the established control limit of 20%?
☐ Yes ☒ No
If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes/flags have been added to database.

RID Pairs		Replicate or Duplicate?	Sample Date	Parameter	RPD	Validation Code/Flag Applied	Code/Flag verified in database applied?*
_____	_____	_____	_____	_____	_____		_____
_____	_____	_____	_____	_____	_____		_____

*See validation procedures to determine which associated data need to be flagged.

Total number of occurrences: 0

☒ **Step 7 Completed** ***Initials:*** SJG ***Date:*** 1/13/16

****

After all of the above steps have been completed, save and print the worksheet, attach all applicable supplemental information and sign below.

I acknowledge that the data verification and validation process has been completed for the data identified above in accordance with the procedures described in the CMC QAPP, SOP #2



1/13/17

Data Verifier/Validator Signature Date

COMPLETION OF DATA VERIFICATION AND VALIDATION PROCESS

Once the data verification and validation process has been completed for the entire study (note: if the worksheet is for a subset of the data from a study, be sure ALL the data for the entire study is included before final completion of the data verification and validation process), notify the NMSQUID administrator that the process is complete and request that “V V in STORET” be added to the project title.

Once all data have been verified and validated for a study provide copies of ALL *Data Verification and Validation Worksheets* and attachments associated with the study to the Quality Assurance Officer and retain originals in the project binder.

Attachment 1.2 SWQB Validation Codes

When deficiencies are identified through the data verification and validation process, AMAFCA documents or "flags" the deficiencies by assigning validation codes. All data collected from the last compliant QC sample and up to the next compliant QC sample are assigned validation codes. The validation code alerts the data user that the results are outside QA control limits and may require re-sampling or a separate, qualitative analysis based on professional judgment.

Validation Code	Definition	WQX Equivalent
A1	Sample not collected according to SOP	
B1	Chemical was detected in the field blank at a concentration less than 5% of the sample concentration.	
BN	Blanks NOT collected during sampling run	
BU	Detection in blank. Analyte was not detected in this sample above the method's sample detection limit.	BU
RB1	Chemical was detected in the field blank at a concentration greater than or equal to 5% of the sample concentration. Results for this sample are rejected because they may be the result of contamination; the results may not be reported or used for regulatory compliance purposes.	B
R1	Rejected due to incorrect sample preservation	R
R2	Rejected due to equipment failure in the field	R
R3	Rejected based on best professional judgment	R
D1	Spike recovery not within method acceptance limits	
F1	Sample filter time exceeded	
J1	Estimated: the analyte was positively identified and the associated value is an approximate concentration of the analyte in the sample	J
K1	Holding time violation	H
Ea	Estimated-Incubation temperature between 35.5 and 38.0° Celsius	
Er	Rejected-Incubation temperature < 34.5 or >38.0° Celsius	
PD1	Percent difference between duplicate samples excessive	
S1	Per SLD, uncertainties (sigmas) are expressed as one standard deviation, i.e. one standard error. Small negative or positive values that are less than two standard deviations should be interpreted as "less than the detection limit."	
S2	Data are suspect but deemed usable based on best professional judgment; documentation of justification is required and should be included in the Data Verification and Validation Packet and reported with results	
Z1	Macroinvertebrate data did not meet QC criteria specified in Section 2.5 of QAPP	
H1	Habitat data did not meet QC criteria specified in Section 2.5 of QAPP	

Attachment 1.1 Water Quality Sample Data Verification and Validation Worksheet

Study Name: Compliance Monitoring Cooperative (CMC)
Year: FY 2017 (August 2016 – Wet Season Sample)
Project Coordinator: For Data Review and Reporting – SJG, BHI
V&V Reviewer: SJG
Data covered by this worksheet: Rio Grande North – 8/10/16 and 8/11/16
Version of Verification/Validation Procedures: QAPP – SOP #2 (2/2015)

Step 1: Verify Field Data

A. Are all Field Data forms present and complete? ☒ Yes ☐ No
*Note – Field Data for DO (mg/L) was recalculated by DBS&A and provided to BHI, e-mail 12-21-16. Corrected Field Notebook not provided to BHI. Database has the recalculated DO from the 12-21-16 e-mail.
If yes, proceed; if no, attempt to locate missing forms, then indicate any remaining missing forms and action taken.

Missing Field Data Forms	Action Taken

Total number of occurrences: 0

B. Are station name and ID, and sampling date and time on forms consistent with database? ☒ Yes ☐ No
If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify.

Station and Parameter	Action Taken	Re-verified?

Total number of occurrences: 0

C. Are field data on forms consistent with database? ☒ Yes ☐ No
If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify.

Station	Sampling Date	Parameter(s) Corrected	Re-verified?

Total number of occurrences: 0

D. Are RIDs correct and associated with the correct analytical suite, media subdivision (e.g. surface water, municipal waste, etc.) and activity type (e.g. Field observation, Routine sample, QA sample etc.)?

☒ Yes ☐ No

If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify

Station/RID	Sampling Date	RID Corrected	Re-verified?

Total number of occurrences: 0

☒ **Step 1 Completed** ***Initials:*** SJG ***Date:*** 1/13/17

- - - -

RID	Submittal Date	Missing or Incorrect Parameters	Action Taken	Re-verified?
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

☒ **Step 2 Completed** ***Initials:*** SJG ***Date:*** 1/13/17

- -

Step 3: Verify Flow Data

*Note – Not Applicable – no flow data provided with CMC sample collection

A. Identify incorrect or missing data on the flow calculation spreadsheet and correct errors.

Station	Sampling Date	Flow data missing or incorrect?
_____	_____	_____
_____	_____	_____

Total number of occurrences: 0

B. Identify incorrect or missing discharge measurements, correct errors in database and re-verify.

Station	Sampling Date	Flow data missing or incorrect?	Re-verified?
_____	_____	_____	_____
_____	_____	_____	_____

Total number of occurrences: 0

Not Applicable

☐ **Step 3 Completed** ***Initials:*** SJG ***Date:*** 1/13/17

- -

Step 4: Verify Analytical Results for Missing Information or Questionable Results

Were any results with missing/questionable information identified? ☒ Yes ☐ No

If no, proceed; if yes, indicate results with missing information or questionable results or attach report. Contact data source and indicate action taken. Complete this step upon receipt of missing information or clarification of questionable results (clarify questionable results only, DO NOT change results without written approval (from lab or QA officer) and associated documentation).

RID	Sample Date	Missing or Questionable Information/Results	Action Taken
Rio Grande North & South	8/11/16	Sample was tested for PCBs using Method 608, screening method.	Lab was contacted by CMC/DBS&A once aware of this testing method – there was not enough sample volume to re-test for PCBs using Method 1668.
Rio Grande North & South	8/11/16	Lab report provides Dissolved Phosphorous results as "Total Phosphorous" for "filtered sample".	Notified AMAFCA and DBS&A of this and requested that lab more clearly report data.

*Note – HEAL Lab report order numbers – 1608623_v1 and 1608678_v2
Total number of occurrences: 2

☒ **Step 4 Completed** ***Initials:*** SJG ***Date:*** 1/13/17

- -

Step 5: Validate Blanks Results
Were any analytes of concern detected in blank samples? ☐ Yes ☒ No

If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager, with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes have been added to database correctly.

RID	Sample Date	Parameter	[Blank]	[Sample]	Validation Code/Flag Applied	Code/Flag verified in database? *
____	_____	_____	_____	_____		_____
_____	_____	_____	_____	_____		_____

*See validation procedures to determine which associated data need to be flagged and include on *Validation Codes Form*.

Total number of occurrences: 0

☒ **Step 5 Completed** ***Initials:*** SJG ***Date:*** 1/13/17

- - - -

After all of the above steps have been completed, save and print the worksheet, attach all applicable supplemental information and sign below.

I acknowledge that the data verification and validation process has been completed for the data identified above in accordance with the procedures described in the CMC QAPP, SOP #2



1/13/17

Data Verifier/Validator Signature Date

COMPLETION OF DATA VERIFICATION AND VALIDATION PROCESS

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Attachment 1.2 SWQB Validation Codes

When deficiencies are identified through the data verification and validation process, AMAFCA documents or "flags" the deficiencies by assigning validation codes. All data collected from the last compliant QC sample and up to the next compliant QC sample are assigned validation codes. The validation code alerts the data user that the results are outside QA control limits and may require re-sampling or a separate, qualitative analysis based on professional judgment.

Validation Code	Definition	WQX Equivalent
A1	Sample not collected according to SOP	
B1	Chemical was detected in the field blank at a concentration less than 5% of the sample concentration.	
BN	Blanks NOT collected during sampling run	
BU	Detection in blank. Analyte was not detected in this sample above the method's sample detection limit.	BU
RB1	Chemical was detected in the field blank at a concentration greater than or equal to 5% of the sample concentration. Results for this sample are rejected because they may be the result of contamination; the results may not be reported or used for regulatory compliance purposes.	B
R1	Rejected due to incorrect sample preservation	R
R2	Rejected due to equipment failure in the field	R
R3	Rejected based on best professional judgment	R
D1	Spike recovery not within method acceptance limits	
F1	Sample filter time exceeded	
J1	Estimated: the analyte was positively identified and the associated value is an approximate concentration of the analyte in the sample	J
K1	Holding time violation	H
Ea	Estimated-Incubation temperature between 35.5 and 38.0° Celsius	
Er	Rejected-Incubation temperature < 34.5 or >38.0° Celsius	
PD1	Percent difference between duplicate samples excessive	
S1	Per SLD, uncertainties (sigmas) are expressed as one standard deviation, i.e. one standard error. Small negative or positive values that are less than two standard deviations should be interpreted as "less than the detection limit."	
S2	Data are suspect but deemed usable based on best professional judgment; documentation of justification is required and should be included in the Data Verification and Validation Packet and reported with results	
Z1	Macroinvertebrate data did not meet QC criteria specified in Section 2.5 of QAPP	
H1	Habitat data did not meet QC criteria specified in Section 2.5 of QAPP	

Attachment 1.1 Water Quality Sample Data Verification and Validation Worksheet

Study Name: Compliance Monitoring Cooperative (CMC)
Year: FY 2017 (August 2016 – Wet Season Sample)
Project Coordinator: For Data Review and Reporting – SJG, BHI
V&V Reviewer: SJG
Data covered by this worksheet: Rio Grande South – 8/11/16
Version of Verification/Validation Procedures: QAPP – SOP #2 (2/2015)

Step 1: Verify Field Data

A. Are all Field Data forms present and complete? ☒ Yes ☐ No
*Note – Field Data for DO (mg/L) was recalculated by DBS&A and provided to BHI, e-mail 12-21-16. Corrected Field Notebook not provided to BHI. Database has the recalculated DO from the 12-21-16 e-mail.
If yes, proceed; if no, attempt to locate missing forms, then indicate any remaining missing forms and action taken.

Missing Field Data Forms	Action Taken

Total number of occurrences: 0

B. Are station name and ID, and sampling date and time on forms consistent with database? ☒ Yes ☐ No
If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify.

Station and Parameter	Action Taken	Re-verified?

Total number of occurrences: 0

C. Are field data on forms consistent with database? ☒ Yes ☐ No
If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify.

Station	Sampling Date	Parameter(s) Corrected	Re-verified?

Total number of occurrences: 0

D. Are RIDs correct and associated with the correct analytical suite, media subdivision (e.g. surface water, municipal waste, etc.) and activity type (e.g. Field observation, Routine sample, QA sample etc.)?

☒ Yes ☐ No

If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify

Station/RID	Sampling Date	RID Corrected	Re-verified?

Total number of occurrences: 0

☒ **Step 1 Completed** ***Initials:*** SJG ***Date:*** 1/13/17

- - - -

RID	Submittal Date	Missing or Incorrect Parameters	Action Taken	Re-verified?
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

☒ **Step 2 Completed** ***Initials:*** SJG ***Date:*** 1/13/17

- -

Step 3: Verify Flow Data

*Note – Not Applicable – no flow data provided with CMC sample collection

A. Identify incorrect or missing data on the flow calculation spreadsheet and correct errors.

Station	Sampling Date	Flow data missing or incorrect?
_____	_____	_____
_____	_____	_____

Total number of occurrences: 0

B. Identify incorrect or missing discharge measurements, correct errors in database and re-verify.

Station	Sampling Date	Flow data missing or incorrect?	Re-verified?
_____	_____	_____	_____
_____	_____	_____	_____

Total number of occurrences: 0

Not Applicable

☐ **Step 3 Completed** ***Initials:*** SJG ***Date:*** 1/13/17

- -

Step 4: Verify Analytical Results for Missing Information or Questionable Results

Were any results with missing/questionable information identified? ☒ Yes ☐ No

If no, proceed; if yes, indicate results with missing information or questionable results or attach report. Contact data source and indicate action taken. Complete this step upon receipt of missing information or clarification of questionable results (clarify questionable results only, DO NOT change results without written approval (from lab or QA officer) and associated documentation).

RID	Sample Date	Missing or Questionable Information/Results	Action Taken
Rio Grande North & South	8/11/16	Sample was tested for PCBs using Method 608, screening method.	Lab was contacted by CMC/DBS&A once aware of this testing method – there was not enough sample volume to re-test for PCBs using Method 1668.
Rio Grande North & South	8/11/16	Lab report provides Dissolved Phosphorous results as "Total Phosphorous" for "filtered sample".	Notified AMAFCA and DBS&A of this and requested that lab more clearly report data.

*Note – HEAL Lab report order number – 1608678_v2
Total number of occurrences: 2

☒ **Step 4 Completed** ***Initials:*** SJG ***Date:*** 1/13/17

- -

Step 5: Validate Blanks Results
Were any analytes of concern detected in blank samples? ☐ Yes ☒ No

If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager, with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes have been added to database correctly.

RID	Sample Date	Parameter	[Blank]	[Sample]	Validation Code/Flag Applied	Code/Flag verified in database? *

*See validation procedures to determine which associated data need to be flagged and include on *Validation Codes Form*.

Total number of occurrences: 0

☒ **Step 5 Completed** ***Initials:*** SJG ***Date:*** 1/13/17

- - - -

After all of the above steps have been completed, save and print the worksheet, attach all applicable supplemental information and sign below.

I acknowledge that the data verification and validation process has been completed for the data identified above in accordance with the procedures described in the CMC QAPP, SOP #2



1/13/17

Data Verifier/Validator Signature Date

COMPLETION OF DATA VERIFICATION AND VALIDATION PROCESS

Once the data verification and validation process has been completed for the entire study (note: if the worksheet is for a subset of the data from a study, be sure ALL the data for the entire study is included before final completion of the data verification and validation process), notify the NMSQUID administrator that the process is complete and request that “V V in STORET” be added to the project title.

Once all data have been verified and validated for a study provide copies of ALL *Data Verification and Validation Worksheets* and attachments associated with the study to the Quality Assurance Officer and retain originals in the project binder.

Attachment 1.2 SWQB Validation Codes

When deficiencies are identified through the data verification and validation process, AMAFCA documents or "flags" the deficiencies by assigning validation codes. All data collected from the last compliant QC sample and up to the next compliant QC sample are assigned validation codes. The validation code alerts the data user that the results are outside QA control limits and may require re-sampling or a separate, qualitative analysis based on professional judgment.

Validation Code	Definition	WQX Equivalent
A1	Sample not collected according to SOP	
B1	Chemical was detected in the field blank at a concentration less than 5% of the sample concentration.	
BN	Blanks NOT collected during sampling run	
BU	Detection in blank. Analyte was not detected in this sample above the method's sample detection limit.	BU
RB1	Chemical was detected in the field blank at a concentration greater than or equal to 5% of the sample concentration. Results for this sample are rejected because they may be the result of contamination; the results may not be reported or used for regulatory compliance purposes.	B
R1	Rejected due to incorrect sample preservation	R
R2	Rejected due to equipment failure in the field	R
R3	Rejected based on best professional judgment	R
D1	Spike recovery not within method acceptance limits	
F1	Sample filter time exceeded	
J1	Estimated: the analyte was positively identified and the associated value is an approximate concentration of the analyte in the sample	J
K1	Holding time violation	H
Ea	Estimated-Incubation temperature between 35.5 and 38.0° Celsius	
Er	Rejected-Incubation temperature < 34.5 or >38.0° Celsius	
PD1	Percent difference between duplicate samples excessive	
S1	Per SLD, uncertainties (sigmas) are expressed as one standard deviation, i.e. one standard error. Small negative or positive values that are less than two standard deviations should be interpreted as "less than the detection limit."	
S2	Data are suspect but deemed usable based on best professional judgment; documentation of justification is required and should be included in the Data Verification and Validation Packet and reported with results	
Z1	Macroinvertebrate data did not meet QC criteria specified in Section 2.5 of QAPP	
H1	Habitat data did not meet QC criteria specified in Section 2.5 of QAPP	

Attachment 1.1 Water Quality Sample Data Verification and Validation Worksheet

Study Name: Compliance Monitoring Cooperative (CMC)
Year: FY 2017 (August 2016 – Wet Season Sample)
Project Coordinator: For Data Review and Reporting – SJG, BHI
V&V Reviewer: SJG
Data covered by this worksheet: Rio Grande North – 8/31/16 – E. coli Only Sample – Was Not Qualifying Storm Event
Version of Verification/Validation Procedures: QAPP – SOP #2 (2/2015)

Step 1: Verify Field Data

A. Are all Field Data forms present and complete? ☒ Yes ☐ No
*Note – Field Data for DO (mg/L) was recalculated by DBS&A and provided to BHI, e-mail 12-21-16. Corrected Field Notebook not provided to BHI. Database has the recalculated DO from the 12-21-16 e-mail.

If yes, proceed; if no, attempt to locate missing forms, then indicate any remaining missing forms and action taken.

Missing Field Data Forms	Action Taken

Total number of occurrences: 0

B. Are station name and ID, and sampling date and time on forms consistent with database? ☒ Yes ☐ No
If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify.

Station and Parameter	Action Taken	Re-verified?

Total number of occurrences: 0

C. Are field data on forms consistent with database? ☒ Yes ☐ No
If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify.

Station	Sampling Date	Parameter(s) Corrected	Re-verified?

Total number of occurrences: 0

D. Are RIDs correct and associated with the correct analytical suite, media subdivision (e.g. surface water, municipal waste, etc.) and activity type (e.g. Field observation, Routine sample, QA sample etc.)?
☒ Yes ☐ No

If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify

Station/RID	Sampling Date	RID Corrected	Re-verified?
_____	_____	_____	_____
_____	_____	_____	_____

Total number of occurrences: 0

☒ **Step 1 Completed** ***Initials:*** SJG ***Date:*** 1/16/17

- -

Step 2: Verify Data Deliverables
A. Have all data in question been delivered? ☒ Yes ☐ No

If yes, proceed; if no, indicate RIDs with missing data (samples or blanks) or attach report with applicable RIDs highlighted. Contact data source and indicate action taken. Complete this step upon receipt of all missing data.

RID	Submittal Date	Missing Data/Parameters	Date of Initial Verification	Date Missing Data Were Received
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

Total number of occurrences: 0

B. Do all of the analytical suites have the correct number and type of analytes. ☒ Yes ☐ No

If yes, proceed; if no, indicate RIDs with missing or incorrect analyte(s) or attach report with applicable RIDs highlighted. Contact data source and indicate action taken.

RID	Submittal Date	Missing or Incorrect Parameters	Action Taken	Re-verified?
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

☒ **Step 2 Completed** ***Initials:*** SJG ***Date:*** 1/16/17

- -

Step 3: Verify Flow Data

*Note – Not Applicable – no flow data provided with CMC sample collection

A. Identify incorrect or missing data on the flow calculation spreadsheet and correct errors.

Station	Sampling Date	Flow data missing or incorrect?
_____	_____	_____
_____	_____	_____

Total number of occurrences: 0

B. Identify incorrect or missing discharge measurements, correct errors in database and re-verify.

Station	Sampling Date	Flow data missing or incorrect?	Re-verified?
_____	_____	_____	_____
_____	_____	_____	_____

Total number of occurrences: 0

Not Applicable

☐ **Step 3 Completed** ***Initials:*** SJG ***Date:*** 1/16/17

- -

Step 4: Verify Analytical Results for Missing Information or Questionable Results

Were any results with missing/questionable information identified? ☒ Yes ☐ No

If no, proceed; if yes, indicate results with missing information or questionable results or attach report. Contact data source and indicate action taken. Complete this step upon receipt of missing information or clarification of questionable results (clarify questionable results only, DO NOT change results without written approval (from lab or QA officer) and associated documentation).

RID	Sample Date	Missing or Questionable Information/Results	Action Taken

*Note – HEAL Lab report order number – 1608H83_v1
Total number of occurrences: 0

☒ **Step 4 Completed** ***Initials:*** SJG ***Date:*** 1/16/17

- -

Step 5: Validate Blanks Results
Were any analytes of concern detected in blank samples? ☐ Yes ☒ No

If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager, with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes have been added to database correctly.

RID	Sample Date	Parameter	[Blank]	[Sample]	Validation Code/Flag Applied	Code/Flag verified in database? *

*See validation procedures to determine which associated data need to be flagged and include on *Validation Codes Form*.

Total number of occurrences: 0

☒ **Step 5 Completed** ***Initials:*** SJG ***Date:*** 1/16/17

- -

Step 6: Validate Holding Times Violations
Were any samples submitted that did not meet specified holding times? ☐ Yes ☒ No

If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes/flags have been added to database.

RID	Sample Date	Parameter	[Blank]	[Sample]	Validation Code/Flag Applied	Code/Flag verified in database to ALL associated data?*
_____	_____	_____	_____	_____		_____
_____	_____	_____	_____	_____		_____

*See validation procedures to determine which associated data need to be flagged.
Total number of occurrences: 0

☒ **Step 6 Completed** ***Initials:*** SJG ***Date:*** 1/16/17

- - - -

After all of the above steps have been completed, save and print the worksheet, attach all applicable supplemental information and sign below.

I acknowledge that the data verification and validation process has been completed for the data identified above in accordance with the procedures described in the CMC QAPP, SOP #2



1/16/17

Data Verifier/Validator Signature Date

COMPLETION OF DATA VERIFICATION AND VALIDATION PROCESS

Once the data verification and validation process has been completed for the entire study (note: if the worksheet is for a subset of the data from a study, be sure ALL the data for the entire study is included before final completion of the data verification and validation process), notify the NMSQUID administrator that the process is complete and request that “V V in STORET” be added to the project title.

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Attachment 1.2 SWQB Validation Codes

When deficiencies are identified through the data verification and validation process, AMAFCA documents or "flags" the deficiencies by assigning validation codes. All data collected from the last compliant QC sample and up to the next compliant QC sample are assigned validation codes. The validation code alerts the data user that the results are outside QA control limits and may require re-sampling or a separate, qualitative analysis based on professional judgment.

Validation Code	Definition	WQX Equivalent
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RB1	Chemical was detected in the field blank at a concentration greater than or equal to 5% of the sample concentration. Results for this sample are rejected because they may be the result of contamination; the results may not be reported or used for regulatory compliance purposes.	B
R1	Rejected due to incorrect sample preservation	R
R2	Rejected due to equipment failure in the field	R
R3	Rejected based on best professional judgment	R
D1	Spike recovery not within method acceptance limits	
F1	Sample filter time exceeded	
J1	Estimated: the analyte was positively identified and the associated value is an approximate concentration of the analyte in the sample	J
K1	Holding time violation	H
Ea	Estimated-Incubation temperature between 35.5 and 38.0° Celsius	
Er	Rejected-Incubation temperature < 34.5 or >38.0° Celsius	
PD1	Percent difference between duplicate samples excessive	
S1	Per SLD, uncertainties (sigmas) are expressed as one standard deviation, i.e. one standard error. Small negative or positive values that are less than two standard deviations should be interpreted as "less than the detection limit."	
S2	Data are suspect but deemed usable based on best professional judgment; documentation of justification is required and should be included in the Data Verification and Validation Packet and reported with results	
Z1	Macroinvertebrate data did not meet QC criteria specified in Section 2.5 of QAPP	
H1	Habitat data did not meet QC criteria specified in Section 2.5 of QAPP	

Attachment 1.1 Water Quality Sample Data Verification and Validation Worksheet

Study Name: Compliance Monitoring Cooperative (CMC)
Year: FY 2017 (September 2016 – Wet Season Sample)
Project Coordinator: For Data Review and Reporting – SJG, BHI
V&V Reviewer: SJG
Data covered by this worksheet: Rio Grande North – 9/7/16 – E. coli Only Sample – Was Not Qualifying Storm Event
Version of Verification/Validation Procedures: QAPP – SOP #2 (2/2015)

Step 1: Verify Field Data
A. Are all Field Data forms present and complete? ☒ Yes ☐ No

If yes, proceed; if no, attempt to locate missing forms, then indicate any remaining missing forms and action taken.

Missing Field Data Forms	Action Taken

Total number of occurrences: 0

B. Are station name and ID, and sampling date and time on forms consistent with database? ☒ Yes ☐ No
If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify.

Station and Parameter	Action Taken	Re-verified?

Total number of occurrences: 0

C. Are field data on forms consistent with database? ☒ Yes ☐ No
If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify.

Station	Sampling Date	Parameter(s) Corrected	Re-verified?

Total number of occurrences: 0

D. Are RIDs correct and associated with the correct analytical suite, media subdivision (e.g. surface water, municipal waste, etc.) and activity type (e.g. Field observation, Routine sample, QA sample etc.)?

☒ Yes ☐ No

If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify

Station/RID	Sampling Date	RID Corrected	Re-verified?

Total number of occurrences: 0

☒ **Step 1 Completed** ***Initials:*** SJG ***Date:*** 1/13/17

- -

Step 2: Verify Data Deliverables

A. Have all data in question been delivered? ☒ Yes ☐ No

If yes, proceed; if no, indicate RIDs with missing data (samples or blanks) or attach report with applicable RIDs highlighted. Contact data source and indicate action taken. Complete this step upon receipt of all missing data.

RID	Submittal Date	Missing Data/Parameters	Date of Initial Verification	Date Missing Data Were Received

Total number of occurrences: 0

B. Do all of the analytical suites have the correct number and type of analytes. ☒ Yes ☐ No

If yes, proceed; if no, indicate RIDs with missing or incorrect analyte(s) or attach report with applicable RIDs highlighted. Contact data source and indicate action taken.

RID	Submittal Date	Missing or Incorrect Parameters	Action Taken	Re-verified?

_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

☒ **Step 2 Completed** ***Initials:*** SJG ***Date:*** 1/13/17

- -

Step 3: Verify Flow Data

*Note – Not Applicable – no flow data provided with CMC sample collection

A. Identify incorrect or missing data on the flow calculation spreadsheet and correct errors.

Station	Sampling Date	Flow data missing or incorrect?
_____	_____	_____
_____	_____	_____

Total number of occurrences: 0

B. Identify incorrect or missing discharge measurements, correct errors in database and re-verify.

Station	Sampling Date	Flow data missing or incorrect?	Re-verified?
_____	_____	_____	_____
_____	_____	_____	_____

Total number of occurrences: 0

Not Applicable

☐ **Step 3 Completed** ***Initials:*** SJG ***Date:*** 1/13/17

- -

Step 4: Verify Analytical Results for Missing Information or Questionable Results

Were any results with missing/questionable information identified? ☒ Yes ☐ No

If no, proceed; if yes, indicate results with missing information or questionable results or attach report. Contact data source and indicate action taken. Complete this step upon receipt of missing information or clarification of questionable results (clarify questionable results only, DO NOT change results without written approval (from lab or QA officer) and associated documentation).

RID	Sample Date	Missing or Questionable Information/Results	Action Taken

*Note – HEAL Lab report order number – 1608289_v1
Total number of occurrences: 0

☒ **Step 4 Completed** ***Initials:*** SJG ***Date:*** 1/13/17

- -

Step 5: Validate Blanks Results
Were any analytes of concern detected in blank samples? ☐ Yes ☒ No

If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager, with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes have been added to database correctly.

RID	Sample Date	Parameter	[Blank]	[Sample]	Validation Code/Flag Applied	Code/Flag verified in database? *

*See validation procedures to determine which associated data need to be flagged and include on *Validation Codes Form*.

Total number of occurrences: 0

☒ **Step 5 Completed** ***Initials:*** SJG ***Date:*** 1/13/17

- -

Step 6: Validate Holding Times Violations
Were any samples submitted that did not meet specified holding times? ☐ Yes ☒ No

If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes/flags have been added to database.

RID	Sample Date	Parameter	[Blank]	[Sample]	Validation Code/Flag Applied	Code/Flag verified in database to ALL associated data?*

*See validation procedures to determine which associated data need to be flagged.

Total number of occurrences: 0

☒ **Step 6 Completed** ***Initials:*** SJG ***Date:*** 1/13/17

- -

Step 7: Validate Replicate/Duplicate Results (if applicable)
Were any replicate/duplicate pairs submitted outside of the established control limit of 20%?
☐ Yes ☒ No
If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes/flags have been added to database.

RID Pairs		Replicate or Duplicate?	Sample Date	Parameter	RPD	Validation Code/Flag Applied	Code/Flag verified in database applied?*
_____	_____	_____	_____	_____	_____		_____
_____	_____	_____	_____	_____	_____		_____

*See validation procedures to determine which associated data need to be flagged.

Total number of occurrences: 0

☒ **Step 7 Completed** ***Initials:*** SJG ***Date:*** 1/13/16

****

After all of the above steps have been completed, save and print the worksheet, attach all applicable supplemental information and sign below.

I acknowledge that the data verification and validation process has been completed for the data identified above in accordance with the procedures described in the CMC QAPP, SOP #2



1/13/17

Data Verifier/Validator Signature Date

COMPLETION OF DATA VERIFICATION AND VALIDATION PROCESS

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Validation Code	Definition	WQX Equivalent
A1	Sample not collected according to SOP	
B1	Chemical was detected in the field blank at a concentration less than 5% of the sample concentration.	
BN	Blanks NOT collected during sampling run	
BU	Detection in blank. Analyte was not detected in this sample above the method's sample detection limit.	BU
RB1	Chemical was detected in the field blank at a concentration greater than or equal to 5% of the sample concentration. Results for this sample are rejected because they may be the result of contamination; the results may not be reported or used for regulatory compliance purposes.	B
R1	Rejected due to incorrect sample preservation	R
R2	Rejected due to equipment failure in the field	R
R3	Rejected based on best professional judgment	R
D1	Spike recovery not within method acceptance limits	
F1	Sample filter time exceeded	
J1	Estimated: the analyte was positively identified and the associated value is an approximate concentration of the analyte in the sample	J
K1	Holding time violation	H
Ea	Estimated-Incubation temperature between 35.5 and 38.0° Celsius	
Er	Rejected-Incubation temperature < 34.5 or >38.0° Celsius	
PD1	Percent difference between duplicate samples excessive	
S1	Per SLD, uncertainties (sigmas) are expressed as one standard deviation, i.e. one standard error. Small negative or positive values that are less than two standard deviations should be interpreted as "less than the detection limit."	
S2	Data are suspect but deemed usable based on best professional judgment; documentation of justification is required and should be included in the Data Verification and Validation Packet and reported with results	
Z1	Macroinvertebrate data did not meet QC criteria specified in Section 2.5 of QAPP	
H1	Habitat data did not meet QC criteria specified in Section 2.5 of QAPP	

Attachment 1.1 Water Quality Sample Data Verification and Validation Worksheet

Study Name: Compliance Monitoring Cooperative (CMC)
Year: FY 2017 (September 2016 – Wet Season Sample)
Project Coordinator: For Data Review and Reporting – SJG, BHI
V&V Reviewer: SJG
Data covered by this worksheet: Rio Grande North – 9/12/16 and 9/13/16
Version of Verification/Validation Procedures: QAPP – SOP #2 (2/2015)

Step 1: Verify Field Data
A. Are all Field Data forms present and complete? ☒ Yes ☐ No

If yes, proceed; if no, attempt to locate missing forms, then indicate any remaining missing forms and action taken.

Missing Field Data Forms	Action Taken

Total number of occurrences: 0

B. Are station name and ID, and sampling date and time on forms consistent with database? ☒ Yes ☐ No
If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify.

Station and Parameter	Action Taken	Re-verified?

Total number of occurrences: 0

C. Are field data on forms consistent with database? ☒ Yes ☐ No
If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify.

Station	Sampling Date	Parameter(s) Corrected	Re-verified?

Total number of occurrences: 0

D. Are RIDs correct and associated with the correct analytical suite, media subdivision (e.g. surface water, municipal waste, etc.) and activity type (e.g. Field observation, Routine sample, QA sample etc.)?

☒ Yes ☐ No

If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify

Station/RID	Sampling Date	RID Corrected	Re-verified?
_____	_____	_____	_____
_____	_____	_____	_____

Total number of occurrences: 0

☒ **Step 1 Completed** ***Initials:*** SJG ***Date:*** 1/13/17

- -

Step 2: Verify Data Deliverables

A. Have all data in question been delivered? ☒ Yes ☐ No

If yes, proceed; if no, indicate RIDs with missing data (samples or blanks) or attach report with applicable RIDs highlighted. Contact data source and indicate action taken. Complete this step upon receipt of all missing data.

RID	Submittal Date	Missing Data/Parameters	Date of Initial Verification	Date Missing Data Were Received
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

Total number of occurrences: 0

B. Do all of the analytical suites have the correct number and type of analytes. ☒ Yes ☐ No

If yes, proceed; if no, indicate RIDs with missing or incorrect analyte(s) or attach report with applicable RIDs highlighted. Contact data source and indicate action taken.

*Note – Lab report identifies “Dissolved phosphorous” as “Total Phosphorous” on a filtered sample (identified under “Client Sample ID”).

RID	Submittal Date	Missing or Incorrect Parameters	Action Taken	Re-verified?
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

☒ **Step 2 Completed** ***Initials:*** SJG ***Date:*** 1/13/17

- -

Step 3: Verify Flow Data

*Note – Not Applicable – no flow data provided with CMC sample collection

A. Identify incorrect or missing data on the flow calculation spreadsheet and correct errors.

Station	Sampling Date	Flow data missing or incorrect?
_____	_____	_____
_____	_____	_____

Total number of occurrences: 0

B. Identify incorrect or missing discharge measurements, correct errors in database and re-verify.

Station	Sampling Date	Flow data missing or incorrect?	Re-verified?
_____	_____	_____	_____
_____	_____	_____	_____

Total number of occurrences: 0

Not Applicable

☐ **Step 3 Completed** ***Initials:*** SJG ***Date:*** 1/13/17

- -

Step 4: Verify Analytical Results for Missing Information or Questionable Results

Were any results with missing/questionable information identified? ☒ Yes ☐ No

If no, proceed; if yes, indicate results with missing information or questionable results or attach report. Contact data source and indicate action taken. Complete this step upon receipt of missing information or clarification of questionable results (clarify questionable results only, DO NOT change results without written approval (from lab or QA officer) and associated documentation).

RID	Sample Date	Missing or Questionable Information/Results	Action Taken
Rio Grande North & South	9/13/16	Lab report provides Dissolved Phosphorous results as "Total Phosphorous" for "filtered sample".	Notified AMAFCA and DBS&A of this and requested that lab more clearly report data.

*Note – HEAL Lab report order number – 1609527_v1 and 1609609_v2
Total number of occurrences: 1

☒ **Step 4 Completed** ***Initials:*** SJG ***Date:*** 1/13/17

- -

Step 5: Validate Blanks Results
Were any analytes of concern detected in blank samples? ☐ Yes ☒ No

If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager, with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes have been added to database correctly.

RID	Sample Date	Parameter	[Blank]	[Sample]	Validation Code/Flag Applied	Code/Flag verified in database? *

*See validation procedures to determine which associated data need to be flagged and include on *Validation Codes Form*.

Total number of occurrences: 0

☒ **Step 5 Completed** ***Initials:*** SJG ***Date:*** 1/13/17

- -

Step 6: Validate Holding Times Violations
Were any samples submitted that did not meet specified holding times? ☐ Yes ☒ No

If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes/flags have been added to database.

RID	Sample Date	Parameter	[Blank]	[Sample]	Validation Code/Flag Applied	Code/Flag verified in database to ALL associated data?*
_____	_____	_____	_____	_____		_____
_____	_____	_____	_____	_____		_____

*See validation procedures to determine which associated data need to be flagged.
Total number of occurrences: 0

☒ **Step 6 Completed** ***Initials:*** SJG ***Date:*** 1/13/17

- -

Step 7: Validate Replicate/Duplicate Results (if applicable)
Were any replicate/duplicate pairs submitted outside of the established control limit of 20%?
☐ Yes ☒ No
If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes/flags have been added to database.

RID Pairs		Replicate or Duplicate?	Sample Date	Parameter	RPD	Validation Code/Flag Applied	Code/Flag verified in database applied?*
_____	_____	_____	_____	_____	_____		_____
_____	_____	_____	_____	_____	_____		_____

*See validation procedures to determine which associated data need to be flagged.

Total number of occurrences: 0

☒ **Step 7 Completed** ***Initials:*** SJG ***Date:*** 1/13/16

****

After all of the above steps have been completed, save and print the worksheet, attach all applicable supplemental information and sign below.

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1/13/17

Data Verifier/Validator Signature Date

COMPLETION OF DATA VERIFICATION AND VALIDATION PROCESS

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R1	Rejected due to incorrect sample preservation	R
R2	Rejected due to equipment failure in the field	R
R3	Rejected based on best professional judgment	R
D1	Spike recovery not within method acceptance limits	
F1	Sample filter time exceeded	
J1	Estimated: the analyte was positively identified and the associated value is an approximate concentration of the analyte in the sample	J
K1	Holding time violation	H
Ea	Estimated-Incubation temperature between 35.5 and 38.0° Celsius	
Er	Rejected-Incubation temperature < 34.5 or >38.0° Celsius	
PD1	Percent difference between duplicate samples excessive	
S1	Per SLD, uncertainties (sigmas) are expressed as one standard deviation, i.e. one standard error. Small negative or positive values that are less than two standard deviations should be interpreted as "less than the detection limit."	
S2	Data are suspect but deemed usable based on best professional judgment; documentation of justification is required and should be included in the Data Verification and Validation Packet and reported with results	
Z1	Macroinvertebrate data did not meet QC criteria specified in Section 2.5 of QAPP	
H1	Habitat data did not meet QC criteria specified in Section 2.5 of QAPP	

Attachment 1.1 Water Quality Sample Data Verification and Validation Worksheet

Study Name: Compliance Monitoring Cooperative (CMC)
Year: FY 2017 (September 2016 – Wet Season Sample)
Project Coordinator: For Data Review and Reporting – SJG, BHI
V&V Reviewer: SJG
Data covered by this worksheet: Rio Grande South – 9/13/16
Version of Verification/Validation Procedures: QAPP – SOP #2 (2/2015)

Step 1: Verify Field Data

A. Are all Field Data forms present and complete? ☒ Yes ☐ No

If yes, proceed; if no, attempt to locate missing forms, then indicate any remaining missing forms and action taken.

Missing Field Data Forms	Action Taken
_____	_____
_____	_____

Total number of occurrences: 0

B. Are station name and ID, and sampling date and time on forms consistent with database? ☒ Yes ☐ No
If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify.

Station and Parameter	Action Taken	Re-verified?
_____	_____	_____
_____	_____	_____

Total number of occurrences: 0

C. Are field data on forms consistent with database? ☒ Yes ☐ No
If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify.

Station	Sampling Date	Parameter(s) Corrected	Re-verified?
_____	_____	_____	_____
_____	_____	_____	_____

Total number of occurrences: 0

D. Are RIDs correct and associated with the correct analytical suite, media subdivision (e.g. surface water, municipal waste, etc.) and activity type (e.g. Field observation, Routine sample, QA sample etc.)?

☒ Yes ☐ No

If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify

Station/RID	Sampling Date	RID Corrected	Re-verified?

Total number of occurrences: 0

☒ **Step 1 Completed** ***Initials:*** SJG ***Date:*** 1/13/17

- - - -

RID	Submittal Date	Missing or Incorrect Parameters	Action Taken	Re-verified?
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

☒ **Step 2 Completed** ***Initials:*** SJG ***Date:*** 1/13/17

- -

Step 3: Verify Flow Data

*Note – Not Applicable – no flow data provided with CMC sample collection

A. Identify incorrect or missing data on the flow calculation spreadsheet and correct errors.

Station	Sampling Date	Flow data missing or incorrect?
_____	_____	_____
_____	_____	_____

Total number of occurrences: 0

B. Identify incorrect or missing discharge measurements, correct errors in database and re-verify.

Station	Sampling Date	Flow data missing or incorrect?	Re-verified?
_____	_____	_____	_____
_____	_____	_____	_____

Total number of occurrences: 0

Not Applicable

☐ **Step 3 Completed** ***Initials:*** SJG ***Date:*** 1/13/17

- -

Step 4: Verify Analytical Results for Missing Information or Questionable Results

Were any results with missing/questionable information identified? ☒ Yes ☐ No

If no, proceed; if yes, indicate results with missing information or questionable results or attach report. Contact data source and indicate action taken. Complete this step upon receipt of missing information or clarification of questionable results (clarify questionable results only, DO NOT change results without written approval (from lab or QA officer) and associated documentation).

RID	Sample Date	Missing or Questionable Information/Results	Action Taken
Rio Grande North & South	9/13/16	Lab report provides Dissolved Phosphorous results as "Total Phosphorous" for "filtered sample".	Notified AMAFCA and DBS&A of this and requested that lab more clearly report data.

*Note – HEAL Lab report order number – 1609609_v2
Total number of occurrences: 1

☒ **Step 4 Completed** ***Initials:*** SJG ***Date:*** 1/13/17

- -

Step 5: Validate Blanks Results
Were any analytes of concern detected in blank samples? ☐ Yes ☒ No

If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager, with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes have been added to database correctly.

RID	Sample Date	Parameter	[Blank]	[Sample]	Validation Code/Flag Applied	Code/Flag verified in database? *

*See validation procedures to determine which associated data need to be flagged and include on *Validation Codes Form*.

Total number of occurrences: 0

☒ **Step 5 Completed** ***Initials:*** SJG ***Date:*** 1/13/17

- -

Step 6: Validate Holding Times Violations
Were any samples submitted that did not meet specified holding times? ☐ Yes ☒ No

If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes/flags have been added to database.

RID	Sample Date	Parameter	[Blank]	[Sample]	Validation Code/Flag Applied	Code/Flag verified in database to ALL associated data?*
_____	_____	_____	_____	_____		_____
_____	_____	_____	_____	_____		_____

*See validation procedures to determine which associated data need to be flagged.
Total number of occurrences: 0

☒ **Step 6 Completed** ***Initials:*** SJG ***Date:*** 1/13/17

- -

Step 7: Validate Replicate/Duplicate Results (if applicable)
Were any replicate/duplicate pairs submitted outside of the established control limit of 20%?
☐ Yes ☒ No
If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes/flags have been added to database.

RID Pairs		Replicate or Duplicate?	Sample Date	Parameter	RPD	Validation Code/Flag Applied	Code/Flag verified in database applied?*
_____	_____	_____	_____	_____	_____		_____
_____	_____	_____	_____	_____	_____		_____

*See validation procedures to determine which associated data need to be flagged.

Total number of occurrences: 0

☒ **Step 7 Completed** ***Initials:*** SJG ***Date:*** 1/13/16

****

After all of the above steps have been completed, save and print the worksheet, attach all applicable supplemental information and sign below.

I acknowledge that the data verification and validation process has been completed for the data identified above in accordance with the procedures described in the CMC QAPP, SOP #2



1/13/17

Data Verifier/Validator Signature Date

COMPLETION OF DATA VERIFICATION AND VALIDATION PROCESS

Once the data verification and validation process has been completed for the entire study (note: if the worksheet is for a subset of the data from a study, be sure ALL the data for the entire study is included before final completion of the data verification and validation process), notify the NMSQUID administrator that the process is complete and request that “V V in STORET” be added to the project title.

Once all data have been verified and validated for a study provide copies of ALL *Data Verification and Validation Worksheets* and attachments associated with the study to the Quality Assurance Officer and retain originals in the project binder.

Attachment 1.2 SWQB Validation Codes

When deficiencies are identified through the data verification and validation process, AMAFCA documents or "flags" the deficiencies by assigning validation codes. All data collected from the last compliant QC sample and up to the next compliant QC sample are assigned validation codes. The validation code alerts the data user that the results are outside QA control limits and may require re-sampling or a separate, qualitative analysis based on professional judgment.

Validation Code	Definition	WQX Equivalent
A1	Sample not collected according to SOP	
B1	Chemical was detected in the field blank at a concentration less than 5% of the sample concentration.	
BN	Blanks NOT collected during sampling run	
BU	Detection in blank. Analyte was not detected in this sample above the method's sample detection limit.	BU
RB1	Chemical was detected in the field blank at a concentration greater than or equal to 5% of the sample concentration. Results for this sample are rejected because they may be the result of contamination; the results may not be reported or used for regulatory compliance purposes.	B
R1	Rejected due to incorrect sample preservation	R
R2	Rejected due to equipment failure in the field	R
R3	Rejected based on best professional judgment	R
D1	Spike recovery not within method acceptance limits	
F1	Sample filter time exceeded	
J1	Estimated: the analyte was positively identified and the associated value is an approximate concentration of the analyte in the sample	J
K1	Holding time violation	H
Ea	Estimated-Incubation temperature between 35.5 and 38.0° Celsius	
Er	Rejected-Incubation temperature < 34.5 or >38.0° Celsius	
PD1	Percent difference between duplicate samples excessive	
S1	Per SLD, uncertainties (sigmas) are expressed as one standard deviation, i.e. one standard error. Small negative or positive values that are less than two standard deviations should be interpreted as "less than the detection limit."	
S2	Data are suspect but deemed usable based on best professional judgment; documentation of justification is required and should be included in the Data Verification and Validation Packet and reported with results	
Z1	Macroinvertebrate data did not meet QC criteria specified in Section 2.5 of QAPP	
H1	Habitat data did not meet QC criteria specified in Section 2.5 of QAPP	

Attachment 1.1 Water Quality Sample Data Verification and Validation Worksheet

Study Name: Compliance Monitoring Cooperative (CMC)
Year: FY 2017 (September 2016 – Wet Season Sample)
Project Coordinator: For Data Review and Reporting – SJG, BHI
V&V Reviewer: SJG
Data covered by this worksheet: Rio Grande North – 9/21/16 and 9/22/16
Version of Verification/Validation Procedures: QAPP – SOP #2 (2/2015)

Step 1: Verify Field Data
A. Are all Field Data forms present and complete? ☒ Yes ☐ No

If yes, proceed; if no, attempt to locate missing forms, then indicate any remaining missing forms and action taken.

Missing Field Data Forms	Action Taken
_____	_____
_____	_____

Total number of occurrences: 0

B. Are station name and ID, and sampling date and time on forms consistent with database? ☒ Yes ☐ No
If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify.

Station and Parameter	Action Taken	Re-verified?
_____	_____	_____
_____	_____	_____

Total number of occurrences: 0

C. Are field data on forms consistent with database? ☒ Yes ☐ No
If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify.

Station	Sampling Date	Parameter(s) Corrected	Re-verified?
_____	_____	_____	_____
_____	_____	_____	_____

Total number of occurrences: 0

D. Are RIDs correct and associated with the correct analytical suite, media subdivision (e.g. surface water, municipal waste, etc.) and activity type (e.g. Field observation, Routine sample, QA sample etc.)?

☒ Yes ☐ No

If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify

Station/RID	Sampling Date	RID Corrected	Re-verified?
_____	_____	_____	_____
_____	_____	_____	_____

Total number of occurrences: 0

☒ **Step 1 Completed** ***Initials:*** SJG ***Date:*** 1/13/17

- -

Step 2: Verify Data Deliverables

A. Have all data in question been delivered? ☒ Yes ☐ No

If yes, proceed; if no, indicate RIDs with missing data (samples or blanks) or attach report with applicable RIDs highlighted. Contact data source and indicate action taken. Complete this step upon receipt of all missing data.

RID	Submittal Date	Missing Data/Parameters	Date of Initial Verification	Date Missing Data Were Received
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

Total number of occurrences: 0

B. Do all of the analytical suites have the correct number and type of analytes. ☒ Yes ☐ No

If yes, proceed; if no, indicate RIDs with missing or incorrect analyte(s) or attach report with applicable RIDs highlighted. Contact data source and indicate action taken.

*Note – Lab report identifies “Dissolved Phosphorous” as “Total Phosphorous” and does not distinguish this as a filtered sample, as prior lab reports have done. Lower value of “Total Phosphorous” reported as the “Dissolved Phosphorous” result.

RID	Submittal Date	Missing or Incorrect Parameters	Action Taken	Re-verified?
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

☒ **Step 2 Completed** ***Initials:*** SJG ***Date:*** 1/13/17

- -

Step 3: Verify Flow Data

*Note – Not Applicable – no flow data provided with CMC sample collection

A. Identify incorrect or missing data on the flow calculation spreadsheet and correct errors.

Station	Sampling Date	Flow data missing or incorrect?
_____	_____	_____
_____	_____	_____

Total number of occurrences: 0

B. Identify incorrect or missing discharge measurements, correct errors in database and re-verify.

Station	Sampling Date	Flow data missing or incorrect?	Re-verified?
_____	_____	_____	_____
_____	_____	_____	_____

Total number of occurrences: 0

Not Applicable

☐ **Step 3 Completed** ***Initials:*** SJG ***Date:*** 1/13/17

- -

Step 4: Verify Analytical Results for Missing Information or Questionable Results

Were any results with missing/questionable information identified? ☒ Yes ☐ No

If no, proceed; if yes, indicate results with missing information or questionable results or attach report. Contact data source and indicate action taken. Complete this step upon receipt of missing information or clarification of questionable results (clarify questionable results only, DO NOT change results without written approval (from lab or QA officer) and associated documentation).

RID	Sample Date	Missing or Questionable Information/Results	Action Taken
Rio Grande North & South	9/22/16	Lab report provides two "Total Phosphorous" results, and no "Dissolved Phosphorous" results. Used lower value as "Dissolved Phosphorous".	Notified AMAFCA and DBS&A of this and requested that lab more clearly report data.

*Note – HEAL Lab report order number – 1609B94_v1 and 1609609_v2
Total number of occurrences: 1

☒ **Step 4 Completed** ***Initials:*** SJG ***Date:*** 1/13/17

- -

Step 5: Validate Blanks Results
Were any analytes of concern detected in blank samples? ☐ Yes ☒ No

If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager, with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes have been added to database correctly.

RID	Sample Date	Parameter	[Blank]	[Sample]	Validation Code/Flag Applied	Code/Flag verified in database? *

*See validation procedures to determine which associated data need to be flagged and include on *Validation Codes Form*.

Total number of occurrences: 0

☒ **Step 5 Completed** ***Initials:*** SJG ***Date:*** 1/13/17

- -

Step 6: Validate Holding Times Violations
Were any samples submitted that did not meet specified holding times? ☐ Yes ☒ No

If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes/flags have been added to database.

RID	Sample Date	Parameter	[Blank]	[Sample]	Validation Code/Flag Applied	Code/Flag verified in database to ALL associated data?*
_____	_____	_____	_____	_____		_____
_____	_____	_____	_____	_____		_____

*See validation procedures to determine which associated data need to be flagged.
Total number of occurrences: 0

☒ **Step 6 Completed** ***Initials:*** SJG ***Date:*** 1/13/17

- -

Step 7: Validate Replicate/Duplicate Results (if applicable)
Were any replicate/duplicate pairs submitted outside of the established control limit of 20%?
☐ Yes ☒ No
If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes/flags have been added to database.

RID Pairs		Replicate or Duplicate?	Sample Date	Parameter	RPD	Validation Code/Flag Applied	Code/Flag verified in database applied?*
_____	_____	_____	_____	_____	_____		_____
_____	_____	_____	_____	_____	_____		_____

*See validation procedures to determine which associated data need to be flagged.

Total number of occurrences: 0

☒ **Step 7 Completed** ***Initials:*** SJG ***Date:*** 1/13/16

****

After all of the above steps have been completed, save and print the worksheet, attach all applicable supplemental information and sign below.

I acknowledge that the data verification and validation process has been completed for the data identified above in accordance with the procedures described in the CMC QAPP, SOP #2



1/13/17

Data Verifier/Validator Signature Date

COMPLETION OF DATA VERIFICATION AND VALIDATION PROCESS

Once the data verification and validation process has been completed for the entire study (note: if the worksheet is for a subset of the data from a study, be sure ALL the data for the entire study is included before final completion of the data verification and validation process), notify the NMSQUID administrator that the process is complete and request that “V V in STORET” be added to the project title.

Once all data have been verified and validated for a study provide copies of ALL *Data Verification and Validation Worksheets* and attachments associated with the study to the Quality Assurance Officer and retain originals in the project binder.

Attachment 1.2 SWQB Validation Codes

When deficiencies are identified through the data verification and validation process, AMAFCA documents or "flags" the deficiencies by assigning validation codes. All data collected from the last compliant QC sample and up to the next compliant QC sample are assigned validation codes. The validation code alerts the data user that the results are outside QA control limits and may require re-sampling or a separate, qualitative analysis based on professional judgment.

Validation Code	Definition	WQX Equivalent
A1	Sample not collected according to SOP	
B1	Chemical was detected in the field blank at a concentration less than 5% of the sample concentration.	
BN	Blanks NOT collected during sampling run	
BU	Detection in blank. Analyte was not detected in this sample above the method's sample detection limit.	BU
RB1	Chemical was detected in the field blank at a concentration greater than or equal to 5% of the sample concentration. Results for this sample are rejected because they may be the result of contamination; the results may not be reported or used for regulatory compliance purposes.	B
R1	Rejected due to incorrect sample preservation	R
R2	Rejected due to equipment failure in the field	R
R3	Rejected based on best professional judgment	R
D1	Spike recovery not within method acceptance limits	
F1	Sample filter time exceeded	
J1	Estimated: the analyte was positively identified and the associated value is an approximate concentration of the analyte in the sample	J
K1	Holding time violation	H
Ea	Estimated-Incubation temperature between 35.5 and 38.0° Celsius	
Er	Rejected-Incubation temperature < 34.5 or >38.0° Celsius	
PD1	Percent difference between duplicate samples excessive	
S1	Per SLD, uncertainties (sigmas) are expressed as one standard deviation, i.e. one standard error. Small negative or positive values that are less than two standard deviations should be interpreted as "less than the detection limit."	
S2	Data are suspect but deemed usable based on best professional judgment; documentation of justification is required and should be included in the Data Verification and Validation Packet and reported with results	
Z1	Macroinvertebrate data did not meet QC criteria specified in Section 2.5 of QAPP	
H1	Habitat data did not meet QC criteria specified in Section 2.5 of QAPP	

Attachment 1.1 Water Quality Sample Data Verification and Validation Worksheet

Study Name: Compliance Monitoring Cooperative (CMC)
Year: FY 2017 (September 2016 – Wet Season Sample)
Project Coordinator: For Data Review and Reporting – SJG, BHI
V&V Reviewer: SJG
Data covered by this worksheet: Rio Grande South – 9/22/16
Version of Verification/Validation Procedures: QAPP – SOP #2 (2/2015)

Step 1: Verify Field Data

A. Are all Field Data forms present and complete? ☒ Yes ☐ No

If yes, proceed; if no, attempt to locate missing forms, then indicate any remaining missing forms and action taken.

Missing Field Data Forms	Action Taken
_____	_____
_____	_____

Total number of occurrences: 0

B. Are station name and ID, and sampling date and time on forms consistent with database? ☒ Yes ☐ No
If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify.

Station and Parameter	Action Taken	Re-verified?
_____	_____	_____
_____	_____	_____

Total number of occurrences: 0

C. Are field data on forms consistent with database? ☒ Yes ☐ No
If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify.

Station	Sampling Date	Parameter(s) Corrected	Re-verified?
_____	_____	_____	_____
_____	_____	_____	_____

Total number of occurrences: 0

D. Are RIDs correct and associated with the correct analytical suite, media subdivision (e.g. surface water, municipal waste, etc.) and activity type (e.g. Field observation, Routine sample, QA sample etc.)?

☒ Yes ☐ No

If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify

Station/RID	Sampling Date	RID Corrected	Re-verified?

Total number of occurrences: 0

☒ **Step 1 Completed** ***Initials:*** SJG ***Date:*** 1/13/17

- - - -

RID	Submittal Date	Missing or Incorrect Parameters	Action Taken	Re-verified?
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

☒ **Step 2 Completed** ***Initials:*** SJG ***Date:*** 1/13/17

- -

Step 3: Verify Flow Data

*Note – Not Applicable – no flow data provided with CMC sample collection

A. Identify incorrect or missing data on the flow calculation spreadsheet and correct errors.

Station	Sampling Date	Flow data missing or incorrect?
_____	_____	_____
_____	_____	_____

Total number of occurrences: 0

B. Identify incorrect or missing discharge measurements, correct errors in database and re-verify.

Station	Sampling Date	Flow data missing or incorrect?	Re-verified?
_____	_____	_____	_____
_____	_____	_____	_____

Total number of occurrences: 0

Not Applicable

☐ **Step 3 Completed** ***Initials:*** SJG ***Date:*** 1/13/17

- -

Step 4: Verify Analytical Results for Missing Information or Questionable Results

Were any results with missing/questionable information identified? ☒ Yes ☐ No

If no, proceed; if yes, indicate results with missing information or questionable results or attach report. Contact data source and indicate action taken. Complete this step upon receipt of missing information or clarification of questionable results (clarify questionable results only, DO NOT change results without written approval (from lab or QA officer) and associated documentation).

RID	Sample Date	Missing or Questionable Information/Results	Action Taken
Rio Grande North & South	9/22/16	Lab report provides two "Total Phosphorous" results, and no "Dissolved Phosphorous" results. Used lower value as "Dissolved Phosphorous".	Notified AMAFCA and DBS&A of this and requested that lab more clearly report data.

*Note – HEAL Lab report order number – 1609609_v2
Total number of occurrences: 1

☒ **Step 4 Completed** ***Initials:*** SJG ***Date:*** 1/13/17

- -

Step 5: Validate Blanks Results
Were any analytes of concern detected in blank samples? ☐ Yes ☒ No

If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager, with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes have been added to database correctly.

RID	Sample Date	Parameter	[Blank]	[Sample]	Validation Code/Flag Applied	Code/Flag verified in database? *

*See validation procedures to determine which associated data need to be flagged and include on *Validation Codes Form*.

Total number of occurrences: 0

☒ **Step 5 Completed** ***Initials:*** SJG ***Date:*** 1/13/17

- -

Step 6: Validate Holding Times Violations
Were any samples submitted that did not meet specified holding times? ☐ Yes ☒ No

If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes/flags have been added to database.

RID	Sample Date	Parameter	[Blank]	[Sample]	Validation Code/Flag Applied	Code/Flag verified in database to ALL associated data?*
_____	_____	_____	_____	_____		_____
_____	_____	_____	_____	_____		_____

*See validation procedures to determine which associated data need to be flagged.
Total number of occurrences: 0

☒ **Step 6 Completed** ***Initials:*** SJG ***Date:*** 1/13/17

- -

Step 7: Validate Replicate/Duplicate Results (if applicable)
Were any replicate/duplicate pairs submitted outside of the established control limit of 20%?
☐ Yes ☒ No
If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes/flags have been added to database.

RID Pairs		Replicate or Duplicate?	Sample Date	Parameter	RPD	Validation Code/Flag Applied	Code/Flag verified in database applied?*
_____	_____	_____	_____	_____	_____		_____
_____	_____	_____	_____	_____	_____		_____

*See validation procedures to determine which associated data need to be flagged.

Total number of occurrences: 0

☒ **Step 7 Completed** ***Initials:*** SJG ***Date:*** 1/13/16

****

After all of the above steps have been completed, save and print the worksheet, attach all applicable supplemental information and sign below.

I acknowledge that the data verification and validation process has been completed for the data identified above in accordance with the procedures described in the CMC QAPP, SOP #2



1/13/17

Data Verifier/Validator Signature Date

COMPLETION OF DATA VERIFICATION AND VALIDATION PROCESS

Once the data verification and validation process has been completed for the entire study (note: if the worksheet is for a subset of the data from a study, be sure ALL the data for the entire study is included before final completion of the data verification and validation process), notify the NMSQUID administrator that the process is complete and request that “V V in STORET” be added to the project title.

Once all data have been verified and validated for a study provide copies of ALL *Data Verification and Validation Worksheets* and attachments associated with the study to the Quality Assurance Officer and retain originals in the project binder.

Attachment 1.2 SWQB Validation Codes

When deficiencies are identified through the data verification and validation process, AMAFCA documents or "flags" the deficiencies by assigning validation codes. All data collected from the last compliant QC sample and up to the next compliant QC sample are assigned validation codes. The validation code alerts the data user that the results are outside QA control limits and may require re-sampling or a separate, qualitative analysis based on professional judgment.

Validation Code	Definition	WQX Equivalent
A1	Sample not collected according to SOP	
B1	Chemical was detected in the field blank at a concentration less than 5% of the sample concentration.	
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BU	Detection in blank. Analyte was not detected in this sample above the method's sample detection limit.	BU
RB1	Chemical was detected in the field blank at a concentration greater than or equal to 5% of the sample concentration. Results for this sample are rejected because they may be the result of contamination; the results may not be reported or used for regulatory compliance purposes.	B
R1	Rejected due to incorrect sample preservation	R
R2	Rejected due to equipment failure in the field	R
R3	Rejected based on best professional judgment	R
D1	Spike recovery not within method acceptance limits	
F1	Sample filter time exceeded	
J1	Estimated: the analyte was positively identified and the associated value is an approximate concentration of the analyte in the sample	J
K1	Holding time violation	H
Ea	Estimated-Incubation temperature between 35.5 and 38.0° Celsius	
Er	Rejected-Incubation temperature < 34.5 or >38.0° Celsius	
PD1	Percent difference between duplicate samples excessive	
S1	Per SLD, uncertainties (sigmas) are expressed as one standard deviation, i.e. one standard error. Small negative or positive values that are less than two standard deviations should be interpreted as "less than the detection limit."	
S2	Data are suspect but deemed usable based on best professional judgment; documentation of justification is required and should be included in the Data Verification and Validation Packet and reported with results	
Z1	Macroinvertebrate data did not meet QC criteria specified in Section 2.5 of QAPP	
H1	Habitat data did not meet QC criteria specified in Section 2.5 of QAPP	

ATTACHMENT 3

DOCUMENTATION RELATED TO E. COLI UNITS MPN/100ML AND CFU/100 ML

From: Holcomb, Sarah, NMENV [mailto:sarah.holcomb@state.nm.us]
Sent: Monday, February 6, 2017 8:08 AM
To: Chavez, Patrick <pchavez@amafca.org>
Subject: RE: MPN vs CFU for E.coli

Hi Patrick,
According to our Monitoring folks, MPN and CFU are interchangeable. We did propose the change in the most recent triennial:

https://www.env.nm.gov/swqb/Standards/TR2013/01a_TRPetition04-2014.pdf

Once they are approved, you might want to check with EPA for how they would like you to report moving forward.

~ Sarah

From: Chavez, Patrick [mailto:pchavez@amafca.org]
Sent: Friday, February 3, 2017 8:54 AM
To: Holcomb, Sarah, NMENV <sarah.holcomb@state.nm.us>
Subject: MPN vs CFU for E.coli

Sarah:

Here is the memo I was referring to that discusses the difference between MPN and CFU. There isn't a lab that does the CFU method in Albuquerque and so all of our results to date are MPN. The permit refers to CFU as does the water quality standard. Be nice if we were able to compare apples-to-apples since the literature suggests that MPN may be higher than when compared to CFU. Should we be applying a correction factor to our lab results and is NMED going to consider EPA's guidance (in the memo) and list the water quality standards in both MPN and CFU?

Thanks,
Patrick

Patrick Chavez, MS, PE, LEED AP+
Storm Water Quality Engineer
Albuquerque **M**etropolitan **A**rroyo **F**lood **C**ontrol **A**uthority
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From: Andy Freeman [mailto:andy@hallenvironmental.com]
Sent: Tuesday, January 31, 2017 3:16 PM
To: Chavez, Patrick <pchavez@amafca.org>
Subject: RE: E.coli results

Hi Patrick,

We report e.Coli enumeration using EPA Method 9223B quantitray. Our reports list e.Coli MPN, but the units say cfu/100mls. This can be confusing. It would be better for us to report as MPN/100mls.

Let me know if you have further questions on this.

Andy

From: Chavez, Patrick [mailto:pchavez@amafca.org]
Sent: Tuesday, January 31, 2017 8:19 AM
To: Andy Freeman
Subject: E.coli results

Andy:

Have a question hoping you can shed some light on concerning the difference between MPN and CFU/100ml. Have attached a lab result as an example but the question pertains to all the E.coli results that have been obtained from HEAL.

The question is: why is E.coli MPN listed as the type of test and the Units are listed as CFU/100ml? It was brought to my attention yesterday from another engineer that the result should either be MPN or CFU/100ml and that they are really two different tests? Can you clarify please?

Thanks again,
Patrick

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ENVIRONMENT DEPARTMENT

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JOHN A. SANCHEZ
Lieutenant Governor

RYAN FLYNN
Cabinet Secretary

BUTCH TONGATE
Deputy Secretary

ERIKA SCHWENDER
Director
Resource Protection Division

MEMORANDUM

TO: Kris Pintado, Standards, Planning and Reporting Team Leader

FROM: Jodey Kougioulis, Quality Assurance Officer

DATE: February 26, 2014

SUBJECT: Triennial Review – Most probable number (MPN) and colony forming units (cfu) enumeration methods and proposed standards reporting revision

Introduction and Purpose

The purpose of this memo is to address EPA's and SWQB staff comments and suggestions regarding the reporting of bacterial concentrations as MPN and to propose suggested revisions to the state's current reporting language for bacteria criteria which are expressed as colony forming units (cfu) per 100 ml. Currently, the SWQB reports bacteria data as most probable number (MPN) per 100 ml based on the use of IDEXX *Quanti-Tray* (QT) method which is an extended version of the IDEXX Colilert test. MPN and cfu represent different enumeration methods and result in different method specific units, but for purposes of reporting, EPA has used these terms interchangeably. EPA has approved methods for enumeration and allows reporting in either cfu or MPN per 100/ml in federal rule for ambient water (40 CFR, 2003) and for wastewater and sludge (40 CFR, 2007).

Background and General Description of MPN and cfu.

The MPN is a statistical estimate of the number of bacteria that, more probable than any other number, would give the observed result; it is not an actual count of the bacteria present. Membrane filtration (MF) methods which produce results expressed as cfu are culture-based and results are quantified by counting the number of colonies that arise from bacteria captured on the membrane filter per volume of water filtered. Although expressed as an actual count of the bacterial colony forming units, the number is still considered an estimate because colonies can be produced by one or several cells that can clump together in the sample. MPN methods are also culture-based with a defined substrate which produces an estimate number (density) of organisms based on the combination of positive and negative test tube results that can be read from a statistical probability MPN table.

Proposal

The SWQB currently uses an approved EPA method for sampling and analyzing bacteria levels in its ambient water quality monitoring program and reports these results in MPN. The water quality standards for bacteria criteria are proposed to be revised to reflect SWQB's current reporting practices and EPA's approved use of either membrane filtration methods, reported as cfu, or MPN methods, reported as MPN for enumeration of bacteria in ambient water and effluent. This change, if adopted, would allow results to be reported in either cfu or MPN, depending on the analytical method. The most appropriate place to do this may be in 20.6.4.900.D and E of NMAC by adding language similar to the following: "Water quality standards for E. coli are expressed in colony forming units per 100 milliliters of water (cfu/100 ml) or as a Most Probable Number (MPN)/100 ml."

Related Research

There have been numerous published papers that address the similarities or differences between enumeration results obtained by cfu methods and those obtained by MPN methods. Much of the earlier research concluded that *"there was no significant difference for the enumeration of E. coli between the QT and MF methods" (Rompré et al., 2002).*

More recently published research by Wohlsen et al. (2006) does show a significant difference between the two enumeration methods when using a standard reference inoculum. The use and calibration of a standard reference inoculum of only viable cells still needs to be related to original criteria development which was based on a combination of frequency, magnitude, and duration of exposure to ambient recreational waters, bacterial densities as enumerated by MF, and selected illness rates in response. As stated earlier, this is primarily a reporting revision to acknowledge the programmatic reality that both MPN and cfu can be reported and used to assess against the water quality standard.

Staff and EPA Comments, Suggestions, and Initial Review of Bacteria Criteria Reporting

Responses to both the EPA, SWQB staff, and the proposal justification will need to be clearly communicated in a consistent and coordinated fashion. The need to remain consistent with existing water quality standard language, definitions, and format may limit the expanse of revised language but ultimately the simple proposed revision will communicate the available reporting options for bacteria criteria. Comments from SWQB staff largely focused on the fact that MPN and cfu are enumerated and expressed differently with method specific units and that clear definitions are needed to describe this difference. EPA's comments and suggestion are largely in concert with the proposed revision and the suggested language will provide the clarity needed for criteria interpretation.

SWQB Staff Questions and Responses

Question 1): I have come across several scholarly articles that attempt to correlate MPN to cfu. They are not the same; cfu represents an absolute number of units, whereas MPN represents a theoretical value (often considered the maximum value).

Response: *EPA permits staff and SWQB staff raised issues about the enumeration of bacteria - most probable number (MPN) and colony forming units (*cfu*) - relative to implementation and assessment of the WQS. The traditional plate tests, including membrane filtration, estimate or count 'colonies' of bacteria reported as* cfu*. These provide a direct count of an indicator organism (E. coli) in ambient water or wastewater based on the development of colonies in/on media and a calculation is still performed. While microscopic counts may be more accurate, it's costly and time consuming, and there's still the problem of what's viable or not. Very few tests are conducted to determine live and dead colonies; in summary exact counts are generally not feasible to obtain. Newer tests such as Colilert (which is used by SWQWB for assessment and monitoring) report data as MPN which is a statistical representation of what level of E. coli is likely present in a sample. While MPN and* cfu *may not be entirely equivalent, for the purposes of reporting, these terms are currently used interchangeably by the EPA. EPA has approved these methods for enumeration in federal rule for ambient water (40 CFR, 2003) and for wastewater and sludge (40 CFR, 2007). The currently recommended EPA recreational or bacteria criteria for E. coli are expressed as cfu/100 ml measured using EPA Method 1603 or any other equivalent method that measures culturable E. coli. Therefore, the water quality standards are under deliberation to be revised to reflect the use of updated methods for monitoring, assessment and reporting. After much consideration, the most appropriate place to do this may be in 20.6.4.900.D and E of NMAC by adding language similar to the following:*

> *"Water quality standards for E. coli are expressed in colony forming units per 100 milliliters of water (cfu / 100 ml) or as a Most Probable Number (MPN)/100 ml"*

References for EPA Method 1603 and EPA's final rules establishing alternate test procedures could also be included in 20.6.4.901 NMAC as references.

Abbreviations for both cfu *and MPN are suggested to be included in the WQS definitions.*

Question 2) Similar to the cfu/100mL definition, do we need to make reference to cfu/100mL in the MPN definition?
Add the term "most probable number" (under terms beginning with the letter 'M').

Response: *Generally, the definitions seem to stand on their own, e.g., there doesn't seem to be any 'cross referencing' in these definitions. Instead of adding a definition for MPN, the abbreviation for MPN is retained in this section. Please also see the previous discussion in response to bacteria enumeration (under 20.6.4.7.A (3)(a) NMAC), and response below.*

"MPN" will be listed under the abbreviations section of the definitions, so it'll be 'defined' in that way. It's also appropriate to add 'MPN' (as an alternate enumeration to cfu) under the criteria section in 20.6.4.900.D and E NMAC (see the new language in that section). As there's not a "full" definition for cfu in the WQS, to be consistent with the rule format, a "full" definition for MPN won't be added. Also, there's really not a concise, easily understood definition for cfu to put into the standards. Both enumeration methods are also fully described in the EPA criteria recommendations and supporting documents, in the methods, and in the scientific literature.

EPA Comment and SWQB Response

The Region's concern with the state's current bacteria criteria are related to how the provision reads and its interpretation. The *E. coli* standard that the state uses is expressed as colony forming units (cfu) per 100 ml. In a plain reading, this provision requires a specific test method but does not allow an alternative test. Generally the Region recommends avoiding this type of approach to test methods.

When bacterial Total Maximum Daily Loads (TMDL) are issued, they may specify extremely large numbers of cfu/100 ml as a loading limit. This requires building an equation for calculating the loading limit as expressed in the TMDL into a footnote into NPDES permits. To simplify the process, the Region has consulted with waste water treatment plant operators to determine if the most probable number (MPN) can be used as an equivalent to cfu/100 ml. The general answer is yes, and the Region has been using this approach. NMED inspectors seem to agree with this approach, since they also see the problem in the field. The problem here is that this approach requires the use of a different test method. What the Region suggests is that both the standards and TMDL guidance documents refer to both cfu/100 ml *and* MPN as equivalent, allowing either generally approved test method to be used to account the level of indicator bacteria in permits.

Response: *EPA Region 6 has suggested that the water quality standards and the state's TMDL guidance refer to both colony forming units (*cfu*) and most probable number (MPN), as EPA has approved the use of test methods with results that are expressed in either cfu or MPN. The use of more cost-effective and time efficient methods in which counts are expressed as MPN was approved by EPA as equivalent for testing ambient waters in 2003*[1] *, and for wastewater and sewage sludge in 2007*[2]*. The SWQB is currently using an approved EPA method for sampling and analyzing bacteria levels in ambient water and reporting results in MPN. The currently recommended EPA recreational or bacteria criteria for E. coli are expressed as* cfu*/100 ml measured using EPA Method 1603 or any other equivalent method that measures culturable E. coli* [3],[4]*. Therefore, the water quality standards are proposed to be revised to reflect the use of updated methods for monitoring, assessment and reporting. References for EPA Method 1603 and EPA's final rules establishing alternate test procedures may be considered for inclusion under 220.6.4.901 NMAC.*

Footnotes

1. *U.S. Federal Register* - 40 CFR Part 136 Vol. 68, No. 139; July 21, 2003.
2. *U.S. Federal Register* - 40 CFR Parts 136 and 503, Vol. 72, No. 157; March 26, 2007.
3. EPA, 2012: http://water.epa.gov/scitech/swguidance/standards/criteria/health/recreation/upload/factsheet2012.pdf
4. USEPA. 2002. Method 1603: *Escherichia coli* (*E. coli*) In Water By Membrane Filtration Using Modified membrane-Thermotolerant *Escherichia coli* Agar (modified mTEC). U.S. Environmental Protection Agency, Office of Water, Washington D.C. EPA–821–R–02–023

References

Annie Rompre´, Pierre Servais, Julia Baudart, Marie-Rene´e de-Roubin, Patrick Laurent (2002). *Detection and enumeration of coliforms in drinking water: current methods and emerging approaches.* Journal of Microbiological Methods 49 (2002) 31–54

U.S. Federal Register - 40 CFR Part 136 Vol. 68, No. 139; July 21, 2003.

U.S. Federal Register - 40 CFR Parts 136 and 503, Vol. 72, No. 157; March 26, 2007.

USEPA, 2012:
http://water.epa.gov/scitech/swguidance/standards/criteria/health/recreation/upload/factsheet2012.pdf

USEPA. 2002. Method 1603: *Escherichia coli* (*E. coli*) In Water By Membrane Filtration Using Modified membrane-Thermotolerant *Escherichia coli* Agar (modified mTEC). U.S. Environmental Protection Agency, Office of Water, Washington D.C. EPA–821–R–02–023

Wohlsen, T., Bates, J., Vesey, G., Robinson, W.A. and M. Katouli (2006) Evaluation of the methods for enumerating coliform bacteria from water samples using precise reference standards. *Letters in Applied Microbiology* **42**, 350-356.

ATTACHMENT 4

DOCUMENTATION OF NMED COORDINATION REGARDING E. COLI LOADING CALCULATIONS AND CMC MS4 WASTE LOAD ALLOCATION

Bohannan Huston

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Advanced Technologies

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MEMORANDUM

DATE: February 8, 2017

TO: Compliance Monitoring Cooperative (CMC) Members

FROM: Sarah Ganley, PE

SUBJECT: **February 1, 2017, Meeting Minutes from Meeting with NMED Regarding E. coli TMDL and CMC MS4 Waste Load Allocation**

Attendees

Sarah Holcomb, New Mexico Environment Department (NMED), Surface Water
Wano Urbanos, NMED, Assessment & TMDL Team
Kali Bronson, Bernalillo County
Patrick Chavez, AMAFCA
Kevin Daggett, City of Albuquerque
Dave Gatterman, SSCAFCA
Steven Morgenstern, NMDOT
Stephen Thies, NMDOT
Sarah Ganley, Bohannan Huston (BHI)

Purpose of Meeting

This meeting was initiated by the Compliance Monitoring Cooperative (CMC) group to discuss with NMED E. coli Total Maximum Daily Load (TMDL) in the Rio Grande, CMC MS4 Waste Load Allocation (WLA), and E. coli loading calculations in order to clarify and confirm calculation assumptions. Also, the group wanted to discuss what the E. coli loading results compared to the WLA mean for the CMC.

General Discussion of TMDL and Single Sample Results

The CMC began the discussion asking NMED for an overall explanation of the TMDL. This led to the CMC questioning the fact that the TMDL is based on daily, instream loading and that the MS4 discharge related to a storm event is not on a daily basis and also that MS4 non-point discharge is not accurately represented as an instream sample. The group also discussed that the TMDL is based on the Pueblos of Sandia and Isleta geometric mean water quality standard (WQS) of 47 CFU/100 ml.

Regarding the daily loading verses loading over a shorter storm duration, NMED's basis for the TMDL is daily loading in the river. If the CMC were to reduce the time duration for the E. coli loading, they would also need to reduce the WLA over that same time period. The E. coli loading

could not be calculated for only the storm duration and then compared to the WLA which was determined on a daily basis. The daily loading is just spreading out the E. coli concentration for a given flow rate over a day. Based on the discussions, the daily loading is appropriate for loading comparison to the TMDL and WLA.

NMED admitted that the WLA is really designed for a pipe/point source, and the instream sample for the MS4 non-point source is not completely accurate. At this time though, this is how the loading calculations and comparisons to the WLA were established and are being done. NMED seemed willing to consider other suggestions in the future, if the CMC could support a better approach. For now, this is how the TMDL and WLA for E. coli was determined.

To improve on the instream sample relevance for the MS4s, NMED suggested that another E. coli sample is needed at the stream segment divide (at Alameda). Discussion of the Santa Fe River TMDL development may have led to this suggestion. This led to a discussion on the CMC refining its sampling plan. This sampling plan refinement would need NMED and EPA approval. In addition, the CMC discussed perhaps adding pre-storm event E. coli samples to determine the condition of the river before a storm event and to help better determine what loading the MS4s are contributing during storm events.

The CMC asked how the TMDL could be based on the Pueblos' geometric mean WQS, but all of the water quality samples are single, grab samples. The comparison of the two numbers does not seem equitable. NMED stated that they must meet most stringent downstream WQSs when developing the TMDL. The geometric mean compared to the single sample was not discussed further.

The CMC members also asked NMED about reporting the monitoring values in the NetDMR system, which is set up for point source reporting. Sarah Holcomb stated that she has not had any conversations with EPA regarding this, so she is not sure about the NetDMR forms.

Stream Segment Designation Questions

The CMC group showed NMED the figure of the Rio Grande designating the two MS4 segments and the four NMED 303(d)/305(b) segments and questioned the NMED 303(d)/305(b) 2016-2018 Integrated Report tables, which do not list E. coli as a TMDL for several of the reaches. NMED explained the tables and the segments. TMDLs are separate from the NMED 303(d)/305(b) 2016-2018 Integrated Report. Based on their explanation, the segments are not contradictory.

The NMED 303(d)/305(b) 2016-2018 Integrated Report tables show the most recent assessment results, and currently, there is only one segment of the Rio Grande (Isleta to Tijeras) that was found to be impaired for E. coli. However, the TMDL for the other stream segments do not go away even if they are no longer impaired – the TMDL remains in place as a protective measure. The analogy NMDOT used to explain this was that if there was an intersection with a lot of accidents, and a stop sign or reduced speed measure was added in an effort to reduce the accidents, once the accidents were reduced, the control measure would not be removed. TMDLs remain after impairments are removed as protective measures. NMED stated that the only way a TMDL would be removed is if the water quality standard changed. NMED did state that new

assessment data or perhaps use of the CMC data could be used to revise the TMDL, but it would not be removed.

NMED stated that the fact that the E. coli impairment has been removed in several segments is a very good thing, and it's likely the MS4 work has helped with this improvement on the river. This point is a good point for CMC members to mention in their annual reporting.

The group briefly discussed why one segment (Isleta to Tijeras) was still impaired. The group asked if NMED looked for sources during the assessment. NMED explained that the NMED 303(d)/305(b) 2016-2018 Integrated Report tables list probable sources which come from staff observations, historical knowledge, and a checklist that is used during the assessments.

E. coli Loading Calculations – Questions on Assumptions

NMED clarified that the two assessment units (AUs) listed in the 2010 TMDL report are not additive – each was looked at individually during TMDL assessment. For calculations this translates to, when there is not a mid-point E. coli sample taken (as the CMC is currently operating), 77% of the instream E. coli loading is applied to the upstream reach (Alameda to Angostura), and 23% is applied to the downstream reach (Isleta to Alameda). As a reminder, currently the E. coli loading is the Rio Grande South E. coli loading minus the Rio Grande North E. coli loading. The draft of the E. coli loading spreadsheet incorrectly assumed the reaches were additive and had applied 100% to the lower reach (Isleta to Alameda)—this was corrected after this meeting. The refined sampling plan (discussed above) would add an intermediate E. coli sample, and the 77% and 23% discussed above would no longer be needed in the loading calculations.

We also briefly discussed that with the way the Rio Grande is operated, flow downstream (using the USGS gage at Central) is not necessarily higher than flow upstream (using the USGS gage at Alameda). This could result in a negative loading. The group's calculation spreadsheet will be updated to not allow negative loading.

WLA Exceedance When no Storm Event

The CMC pointed out that they had upstream and downstream E. coli results for non-storm events and analysis of these loading results show that the CMC WLA was exceeded even in "dry," non-storm event conditions. NMED stated that you would never analyze non-storm event flows related to the CMC, and the CMC could not be in exceedance. The CMC's point that the "dry" exceedances show that the river E. coli issues are likely not correctly attributed to the MS4s was not fully understood/accepted by NMED during the meeting. NMED focused on the fact the MS4s would never look at "dry" conditions or be in exceedance of any WLAs in "dry," non-storm event conditions.

This led to a brief discussion on if MS4s could be contributing to the E. coli loading during non-storm conditions (illicit discharges, septic systems, etc.). This led to a discussion by the CMC members of potentially conducting one day of watershed-wide dry weather inspections at the same time as sampling the E. coli upstream and downstream (maybe at the mid-point also) of the MS4. The dry weather screening would give assurance that no (or minimal) illicit discharges or non-stormwater flows were contributing to the river at the time of the samples. Then the river E.

coli samples could be assessed with assurance that the MS4 was not contributing runoff and the results would only be attributable to point sources and background sources.

What Does WLA Exceedance Mean for CMC

The CMC discussed that the WLA seems unattainable. The NMED 2010 TMDL reports state this is a “difficult objective.” Some of the reasons discussed regarding the WLA as a poor measurable goal include: the basis of the TMDL/WLA (the Pueblo geometric mean), the instream and single grab sample used in the calculation, and the fact that the “dry,” non-storm event conditions E. coli analyses show exceedances that are not attributable to the MS4s. NMED suggested including these concerns in the EPA annual reports along with the results.

AMAFCA asked if the WLA was always going to be exceeded should NMED consider issuing advisories. There were no real responses to the advisory discussion.

NMED explained that exceeding the WLA does not trigger enforcement. However, the MS4s need to document what they are doing once they realize the WLA is exceeded. First, this meeting and CMC discussion with NMED demonstrate that CMC members are working toward understanding and improvement. In addition, the suggested refinements to the sampling plan (discussed above) show that the CMC is investigating the exceedance. The proposed one day, watershed-wide dry weather inspections would be another step to show actions taken to further investigate the exceedance. In addition, NMED mentioned looking at Best Management Practices (BMPs) and how those could improve. Also, NMED suggested that the CMC members document all of these actions in their annual reports.

Potential Upcoming TMDLs Discussion

At the end of the meeting, the CMC group asked about the estimated 2017 TMDLs listed in the NMED 303(d)/305(b) 2016-2018 Integrated Report tables and what to expect regarding those. NMED stated that these are not current priorities and will not occur in 2017. The discussion is important because, as discussed earlier, once a TMDL is issued, it does not go away. In addition, MS4s cannot really remove themselves from a TMDL; since runoff occurs, it has to have a WLA. Bernalillo County was particularly interested in this regarding the Tijeras Arroyo and a future TMDL for nutrients. Even though the County has data showing runoff is not contributing to the nutrient issue, they would still be given a WLA in the future TMDL.

SG/le
Attachment

Attachment 1 – Meeting Agenda

ATTACHMENT 1
MEETING AGENDA

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CMC Stormwater Quality Monitoring –
E. coli Loading and TMDL/WLA Discussion with NMED

NMED
Wednesday, February 1, 2017
9:30 am

Meeting Objective: Discuss E. coli TMDL in Rio Grande, CMC MS4 WLA, and E. coli loading calculations with NMED in order to clarify and confirm calculation assumptions. Also, discuss what the E. coli loading results mean for the CMC.

General Discussion of TMDL and Single Sample Results	Single sample and how one result translates/compares to the instream TMDL CMC has single sample for determining the E. coli loading – TMDL based on Pueblo geometric maximum mean value of 47 CFU/100 ml E. coli loading – daily loading compared to loading over the storm event duration NetDMR reporting – set up for point source reporting
Stream Segment Designation Questions	Compare MS4 and NMED §303(d)/§305(b) Integrated Report segment designations Question on NMED §303(d)/§305(b) Integrated Report listing of E. coli TMDLs
E. coli Loading Calculations – Questions on Assumptions	Flow regime designations – 2010 TMDL Report vs. NMED e-mail Confirm understanding and application of Jurisdictional Area Approach Delta in E. coli loading (north sample minus south sample) – this could be negative because of how Rio Grande is operated (flows can decrease downstream) Upstream exceedance – WLA only considers the delta in loading
WLA Exceedance When no Storm Event	Examples from Wet Season (July 2016) and Dry Season (Dec. 2016) E. coli data in 2010 TMDL Report – not related to storm events
What Does WLA Exceedance Mean for CMC	Need to calculate E. coli loading & compare to WLA – Required in MS4 Permit. Discuss what a calculated exceedance mean for the MS4s?

TMDL and MS4 Stream Segment
Alameda Bridge to Angostura Diversion
(2105.1_00)

NMED 303(d)/305(b) Stream Segment
US 550 to Angostura Diversion
(2105.1_02)

NMED 303(d)/305(b) Stream Segment
Alameda Bridge to US 550
(2105.1_00)

NMED 303(d)/305(b) Stream Segment
Tijeras Arroyo to Alameda Bridge
(2105_10)

Rio Grande Segment
with TMDL and Impairment
for E. Coli

NMED 303(d)/305(b) Stream Segment
Isleta Pueblo Boundary to Tijeras Arroyo
(2105_50)

TMDL and MS4 Stream Segment
Isleta Pueblo Boundary
to Alameda Bridge
(2105_50)

MCMAHON BLVD
ROY AV
TRAMWAY RD
ALAMEDA BLVD
PASEO DEL NORTE
OSUNA RD
MONTANO RD
CANDELARIA RD
MENAUL BLVD
LOMAS BLVD
LEAD AV
ZUNI RD
CENTRAL AV
BRIDGE BLVD
GIBSON BLVD
DENNIS CHAVEZ BLVD
UNSER BLVD
98TH ST
2ND ST
ISLETA BLVD
BROADWAY BLVD
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25
550

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Legend

- TMDL/MS4 Stream Segments
- NMED Stream Segments
- North Diversion Channel
- Rio Grande Segment w/ TMDL and Impairment for E. Coli
- Interstate Highway
- U.S. Highway
- State Highway

N W E S

0 0.5 1 2
Miles

CMC Monitoring

Figure 7
Rio Grande
NMED and MS4 Permit
Stream Segments

P:\20170386\WR\Reports\Preliminary & Draft\Figures\MXDs\Figure7-TMDLStreamSegments.mxd
Author: gmaynard

February 2017

Sarah Ganley

From: Sarah Ganley
Sent: Thursday, March 02, 2017 9:42 AM
To: 'smith.nelly@epa.gov'
Cc: Chavez, Patrick (pchavez@amafca.org); Sarah Holcomb (sarah.holcomb@state.nm.us)
Subject: FW: MS4 CMC E. coli Loading Calculation Follow-Up
Attachments: CMC E coli Loading Percentage Calculation 3_2_17.xlsx

Hello Nelly –

I am forwarding you this e-mail to keep you informed of on-going coordination between the Middle Rio Grande Stormwater MS4 Compliance Monitoring Cooperative (CMC) and NMED regarding E. coli loading calculations and comparison to the TMDL WLA values in the Rio Grande.

Thank you,

Sarah J. Ganley, PE
Engineer
Water Resources
Direct line: 505-923-3314

Bohannan Huston
Courtyard I
7500 Jefferson St. NE
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From: Sarah Ganley
Sent: Thursday, March 02, 2017 9:30 AM
To: Sarah Holcomb (sarah.holcomb@state.nm.us) <sarah.holcomb@state.nm.us>; Henderson, Heidi, NMENV <heidi.henderson@state.nm.us>; wayne.urbonas@state.nm.us
Cc: Chavez, Patrick (pchavez@amafca.org) <pchavez@amafca.org>
Subject: MS4 CMC E. coli Loading Calculation Follow-Up

Hello Sarah, Heidi, and Wano,

Thank you for taking the time for a conference call on February 16, 2017 with myself and Patrick Chavez regarding the Middle Rio Grande Stormwater MS4 Compliance Monitoring Cooperative (CMC) E. coli loading calculations and comparison to the TMDL WLA values in the Rio Grande.

After our conversation, we went back and re-checked our approach, made one modification, and added notes/clarifications to our calculations spreadsheet. I have attached an updated spreadsheet to this e-mail for your reference.

As a summary of what we discussed on February 16th:

- Sources for the E. coli loading measured in the river are not solely attributable to the CMC MS4 members; the calculations we presented serve to provide a reasonable estimate of the CMC contribution to the measured E. coli loading.
- The measured E. coli loading is attributable to point sources (Town of Bernalillo WWTP, City of Rio Rancho WWTP No. 2, City of Rio Rancho WWTP No. 3, Albuquerque Bernalillo Water Utility Authority, and Sandia Peak Ski Co.), as well as non-point sources such as MS4 contributions and natural background contributions.
- An estimation of the E. coli loading attributable to the CMC is needed to allow comparison with the WLA values.
- We presented reasoning for why the 6% and 10% values from the US EPA Approved Total Maximum Daily Load (TMDL) for the Middle Rio Grande Watershed, June 30, 2010, Appendix F are not applicable estimations for this approach because these percentages do not consider the point source contributions to the measured E. coli loading. They make sense regarding the WLA determination, but not when looking at this from an in-stream E. coli loading determination.
- We presented alternative percentages of contribution – and as mentioned earlier, modified these after our conversation with you – that calculate a percentage of the CMC WLA value divided by the TMDL minus the MOS. This percentage represents an estimate of the percent of the CMC E. coli loading to all of the E. coli contributors (point sources, MS4s, and natural background). This percentage allows a reasonable estimation of the percent of the E. coli loading that is attributable to the CMC MS4s. Since our discussion, we removed the MOS from our percentage calculation.
- Using the above approach, the CMC then has an E. coli loading value to compare to the applicable WLA values, for a given stream segment and flow regime.
- The percentages of contribution that are presented for the upper stream segment (Alameda to Angostura) are essentially 6%, the same value presented in Appendix F of the 2010 US EPA Approved TMDL. The point sources in this stream segment are small (0 to 3% of the total TMDL), so although the jurisdictional area percentage presented in Appendix F did not include point sources, the effect is negligible. The pie charts in the attached spreadsheet help to illustrate this.
- The percentages of contribution that are presented for the lower stream segment (Isleta to Alameda) range from 1.8% to 6.5%. In Appendix F of the 2010 US EPA Approved TMDL and the NMED Nov. 2016 e-mail, the CMC value would be 6.7%. The greater difference in percentages in this stream segment is due to the presence of significant point sources (specifically the ABCWUA), which are relatively large contributors (2.5% to 70.7%, depending on the flow regime) to the total TMDL; therefore, because the percentage presented in Appendix F did not account for point sources, the impact to the calculated percent contribution by the CMC members can be significant.
- This approach is only an estimate of the CMC contribution to the E. coli loading. We do not know from the in-stream data the concentration of E. coli contributed by the CMC MS4s, or any of the other potential sources. By using this percentage approach, if other contributors are in exceedance of the WLA then the CMC will likely also be in exceedance since this approach relies on a percentage of a total. Therefore, the data collected by the CMC could not be used to determine the source causing the exceedance.

You left me a voicemail regarding the application of these percentages if and when the CMC adds a mid-point E. coli sample to their sampling program. To clarify:

- The percentages presented above and discussed during our conference call will still need to be applied if and when the CMC adds a mid-point E. coli sample to their sampling program. These percentages are to estimate how much of the total measured E. coli loading applies to the CMC MS4s.
- The TMDL was determined for two river segments, so each segment has different WLAs for the CMC; therefore, we currently divide the measured E. coli loading between these two segments so that they can be compared to the applicable WLA. The jurisdictional area from Appendix F of the 2010 US EPA Approved TMDL was used to estimate the percent of E. coli loading attributable to the northern segment (Alameda to Angostura) and the southern segment (Isleta to Alameda) of the Middle Rio Grande – 77% and 23%, respectively. If and when the

CMC adds a mid-point E. coli sample to their sampling program, these percentages will no longer need to be applied to the CMC E. coli loading calculation.

Thank you again for taking the time to discuss and review the CMC E. coli loading approach and calculations. We are moving forward with this E. coli loading approach. Please let me know if you have any questions or I can provide additional information or rational for this approach.

Sarah J. Ganley, PE
Engineer
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Sarah Ganley

From: Holcomb, Sarah, NMENV <sarah.holcomb@state.nm.us>
Sent: Thursday, March 02, 2017 1:20 PM
To: Sarah Ganley; Henderson, Heidi, NMENV; Urbonas, Wayne, NMENV
Cc: Chavez, Patrick (pchavez@amafca.org); Smith, Nelly (Smith.Nelly@epa.gov)
Subject: RE: MS4 CMC E. coli Loading Calculation Follow-Up

Hi Sarah & Patrick:

Thanks for the email. I think this is a good approach to estimating the CMC's contribution in stormwater. If there continue to be exceedances of the benchmark, then perhaps it may be a worthwhile discussion to refine the math at work here and look closer at conditions the day of monitoring. But we'll cross that bridge when we come to it.

I also wanted to ask when the CMC will add the additional monitoring location (for E. coli only) at the AU break.. I believe this should be documented in your next annual report, but this shouldn't require re-approval of the monitoring plan overall. Nelly, do you agree?

~ Sarah

From: Sarah Ganley [mailto:sganley@bhinc.com]
Sent: Thursday, March 2, 2017 9:30 AM
To: Holcomb, Sarah, NMENV <sarah.holcomb@state.nm.us>; Henderson, Heidi, NMENV <heidi.henderson@state.nm.us>; wayne.urbanos@state.nm.us
Cc: Chavez, Patrick (pchavez@amafca.org) <pchavez@amafca.org>
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Sarah J. Ganley, PE
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MEMORANDUM

DATE: July 12, 2017

TO: Jerry Lovato, PE, AMAFCA
Patrick Chavez, PE, AMAFCA

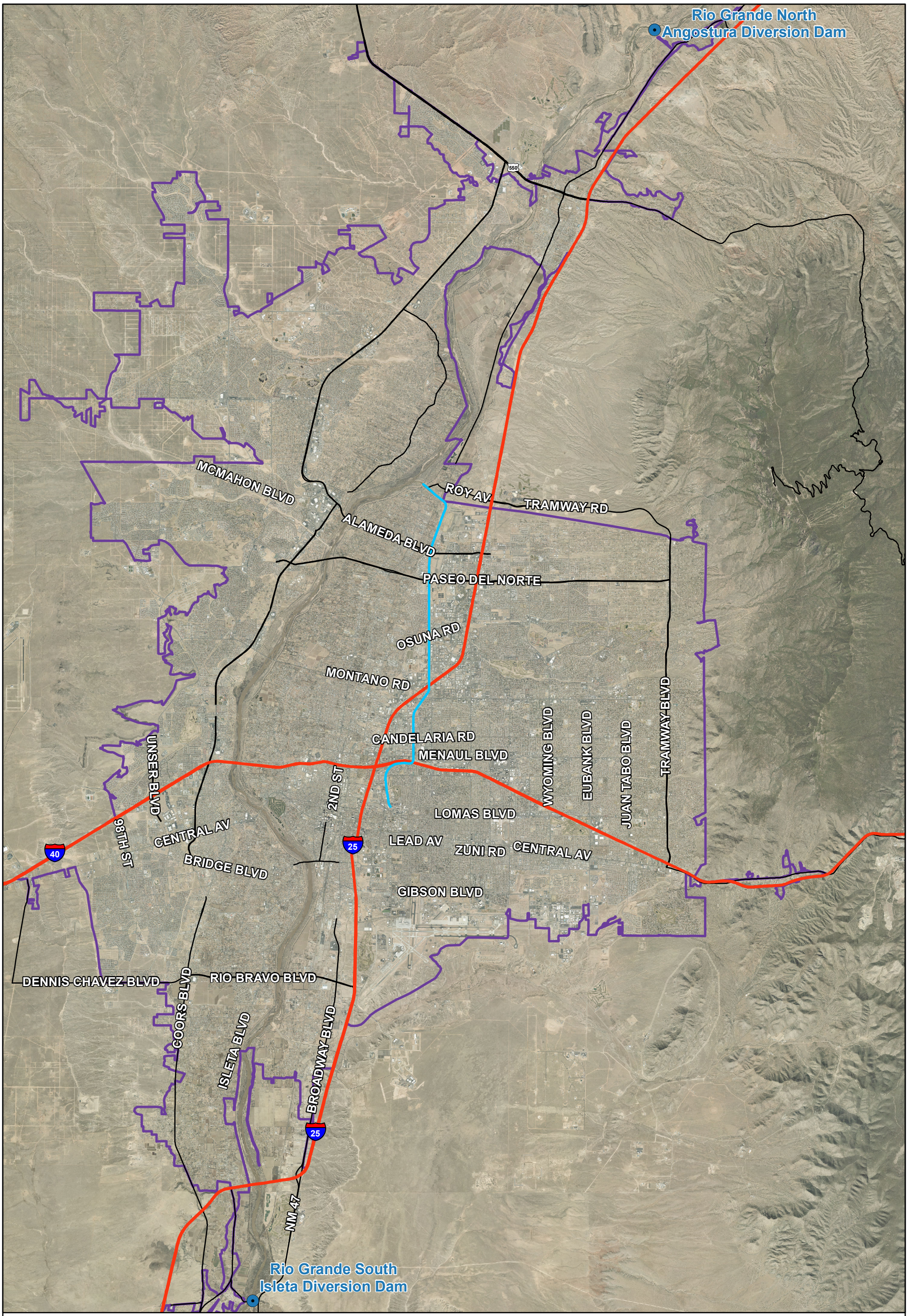
FROM: Craig Hoover, PE
Sarah Ganley, PE

SUBJECT: **CMC Dry Season, Wet Weather Stormwater Monitoring Data Verification, Analysis Results Database, and Reporting FY 2017 Dry Season (November 1, 2016, to June 30, 2017) Memo**

Overview of Stormwater Monitoring Activity

Bohannan Huston, Inc. (BHI) has been tasked to perform water quality services for the Compliance Monitoring Cooperative (CMC) Stormwater Data Verification, Database, and Reporting for the Wet Weather Stormwater Quality Monitoring Program for Fiscal Year (FY) 2017 (July 1, 2016, to June 30, 2017). The scope of work for this task includes data verification of the stormwater laboratory analysis results, compiling the analysis results into a database, and calculating the E. coli daily loading to compare with the Waste Load Allocation (WLA) for the qualifying storm events. The stormwater compliance monitoring is being conducted separately by Daniel B. Stephens & Associates, Inc. (DBS&A) and is not a part of this on-call task. This task is being conducted to assist the CMC members with their comprehensive monitoring and assessment program for compliance under the 2014 Middle Rio Grande Watershed Based Municipal Separate Storm Sewer System (MS4) Permit, NPDES Permit No. NMR04A000 ("WSB MS4 Permit").

As identified in the CMC Monitoring Plan, the WSB MS4 Permit requires that a minimum of seven (7) storm events be sampled at both the Rio Grande North and Rio Grande South locations (refer to Figure 1, page 2). During the 5-year WSB MS4 Permit term, at least three (3) events must be sampled in the wet season (between July 1 and October 31, 2016) and at least two (2) events in the dry season (between November and June). The remaining two (2) required events can be obtained during either the wet or dry seasons. During the FY 2017 dry season (November 2016 through June 2017) there was one (1) qualifying storm event where samples were collected for both the Rio Grande North and Rio Grande South locations.



Bohannan Huston
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Legend

- CMC Monitoring Locations
- North Diversion Channel
- Albuquerque Urbanized Area
- Interstate Highway
- U.S. Highway
- State Highway

N W E S

0 0.5 1 2
Miles

CMC Monitoring Locations

Figure 1

P:\20170386\WR\Reports\Preliminary & Draft\Figures\MXDs\Figure1-CMCMonitoringLocations.mxd
Author: gmaynard

July 2017

Summary of the CMC Sampling Plan

Sampling Parameters:

Samples from both the Rio Grande North and Rio Grande South monitoring locations were analyzed for the parameters defined in the EPA approved WSB MS4 CMC Monitoring Plan, May 5, 2016. The parameter list for both locations, which is intended to characterize stormwater discharges into the river, is as follows:

Total Suspended Solids (TSS)
Total Dissolved Solids (TDS)
Chemical Oxygen Demand (COD)
Biological Oxygen Demand – 5-day (BOD_5)
Dissolved Oxygen (DO)
Oil & grease (N-Hexane Extractable Material)
E. coli
pH
Total Kjeldahl Nitrogen (TKN)
Nitrate plus Nitrite
Dissolved Phosphorus
Ammonia plus Organic Nitrogen (Nitrogen, Ammonia and Nitrogen, Total)
Phosphorous (Total Phosphorous)
Polychlorinated Biphenyls (PCBs – Method 1668A)
Gross Alpha
Tetrahydrofuran
Benzo(a)pyrene
Benzo(b)fluoranthene (3, 4 Benzofluoranthene)
Benzo(k)fluoranthene
Chrysene
lndeno(1 ,2,3-cd)pyrene
Dieldrin
Pentachlorophenol
Benzidine
Benzo(a)anthracene
Dibenzofuran
Dibenzo(a, h)anthracene
Chromium VI (Hexavalent)
Copper – Dissolved
Lead – Dissolved
Bis(2-ethylhexyl)phthalate
Conductivity
Temperature
Hardness (as CaCO3) – added to allow dissolved metal results to be compared to the applicable water quality standards

DO, pH, conductivity, and temperature are required by the WSB MS4 Permit to be analyzed in the field during sample collection, which was conducted by DBS&A, within fifteen (15) minutes of sample collection. All E. coli samples were submitted to the laboratory within six (6) hours of collection in order to meet the specified hold time.

Sampling Locations:

The sampling locations are shown in Figure 1, page 2.

Rio Grande North – Instream sampling within the Rio Grande was performed upstream of the Angostura Diversion Dam at the north end of the watershed. The location is upstream of all inputs from the Urban Area (UA) to the river and provides the background water conditions.

Rio Grande South – Instream sampling within the Rio Grande was performed at the Isleta Bridge at the south end of the watershed. The location is downstream of all inputs from the UA to the river and provides the downstream water conditions.

These locations have been accepted by EPA and New Mexico Environment Department (NMED) to meet the WSB MS4 Permit requirements in Part III.A. These North and South instream sample locations capture all inputs to the Rio Grande within the UA.

Sample Collection:

As mentioned previously, sample collection for the CMC is being conducted by DBS&A through a separate on-call contract. Since BHI was not involved, this task and memo do not address the details of the methodologies regarding sampling, determining if an event was a qualifying storm event, or determining the timing of the hydrograph at the Rio Grande South location. After the November qualifying storm event sample was obtained, the CMC instructed DBS&A to stop sample collection during the remainder of the dry season.

DBS&A provided BHI with their field notes and field sample data (temperature, DO, specific conductivity, and pH) for the FY 2017 dry season sampling. AMAFCA provided BHI the completed laboratory analysis reports from Hall Environmental Analysis Laboratory (HEAL) for this monitoring season.

Quality Assurance Project Plan (QAPP):

AMAFCA provided BHI with the Draft Quality Assurance Project Plan (QAPP) for the CMC dated June 14, 2016. DBS&A followed this QAPP during sample collection. BHI used this QAPP and the included standard operating procedures (SOPs) for the data verification and validation.

Monitoring Activity & Lab Analysis Summary

The list below provides a chronological summary of the CMC comprehensive monitoring program activities completed by DBS&A for the FY 2017 dry season from November 2016 through June 2017. One (1) qualifying storm event was sampled and analyzed during the FY 2017 dry season.

- **November 3 – Only E. coli for Rio Grande North.** A sample was collected at the Rio Grande North location and sent to the laboratory for an E. coli only test. Based on review of the storm event by the CMC, it was determined this was not a qualifying storm event; therefore, full parameter testing did not occur for the sample collected at the Rio Grande North location.
- **November 21-22 – Qualifying Storm Event – Full Analysis of Samples**. A sample was collected at the Rio Grande North location beginning at 9:30 a.m. on November 21 and sent to the laboratory for an E. coli only test. The CMC determined that the storm event

beginning November 21 was a qualifying storm event. A Rio Grande South sample was collected beginning at 7:00 a.m. on November 22; the samples from the North (from November 21 collection) and South locations were taken to the laboratory for full parameter testing.

Stormwater Quality Database for CMC

As stated previously, there was one (1) qualifying storm event sampled during the FY 2017 dry season, wet weather monitoring which occurred November 21-22, 2016. DBS&A's field notes containing DO, pH, conductivity, and temperature measurements, as well as comments for the sampling done in November, have been received, and field results have been added to the database. Additionally, the HEAL reports for the corresponding time period have been received, added to the database, and are provided with this memo (Attachment 1). The laboratory reports attached to this memo have BHI added comments including the field parameter measurements and other relevant notes related to each laboratory report.

The HEAL analyses for the one (1) qualifying storm event contain the full parameter list for both the Rio Grande North and Rio Grande South sampling locations. There was one other precipitation event in November 2016 that did not evolve into qualifying storm events; however, an E. coli sample was still collected and field data was measured for the Rio Grande North location. The HEAL lab reports are provided with this memo (Attachment 1). Despite not being qualifying storm events, the field and E. coli data collected were added to the database as they provide additional background data for the CMC program.

Database Creation and Data Entry:

An Excel database of the FY 2017 wet weather monitoring data was created for this Task and provided with the March 6, 2017 FY 2017 Wet Season Memo. The November 2016 dry season monitoring data has been added to this database. The database contains sample locations (Rio Grande North and Rio Grande South), sample date, analyses conducted, methods used, applicable surface water quality standards (WQS), WSB MS4 Permit required Minimum Quantification Levels (MQL), and analysis results. Applicable surface WQS found in New Mexico Administrative Code (NMAC) 20.6.4, as well as the Pueblo of Isleta and Pueblo of Sandia WQS, are entered in the Excel database for comparison purposes with testing results. There is an indicator in the database to show if the monitoring results exceed the applicable surface WQS. An exceedance is not a violation of the WSB MS4 Permit, as the Permit does not have numeric discharge limitations. These ">WQ Standard" flags simply and quickly show the CMC members where the results of the lab data exceed the applicable surface WQS.

Upon receipt of the HEAL lab reports, water quality data was entered into the database. All data entered into the database is initially denoted with a "P" to indicate that it is provisional and has not been through the verification and validation process yet. Full parameter analyses of the qualifying storm event for both Rio Grande North and Rio Grande South locations were entered respectively into the database. In addition, the E. coli and field data only samples from the Rio Grande North location, obtained during one non-qualifying storm event, were also entered into the database.

Data Verification and Validation:

The HEAL laboratory analysis reports were provided to BHI by AMAFCA. The lab reports also contain the Chain of Custody for the submitted samples. Field data was requested by and

provided to BHI by DBS&A. Data verification and validation (V & V) was conducted by BHI on all field notes, lab reports, and Chain of Custody documents in accordance with the CMC Water Quality Standard Operating Procedure (SOP) #2, which is part of the existing CMC QAPP, Draft June 14, 2016. These procedures are based on EPA Guidance for Environmental Data Verification and Validation (U.S. EPA, 2008).

As stated in the QAPP, the V & V process was completed by a different person than the one who entered the data into the database. The V & V process included use of the *Data Verification and Validation Worksheet* (provided in the QAPP). For this task, field data was verified first, confirming that all field notes were complete. BHI handled field parameter questions directly with DBS&A. Chemical data verification began as soon as the lab reports were received, checking that all parameters were tested and looking for any obvious exceedances of surface WQS. Other steps listed on the *Data Verification and Validation Worksheet* were completed after all data from the laboratory was received and entered into the database. Sample blank results were reviewed to identify potential contamination during field processing or transport. Replica/duplicate samples were evaluated based on relative percent difference (as described in more detail in the QAPP) to determine the variability of the samples.

There were not any CMC FY 2017 dry season data that did not meet the appropriate QA/QC requirements. If there were any data that did not meet the appropriate QA/QC requirements, it would have been assigned an appropriate laboratory qualifier or validation code. A summary of validation codes is provided in the QAPP.

Once the V & V process was completed, the worksheets were signed. Copies of the V & V worksheets are provided with this memo (Attachment 2). In the database, data that was checked during the V & V process was then changed from being denoted with a “P” for provisional to a “V” for verified, and laboratory qualifiers were added as needed.

CMC FY 2017 Dry Season Assessment and Evaluation of Monitoring Results

The EPA approved WSB MS4 CMC Monitoring Plan, May 5, 2016, has thirty-four (34) parameters to monitor at the Rio Grande North and Rio Grande South monitoring locations. Of these thirty-four (34) parameters (which include four field parameters), over half of the parameters—eighteen (18) parameters—were not detected in the FY 2017 dry season samples at either the Rio Grande North or South locations. Refer to Table 1 for a list of the parameters that were not detected.

Table 1: Parameters Not Detected
CMC FY 2017 Dry Season Monitoring

Parameters Not Detected	
Oil and Grease (N-Hexane Extractable Material)	Pentachlorophenol
Ammonia (mg/L as N)	Benzidine
Tetrahydrofuran	Benzo(a)anthracene
Benzo(a)pyrene	Dibenzofuran
Benzo(b)fluoranthene (3, 4 Benzofluoranthene)	Dibenzo(a,h)anthracene
Benzo(k)fluoranthene	Chromium VI (Hexavalent)
Chrysene	Dissolved Copper
Indeno(1,2,3-cd)Pyrene	Dissolved Lead
Dieldren	Bis (2-ethyhexyl) Phthalate

The FY 2017 wet season also had eighteen (18) parameters that were not detected at either the Rio Grande North or South locations. The wet season non-detected parameters differed by two parameters as compared to the dry season; dissolved copper was detected in the wet season samples, and Total Kjedahl Nitrogen (TKN) was not detected in the wet season samples.

E. coli:

For the remaining sixteen (16) parameters on the CMC monitoring parameter list, only one parameter (E. coli) had exceedances of the applicable surface WQS found in New Mexico Administrative Code (NMAC) 20.6.4 and the Pueblo of Isleta and Pueblo of Sandia WQS during the FY 2017 dry season. At the Rio Grande North location (upstream of the Albuquerque UA, at the Angostura Diversion Dam), two (2) samples were collected and tested for E. coli, and neither of the samples had results that exceeded the primary contact-single sample Pueblo of Isleta and Pueblo of Sandia WQS (88 CFU/100 mL). At the Rio Grande South location (downstream of the MS4 UA), one (1) sample was collected and tested for E. coli, and this sample's result exceeded the primary contact-single sample NMAC WQS (410 CFU/100 ml) as well as the Pueblo of Isleta and Pueblo of Sandia WQS (88 CFU/100 mL). As a reminder, the E. coli units of MPN/100 mL and CFU/100 mL are considered to be interchangeable; the March 6, 2017 FY 2017 Wet Season Memo provides additional documentation regarding the E. coli units.

Dissolved Oxygen, PCB's and Temperature:

Three of the water quality parameters are specifically worth mentioning in this memo because they are listed in the WSB MS4 Permit, Part I.C.1 – Special Conditions: dissolved oxygen, PCBs, and temperature.

Dissolved oxygen is a water quality concern in the Rio Grande if it is below 5 mg/L. None of the samples taken from the Rio Grande during the FY 2017 CMC monitoring program had dissolved oxygen values below 5 mg/L. Refer to Figure 2 for dissolved oxygen results and comparison to applicable surface WQS.

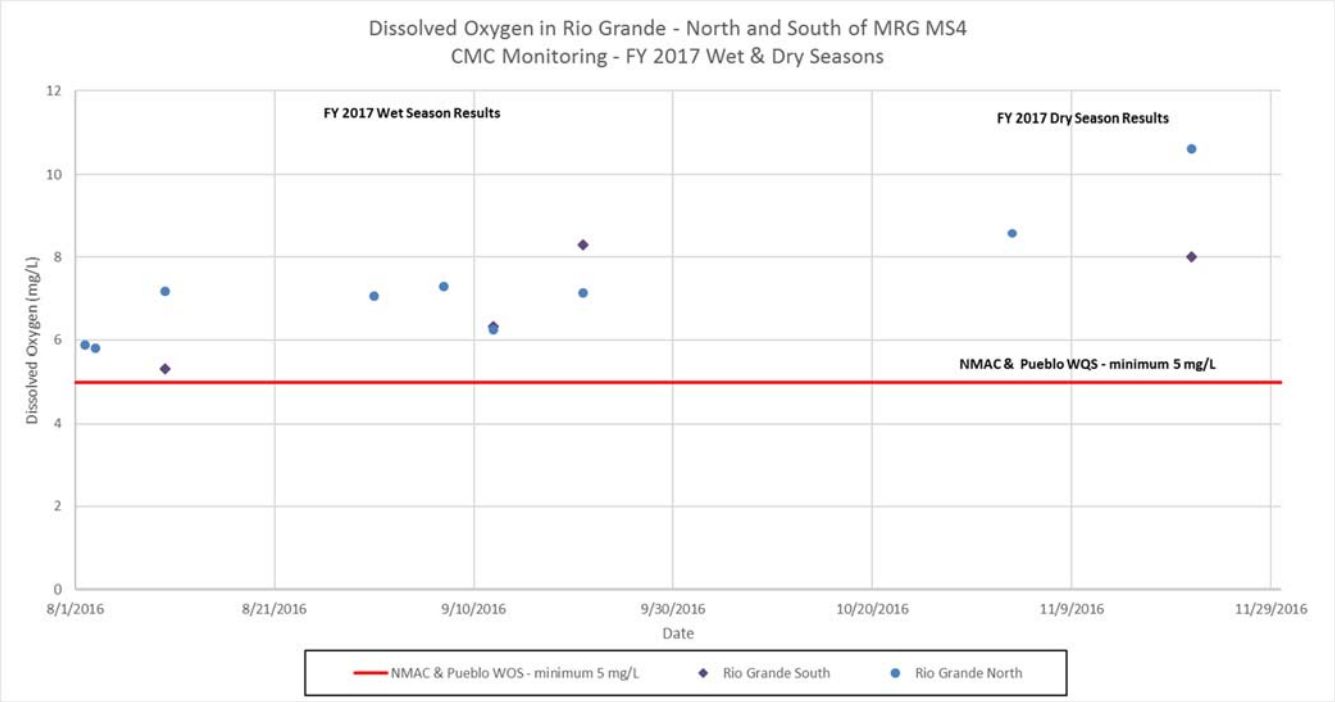


Figure 2: Dissolved Oxygen Results for Rio Grande
CMC Monitoring – FY 2017 Wet and Dry Seasons

For the CMC FY 2017 dry season sample, as well as for the three (3) FY 2017 wet season samples, there were no exceedances of WQS for PCBs.

Temperature is listed in the WSB MS4 Permit as a special condition (only applicable to the City of Albuquerque and AMAFCA). Past data submitted to EPA and NMED has proven that stormwater discharges into the Rio Grande are not impacting the Rio Grande temperature above the applicable WQS. The data collected during this FY 2017 dry season monitoring supports this conclusion. All of the temperature field readings taken in the Rio Grande during the CMC FY 2017 dry season were below 32.2°C (90 °F) – the WQS for the State of New Mexico and for the Isleta and Sandia Pueblos.

CMC FY 2017 Wet Season E. coli Loading Calculations and Waste Load Allocation (WLA)

Related to assessing the stormwater results, BHI has calculated the E. coli daily loading and compared it to the aggregate Total Maximum Daily Load (TMDL) Waste Load Allocation (WLA) for the CMC group. A TMDL is the maximum amount of a pollutant (E. coli in this case) that a water body (Rio Grande) can assimilate on a daily basis without violating applicable surface WQS. The total TMDL for a stream segment consists of the multiple WLA for point sources, non-point sources, and natural sources, plus a margin of safety. The CMC MS4 allotted WLA was determined in the US EPA Approved, Total Maximum Daily Load for the Middle Rio Grande Watershed, June 30, 2010, and subsequent communications with NMED. The WLA varies by flow condition in the Rio Grande and by stream segment.

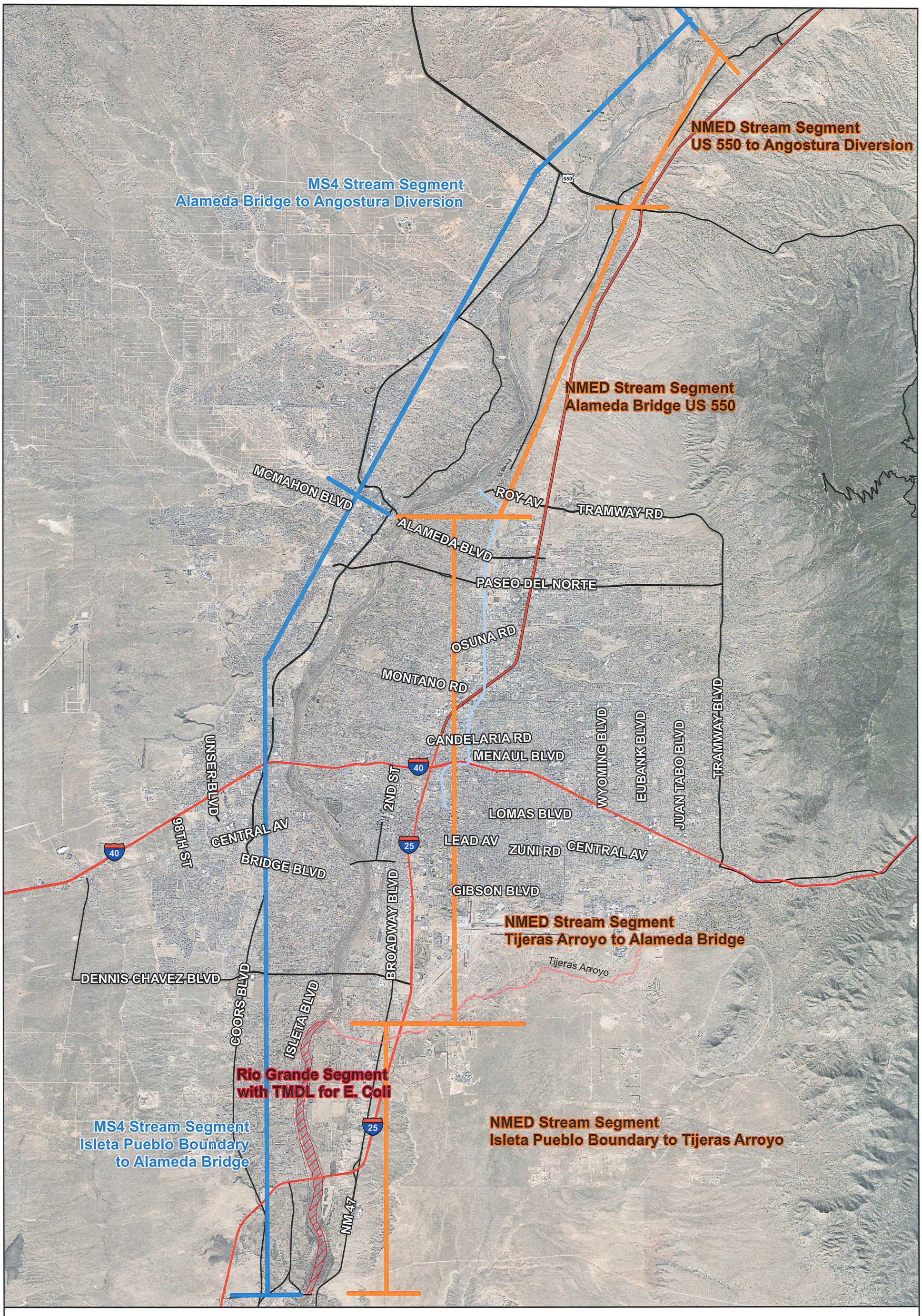
E. coli loading calculations and comparison to the WLA follows the WSB MS4 Permit requirements in “Discharges to Water Quality Impaired Water Bodies with an Approved TMDL,” Part I.C.2.b.(i).(c).B, Appendix B-Total Maximum Daily Loads (TMDLs) Tables of the WSB MS4 Permit, and the NMED guidance provided to the CMC.

Attached to this memo is the WLA Calculation spreadsheet which steps through the E. coli daily loading calculations and assumptions comparing the calculated E. coli loading to the CMC aggregate WLA defined by NMED. BHI provided the draft calculations spreadsheet for review to AMAFCA, who shared this with other CMC members, in both December 2016 and February 2017, related to the wet season monitoring results. The CMC members also met to discuss the E. coli loading calculations with NMED on February 1, 2017. BHI followed up with NMED on February 16, 2017, regarding specific calculation details. The current spreadsheet includes the improvements discussed at the NMED meeting and follow-up phone call.

There are two (2) stream segments defined in the WSB MS4 Permit (Appendix B) for the Middle Rio Grande: Isleta Pueblo Boundary to Alameda Street Bridge (Stream Segment 2105_50) and Non-Pueblo Alameda Bridge to Angostura Diversion (Stream Segment 2105.1_00). These stream segments differ from NMED’s current stream segments defined in “2016-2018 State of New Mexico Clean Water Act Section 303(d)/Section 305(b) Integrated Report,” September 23, 2016. NMED currently has four (4) stream segments instead of the two (2) WSB MS4 stream segments; of the four (4) segments, only one segment has an impairment for E. coli (2105_50 Isleta Pueblo Boundary to Tijeras Arroyo). These various stream segment designations are shown in Figure 3, page 10.

NMED provided clarification at the February 1, 2017, meeting regarding the various stream segment designations. The NMED 303(d)/305(b) 2016-2018 Integrated Report tables show the most recent assessment results, and currently there is only one segment of the Middle Rio Grande (Isleta to Tijeras) within the MS4 boundaries that was found to be impaired for E. coli. However, the TMDL for the other Middle Rio Grande stream segments do not go away even if they are no longer impaired—the TMDL remains in place as a protective measure. TMDLs remain in effect after impairments are removed as protective measures.

The E. coli daily loading associated with the CMC group and comparison to the NMED WLA was completed for the one (1) qualifying event storm event monitored in the FY 2017 dry season—November 21-22, 2016. Refer to Table 2 for a summary of the WLA comparison. A spreadsheet is attached to this memo that provides the detailed calculations for all of FY 2017.



AMAFCA

Bohannan Huston
www.bhinc.com 800.877.5332

Legend

- MS4 Stream Segments
- NMED Stream Segments
- North Diversion Channel
- Rio Grande Segment w/ TMDL for E. Coli
- Interstate Highway
- U.S. Highway
- State Highway

N W E S

0 0.5 1 2

Miles

Figure 3
Rio Grande
NMED and MS4 Permit
Stream Segments

P:\20170386\WR\General Exhibits\TMDLStreamSegments.mxd
Author: sganley

July 2017

Table 2: Summary of CMC Daily E. Coli Loading Compared to WLA for the CMC

Date / Stream Segment	Daily Mean Flow (cfs)	Flow Conditions (cfs) *range defined by NMED*	CMC Daily E. coli Loading (CFU/day)	NMED WLA for CMC for Stream Segment and Flow Conditions	Loading Compared to WLA Potential Exceedance or Acceptable
November 21-22, 2016 – Rio Grande North E. coli concentration = 43.5 CFU/100 mL and Rio Grande South E. coli concentration = 7,270 CFU/100 mL					
Alameda to Angostura	710	Mid	—	No Value	WLA Acceptable
Isleta to Alameda	881	Mid	1.68E+12	4.22E+10	Potential Exceedance

As Table 2 illustrates, the E. coli loading for the dry season event potentially exceeded the CMC allocated WLA in the southern stream segment (Isleta to Alameda) of the Middle Rio Grande. This sampling and calculation approach is only an estimate of the CMC contribution to the E. coli loading which is why the term “potential exceedance” is used. NMED has not set a TMDL or associated WLA values for the Alameda to Angostura stream segment of the Middle Rio Grande for mid-flow conditions (647 to 992 cfs) because there were not observed E. coli exceedances during this flow regime in the data used to develop the TMDL. Therefore, when a qualifying storm event is monitored during mid-flow regime conditions, like the November 21-21, 2016 event, in the Alameda to Angostura stream segment, the CMC’s WLA will never be in exceedance since there is not set TMDL.

The WSB MS4 Permit implies that the WLA is a measurable goal for the MS4s related to E. coli. Based on extensive review of the US EPA Approved, Total Maximum Daily Load (TMDL) for the Middle Rio Grande Watershed, June 30, 2010, this seems to be an unattainable goal for MS4s. The 2010 TMDL Report states on page 40, “It is important to remember that the TMDL is a planning tool to be used to achieve water quality standards…Meeting the calculated TMDL may be a difficult objective.” The TMDL/WLA was calculated by NMED to meet the Pueblo (Sandia and Isleta) geometric mean maximum of 47 CFU/100 mL which was done to be “protective of downstream waters” and “to provide an implicit margin of safety (MOS).” A single grab sample E. coli result meeting this very low geometric mean WQS will be very difficult for the MS4s to obtain.

The CMC members discussed the difficulty of using the WLA as a measurable goal with NMED on February 1, 2017. NMED explained that exceeding the WLA does not trigger enforcement. However, NMED strongly encouraged the MS4s to document what they are doing once they realize the WLA is potentially exceeded. The February 1, 2017, meeting and the February 16, 2017, CMC discussion with NMED demonstrate that CMC members are working toward understanding the WLA. In addition, the CMC members and NMED discussed potential refinements to the sampling plan, demonstrating that the CMC is investigating the potential exceedances and improvements to monitor E. coli in the Rio Grande.

Data Entry for Discharge Monitoring Reports

As required in the WSB MS4 Permit, verified stormwater quality data must be submitted annually to the EPA using electronic Discharge Monitoring Report (DMR) forms. Data from the DMRs are uploaded to a comprehensive nation-wide database that contains discharge data for facilities and other point sources that discharge directly to receiving streams. Currently, the CMC members are working with the EPA regarding access and use of the NetDMR system. For this Task, BHI has not been tasked with any data entry related to the EPA DMRs for the FY 2017 wet or dry seasons.

Conclusions and Planning

In FY 2017 four (4) qualifying event samples were obtained. During the FY 2017 wet season (July 1 to October 31, 2016) three (3) qualifying stormwater samples were obtained by the CMC, and during the dry season (November 1, 2016 to June 30, 2017) one (1) qualifying stormwater sample was obtained by the CMC. Lab results have been received for these samples. This data has been entered into the project Excel database. The lab data entered is marked in the spreadsheet as “V” (verified), and data V & V has been completed.

To summarize, monitoring results and E. coli loading calculations for the CMC FY 2017 wet and dry seasons show that:

- Four (4) of the seven (7) required samples in the WSB MS4 Permit Wet Weather Monitoring section were obtained in FY 2017. Seven (7) samples are required during the 5-year Permit term, so this is significant progress for the CMC.
- The CMC has met the required Permit minimum of monitoring three (3) events during the wet season and has obtained one (1) of the two (2) events required in the dry season.
- Over half of the parameters tested were not detected in any of the Rio Grande samples.
- Only E. coli was in exceedance of applicable New Mexico and Pueblos of Sandia and Isleta WQS.
    - All dissolved oxygen results were greater than 5 mg/L (minimum WQS).
    - All temperature results were less than 32.2 °C (maximum WQS).
    - There were no PCB test results exceeding the applicable WQS.
- The calculated E. coli loading for the one (1) qualifying storm event in the dry season shows that the WLA for the CMC members is potentially exceeded for the southern stream segment (Isleta to Alameda). NMED has not set a TMDL for the Alameda to Angostura stream segment of the Middle Rio Grande for mid-flow conditions (647 to 992 cfs); therefore, the monitored dry season storm event did not exceed the WLA.
    - Sources for the E. coli loading measured in the river are not solely attributable to the CMC MS4 members; the E. coli loading calculations serve to provide a reasonable estimate of the CMC contribution to the measured E. coli loading.
    - This sampling and calculation approach is only an estimate of the CMC contribution to the E. coli loading which is why the term “potential exceedance” is used.
    - The in-stream data does not provide the concentration of E. coli contributed by only the CMC MS4s, or any of the other potential sources. By using this percentage calculation approach, if other contributors are in exceedance of the

WLA, then the CMC will likely also be in exceedance since this approach relies on a percentage of a total.

SG/le
Attachments:

Attachment 1 – Hall Environmental Analysis Laboratory Reports with BHI Notes for FY 2017 Dry Season

Attachment 2 – FY 2017 Dry Season Completed Data Verification and Validation Forms

Spreadsheets Included Separately:

E. coli Loading and Comparison to Waste Load Allocation (WLA) Excel Spreadsheet

Excel CMC Spreadsheet with FY 2017 Stormwater Quality Monitoring Results

ATTACHMENT 1

HALL ENVIRONMENTAL ANALYSIS LABORATORY REPORTS WITH BHI NOTES FOR FY 2017 DRY SEASON

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

November 08, 2016

Patrick Chavez
AMAFCA
2600 Prospect Ave NE
Albuquerque, NM 87107
TEL: (505) 884-2215
FAX

RE: CMC OrderNo.: 1611208

Dear Patrick Chavez:

Hall Environmental Analysis Laboratory received 1 sample(s) on 11/3/2016 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

Field Data - Provided by DBS&A (field notebook & e-mails):
11/3/16 - Rio Grande North
DO = 8.57 mg/L, pH = 8.01, Conductivity = 320 umhos/cm, and Temperature = 14.6°C

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report
Lab Order **1611208**
Date Reported: **11/8/2016**

CLIENT: AMAFCA
Client Sample ID: RGN110316
Project: CMC
Collection Date: 11/3/2016 2:10:00 PM
Lab ID: 1611208-001 **Matrix:** AQUEOUS **Received Date:** 11/3/2016 3:02:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
SM 9223B FECAL INDICATOR: E. COLI MPN						Analyst: **tnc**	
E. Coli	42.0	1.000		CFU/100ml	1	11/4/2016 4:52:00 PM	28465

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: AMAPCA Work Order Number: 1611208 RcptNo: 1

Received by/date: 11/03/16

Logged By: Ashley Gallegos 11/3/2016 3:02:00 PM

Completed By: Ashley Gallegos 11/3/2016 3:58:05 PM

Reviewed By: 11/03/16 @ 1600

Chain of Custody

1. Custody seals intact on sample bottles?	Yes	No	Not Present ✔
2. Is Chain of Custody complete?	Yes ✔	No	Not Present
3. How was the sample delivered?	Client		

Log In

4. Was an attempt made to cool the samples?	Yes ✔	No	NA
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes	No ✔	NA
Samples were collected the same day and chilled.			
6. Sample(s) in proper container(s)?	Yes ✔	No	
7. Sufficient sample volume for indicated test(s)?	Yes ✔	No	
8. Are samples (except VOA and ONG) properly preserved?	Yes ✔	No	
9. Was preservative added to bottles?	Yes	No ✔	NA
10. VOA vials have zero headspace?	Yes	No	No VOA Vials ✔
11. Were any sample containers received broken?	Yes	No ✔	# of preserved bottles checked for pH:
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ✔	No	(<2 or >12 unless noted)
13. Are matrices correctly identified on Chain of Custody?	Yes ✔	No	Adjusted?
14. Is it clear what analyses were requested?	Yes ✔	No	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ✔	No	Checked by:

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes No NA ✔

Person Notified: Date

By Whom: Via: eMail Phone Fax In Person

Regarding:

Client Instructions:

17. Additional remarks:

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	15.5	Good	Not Present			

Chain-of-Custody Record

Client: AMAFCA

Mailing Address:

Phone #:

email or Fax#:

QA/QC Package:
☐ Standard ☐ Level 4 (Full Validation)

Accreditation
☐ NELAP ☐ Other _____
☐ EDD (Type) _____

Turn-Around Time:
☒ Standard ☐ Rush _____

Project Name: CMC

Project #:

Project Manager: Patrick Chavez

Sampler:

On Ice: ☐ Yes ☒ No

Sample Temperature: 15.5 C

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	E-coli (Num)				Air Bubbles (Y or N)
						Analysis Request																
1/3/16	1410	Water	RGN110316			1611208-001												X				

Date:	Time:	Relinquished by:	Received by:	Date	Time	Remarks:
1/3/16	1502	Ben Lairo	[signature]	1/3/16	1502	
1/3/16	1502					

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

December 02, 2016

Patrick Chavez
AMAFCA
2600 Prospect Ave NE
Albuquerque, NM 87107
TEL: (505) 884-2215
FAX

RE: CMC OrderNo.: 1611B12

Dear Patrick Chavez:

Hall Environmental Analysis Laboratory received 1 sample(s) on 11/21/2016 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,



Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Field Data - Provided by DBS&A (field notebook & e-mails):
11/21/16 - Rio Grande North
DO = 10.62 mg/L, pH = 8.4, Conductivity = 305 umhos/cm, and Temperature = 10.36°C

Hall Environmental Analysis Laboratory, Inc.

Analytical Report
Lab Order **1611B12**
Date Reported: **12/2/2016**

CLIENT: AMAFCA
Client Sample ID: Rio Grande North 112116
Project: CMC
Collection Date: 11/21/2016 9:30:00 AM
Lab ID: 1611B12-001
Matrix: AQUEOUS
Received Date: 11/21/2016 11:20:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
SM 9223B FECAL INDICATOR: E. COLI MPN						Analyst: **tnc**	
E. Coli	43.5	1.000		CFU/100ml	1	11/22/2016 4:34:00 PM	28792

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: AMAFCA | Work Order Number: 1611B12 | RcptNo: 1

Received by/date: AG 11/21/16

Logged By: Ashley Gallegos 11/21/2016 11:20:00 AM AG

Completed By: Ashley Gallegos 11/21/2016 11:24:06 AM AG

Reviewed By: JC 11/21/16 @ 1230

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	Client		

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☐	No ☑	NA ☐
6. Sample(s) in proper container(s)?	Yes ☑ (Not required)	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
9. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
11. Were any sample containers received broken?	Yes ☐	No ☑	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)

Adjusted? _____

Checked by: _____

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	9.7	Good	Not Present			

Chain-of-Custody Record

Client: AMAFCA

Mailing Address:

Phone #:

email or Fax#:

QA/QC Package:
☐ Standard ☐ Level 4 (Full Validation)

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name: CMC

Project #: NM15.0156

Project Manager: Patrick Chavez ~~C. Johannesen~~

Sampler: E. Bastian

On Ice: ☒ Yes ☐ No

Sample Temperature: 9.7

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	E. Coli				Air Bubbles (Y or N)
11/21/16	9:30	SW	Rio Grande North 112116	1 - 125mL poly		1611B12-001												X				

Date: 11/21/16 Time: 11:20 Relinquished by: Elizabeth Bastian

Received by: Date 11/21/16 Time 1120

Date: Time: Relinquished by:

Received by: Date Time

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

December 23, 2016

Patrick Chavez
AMAFCA
2600 Prospect Ave NE
Albuquerque, NM 87107
TEL: (505) 884-2215
FAX

RE: CMC OrderNo.: 1611B75

Dear Patrick Chavez:

Hall Environmental Analysis Laboratory received 3 sample(s) on 11/22/2016 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,



Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Field Data - Provided by DBS&A (field notebook & e-mails):
11/21/16 - Rio Grande North
DO = 10.62 mg/L, pH = 8.4, Conductivity = 305 umhos/cm, and Temperature = 10.36°C
11/22/16 - Rio Grande South
DO = 8.01 mg/L, pH = 8.08, Conductivity = 367 umhos/cm, and Temperature = 9.3°C

Analytical Report
Lab Order: **1611B75**
Date Reported: **12/23/2016**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Project: CMC
Lab ID: 1611B75-001B

Client Sample ID: Rio Grande-North-112116
Collection Date: 11/21/2016 9:30:00 AM
Matrix: Aqueous

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
SM5210B: BOD						Analyst: **SMS**	
Biochemical Oxygen Demand	DO Depletion<2.0	2.0		mg/L	1	11/27/2016 11:09:00 AM	28809

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Client Sample ID: Rio Grande-North-112116
Project: CMC
Collection Date: 11/21/2016 9:30:00 AM
Lab ID: 1611B75-001D
Matrix: Aqueous

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	11/22/2016 10:29:21 PM	R38938
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	11/22/2016 10:29:21 PM	R38938
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **KS**	
Total Dissolved Solids	213	20.0		mg/L	1	11/29/2016 7:42:00 PM	28867
SM 4500 NH3: AMMONIA						Analyst: **CJS**	
Nitrogen, Ammonia	ND	1.0		mg/L	1	12/9/2016 2:11:00 PM	R39298
TOTAL NITROGEN						Analyst: **SRM**	
Nitrogen, Total	ND	1.0		mg/L	1	12/15/2016 4:55:00 PM	R39426
SM4500-H+B: PH						Analyst: **JRR**	
pH	8.10	1.68	H	pH units	1	11/22/2016 4:33:22 PM	R38947
EPA METHOD 365.1: TOTAL PHOSPHOROUS						Analyst: **JRR**	
Phosphorus, Total (As P)	0.042	0.010		mg/L	1	12/2/2016 10:17:24 AM	28952
SM 4500 NORG C: TKN						Analyst: **CJS**	
Nitrogen, Kjeldahl, Total	ND	1.0		mg/L	1	12/13/2016 11:26:00 AM	29132
SM 2540D: TSS						Analyst: **KS**	
Suspended Solids	27	4.0		mg/L	1	11/28/2016 4:20:00 PM	28852

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Project: CMC
Lab ID: 1611B75-001E

Client Sample ID: Rio Grande-North-112116
Collection Date: 11/21/2016 9:30:00 AM
Matrix: Aqueous

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 1664A						Analyst: **tnc**	
N-Hexane Extractable Material	ND	10.7		mg/L	1	11/28/2016 9:14:00 AM	28858

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Project: CMC
Lab ID: 1611B75-001F

Client Sample ID: Rio Grande-North-112116
Collection Date: 11/21/2016 9:30:00 AM
Matrix: Aqueous

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: DISSOLVED METALS						Analyst: **JLF**	
Copper	ND	0.0010		mg/L	1	12/2/2016 3:56:41 PM	B39114
Lead	ND	0.00050		mg/L	1	12/2/2016 3:56:41 PM	B39114
Uranium	0.0024	0.00050		mg/L	1	12/2/2016 3:56:41 PM	B39114
SM2340B: HARDNESS						Analyst: **MED**	
Hardness (As CaCO3)	130	6.6		mg/L	1	12/14/2016	R39376
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **MED**	
Calcium	40	1.0		mg/L	1	12/14/2016 9:47:40 AM	A39376
Magnesium	7.3	1.0		mg/L	1	12/14/2016 10:46:06 AM	A39376

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Project: CMC
Lab ID: 1611B75-001K

Client Sample ID: Rio Grande-North-112116
Collection Date: 11/21/2016 9:30:00 AM
Matrix: Aqueous

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 365.1: TOTAL PHOSPHOROUS						Analyst: **JRR**	
Phosphorus, Total (As P)	0.012	0.010		mg/L	1	12/2/2016 10:21:54 AM	28952

Dissolved Phosphorous

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Client Sample ID: Rio Grande-South-112216
Project: CMC
Collection Date: 11/22/2016 7:00:00 AM
Lab ID: 1611B75-002A
Matrix: Aqueous

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
SM 9223B FECAL INDICATOR: E. COLI MPN						Analyst: **tnc**	
E. Coli	7270	10.00		CFU/100ml	10	11/23/2016 2:54:00 PM	28825

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Client Sample ID: Rio Grande-South-112216
Project: CMC
Collection Date: 11/22/2016 7:00:00 AM
Lab ID: 1611B75-002B
Matrix: Aqueous

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
SM5210B: BOD						Analyst: **SMS**	
Biochemical Oxygen Demand	3.0	2.0		mg/L	1	11/27/2016 11:09:00 AM	28809

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Client Sample ID: Rio Grande-South-112216
Project: CMC
Collection Date: 11/22/2016 7:00:00 AM
Lab ID: 1611B75-002D
Matrix: Aqueous

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Nitrogen, Nitrite (As N)	ND	0.50		mg/L	5	11/22/2016 9:39:42 PM	R38938
Nitrogen, Nitrate (As N)	0.68	0.50		mg/L	5	11/22/2016 9:39:42 PM	R38938
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **KS**	
Total Dissolved Solids	248	40.0	D	mg/L	1	11/29/2016 7:42:00 PM	28867
SM 4500 NH3: AMMONIA						Analyst: **CJS**	
Nitrogen, Ammonia	ND	1.0		mg/L	1	12/9/2016 2:11:00 PM	R39298
TOTAL NITROGEN						Analyst: **SRM**	
Nitrogen, Total	2.9	1.0		mg/L	1	12/15/2016 4:55:00 PM	R39426
SM4500-H+B: PH						Analyst: **JRR**	
pH	8.09	1.68	H	pH units	1	11/22/2016 4:37:41 PM	R38947
EPA METHOD 365.1: TOTAL PHOSPHOROUS						Analyst: **JRR**	
Phosphorus, Total (As P)	0.55	0.010		mg/L	1	12/2/2016 10:23:24 AM	28952
SM 4500 NORG C: TKN						Analyst: **CJS**	
Nitrogen, Kjeldahl, Total	2.2	2.0	D	mg/L	1	12/13/2016 11:26:00 AM	29132
SM 2540D: TSS						Analyst: **KS**	
Suspended Solids	340	4.0		mg/L	1	11/28/2016 4:20:00 PM	28852

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Project: CMC
Lab ID: 1611B75-002E

Client Sample ID: Rio Grande-South-112216
Collection Date: 11/22/2016 7:00:00 AM
Matrix: Aqueous

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 1664A						Analyst: **tnc**	
N-Hexane Extractable Material	ND	10.2		mg/L	1	11/28/2016 9:14:00 AM	28858

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Project: CMC
Lab ID: 1611B75-002F

Client Sample ID: Rio Grande-South-112216
Collection Date: 11/22/2016 7:00:00 AM
Matrix: Aqueous

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: DISSOLVED METALS						Analyst: **JLF**	
Copper	ND	0.0010		mg/L	1	12/2/2016 3:59:45 PM	B39114
Lead	ND	0.00050		mg/L	1	12/2/2016 3:59:45 PM	B39114
Uranium	0.0020	0.00050		mg/L	1	12/2/2016 3:59:45 PM	B39114
SM2340B: HARDNESS						Analyst: **MED**	
Hardness (As CaCO3)	130	6.6		mg/L	1	12/14/2016	R39376
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **MED**	
Calcium	41	1.0		mg/L	1	12/14/2016 9:51:34 AM	A39376
Magnesium	7.3	1.0		mg/L	1	12/14/2016 10:48:04 AM	A39376

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Project: CMC
Lab ID: 1611B75-002L

Client Sample ID: Rio Grande-South-112216
Collection Date: 11/22/2016 7:00:00 AM
Matrix: Aqueous

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 365.1: TOTAL PHOSPHOROUS						Analyst: **JRR**	
Phosphorus, Total (As P)	0.30	0.010		mg/L	1	12/2/2016 10:29:24 AM	28952

Dissolved Phosphorous

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

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Client:	HALL ENVIRONMENTAL ANALYSIS LAB	**Batch #:**	161123012
Address:	4901 HAWKINS NE SUITE D ALBUQUERQUE, NM 87109	**Project Name:**	1611B75
Attn:	ANDY FREEMAN		

Analytical Results Report

Sample Number	161123012-001	**Sampling Date**	11/22/2016	**Date/Time Received**	11/23/2016 10:45 AM
Client Sample ID	1611B75-001C / RIO GRANDE-NORTH-112116			**Sampling Time**	9:30 AM
Matrix	Water				
Comments					

Parameter	Result	Units	MDL	PQL	Analysis Date	Analyst	Method	Qualifier
Tetrahydrofuran	ND	ug/L	0.5	0.5	12/2/2016	SAT	EPA 8260C	

Surrogate Data

Sample Number 161123012-001

Surrogate Standard	Method	Percent Recovery	Control Limits
1,2-Dichlorobenzene-d4	EPA 8260C	97.6	70-130
4-Bromofluorobenzene	EPA 8260C	97.2	70-130
Toluene-d8	EPA 8260C	98.4	70-130

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Client: HALL ENVIRONMENTAL ANALYSIS LAB
Address: 4901 HAWKINS NE SUITE D
ALBUQUERQUE, NM 87109
Attn: ANDY FREEMAN

Batch #: 161123012
Project Name: 1611B75

Analytical Results Report

Sample Number 161123012-004 **Sampling Date** 11/22/2016 **Date/Time Received** 11/23/2016 10:45 AM
Client Sample ID 1611B75-002C / RIO GRANDE-SOUTH-112216 **Sampling Time** 7:00 AM
Matrix Water
Comments

Parameter	Result	Units	MDL	PQL	Analysis Date	Analyst	Method	Qualifier
Tetrahydrofuran	ND	ug/L	0.5	0.5	12/2/2016	SAT	EPA 8260C	

Surrogate Data

Sample Number 161123012-004

Surrogate Standard	Method	Percent Recovery	Control Limits
1,2-Dichlorobenzene-d4	EPA 8260C	98.0	70-130
4-Bromofluorobenzene	EPA 8260C	97.6	70-130
Toluene-d8	EPA 8260C	97.2	70-130

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Client:	HALL ENVIRONMENTAL ANALYSIS LAB	**Batch #:**	161123012
Address:	4901 HAWKINS NE SUITE D ALBUQUERQUE, NM 87109	**Project Name:**	1611B75
Attn:	ANDY FREEMAN		

Analytical Results Report

Sample Number	161123012-007	**Sampling Date**	11/22/2016	**Date/Time Received**	11/23/2016 10:45 AM
Client Sample ID	1611B75-003A / TRIP BLANK			**Sampling Time**	
Matrix	Water				
Comments					

Parameter	Result	Units	MDL	PQL	Analysis Date	Analyst	Method	Qualifier
Tetrahydrofuran	ND	ug/L	0.5	0.5	12/2/2016	SAT	EPA 8260C	

Surrogate Data

Sample Number 161123012-007

Surrogate Standard	Method	Percent Recovery	Control Limits
1,2-Dichlorobenzene-d4	EPA 8260C	96.8	70-130
4-Bromofluorobenzene	EPA 8260C	97.2	70-130
Toluene-d8	EPA 8260C	100.4	70-130

Authorized Signature

Todd Taruscio, Lab Manager

MCL EPA's Maximum Contaminant Level
ND Not Detected
PQL Practical Quantitation Limit

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Client:	HALL ENVIRONMENTAL ANALYSIS LAB	**Batch #:**	161123012
Address:	4901 HAWKINS NE SUITE D ALBUQUERQUE, NM 87109	**Project Name:**	1611B75
Attn:	ANDY FREEMAN		

Analytical Results Report

Quality Control Data

Lab Control Sample

Parameter	LCS Result	Units	LCS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
Tetrahydrofuran	8.12	ug/L	10	81.2	70-130	12/2/2016	12/2/2016

Method Blank

Parameter	Result	Units	PQL	Prep Date	Analysis Date
Tetrahydrofuran	ND	ug/L	0.5	12/2/2016	12/2/2016

AR	Acceptable Range
ND	Not Detected
PQL	Practical Quantitation Limit
RPD	Relative Percentage Difference

Comments:

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; FL(NELAP):E87893; ID:ID00013; MT:CERT0028; NM: ID00013;NV:ID00013; OR:ID200001-002; WA:C595
Certifications held by Anatek Labs WA: EPA:WA00169; ID:WA00169; WA:C585; MT:Cert0095; FL(NELAP): E871099

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Client: HALL ENVIRONMENTAL ANALYSIS LAB
Address: 4901 HAWKINS NE SUITE D
ALBUQUERQUE, NM 87109
Attn: ANDY FREEMAN

Batch #: 161123012
Project Name: 1611B75

Analytical Results Report

Sample Number	161123012-002	**Sampling Date**	11/22/2016	**Date/Time Received**	11/23/2016 10:45 AM
Client Sample ID	1611B75-001G / RIO GRANDE-NORTH-112116			**Extraction Date**	11/29/2016
Matrix	Water	**Sampling Time**	9:30 AM		
Comments					

Parameter	Result	Units	MDL	PQL	Analysis Date	Analyst	Method	Qualifier
Dieldrin	ND	ug/L	0.003	0.01	12/6/2016	MAH	EPA 608	
Benzidine	ND	ug/L	0.1	0.5	11/29/2016	HSW	EPA 625	
Benzo[a]anthracene	ND	ug/L	0.1	0.5	11/29/2016	HSW	EPA 625	
Benzo[a]pyrene	ND	ug/L	0.1	0.5	11/29/2016	HSW	EPA 625	
Benzo[b]fluoranthene	ND	ug/L	0.1	0.5	11/29/2016	HSW	EPA 625	
Benzo[k]fluoranthene	ND	ug/L	0.1	0.5	11/29/2016	HSW	EPA 625	
bis(2-Ethylhexyl)phthalate	ND	ug/L	0.2	0.5	11/29/2016	HSW	EPA 625	
Chrysene	ND	ug/L	0.1	0.5	11/29/2016	HSW	EPA 625	
Dibenz[a,h]anthracene	ND	ug/L	0.1	0.5	11/29/2016	HSW	EPA 625	
Dibenzofuran	ND	ug/L	0.1	0.5	11/29/2016	HSW	EPA 625	
Indeno[1,2,3-cd]pyrene	ND	ug/L	0.1	0.5	11/29/2016	HSW	EPA 625	
Pentachlorophenol	ND	ug/L	0.1	0.5	11/29/2016	HSW	EPA 625	

Surrogate Data

Sample Number 161123012-002

Surrogate Standard	Method	Percent Recovery	Control Limits
DCB	EPA 608	72.4	30-130
2,4,6-Tribromophenol	EPA 625	70.0	53-122
2-Fluorobiphenyl	EPA 625	58.4	12-116
2-Fluorophenol	EPA 625	43.0	10-139
Nitrobenzene-d5	EPA 625	62.4	49-118
Phenol-d5	EPA 625	49.6	28-154
Terphenyl-d14	EPA 625	62.0	20-137

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Certifications held by Anatek Labs WA: EPA:WA00169; ID:WA00169; WA:C585; MT:Cert0095; FL(NELAP): E871099

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Client:	HALL ENVIRONMENTAL ANALYSIS LAB	**Batch #:**	161123012
Address:	4901 HAWKINS NE SUITE D ALBUQUERQUE, NM 87109	**Project Name:**	1611B75
Attn:	ANDY FREEMAN		

Analytical Results Report

Sample Number	161123012-005	**Sampling Date**	11/22/2016	**Date/Time Received**	11/23/2016 10:45 AM
Client Sample ID	1611B75-002G / RIO GRANDE-SOUTH-112216			**Extraction Date**	11/29/2016
Matrix	Water	**Sampling Time**	7:00 AM		
Comments					

Parameter	Result	Units	MDL	PQL	Analysis Date	Analyst	Method	Qualifier
Dieldrin	ND	ug/L	0.003	0.01	12/6/2016	MAH	EPA 608	
Benzidine	ND	ug/L	0.1	0.5	11/29/2016	HSW	EPA 625	
Benzo[a]anthracene	ND	ug/L	0.1	0.5	11/29/2016	HSW	EPA 625	
Benzo[a]pyrene	ND	ug/L	0.1	0.5	11/29/2016	HSW	EPA 625	
Benzo[b]fluoranthene	ND	ug/L	0.1	0.5	11/29/2016	HSW	EPA 625	
Benzo[k]fluoranthene	ND	ug/L	0.1	0.5	11/29/2016	HSW	EPA 625	
bis(2-Ethylhexyl)phthalate	ND	ug/L	0.2	0.5	11/29/2016	HSW	EPA 625	
Chrysene	ND	ug/L	0.1	0.5	11/29/2016	HSW	EPA 625	
Dibenz[a,h]anthracene	ND	ug/L	0.1	0.5	11/29/2016	HSW	EPA 625	
Dibenzofuran	ND	ug/L	0.1	0.5	11/29/2016	HSW	EPA 625	
Indeno[1,2,3-cd]pyrene	ND	ug/L	0.1	0.5	11/29/2016	HSW	EPA 625	
Pentachlorophenol	ND	ug/L	0.1	0.5	11/29/2016	HSW	EPA 625	

Surrogate Data

Sample Number 161123012-005

Surrogate Standard	Method	Percent Recovery	Control Limits
DCB	EPA 608	75.2	30-130
2,4,6-Tribromophenol	EPA 625	115.8	53-122
2-Fluorobiphenyl	EPA 625	101.2	12-116
2-Fluorophenol	EPA 625	88.0	10-139
Nitrobenzene-d5	EPA 625	102.0	49-118
Phenol-d5	EPA 625	103.6	28-154
Terphenyl-d14	EPA 625	91.6	20-137

Authorized Signature

Todd Taruscio, Lab Manager

MCL EPA's Maximum Contaminant Level
ND Not Detected
PQL Practical Quantitation Limit

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Certifications held by Anatek Labs WA: EPA:WA00169; ID:WA00169; WA:C585; MT:Cert0095; FL(NELAP): E871099

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Client: HALL ENVIRONMENTAL ANALYSIS LAB
Address: 4901 HAWKINS NE SUITE D
ALBUQUERQUE, NM 87109
Attn: ANDY FREEMAN

Batch #: 161123012
Project Name: 1611B75

Analytical Results Report

Quality Control Data

Lab Control Sample

Parameter	LCS Result	Units	LCS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
Dieldrin	0.458	ug/L	0.5	91.6	30-130	11/29/2016	12/5/2016
Pentachlorophenol	6.25	ug/L	5	125.0	22-138	11/28/2016	11/30/2016
bis(2-Ethylhexyl)phthalate	5.14	ug/L	5	102.8	43-148	11/28/2016	11/30/2016

Lab Control Sample Duplicate

Parameter	LCSD Result	Units	LCSD Spike	%Rec	%RPD	AR %RPD	Prep Date	Analysis Date
Pentachlorophenol	5.88	ug/L	5	117.6	6.1	0-47	11/28/2016	11/30/2016
bis(2-Ethylhexyl)phthalate	5.51	ug/L	5	110.2	6.9	0-50	11/28/2016	11/30/2016

Matrix Spike

Sample Number	Parameter	Sample Result	MS Result	Units	MS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
161123012-002	Pentachlorophenol	ND	6.27	ug/L	5	125.4	22-138	11/28/2016	11/30/2016
161123012-002	bis(2-Ethylhexyl)phthalate	ND	4.00	ug/L	5	80.0	43-142	11/28/2016	11/30/2016
161123012-005	Dieldrin	ND	0.505	ug/L	0.5	101.0	30-150	11/29/2016	12/5/2016

Matrix Spike Duplicate

Parameter	MSD Result	Units	MSD Spike	%Rec	%RPD	AR %RPD	Prep Date	Analysis Date
Dieldrin	0.508	ug/L	0.5	101.6	0.6	0-30	11/29/2016	12/5/2016

Method Blank

Parameter	Result	Units	PQL	Prep Date	Analysis Date
Benzidine	ND	ug/L	0.5	11/28/2016	11/30/2016
Benzo[a]anthracene	ND	ug/L	0.5	11/28/2016	11/30/2016
Benzo[a]pyrene	ND	ug/L	0.5	11/28/2016	11/30/2016
Benzo[b]fluoranthene	ND	ug/L	0.5	11/28/2016	11/30/2016
Benzo[k]fluoranthene	ND	ug/L	0.5	11/28/2016	11/30/2016
bis(2-Ethylhexyl)phthalate	ND	ug/L	0.5	11/28/2016	11/30/2016
Chrysene	ND	ug/L	0.5	11/28/2016	11/30/2016
Dibenz[a,h]anthracene	ND	ug/L	0.5	11/28/2016	11/30/2016
Dibenzofuran	ND	ug/L	0.5	11/28/2016	11/30/2016

Comments:

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; FL(NELAP):E87893; ID:ID00013; MT:CERT0028; NM: ID00013;NV:ID00013; OR:ID200001-002; WA:C595
Certifications held by Anatek Labs WA: EPA:WA00169; ID:WA00169; WA:C585; MT:Cert0095; FL(NELAP): E871099

Anatek Labs, Inc.

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504 E Sprague Ste. D • Spokane WA 99202 • (509) 838-3999 • Fax (509) 838-4433 • email spokane@anateklabs.com

Client:	HALL ENVIRONMENTAL ANALYSIS LAB	**Batch #:**	161123012
Address:	4901 HAWKINS NE SUITE D	**Project Name:**	1611B75
	ALBUQUERQUE, NM 87109		
Attn:	ANDY FREEMAN		

Analytical Results Report

Quality Control Data

Method Blank

Parameter	Result	Units	PQL	Prep Date	Analysis Date
Dieldrin	ND	ug/L	0.01	11/29/2016	12/5/2016
Indeno[1,2,3-cd]pyrene	ND	ug/L	0.5	11/28/2016	11/30/2016
Pentachlorophenol	ND	ug/L	0.5	11/28/2016	11/30/2016

AR	Acceptable Range
ND	Not Detected
PQL	Practical Quantitation Limit
RPD	Relative Percentage Difference

Comments:

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; FL(NELAP):E87893; ID:ID00013; MT:CERT0028; NM: ID00013;NV:ID00013; OR:ID200001-002; WA:C595
Certifications held by Anatek Labs WA: EPA:WA00169; ID:WA00169; WA:C585; MT:Cert0095; FL(NELAP): E871099

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Client:	HALL ENVIRONMENTAL ANALYSIS LAB	**Batch #:**	161123012
Address:	4901 HAWKINS NE SUITE D ALBUQUERQUE, NM 87109	**Project Name:**	1611B75
Attn:	ANDY FREEMAN		

Analytical Results Report

Sample Number	161123012-003	**Sampling Date**	11/22/2016	**Date/Time Received**	11/23/2016 10:45 AM
Client Sample ID	1611B75-001I / RIO GRANDE-NORTH-112116			**Sampling Time**	9:30 AM
Matrix	Water				
Comments					

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
COD	16.4	mg/L	5	12/7/2016 1:00:00 PM	JDB	EPA 410.4	

Sample Number	161123012-006	**Sampling Date**	11/22/2016	**Date/Time Received**	11/23/2016 10:45 AM
Client Sample ID	1611B75-002I / RIO GRANDE-SOUTH-112216			**Sampling Time**	7:00 AM
Matrix	Water				
Comments					

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
COD	23.1	mg/L	5	12/7/2016 1:00:00 PM	JDB	EPA 410.4	

Authorized Signature

Todd Taruscio, Lab Manager

MCL EPA's Maximum Contaminant Level
ND Not Detected
PQL Practical Quantitation Limit

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The results reported relate only to the samples indicated.
Soil/solid results are reported on a dry-weight basis unless otherwise noted.

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; FL(NELAP):E87893; ID:ID00013; MT:CERT0028; NM: ID00013;NV:ID00013; OR:ID200001-002; WA:C595
Certifications held by Anatek Labs WA: EPA:WA00169; ID:WA00169; WA:C585; MT:Cert0095; FL(NELAP): E871099

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Client: HALL ENVIRONMENTAL ANALYSIS LAB
Address: 4901 HAWKINS NE SUITE D
ALBUQUERQUE, NM 87109
Attn: ANDY FREEMAN

Batch #: 161123012
Project Name: 1611B75

Analytical Results Report

Quality Control Data

Lab Control Sample

Parameter	LCS Result	Units	LCS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
COD	102	mg/L	100	102.0	90-110	12/7/2016	12/7/2016

Matrix Spike

Sample Number	Parameter	Sample Result	MS Result	Units	MS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
161202010-002	COD	<5	109	mg/L	100	109.0	80-120	12/7/2016	12/7/2016

Matrix Spike Duplicate

Parameter	MSD Result	Units	MSD Spike	%Rec	%RPD	AR %RPD	Prep Date	Analysis Date
COD	104	mg/L	100	104.0	4.7	0-20	12/7/2016	12/7/2016

Method Blank

Parameter	Result	Units	PQL	Prep Date	Analysis Date
COD	<5	mg/L	5	12/7/2016	12/7/2016

Duplicate

Sample Number	Parameter	Sample Result	Duplicate Result	Units	%RPD	AR %RPD	Prep Date	Analysis Date
161202010-004	COD	15.9	18.0	mg/L	12.4	0-20	12/7/2016	12/7/2016

AR	Acceptable Range
ND	Not Detected
PQL	Practical Quantitation Limit
RPD	Relative Percentage Difference

Comments:

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; FL(NELAP):E87893; ID:ID00013; MT:CERT0028; NM: ID00013;NV:ID00013; OR:ID200001-002; WA:C595
Certifications held by Anatek Labs WA: EPA:WA00169; ID:WA00169; WA:C585; MT:Cert0095; FL(NELAP): E871099

Wet Chemistry by Method 3500Cr C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Hexavalent Chromium	ND		0.000500	1	11/26/2016 09:41	WG929321

Incorrectly labeled - 02 is for Rio Grande South

1611B75-002H RIO GRANDE-NORTH-112116

Collected date/time: 11/21/16 07:00

SAMPLE RESULTS - 02

L874519

ONE LAB. NATIONWIDE.

Wet Chemistry by Method 3500Cr C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Hexavalent Chromium	ND		0.000500	1	11/26/2016 09:52	WG929321

Method Blank (MB)

(MB) R3180621-1 11/26/16 07:41

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/l		mg/l	mg/l
Hexavalent Chromium	U		0.000150	0.000500

L874168-02 Original Sample (OS) • Duplicate (DUP)

(OS) L874168-02 11/26/16 08:24 • (DUP) R3180621-4 11/26/16 08:35

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	mg/l	mg/l		%		%
Hexavalent Chromium	ND	ND	1	0.000		20

L874355-01 Original Sample (OS) • Duplicate (DUP)

(OS) L874355-01 11/26/16 10:41 • (DUP) R3180621-7 11/26/16 10:49

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	mg/l	mg/l		%		%
Hexavalent Chromium	ND	ND	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3180621-2 11/26/16 07:49 • (LCSD) R3180621-3 11/26/16 07:57

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	%	%	%			%	%
Hexavalent Chromium	0.00200	0.00205	0.00205	102	103	90.0-110			0.000	20

L874357-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L874357-01 11/26/16 08:43 • (MS) R3180621-5 11/26/16 08:51 • (MSD) R3180621-6 11/26/16 09:00

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Hexavalent Chromium	0.0500	ND	0.0521	0.0505	104	101	1	90.0-110			3.00	20

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 1611B75
Pace Project No.: 30203584

Sample: 1611B75-001J Rio Grande-North- **Lab ID: 30203584001** Collected: 11/21/16 09:30 Received: 11/23/16 11:00 Matrix: Water

PWS: Site ID: Sample Type:

Comments: • The sampler's name and signature were not listed on the COC.

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0	**3.11 ± 0.884 (0.826) C:NA T:NA**	pCi/L	12/07/16 20:06	12587-46-1	

Sample: 1611B75-002J Rio Grande-South- **Lab ID: 30203584002** Collected: 11/22/16 07:00 Received: 11/23/16 11:00 Matrix: Water

PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0	**7.26 ± 1.94 (1.74) C:NA T:NA**	pCi/L	12/07/16 20:06	12587-46-1	

REPORT OF LABORATORY ANALYSIS

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Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL - RADIOCHEMISTRY

Project: 1611B75
Pace Project No.: 30203584

QC Batch: 242010
QC Batch Method: EPA 900.0
Analysis Method: EPA 900.0
Analysis Description: 900.0 Gross Alpha/Beta
Associated Lab Samples: 30203584001, 30203584002

METHOD BLANK: 1189267
Matrix: Water
Associated Lab Samples: 30203584001, 30203584002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Gross Alpha	-0.349 ± 0.368 (1.13) C:NA T:NA	pCi/L	12/07/16 19:54	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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Greensburg, PA 15601
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QUALIFIERS

Project: 1611B75
Pace Project No.: 30203584

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval). Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

REPORT OF LABORATORY ANALYSIS

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CFA | Cape Fear Analytical LLC
an affiliate of **The GEL Group** INC

3306 Kitty Hawk Road, Suite 120 Wilmington, NC 28405
P 910.795.0421

www.capefearanalytical.com

December 21, 2016

Mr. Andy Freeman
Hall Environmental
4901 Hawkins NE
Suite D
Albuquerque, New Mexico 87109

Re: 1668A Water
Work Order: 10146
SDG: 1611B75

Dear Mr. Freeman:

Cape Fear Analytical LLC (CFA) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on November 29, 2016 and November 30, 2016. This original data report has been prepared and reviewed in accordance with CFA's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at 910-795-0421.

Sincerely,

Cynde Larkins

Cynde Larkins
Project Manager

Enclosures

problem solved

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975
FAX: 505-345-4107
Website: www.hallenvironmental.com

CHAIN OF CUSTODY RECORD

SUB CONTRATOR: Cape Fear Analytical	COMPANY: Cape Fear Analytical	PHONE: (910) 795-0421	FAX:
ADDRESS: 3306 Kitty Hawk Rd Ste 120		ACCOUNT #:	EMAIL:
CITY, STATE, ZIP: Wilmington, NC 28405			

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS
1	1611B75-001L	Rio Grande-North-112116	1LAmber	Aqueous	11/21/2016 9:30:00 AM	1	PCB Congeners
2	1611B75-002M	Rio Grande-South-112216	1LAmber	Aqueous	11/22/2016 7:00:00 AM	1	PCB Congeners broken in transit

CFA WO #10146

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

Relinquished By:	Date: 11/22/2016	Time: 10:11 AM	Received By:	Date: 22Nov2016	Time: 10:25
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

TAT: Standard ☐ RUSH Next BD ☐ 2nd BD ☐ 3rd BD ☐

REPORT TRANSMITTAL DESIRED:
☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY
Temp of samples 3.0 °C Attempt to Cool ? _____
Comments: _____

1 of 2 broken

SAMPLE RECEIPT CHECKLIST

Cape Fear Analytical

Client: HALL	Work Order: 10146
Shipping Company: Fed Ex	Date/Time Received: 29 Nov 2016 10:25

Suspected Hazard Information	Yes	NA	No
Shipped as DOT Hazardous?			✓
Samples identified as Foreign Soil?			✓

DOE Site Sample Packages	Yes	NA	No*
Screened <0.5 mR/hr?			
Samples < 2x background?			✓

* Notify RSO of any responses in this column immediately.

Air Sample Receipt Specifics	Yes	NA	No
Air sample in shipment?			✓

Air Witness: _____

	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	✓			Circle Applicable: seals broken damaged container leaking container other(describe)
2	Chain of Custody documents included with shipment?	✓			
3	Samples requiring cold preservation within 0-6°C?	✓			Preservation Method: ice bags blue ice dry ice none other (describe) 3.0°C
4	Aqueous samples found to have visible solids?	✓			Sample IDs, containers affected: <1% solids
5	Samples requiring chemical preservation at proper pH?			✓	Sample IDs, containers affected and pH observed: pH=7 If preservative added, Lot#:
6	Samples requiring preservation have no residual chlorine?	✓			Sample IDs, containers affected: If preservative added, Lot#:
7	Samples received within holding time?	✓			Sample IDs, tests affected:
8	Sample IDs on COC match IDs on containers?	✓			Sample IDs, containers affected:
9	Date & time of COC match date & time on containers?	✓			Sample IDs, containers affected:
10	Number of containers received match number indicated on COC?			✓	List type and number of containers / Sample IDs, containers affected: Sample -002M broken in transit 1-1L WMA for -001L
11	COC form is properly signed in relinquished/received sections?	✓			

Comments:

Checklist performed by: Initials: MJD Date: 29 Nov 2016

CF-UD-F-7

SAMPLE RECEIPT CHECKLIST

Cape Fear Analytical

Client: HALL	Work Order: 10146
Shipping Company: Fed Ex	Date/Time Received: 30Nov2016 10:45

Suspected Hazard Information	Yes	NA	No
Shipped as DOT Hazardous?			✓
Samples identified as Foreign Soil?			✓

DOE Site Sample Packages	Yes	NA	No*
Screened <0.5 mR/hr?		✓	
Samples < 2x background?		✓	

* Notify RSO of any responses in this column immediately.

Air Sample Receipt Specifics	Yes	NA	No
Air sample in shipment?			✓

Air Witness: _____

	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	✓			Circle Applicable: seals broken damaged container leaking container other(describe)
2	Chain of Custody documents included with shipment?	✓		✓	No COC sent with replacement sample. Original COC was used for verification.
3	Samples requiring cold preservation within 0-6°C?	✓			Preservation method: Ice bags blue ice dry ice none other (describe) 4.2+0.1=4.3°C
4	Aqueous samples found to have visible solids?	✓			Sample IDs, containers affected: N/A
5	Samples requiring chemical preservation at proper pH?		✓		Sample IDs, containers affected and pH observed: pH=7 If preservative added, Lot#:
6	Samples requiring preservation have no residual chlorine?	✓			Sample IDs, containers affected: If preservative added, Lot#:
7	Samples received within holding time?	✓			Sample IDs, tests affected:
8	Sample IDs on COC match IDs on containers?	✓			Sample IDs, containers affected:
9	Date & time of COC match date & time on containers?	✓			Sample IDs, containers affected:
10	Number of containers received match number indicated on COC?	✓			List type and number of containers / Sample IDs, containers affected: 1-1L WMA
11	COC form is properly signed in relinquished/received sections?	✓			

Comments: *Replacement Sample for broken original received 29Nov16.

Checklist performed by: Initials: MJO Date: 30Nov2016

CF-UD-F-7

Anne Thorne

From: Cynde Larkins <cynde.larkins@cfanalytical.com>
Sent: Tuesday, November 29, 2016 1:30 PM
To: Anne Thorne
Cc: Melissa O'Dorisio
Subject: 1611B75

Anne,

One of the sample containers we received today at CFA was broken in transit: 1611B75-002M Rio Grande-South-112216. Do you have a replacement sample you could send us?

Thanks,

WO# 10146

--
Cynde Larkins
Project Manager
Cape Fear Analytical, LLC
3306 Kitty Hawk Road Suite 120
Wilmington, NC 28405
(910) 795-0421

Cape Fear Analytical will be closed for Christmas on Monday, December 26, 2016 and New Year's on Monday, January 2, 2017. For sample receiving hours during the holidays please contact the lab.

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5, pH: 7
4.2 10.1=
4.3°C

PCB Congeners Analysis

Case Narrative

PCBC Case Narrative
Hall Environmental Analysis Laboratory (HALL)
SDG 1611B75
Work Order 10146

Method/Analysis Information

Product:	**PCB Congeners by EPA Method 1668A in Liquids**
Analytical Method:	EPA Method 1668A
Extraction Method:	SW846 3520C
Analytical Batch Number:	33561
Clean Up Batch Number:	33560
Extraction Batch Number:	33559

Sample Analysis

The following samples were analyzed using the analytical protocol as established in EPA Method 1668A:

Sample ID	Client ID
10146001	1611B75-001L Rio Grande-North-112116
10146002	1611B75-002L Rio Grande-South-112116
12017564	Method Blank (MB)
12017565	Laboratory Control Sample (LCS)
12017566	Laboratory Control Sample Duplicate (LCSD)

The samples in this SDG were analyzed on an "as received" basis.

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by Cape Fear Analytical LLC (CFA) as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with CF-OA-E-003 REV# 6.

Raw data reports are processed and reviewed by the analyst using the TargetLynx software package.

Calibration Information

Initial Calibration

All initial calibration requirements have been met for this sample delivery group (SDG).

Continuing Calibration Verification (CCV) Requirements

All associated calibration verification standard(s) (ICV or CCV) met the acceptance criteria.

Quality Control (QC) Information

Certification Statement
The test results presented in this document are certified to meet all requirements of the 2009 TNI Standard.

Method Blank (MB) Statement
The MB(s) analyzed with this SDG met the acceptance criteria.

Surrogate Recoveries
All surrogate recoveries were within the established acceptance criteria for this SDG.

Laboratory Control Sample (LCS) Recovery
The LCS spike recoveries met the acceptance limits.

Laboratory Control Sample Duplicate (LCSD) Recovery
The LCSD spike recoveries met the acceptance limits.

LCS/LCSD Relative Percent Difference (RPD) Statement
The RPD(s) between the LCS and LCSD met the acceptance limits.

QC Sample Designation
A matrix spike and matrix spike duplicate analysis was not required for this SDG.

Technical Information

Holding Time Specifications
CFA assigns holding times based on the associated methodology, which assigns the date and time from sample collection. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration. All samples in this SDG met the specified holding time.

Preparation/Analytical Method Verification
All procedures were performed as stated in the SOP.

Sample Dilutions
The samples in this SDG did not require dilutions.

Sample Re-extraction/Re-analysis
Re-extractions or re-analyses were not required in this SDG.

Miscellaneous Information

Nonconformance (NCR) Documentation
A NCR was not required for this SDG.

Manual Integrations
Manual integrations were required for data files in this SDG. Certain standards and QC samples required manual integrations to correctly position the baseline as set in the calibration standard injections. Where manual integrations were performed, copies of all manual integration peak profiles are included in the raw data section of this fraction.

System Configuration
This analysis was performed on the following instrument configuration:

Instrument ID	Instrument	System Configuration	Column ID	Column Description
HRP791_1	PCB Analysis	PCB Analysis	SPB-Octyl	30m x 0.25mm, 0.25um

Electronic Packaging Comment

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted: Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative will include the data validator's signature and title. The signature page also includes the data qualifiers used in the fractional package. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Sample Data Summary

Cape Fear Analytical, LLC
3306 Kitty Hawk Road Suite 120, Wilmington, NC 28405 - (910) 795-0421 - www.capefearanalytical.com

Certificate of Analysis Report
for

HALL001 Hall Environmental Analysis Laboratory

Client SDG: 1611B75 CFA Work Order: 10146

The Qualifiers in this report are defined as follows:

* A quality control analyte recovery is outside of specified acceptance criteria
** Analyte is a surrogate compound
B The target analyte was detected in the associated blank.
C Congener has coeluters. When Cxxx, refer to congener number xxx for data
J Value is estimated
U Analyte was analyzed for, but not detected above the specified detection limit.

Review/Validation

Cape Fear Analytical requires all analytical data to be verified by a qualified data reviewer.

The following data validator verified the information presented in this case narrative:

Signature:  **Name: Heather Patterson**

Date: 21 DEC 2016 **Title: Group Leader**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**1611B75**	**Client:**	**HALL001**	**Project:**	**HALL00114**
Lab Sample ID:	**10146001**	**Date Collected:**	**11/21/2016 09:30**	**Matrix:**	**WATER**
Client Sample:	**1668A Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**1611B75-001L Rio Grande-North-11**			**Prep Basis:**	**As Received**
Batch ID:	**33561**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/16/2016 17:07**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c16dec16a-8**			**Dilution:**	**1**
Prep Batch:	**33559**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**13-DEC-16**	**Prep Aliquot:**	**917 mL**		

CAS No.	Parmname	Qual	Result	Units	MDL	PQL
2051-60-7	1-MoCB	U	ND	pg/L	7.37	21.8
2051-61-8	2-MoCB	U	ND	pg/L	7.26	21.8
2051-62-9	3-MoCB	U	ND	pg/L	7.26	21.8
13029-08-8	4-DiCB	U	ND	pg/L	7.33	21.8
16605-91-7	5-DiCB	U	ND	pg/L	8.38	21.8
25569-80-6	6-DiCB	U	ND	pg/L	7.90	21.8
33284-50-3	7-DiCB	U	ND	pg/L	7.26	21.8
34883-43-7	8-DiCB	U	ND	pg/L	7.74	21.8
34883-39-1	9-DiCB	U	ND	pg/L	7.26	21.8
33146-45-1	10-DiCB	U	ND	pg/L	7.26	21.8
2050-67-1	11-DiCB	J	41.8	pg/L	12.5	109
2974-92-7	12-DiCB	CU	ND	pg/L	14.5	43.6
2974-90-5	13-DiCB	C12				
34883-41-5	14-DiCB	U	ND	pg/L	7.26	21.8
2050-68-2	15-DiCB	J	12.0	pg/L	7.26	21.8
38444-78-9	16-TrCB	U	ND	pg/L	8.79	21.8
37680-66-3	17-TrCB	U	ND	pg/L	7.26	21.8
37680-65-2	18-TrCB	CU	ND	pg/L	14.5	43.6
38444-73-4	19-TrCB	U	ND	pg/L	7.26	21.8
38444-84-7	20-TrCB	CU	ND	pg/L	14.5	43.6
55702-46-0	21-TrCB	CU	ND	pg/L	14.5	43.6
38444-85-8	22-TrCB	U	ND	pg/L	7.26	21.8
55720-44-0	23-TrCB	U	ND	pg/L	7.26	21.8
55702-45-9	24-TrCB	U	ND	pg/L	7.26	21.8
55712-37-3	25-TrCB	U	ND	pg/L	7.26	21.8
38444-81-4	26-TrCB	CU	ND	pg/L	14.5	43.6
38444-76-7	27-TrCB	U	ND	pg/L	7.26	21.8
7012-37-5	28-TrCB	C20				
15862-07-4	29-TrCB	C26				
35693-92-6	30-TrCB	C18				
16606-02-3	31-TrCB	U	ND	pg/L	7.26	21.8
38444-77-8	32-TrCB	U	ND	pg/L	7.26	21.8

Comments:

B The target analyte was detected in the associated blank.
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PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**1611B75**	**Client:**	**HALL001**	**Project:**	**HALL00114**
Lab Sample ID:	**10146001**	**Date Collected:**	**11/21/2016 09:30**	**Matrix:**	**WATER**
Client Sample:	**1668A Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**1611B75-001L Rio Grande-North-11**			**Prep Basis:**	**As Received**
Batch ID:	**33561**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/16/2016 17:07**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c16dec16a-8**			**Dilution:**	**1**
Prep Batch:	**33559**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**13-DEC-16**	**Prep Aliquot:**	**917 mL**		

CAS No.	Parmname	Qual	Result	Units	MDL	PQL
38444-86-9	33-TrCB	C21				
37680-68-5	34-TrCB	U	ND	pg/L	7.26	21.8
37680-69-6	35-TrCB	U	ND	pg/L	7.26	21.8
38444-87-0	36-TrCB	U	ND	pg/L	7.26	21.8
38444-90-5	37-TrCB	U	ND	pg/L	7.26	21.8
53555-66-1	38-TrCB	U	ND	pg/L	7.26	21.8
38444-88-1	39-TrCB	U	ND	pg/L	7.26	21.8
38444-93-8	40-TeCB	CU	ND	pg/L	14.5	43.6
52663-59-9	41-TeCB	U	ND	pg/L	7.26	21.8
36559-22-5	42-TeCB	U	ND	pg/L	7.26	21.8
70362-46-8	43-TeCB	U	ND	pg/L	7.26	21.8
41464-39-5	44-TeCB	CU	ND	pg/L	21.8	65.4
70362-45-7	45-TeCB	CU	ND	pg/L	14.5	43.6
41464-47-5	46-TeCB	U	ND	pg/L	7.26	21.8
2437-79-8	47-TeCB	C44				
70362-47-9	48-TeCB	U	ND	pg/L	7.26	21.8
41464-40-8	49-TeCB	CU	ND	pg/L	14.5	43.6
62796-65-0	50-TeCB	CU	ND	pg/L	14.5	43.6
68194-04-7	51-TeCB	C45				
35693-99-3	52-TeCB	J	7.33	pg/L	7.26	21.8
41464-41-9	53-TeCB	C50				
15968-05-5	54-TeCB	U	ND	pg/L	7.26	21.8
74338-24-2	55-TeCB	U	ND	pg/L	7.26	21.8
41464-43-1	56-TeCB	U	ND	pg/L	7.26	21.8
70424-67-8	57-TeCB	U	ND	pg/L	7.26	21.8
41464-49-7	58-TeCB	U	ND	pg/L	7.26	21.8
74472-33-6	59-TeCB	CU	ND	pg/L	21.8	65.4
33025-41-1	60-TeCB	U	ND	pg/L	7.26	21.8
33284-53-6	61-TeCB	CU	ND	pg/L	29.0	87.2
54230-22-7	62-TeCB	C59				
74472-34-7	63-TeCB	U	ND	pg/L	7.26	21.8
52663-58-8	64-TeCB	U	ND	pg/L	7.26	21.8

Comments:

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Sample Summary

SDG Number:	**1611B75**	**Client:**	**HALL001**	**Project:**	**HALL00114**
Lab Sample ID:	**10146001**	**Date Collected:**	**11/21/2016 09:30**	**Matrix:**	**WATER**
Client Sample:	**1668A Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**1611B75-001L Rio Grande-North-11**			**Prep Basis:**	**As Received**
Batch ID:	**33561**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/16/2016 17:07**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c16dec16a-8**			**Dilution:**	**1**
Prep Batch:	**33559**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**13-DEC-16**	**Prep Aliquot:**	**917 mL**		

CAS No.	Parmname	Qual	Result	Units	MDL	PQL
33284-54-7	65-TeCB	C44				
32598-10-0	66-TeCB	U	ND	pg/L	7.26	21.8
73575-53-8	67-TeCB	U	ND	pg/L	7.26	21.8
73575-52-7	68-TeCB	U	ND	pg/L	7.26	21.8
60233-24-1	69-TeCB	C49				
32598-11-1	70-TeCB	C61				
41464-46-4	71-TeCB	C40				
41464-42-0	72-TeCB	U	ND	pg/L	7.26	21.8
74338-23-1	73-TeCB	U	ND	pg/L	7.26	21.8
32690-93-0	74-TeCB	C61				
32598-12-2	75-TeCB	C59				
70362-48-0	76-TeCB	C61				
32598-13-3	77-TeCB	U	ND	pg/L	7.26	21.8
70362-49-1	78-TeCB	U	ND	pg/L	7.26	21.8
41464-48-6	79-TeCB	U	ND	pg/L	7.26	21.8
33284-52-5	80-TeCB	U	ND	pg/L	7.26	21.8
70362-50-4	81-TeCB	U	ND	pg/L	7.26	21.8
52663-62-4	82-PeCB	U	ND	pg/L	7.26	21.8
60145-20-2	83-PeCB	U	ND	pg/L	7.26	21.8
52663-60-2	84-PeCB	U	ND	pg/L	7.26	21.8
65510-45-4	85-PeCB	CU	ND	pg/L	21.8	65.4
55312-69-1	86-PeCB	CU	ND	pg/L	43.6	131
38380-02-8	87-PeCB	C86				
55215-17-3	88-PeCB	CU	ND	pg/L	14.5	43.6
73575-57-2	89-PeCB	U	ND	pg/L	7.26	21.8
68194-07-0	90-PeCB	CU	ND	pg/L	21.8	65.4
68194-05-8	91-PeCB	C88				
52663-61-3	92-PeCB	U	ND	pg/L	7.26	21.8
73575-56-1	93-PeCB	CU	ND	pg/L	14.5	43.6
73575-55-0	94-PeCB	U	ND	pg/L	7.26	21.8
38379-99-6	95-PeCB	U	ND	pg/L	7.26	21.8
73575-54-9	96-PeCB	U	ND	pg/L	7.26	21.8

Comments:

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Client Sample:	**1668A Water**	**Date Received:**	**11/29/2016 10:25**		
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Batch ID:	**33561**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/16/2016 17:07**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c16dec16a-8**			**Dilution:**	**1**
Prep Batch:	**33559**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**13-DEC-16**	**Prep Aliquot:**	**917 mL**		

CAS No.	Parmname	Qual	Result	Units	MDL	PQL
41464-51-1	97-PeCB	C86				
60233-25-2	98-PeCB	CU	ND	pg/L	14.5	43.6
38380-01-7	99-PeCB	U	ND	pg/L	7.26	21.8
39485-83-1	100-PeCB	C93				
37680-73-2	101-PeCB	C90				
68194-06-9	102-PeCB	C98				
60145-21-3	103-PeCB	U	ND	pg/L	7.26	21.8
56558-16-8	104-PeCB	U	ND	pg/L	7.26	21.8
32598-14-4	105-PeCB	U	ND	pg/L	7.26	21.8
70424-69-0	106-PeCB	U	ND	pg/L	7.26	21.8
70424-68-9	107-PeCB	U	ND	pg/L	7.26	21.8
70362-41-3	108-PeCB	CU	ND	pg/L	14.5	43.6
74472-35-8	109-PeCB	C86				
38380-03-9	110-PeCB	CU	ND	pg/L	14.5	43.6
39635-32-0	111-PeCB	U	ND	pg/L	7.26	21.8
74472-36-9	112-PeCB	U	ND	pg/L	7.26	21.8
68194-10-5	113-PeCB	C90				
74472-37-0	114-PeCB	U	ND	pg/L	7.26	21.8
74472-38-1	115-PeCB	C110				
18259-05-7	116-PeCB	C85				
68194-11-6	117-PeCB	C85				
31508-00-6	118-PeCB	U	ND	pg/L	7.26	21.8
56558-17-9	119-PeCB	C86				
68194-12-7	120-PeCB	U	ND	pg/L	7.26	21.8
56558-18-0	121-PeCB	U	ND	pg/L	7.26	21.8
76842-07-4	122-PeCB	U	ND	pg/L	7.26	21.8
65510-44-3	123-PeCB	U	ND	pg/L	7.26	21.8
70424-70-3	124-PeCB	C108				
74472-39-2	125-PeCB	C86				
57465-28-8	126-PeCB	U	ND	pg/L	7.26	21.8
39635-33-1	127-PeCB	U	ND	pg/L	7.26	21.8
38380-07-3	128-HxCB	CU	ND	pg/L	14.5	43.6

Comments:

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PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**1611B75**	**Client:**	**HALL001**	**Project:**	**HALL00114**
Lab Sample ID:	**10146001**	**Date Collected:**	**11/21/2016 09:30**	**Matrix:**	**WATER**
Client Sample:	**1668A Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**1611B75-001L Rio Grande-North-11**			**Prep Basis:**	**As Received**
Batch ID:	**33561**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/16/2016 17:07**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c16dec16a-8**			**Dilution:**	**1**
Prep Batch:	**33559**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**13-DEC-16**	**Prep Aliquot:**	**917 mL**		

CAS No.	Parmname	Qual	Result	Units	MDL	PQL
55215-18-4	129-HxCB	CU	ND	pg/L	21.8	65.4
52663-66-8	130-HxCB	U	ND	pg/L	7.26	21.8
61798-70-7	131-HxCB	U	ND	pg/L	7.26	21.8
38380-05-1	132-HxCB	U	ND	pg/L	13.9	21.8
35694-04-3	133-HxCB	U	ND	pg/L	7.26	21.8
52704-70-8	134-HxCB	U	ND	pg/L	7.33	21.8
52744-13-5	135-HxCB	CU	ND	pg/L	14.5	43.6
38411-22-2	136-HxCB	U	ND	pg/L	7.26	21.8
35694-06-5	137-HxCB	U	ND	pg/L	7.26	21.8
35065-28-2	138-HxCB	C129				
56030-56-9	139-HxCB	CU	ND	pg/L	14.5	43.6
59291-64-4	140-HxCB	C139				
52712-04-6	141-HxCB	U	ND	pg/L	7.26	21.8
41411-61-4	142-HxCB	U	ND	pg/L	7.26	21.8
68194-15-0	143-HxCB	U	ND	pg/L	7.26	21.8
68194-14-9	144-HxCB	U	ND	pg/L	7.26	21.8
74472-40-5	145-HxCB	U	ND	pg/L	7.26	21.8
51908-16-8	146-HxCB	U	ND	pg/L	7.26	21.8
68194-13-8	147-HxCB	CU	ND	pg/L	14.5	43.6
74472-41-6	148-HxCB	U	ND	pg/L	7.26	21.8
38380-04-0	149-HxCB	C147				
68194-08-1	150-HxCB	U	ND	pg/L	7.26	21.8
52663-63-5	151-HxCB	C135				
68194-09-2	152-HxCB	U	ND	pg/L	7.26	21.8
35065-27-1	153-HxCB	CU	ND	pg/L	14.5	43.6
60145-22-4	154-HxCB	U	ND	pg/L	7.26	21.8
33979-03-2	155-HxCB	U	ND	pg/L	7.26	21.8
38380-08-4	156-HxCB	CU	ND	pg/L	14.5	43.6
69782-90-7	157-HxCB	C156				
74472-42-7	158-HxCB	U	ND	pg/L	7.26	21.8
39635-35-3	159-HxCB	U	ND	pg/L	7.26	21.8
41411-62-5	160-HxCB	U	ND	pg/L	7.26	21.8

Comments:

B The target analyte was detected in the associated blank.
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PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**1611B75**	**Client:**	**HALL001**	**Project:**	**HALL00114**
Lab Sample ID:	**10146001**	**Date Collected:**	**11/21/2016 09:30**	**Matrix:**	**WATER**
Client Sample:	**1668A Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**1611B75-001L Rio Grande-North-11**			**Prep Basis:**	**As Received**
Batch ID:	**33561**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/16/2016 17:07**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c16dec16a-8**			**Dilution:**	**1**
Prep Batch:	**33559**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**13-DEC-16**	**Prep Aliquot:**	**917 mL**		

CAS No.	Parmname	Qual	Result	Units	MDL	PQL
74472-43-8	161-HxCB	U	ND	pg/L	7.26	21.8
39635-34-2	162-HxCB	U	ND	pg/L	7.26	21.8
74472-44-9	163-HxCB	C129				
74472-45-0	164-HxCB	U	ND	pg/L	7.26	21.8
74472-46-1	165-HxCB	U	ND	pg/L	7.26	21.8
41411-63-6	166-HxCB	C128				
52663-72-6	167-HxCB	U	ND	pg/L	7.26	21.8
59291-65-5	168-HxCB	C153				
32774-16-6	169-HxCB	U	ND	pg/L	7.26	21.8
35065-30-6	170-HpCB	U	ND	pg/L	7.26	21.8
52663-71-5	171-HpCB	CU	ND	pg/L	14.5	43.6
52663-74-8	172-HpCB	U	ND	pg/L	7.26	21.8
68194-16-1	173-HpCB	C171				
38411-25-5	174-HpCB	U	ND	pg/L	7.26	21.8
40186-70-7	175-HpCB	U	ND	pg/L	7.26	21.8
52663-65-7	176-HpCB	U	ND	pg/L	7.26	21.8
52663-70-4	177-HpCB	U	ND	pg/L	7.26	21.8
52663-67-9	178-HpCB	U	ND	pg/L	7.26	21.8
52663-64-6	179-HpCB	U	ND	pg/L	7.26	21.8
35065-29-3	180-HpCB	CU	ND	pg/L	14.5	43.6
74472-47-2	181-HpCB	U	ND	pg/L	7.26	21.8
60145-23-5	182-HpCB	U	ND	pg/L	7.26	21.8
52663-69-1	183-HpCB	CU	ND	pg/L	14.5	43.6
74472-48-3	184-HpCB	U	ND	pg/L	7.26	21.8
52712-05-7	185-HpCB	C183				
74472-49-4	186-HpCB	U	ND	pg/L	7.26	21.8
52663-68-0	187-HpCB	U	ND	pg/L	7.26	21.8
74487-85-7	188-HpCB	U	ND	pg/L	7.26	21.8
39635-31-9	189-HpCB	U	ND	pg/L	7.26	21.8
41411-64-7	190-HpCB	U	ND	pg/L	7.26	21.8
74472-50-7	191-HpCB	U	ND	pg/L	7.26	21.8
74472-51-8	192-HpCB	U	ND	pg/L	7.26	21.8

Comments:

B **The target analyte was detected in the associated blank.**

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**

J **Value is estimated**

U **Analyte was analyzed for, but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**1611B75**	**Client:**	**HALL001**	**Project:**	**HALL00114**
Lab Sample ID:	**10146001**	**Date Collected:**	**11/21/2016 09:30**	**Matrix:**	**WATER**
Client Sample:	**1668A Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**1611B75-001L Rio Grande-North-11**			**Prep Basis:**	**As Received**
Batch ID:	**33561**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/16/2016 17:07**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c16dec16a-8**			**Dilution:**	**1**
Prep Batch:	**33559**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**13-DEC-16**	**Prep Aliquot:**	**917 mL**		

CAS No.	Parmname	Qual	Result	Units	MDL	PQL
69782-91-8	193-HpCB	C180				
35694-08-7	194-OcCB	U	ND	pg/L	7.26	21.8
52663-78-2	195-OcCB	U	ND	pg/L	7.26	21.8
42740-50-1	196-OcCB	U	ND	pg/L	7.26	21.8
33091-17-7	197-OcCB	CU	ND	pg/L	14.5	43.6
68194-17-2	198-OcCB	CU	ND	pg/L	14.5	43.6
52663-75-9	199-OcCB	C198				
52663-73-7	200-OcCB	C197				
40186-71-8	201-OcCB	U	ND	pg/L	7.26	21.8
2136-99-4	202-OcCB	U	ND	pg/L	7.26	21.8
52663-76-0	203-OcCB	U	ND	pg/L	7.26	21.8
74472-52-9	204-OcCB	U	ND	pg/L	7.26	21.8
74472-53-0	205-OcCB	U	ND	pg/L	7.26	21.8
40186-72-9	206-NoCB	U	ND	pg/L	7.26	21.8
52663-79-3	207-NoCB	U	ND	pg/L	7.26	21.8
52663-77-1	208-NoCB	U	ND	pg/L	7.26	21.8
2051-24-3	209-DeCB	U	ND	pg/L	7.26	21.8
1336-36-3	Total PCB Congeners	B	61.1	pg/L	7.26	21.8

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		952	2180	pg/L	43.6	(15%-150%)
13C-3-MoCB		1120	2180	pg/L	51.5	(15%-150%)
13C-4-DiCB		1090	2180	pg/L	49.9	(25%-150%)
13C-15-DiCB		2100	2180	pg/L	96.5	(25%-150%)
13C-19-TrCB		1520	2180	pg/L	69.9	(25%-150%)
13C-37-TrCB		1750	2180	pg/L	80.1	(25%-150%)
13C-54-TeCB		1360	2180	pg/L	62.5	(25%-150%)
13C-77-TeCB		2010	2180	pg/L	92.0	(25%-150%)
13C-81-TeCB		2020	2180	pg/L	92.8	(25%-150%)
13C-104-PeCB		1530	2180	pg/L	70.2	(25%-150%)
13C-105-PeCB		1820	2180	pg/L	83.4	(25%-150%)
13C-114-PeCB		1800	2180	pg/L	82.3	(25%-150%)
13C-118-PeCB		1870	2180	pg/L	85.8	(25%-150%)
13C-123-PeCB		1910	2180	pg/L	87.6	(25%-150%)
13C-126-PeCB		1780	2180	pg/L	81.7	(25%-150%)
13C-155-HxCB		1620	2180	pg/L	74.4	(25%-150%)
13C-156-HxCB	C	3230	4360	pg/L	74.1	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		1700	2180	pg/L	78.1	(25%-150%)
13C-169-HxCB		1570	2180	pg/L	71.9	(25%-150%)
13C-188-HpCB		2050	2180	pg/L	93.8	(25%-150%)
13C-189-HpCB		1800	2180	pg/L	82.7	(25%-150%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	1611B75	**Client:**	HALL001	**Project:**	HALL00114
Lab Sample ID:	10146001	**Date Collected:**	11/21/2016 09:30	**Matrix:**	WATER
Client Sample:	1668A Water	**Date Received:**	11/29/2016 10:25		
Client ID:	1611B75-001L Rio Grande-North-11			**Prep Basis:**	As Received
Batch ID:	33561	**Method:**	EPA Method 1668A		
Run Date:	12/16/2016 17:07	**Analyst:**	MJC	**Instrument:**	HRP791
Data File:	c16dec16a-8			**Dilution:**	1
Prep Batch:	33559	**Prep Method:**	SW846 3520C	**Prep SOP Ref:**	CF-OA-E-001
Prep Date:	13-DEC-16	**Prep Aliquot:**	917 mL		

CAS No.	Parmname	Qual	Result	Units	MDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-202-OcCB		2110	2180	pg/L	96.9	(25%-150%)
13C-205-OcCB		1980	2180	pg/L	90.8	(25%-150%)
13C-206-NoCB		1950	2180	pg/L	89.2	(25%-150%)
13C-208-NoCB		1990	2180	pg/L	91.2	(25%-150%)
13C-209-DeCB		2160	2180	pg/L	99.1	(25%-150%)
13C-28-TrCB		1540	2180	pg/L	70.7	(30%-135%)
13C-111-PeCB		1910	2180	pg/L	87.4	(30%-135%)
13C-178-HpCB		2050	2180	pg/L	94.0	(30%-135%)

Comments:

B The target analyte was detected in the associated blank.
C Congener has coeluters. When Cxxx, refer to congener number xxx for data
J Value is estimated
U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**1611B75**	**Client:**	**HALL001**	**Project:**	**HALL00114**
Lab Sample ID:	**10146002**	**Date Collected:**	**11/22/2016 07:00**	**Matrix:**	**WATER**
Client Sample:	**1668A Water**	**Date Received:**	**11/30/2016 10:45**		
Client ID:	**1611B75-002L Rio Grande-South-11**			**Prep Basis:**	**As Received**
Batch ID:	**33561**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/16/2016 18:13**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c16dec16a-9**			**Dilution:**	**1**
Prep Batch:	**33559**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**13-DEC-16**	**Prep Aliquot:**	**903.4 mL**		

CAS No.	Parmname	Qual	Result	Units	MDL	PQL
2051-60-7	1-MoCB	U	ND	pg/L	7.48	22.1
2051-61-8	2-MoCB	U	ND	pg/L	7.37	22.1
2051-62-9	3-MoCB	U	ND	pg/L	7.37	22.1
13029-08-8	4-DiCB	U	ND	pg/L	7.44	22.1
16605-91-7	5-DiCB	U	ND	pg/L	8.50	22.1
25569-80-6	6-DiCB	U	ND	pg/L	8.01	22.1
33284-50-3	7-DiCB	U	ND	pg/L	7.37	22.1
34883-43-7	8-DiCB	U	ND	pg/L	7.86	22.1
34883-39-1	9-DiCB	U	ND	pg/L	7.37	22.1
33146-45-1	10-DiCB	U	ND	pg/L	7.37	22.1
2050-67-1	11-DiCB	J	78.4	pg/L	12.7	111
2974-92-7	12-DiCB	CU	ND	pg/L	14.7	44.3
2974-90-5	13-DiCB	C12				
34883-41-5	14-DiCB	U	ND	pg/L	7.37	22.1
2050-68-2	15-DiCB	J	13.0	pg/L	7.37	22.1
38444-78-9	16-TrCB	U	ND	pg/L	8.92	22.1
37680-66-3	17-TrCB	U	ND	pg/L	7.37	22.1
37680-65-2	18-TrCB	CU	ND	pg/L	14.7	44.3
38444-73-4	19-TrCB	U	ND	pg/L	7.37	22.1
38444-84-7	20-TrCB	CJ	20.2	pg/L	14.7	44.3
55702-46-0	21-TrCB	CU	ND	pg/L	14.7	44.3
38444-85-8	22-TrCB	U	ND	pg/L	7.37	22.1
55720-44-0	23-TrCB	U	ND	pg/L	7.37	22.1
55702-45-9	24-TrCB	U	ND	pg/L	7.37	22.1
55712-37-3	25-TrCB	U	ND	pg/L	7.37	22.1
38444-81-4	26-TrCB	CU	ND	pg/L	14.7	44.3
38444-76-7	27-TrCB	U	ND	pg/L	7.37	22.1
7012-37-5	28-TrCB	C20				
15862-07-4	29-TrCB	C26				
35693-92-6	30-TrCB	C18				
16606-02-3	31-TrCB	J	13.4	pg/L	7.37	22.1
38444-77-8	32-TrCB	U	ND	pg/L	7.37	22.1

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**

J **Value is estimated**

U **Analyte was analyzed for, but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**1611B75**	**Client:**	**HALL001**	**Project:**	**HALL00114**
Lab Sample ID:	**10146002**	**Date Collected:**	**11/22/2016 07:00**	**Matrix:**	**WATER**
Client Sample:	**1668A Water**	**Date Received:**	**11/30/2016 10:45**		
Client ID:	**1611B75-002L Rio Grande-South-11**			**Prep Basis:**	**As Received**
Batch ID:	**33561**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/16/2016 18:13**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c16dec16a-9**			**Dilution:**	**1**
Prep Batch:	**33559**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**13-DEC-16**	**Prep Aliquot:**	**903.4 mL**		

CAS No.	Parmname	Qual	Result	Units	MDL	PQL
38444-86-9	33-TrCB	C21				
37680-68-5	34-TrCB	U	ND	pg/L	7.37	22.1
37680-69-6	35-TrCB	U	ND	pg/L	7.37	22.1
38444-87-0	36-TrCB	U	ND	pg/L	7.37	22.1
38444-90-5	37-TrCB	J	9.05	pg/L	7.37	22.1
53555-66-1	38-TrCB	U	ND	pg/L	7.37	22.1
38444-88-1	39-TrCB	U	ND	pg/L	7.37	22.1
38444-93-8	40-TeCB	CU	ND	pg/L	14.7	44.3
52663-59-9	41-TeCB	U	ND	pg/L	7.37	22.1
36559-22-5	42-TeCB	U	ND	pg/L	7.37	22.1
70362-46-8	43-TeCB	U	ND	pg/L	7.37	22.1
41464-39-5	44-TeCB	CJ	27.1	pg/L	22.1	66.4
70362-45-7	45-TeCB	CU	ND	pg/L	14.7	44.3
41464-47-5	46-TeCB	U	ND	pg/L	7.37	22.1
2437-79-8	47-TeCB	C44				
70362-47-9	48-TeCB	U	ND	pg/L	7.37	22.1
41464-40-8	49-TeCB	CU	ND	pg/L	14.7	44.3
62796-65-0	50-TeCB	CU	ND	pg/L	14.7	44.3
68194-04-7	51-TeCB	C45				
35693-99-3	52-TeCB		37.5	pg/L	7.37	22.1
41464-41-9	53-TeCB	C50				
15968-05-5	54-TeCB	U	ND	pg/L	7.37	22.1
74338-24-2	55-TeCB	U	ND	pg/L	7.37	22.1
41464-43-1	56-TeCB	J	11.2	pg/L	7.37	22.1
70424-67-8	57-TeCB	U	ND	pg/L	7.37	22.1
41464-49-7	58-TeCB	U	ND	pg/L	7.37	22.1
74472-33-6	59-TeCB	CU	ND	pg/L	22.1	66.4
33025-41-1	60-TeCB	U	ND	pg/L	7.37	22.1
33284-53-6	61-TeCB	CJ	45.1	pg/L	29.4	88.6
54230-22-7	62-TeCB	C59				
74472-34-7	63-TeCB	U	ND	pg/L	7.37	22.1
52663-58-8	64-TeCB	J	9.32	pg/L	7.37	22.1

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**1611B75**	**Client:**	**HALL001**	**Project:**	**HALL00114**
Lab Sample ID:	**10146002**	**Date Collected:**	**11/22/2016 07:00**	**Matrix:**	**WATER**
Client Sample:	**1668A Water**	**Date Received:**	**11/30/2016 10:45**		
Client ID:	**1611B75-002L Rio Grande-South-11**			**Prep Basis:**	**As Received**
Batch ID:	**33561**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/16/2016 18:13**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c16dec16a-9**			**Dilution:**	**1**
Prep Batch:	**33559**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**13-DEC-16**	**Prep Aliquot:**	**903.4 mL**		

CAS No.	Parmname	Qual	Result	Units	MDL	PQL
33284-54-7	65-TeCB	C44				
32598-10-0	66-TeCB	J	17.4	pg/L	7.37	22.1
73575-53-8	67-TeCB	U	ND	pg/L	7.37	22.1
73575-52-7	68-TeCB	U	ND	pg/L	7.37	22.1
60233-24-1	69-TeCB	C49				
32598-11-1	70-TeCB	C61				
41464-46-4	71-TeCB	C40				
41464-42-0	72-TeCB	U	ND	pg/L	7.37	22.1
74338-23-1	73-TeCB	U	ND	pg/L	7.37	22.1
32690-93-0	74-TeCB	C61				
32598-12-2	75-TeCB	C59				
70362-48-0	76-TeCB	C61				
32598-13-3	77-TeCB	U	ND	pg/L	7.37	22.1
70362-49-1	78-TeCB	U	ND	pg/L	7.37	22.1
41464-48-6	79-TeCB	U	ND	pg/L	7.37	22.1
33284-52-5	80-TeCB	U	ND	pg/L	7.37	22.1
70362-50-4	81-TeCB	U	ND	pg/L	7.37	22.1
52663-62-4	82-PeCB	J	7.68	pg/L	7.37	22.1
60145-20-2	83-PeCB	U	ND	pg/L	7.37	22.1
52663-60-2	84-PeCB	J	14.1	pg/L	7.37	22.1
65510-45-4	85-PeCB	CU	ND	pg/L	22.1	66.4
55312-69-1	86-PeCB	CJ	46.6	pg/L	44.3	133
38380-02-8	87-PeCB	C86				
55215-17-3	88-PeCB	CU	ND	pg/L	14.7	44.3
73575-57-2	89-PeCB	U	ND	pg/L	7.37	22.1
68194-07-0	90-PeCB	CJ	65.4	pg/L	22.1	66.4
68194-05-8	91-PeCB	C88				
52663-61-3	92-PeCB	J	11.8	pg/L	7.37	22.1
73575-56-1	93-PeCB	CU	ND	pg/L	14.7	44.3
73575-55-0	94-PeCB	U	ND	pg/L	7.37	22.1
38379-99-6	95-PeCB		43.8	pg/L	7.37	22.1
73575-54-9	96-PeCB	U	ND	pg/L	7.37	22.1

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**1611B75**	**Client:**	**HALL001**	**Project:**	**HALL00114**
Lab Sample ID:	**10146002**	**Date Collected:**	**11/22/2016 07:00**	**Matrix:**	**WATER**
Client Sample:	**1668A Water**	**Date Received:**	**11/30/2016 10:45**		
Client ID:	**1611B75-002L Rio Grande-South-11**			**Prep Basis:**	**As Received**
Batch ID:	**33561**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/16/2016 18:13**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c16dec16a-9**			**Dilution:**	**1**
Prep Batch:	**33559**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**13-DEC-16**	**Prep Aliquot:**	**903.4 mL**		

CAS No.	Parmname	Qual	Result	Units	MDL	PQL
41464-51-1	97-PeCB	C86				
60233-25-2	98-PeCB	CU	ND	pg/L	14.7	44.3
38380-01-7	99-PeCB		26.8	pg/L	7.37	22.1
39485-83-1	100-PeCB	C93				
37680-73-2	101-PeCB	C90				
68194-06-9	102-PeCB	C98				
60145-21-3	103-PeCB	U	ND	pg/L	7.37	22.1
56558-16-8	104-PeCB	U	ND	pg/L	7.37	22.1
32598-14-4	105-PeCB		33.8	pg/L	7.37	22.1
70424-69-0	106-PeCB	U	ND	pg/L	7.37	22.1
70424-68-9	107-PeCB	U	ND	pg/L	7.37	22.1
70362-41-3	108-PeCB	CU	ND	pg/L	14.7	44.3
74472-35-8	109-PeCB	C86				
38380-03-9	110-PeCB	C	92.3	pg/L	14.7	44.3
39635-32-0	111-PeCB	U	ND	pg/L	7.37	22.1
74472-36-9	112-PeCB	U	ND	pg/L	7.37	22.1
68194-10-5	113-PeCB	C90				
74472-37-0	114-PeCB	U	ND	pg/L	7.37	22.1
74472-38-1	115-PeCB	C110				
18259-05-7	116-PeCB	C85				
68194-11-6	117-PeCB	C85				
31508-00-6	118-PeCB		68.0	pg/L	7.37	22.1
56558-17-9	119-PeCB	C86				
68194-12-7	120-PeCB	U	ND	pg/L	7.37	22.1
56558-18-0	121-PeCB	U	ND	pg/L	7.37	22.1
76842-07-4	122-PeCB	U	ND	pg/L	7.37	22.1
65510-44-3	123-PeCB	U	ND	pg/L	7.37	22.1
70424-70-3	124-PeCB	C108				
74472-39-2	125-PeCB	C86				
57465-28-8	126-PeCB	U	ND	pg/L	7.37	22.1
39635-33-1	127-PeCB	U	ND	pg/L	7.37	22.1
38380-07-3	128-HxCB	CJ	19.9	pg/L	14.7	44.3

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**1611B75**	**Client:**	**HALL001**	**Project:**	**HALL00114**
Lab Sample ID:	**10146002**	**Date Collected:**	**11/22/2016 07:00**	**Matrix:**	**WATER**
Client Sample:	**1668A Water**	**Date Received:**	**11/30/2016 10:45**		
Client ID:	**1611B75-002L Rio Grande-South-11**			**Prep Basis:**	**As Received**
Batch ID:	**33561**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/16/2016 18:13**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c16dec16a-9**			**Dilution:**	**1**
Prep Batch:	**33559**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**13-DEC-16**	**Prep Aliquot:**	**903.4 mL**		

CAS No.	Parmname	Qual	Result	Units	MDL	PQL
55215-18-4	129-HxCB	C	160	pg/L	22.1	66.4
52663-66-8	130-HxCB	J	8.66	pg/L	7.37	22.1
61798-70-7	131-HxCB	U	ND	pg/L	7.37	22.1
38380-05-1	132-HxCB		43.1	pg/L	14.1	22.1
35694-04-3	133-HxCB	U	ND	pg/L	7.37	22.1
52704-70-8	134-HxCB	U	ND	pg/L	7.44	22.1
52744-13-5	135-HxCB	CJ	39.2	pg/L	14.7	44.3
38411-22-2	136-HxCB	J	12.4	pg/L	7.37	22.1
35694-06-5	137-HxCB	U	ND	pg/L	7.37	22.1
35065-28-2	138-HxCB	C129				
56030-56-9	139-HxCB	CU	ND	pg/L	14.7	44.3
59291-64-4	140-HxCB	C139				
52712-04-6	141-HxCB		24.0	pg/L	7.37	22.1
41411-61-4	142-HxCB	U	ND	pg/L	7.37	22.1
68194-15-0	143-HxCB	U	ND	pg/L	7.37	22.1
68194-14-9	144-HxCB	U	ND	pg/L	7.37	22.1
74472-40-5	145-HxCB	U	ND	pg/L	7.37	22.1
51908-16-8	146-HxCB	J	17.0	pg/L	7.37	22.1
68194-13-8	147-HxCB	C	95.3	pg/L	14.7	44.3
74472-41-6	148-HxCB	U	ND	pg/L	7.37	22.1
38380-04-0	149-HxCB	C147				
68194-08-1	150-HxCB	U	ND	pg/L	7.37	22.1
52663-63-5	151-HxCB	C135				
68194-09-2	152-HxCB	U	ND	pg/L	7.37	22.1
35065-27-1	153-HxCB	C	116	pg/L	14.7	44.3
60145-22-4	154-HxCB	U	ND	pg/L	7.37	22.1
33979-03-2	155-HxCB	U	ND	pg/L	7.37	22.1
38380-08-4	156-HxCB	CJ	16.8	pg/L	14.7	44.3
69782-90-7	157-HxCB	C156				
74472-42-7	158-HxCB	J	14.4	pg/L	7.37	22.1
39635-35-3	159-HxCB	U	ND	pg/L	7.37	22.1
41411-62-5	160-HxCB	U	ND	pg/L	7.37	22.1

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	1611B75	**Client:**	HALL001	**Project:**	HALL00114
Lab Sample ID:	10146002	**Date Collected:**	11/22/2016 07:00	**Matrix:**	WATER
Client Sample:	1668A Water	**Date Received:**	11/30/2016 10:45		
Client ID:	1611B75-002L Rio Grande-South-11			**Prep Basis:**	As Received
Batch ID:	33561	**Method:**	EPA Method 1668A		
Run Date:	12/16/2016 18:13	**Analyst:**	MJC	**Instrument:**	HRP791
Data File:	c16dec16a-9			**Dilution:**	1
Prep Batch:	33559	**Prep Method:**	SW846 3520C	**Prep SOP Ref:**	CF-OA-E-001
Prep Date:	13-DEC-16	**Prep Aliquot:**	903.4 mL		

CAS No.	Parmname	Qual	Result	Units	MDL	PQL
74472-43-8	161-HxCB	U	ND	pg/L	7.37	22.1
39635-34-2	162-HxCB	U	ND	pg/L	7.37	22.1
74472-44-9	163-HxCB	C129				
74472-45-0	164-HxCB	J	10.2	pg/L	7.37	22.1
74472-46-1	165-HxCB	U	ND	pg/L	7.37	22.1
41411-63-6	166-HxCB	C128				
52663-72-6	167-HxCB	U	ND	pg/L	7.37	22.1
59291-65-5	168-HxCB	C153				
32774-16-6	169-HxCB	U	ND	pg/L	7.37	22.1
35065-30-6	170-HpCB		44.1	pg/L	7.37	22.1
52663-71-5	171-HpCB	CU	ND	pg/L	14.7	44.3
52663-74-8	172-HpCB	J	8.55	pg/L	7.37	22.1
68194-16-1	173-HpCB	C171				
38411-25-5	174-HpCB		43.2	pg/L	7.37	22.1
40186-70-7	175-HpCB	U	ND	pg/L	7.37	22.1
52663-65-7	176-HpCB	U	ND	pg/L	7.37	22.1
52663-70-4	177-HpCB		26.6	pg/L	7.37	22.1
52663-67-9	178-HpCB	J	9.25	pg/L	7.37	22.1
52663-64-6	179-HpCB	J	15.5	pg/L	7.37	22.1
35065-29-3	180-HpCB	C	99.8	pg/L	14.7	44.3
74472-47-2	181-HpCB	U	ND	pg/L	7.37	22.1
60145-23-5	182-HpCB	U	ND	pg/L	7.37	22.1
52663-69-1	183-HpCB	CJ	29.5	pg/L	14.7	44.3
74472-48-3	184-HpCB	U	ND	pg/L	7.37	22.1
52712-05-7	185-HpCB	C183				
74472-49-4	186-HpCB	U	ND	pg/L	7.37	22.1
52663-68-0	187-HpCB		55.3	pg/L	7.37	22.1
74487-85-7	188-HpCB	U	ND	pg/L	7.37	22.1
39635-31-9	189-HpCB	U	ND	pg/L	7.37	22.1
41411-64-7	190-HpCB	J	8.55	pg/L	7.37	22.1
74472-50-7	191-HpCB	U	ND	pg/L	7.37	22.1
74472-51-8	192-HpCB	U	ND	pg/L	7.37	22.1

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**1611B75**	**Client:**	**HALL001**	**Project:**	**HALL00114**
Lab Sample ID:	**10146002**	**Date Collected:**	**11/22/2016 07:00**	**Matrix:**	**WATER**
Client Sample:	**1668A Water**	**Date Received:**	**11/30/2016 10:45**		
Client ID:	**1611B75-002L Rio Grande-South-11**			**Prep Basis:**	**As Received**
Batch ID:	**33561**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/16/2016 18:13**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c16dec16a-9**			**Dilution:**	**1**
Prep Batch:	**33559**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**13-DEC-16**	**Prep Aliquot:**	**903.4 mL**		

CAS No.	Parmname	Qual	Result	Units	MDL	PQL
69782-91-8	193-HpCB	C180				
35694-08-7	194-OcCB	J	21.1	pg/L	7.37	22.1
52663-78-2	195-OcCB	J	8.15	pg/L	7.37	22.1
42740-50-1	196-OcCB	J	10.8	pg/L	7.37	22.1
33091-17-7	197-OcCB	CU	ND	pg/L	14.7	44.3
68194-17-2	198-OcCB	CJ	25.9	pg/L	14.7	44.3
52663-75-9	199-OcCB	C198				
52663-73-7	200-OcCB	C197				
40186-71-8	201-OcCB	U	ND	pg/L	7.37	22.1
2136-99-4	202-OcCB	U	ND	pg/L	7.37	22.1
52663-76-0	203-OcCB	J	17.3	pg/L	7.37	22.1
74472-52-9	204-OcCB	U	ND	pg/L	7.37	22.1
74472-53-0	205-OcCB	U	ND	pg/L	7.37	22.1
40186-72-9	206-NoCB	J	13.6	pg/L	7.37	22.1
52663-79-3	207-NoCB	U	ND	pg/L	7.37	22.1
52663-77-1	208-NoCB	U	ND	pg/L	7.37	22.1
2051-24-3	209-DeCB	J	12.2	pg/L	7.37	22.1
1336-36-3	Total PCB Congeners		1720	pg/L	7.37	22.1

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		1240	2210	pg/L	56.0	(15%-150%)
13C-3-MoCB		1410	2210	pg/L	63.6	(15%-150%)
13C-4-DiCB		1360	2210	pg/L	61.6	(25%-150%)
13C-15-DiCB		2580	2210	pg/L	117	(25%-150%)
13C-19-TrCB		1850	2210	pg/L	83.6	(25%-150%)
13C-37-TrCB		2010	2210	pg/L	90.9	(25%-150%)
13C-54-TeCB		1510	2210	pg/L	68.3	(25%-150%)
13C-77-TeCB		2290	2210	pg/L	103	(25%-150%)
13C-81-TeCB		2320	2210	pg/L	105	(25%-150%)
13C-104-PeCB		1680	2210	pg/L	75.7	(25%-150%)
13C-105-PeCB		2010	2210	pg/L	90.7	(25%-150%)
13C-114-PeCB		1980	2210	pg/L	89.3	(25%-150%)
13C-118-PeCB		2040	2210	pg/L	92.0	(25%-150%)
13C-123-PeCB		2060	2210	pg/L	93.0	(25%-150%)
13C-126-PeCB		2020	2210	pg/L	91.2	(25%-150%)
13C-155-HxCB		1780	2210	pg/L	80.3	(25%-150%)
13C-156-HxCB	C	3640	4430	pg/L	82.1	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		1920	2210	pg/L	86.6	(25%-150%)
13C-169-HxCB		1780	2210	pg/L	80.6	(25%-150%)
13C-188-HpCB		2130	2210	pg/L	96.3	(25%-150%)
13C-189-HpCB		1990	2210	pg/L	90.0	(25%-150%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	1611B75	**Client:**	HALL001	**Project:**	HALL00114
Lab Sample ID:	10146002	**Date Collected:**	11/22/2016 07:00	**Matrix:**	WATER
Client Sample:	1668A Water	**Date Received:**	11/30/2016 10:45		
Client ID:	1611B75-002L Rio Grande-South-11			**Prep Basis:**	As Received
Batch ID:	33561	**Method:**	EPA Method 1668A		
Run Date:	12/16/2016 18:13	**Analyst:**	MJC	**Instrument:**	HRP791
Data File:	c16dec16a-9			**Dilution:**	1
Prep Batch:	33559	**Prep Method:**	SW846 3520C	**Prep SOP Ref:**	CF-OA-E-001
Prep Date:	13-DEC-16	**Prep Aliquot:**	903.4 mL		

CAS No.	Parmname	Qual	Result	Units	MDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-202-OcCB		2270	2210	pg/L	103	(25%-150%)
13C-205-OcCB		2140	2210	pg/L	96.5	(25%-150%)
13C-206-NoCB		2100	2210	pg/L	94.7	(25%-150%)
13C-208-NoCB		2150	2210	pg/L	96.9	(25%-150%)
13C-209-DeCB		2320	2210	pg/L	105	(25%-150%)
13C-28-TrCB		1630	2210	pg/L	73.6	(30%-135%)
13C-111-PeCB		2030	2210	pg/L	91.5	(30%-135%)
13C-178-HpCB		2190	2210	pg/L	99.0	(30%-135%)

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

Quality Control Summary

PCB Congeners

Surrogate Recovery Report

SDG Number: 1611B75

Matrix Type: LIQUID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12017565	LCS for batch 33559	13C-1-MoCB		46.8	(15%-140%)
		13C-3-MoCB		52.3	(15%-140%)
		13C-4-DiCB		54.2	(30%-140%)
		13C-15-DiCB		89.2	(30%-140%)
		13C-19-TrCB		72.1	(30%-140%)
		13C-37-TrCB		77.9	(30%-140%)
		13C-54-TeCB		68.5	(30%-140%)
		13C-77-TeCB		88.4	(30%-140%)
		13C-81-TeCB		90.4	(30%-140%)
		13C-104-PeCB		73.7	(30%-140%)
		13C-105-PeCB		82.4	(30%-140%)
		13C-114-PeCB		81.6	(30%-140%)
		13C-118-PeCB		83.9	(30%-140%)
		13C-123-PeCB		84.9	(30%-140%)
		13C-126-PeCB		78.7	(30%-140%)
		13C-155-HxCB		79.9	(30%-140%)
		13C-156-HxCB	C	75.5	(30%-140%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		79.4	(30%-140%)
		13C-169-HxCB		72.2	(30%-140%)
		13C-188-HpCB		104	(30%-140%)
		13C-189-HpCB		85.8	(30%-140%)
		13C-202-OcCB		106	(30%-140%)
		13C-205-OcCB		93.5	(30%-140%)
		13C-206-NoCB		94.5	(30%-140%)
		13C-208-NoCB		97.6	(30%-140%)
		13C-209-DeCB		107	(30%-140%)
		13C-28-TrCB		74.6	(40%-125%)
		13C-111-PeCB		88.8	(40%-125%)
		13C-178-HpCB		101	(40%-125%)
12017566	LCSD for batch 33559	13C-1-MoCB		43.9	(15%-140%)
		13C-3-MoCB		51.9	(15%-140%)
		13C-4-DiCB		50.1	(30%-140%)
		13C-15-DiCB		90.3	(30%-140%)
		13C-19-TrCB		69.3	(30%-140%)
		13C-37-TrCB		72.0	(30%-140%)
		13C-54-TeCB		58.8	(30%-140%)
		13C-77-TeCB		79.7	(30%-140%)
		13C-81-TeCB		81.5	(30%-140%)
		13C-104-PeCB		65.8	(30%-140%)
		13C-105-PeCB		74.2	(30%-140%)
		13C-114-PeCB		72.7	(30%-140%)
		13C-118-PeCB		75.3	(30%-140%)
		13C-123-PeCB		76.0	(30%-140%)
		13C-126-PeCB		71.6	(30%-140%)
		13C-155-HxCB		69.7	(30%-140%)
		13C-156-HxCB	C	67.1	(30%-140%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		71.1	(30%-140%)
		13C-169-HxCB		64.2	(30%-140%)
		13C-188-HpCB		91.6	(30%-140%)
		13C-189-HpCB		76.7	(30%-140%)

PCB Congeners
Surrogate Recovery Report

SDG Number: 1611B75

Matrix Type: LIQUID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12017566	LCSD for batch 33559	13C-202-OcCB		93.2	(30%-140%)
		13C-205-OcCB		83.4	(30%-140%)
		13C-206-NoCB		83.3	(30%-140%)
		13C-208-NoCB		85.8	(30%-140%)
		13C-209-DeCB		94.5	(30%-140%)
		13C-28-TrCB		71.9	(40%-125%)
		13C-111-PeCB		88.7	(40%-125%)
		13C-178-HpCB		98.6	(40%-125%)
12017564	MB for batch 33559	13C-1-MoCB		54.3	(15%-150%)
		13C-3-MoCB		57.6	(15%-150%)
		13C-4-DiCB		57.4	(25%-150%)
		13C-15-DiCB		109	(25%-150%)
		13C-19-TrCB		80.5	(25%-150%)
		13C-37-TrCB		90.8	(25%-150%)
		13C-54-TeCB		67.3	(25%-150%)
		13C-77-TeCB		103	(25%-150%)
		13C-81-TeCB		105	(25%-150%)
		13C-104-PeCB		72.9	(25%-150%)
		13C-105-PeCB		86.7	(25%-150%)
		13C-114-PeCB		85.3	(25%-150%)
		13C-118-PeCB		87.2	(25%-150%)
		13C-123-PeCB		88.4	(25%-150%)
		13C-126-PeCB		84.9	(25%-150%)
		13C-155-HxCB		82.0	(25%-150%)
		13C-156-HxCB	C	78.6	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		83.7	(25%-150%)
		13C-169-HxCB		74.8	(25%-150%)
		13C-188-HpCB		106	(25%-150%)
		13C-189-HpCB		88.4	(25%-150%)
		13C-202-OcCB		108	(25%-150%)
		13C-205-OcCB		95.1	(25%-150%)
		13C-206-NoCB		95.2	(25%-150%)
		13C-208-NoCB		100	(25%-150%)
		13C-209-DeCB		108	(25%-150%)
		13C-28-TrCB		74.3	(30%-135%)
		13C-111-PeCB		93.9	(30%-135%)
		13C-178-HpCB		106	(30%-135%)
10146001	1611B75-001L Rio Grande-North-112116	13C-1-MoCB		43.6	(15%-150%)
		13C-3-MoCB		51.5	(15%-150%)
		13C-4-DiCB		49.9	(25%-150%)
		13C-15-DiCB		96.5	(25%-150%)
		13C-19-TrCB		69.9	(25%-150%)
		13C-37-TrCB		80.1	(25%-150%)
		13C-54-TeCB		62.5	(25%-150%)
		13C-77-TeCB		92.0	(25%-150%)
		13C-81-TeCB		92.8	(25%-150%)
		13C-104-PeCB		70.2	(25%-150%)
		13C-105-PeCB		83.4	(25%-150%)
		13C-114-PeCB		82.3	(25%-150%)
		13C-118-PeCB		85.8	(25%-150%)

PCB Congeners
Surrogate Recovery Report

SDG Number: 1611B75

Matrix Type: LIQUID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
10146001	1611B75-001L Rio Grande-North-112116	13C-123-PeCB		87.6	(25%-150%)
		13C-126-PeCB		81.7	(25%-150%)
		13C-155-HxCB		74.4	(25%-150%)
		13C-156-HxCB	C	74.1	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		78.1	(25%-150%)
		13C-169-HxCB		71.9	(25%-150%)
		13C-188-HpCB		93.8	(25%-150%)
		13C-189-HpCB		82.7	(25%-150%)
		13C-202-OcCB		96.9	(25%-150%)
		13C-205-OcCB		90.8	(25%-150%)
		13C-206-NoCB		89.2	(25%-150%)
		13C-208-NoCB		91.2	(25%-150%)
		13C-209-DeCB		99.1	(25%-150%)
		13C-28-TrCB		70.7	(30%-135%)
		13C-111-PeCB		87.4	(30%-135%)
		13C-178-HpCB		94.0	(30%-135%)
10146002	1611B75-002L Rio Grande-South-112116	13C-1-MoCB		56.0	(15%-150%)
		13C-3-MoCB		63.6	(15%-150%)
		13C-4-DiCB		61.6	(25%-150%)
		13C-15-DiCB		117	(25%-150%)
		13C-19-TrCB		83.6	(25%-150%)
		13C-37-TrCB		90.9	(25%-150%)
		13C-54-TeCB		68.3	(25%-150%)
		13C-77-TeCB		103	(25%-150%)
		13C-81-TeCB		105	(25%-150%)
		13C-104-PeCB		75.7	(25%-150%)
		13C-105-PeCB		90.7	(25%-150%)
		13C-114-PeCB		89.3	(25%-150%)
		13C-118-PeCB		92.0	(25%-150%)
		13C-123-PeCB		93.0	(25%-150%)
		13C-126-PeCB		91.2	(25%-150%)
		13C-155-HxCB		80.3	(25%-150%)
		13C-156-HxCB	C	82.1	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		86.6	(25%-150%)
		13C-169-HxCB		80.6	(25%-150%)
		13C-188-HpCB		96.3	(25%-150%)
		13C-189-HpCB		90.0	(25%-150%)
		13C-202-OcCB		103	(25%-150%)
		13C-205-OcCB		96.5	(25%-150%)
		13C-206-NoCB		94.7	(25%-150%)
		13C-208-NoCB		96.9	(25%-150%)
		13C-209-DeCB		105	(25%-150%)
		13C-28-TrCB		73.6	(30%-135%)
		13C-111-PeCB		91.5	(30%-135%)
		13C-178-HpCB		99.0	(30%-135%)

* Recovery outside Acceptance Limits
# Column to be used to flag recovery values
D Sample Diluted

PCB Congeners

Quality Control Summary
Spike Recovery Report

SDG Number: 1611B75 **Sample Type:** Laboratory Control Sample

Client ID: LCS for batch 33559 **Matrix:** WATER

Lab Sample ID: 12017565

Instrument: HRP791 **Analysis Date:** 12/16/2016 10:30 **Dilution:** 1

Analyst: MJC **Prep Batch ID:** 33559

Batch ID: 33561

CAS No.		Parmname	Amount Added pg/L		Spike Conc. pg/L	Recovery %	Acceptance Limits
2051-60-7	LCS	1-MoCB	500		547	109	50-150
2051-62-9	LCS	3-MoCB	500		600	120	50-150
13029-08-8	LCS	4-DiCB	500		471	94.1	50-150
2050-68-2	LCS	15-DiCB	500		584	117	50-150
38444-73-4	LCS	19-TrCB	500		502	100	50-150
38444-90-5	LCS	37-TrCB	500		512	102	50-150
15968-05-5	LCS	54-TeCB	1000		977	97.7	50-150
32598-13-3	LCS	77-TeCB	1000		1000	100	50-150
70362-50-4	LCS	81-TeCB	1000		1140	114	50-150
56558-16-8	LCS	104-PeCB	1000		1070	107	50-150
32598-14-4	LCS	105-PeCB	1000		1260	126	50-150
74472-37-0	LCS	114-PeCB	1000		1140	114	50-150
31508-00-6	LCS	118-PeCB	1000		1070	107	50-150
65510-44-3	LCS	123-PeCB	1000		1050	105	50-150
57465-28-8	LCS	126-PeCB	1000		1180	118	50-150
33979-03-2	LCS	155-HxCB	1000		1000	100	50-150
38380-08-4	LCS	156-HxCB	2000	C	2380	119	50-150
69782-90-7	LCS	157-HxCB		C156			
52663-72-6	LCS	167-HxCB	1000		1240	124	50-150
32774-16-6	LCS	169-HxCB	1000		1110	111	50-150
74487-85-7	LCS	188-HpCB	1000		1020	102	50-150
39635-31-9	LCS	189-HpCB	1000		1100	110	50-150
2136-99-4	LCS	202-OcCB	1500		1490	99.1	50-150
74472-53-0	LCS	205-OcCB	1500		1440	95.9	50-150
40186-72-9	LCS	206-NoCB	1500		1470	98.3	50-150
52663-77-1	LCS	208-NoCB	1500		1580	106	50-150
2051-24-3	LCS	209-DeCB	1500		1440	95.9	50-150

PCB Congeners

Quality Control Summary

Spike Recovery Report

SDG Number: 1611B75 **Sample Type:** Laboratory Control Sample Duplicate

Client ID: LCSD for batch 33559 **Matrix:** WATER

Lab Sample ID: 12017566

Instrument: HRP791 **Analysis Date:** 12/16/2016 11:36 **Dilution:** 1

Analyst: MJC **Prep Batch ID:** 33559

Batch ID: 33561

CAS No.		Parmname	Amount Added pg/L		Spike Conc. pg/L	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
2051-60-7	LCSD	1-MoCB	500		539	108	50-150	1.48	0-20
2051-62-9	LCSD	3-MoCB	500		582	116	50-150	2.95	0-20
13029-08-8	LCSD	4-DiCB	500		472	94.3	50-150	0.225	0-20
2050-68-2	LCSD	15-DiCB	500		577	115	50-150	1.26	0-20
38444-73-4	LCSD	19-TrCB	500		508	102	50-150	1.19	0-20
38444-90-5	LCSD	37-TrCB	500		520	104	50-150	1.42	0-20
15968-05-5	LCSD	54-TeCB	1000		967	96.7	50-150	1.05	0-20
32598-13-3	LCSD	77-TeCB	1000		1010	101	50-150	0.951	0-20
70362-50-4	LCSD	81-TeCB	1000		1140	114	50-150	0.263	0-20
56558-16-8	LCSD	104-PeCB	1000		1080	108	50-150	0.775	0-20
32598-14-4	LCSD	105-PeCB	1000		1280	128	50-150	1.14	0-20
74472-37-0	LCSD	114-PeCB	1000		1150	115	50-150	1.09	0-20
31508-00-6	LCSD	118-PeCB	1000		1050	105	50-150	1.52	0-20
65510-44-3	LCSD	123-PeCB	1000		1040	104	50-150	1.06	0-20
57465-28-8	LCSD	126-PeCB	1000		1190	119	50-150	1.07	0-20
33979-03-2	LCSD	155-HxCB	1000		992	99.2	50-150	1.08	0-20
38380-08-4	LCSD	156-HxCB	2000	C	2390	120	50-150	0.627	0-20
69782-90-7	LCSD	157-HxCB		C156					
52663-72-6	LCSD	167-HxCB	1000		1230	123	50-150	0.497	0-20
32774-16-6	LCSD	169-HxCB	1000		1120	112	50-150	0.674	0-20
74487-85-7	LCSD	188-HpCB	1000		1010	101	50-150	0.458	0-20
39635-31-9	LCSD	189-HpCB	1000		1080	108	50-150	1.46	0-20
2136-99-4	LCSD	202-OcCB	1500		1470	98.3	50-150	0.805	0-20
74472-53-0	LCSD	205-OcCB	1500		1430	95.1	50-150	0.842	0-20
40186-72-9	LCSD	206-NoCB	1500		1480	98.5	50-150	0.186	0-20
52663-77-1	LCSD	208-NoCB	1500		1570	105	50-150	0.500	0-20
2051-24-3	LCSD	209-DeCB	1500		1430	95.2	50-150	0.680	0-20

Method Blank Summary

SDG Number:	**1611B75**	**Client:**	**HALL001**	**Matrix:**	**WATER**
Client ID:	**MB for batch 33559**	**Instrument ID:**	**HRP791**	**Data File:**	**c16dec16a-4**
Lab Sample ID:	**12017564**	**Prep Date:**	**13-DEC-16**	**Analyzed:**	**12/16/16 12:42**
Column:					

This method blank applies to the following samples and quality control samples:

	Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed
01	LCS for batch 33559	12017565	c16dec16a-2	12/16/16	1030
02	LCSD for batch 33559	12017566	c16dec16a-3	12/16/16	1136
03	1611B75-001L Rio Grande-North-112116	10146001	c16dec16a-8	12/16/16	1707
04	1611B75-002L Rio Grande-South-112116	10146002	c16dec16a-9	12/16/16	1813

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**1611B75**	**Client:**	**HALL001**	**Project:**	**HALL00114**
Lab Sample ID:	**12017564**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 33559**				
Client ID:	**MB for batch 33559**			**Prep Basis:**	**As Received**
Batch ID:	**33561**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/16/2016 12:42**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c16dec16a-4**			**Dilution:**	**1**
Prep Batch:	**33559**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**13-DEC-16**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	MDL	PQL
2051-60-7	1-MoCB	U	ND	pg/L	6.76	20.0
2051-61-8	2-MoCB	U	ND	pg/L	6.66	20.0
2051-62-9	3-MoCB	U	ND	pg/L	6.66	20.0
13029-08-8	4-DiCB	U	ND	pg/L	6.72	20.0
16605-91-7	5-DiCB	U	ND	pg/L	7.68	20.0
25569-80-6	6-DiCB	U	ND	pg/L	7.24	20.0
33284-50-3	7-DiCB	U	ND	pg/L	6.66	20.0
34883-43-7	8-DiCB	U	ND	pg/L	7.10	20.0
34883-39-1	9-DiCB	U	ND	pg/L	6.66	20.0
33146-45-1	10-DiCB	U	ND	pg/L	6.66	20.0
2050-67-1	11-DiCB	J	35.2	pg/L	11.5	100
2974-92-7	12-DiCB	CU	ND	pg/L	13.3	40.0
2974-90-5	13-DiCB	C12				
34883-41-5	14-DiCB	U	ND	pg/L	6.66	20.0
2050-68-2	15-DiCB	U	ND	pg/L	6.66	20.0
38444-78-9	16-TrCB	U	ND	pg/L	8.06	20.0
37680-66-3	17-TrCB	U	ND	pg/L	6.66	20.0
37680-65-2	18-TrCB	CU	ND	pg/L	13.3	40.0
38444-73-4	19-TrCB	U	ND	pg/L	6.66	20.0
38444-84-7	20-TrCB	CU	ND	pg/L	13.3	40.0
55702-46-0	21-TrCB	CU	ND	pg/L	13.3	40.0
38444-85-8	22-TrCB	U	ND	pg/L	6.66	20.0
55720-44-0	23-TrCB	U	ND	pg/L	6.66	20.0
55702-45-9	24-TrCB	U	ND	pg/L	6.66	20.0
55712-37-3	25-TrCB	U	ND	pg/L	6.66	20.0
38444-81-4	26-TrCB	CU	ND	pg/L	13.3	40.0
38444-76-7	27-TrCB	U	ND	pg/L	6.66	20.0
7012-37-5	28-TrCB	C20				
15862-07-4	29-TrCB	C26				
35693-92-6	30-TrCB	C18				
16606-02-3	31-TrCB	U	ND	pg/L	6.66	20.0
38444-77-8	32-TrCB	U	ND	pg/L	6.66	20.0

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**1611B75**	**Client:**	**HALL001**	**Project:**	**HALL00114**
Lab Sample ID:	**12017564**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 33559**				
Client ID:	**MB for batch 33559**			**Prep Basis:**	**As Received**
Batch ID:	**33561**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/16/2016 12:42**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c16dec16a-4**			**Dilution:**	**1**
Prep Batch:	**33559**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**13-DEC-16**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	MDL	PQL
38444-86-9	33-TrCB	C21				
37680-68-5	34-TrCB	U	ND	pg/L	6.66	20.0
37680-69-6	35-TrCB	U	ND	pg/L	6.66	20.0
38444-87-0	36-TrCB	U	ND	pg/L	6.66	20.0
38444-90-5	37-TrCB	U	ND	pg/L	6.66	20.0
53555-66-1	38-TrCB	U	ND	pg/L	6.66	20.0
38444-88-1	39-TrCB	U	ND	pg/L	6.66	20.0
38444-93-8	40-TeCB	CU	ND	pg/L	13.3	40.0
52663-59-9	41-TeCB	U	ND	pg/L	6.66	20.0
36559-22-5	42-TeCB	U	ND	pg/L	6.66	20.0
70362-46-8	43-TeCB	U	ND	pg/L	6.66	20.0
41464-39-5	44-TeCB	CU	ND	pg/L	20.0	60.0
70362-45-7	45-TeCB	CU	ND	pg/L	13.3	40.0
41464-47-5	46-TeCB	U	ND	pg/L	6.66	20.0
2437-79-8	47-TeCB	C44				
70362-47-9	48-TeCB	U	ND	pg/L	6.66	20.0
41464-40-8	49-TeCB	CU	ND	pg/L	13.3	40.0
62796-65-0	50-TeCB	CU	ND	pg/L	13.3	40.0
68194-04-7	51-TeCB	C45				
35693-99-3	52-TeCB	U	ND	pg/L	6.66	20.0
41464-41-9	53-TeCB	C50				
15968-05-5	54-TeCB	U	ND	pg/L	6.66	20.0
74338-24-2	55-TeCB	U	ND	pg/L	6.66	20.0
41464-43-1	56-TeCB	U	ND	pg/L	6.66	20.0
70424-67-8	57-TeCB	U	ND	pg/L	6.66	20.0
41464-49-7	58-TeCB	U	ND	pg/L	6.66	20.0
74472-33-6	59-TeCB	CU	ND	pg/L	20.0	60.0
33025-41-1	60-TeCB	U	ND	pg/L	6.66	20.0
33284-53-6	61-TeCB	CU	ND	pg/L	26.6	80.0
54230-22-7	62-TeCB	C59				
74472-34-7	63-TeCB	U	ND	pg/L	6.66	20.0
52663-58-8	64-TeCB	U	ND	pg/L	6.66	20.0

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	1611B75	**Client:**	HALL001	**Project:**	HALL00114
Lab Sample ID:	12017564			**Matrix:**	WATER
Client Sample:	QC for batch 33559				
Client ID:	MB for batch 33559			**Prep Basis:**	As Received
Batch ID:	33561	**Method:**	EPA Method 1668A		
Run Date:	12/16/2016 12:42	**Analyst:**	MJC	**Instrument:**	HRP791
Data File:	c16dec16a-4			**Dilution:**	1
Prep Batch:	33559	**Prep Method:**	SW846 3520C	**Prep SOP Ref:**	CF-OA-E-001
Prep Date:	13-DEC-16	**Prep Aliquot:**	1000 mL		

CAS No.	Parmname	Qual	Result	Units	MDL	PQL
33284-54-7	65-TeCB	C44				
32598-10-0	66-TeCB	U	ND	pg/L	6.66	20.0
73575-53-8	67-TeCB	U	ND	pg/L	6.66	20.0
73575-52-7	68-TeCB	U	ND	pg/L	6.66	20.0
60233-24-1	69-TeCB	C49				
32598-11-1	70-TeCB	C61				
41464-46-4	71-TeCB	C40				
41464-42-0	72-TeCB	U	ND	pg/L	6.66	20.0
74338-23-1	73-TeCB	U	ND	pg/L	6.66	20.0
32690-93-0	74-TeCB	C61				
32598-12-2	75-TeCB	C59				
70362-48-0	76-TeCB	C61				
32598-13-3	77-TeCB	U	ND	pg/L	6.66	20.0
70362-49-1	78-TeCB	U	ND	pg/L	6.66	20.0
41464-48-6	79-TeCB	U	ND	pg/L	6.66	20.0
33284-52-5	80-TeCB	U	ND	pg/L	6.66	20.0
70362-50-4	81-TeCB	U	ND	pg/L	6.66	20.0
52663-62-4	82-PeCB	U	ND	pg/L	6.66	20.0
60145-20-2	83-PeCB	U	ND	pg/L	6.66	20.0
52663-60-2	84-PeCB	U	ND	pg/L	6.66	20.0
65510-45-4	85-PeCB	CU	ND	pg/L	20.0	60.0
55312-69-1	86-PeCB	CU	ND	pg/L	40.0	120
38380-02-8	87-PeCB	C86				
55215-17-3	88-PeCB	CU	ND	pg/L	13.3	40.0
73575-57-2	89-PeCB	U	ND	pg/L	6.66	20.0
68194-07-0	90-PeCB	CU	ND	pg/L	20.0	60.0
68194-05-8	91-PeCB	C88				
52663-61-3	92-PeCB	U	ND	pg/L	6.66	20.0
73575-56-1	93-PeCB	CU	ND	pg/L	13.3	40.0
73575-55-0	94-PeCB	U	ND	pg/L	6.66	20.0
38379-99-6	95-PeCB	U	ND	pg/L	6.66	20.0
73575-54-9	96-PeCB	U	ND	pg/L	6.66	20.0

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**1611B75**	**Client:**	**HALL001**	**Project:**	**HALL00114**
Lab Sample ID:	**12017564**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 33559**				
Client ID:	**MB for batch 33559**			**Prep Basis:**	**As Received**
Batch ID:	**33561**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/16/2016 12:42**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c16dec16a-4**			**Dilution:**	**1**
Prep Batch:	**33559**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**13-DEC-16**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	MDL	PQL
41464-51-1	97-PeCB	C86				
60233-25-2	98-PeCB	CU	ND	pg/L	13.3	40.0
38380-01-7	99-PeCB	U	ND	pg/L	6.66	20.0
39485-83-1	100-PeCB	C93				
37680-73-2	101-PeCB	C90				
68194-06-9	102-PeCB	C98				
60145-21-3	103-PeCB	U	ND	pg/L	6.66	20.0
56558-16-8	104-PeCB	U	ND	pg/L	6.66	20.0
32598-14-4	105-PeCB	U	ND	pg/L	6.66	20.0
70424-69-0	106-PeCB	U	ND	pg/L	6.66	20.0
70424-68-9	107-PeCB	U	ND	pg/L	6.66	20.0
70362-41-3	108-PeCB	CU	ND	pg/L	13.3	40.0
74472-35-8	109-PeCB	C86				
38380-03-9	110-PeCB	CU	ND	pg/L	13.3	40.0
39635-32-0	111-PeCB	U	ND	pg/L	6.66	20.0
74472-36-9	112-PeCB	U	ND	pg/L	6.66	20.0
68194-10-5	113-PeCB	C90				
74472-37-0	114-PeCB	U	ND	pg/L	6.66	20.0
74472-38-1	115-PeCB	C110				
18259-05-7	116-PeCB	C85				
68194-11-6	117-PeCB	C85				
31508-00-6	118-PeCB	U	ND	pg/L	6.66	20.0
56558-17-9	119-PeCB	C86				
68194-12-7	120-PeCB	U	ND	pg/L	6.66	20.0
56558-18-0	121-PeCB	U	ND	pg/L	6.66	20.0
76842-07-4	122-PeCB	U	ND	pg/L	6.66	20.0
65510-44-3	123-PeCB	U	ND	pg/L	6.66	20.0
70424-70-3	124-PeCB	C108				
74472-39-2	125-PeCB	C86				
57465-28-8	126-PeCB	U	ND	pg/L	6.66	20.0
39635-33-1	127-PeCB	U	ND	pg/L	6.66	20.0
38380-07-3	128-HxCB	CU	ND	pg/L	13.3	40.0

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**

J **Value is estimated**

U **Analyte was analyzed for, but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**1611B75**	**Client:**	**HALL001**	**Project:**	**HALL00114**
Lab Sample ID:	**12017564**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 33559**				
Client ID:	**MB for batch 33559**			**Prep Basis:**	**As Received**
Batch ID:	**33561**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/16/2016 12:42**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c16dec16a-4**			**Dilution:**	**1**
Prep Batch:	**33559**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**13-DEC-16**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	MDL	PQL
55215-18-4	129-HxCB	CU	ND	pg/L	20.0	60.0
52663-66-8	130-HxCB	U	ND	pg/L	6.66	20.0
61798-70-7	131-HxCB	U	ND	pg/L	6.66	20.0
38380-05-1	132-HxCB	U	ND	pg/L	12.7	20.0
35694-04-3	133-HxCB	U	ND	pg/L	6.66	20.0
52704-70-8	134-HxCB	U	ND	pg/L	6.72	20.0
52744-13-5	135-HxCB	CU	ND	pg/L	13.3	40.0
38411-22-2	136-HxCB	U	ND	pg/L	6.66	20.0
35694-06-5	137-HxCB	U	ND	pg/L	6.66	20.0
35065-28-2	138-HxCB	C129				
56030-56-9	139-HxCB	CU	ND	pg/L	13.3	40.0
59291-64-4	140-HxCB	C139				
52712-04-6	141-HxCB	U	ND	pg/L	6.66	20.0
41411-61-4	142-HxCB	U	ND	pg/L	6.66	20.0
68194-15-0	143-HxCB	U	ND	pg/L	6.66	20.0
68194-14-9	144-HxCB	U	ND	pg/L	6.66	20.0
74472-40-5	145-HxCB	U	ND	pg/L	6.66	20.0
51908-16-8	146-HxCB	U	ND	pg/L	6.66	20.0
68194-13-8	147-HxCB	CU	ND	pg/L	13.3	40.0
74472-41-6	148-HxCB	U	ND	pg/L	6.66	20.0
38380-04-0	149-HxCB	C147				
68194-08-1	150-HxCB	U	ND	pg/L	6.66	20.0
52663-63-5	151-HxCB	C135				
68194-09-2	152-HxCB	U	ND	pg/L	6.66	20.0
35065-27-1	153-HxCB	CU	ND	pg/L	13.3	40.0
60145-22-4	154-HxCB	U	ND	pg/L	6.66	20.0
33979-03-2	155-HxCB	U	ND	pg/L	6.66	20.0
38380-08-4	156-HxCB	CU	ND	pg/L	13.3	40.0
69782-90-7	157-HxCB	C156				
74472-42-7	158-HxCB	U	ND	pg/L	6.66	20.0
39635-35-3	159-HxCB	U	ND	pg/L	6.66	20.0
41411-62-5	160-HxCB	U	ND	pg/L	6.66	20.0

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data
J Value is estimated
U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**1611B75**	**Client:**	**HALL001**	**Project:**	**HALL00114**
Lab Sample ID:	**12017564**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 33559**				
Client ID:	**MB for batch 33559**			**Prep Basis:**	**As Received**
Batch ID:	**33561**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/16/2016 12:42**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c16dec16a-4**			**Dilution:**	**1**
Prep Batch:	**33559**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**13-DEC-16**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	MDL	PQL
74472-43-8	161-HxCB	U	ND	pg/L	6.66	20.0
39635-34-2	162-HxCB	U	ND	pg/L	6.66	20.0
74472-44-9	163-HxCB	C129				
74472-45-0	164-HxCB	U	ND	pg/L	6.66	20.0
74472-46-1	165-HxCB	U	ND	pg/L	6.66	20.0
41411-63-6	166-HxCB	C128				
52663-72-6	167-HxCB	U	ND	pg/L	6.66	20.0
59291-65-5	168-HxCB	C153				
32774-16-6	169-HxCB	U	ND	pg/L	6.66	20.0
35065-30-6	170-HpCB	U	ND	pg/L	6.66	20.0
52663-71-5	171-HpCB	CU	ND	pg/L	13.3	40.0
52663-74-8	172-HpCB	U	ND	pg/L	6.66	20.0
68194-16-1	173-HpCB	C171				
38411-25-5	174-HpCB	U	ND	pg/L	6.66	20.0
40186-70-7	175-HpCB	U	ND	pg/L	6.66	20.0
52663-65-7	176-HpCB	U	ND	pg/L	6.66	20.0
52663-70-4	177-HpCB	U	ND	pg/L	6.66	20.0
52663-67-9	178-HpCB	U	ND	pg/L	6.66	20.0
52663-64-6	179-HpCB	U	ND	pg/L	6.66	20.0
35065-29-3	180-HpCB	CU	ND	pg/L	13.3	40.0
74472-47-2	181-HpCB	U	ND	pg/L	6.66	20.0
60145-23-5	182-HpCB	U	ND	pg/L	6.66	20.0
52663-69-1	183-HpCB	CU	ND	pg/L	13.3	40.0
74472-48-3	184-HpCB	U	ND	pg/L	6.66	20.0
52712-05-7	185-HpCB	C183				
74472-49-4	186-HpCB	U	ND	pg/L	6.66	20.0
52663-68-0	187-HpCB	U	ND	pg/L	6.66	20.0
74487-85-7	188-HpCB	U	ND	pg/L	6.66	20.0
39635-31-9	189-HpCB	U	ND	pg/L	6.66	20.0
41411-64-7	190-HpCB	U	ND	pg/L	6.66	20.0
74472-50-7	191-HpCB	U	ND	pg/L	6.66	20.0
74472-51-8	192-HpCB	U	ND	pg/L	6.66	20.0

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**

J **Value is estimated**

U **Analyte was analyzed for, but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**1611B75**	**Client:**	**HALL001**	**Project:**	**HALL00114**
Lab Sample ID:	**12017564**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 33559**				
Client ID:	**MB for batch 33559**			**Prep Basis:**	**As Received**
Batch ID:	**33561**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/16/2016 12:42**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c16dec16a-4**			**Dilution:**	**1**
Prep Batch:	**33559**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**13-DEC-16**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	MDL	PQL
69782-91-8	193-HpCB	C180				
35694-08-7	194-OcCB	U	ND	pg/L	6.66	20.0
52663-78-2	195-OcCB	U	ND	pg/L	6.66	20.0
42740-50-1	196-OcCB	U	ND	pg/L	6.66	20.0
33091-17-7	197-OcCB	CU	ND	pg/L	13.3	40.0
68194-17-2	198-OcCB	CU	ND	pg/L	13.3	40.0
52663-75-9	199-OcCB	C198				
52663-73-7	200-OcCB	C197				
40186-71-8	201-OcCB	U	ND	pg/L	6.66	20.0
2136-99-4	202-OcCB	U	ND	pg/L	6.66	20.0
52663-76-0	203-OcCB	U	ND	pg/L	6.66	20.0
74472-52-9	204-OcCB	U	ND	pg/L	6.66	20.0
74472-53-0	205-OcCB	U	ND	pg/L	6.66	20.0
40186-72-9	206-NoCB	U	ND	pg/L	6.66	20.0
52663-79-3	207-NoCB	U	ND	pg/L	6.66	20.0
52663-77-1	208-NoCB	U	ND	pg/L	6.66	20.0
2051-24-3	209-DeCB	U	ND	pg/L	6.66	20.0
1336-36-3	Total PCB Congeners		35.2	pg/L	6.66	20.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		1090	2000	pg/L	54.3	(15%-150%)
13C-3-MoCB		1150	2000	pg/L	57.6	(15%-150%)
13C-4-DiCB		1150	2000	pg/L	57.4	(25%-150%)
13C-15-DiCB		2190	2000	pg/L	109	(25%-150%)
13C-19-TrCB		1610	2000	pg/L	80.5	(25%-150%)
13C-37-TrCB		1820	2000	pg/L	90.8	(25%-150%)
13C-54-TeCB		1350	2000	pg/L	67.3	(25%-150%)
13C-77-TeCB		2050	2000	pg/L	103	(25%-150%)
13C-81-TeCB		2100	2000	pg/L	105	(25%-150%)
13C-104-PeCB		1460	2000	pg/L	72.9	(25%-150%)
13C-105-PeCB		1730	2000	pg/L	86.7	(25%-150%)
13C-114-PeCB		1710	2000	pg/L	85.3	(25%-150%)
13C-118-PeCB		1740	2000	pg/L	87.2	(25%-150%)
13C-123-PeCB		1770	2000	pg/L	88.4	(25%-150%)
13C-126-PeCB		1700	2000	pg/L	84.9	(25%-150%)
13C-155-HxCB		1640	2000	pg/L	82.0	(25%-150%)
13C-156-HxCB	C	3140	4000	pg/L	78.6	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		1670	2000	pg/L	83.7	(25%-150%)
13C-169-HxCB		1500	2000	pg/L	74.8	(25%-150%)
13C-188-HpCB		2120	2000	pg/L	106	(25%-150%)
13C-189-HpCB		1770	2000	pg/L	88.4	(25%-150%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**1611B75**	**Client:**	**HALL001**	**Project:**	**HALL00114**
Lab Sample ID:	**12017564**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 33559**				
Client ID:	**MB for batch 33559**			**Prep Basis:**	**As Received**
Batch ID:	**33561**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/16/2016 12:42**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c16dec16a-4**			**Dilution:**	**1**
Prep Batch:	**33559**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**13-DEC-16**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	MDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-202-OcCB		2160	2000	pg/L	108	(25%-150%)
13C-205-OcCB		1900	2000	pg/L	95.1	(25%-150%)
13C-206-NoCB		1900	2000	pg/L	95.2	(25%-150%)
13C-208-NoCB		2010	2000	pg/L	100	(25%-150%)
13C-209-DeCB		2160	2000	pg/L	108	(25%-150%)
13C-28-TrCB		1490	2000	pg/L	74.3	(30%-135%)
13C-111-PeCB		1880	2000	pg/L	93.9	(30%-135%)
13C-178-HpCB		2120	2000	pg/L	106	(30%-135%)

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**

J **Value is estimated**

U **Analyte was analyzed for, but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**1611B75**	**Client:**	**HALL001**	**Project:**	**HALL00114**
Lab Sample ID:	**12017565**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 33559**				
Client ID:	**LCS for batch 33559**			**Prep Basis:**	**As Received**
Batch ID:	**33561**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/16/2016 10:30**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c16dec16a-2**			**Dilution:**	**1**
Prep Batch:	**33559**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**13-DEC-16**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	MDL	PQL
2051-60-7	1-MoCB		547	pg/L	6.76	20.0
2051-62-9	3-MoCB		600	pg/L	6.66	20.0
13029-08-8	4-DiCB		471	pg/L	6.72	20.0
2050-68-2	15-DiCB		584	pg/L	6.66	20.0
38444-73-4	19-TrCB		502	pg/L	6.66	20.0
38444-90-5	37-TrCB		512	pg/L	6.66	20.0
15968-05-5	54-TeCB		977	pg/L	6.66	20.0
32598-13-3	77-TeCB		1000	pg/L	6.66	20.0
70362-50-4	81-TeCB		1140	pg/L	6.66	20.0
56558-16-8	104-PeCB		1070	pg/L	6.66	20.0
32598-14-4	105-PeCB		1260	pg/L	6.66	20.0
74472-37-0	114-PeCB		1140	pg/L	6.66	20.0
31508-00-6	118-PeCB		1070	pg/L	6.66	20.0
65510-44-3	123-PeCB		1050	pg/L	6.66	20.0
57465-28-8	126-PeCB		1180	pg/L	6.66	20.0
33979-03-2	155-HxCB		1000	pg/L	6.66	20.0
38380-08-4	156-HxCB	C	2380	pg/L	13.3	40.0
69782-90-7	157-HxCB	C156				
52663-72-6	167-HxCB		1240	pg/L	6.66	20.0
32774-16-6	169-HxCB		1110	pg/L	6.66	20.0
74487-85-7	188-HpCB		1020	pg/L	6.66	20.0
39635-31-9	189-HpCB		1100	pg/L	6.66	20.0
2136-99-4	202-OcCB		1490	pg/L	6.66	20.0
74472-53-0	205-OcCB		1440	pg/L	6.66	20.0
40186-72-9	206-NoCB		1470	pg/L	6.66	20.0
52663-77-1	208-NoCB		1580	pg/L	6.66	20.0
2051-24-3	209-DeCB		1440	pg/L	6.66	20.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		937	2000	pg/L	46.8	(15%-140%)
13C-3-MoCB		1050	2000	pg/L	52.3	(15%-140%)
13C-4-DiCB		1080	2000	pg/L	54.2	(30%-140%)
13C-15-DiCB		1780	2000	pg/L	89.2	(30%-140%)
13C-19-TrCB		1440	2000	pg/L	72.1	(30%-140%)
13C-37-TrCB		1560	2000	pg/L	77.9	(30%-140%)
13C-54-TeCB		1370	2000	pg/L	68.5	(30%-140%)
13C-77-TeCB		1770	2000	pg/L	88.4	(30%-140%)
13C-81-TeCB		1810	2000	pg/L	90.4	(30%-140%)
13C-104-PeCB		1470	2000	pg/L	73.7	(30%-140%)
13C-105-PeCB		1650	2000	pg/L	82.4	(30%-140%)
13C-114-PeCB		1630	2000	pg/L	81.6	(30%-140%)
13C-118-PeCB		1680	2000	pg/L	83.9	(30%-140%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**1611B75**	**Client:**	**HALL001**	**Project:**	**HALL00114**
Lab Sample ID:	**12017565**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 33559**				
Client ID:	**LCS for batch 33559**			**Prep Basis:**	**As Received**
Batch ID:	**33561**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/16/2016 10:30**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c16dec16a-2**			**Dilution:**	**1**
Prep Batch:	**33559**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**13-DEC-16**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	MDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-123-PeCB		1700	2000	pg/L	84.9	(30%-140%)
13C-126-PeCB		1570	2000	pg/L	78.7	(30%-140%)
13C-155-HxCB		1600	2000	pg/L	79.9	(30%-140%)
13C-156-HxCB	C	3020	4000	pg/L	75.5	(30%-140%)
13C-157-HxCB	C156L					
13C-167-HxCB		1590	2000	pg/L	79.4	(30%-140%)
13C-169-HxCB		1440	2000	pg/L	72.2	(30%-140%)
13C-188-HpCB		2070	2000	pg/L	104	(30%-140%)
13C-189-HpCB		1720	2000	pg/L	85.8	(30%-140%)
13C-202-OcCB		2120	2000	pg/L	106	(30%-140%)
13C-205-OcCB		1870	2000	pg/L	93.5	(30%-140%)
13C-206-NoCB		1890	2000	pg/L	94.5	(30%-140%)
13C-208-NoCB		1950	2000	pg/L	97.6	(30%-140%)
13C-209-DeCB		2150	2000	pg/L	107	(30%-140%)
13C-28-TrCB		1490	2000	pg/L	74.6	(40%-125%)
13C-111-PeCB		1780	2000	pg/L	88.8	(40%-125%)
13C-178-HpCB		2010	2000	pg/L	101	(40%-125%)

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**1611B75**	**Client:**	**HALL001**	**Project:**	**HALL00114**
Lab Sample ID:	**12017566**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 33559**				
Client ID:	**LCSD for batch 33559**			**Prep Basis:**	**As Received**
Batch ID:	**33561**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/16/2016 11:36**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c16dec16a-3**			**Dilution:**	**1**
Prep Batch:	**33559**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**13-DEC-16**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	MDL	PQL
2051-60-7	1-MoCB		539	pg/L	6.76	20.0
2051-62-9	3-MoCB		582	pg/L	6.66	20.0
13029-08-8	4-DiCB		472	pg/L	6.72	20.0
2050-68-2	15-DiCB		577	pg/L	6.66	20.0
38444-73-4	19-TrCB		508	pg/L	6.66	20.0
38444-90-5	37-TrCB		520	pg/L	6.66	20.0
15968-05-5	54-TeCB		967	pg/L	6.66	20.0
32598-13-3	77-TeCB		1010	pg/L	6.66	20.0
70362-50-4	81-TeCB		1140	pg/L	6.66	20.0
56558-16-8	104-PeCB		1080	pg/L	6.66	20.0
32598-14-4	105-PeCB		1280	pg/L	6.66	20.0
74472-37-0	114-PeCB		1150	pg/L	6.66	20.0
31508-00-6	118-PeCB		1050	pg/L	6.66	20.0
65510-44-3	123-PeCB		1040	pg/L	6.66	20.0
57465-28-8	126-PeCB		1190	pg/L	6.66	20.0
33979-03-2	155-HxCB		992	pg/L	6.66	20.0
38380-08-4	156-HxCB	C	2390	pg/L	13.3	40.0
69782-90-7	157-HxCB	C156				
52663-72-6	167-HxCB		1230	pg/L	6.66	20.0
32774-16-6	169-HxCB		1120	pg/L	6.66	20.0
74487-85-7	188-HpCB		1010	pg/L	6.66	20.0
39635-31-9	189-HpCB		1080	pg/L	6.66	20.0
2136-99-4	202-OcCB		1470	pg/L	6.66	20.0
74472-53-0	205-OcCB		1430	pg/L	6.66	20.0
40186-72-9	206-NoCB		1480	pg/L	6.66	20.0
52663-77-1	208-NoCB		1570	pg/L	6.66	20.0
2051-24-3	209-DeCB		1430	pg/L	6.66	20.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		877	2000	pg/L	43.9	(15%-140%)
13C-3-MoCB		1040	2000	pg/L	51.9	(15%-140%)
13C-4-DiCB		1000	2000	pg/L	50.1	(30%-140%)
13C-15-DiCB		1810	2000	pg/L	90.3	(30%-140%)
13C-19-TrCB		1390	2000	pg/L	69.3	(30%-140%)
13C-37-TrCB		1440	2000	pg/L	72.0	(30%-140%)
13C-54-TeCB		1180	2000	pg/L	58.8	(30%-140%)
13C-77-TeCB		1590	2000	pg/L	79.7	(30%-140%)
13C-81-TeCB		1630	2000	pg/L	81.5	(30%-140%)
13C-104-PeCB		1320	2000	pg/L	65.8	(30%-140%)
13C-105-PeCB		1480	2000	pg/L	74.2	(30%-140%)
13C-114-PeCB		1450	2000	pg/L	72.7	(30%-140%)
13C-118-PeCB		1510	2000	pg/L	75.3	(30%-140%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**1611B75**	**Client:**	**HALL001**	**Project:**	**HALL00114**
Lab Sample ID:	**12017566**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 33559**				
Client ID:	**LCSD for batch 33559**			**Prep Basis:**	**As Received**
Batch ID:	**33561**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/16/2016 11:36**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c16dec16a-3**			**Dilution:**	**1**
Prep Batch:	**33559**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**13-DEC-16**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	MDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-123-PeCB		1520	2000	pg/L	76.0	(30%-140%)
13C-126-PeCB		1430	2000	pg/L	71.6	(30%-140%)
13C-155-HxCB		1390	2000	pg/L	69.7	(30%-140%)
13C-156-HxCB	C	2680	4000	pg/L	67.1	(30%-140%)
13C-157-HxCB	C156L					
13C-167-HxCB		1420	2000	pg/L	71.1	(30%-140%)
13C-169-HxCB		1280	2000	pg/L	64.2	(30%-140%)
13C-188-HpCB		1830	2000	pg/L	91.6	(30%-140%)
13C-189-HpCB		1530	2000	pg/L	76.7	(30%-140%)
13C-202-OcCB		1860	2000	pg/L	93.2	(30%-140%)
13C-205-OcCB		1670	2000	pg/L	83.4	(30%-140%)
13C-206-NoCB		1670	2000	pg/L	83.3	(30%-140%)
13C-208-NoCB		1720	2000	pg/L	85.8	(30%-140%)
13C-209-DeCB		1890	2000	pg/L	94.5	(30%-140%)
13C-28-TrCB		1440	2000	pg/L	71.9	(40%-125%)
13C-111-PeCB		1770	2000	pg/L	88.7	(40%-125%)
13C-178-HpCB		1970	2000	pg/L	98.6	(40%-125%)

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1611B75**

23-Dec-16

Client: AMAFCA

Project: CMC

Sample ID	**MB-28858**	SampType:	**MBLK**	TestCode:	**EPA Method 1664A**					
Client ID:	**PBW**	Batch ID:	**28858**	RunNo:	**39004**					
Prep Date:	**11/28/2016**	Analysis Date:	**11/28/2016**	SeqNo:	**1219830**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
N-Hexane Extractable Material	ND	10.0								

Sample ID	**LCS-28858**	SampType:	**LCS**	TestCode:	**EPA Method 1664A**					
Client ID:	**LCSW**	Batch ID:	**28858**	RunNo:	**39004**					
Prep Date:	**11/28/2016**	Analysis Date:	**11/28/2016**	SeqNo:	**1219831**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
N-Hexane Extractable Material	39.4	10.0	40.00	0	98.5	78	114			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1611B75**

23-Dec-16

Client: AMAFCA

Project: CMC

Sample ID **MB-A**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **A39376**	RunNo: **39376**
Prep Date:	Analysis Date: **12/14/2016**	SeqNo: **1232681** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	ND	1.0								
Magnesium	ND	1.0								

Sample ID **LCS-A**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **A39376**	RunNo: **39376**
Prep Date:	Analysis Date: **12/14/2016**	SeqNo: **1232682** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	50	1.0	50.00	0	99.4	85	115			
Magnesium	51	1.0	50.00	0	102	85	115			

Sample ID **LLLCS-A**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **A39376**	RunNo: **39376**
Prep Date:	Analysis Date: **12/14/2016**	SeqNo: **1232683** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	ND	1.0	0.5000	0	108	50	150			
Magnesium	ND	1.0	0.5000	0	112	50	150			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1611B75**

23-Dec-16

Client: AMAFCA

Project: CMC

Sample ID	**LCS**	SampType:	**LCS**		TestCode:	**EPA 200.8: Dissolved Metals**				
Client ID:	**LCSW**	Batch ID:	**B39114**		RunNo:	**39114**				
Prep Date:		Analysis Date:	**12/2/2016**		SeqNo:	**1224351**	Units:	**mg/L**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Copper	0.025	0.0010	0.02500	0	99.7	85	115			
Lead	0.012	0.00050	0.01250	0	99.0	85	115			
Uranium	0.012	0.00050	0.01250	0	95.6	85	115			

Sample ID	**LLLCS**	SampType:	**LCSLL**		TestCode:	**EPA 200.8: Dissolved Metals**				
Client ID:	**BatchQC**	Batch ID:	**B39114**		RunNo:	**39114**				
Prep Date:		Analysis Date:	**12/2/2016**		SeqNo:	**1224353**	Units:	**mg/L**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Copper	ND	0.0010	0.001000	0	72.4	50	150			
Lead	ND	0.00050	0.0005000	0	95.5	50	150			
Uranium	ND	0.00050	0.0005000	0	92.0	50	150			

Sample ID	**MB**	SampType:	**MBLK**		TestCode:	**EPA 200.8: Dissolved Metals**				
Client ID:	**PBW**	Batch ID:	**B39114**		RunNo:	**39114**				
Prep Date:		Analysis Date:	**12/2/2016**		SeqNo:	**1224355**	Units:	**mg/L**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Copper	ND	0.0010								
Lead	ND	0.00050								
Uranium	ND	0.00050								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1611B75**

23-Dec-16

Client: AMAFCA

Project: CMC

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R38938**	RunNo: **38938**
Prep Date:	Analysis Date: **11/22/2016**	SeqNo: **1217522** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Nitrite (As N)	ND	0.10								
Nitrogen, Nitrate (As N)	ND	0.10								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **R38938**	RunNo: **38938**
Prep Date:	Analysis Date: **11/22/2016**	SeqNo: **1217523** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Nitrite (As N)	0.92	0.10	1.000	0	92.4	90	110			
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0	99.3	90	110			

Sample ID **1611B75-001DMS**	SampType: **MS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **Rio Grande-North-1**	Batch ID: **R38938**	RunNo: **38938**
Prep Date:	Analysis Date: **11/22/2016**	SeqNo: **1217529** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Nitrite (As N)	0.88	0.10	1.000	0	88.2	76.7	103			
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0.04580	96.5	84.9	115			

Sample ID **1611B75-001DMSD**	SampType: **MSD**	TestCode: **EPA Method 300.0: Anions**
Client ID: **Rio Grande-North-1**	Batch ID: **R38938**	RunNo: **38938**
Prep Date:	Analysis Date: **11/22/2016**	SeqNo: **1217530** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Nitrite (As N)	0.90	0.10	1.000	0	89.6	76.7	103	1.59	20	
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0.04580	98.2	84.9	115	1.77	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1611B75**

23-Dec-16

Client: AMAFCA

Project: CMC

Sample ID	**MB-28809**	SampType:	**MBLK**	TestCode:	**SM5210B: BOD**					
Client ID:	**PBW**	Batch ID:	**28809**	RunNo:	**39012**					
Prep Date:	**11/22/2016**	Analysis Date:	**11/27/2016**	SeqNo:	**1220182**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Biochemical Oxygen Demand	ND	2.0								

Sample ID	**MB--28809**	SampType:	**MBLK**	TestCode:	**SM5210B: BOD**					
Client ID:	**PBW**	Batch ID:	**28809**	RunNo:	**39012**					
Prep Date:	**11/22/2016**	Analysis Date:	**11/27/2016**	SeqNo:	**1220183**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Biochemical Oxygen Demand	ND	2.0								

Sample ID	**LCS-28809**	SampType:	**LCS**	TestCode:	**SM5210B: BOD**					
Client ID:	**LCSW**	Batch ID:	**28809**	RunNo:	**39012**					
Prep Date:	**11/22/2016**	Analysis Date:	**11/27/2016**	SeqNo:	**1220184**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Biochemical Oxygen Demand	210	2.0	198.0	0	109	59.3	123			

Sample ID	**LCSD-28809**	SampType:	**LCSD**	TestCode:	**SM5210B: BOD**					
Client ID:	**LCSS02**	Batch ID:	**28809**	RunNo:	**39012**					
Prep Date:	**11/22/2016**	Analysis Date:	**11/27/2016**	SeqNo:	**1220185**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Biochemical Oxygen Demand	220	2.0	198.0	0	111	59.3	123	1.84	29.9	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1611B75**

23-Dec-16

Client: AMAFCA

Project: CMC

Sample ID	**MB-28825**	SampType:	**MBLK**	TestCode:	**SM 9223B Fecal Indicator: E. coli MPN**					
Client ID:	**PBW**	Batch ID:	**28825**	RunNo:	**38956**					
Prep Date:	**11/22/2016**	Analysis Date:	**11/23/2016**	SeqNo:	**1217926**	Units:	**CFU/100ml**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
E. Coli	<1	1.000								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1611B75**

23-Dec-16

Client: AMAFCA

Project: CMC

Sample ID **MB**	SampType: **MBLK**	TestCode: **SM 4500 NH3: Ammonia**
Client ID: **PBW**	Batch ID: **R39298**	RunNo: **39298**
Prep Date:	Analysis Date: **12/9/2016**	SeqNo: **1229981** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	1.0								

Sample ID **LCS**	SampType: **LCS**	TestCode: **SM 4500 NH3: Ammonia**
Client ID: **LCSW**	Batch ID: **R39298**	RunNo: **39298**
Prep Date:	Analysis Date: **12/9/2016**	SeqNo: **1229982** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	9.8	1.0	10.00	0	98.0	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1611B75**

23-Dec-16

Client: AMAFCA

Project: CMC

Sample ID	**MB-28952**	SampType:	**MBLK**	TestCode:	**EPA Method 365.1: Total Phosphorous**					
Client ID:	**PBW**	Batch ID:	**28952**	RunNo:	**39106**					
Prep Date:	**12/1/2016**	Analysis Date:	**12/2/2016**	SeqNo:	**1223359**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	ND	0.010								

Sample ID	**LCS-28952**	SampType:	**LCS**	TestCode:	**EPA Method 365.1: Total Phosphorous**					
Client ID:	**LCSW**	Batch ID:	**28952**	RunNo:	**39106**					
Prep Date:	**12/1/2016**	Analysis Date:	**12/2/2016**	SeqNo:	**1223360**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	0.25	0.010	0.2500	0	98.9	90	110			

Sample ID	**1611B75-001DMS**	SampType:	**MS**	TestCode:	**EPA Method 365.1: Total Phosphorous**					
Client ID:	**Rio Grande-North-1**	Batch ID:	**28952**	RunNo:	**39106**					
Prep Date:	**12/1/2016**	Analysis Date:	**12/2/2016**	SeqNo:	**1223365**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	0.29	0.010	0.2500	0.04180	99.0	90	110			

Sample ID	**1611B75-001DMSD**	SampType:	**MSD**	TestCode:	**EPA Method 365.1: Total Phosphorous**					
Client ID:	**Rio Grande-North-1**	Batch ID:	**28952**	RunNo:	**39106**					
Prep Date:	**12/1/2016**	Analysis Date:	**12/2/2016**	SeqNo:	**1223366**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	0.29	0.010	0.2500	0.04180	98.0	90	110	0.937	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1611B75**

23-Dec-16

Client: AMAFCA

Project: CMC

Sample ID	**MB-28867**	SampType:	**MBLK**	TestCode:	**SM2540C MOD: Total Dissolved Solids**					
Client ID:	**PBW**	Batch ID:	**28867**	RunNo:	**39028**					
Prep Date:	**11/28/2016**	Analysis Date:	**11/29/2016**	SeqNo:	**1220776**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	20.0								

Sample ID	**LCS-28867**	SampType:	**LCS**	TestCode:	**SM2540C MOD: Total Dissolved Solids**					
Client ID:	**LCSW**	Batch ID:	**28867**	RunNo:	**39028**					
Prep Date:	**11/28/2016**	Analysis Date:	**11/29/2016**	SeqNo:	**1220777**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1010	20.0	1000	0	101	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1611B75**

23-Dec-16

Client: AMAFCA

Project: CMC

Sample ID **MB-29132**	SampType: **MBLK**	TestCode: **SM 4500 Norg C: TKN**
Client ID: **PBW**	Batch ID: **29132**	RunNo: **39357**
Prep Date: **12/12/2016**	Analysis Date: **12/13/2016**	SeqNo: **1231859** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Kjeldahl, Total	ND	1.0								

Sample ID **LCS-29132**	SampType: **LCS**	TestCode: **SM 4500 Norg C: TKN**
Client ID: **LCSW**	Batch ID: **29132**	RunNo: **39357**
Prep Date: **12/12/2016**	Analysis Date: **12/13/2016**	SeqNo: **1231860** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Kjeldahl, Total	10	1.0	10.00	0	102	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1611B75**

23-Dec-16

Client: AMAFCA

Project: CMC

Sample ID	**MB-28852**	SampType:	**MBLK**	TestCode:	**SM 2540D: TSS**					
Client ID:	**PBW**	Batch ID:	**28852**	RunNo:	**39013**					
Prep Date:	**11/23/2016**	Analysis Date:	**11/28/2016**	SeqNo:	**1220216**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Suspended Solids	ND	4.0								

Sample ID	**LCS-28852**	SampType:	**LCS**	TestCode:	**SM 2540D: TSS**					
Client ID:	**LCSW**	Batch ID:	**28852**	RunNo:	**39013**					
Prep Date:	**11/23/2016**	Analysis Date:	**11/28/2016**	SeqNo:	**1220217**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Suspended Solids	94	4.0	92.50	0	102	83.35	118.92			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: AMAFCA | Work Order Number: 1611B75 | RcptNo: 1

Received by/date: MF 11/22/16

Logged By: Lindsay Mangin 11/22/2016 9:15:00 AM

Completed By: Lindsay Mangin 11/22/2016 9:41:52 AM

Reviewed By: JC 11/22/16 CP 1130

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	Client		

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
9. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10. VOA vials have zero headspace?	Yes ☑	No ☐	No VOA Vials ☐
11. Were any sample containers received broken?	Yes ☐	No ☑	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	# of preserved bottles checked for pH: 12 (<2 or >12 unless noted)
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	Adjusted? NO
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	Checked by: RR

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑

Person Notified: _____ Date _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.9	Good	Not Present			

Chain-of-Custody Record

Client: AMAFCA

Mailing Address:

Phone #:

email or Fax#: pchavez@amafca.org

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name: CMC

Project #: NM15.0156

Project Manager: Patrick Chavez, C Johannesen

Sampler:

On Ice: ☒ Yes ☐ No

Sample Temperature: 5.9°C

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1611875	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions ($F, Cl, NO_3, NO_2, PO_4, SO_4$)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	See attached table	E coli: Nom			Air Bubbles (Y or N)
11/21/16	0930	AQ	Rio Grande North 112116	Numerous	Numerous	-001												+				
11/22/16	0700	AQ	Rio Grande South 112216	"	"	-002												+	+			

Date: 11/22/16 Time: 0915 Relinquished by:

Received by: Date 11/22/16 Time 0915

Date: Time: Relinquished by:

Received by: Date Time

Remarks:
PCB analysis by 1668
Tetrahydrofuran by 8260C

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Collaborative Monitoring Cooperative - Analyses List
Attach to Chain of Custody

Analyte (Bold Indicates WQS)	CAS #	Fraction	Method #	MDL (µg/L)
Hardness (Ca + Mg)	NA	Total	200.7	2.4
Lead	7439-92-1	Dissolved	200.8	0.09
Copper	7440-50-8	Dissolved	200.8	1.06
Ammonia + organic nitrogen	7664-41-7	Total	350.1	31.32
Total Kjehldal Nitrogen	17778-88-0	Total	351.2	58.78
Nitrate + Nitrite	14797-55-8	Total	353.2	10.17
sub **Polychlorinated biphenyls (PCBs)**	1336-36-3	Total	1668	~~NA~~ .014
Tetrahydrofuran (THF)	109-99-9	Total	8260C	7.9
bis(2-Ethylhexyl)phthalate	117-81-7	Total	8270D	0.2
Dibenzofuran	132-64-9	Total	8270D	0.2
Indeno(1,2,3-cd)pyrene	193-39-5	Total	8270D	0.2
Benzo(b)fluoranthene	205-99-2	Total	8270D	0.1
Benzo(k)fluoranthene	207-08-9	Total	8270D	0.1
Chrysene	218-01-9	Total	8270D	0.2
Benzo(a)pyrene	50-32-8	Total	8270D	0.3
Dibenzo(a,h)anthracene	53-70-3	Total	8270D	0.3
Benzo(a)anthracene	56-55-3	Total	8270D	0.2
Dieldrin	60-57-1	Total	8270D	0.1
Pentachlorophenol	87-86-5	Total	8270D	0.2
Benzidine	92-87-5	Total	8270D	0.1
Chemical Oxygen Demand	E1641638[2]	Total	HACH	5100
Gross alpha (adjusted)	NA	Total	Method 900	0.1 pCi/L
Total Dissolved Solids	E1642222[2]	Total	SM 2540C	60.4
Total Suspended Solids	NA	Total	SM 2540D	3450
Biological Oxygen Demand	N/A	Total	Standard Methods	930
Oil and Grease		Total	1664A	5000
Ecoli			SM 9223B	
pH			SM 4500	
Phosphorus		Dissolved	365.1	100
Phosphorus		Total	365.1	100
Chromium IV		Total	3500Cr C-2011	100

This sheet just for detection levels.

Appendix F - Minimum Quantification Levels (MQL's)

The following Minimum Quantification Levels (MQL's) are to be used for reporting pollutant data for NPDES permit applications and/or compliance reporting.

POLLUTANTS	MQL µg/l	POLLUTANTS	MQL µg/l
METALS, RADIOACTIVITY, CYANIDE and CHLORINE			
Aluminum	2.5	Molybdenum	10
Antimony	60	Nickel	0.5
Arsenic	0.5	Selenium	5
Barium	100	Silver	0.5
Beryllium	0.5	Thalllium	0.5
Boron	100	Uranium	0.1
Cadmium	1	Vanadium	50
Chromium	10	Zinc	20
Cobalt	50	Cyanide	10
Copper	0.5	Cyanide, weak acid dissociable	10
Lead	0.5	Total Residual Chlorine	33
Mercury (*)	0.0005 0.005		
DIOXIN			
2,3,7,8-TCDD	0.00001		
VOLATILE COMPOUNDS			
Acrolein	50	1,3-Dichloropropylene	10
Acrylonitrile	20	Ethylbenzene	10
Benzene	10	Methyl Bromide	50
Bromoform	10	Methylene Chloride	20
Carbon Tetrachloride	2	1,1,2,2-Tetrachloroethane	10
Chlorobenzene	10	Tetrachloroethylene	10
Clorodibromomethane	10	Toluene	10
Chloroform	50	1,2-trans-Dichloroethylene	10
Dichlorobromomethane	10	1,1,2-Trichloroethane	10
1,2-Dichloroethane	10	Trichloroethylene	10
1,1-Dichloroethylene	10	Vinyl Chloride	10
1,2-Dichloropropane	10		
ACID COMPOUNDS			
2-Chlorophenol	10	2,4-Dinitrophenol	50
2,4-Dichlorophenol	10	Pentachlorophenol	5
2,4-Dimethylphenol	10	Phenol	10
4,6-Dinitro-o-Cresol	50	2,4,6-Trichlorophenol	10

ATTACHMENT 2

FY 2017 DRY SEASON COMPLETED DATA VERIFICATION AND VALIDATION FORMS

Attachment 1.1 Water Quality Sample Data Verification and Validation Worksheet

Study Name: Compliance Monitoring Cooperative (CMC)
Year: FY 2017 (November 2016 – Dry Season Sample)
Project Coordinator: For Data Review and Reporting – SJG, BHI
V&V Reviewer: SJG
Data covered by this worksheet: Rio Grande North – 11/3/16 – E. coli Only Sample – Was Not Qualifying Storm Event
Version of Verification/Validation Procedures: QAPP – SOP #2 (2/2015)

Step 1: Verify Field Data
A. Are all Field Data forms present and complete? ☒ Yes ☐ No

If yes, proceed; if no, attempt to locate missing forms, then indicate any remaining missing forms and action taken.

Missing Field Data Forms	Action Taken
_____	_____
_____	_____

Total number of occurrences: 0

B. Are station name and ID, and sampling date and time on forms consistent with database? ☒ Yes ☐ No
If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify.

Station and Parameter	Action Taken	Re-verified?
_____	_____	_____
_____	_____	_____

Total number of occurrences: 0

C. Are field data on forms consistent with database? ☒ Yes ☐ No
If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify.

Station	Sampling Date	Parameter(s) Corrected	Re-verified?
_____	_____	_____	_____
_____	_____	_____	_____

Total number of occurrences: 0

D. Are RIDs correct and associated with the correct analytical suite, media subdivision (e.g. surface water, municipal waste, etc.) and activity type (e.g. Field observation, Routine sample, QA sample etc.)?

☒ Yes ☐ No

If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify

Station/RID	Sampling Date	RID Corrected	Re-verified?

Total number of occurrences: 0

☒ **Step 1 Completed** ***Initials:*** SJG ***Date:*** 1/20/17

- -

Step 2: Verify Data Deliverables

A. Have all data in question been delivered? ☒ Yes ☐ No

If yes, proceed; if no, indicate RIDs with missing data (samples or blanks) or attach report with applicable RIDs highlighted. Contact data source and indicate action taken. Complete this step upon receipt of all missing data.

RID	Submittal Date	Missing Data/Parameters	Date of Initial Verification	Date Missing Data Were Received

Total number of occurrences: 0

B. Do all of the analytical suites have the correct number and type of analytes. ☒ Yes ☐ No

If yes, proceed; if no, indicate RIDs with missing or incorrect analyte(s) or attach report with applicable RIDs highlighted. Contact data source and indicate action taken.

RID	Submittal Date	Missing or Incorrect Parameters	Action Taken	Re-verified?

_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

☒ **Step 2 Completed** ***Initials:*** SJG ***Date:*** 1/20/17

- -

Step 3: Verify Flow Data

*Note – Not Applicable – no flow data provided with CMC sample collection

A. Identify incorrect or missing data on the flow calculation spreadsheet and correct errors.

Station	Sampling Date	Flow data missing or incorrect?
_____	_____	_____
_____	_____	_____

Total number of occurrences: 0

B. Identify incorrect or missing discharge measurements, correct errors in database and re-verify.

Station	Sampling Date	Flow data missing or incorrect?	Re-verified?
_____	_____	_____	_____
_____	_____	_____	_____

Total number of occurrences: 0

Not Applicable

☐ **Step 3 Completed** ***Initials:*** SJG ***Date:*** 1/20/17

- -

Step 4: Verify Analytical Results for Missing Information or Questionable Results

Were any results with missing/questionable information identified? ☒ Yes ☐ No

If no, proceed; if yes, indicate results with missing information or questionable results or attach report. Contact data source and indicate action taken. Complete this step upon receipt of missing information or clarification of questionable results (clarify questionable results only, DO NOT change results without written approval (from lab or QA officer) and associated documentation).

RID	Sample Date	Missing or Questionable Information/Results	Action Taken

*Note – HEAL Lab report order number – 1611208_v1

Total number of occurrences: 0

☒ **Step 4 Completed** ***Initials:*** SJG ***Date:*** 1/20/17

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Total number of occurrences: 0

☒ **Step 6 Completed** ***Initials:*** SJG ***Date:*** 1/20/17

- -

Step 7: Validate Replicate/Duplicate Results (if applicable)
Were any replicate/duplicate pairs submitted outside of the established control limit of 20%?
☐ Yes ☒ No
If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes/flags have been added to database.

RID Pairs		Replicate or Duplicate?	Sample Date	Parameter	RPD	Validation Code/Flag Applied	Code/Flag verified in database applied?*
_____	_____	_____	_____	_____	_____		_____
_____	_____	_____	_____	_____	_____		_____

*See validation procedures to determine which associated data need to be flagged.

Total number of occurrences: 0

☒ **Step 7 Completed** ***Initials:*** SJG ***Date:*** 1/20/16

****

After all of the above steps have been completed, save and print the worksheet, attach all applicable supplemental information and sign below.

I acknowledge that the data verification and validation process has been completed for the data identified above in accordance with the procedures described in the CMC QAPP, SOP #2



1/20/17

Data Verifier/Validator Signature Date

COMPLETION OF DATA VERIFICATION AND VALIDATION PROCESS

Once the data verification and validation process has been completed for the entire study (note: if the worksheet is for a subset of the data from a study, be sure ALL the data for the entire study is included before final completion of the data verification and validation process), notify the NMSQUID administrator that the process is complete and request that “V V in STORET” be added to the project title.

Once all data have been verified and validated for a study provide copies of ALL *Data Verification and Validation Worksheets* and attachments associated with the study to the Quality Assurance Officer and retain originals in the project binder.

Attachment 1.2 SWQB Validation Codes

When deficiencies are identified through the data verification and validation process, AMAFCA documents or "flags" the deficiencies by assigning validation codes. All data collected from the last compliant QC sample and up to the next compliant QC sample are assigned validation codes. The validation code alerts the data user that the results are outside QA control limits and may require re-sampling or a separate, qualitative analysis based on professional judgment.

Validation Code	Definition	WQX Equivalent
A1	Sample not collected according to SOP	
B1	Chemical was detected in the field blank at a concentration less than 5% of the sample concentration.	
BN	Blanks NOT collected during sampling run	
BU	Detection in blank. Analyte was not detected in this sample above the method's sample detection limit.	BU
RB1	Chemical was detected in the field blank at a concentration greater than or equal to 5% of the sample concentration. Results for this sample are rejected because they may be the result of contamination; the results may not be reported or used for regulatory compliance purposes.	B
R1	Rejected due to incorrect sample preservation	R
R2	Rejected due to equipment failure in the field	R
R3	Rejected based on best professional judgment	R
D1	Spike recovery not within method acceptance limits	
F1	Sample filter time exceeded	
J1	Estimated: the analyte was positively identified and the associated value is an approximate concentration of the analyte in the sample	J
K1	Holding time violation	H
Ea	Estimated-Incubation temperature between 35.5 and 38.0° Celsius	
Er	Rejected-Incubation temperature < 34.5 or >38.0° Celsius	
PD1	Percent difference between duplicate samples excessive	
S1	Per SLD, uncertainties (sigmas) are expressed as one standard deviation, i.e. one standard error. Small negative or positive values that are less than two standard deviations should be interpreted as "less than the detection limit."	
S2	Data are suspect but deemed usable based on best professional judgment; documentation of justification is required and should be included in the Data Verification and Validation Packet and reported with results	
Z1	Macroinvertebrate data did not meet QC criteria specified in Section 2.5 of QAPP	
H1	Habitat data did not meet QC criteria specified in Section 2.5 of QAPP	

Attachment 1.1 Water Quality Sample Data Verification and Validation Worksheet

Study Name: Compliance Monitoring Cooperative (CMC)
Year: FY 2017 (November 2016 – Dry Season Sample)
Project Coordinator: For Data Review and Reporting – SJG, BHI
V&V Reviewer: SJG
Data covered by this worksheet: Rio Grande North – 11/21/16 and 11/22/16
Version of Verification/Validation Procedures: QAPP – SOP #2 (2/2015)

Step 1: Verify Field Data
A. Are all Field Data forms present and complete? ☒ Yes ☐ No

If yes, proceed; if no, attempt to locate missing forms, then indicate any remaining missing forms and action taken.

Missing Field Data Forms	Action Taken
_____	_____
_____	_____

Total number of occurrences: 0

B. Are station name and ID, and sampling date and time on forms consistent with database? ☒ Yes ☐ No
If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify.

Station and Parameter	Action Taken	Re-verified?
_____	_____	_____
_____	_____	_____

Total number of occurrences: 0

C. Are field data on forms consistent with database? ☒ Yes ☐ No
If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify.

Station	Sampling Date	Parameter(s) Corrected	Re-verified?
_____	_____	_____	_____
_____	_____	_____	_____

Total number of occurrences: 0

D. Are RIDs correct and associated with the correct analytical suite, media subdivision (e.g. surface water, municipal waste, etc.) and activity type (e.g. Field observation, Routine sample, QA sample etc.)?

☒ Yes ☐ No

If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify

Station/RID	Sampling Date	RID Corrected	Re-verified?
_____	_____	_____	_____
_____	_____	_____	_____

Total number of occurrences: 0

☒ **Step 1 Completed** ***Initials:*** SJG ***Date:*** 1/20/17

- -

Step 2: Verify Data Deliverables

A. Have all data in question been delivered? ☒ Yes ☐ No

If yes, proceed; if no, indicate RIDs with missing data (samples or blanks) or attach report with applicable RIDs highlighted. Contact data source and indicate action taken. Complete this step upon receipt of all missing data.

RID	Submittal Date	Missing Data/Parameters	Date of Initial Verification	Date Missing Data Were Received
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

Total number of occurrences: 0

B. Do all of the analytical suites have the correct number and type of analytes. ☒ Yes ☐ No

If yes, proceed; if no, indicate RIDs with missing or incorrect analyte(s) or attach report with applicable RIDs highlighted. Contact data source and indicate action taken.

*Note – Lab report identifies “Dissolved Phosphorous” as “Total Phosphorous” and does not distinguish this as a filtered sample, as prior lab reports have done. Lower value of “Total Phosphorous” reported as the “Dissolved Phosphorous” result.

RID	Submittal Date	Missing or Incorrect Parameters	Action Taken	Re-verified?
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

☒ **Step 2 Completed** ***Initials:*** SJG ***Date:*** 1/20/17

- -

Step 3: Verify Flow Data

*Note – Not Applicable – no flow data provided with CMC sample collection

A. Identify incorrect or missing data on the flow calculation spreadsheet and correct errors.

Station	Sampling Date	Flow data missing or incorrect?
_____	_____	_____
_____	_____	_____

Total number of occurrences: 0

B. Identify incorrect or missing discharge measurements, correct errors in database and re-verify.

Station	Sampling Date	Flow data missing or incorrect?	Re-verified?
_____	_____	_____	_____
_____	_____	_____	_____

Total number of occurrences: 0

Not Applicable

☐ **Step 3 Completed** ***Initials:*** SJG ***Date:*** 1/20/17

- -

Step 4: Verify Analytical Results for Missing Information or Questionable Results

Were any results with missing/questionable information identified? ☒ Yes ☐ No

If no, proceed; if yes, indicate results with missing information or questionable results or attach report. Contact data source and indicate action taken. Complete this step upon receipt of missing information or clarification of questionable results (clarify questionable results only, DO NOT change results without written approval (from lab or QA officer) and associated documentation).

RID	Sample Date	Missing or Questionable Information/Results	Action Taken
Rio Grande North & South	11/22/16	Lab report provides two "Total Phosphorous" results, and no "Dissolved Phosphorous" results. Used lower value as "Dissolved Phosphorous".	Notified AMAFCA and DBS&A of this and requested that lab more clearly report data.

*Note – HEAL Lab report order number – 1611B12_v1 and 1611B75_v2
Total number of occurrences: 1

☒ **Step 4 Completed** ***Initials:*** SJG ***Date:*** 1/20/17

- -

Step 5: Validate Blanks Results
Were any analytes of concern detected in blank samples? ☐ Yes ☒ No

If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager, with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes have been added to database correctly.

RID	Sample Date	Parameter	[Blank]	[Sample]	Validation Code/Flag Applied	Code/Flag verified in database? *

*See validation procedures to determine which associated data need to be flagged and include on *Validation Codes Form*.

Total number of occurrences: 0

☒ **Step 5 Completed** ***Initials:*** SJG ***Date:*** 1/20/17

- -

Step 6: Validate Holding Times Violations
Were any samples submitted that did not meet specified holding times? ☐ Yes ☒ No

If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes/flags have been added to database.

RID	Sample Date	Parameter	[Blank]	[Sample]	Validation Code/Flag Applied	Code/Flag verified in database to ALL associated data?*
_____	_____	_____	_____	_____		_____
_____	_____	_____	_____	_____		_____

*See validation procedures to determine which associated data need to be flagged.
Total number of occurrences: 0

☒ **Step 6 Completed** ***Initials:*** SJG ***Date:*** 1/20/17

- -

Step 7: Validate Replicate/Duplicate Results (if applicable)
Were any replicate/duplicate pairs submitted outside of the established control limit of 20%?
☐ Yes ☒ No
If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes/flags have been added to database.

RID Pairs		Replicate or Duplicate?	Sample Date	Parameter	RPD	Validation Code/Flag Applied	Code/Flag verified in database applied?*
_____	_____	_____	_____	_____	_____		_____
_____	_____	_____	_____	_____	_____		_____

*See validation procedures to determine which associated data need to be flagged.

Total number of occurrences: 0

☒ **Step 7 Completed** ***Initials:*** SJG ***Date:*** 1/20/16

****

After all of the above steps have been completed, save and print the worksheet, attach all applicable supplemental information and sign below.

I acknowledge that the data verification and validation process has been completed for the data identified above in accordance with the procedures described in the CMC QAPP, SOP #2



1/20/17

Data Verifier/Validator Signature Date

COMPLETION OF DATA VERIFICATION AND VALIDATION PROCESS

Once the data verification and validation process has been completed for the entire study (note: if the worksheet is for a subset of the data from a study, be sure ALL the data for the entire study is included before final completion of the data verification and validation process), notify the NMSQUID administrator that the process is complete and request that “V V in STORET” be added to the project title.

Once all data have been verified and validated for a study provide copies of ALL *Data Verification and Validation Worksheets* and attachments associated with the study to the Quality Assurance Officer and retain originals in the project binder.

Attachment 1.2 SWQB Validation Codes

When deficiencies are identified through the data verification and validation process, AMAFCA documents or "flags" the deficiencies by assigning validation codes. All data collected from the last compliant QC sample and up to the next compliant QC sample are assigned validation codes. The validation code alerts the data user that the results are outside QA control limits and may require re-sampling or a separate, qualitative analysis based on professional judgment.

Validation Code	Definition	WQX Equivalent
A1	Sample not collected according to SOP	
B1	Chemical was detected in the field blank at a concentration less than 5% of the sample concentration.	
BN	Blanks NOT collected during sampling run	
BU	Detection in blank. Analyte was not detected in this sample above the method's sample detection limit.	BU
RB1	Chemical was detected in the field blank at a concentration greater than or equal to 5% of the sample concentration. Results for this sample are rejected because they may be the result of contamination; the results may not be reported or used for regulatory compliance purposes.	B
R1	Rejected due to incorrect sample preservation	R
R2	Rejected due to equipment failure in the field	R
R3	Rejected based on best professional judgment	R
D1	Spike recovery not within method acceptance limits	
F1	Sample filter time exceeded	
J1	Estimated: the analyte was positively identified and the associated value is an approximate concentration of the analyte in the sample	J
K1	Holding time violation	H
Ea	Estimated-Incubation temperature between 35.5 and 38.0° Celsius	
Er	Rejected-Incubation temperature < 34.5 or >38.0° Celsius	
PD1	Percent difference between duplicate samples excessive	
S1	Per SLD, uncertainties (sigmas) are expressed as one standard deviation, i.e. one standard error. Small negative or positive values that are less than two standard deviations should be interpreted as "less than the detection limit."	
S2	Data are suspect but deemed usable based on best professional judgment; documentation of justification is required and should be included in the Data Verification and Validation Packet and reported with results	
Z1	Macroinvertebrate data did not meet QC criteria specified in Section 2.5 of QAPP	
H1	Habitat data did not meet QC criteria specified in Section 2.5 of QAPP	

Attachment 1.1 Water Quality Sample Data Verification and Validation Worksheet

Study Name: Compliance Monitoring Cooperative (CMC)
Year: FY 2017 (November 2016 – Dry Season Sample)
Project Coordinator: For Data Review and Reporting – SJG, BHI
V&V Reviewer: SJG
Data covered by this worksheet: Rio Grande South – 11/22/16
Version of Verification/Validation Procedures: QAPP – SOP #2 (2/2015)

Step 1: Verify Field Data

A. Are all Field Data forms present and complete? ☒ Yes ☐ No

If yes, proceed; if no, attempt to locate missing forms, then indicate any remaining missing forms and action taken.

Missing Field Data Forms	Action Taken
_____	_____
_____	_____

Total number of occurrences: 0

B. Are station name and ID, and sampling date and time on forms consistent with database? ☒ Yes ☐ No
If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify.

Station and Parameter	Action Taken	Re-verified?
_____	_____	_____
_____	_____	_____

Total number of occurrences: 0

C. Are field data on forms consistent with database? ☒ Yes ☐ No
If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify.

Station	Sampling Date	Parameter(s) Corrected	Re-verified?
_____	_____	_____	_____
_____	_____	_____	_____

Total number of occurrences: 0

D. Are RIDs correct and associated with the correct analytical suite, media subdivision (e.g. surface water, municipal waste, etc.) and activity type (e.g. Field observation, Routine sample, QA sample etc.)?

☒ Yes ☐ No

If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify

Station/RID	Sampling Date	RID Corrected	Re-verified?

Total number of occurrences: 0

☒ **Step 1 Completed** ***Initials:*** SJG ***Date:*** 1/20/17

- - - -

RID	Submittal Date	Missing or Incorrect Parameters	Action Taken	Re-verified?
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

☒ **Step 2 Completed** ***Initials:*** SJG ***Date:*** 1/20/17

- -

Step 3: Verify Flow Data

*Note – Not Applicable – no flow data provided with CMC sample collection

A. Identify incorrect or missing data on the flow calculation spreadsheet and correct errors.

Station	Sampling Date	Flow data missing or incorrect?
_____	_____	_____
_____	_____	_____

Total number of occurrences: 0

B. Identify incorrect or missing discharge measurements, correct errors in database and re-verify.

Station	Sampling Date	Flow data missing or incorrect?	Re-verified?
_____	_____	_____	_____
_____	_____	_____	_____

Total number of occurrences: 0

Not Applicable

☐ **Step 3 Completed** ***Initials:*** SJG ***Date:*** 1/20/17

- -

Step 4: Verify Analytical Results for Missing Information or Questionable Results

Were any results with missing/questionable information identified? ☒ Yes ☐ No

If no, proceed; if yes, indicate results with missing information or questionable results or attach report. Contact data source and indicate action taken. Complete this step upon receipt of missing information or clarification of questionable results (clarify questionable results only, DO NOT change results without written approval (from lab or QA officer) and associated documentation).

RID	Sample Date	Missing or Questionable Information/Results	Action Taken
Rio Grande North & South	11/22/16	Lab report provides two "Total Phosphorous" results, and no "Dissolved Phosphorous" results. Used lower value as "Dissolved Phosphorous".	Notified AMAFCA and DBS&A of this and requested that lab more clearly report data.
Rio Grande South	11/22/16	Hexavalent Chromium for Rio Grande South (02) incorrectly labeled in lab report as Rio Grande North	Notified AMAFCA and of this and requested that lab more clearly report data.

*Note – HEAL Lab report order number – 1611B75_v2
Total number of occurrences: 2

☒ **Step 4 Completed** ***Initials:*** SJG ***Date:*** 1/20/17

- -

Step 5: Validate Blanks Results
Were any analytes of concern detected in blank samples? ☐ Yes ☒ No

If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager, with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes have been added to database correctly.

RID	Sample Date	Parameter	[Blank]	[Sample]	Validation Code/Flag Applied	Code/Flag verified in database? *

*See validation procedures to determine which associated data need to be flagged and include on *Validation Codes Form*.

Total number of occurrences: 0

☒ **Step 5 Completed** ***Initials:*** SJG ***Date:*** 1/20/17

- -

Step 6: Validate Holding Times Violations
Were any samples submitted that did not meet specified holding times? ☐ Yes ☒ No

If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes/flags have been added to database.

RID	Sample Date	Parameter	[Blank]	[Sample]	Validation Code/Flag Applied	Code/Flag verified in database to ALL associated data?*
_____	_____	_____	_____	_____		_____
_____	_____	_____	_____	_____		_____

*See validation procedures to determine which associated data need to be flagged.
Total number of occurrences: 0

☒ **Step 6 Completed** ***Initials:*** SJG ***Date:*** 1/20/17

- -

Step 7: Validate Replicate/Duplicate Results (if applicable)
Were any replicate/duplicate pairs submitted outside of the established control limit of 20%?
☐ Yes ☒ No
If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes/flags have been added to database.

RID Pairs		Replicate or Duplicate?	Sample Date	Parameter	RPD	Validation Code/Flag Applied	Code/Flag verified in database applied?*
_____	_____	_____	_____	_____	_____		_____
_____	_____	_____	_____	_____	_____		_____

*See validation procedures to determine which associated data need to be flagged.

Total number of occurrences: 0

☒ **Step 7 Completed** ***Initials:*** SJG ***Date:*** 1/20/16

****

After all of the above steps have been completed, save and print the worksheet, attach all applicable supplemental information and sign below.

I acknowledge that the data verification and validation process has been completed for the data identified above in accordance with the procedures described in the CMC QAPP, SOP #2



1/20/17

Data Verifier/Validator Signature Date

COMPLETION OF DATA VERIFICATION AND VALIDATION PROCESS

Once the data verification and validation process has been completed for the entire study (note: if the worksheet is for a subset of the data from a study, be sure ALL the data for the entire study is included before final completion of the data verification and validation process), notify the NMSQUID administrator that the process is complete and request that “V V in STORET” be added to the project title.

Once all data have been verified and validated for a study provide copies of ALL *Data Verification and Validation Worksheets* and attachments associated with the study to the Quality Assurance Officer and retain originals in the project binder.

Attachment 1.2 SWQB Validation Codes

When deficiencies are identified through the data verification and validation process, AMAFCA documents or "flags" the deficiencies by assigning validation codes. All data collected from the last compliant QC sample and up to the next compliant QC sample are assigned validation codes. The validation code alerts the data user that the results are outside QA control limits and may require re-sampling or a separate, qualitative analysis based on professional judgment.

Validation Code	Definition	WQX Equivalent
A1	Sample not collected according to SOP	
B1	Chemical was detected in the field blank at a concentration less than 5% of the sample concentration.	
BN	Blanks NOT collected during sampling run	
BU	Detection in blank. Analyte was not detected in this sample above the method's sample detection limit.	BU
RB1	Chemical was detected in the field blank at a concentration greater than or equal to 5% of the sample concentration. Results for this sample are rejected because they may be the result of contamination; the results may not be reported or used for regulatory compliance purposes.	B
R1	Rejected due to incorrect sample preservation	R
R2	Rejected due to equipment failure in the field	R
R3	Rejected based on best professional judgment	R
D1	Spike recovery not within method acceptance limits	
F1	Sample filter time exceeded	
J1	Estimated: the analyte was positively identified and the associated value is an approximate concentration of the analyte in the sample	J
K1	Holding time violation	H
Ea	Estimated-Incubation temperature between 35.5 and 38.0° Celsius	
Er	Rejected-Incubation temperature < 34.5 or >38.0° Celsius	
PD1	Percent difference between duplicate samples excessive	
S1	Per SLD, uncertainties (sigmas) are expressed as one standard deviation, i.e. one standard error. Small negative or positive values that are less than two standard deviations should be interpreted as "less than the detection limit."	
S2	Data are suspect but deemed usable based on best professional judgment; documentation of justification is required and should be included in the Data Verification and Validation Packet and reported with results	
Z1	Macroinvertebrate data did not meet QC criteria specified in Section 2.5 of QAPP	
H1	Habitat data did not meet QC criteria specified in Section 2.5 of QAPP	

DMR Copy of Record

Permit					
Permit #:	**NMR04A014**	**Permittee:**	CITY OF ALBUQUERQUE (COA)	**Facility:**	CITY OF ALBUQUERQUE MS4
Major:	No	**Permittee Address:**	ONE CIVIC PLAZA ALBUQUERQUE, NM 87102	**Facility Location:**	ONE CIVIC PLAZA ALBUQUERQUE, NM 87102
Permitted Feature:	001 External Outfall	**Discharge:**	**001-W** ANGOSTURA DIVERSION DAM (NORTH) - WET SEASON		
Report Dates & Status					
Monitoring Period:	**From 07/01/16 to 10/31/16**	**DMR Due Date:**	**12/01/16**	**Status:**	**NetDMR Validated**
Considerations for Form Completion					
SEASONAL MONITORING PERIODS ARE: WET SEASON = JULY 1-OCT. 31 & DRY SEASON = NOV. 1-JUNE 30. SEPARATE DMRS REQUIRED FOR EACH SEASON. DMRS TO BE SUBMITTED DUE DEC. 1ST, FOLLOWING END OF MONIT. PERIOD. PERMIT REQUIRES A MIN. OF 7 EVENTS PER LOC. PER PERMIT TERM (3 WET SEASON, 2 DRY SEASON & 2 PERMITTEE'S CHOICE).					
Principal Executive Officer					
First Name:	Melissa	**Title:**	Acting Director, DMD	**Telephone:**	505-768-3661
Last Name:	Lozoya				
No Data Indicator (NODI)					
Form NODI:	--				

Parameter		Monitoring Location	Season #	Param. NODI		Quantity or Loading						Quality or Concentration						# of Ex.	Frequency of Analysis	Sample Type
Code	Name					Qualifier 1	Value 1	Qualifier 2	Value 2	Units		Qualifier 1	Value 1	Qualifier 2	Value 2	Qualifier 3	Value 3	Units		
00010	Temperature, water deg. centigrade	1 - Effluent Gross	0	--	Sample							=	22.8	=	22.8	=	22.8	04 - deg C		03/PT - Three Per Permit Term	GR - GRAB
					Permit Req.								Req Mon DAILY MN		Req Mon DAILY AV		Req Mon DAILY MX	04 - deg C		03/PT - Three Per Permit Term	GR - GRAB
					Value NODI															
00094	Conductivity	1 - Effluent Gross	0	--	Sample									=	280	=	280	11 - umho/cm		03/PT - Three Per Permit Term	GR - GRAB
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	11 - umho/cm		03/PT - Three Per Permit Term	GR - GRAB
					Value NODI															
00300	Oxygen, dissolved [DO]	1 - Effluent Gross	0	--	Sample							=	7.18	=	7.18			19 - mg/L		03/PT - Three Per Permit Term	GR - GRAB
					Permit Req.								Req Mon DAILY MN		Req Mon DAILY AV			19 - mg/L		03/PT - Three Per Permit Term	GR - GRAB
					Value NODI															
00310	BOD, 5-day, 20 deg. C	1 - Effluent Gross	0	--	Sample									<	2	<	2	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS
					Value NODI															
00340	Oxygen demand, chem. [high level] [COD]	1 - Effluent Gross	0	--	Sample									=	16.2	=	16.2	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS
					Value NODI															
00400	pH	1 - Effluent Gross	0	--	Sample							=	8.73			=	8.73	12 - SU		03/PT - Three Per Permit Term	GR - GRAB
					Permit Req.								Req Mon MINIMUM				Req Mon MAXIMUM	12 - SU		03/PT - Three Per Permit Term	GR - GRAB
					Value NODI															
00530	Solids, total suspended	1 - Effluent Gross	0	--	Sample									=	41	=	41	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS
					Value NODI															
00556	Oil & Grease	1 - Effluent Gross	0	--	Sample															
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS
					Value NODI										B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection			
00625	Nitrogen, Kjeldahl, total [as N]	1 - Effluent Gross	0	--	Sample															
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS
					Value NODI										B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection			
00630	Nitrite + Nitrate total [as N]	1 - Effluent Gross	0	--	Sample															
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS
					Value NODI										B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection			
00665	Phosphorus, total [as P]	1 - Effluent Gross	0	--	Sample									=	0.081	=	0.081	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS
					Value NODI															
00666	Phosphorus, dissolved	1 - Effluent Gross	0	--	Sample									=	0.03	=	0.03	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS
					Value NODI															
01032	Chromium, hexavalent [as Cr]	1 - Effluent Gross	0	--	Sample															
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS
					Value NODI										B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection			
01040	Copper, dissolved [as Cu]	1 - Effluent Gross	0	--	Sample									=	1.2	=	1.2	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS
					Value NODI															
01049	Lead, dissolved [as Pb]	1 - Effluent Gross	0	--	Sample															
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS
					Value NODI										B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection			
34230	Benzo[b]fluoranthene	1 - Effluent Gross	0	--	Sample															
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS

					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection					
					Sample																
34242	Benzo[k]fluoranthene	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS	
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection					
					Sample																
34247	Benzo[a]pyrene	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS	
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection					
					Sample																
34320	Chrysene	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS	
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection					
					Sample																
34403	Indeno[1,2,3-cd]pyrene	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS	
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection					
					Sample																
34526	Benzo[a]anthracene	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS	
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection					
					Sample																
34556	Dibenz[a,h]anthracene	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS	
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection					
					Sample																
39032	Pentachlorophenol	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS	
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection					
					Sample																
39100	Di[2-ethylhexyl] phthalate [DEHP]	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS	
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection					
					Sample																
39120	Benzidine	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS	
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection					
					Sample																
39380	Dieldrin	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS	
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection					
					Sample																
39516	Polychlorinated biphenyls [PCBs]	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS	
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection					
					Sample								=	35.9	=	35.9	3Z - CFU/100mL		03/PT - Three Per Permit Term	GR - GRAB	
51040	E. coli	1 - Effluent Gross	0	--	Permit Req.									Req Mon DA GEOAV		Req Mon DAILY MX	3Z - CFU/100mL		03/PT - Three Per Permit Term	GR - GRAB	
					Value NODI																
					Sample								=	230	=	230	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS	
70295	Solids, total dissolved	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS	
					Value NODI																
					Sample								=	3.72	=	3.72	17 - pCi/L		03/PT - Three Per Permit Term	CP - COMPOS	
80029	Alpha gross radioactivity	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	17 - pCi/L		03/PT - Three Per Permit Term	CP - COMPOS	
					Value NODI																
					Sample																
81302	Dibenzofuran	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS	
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection					
					Sample																
81607	Tetrahydrofuran	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS	
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection					

Submission Note

If a parameter row does not contain any values for the Sample nor Effluent Trading, then none of the following fields will be submitted for that row: Units, Number of Excursions, Frequency of Analysis, and Sample Type.

Edit Check Errors

No errors.

Comments

Wet Season Sample Date: 8/10/2016. Data matches CMC data. PCBs tested using Method 608, not enough volume to retest with Method 1668A.

Attachments

No attachments.

Report Last Saved By

CITY OF ALBUQUERQUE (COA)

User:	seaton@cabq.gov
Name:	Shellie Eaton
E-Mail:	seaton@cabq.gov
Date/Time:	2017-11-29 14:05 (Time Zone: -06:00)

Report Last Signed By

User:	MLOZOYA1
Name:	Melissa Lozoya
E-Mail:	mlozoya@cabq.gov

Date/Time:	2017-11-30 10:07 (Time Zone: -06:00)

DMR Copy of Record

Permit					
Permit #:	**NMR04A014**	**Permittee:**	CITY OF ALBUQUERQUE (COA)	**Facility:**	CITY OF ALBUQUERQUE MS4
Major:	No	**Permittee Address:**	ONE CIVIC PLAZA ALBUQUERQUE, NM 87102	**Facility Location:**	ONE CIVIC PLAZA ALBUQUERQUE, NM 87102
Permitted Feature:	002 External Outfall	**Discharge:**	**002-W** ISLETA DIVERSION DAM (SOUTH) - WET SEASON		
Report Dates & Status					
Monitoring Period:	**From 07/01/16 to 10/31/16**	**DMR Due Date:**	**12/01/16**	**Status:**	**NetDMR Validated**
Considerations for Form Completion					
SEASONAL MONITORING PERIODS ARE: WET SEASON = JULY 1-OCT. 31 & DRY SEASON = NOV. 1-JUNE 30. SEPARATE DMRS REQUIRED FOR EACH SEASON. DMRS TO BE SUBMITTED DUE DEC. 1ST, FOLLOWING END OF MONIT. PERIOD. PERMIT REQUIRES A MIN. OF 7 EVENTS PER LOC. PER PERMIT TERM (3 WET SEASON, 2 DRY SEASON & 2 PERMITTEE'S CHOICE).					
Principal Executive Officer					
First Name:	Melissa	**Title:**	Acting Director, DMD	**Telephone:**	505-768-3661
Last Name:	Lozoya				
No Data Indicator (NODI)					
Form NODI:	--				

Parameter		Monitoring Location	Season #	Param. NODI		Quantity or Loading						Quality or Concentration						# of Ex.	Frequency of Analysis	Sample Type
Code	Name					Qualifier 1	Value 1	Qualifier 2	Value 2	Units		Qualifier 1	Value 1	Qualifier 2	Value 2	Qualifier 3	Value 3	Units		
00010	Temperature, water deg. centigrade	1 - Effluent Gross	0	--	Sample							=	24.9	=	24.9	=	24.9	04 - deg C		03/PT - Three Per Permit Term	GR - GRAB
					Permit Req.								Req Mon DAILY MN		Req Mon DAILY AV		Req Mon DAILY MX	04 - deg C		03/PT - Three Per Permit Term	GR - GRAB
					Value NODI															
00094	Conductivity	1 - Effluent Gross	0	--	Sample									=	326	=	326	11 - umho/cm		03/PT - Three Per Permit Term	GR - GRAB
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	11 - umho/cm		03/PT - Three Per Permit Term	GR - GRAB
					Value NODI															
00300	Oxygen, dissolved [DO]	1 - Effluent Gross	0	--	Sample							=	5.33	=	5.33			19 - mg/L		03/PT - Three Per Permit Term	GR - GRAB
					Permit Req.								Req Mon DAILY MN		Req Mon DAILY AV			19 - mg/L		03/PT - Three Per Permit Term	GR - GRAB
					Value NODI															
00310	BOD, 5-day, 20 deg. C	1 - Effluent Gross	0	--	Sample									<	2	<	2	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS
					Value NODI															
00340	Oxygen demand, chem. [high level] [COD]	1 - Effluent Gross	0	--	Sample									=	17	=	17	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS
					Value NODI															
00400	pH	1 - Effluent Gross	0	--	Sample							=	8.7			=	8.7	12 - SU		03/PT - Three Per Permit Term	GR - GRAB
					Permit Req.								Req Mon MINIMUM				Req Mon MAXIMUM	12 - SU		03/PT - Three Per Permit Term	GR - GRAB
					Value NODI															
00530	Solids, total suspended	1 - Effluent Gross	0	--	Sample									=	330	=	330	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS
					Value NODI															
00556	Oil & Grease	1 - Effluent Gross	0	--	Sample															
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS
					Value NODI										B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection			
00625	Nitrogen, Kjeldahl, total [as N]	1 - Effluent Gross	0	--	Sample															
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS
					Value NODI										B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection			
00630	Nitrite + Nitrate total [as N]	1 - Effluent Gross	0	--	Sample															
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS
					Value NODI										B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection			
00665	Phosphorus, total [as P]	1 - Effluent Gross	0	--	Sample									=	0.38	=	0.38	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS
					Value NODI															
00666	Phosphorus, dissolved	1 - Effluent Gross	0	--	Sample									=	0.17	=	0.17	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS
					Value NODI															
01032	Chromium, hexavalent [as Cr]	1 - Effluent Gross	0	--	Sample															
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS
					Value NODI										B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection			
01040	Copper, dissolved [as Cu]	1 - Effluent Gross	0	--	Sample									=	1.2	=	1.2	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS
					Value NODI															
01049	Lead, dissolved [as Pb]	1 - Effluent Gross	0	--	Sample															
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS
					Value NODI										B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection			
34230	Benzo[b]fluoranthene	1 - Effluent Gross	0	--	Sample															
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS

					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection						
					Sample																	
34242	Benzo[k]fluoranthene	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS		
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection						
					Sample																	
34247	Benzo[a]pyrene	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS		
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection						
					Sample																	
34320	Chrysene	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS		
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection						
					Sample																	
34403	Indeno[1,2,3-cd]pyrene	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS		
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection						
					Sample																	
34526	Benzo[a]anthracene	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS		
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection						
					Sample																	
34556	Dibenz[a,h]anthracene	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS		
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection						
					Sample																	
39032	Pentachlorophenol	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS		
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection						
					Sample																	
39100	Di[2-ethylhexyl] phthalate [DEHP]	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS		
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection						
					Sample																	
39120	Benzidine	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS		
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection						
					Sample																	
39380	Dieldrin	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS		
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection						
					Sample																	
39516	Polychlorinated biphenyls [PCBs]	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS		
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection						
					Sample								=	1106	=	1106	3Z - CFU/100mL		03/PT - Three Per Permit Term	GR - GRAB		
51040	E. coli	1 - Effluent Gross	0	--	Permit Req.									Req Mon DA GEOAV		Req Mon DAILY MX	3Z - CFU/100mL		03/PT - Three Per Permit Term	GR - GRAB		
					Value NODI																	
					Sample								=	305	=	305	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS		
70295	Solids, total dissolved	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS		
					Value NODI																	
					Sample								=	10.6	=	10.6	17 - pCi/L		03/PT - Three Per Permit Term	CP - COMPOS		
80029	Alpha gross radioactivity	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	17 - pCi/L		03/PT - Three Per Permit Term	CP - COMPOS		
					Value NODI																	
					Sample																	
81302	Dibenzofuran	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS		
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection						
					Sample																	
81607	Tetrahydrofuran	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS		
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection						

Submission Note

If a parameter row does not contain any values for the Sample nor Effluent Trading, then none of the following fields will be submitted for that row: Units, Number of Excursions, Frequency of Analysis, and Sample Type.

Edit Check Errors

No errors.

Comments

Wet Season Sample Date: 8/11/2016. Data matches CMC. PCBs tested using Method 608, not enough volume to retest with Method 1668A.

Attachments

No attachments.

Report Last Saved By

CITY OF ALBUQUERQUE (COA)

User:	seaton@cabq.gov
Name:	Shellie Eaton
E-Mail:	seaton@cabq.gov
Date/Time:	2017-11-29 14:39 (Time Zone: -06:00)

Report Last Signed By

User:	MLOZOYA1
Name:	Melissa Lozoya
E-Mail:	mlozoya@cabq.gov

Date/Time:	2017-11-30 10:07 (Time Zone: -06:00)

DMR Copy of Record

Permit

Permit #:	**NMR04A014**	**Permittee:**	CITY OF ALBUQUERQUE (COA)	**Facility:**	CITY OF ALBUQUERQUE MS4
Major:	No	**Permittee Address:**	ONE CIVIC PLAZA ALBUQUERQUE, NM 87102	**Facility Location:**	ONE CIVIC PLAZA ALBUQUERQUE, NM 87102
Permitted Feature:	001 External Outfall	**Discharge:**	**001-WA** ANGOSTURA DIVERSION DAM (NORTH) - WET SEASON		

Report Dates & Status

Monitoring Period:	**From 07/01/16 to 10/31/16**	**DMR Due Date:**	**12/01/16**	**Status:**	**NetDMR Validated**

Considerations for Form Completion

SEASONAL MONITORING PERIODS ARE: WET SEASON = JULY 1-OCT. 31 & DRY SEASON = NOV. 1-JUNE 30. SEPARATE DMRS REQUIRED FOR EACH SEASON. DMRS TO BE SUBMITTED DUE DEC. 1ST, FOLLOWING END OF MONIT. PERIOD. PERMIT REQUIRES A MIN. OF 7 EVENTS PER LOC. PER PERMIT TERM (3 WET SEASON, 2 DRY SEASON & 2 PERMITTEE'S CHOICE).

Principal Executive Officer

First Name:	Melissa	**Title:**	Acting Director, DMD	**Telephone:**	505-768-3661
Last Name:	Lozoya				

No Data Indicator (NODI)

Form NODI: --

Parameter		Monitoring Location	Season #	Param. NODI		Quantity or Loading						Quality or Concentration							# of Ex.	Frequency of Analysis	Sample Type
Code	Name					Qualifier 1	Value 1	Qualifier 2	Value 2	Units		Qualifier 1	Value 1	Qualifier 2	Value 2	Qualifier 3	Value 3	Units			
00010	Temperature, water deg. centigrade	1 - Effluent Gross	0	--	Sample							=	20.01	=	20.01	=	20.01	04 - deg C		03/PT - Three Per Permit Term	GR - GRAB
					Permit Req.								Req Mon DAILY MN		Req Mon DAILY AV		Req Mon DAILY MX	04 - deg C		03/PT - Three Per Permit Term	GR - GRAB
					Value NODI																
00094	Conductivity	1 - Effluent Gross	0	--	Sample									=	318	=	318	11 - umho/cm		03/PT - Three Per Permit Term	GR - GRAB
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	11 - umho/cm		03/PT - Three Per Permit Term	GR - GRAB
					Value NODI																
00300	Oxygen, dissolved [DO]	1 - Effluent Gross	0	--	Sample							=	6.24	=	6.24			19 - mg/L		03/PT - Three Per Permit Term	GR - GRAB
					Permit Req.								Req Mon DAILY MN		Req Mon DAILY AV			19 - mg/L		03/PT - Three Per Permit Term	GR - GRAB
					Value NODI																
00310	BOD, 5-day, 20 deg. C	1 - Effluent Gross	0	--	Sample									<	2	<	2	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS
					Value NODI																
00340	Oxygen demand, chem. [high level] [COD]	1 - Effluent Gross	0	--	Sample									=	12.3	=	12.3	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS
					Value NODI																
00400	pH	1 - Effluent Gross	0	--	Sample							=	8.53			=	8.53	12 - SU		03/PT - Three Per Permit Term	GR - GRAB
					Permit Req.								Req Mon MINIMUM				Req Mon MAXIMUM	12 - SU		03/PT - Three Per Permit Term	GR - GRAB
					Value NODI																
00530	Solids, total suspended	1 - Effluent Gross	0	--	Sample									=	29	=	29	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS
					Value NODI																
00556	Oil & Grease	1 - Effluent Gross	0	--	Sample																
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS
					Value NODI										B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection				
00625	Nitrogen, Kjeldahl, total [as N]	1 - Effluent Gross	0	--	Sample																
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS
					Value NODI										B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection				
00630	Nitrite + Nitrate total [as N]	1 - Effluent Gross	0	--	Sample																
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS
					Value NODI										B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection				
00665	Phosphorus, total [as P]	1 - Effluent Gross	0	--	Sample									=	0.052	=	0.052	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS
					Value NODI																
00666	Phosphorus, dissolved	1 - Effluent Gross	0	--	Sample									=	0.018	=	0.018	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS
					Value NODI																
01032	Chromium, hexavalent [as Cr]	1 - Effluent Gross	0	--	Sample																
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS
					Value NODI										B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection				
01040	Copper, dissolved [as Cu]	1 - Effluent Gross	0	--	Sample									=	2.4	=	2.4	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS
					Value NODI																
01049	Lead, dissolved [as Pb]	1 - Effluent Gross	0	--	Sample																
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS
					Value NODI										B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection				
34230	Benzo[b]fluoranthene	1 - Effluent Gross	0	--	Sample																
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS

					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection						
					Sample																	
34242	Benzo[k]fluoranthene	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS		
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection						
					Sample																	
34247	Benzo[a]pyrene	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS		
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection						
					Sample																	
34320	Chrysene	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS		
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection						
					Sample																	
34403	Indeno[1,2,3-cd]pyrene	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS		
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection						
					Sample																	
34526	Benzo[a]anthracene	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS		
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection						
					Sample																	
34556	Dibenz[a,h]anthracene	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS		
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection						
					Sample																	
39032	Pentachlorophenol	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS		
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection						
					Sample																	
39100	Di[2-ethylhexyl] phthalate [DEHP]	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS		
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection						
					Sample																	
39120	Benzidine	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS		
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection						
					Sample																	
39380	Dieldrin	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS		
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection						
					Sample								=	0.0000014	=	0.0000014	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS		
39516	Polychlorinated biphenyls [PCBs]	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS		
					Value NODI																	
					Sample								=	55.6	=	55.6	3Z - CFU/100mL		03/PT - Three Per Permit Term	GR - GRAB		
51040	E. coli	1 - Effluent Gross	0	--	Permit Req.									Req Mon DA GEOAV		Req Mon DAILY MX	3Z - CFU/100mL		03/PT - Three Per Permit Term	GR - GRAB		
					Value NODI																	
					Sample								=	201	=	201	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS		
70295	Solids, total dissolved	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS		
					Value NODI																	
					Sample								=	2.32	=	2.32	17 - pCi/L		03/PT - Three Per Permit Term	CP - COMPOS		
80029	Alpha gross radioactivity	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	17 - pCi/L		03/PT - Three Per Permit Term	CP - COMPOS		
					Value NODI																	
					Sample																	
81302	Dibenzofuran	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS		
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection						
					Sample																	
81607	Tetrahydrofuran	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS		
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection						

Submission Note

If a parameter row does not contain any values for the Sample nor Effluent Trading, then none of the following fields will be submitted for that row: Units, Number of Excursions, Frequency of Analysis, and Sample Type.

Edit Check Errors

No errors.

Comments

Wet Season Sample Date: 9/12/2016. Data matches CMC.

Attachments

No attachments.

Report Last Saved By

CITY OF ALBUQUERQUE (COA)

User:	seaton@cabq.gov
Name:	Shellie Eaton
E-Mail:	seaton@cabq.gov
Date/Time:	2017-11-29 14:30 (Time Zone: -06:00)

Report Last Signed By

User:	MLOZOYA1
Name:	Melissa Lozoya
E-Mail:	mlozoya@cabq.gov

Date/Time:	2017-11-30 10:07 (Time Zone: -06:00)

DMR Copy of Record

Permit					
Permit #:	**NMR04A014**	**Permittee:**	CITY OF ALBUQUERQUE (COA)	**Facility:**	CITY OF ALBUQUERQUE MS4
Major:	No	**Permittee Address:**	ONE CIVIC PLAZA ALBUQUERQUE, NM 87102	**Facility Location:**	ONE CIVIC PLAZA ALBUQUERQUE, NM 87102
Permitted Feature:	002 External Outfall	**Discharge:**	**002-WA** ISLETA DIVERSION DAM (SOUTH) - WET SEASON		
Report Dates & Status					
Monitoring Period:	**From 07/01/16 to 10/31/16**	**DMR Due Date:**	**12/01/16**	**Status:**	**NetDMR Validated**
Considerations for Form Completion					
SEASONAL MONITORING PERIODS ARE: WET SEASON = JULY 1-OCT. 31 & DRY SEASON = NOV. 1-JUNE 30. SEPARATE DMRS REQUIRED FOR EACH SEASON. DMRS TO BE SUBMITTED DUE DEC. 1ST, FOLLOWING END OF MONIT. PERIOD. PERMIT REQUIRES A MIN. OF 7 EVENTS PER LOC. PER PERMIT TERM (3 WET SEASON, 2 DRY SEASON & 2 PERMITTEE'S CHOICE).					
Principal Executive Officer					
First Name:	Melissa	**Title:**	Acting Director, DMD	**Telephone:**	505-768-3661
Last Name:	Lozoya				
No Data Indicator (NODI)					
Form NODI:	--				

Parameter		Monitoring Location	Season #	Param. NODI		Quantity or Loading						Quality or Concentration						# of Ex.	Frequency of Analysis	Sample Type
Code	Name					Qualifier 1	Value 1	Qualifier 2	Value 2	Units		Qualifier 1	Value 1	Qualifier 2	Value 2	Qualifier 3	Value 3	Units		
00010	Temperature, water deg. centigrade	1 - Effluent Gross	0	--	Sample							=	18.7	=	18.7	=	18.7	04 - deg C		03/PT - Three Per Permit Term	GR - GRAB
					Permit Req.								Req Mon DAILY MN		Req Mon DAILY AV		Req Mon DAILY MX	04 - deg C		03/PT - Three Per Permit Term	GR - GRAB
					Value NODI															
00094	Conductivity	1 - Effluent Gross	0	--	Sample									=	412	=	412	11 - umho/cm		03/PT - Three Per Permit Term	GR - GRAB
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	11 - umho/cm		03/PT - Three Per Permit Term	GR - GRAB
					Value NODI															
00300	Oxygen, dissolved [DO]	1 - Effluent Gross	0	--	Sample							=	6.32	=	6.32			19 - mg/L		03/PT - Three Per Permit Term	GR - GRAB
					Permit Req.								Req Mon DAILY MN		Req Mon DAILY AV			19 - mg/L		03/PT - Three Per Permit Term	GR - GRAB
					Value NODI															
00310	BOD, 5-day, 20 deg. C	1 - Effluent Gross	0	--	Sample									<	2	<	2	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS
					Value NODI															
00340	Oxygen demand, chem. [high level] [COD]	1 - Effluent Gross	0	--	Sample									=	18.6	=	18.6	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS
					Value NODI															
00400	pH	1 - Effluent Gross	0	--	Sample							=	8.45			=	8.45	12 - SU		03/PT - Three Per Permit Term	GR - GRAB
					Permit Req.								Req Mon MINIMUM				Req Mon MAXIMUM	12 - SU		03/PT - Three Per Permit Term	GR - GRAB
					Value NODI															
00530	Solids, total suspended	1 - Effluent Gross	0	--	Sample									=	130	=	130	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS
					Value NODI															
00556	Oil & Grease	1 - Effluent Gross	0	--	Sample															
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS
					Value NODI										B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection			
00625	Nitrogen, Kjeldahl, total [as N]	1 - Effluent Gross	0	--	Sample															
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS
					Value NODI										B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection			
00630	Nitrite + Nitrate total [as N]	1 - Effluent Gross	0	--	Sample									=	0.83	=	0.83	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS
					Value NODI															
00665	Phosphorus, total [as P]	1 - Effluent Gross	0	--	Sample									=	0.65	=	0.65	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS
					Value NODI															
00666	Phosphorus, dissolved	1 - Effluent Gross	0	--	Sample									=	0.5	=	0.5	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS
					Value NODI															
01032	Chromium, hexavalent [as Cr]	1 - Effluent Gross	0	--	Sample															
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS
					Value NODI										B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection			
01040	Copper, dissolved [as Cu]	1 - Effluent Gross	0	--	Sample									=	1.6	=	1.6	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS
					Value NODI															
01049	Lead, dissolved [as Pb]	1 - Effluent Gross	0	--	Sample															
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS
					Value NODI										B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection			
34230	Benzo[b]fluoranthene	1 - Effluent Gross	0	--	Sample															
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS

					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection						
					Sample																	
34242	Benzo[k]fluoranthene	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS		
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection						
					Sample																	
34247	Benzo[a]pyrene	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS		
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection						
					Sample																	
34320	Chrysene	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS		
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection						
					Sample																	
34403	Indeno[1,2,3-cd]pyrene	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS		
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection						
					Sample																	
34526	Benzo[a]anthracene	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS		
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection						
					Sample																	
34556	Dibenz[a,h]anthracene	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS		
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection						
					Sample																	
39032	Pentachlorophenol	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS		
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection						
					Sample																	
39100	Di[2-ethylhexyl] phthalate [DEHP]	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS		
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection						
					Sample																	
39120	Benzidine	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS		
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection						
					Sample																	
39380	Dieldrin	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS		
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection						
					Sample								=	0.0000027	=	0.0000027	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS		
39516	Polychlorinated biphenyls [PCBs]	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS		
					Value NODI																	
					Sample								=	959	=	959	3Z - CFU/100mL		03/PT - Three Per Permit Term	GR - GRAB		
51040	E. coli	1 - Effluent Gross	0	--	Permit Req.									Req Mon DA GEOAV		Req Mon DAILY MX	3Z - CFU/100mL		03/PT - Three Per Permit Term	GR - GRAB		
					Value NODI																	
					Sample								=	288	=	288	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS		
70295	Solids, total dissolved	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS		
					Value NODI																	
					Sample								=	6.16	=	6.16	17 - pCi/L		03/PT - Three Per Permit Term	CP - COMPOS		
80029	Alpha gross radioactivity	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	17 - pCi/L		03/PT - Three Per Permit Term	CP - COMPOS		
					Value NODI																	
					Sample																	
81302	Dibenzofuran	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS		
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection						
					Sample																	
81607	Tetrahydrofuran	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS		
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection						

Submission Note

If a parameter row does not contain any values for the Sample nor Effluent Trading, then none of the following fields will be submitted for that row: Units, Number of Excursions, Frequency of Analysis, and Sample Type.

Edit Check Errors

No errors.

Comments

Wet Season Sample Date: 913/2016. Data matches CMC.

Attachments

No attachments.

Report Last Saved By

CITY OF ALBUQUERQUE (COA)

User:	seaton@cabq.gov
Name:	Shellie Eaton
E-Mail:	seaton@cabq.gov
Date/Time:	2017-11-29 14:45 (Time Zone: -06:00)

Report Last Signed By

User:	MLOZOYA1
Name:	Melissa Lozoya
E-Mail:	mlozoya@cabq.gov

Date/Time:	2017-11-30 10:07 (Time Zone: -06:00)

DMR Copy of Record

Permit

Permit #:	**NMR04A014**	**Permittee:**	CITY OF ALBUQUERQUE (COA)	**Facility:**	CITY OF ALBUQUERQUE MS4
Major:	No	**Permittee Address:**	ONE CIVIC PLAZA ALBUQUERQUE, NM 87102	**Facility Location:**	ONE CIVIC PLAZA ALBUQUERQUE, NM 87102
Permitted Feature:	001 External Outfall	**Discharge:**	**001-WB** ANGOSTURA DIVERSION DAM (NORTH) - WET SEASON		

Report Dates & Status

Monitoring Period:	**From 07/01/16 to 10/31/16**	**DMR Due Date:**	**12/01/16**	**Status:**	**NetDMR Validated**

Considerations for Form Completion

SEASONAL MONITORING PERIODS ARE: WET SEASON = JULY 1-OCT. 31 & DRY SEASON = NOV. 1-JUNE 30. SEPARATE DMRS REQUIRED FOR EACH SEASON. DMRS TO BE SUBMITTED DUE DEC. 1ST, FOLLOWING END OF MONIT. PERIOD. PERMIT REQUIRES A MIN. OF 7 EVENTS PER LOC. PER PERMIT TERM (3 WET SEASON, 2 DRY SEASON & 2 PERMITTEE'S CHOICE).

Principal Executive Officer

First Name:	Melissa	**Title:**	Acting Director, DMD	**Telephone:**	505-768-3661
Last Name:	Lozoya				

No Data Indicator (NODI)

Form NODI: --

Parameter		Monitoring Location	Season #	Param. NODI		Quantity or Loading						Quality or Concentration							# of Ex.	Frequency of Analysis	Sample Type
Code	Name					Qualifier 1	Value 1	Qualifier 2	Value 2	Units		Qualifier 1	Value 1	Qualifier 2	Value 2	Qualifier 3	Value 3	Units			
00010	Temperature, water deg. centigrade	1 - Effluent Gross	0	--	Sample							=	20.99	=	20.99	=	20.99	04 - deg C		03/PT - Three Per Permit Term	GR - GRAB
					Permit Req.								Req Mon DAILY MN		Req Mon DAILY AV		Req Mon DAILY MX	04 - deg C		03/PT - Three Per Permit Term	GR - GRAB
					Value NODI																
00094	Conductivity	1 - Effluent Gross	0	--	Sample									=	298	=	298	11 - umho/cm		03/PT - Three Per Permit Term	GR - GRAB
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	11 - umho/cm		03/PT - Three Per Permit Term	GR - GRAB
					Value NODI																
00300	Oxygen, dissolved [DO]	1 - Effluent Gross	0	--	Sample							=	7.14	=	7.14			19 - mg/L		03/PT - Three Per Permit Term	GR - GRAB
					Permit Req.								Req Mon DAILY MN		Req Mon DAILY AV			19 - mg/L		03/PT - Three Per Permit Term	GR - GRAB
					Value NODI																
00310	BOD, 5-day, 20 deg. C	1 - Effluent Gross	0	--	Sample									<	2	<	2	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS
					Value NODI																
00340	Oxygen demand, chem. [high level] [COD]	1 - Effluent Gross	0	--	Sample									=	8.49	=	8.49	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS
					Value NODI																
00400	pH	1 - Effluent Gross	0	--	Sample							=	8.96			=	8.96	12 - SU		03/PT - Three Per Permit Term	GR - GRAB
					Permit Req.								Req Mon MINIMUM				Req Mon MAXIMUM	12 - SU		03/PT - Three Per Permit Term	GR - GRAB
					Value NODI																
00530	Solids, total suspended	1 - Effluent Gross	0	--	Sample									=	26	=	26	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS
					Value NODI																
00556	Oil & Grease	1 - Effluent Gross	0	--	Sample																
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS
					Value NODI										B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection				
00625	Nitrogen, Kjeldahl, total [as N]	1 - Effluent Gross	0	--	Sample																
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS
					Value NODI										B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection				
00630	Nitrite + Nitrate total [as N]	1 - Effluent Gross	0	--	Sample																
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS
					Value NODI										B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection				
00665	Phosphorus, total [as P]	1 - Effluent Gross	0	--	Sample									=	0.042	=	0.042	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS
					Value NODI																
00666	Phosphorus, dissolved	1 - Effluent Gross	0	--	Sample									=	0.016	=	0.016	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS
					Value NODI																
01032	Chromium, hexavalent [as Cr]	1 - Effluent Gross	0	--	Sample																
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS
					Value NODI										B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection				
01040	Copper, dissolved [as Cu]	1 - Effluent Gross	0	--	Sample									=	1.3	=	1.3	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS
					Value NODI																
01049	Lead, dissolved [as Pb]	1 - Effluent Gross	0	--	Sample																
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS
					Value NODI										B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection				
34230	Benzo[b]fluoranthene	1 - Effluent Gross	0	--	Sample																
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS

					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection					
					Sample																
34242	Benzo[k]fluoranthene	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS	
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection					
					Sample																
34247	Benzo[a]pyrene	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS	
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection					
					Sample																
34320	Chrysene	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS	
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection					
					Sample																
34403	Indeno[1,2,3-cd]pyrene	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS	
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection					
					Sample																
34526	Benzo[a]anthracene	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS	
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection					
					Sample																
34556	Dibenz[a,h]anthracene	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS	
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection					
					Sample																
39032	Pentachlorophenol	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS	
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection					
					Sample																
39100	Di[2-ethylhexyl] phthalate [DEHP]	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS	
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection					
					Sample																
39120	Benzidine	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS	
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection					
					Sample																
39380	Dieldrin	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS	
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection					
					Sample								=	0.0000015	=	0.0000015	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS	
39516	Polychlorinated biphenyls [PCBs]	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS	
					Value NODI																
					Sample								=	31.1	=	31.1	3Z - CFU/100mL		03/PT - Three Per Permit Term	GR - GRAB	
51040	E. coli	1 - Effluent Gross	0	--	Permit Req.									Req Mon DA GEOAV		Req Mon DAILY MX	3Z - CFU/100mL		03/PT - Three Per Permit Term	GR - GRAB	
					Value NODI																
					Sample								=	215	=	215	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS	
70295	Solids, total dissolved	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS	
					Value NODI																
					Sample								=	5.68	=	5.68	17 - pCi/L		03/PT - Three Per Permit Term	CP - COMPOS	
80029	Alpha gross radioactivity	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	17 - pCi/L		03/PT - Three Per Permit Term	CP - COMPOS	
					Value NODI																
					Sample																
81302	Dibenzofuran	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS	
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection					
					Sample																
81607	Tetrahydrofuran	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS	
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection					

Submission Note

If a parameter row does not contain any values for the Sample nor Effluent Trading, then none of the following fields will be submitted for that row: Units, Number of Excursions, Frequency of Analysis, and Sample Type.

Edit Check Errors

No errors.

Comments

Wet Season Sample Date: 9/21/2016. Data matches CMC.

Attachments

No attachments.

Report Last Saved By

CITY OF ALBUQUERQUE (COA)

User:	seaton@cabq.gov
Name:	Shellie Eaton
E-Mail:	seaton@cabq.gov
Date/Time:	2017-11-29 14:32 (Time Zone: -06:00)

Report Last Signed By

User:	MLOZOYA1
Name:	Melissa Lozoya
E-Mail:	mlozoya@cabq.gov

Date/Time:	2017-11-30 10:07 (Time Zone: -06:00)

DMR Copy of Record

Permit					
Permit #:	**NMR04A014**	**Permittee:**	CITY OF ALBUQUERQUE (COA)	**Facility:**	CITY OF ALBUQUERQUE MS4
Major:	No	**Permittee Address:**	ONE CIVIC PLAZA ALBUQUERQUE, NM 87102	**Facility Location:**	ONE CIVIC PLAZA ALBUQUERQUE, NM 87102
Permitted Feature:	002 External Outfall	**Discharge:**	**002-WB** ISLETA DIVERSION DAM (SOUTH) - WET SEASON		
Report Dates & Status					
Monitoring Period:	**From 07/01/16 to 10/31/16**	**DMR Due Date:**	**12/01/16**	**Status:**	**NetDMR Validated**
Considerations for Form Completion					
SEASONAL MONITORING PERIODS ARE: WET SEASON = JULY 1-OCT. 31 & DRY SEASON = NOV. 1-JUNE 30. SEPARATE DMRS REQUIRED FOR EACH SEASON. DMRS TO BE SUBMITTED DUE DEC. 1ST, FOLLOWING END OF MONIT. PERIOD. PERMIT REQUIRES A MIN. OF 7 EVENTS PER LOC. PER PERMIT TERM (3 WET SEASON, 2 DRY SEASON & 2 PERMITTEE'S CHOICE).					
Principal Executive Officer					
First Name:	Melissa	**Title:**	Acting Director, DMD	**Telephone:**	505-768-3661
Last Name:	Lozoya				
No Data Indicator (NODI)					
Form NODI:	--				

Parameter		Monitoring Location	Season #	Param. NODI		Quantity or Loading						Quality or Concentration						# of Ex.	Frequency of Analysis	Sample Type
Code	Name					Qualifier 1	Value 1	Qualifier 2	Value 2	Units		Qualifier 1	Value 1	Qualifier 2	Value 2	Qualifier 3	Value 3	Units		
00010	Temperature, water deg. centigrade	1 - Effluent Gross	0	--	Sample							=	22.03	=	22.03	=	22.03	04 - deg C		03/PT - Three Per Permit Term	GR - GRAB
					Permit Req.								Req Mon DAILY MN		Req Mon DAILY AV		Req Mon DAILY MX	04 - deg C		03/PT - Three Per Permit Term	GR - GRAB
					Value NODI															
00094	Conductivity	1 - Effluent Gross	0	--	Sample									=	436	=	436	11 - umho/cm		03/PT - Three Per Permit Term	GR - GRAB
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	11 - umho/cm		03/PT - Three Per Permit Term	GR - GRAB
					Value NODI															
00300	Oxygen, dissolved [DO]	1 - Effluent Gross	0	--	Sample							=	8.29	=	8.29			19 - mg/L		03/PT - Three Per Permit Term	GR - GRAB
					Permit Req.								Req Mon DAILY MN		Req Mon DAILY AV			19 - mg/L		03/PT - Three Per Permit Term	GR - GRAB
					Value NODI															
00310	BOD, 5-day, 20 deg. C	1 - Effluent Gross	0	--	Sample									<	2	<	2	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS
					Value NODI															
00340	Oxygen demand, chem. [high level] [COD]	1 - Effluent Gross	0	--	Sample									=	10.6	=	10.6	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS
					Value NODI															
00400	pH	1 - Effluent Gross	0	--	Sample							=	9			=	9	12 - SU		03/PT - Three Per Permit Term	GR - GRAB
					Permit Req.								Req Mon MINIMUM				Req Mon MAXIMUM	12 - SU		03/PT - Three Per Permit Term	GR - GRAB
					Value NODI															
00530	Solids, total suspended	1 - Effluent Gross	0	--	Sample									=	60	=	60	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS
					Value NODI															
00556	Oil & Grease	1 - Effluent Gross	0	--	Sample															
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS
					Value NODI										B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection			
00625	Nitrogen, Kjeldahl, total [as N]	1 - Effluent Gross	0	--	Sample															
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS
					Value NODI										B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection			
00630	Nitrite + Nitrate total [as N]	1 - Effluent Gross	0	--	Sample									=	0.95	=	0.95	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS
					Value NODI															
00665	Phosphorus, total [as P]	1 - Effluent Gross	0	--	Sample									=	0.42	=	0.42	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS
					Value NODI															
00666	Phosphorus, dissolved	1 - Effluent Gross	0	--	Sample									=	0.32	=	0.32	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS
					Value NODI															
01032	Chromium, hexavalent [as Cr]	1 - Effluent Gross	0	--	Sample															
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS
					Value NODI										B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection			
01040	Copper, dissolved [as Cu]	1 - Effluent Gross	0	--	Sample									=	1.2	=	1.2	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS
					Value NODI															
01049	Lead, dissolved [as Pb]	1 - Effluent Gross	0	--	Sample															
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS
					Value NODI										B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection			
34230	Benzo[b]fluoranthene	1 - Effluent Gross	0	--	Sample															
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS

					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection					
					Sample																
34242	Benzo[k]fluoranthene	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS	
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection					
					Sample																
34247	Benzo[a]pyrene	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS	
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection					
					Sample																
34320	Chrysene	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS	
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection					
					Sample																
34403	Indeno[1,2,3-cd]pyrene	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS	
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection					
					Sample																
34526	Benzo[a]anthracene	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS	
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection					
					Sample																
34556	Dibenz[a,h]anthracene	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS	
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection					
					Sample																
39032	Pentachlorophenol	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS	
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection					
					Sample																
39100	Di[2-ethylhexyl] phthalate [DEHP]	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS	
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection					
					Sample																
39120	Benzidine	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS	
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection					
					Sample																
39380	Dieldrin	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS	
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection					
					Sample								=	0.0000022	=	0.0000022	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS	
39516	Polychlorinated biphenyls [PCBs]	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS	
					Value NODI																
					Sample								=	517.2	=	517.2	3Z - CFU/100mL		03/PT - Three Per Permit Term	GR - GRAB	
51040	E. coli	1 - Effluent Gross	0	--	Permit Req.									Req Mon DA GEOAV		Req Mon DAILY MX	3Z - CFU/100mL		03/PT - Three Per Permit Term	GR - GRAB	
					Value NODI																
					Sample								=	301	=	301	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS	
70295	Solids, total dissolved	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		03/PT - Three Per Permit Term	CP - COMPOS	
					Value NODI																
					Sample								=	2.25	=	2.25	17 - pCi/L		03/PT - Three Per Permit Term	CP - COMPOS	
80029	Alpha gross radioactivity	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	17 - pCi/L		03/PT - Three Per Permit Term	CP - COMPOS	
					Value NODI																
					Sample																
81302	Dibenzofuran	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS	
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection					
					Sample																
81607	Tetrahydrofuran	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		03/PT - Three Per Permit Term	CP - COMPOS	
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection					

Submission Note

If a parameter row does not contain any values for the Sample nor Effluent Trading, then none of the following fields will be submitted for that row: Units, Number of Excursions, Frequency of Analysis, and Sample Type.

Edit Check Errors

No errors.

Comments

Wet Season Sample Date: 9/22/2016. Data matches CMC.

Attachments

No attachments.

Report Last Saved By

CITY OF ALBUQUERQUE (COA)

User:	seaton@cabq.gov
Name:	Shellie Eaton
E-Mail:	seaton@cabq.gov
Date/Time:	2017-11-29 14:50 (Time Zone: -06:00)

Report Last Signed By

User:	MLOZOYA1
Name:	Melissa Lozoya
E-Mail:	mlozoya@cabq.gov

Date/Time:	2017-11-30 10:07 (Time Zone: -06:00)

DMR Copy of Record

Permit					
Permit #:	**NMR04A014**	**Permittee:**	CITY OF ALBUQUERQUE (COA)	**Facility:**	CITY OF ALBUQUERQUE MS4
Major:	No	**Permittee Address:**	ONE CIVIC PLAZA ALBUQUERQUE, NM 87102	**Facility Location:**	ONE CIVIC PLAZA ALBUQUERQUE, NM 87102
Permitted Feature:	001 External Outfall	**Discharge:**	**001-D** ANGOSTURA DIVERSION DAM (NORTH) - DRY SEASON		
Report Dates & Status					
Monitoring Period:	**From 11/01/16 to 06/30/17**	**DMR Due Date:**	**12/01/17**	**Status:**	**NetDMR Validated**
Considerations for Form Completion					
SEASONAL MONITORING PERIODS ARE: WET SEASON = JULY 1-OCT. 31 & DRY SEASON = NOV. 1-JUNE 30. SEPARATE DMRS REQUIRED FOR EACH SEASON. DMRS TO BE SUBMITTED DUE DEC. 1ST, FOLLOWING END OF MONIT. PERIOD. PERMIT REQUIRES A MIN. OF 7 EVENTS PER LOC. PER PERMIT TERM (3 WET SEASON, 2 DRY SEASON & 2 PERMITTEE'S CHOICE).					
Principal Executive Officer					
First Name:	Melissa	**Title:**	Acting Director, DMD	**Telephone:**	505-768-3661
Last Name:	Lozoya				
No Data Indicator (NODI)					
Form NODI:	--				

Parameter		Monitoring Location	Season #	Param. NODI		Quantity or Loading						Quality or Concentration						# of Ex.	Frequency of Analysis	Sample Type
Code	Name					Qualifier 1	Value 1	Qualifier 2	Value 2	Units	Qualifier 1	Value 1	Qualifier 2	Value 2	Qualifier 3	Value 3	Units			
00010	Temperature, water deg. centigrade	1 - Effluent Gross	0	--	Sample						=	10.36	=	10.36	=	10.36	04 - deg C		02/PT - Twice Per Permit Term	GR - GRAB
					Permit Req.							Req Mon DAILY MN		Req Mon DAILY AV		Req Mon DAILY MX	04 - deg C		02/PT - Twice Per Permit Term	GR - GRAB
					Value NODI															
00094	Conductivity	1 - Effluent Gross	0	--	Sample								=	305	=	305	11 - umho/cm		02/PT - Twice Per Permit Term	GR - GRAB
					Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	11 - umho/cm		02/PT - Twice Per Permit Term	GR - GRAB
					Value NODI															
00300	Oxygen, dissolved [DO]	1 - Effluent Gross	0	--	Sample						=	10.62	=	10.62			19 - mg/L		02/PT - Twice Per Permit Term	GR - GRAB
					Permit Req.							Req Mon DAILY MN		Req Mon DAILY AV			19 - mg/L		02/PT - Twice Per Permit Term	GR - GRAB
					Value NODI															
00310	BOD, 5-day, 20 deg. C	1 - Effluent Gross	0	--	Sample								<	2	<	2	19 - mg/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI															
00340	Oxygen demand, chem. [high level] [COD]	1 - Effluent Gross	0	--	Sample								=	16.4	=	16.4	19 - mg/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI															
00400	pH	1 - Effluent Gross	0	--	Sample						=	8.4			=	8.4	12 - SU		02/PT - Twice Per Permit Term	GR - GRAB
					Permit Req.							Req Mon MINIMUM				Req Mon MAXIMUM	12 - SU		02/PT - Twice Per Permit Term	GR - GRAB
					Value NODI															
00530	Solids, total suspended	1 - Effluent Gross	0	--	Sample								=	27	=	27	19 - mg/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI															
00556	Oil & Grease	1 - Effluent Gross	0	--	Sample															
					Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection				
00625	Nitrogen, Kjeldahl, total [as N]	1 - Effluent Gross	0	--	Sample															
					Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection				
00630	Nitrite + Nitrate total [as N]	1 - Effluent Gross	0	--	Sample															
					Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection				
00665	Phosphorus, total [as P]	1 - Effluent Gross	0	--	Sample								=	0.042	=	0.042	19 - mg/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI															
00666	Phosphorus, dissolved	1 - Effluent Gross	0	--	Sample								=	0.012	=	0.012	19 - mg/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI															
01032	Chromium, hexavalent [as Cr]	1 - Effluent Gross	0	--	Sample															
					Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection				
01040	Copper, dissolved [as Cu]	1 - Effluent Gross	0	--	Sample															
					Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection				
01049	Lead, dissolved [as Pb]	1 - Effluent Gross	0	--	Sample															
					Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection				
34230	Benzo[b]fluoranthene	1 - Effluent Gross	0	--	Sample															
					Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS

					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection						
					Sample																	
34242	Benzo[k]fluoranthene	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS		
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection						
					Sample																	
34247	Benzo[a]pyrene	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS		
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection						
					Sample																	
34320	Chrysene	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY MN		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS		
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection						
					Sample																	
34403	Indeno[1,2,3-cd]pyrene	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS		
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection						
					Sample																	
34526	Benzo[a]anthracene	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS		
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection						
					Sample																	
34556	Dibenz[a,h]anthracene	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS		
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection						
					Sample																	
39032	Pentachlorophenol	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS		
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection						
					Sample																	
39100	Di[2-ethylhexyl] phthalate [DEHP]	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS		
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection						
					Sample																	
39120	Benzidine	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS		
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection						
					Sample																	
39380	Dieldrin	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS		
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection						
					Sample								=	0.0000001	=	0.0000001	19 - mg/L		02/PT - Twice Per Permit Term	CP - COMPOS		
39516	Polychlorinated biphenyls [PCBs]	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		02/PT - Twice Per Permit Term	CP - COMPOS		
					Value NODI																	
					Sample								=	43.5	=	43.5	3Z - CFU/100mL		02/PT - Twice Per Permit Term	GR - GRAB		
51040	E. coli	1 - Effluent Gross	0	--	Permit Req.									Req Mon DA GEOAV		Req Mon DAILY MX	3Z - CFU/100mL		02/PT - Twice Per Permit Term	GR - GRAB		
					Value NODI																	
					Sample								=	213	=	213	19 - mg/L		02/PT - Twice Per Permit Term	CP - COMPOS		
70295	Solids, total dissolved	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		02/PT - Twice Per Permit Term	CP - COMPOS		
					Value NODI																	
					Sample								=	3.11	=	3.11	17 - pCi/L		02/PT - Twice Per Permit Term	CP - COMPOS		
80029	Alpha gross radioactivity	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	17 - pCi/L		02/PT - Twice Per Permit Term	CP - COMPOS		
					Value NODI																	
					Sample																	
81302	Dibenzofuran	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS		
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection						
					Sample																	
81607	Tetrahydrofuran	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY MN		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS		
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection						

Submission Note

If a parameter row does not contain any values for the Sample nor Effluent Trading, then none of the following fields will be submitted for that row: Units, Number of Excursions, Frequency of Analysis, and Sample Type.

Edit Check Errors

No errors.

Comments

Dry Season Sample Date: 11/21/2016. Data matches CMC.

Attachments

No attachments.

Report Last Saved By

CITY OF ALBUQUERQUE (COA)

User:	seaton@cabq.gov
Name:	Shellie Eaton
E-Mail:	seaton@cabq.gov
Date/Time:	2017-11-29 15:24 (Time Zone: -06:00)

Report Last Signed By

User:	MLOZOYA1
Name:	Melissa Lozoya
E-Mail:	mlozoya@cabq.gov

Date/Time:	2017-11-30 10:07 (Time Zone: -06:00)

DMR Copy of Record

Permit					
Permit #:	**NMR04A014**	**Permittee:**	CITY OF ALBUQUERQUE (COA)	**Facility:**	CITY OF ALBUQUERQUE MS4
Major:	No	**Permittee Address:**	ONE CIVIC PLAZA ALBUQUERQUE, NM 87102	**Facility Location:**	ONE CIVIC PLAZA ALBUQUERQUE, NM 87102
Permitted Feature:	002 External Outfall	**Discharge:**	**002-D** ISLETA DIVERSION DAM (SOUTH) - DRY SEASON		
Report Dates & Status					
Monitoring Period:	**From 11/01/16 to 06/30/17**	**DMR Due Date:**	**12/01/17**	**Status:**	**NetDMR Validated**
Considerations for Form Completion					
SEASONAL MONITORING PERIODS ARE: WET SEASON = JULY 1-OCT. 31 & DRY SEASON = NOV. 1-JUNE 30. SEPARATE DMRS REQUIRED FOR EACH SEASON. DMRS TO BE SUBMITTED DUE DEC. 1ST, FOLLOWING END OF MONIT. PERIOD. PERMIT REQUIRES A MIN. OF 7 EVENTS PER LOC. PER PERMIT TERM (3 WET SEASON, 2 DRY SEASON & 2 PERMITTEE'S CHOICE).					
Principal Executive Officer					
First Name:	Melissa	**Title:**	Acting Director, DMD	**Telephone:**	505-768-3661
Last Name:	Lozoya				
No Data Indicator (NODI)					
Form NODI:	--				

Parameter		Monitoring Location	Season #	Param. NODI		Quantity or Loading						Quality or Concentration						# of Ex.	Frequency of Analysis	Sample Type
Code	Name					Qualifier 1	Value 1	Qualifier 2	Value 2	Units		Qualifier 1	Value 1	Qualifier 2	Value 2	Qualifier 3	Value 3	Units		
00010	Temperature, water deg. centigrade	1 - Effluent Gross	0	--	Sample							=	9.3	=	9.3	=	9.3	04 - deg C		02/PT - Twice Per Permit Term	GR - GRAB
					Permit Req.								Req Mon DAILY MN		Req Mon DAILY AV		Req Mon DAILY MX	04 - deg C		02/PT - Twice Per Permit Term	GR - GRAB
					Value NODI																
00094	Conductivity	1 - Effluent Gross	0	--	Sample									=	367	=	367	11 - umho/cm		02/PT - Twice Per Permit Term	GR - GRAB
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	11 - umho/cm		02/PT - Twice Per Permit Term	GR - GRAB
					Value NODI																
00300	Oxygen, dissolved [DO]	1 - Effluent Gross	0	--	Sample							=	8.01	=	8.01			19 - mg/L		02/PT - Twice Per Permit Term	GR - GRAB
					Permit Req.								Req Mon DAILY MN		Req Mon DAILY AV			19 - mg/L		02/PT - Twice Per Permit Term	GR - GRAB
					Value NODI																
00310	BOD, 5-day, 20 deg. C	1 - Effluent Gross	0	--	Sample									=	3	=	3	19 - mg/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI																
00340	Oxygen demand, chem. [high level] [COD]	1 - Effluent Gross	0	--	Sample									=	23.1	=	23.1	19 - mg/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI																
00400	pH	1 - Effluent Gross	0	--	Sample							=	8.08			=	8.08	12 - SU		02/PT - Twice Per Permit Term	GR - GRAB
					Permit Req.								Req Mon MINIMUM				Req Mon MAXIMUM	12 - SU		02/PT - Twice Per Permit Term	GR - GRAB
					Value NODI																
00530	Solids, total suspended	1 - Effluent Gross	0	--	Sample									=	340	=	340	19 - mg/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI																
00556	Oil & Grease	1 - Effluent Gross	0	--	Sample																
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI										B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection				
00625	Nitrogen, Kjeldahl, total [as N]	1 - Effluent Gross	0	--	Sample									=	2.2	=	2.2	19 - mg/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI																
00630	Nitrite + Nitrate total [as N]	1 - Effluent Gross	0	--	Sample									=	0.68	=	0.68	19 - mg/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI																
00665	Phosphorus, total [as P]	1 - Effluent Gross	0	--	Sample									=	0.55	=	0.55	19 - mg/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI																
00666	Phosphorus, dissolved	1 - Effluent Gross	0	--	Sample									=	0.3	=	0.3	19 - mg/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI																
01032	Chromium, hexavalent [as Cr]	1 - Effluent Gross	0	--	Sample																
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI										B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection				
01040	Copper, dissolved [as Cu]	1 - Effluent Gross	0	--	Sample																
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI										B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection				
01049	Lead, dissolved [as Pb]	1 - Effluent Gross	0	--	Sample																
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI										B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection				
34230	Benzo[b]fluoranthene	1 - Effluent Gross	0	--	Sample																
					Permit Req.										Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS

					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection						
					Sample																	
34242	Benzo[k]fluoranthene	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS		
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection						
					Sample																	
34247	Benzo[a]pyrene	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS		
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection						
					Sample																	
34320	Chrysene	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY MN		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS		
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection						
					Sample																	
34403	Indeno[1,2,3-cd]pyrene	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS		
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection						
					Sample																	
34526	Benzo[a]anthracene	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS		
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection						
					Sample																	
34556	Dibenz[a,h]anthracene	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS		
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection						
					Sample																	
39032	Pentachlorophenol	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS		
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection						
					Sample																	
39100	Di[2-ethylhexyl] phthalate [DEHP]	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS		
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection						
					Sample																	
39120	Benzidine	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS		
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection						
					Sample																	
39380	Dieldrin	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS		
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection						
					Sample								=	0.0000017	=	0.0000017	19 - mg/L		02/PT - Twice Per Permit Term	CP - COMPOS		
39516	Polychlorinated biphenyls [PCBs]	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		02/PT - Twice Per Permit Term	CP - COMPOS		
					Value NODI																	
					Sample								=	7270	=	7270	3Z - CFU/100mL		02/PT - Twice Per Permit Term	GR - GRAB		
51040	E. coli	1 - Effluent Gross	0	--	Permit Req.									Req Mon DA GEOAV		Req Mon DAILY MX	3Z - CFU/100mL		02/PT - Twice Per Permit Term	GR - GRAB		
					Value NODI																	
					Sample								=	248	=	248	19 - mg/L		02/PT - Twice Per Permit Term	CP - COMPOS		
70295	Solids, total dissolved	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		02/PT - Twice Per Permit Term	CP - COMPOS		
					Value NODI																	
					Sample								=	7.26	=	7.26	17 - pCi/L		02/PT - Twice Per Permit Term	CP - COMPOS		
80029	Alpha gross radioactivity	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	17 - pCi/L		02/PT - Twice Per Permit Term	CP - COMPOS		
					Value NODI																	
					Sample																	
81302	Dibenzofuran	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS		
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection						
					Sample																	
81607	Tetrahydrofuran	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY MN		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS		
					Value NODI									B - Below Detection Limit/No Detection		B - Below Detection Limit/No Detection						

Submission Note

If a parameter row does not contain any values for the Sample nor Effluent Trading, then none of the following fields will be submitted for that row: Units, Number of Excursions, Frequency of Analysis, and Sample Type.

Edit Check Errors

No errors.

Comments

Dry Season Sampling Date: 11/22/2016. Data matches CMC.

Attachments

No attachments.

Report Last Saved By

CITY OF ALBUQUERQUE (COA)

User:	seaton@cabq.gov
Name:	Shellie Eaton
E-Mail:	seaton@cabq.gov
Date/Time:	2017-11-29 15:24 (Time Zone: -06:00)

Report Last Signed By

User:	MLOZOYA1
Name:	Melissa Lozoya
E-Mail:	mlozoya@cabq.gov

Date/Time:	2017-11-30 10:07 (Time Zone: -06:00)

DMR Copy of Record

Permit

Permit #:	**NMR04A014**	**Permittee:**	CITY OF ALBUQUERQUE (COA)	**Facility:**	CITY OF ALBUQUERQUE MS4
Major:	No	**Permittee Address:**	ONE CIVIC PLAZA ALBUQUERQUE, NM 87102	**Facility Location:**	ONE CIVIC PLAZA ALBUQUERQUE, NM 87102
Permitted Feature:	001 External Outfall	**Discharge:**	**001-DA** ANGOSTURA DIVERSION DAM (NORTH) - DRY SEASON		

Report Dates & Status

Monitoring Period:	**From 11/01/16 to 06/30/17**	**DMR Due Date:**	**12/01/17**	**Status:**	**NetDMR Validated**

Considerations for Form Completion

SEASONAL MONITORING PERIODS ARE: WET SEASON = JULY 1-OCT. 31 & DRY SEASON = NOV. 1-JUNE 30. SEPARATE DMRS REQUIRED FOR EACH SEASON. DMRS TO BE SUBMITTED DUE DEC. 1ST, FOLLOWING END OF MONIT. PERIOD. PERMIT REQUIRES A MIN. OF 7 EVENTS PER LOC. PER PERMIT TERM (3 WET SEASON, 2 DRY SEASON & 2 PERMITTEE'S CHOICE).

Principal Executive Officer

First Name:	Melissa	**Title:**	Acting Director, DMD	**Telephone:**	505-768-3661
Last Name:	Lozoya				

No Data Indicator (NODI)

Form NODI: --

Parameter		Monitoring Location	Season #	Param. NODI		Quantity or Loading					Quality or Concentration						# of Ex.	Frequency of Analysis	Sample Type
Code	Name					Qualifier 1	Value 1	Qualifier 2	Value 2	Units	Qualifier 1	Value 1	Qualifier 2	Value 2	Qualifier 3	Value 3	Units			
00010	Temperature, water deg. centigrade	1 - Effluent Gross	0	--	Sample															
					Permit Req.							Req Mon DAILY MN		Req Mon DAILY AV		Req Mon DAILY MX	04 - deg C		02/PT - Twice Per Permit Term	GR - GRAB
					Value NODI							9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
00094	Conductivity	1 - Effluent Gross	0	--	Sample															
					Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	11 - umho/cm		02/PT - Twice Per Permit Term	GR - GRAB
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
00300	Oxygen, dissolved [DO]	1 - Effluent Gross	0	--	Sample															
					Permit Req.							Req Mon DAILY MN		Req Mon DAILY AV			19 - mg/L		02/PT - Twice Per Permit Term	GR - GRAB
					Value NODI							9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period						
00310	BOD, 5-day, 20 deg. C	1 - Effluent Gross	0	--	Sample															
					Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
00340	Oxygen demand, chem. [high level] [COD]	1 - Effluent Gross	0	--	Sample															
					Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
00400	pH	1 - Effluent Gross	0	--	Sample															
					Permit Req.							Req Mon MINIMUM				Req Mon MAXIMUM	12 - SU		02/PT - Twice Per Permit Term	GR - GRAB
					Value NODI							9 - Conditional Monitoring - Not Required This Period				9 - Conditional Monitoring - Not Required This Period				
00530	Solids, total suspended	1 - Effluent Gross	0	--	Sample															
					Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
00556	Oil & Grease	1 - Effluent Gross	0	--	Sample															
					Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
00625	Nitrogen, Kjeldahl, total [as N]	1 - Effluent Gross	0	--	Sample															
					Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
00630	Nitrite + Nitrate total [as N]	1 - Effluent Gross	0	--	Sample															
					Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
					Sample															

00665	Phosphorus, total [as P]	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
					Sample															
00666	Phosphorus, dissolved	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
					Sample															
01032	Chromium, hexavalent [as Cr]	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
					Sample															
01040	Copper, dissolved [as Cu]	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
					Sample															
01049	Lead, dissolved [as Pb]	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
					Sample															
34230	Benzo[b]fluoranthene	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
					Sample															
34242	Benzo[k]fluoranthene	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
					Sample															
34247	Benzo[a]pyrene	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
					Sample															
34320	Chrysene	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY MN		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
					Sample															
34403	Indeno[1,2,3-cd]pyrene	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
					Sample															
34526	Benzo[a]anthracene	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
					Sample															
34556	Dibenz[a,h]anthracene	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
					Sample															
39032	Pentachlorophenol	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
					Sample															
39100	Di[2-ethylhexyl] phthalate [DEHP]	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
					Sample															
39120	Benzidine	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
					Sample															
39380	Dieldrin	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
					Sample															
					Permit														02/PT - Twice Per Permit	CP -

39516	Polychlorinated biphenyls [PCBs]	1 - Effluent Gross	0	--	Req.								Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		Term	COMPOS
					Value NODI								9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
51040	E. coli	1 - Effluent Gross	0	--	Sample														
					Permit Req.								Req Mon DA GEOAV		Req Mon DAILY MX	3Z - CFU/100mL		02/PT - Twice Per Permit Term	GR - GRAB
					Value NODI								9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
70295	Solids, total dissolved	1 - Effluent Gross	0	--	Sample														
					Permit Req.								Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI								9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
80029	Alpha gross radioactivity	1 - Effluent Gross	0	--	Sample														
					Permit Req.								Req Mon DAILY AV		Req Mon DAILY MX	17 - pCi/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI								9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
81302	Dibenzofuran	1 - Effluent Gross	0	--	Sample														
					Permit Req.								Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI								9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
81607	Tetrahydrofuran	1 - Effluent Gross	0	--	Sample														
					Permit Req.								Req Mon DAILY MN		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI								9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				

Submission Note

If a parameter row does not contain any values for the Sample nor Effluent Trading, then none of the following fields will be submitted for that row: Units, Number of Excursions, Frequency of Analysis, and Sample Type.

Edit Check Errors

No errors.

Comments

One dry sample was obtained during this monitoring period reported on 001-D - no additional sampling was required during this period.

Attachments

No attachments.

Report Last Saved By

CITY OF ALBUQUERQUE (COA)

User:	seaton@cabq.gov
Name:	Shellie Eaton
E-Mail:	seaton@cabq.gov
Date/Time:	2017-11-29 15:34 (Time Zone: -06:00)

Report Last Signed By

User:	MLOZOYA1
Name:	Melissa Lozoya
E-Mail:	mlozoya@cabq.gov
Date/Time:	2017-11-30 10:07 (Time Zone: -06:00)

DMR Copy of Record

Permit

Permit #:	**NMR04A014**	**Permittee:**	CITY OF ALBUQUERQUE (COA)	**Facility:**	CITY OF ALBUQUERQUE MS4
Major:	No	**Permittee Address:**	ONE CIVIC PLAZA ALBUQUERQUE, NM 87102	**Facility Location:**	ONE CIVIC PLAZA ALBUQUERQUE, NM 87102
Permitted Feature:	002 External Outfall	**Discharge:**	**002-DA** ISLETA DIVERSION DAM (SOUTH) - DRY SEASON		

Report Dates & Status

Monitoring Period:	**From 11/01/16 to 06/30/17**	**DMR Due Date:**	**12/01/17**	**Status:**	**NetDMR Validated**

Considerations for Form Completion

SEASONAL MONITORING PERIODS ARE: WET SEASON = JULY 1-OCT. 31 & DRY SEASON = NOV. 1-JUNE 30. SEPARATE DMRS REQUIRED FOR EACH SEASON. DMRS TO BE SUBMITTED DUE DEC. 1ST, FOLLOWING END OF MONIT. PERIOD. PERMIT REQUIRES A MIN. OF 7 EVENTS PER LOC. PER PERMIT TERM (3 WET SEASON, 2 DRY SEASON & 2 PERMITTEE'S CHOICE).

Principal Executive Officer

First Name:	Melissa	**Title:**	Acting Director, DMD	**Telephone:**	505-768-3661
Last Name:	Lozoya				

No Data Indicator (NODI)

Form NODI: --

Parameter		Monitoring Location	Season #	Param. NODI		Quantity or Loading					Quality or Concentration						# of Ex.	Frequency of Analysis	Sample Type
Code	Name					Qualifier 1	Value 1	Qualifier 2	Value 2	Units	Qualifier 1	Value 1	Qualifier 2	Value 2	Qualifier 3	Value 3	Units			
00010	Temperature, water deg. centigrade	1 - Effluent Gross	0	--	Sample															
					Permit Req.							Req Mon DAILY MN		Req Mon DAILY AV		Req Mon DAILY MX	04 - deg C		02/PT - Twice Per Permit Term	GR - GRAB
					Value NODI							9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
00094	Conductivity	1 - Effluent Gross	0	--	Sample															
					Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	11 - umho/cm		02/PT - Twice Per Permit Term	GR - GRAB
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
00300	Oxygen, dissolved [DO]	1 - Effluent Gross	0	--	Sample															
					Permit Req.							Req Mon DAILY MN		Req Mon DAILY AV			19 - mg/L		02/PT - Twice Per Permit Term	GR - GRAB
					Value NODI							9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period						
00310	BOD, 5-day, 20 deg. C	1 - Effluent Gross	0	--	Sample															
					Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
00340	Oxygen demand, chem. [high level] [COD]	1 - Effluent Gross	0	--	Sample															
					Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
00400	pH	1 - Effluent Gross	0	--	Sample															
					Permit Req.							Req Mon MINIMUM				Req Mon MAXIMUM	12 - SU		02/PT - Twice Per Permit Term	GR - GRAB
					Value NODI							9 - Conditional Monitoring - Not Required This Period				9 - Conditional Monitoring - Not Required This Period				
00530	Solids, total suspended	1 - Effluent Gross	0	--	Sample															
					Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
00556	Oil & Grease	1 - Effluent Gross	0	--	Sample															
					Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
00625	Nitrogen, Kjeldahl, total [as N]	1 - Effluent Gross	0	--	Sample															
					Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
00630	Nitrite + Nitrate total [as N]	1 - Effluent Gross	0	--	Sample															
					Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
					Sample															

00665	Phosphorus, total [as P]	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
					Sample															
00666	Phosphorus, dissolved	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
					Sample															
01032	Chromium, hexavalent [as Cr]	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
					Sample															
01040	Copper, dissolved [as Cu]	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
					Sample															
01049	Lead, dissolved [as Pb]	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
					Sample															
34230	Benzo[b]fluoranthene	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
					Sample															
34242	Benzo[k]fluoranthene	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
					Sample															
34247	Benzo[a]pyrene	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
					Sample															
34320	Chrysene	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY MN		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
					Sample															
34403	Indeno[1,2,3-cd]pyrene	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
					Sample															
34526	Benzo[a]anthracene	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
					Sample															
34556	Dibenz[a,h]anthracene	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
					Sample															
39032	Pentachlorophenol	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
					Sample															
39100	Di[2-ethylhexyl] phthalate [DEHP]	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
					Sample															
39120	Benzidine	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
					Sample															
39380	Dieldrin	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
					Sample															
					Permit														02/PT - Twice Per Permit	CP -

39516	Polychlorinated biphenyls [PCBs]	1 - Effluent Gross	0	--	Req.								Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		Term	COMPOS
					Value NODI								9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
51040	E. coli	1 - Effluent Gross	0	--	Sample														
					Permit Req.								Req Mon DA GEOAV		Req Mon DAILY MX	3Z - CFU/100mL		02/PT - Twice Per Permit Term	GR - GRAB
					Value NODI								9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
70295	Solids, total dissolved	1 - Effluent Gross	0	--	Sample														
					Permit Req.								Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI								9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
80029	Alpha gross radioactivity	1 - Effluent Gross	0	--	Sample														
					Permit Req.								Req Mon DAILY AV		Req Mon DAILY MX	17 - pCi/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI								9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
81302	Dibenzofuran	1 - Effluent Gross	0	--	Sample														
					Permit Req.								Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI								9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
81607	Tetrahydrofuran	1 - Effluent Gross	0	--	Sample														
					Permit Req.								Req Mon DAILY MN		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI								9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				

Submission Note

If a parameter row does not contain any values for the Sample nor Effluent Trading, then none of the following fields will be submitted for that row: Units, Number of Excursions, Frequency of Analysis, and Sample Type.

Edit Check Errors

No errors.

Comments

One dry sample was obtained during this monitoring period reported on 002-D - no additional sampling was required during this period.

Attachments

No attachments.

Report Last Saved By

CITY OF ALBUQUERQUE (COA)

User:	seaton@cabq.gov
Name:	Shellie Eaton
E-Mail:	seaton@cabq.gov
Date/Time:	2017-11-29 15:35 (Time Zone: -06:00)

Report Last Signed By

User:	MLOZOYA1
Name:	Melissa Lozoya
E-Mail:	mlozoya@cabq.gov
Date/Time:	2017-11-30 10:07 (Time Zone: -06:00)

DMR Copy of Record

Permit					
Permit #:	**NMR04A014**	**Permittee:**	CITY OF ALBUQUERQUE (COA)	**Facility:**	CITY OF ALBUQUERQUE MS4
Major:	No	**Permittee Address:**	ONE CIVIC PLAZA ALBUQUERQUE, NM 87102	**Facility Location:**	ONE CIVIC PLAZA ALBUQUERQUE, NM 87102
Permitted Feature:	001 External Outfall	**Discharge:**	**001-DB** ANGOSTURA DIVERSION DAM (NORTH) - DRY SEASON		
Report Dates & Status					
Monitoring Period:	**From 11/01/16 to 06/30/17**	**DMR Due Date:**	**12/01/17**	**Status:**	**NetDMR Validated**
Considerations for Form Completion					
SEASONAL MONITORING PERIODS ARE: WET SEASON = JULY 1-OCT. 31 & DRY SEASON = NOV. 1-JUNE 30. SEPARATE DMRS REQUIRED FOR EACH SEASON. DMRS TO BE SUBMITTED DUE DEC. 1ST, FOLLOWING END OF MONIT. PERIOD. PERMIT REQUIRES A MIN. OF 7 EVENTS PER LOC. PER PERMIT TERM (3 WET SEASON, 2 DRY SEASON & 2 PERMITTEE'S CHOICE).					
Principal Executive Officer					
First Name:	Melissa	**Title:**	Acting Director, DMD	**Telephone:**	505-768-3661
Last Name:	Lozoya				
No Data Indicator (NODI)					
Form NODI:	--				

Parameter		Monitoring Location	Season #	Param. NODI		Quantity or Loading					Quality or Concentration						# of Ex.	Frequency of Analysis	Sample Type
Code	Name					Qualifier 1	Value 1	Qualifier 2	Value 2	Units	Qualifier 1	Value 1	Qualifier 2	Value 2	Qualifier 3	Value 3	Units			
00010	Temperature, water deg. centigrade	1 - Effluent Gross	0	--	Sample															
					Permit Req.							Req Mon DAILY MN		Req Mon DAILY AV		Req Mon DAILY MX	04 - deg C		02/PT - Twice Per Permit Term	GR - GRAB
					Value NODI							9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
00094	Conductivity	1 - Effluent Gross	0	--	Sample															
					Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	11 - umho/cm		02/PT - Twice Per Permit Term	GR - GRAB
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
00300	Oxygen, dissolved [DO]	1 - Effluent Gross	0	--	Sample															
					Permit Req.							Req Mon DAILY MN		Req Mon DAILY AV			19 - mg/L		02/PT - Twice Per Permit Term	GR - GRAB
					Value NODI							9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period						
00310	BOD, 5-day, 20 deg. C	1 - Effluent Gross	0	--	Sample															
					Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
00340	Oxygen demand, chem. [high level] [COD]	1 - Effluent Gross	0	--	Sample															
					Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
00400	pH	1 - Effluent Gross	0	--	Sample															
					Permit Req.							Req Mon MINIMUM				Req Mon MAXIMUM	12 - SU		02/PT - Twice Per Permit Term	GR - GRAB
					Value NODI							9 - Conditional Monitoring - Not Required This Period				9 - Conditional Monitoring - Not Required This Period				
00530	Solids, total suspended	1 - Effluent Gross	0	--	Sample															
					Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
00556	Oil & Grease	1 - Effluent Gross	0	--	Sample															
					Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
00625	Nitrogen, Kjeldahl, total [as N]	1 - Effluent Gross	0	--	Sample															
					Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
00630	Nitrite + Nitrate total [as N]	1 - Effluent Gross	0	--	Sample															
					Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
					Sample															

00665	Phosphorus, total [as P]	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
					Sample															
00666	Phosphorus, dissolved	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
					Sample															
01032	Chromium, hexavalent [as Cr]	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
					Sample															
01040	Copper, dissolved [as Cu]	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
					Sample															
01049	Lead, dissolved [as Pb]	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
					Sample															
34230	Benzo[b]fluoranthene	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
					Sample															
34242	Benzo[k]fluoranthene	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
					Sample															
34247	Benzo[a]pyrene	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
					Sample															
34320	Chrysene	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY MN		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
					Sample															
34403	Indeno[1,2,3-cd]pyrene	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
					Sample															
34526	Benzo[a]anthracene	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
					Sample															
34556	Dibenz[a,h]anthracene	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
					Sample															
39032	Pentachlorophenol	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
					Sample															
39100	Di[2-ethylhexyl] phthalate [DEHP]	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
					Sample															
39120	Benzidine	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
					Sample															
39380	Dieldrin	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
					Sample															
					Permit														02/PT - Twice Per Permit	CP -

39516	Polychlorinated biphenyls [PCBs]	1 - Effluent Gross	0	--	Req.								Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		Term	COMPOS
					Value NODI								9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
51040	E. coli	1 - Effluent Gross	0	--	Sample														
					Permit Req.								Req Mon DA GEOAV		Req Mon DAILY MX	3Z - CFU/100mL		02/PT - Twice Per Permit Term	GR - GRAB
					Value NODI								9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
70295	Solids, total dissolved	1 - Effluent Gross	0	--	Sample														
					Permit Req.								Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI								9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
80029	Alpha gross radioactivity	1 - Effluent Gross	0	--	Sample														
					Permit Req.								Req Mon DAILY AV		Req Mon DAILY MX	17 - pCi/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI								9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
81302	Dibenzofuran	1 - Effluent Gross	0	--	Sample														
					Permit Req.								Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI								9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
81607	Tetrahydrofuran	1 - Effluent Gross	0	--	Sample														
					Permit Req.								Req Mon DAILY MN		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI								9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				

Submission Note

If a parameter row does not contain any values for the Sample nor Effluent Trading, then none of the following fields will be submitted for that row: Units, Number of Excursions, Frequency of Analysis, and Sample Type.

Edit Check Errors

No errors.

Comments

One dry sample was obtained during this monitoring period reported on 001-D - no additional sampling was required during this period.

Attachments

No attachments.

Report Last Saved By

CITY OF ALBUQUERQUE (COA)

User:	seaton@cabq.gov
Name:	Shellie Eaton
E-Mail:	seaton@cabq.gov
Date/Time:	2017-11-29 15:34 (Time Zone: -06:00)

Report Last Signed By

User:	MLOZOYA1
Name:	Melissa Lozoya
E-Mail:	mlozoya@cabq.gov
Date/Time:	2017-11-30 10:07 (Time Zone: -06:00)

DMR Copy of Record

Permit					
Permit #:	**NMR04A014**	**Permittee:**	CITY OF ALBUQUERQUE (COA)	**Facility:**	CITY OF ALBUQUERQUE MS4
Major:	No	**Permittee Address:**	ONE CIVIC PLAZA ALBUQUERQUE, NM 87102	**Facility Location:**	ONE CIVIC PLAZA ALBUQUERQUE, NM 87102
Permitted Feature:	002 External Outfall	**Discharge:**	**002-DB** ISLETA DIVERSION DAM (SOUTH) - DRY SEASON		
Report Dates & Status					
Monitoring Period:	**From 11/01/16 to 06/30/17**	**DMR Due Date:**	**12/01/17**	**Status:**	**NetDMR Validated**
Considerations for Form Completion					
SEASONAL MONITORING PERIODS ARE: WET SEASON = JULY 1-OCT. 31 & DRY SEASON = NOV. 1-JUNE 30. SEPARATE DMRS REQUIRED FOR EACH SEASON. DMRS TO BE SUBMITTED DUE DEC. 1ST, FOLLOWING END OF MONIT. PERIOD. PERMIT REQUIRES A MIN. OF 7 EVENTS PER LOC. PER PERMIT TERM (3 WET SEASON, 2 DRY SEASON & 2 PERMITTEE'S CHOICE).					
Principal Executive Officer					
First Name:	Melissa	**Title:**	Acting Director, DMD	**Telephone:**	505-768-3661
Last Name:	Lozoya				
No Data Indicator (NODI)					
Form NODI:	--				

Parameter		Monitoring Location	Season #	Param. NODI		Quantity or Loading					Quality or Concentration						# of Ex.	Frequency of Analysis	Sample Type
Code	Name					Qualifier 1	Value 1	Qualifier 2	Value 2	Units	Qualifier 1	Value 1	Qualifier 2	Value 2	Qualifier 3	Value 3	Units			
00010	Temperature, water deg. centigrade	1 - Effluent Gross	0	--	Sample															
					Permit Req.							Req Mon DAILY MN		Req Mon DAILY AV		Req Mon DAILY MX	04 - deg C		02/PT - Twice Per Permit Term	GR - GRAB
					Value NODI							9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
00094	Conductivity	1 - Effluent Gross	0	--	Sample															
					Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	11 - umho/cm		02/PT - Twice Per Permit Term	GR - GRAB
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
00300	Oxygen, dissolved [DO]	1 - Effluent Gross	0	--	Sample															
					Permit Req.							Req Mon DAILY MN		Req Mon DAILY AV			19 - mg/L		02/PT - Twice Per Permit Term	GR - GRAB
					Value NODI							9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period						
00310	BOD, 5-day, 20 deg. C	1 - Effluent Gross	0	--	Sample															
					Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
00340	Oxygen demand, chem. [high level] [COD]	1 - Effluent Gross	0	--	Sample															
					Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
00400	pH	1 - Effluent Gross	0	--	Sample															
					Permit Req.							Req Mon MINIMUM				Req Mon MAXIMUM	12 - SU		02/PT - Twice Per Permit Term	GR - GRAB
					Value NODI							9 - Conditional Monitoring - Not Required This Period				9 - Conditional Monitoring - Not Required This Period				
00530	Solids, total suspended	1 - Effluent Gross	0	--	Sample															
					Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
00556	Oil & Grease	1 - Effluent Gross	0	--	Sample															
					Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
00625	Nitrogen, Kjeldahl, total [as N]	1 - Effluent Gross	0	--	Sample															
					Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
00630	Nitrite + Nitrate total [as N]	1 - Effluent Gross	0	--	Sample															
					Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
					Sample															

00665	Phosphorus, total [as P]	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
					Sample															
00666	Phosphorus, dissolved	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
					Sample															
01032	Chromium, hexavalent [as Cr]	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
					Sample															
01040	Copper, dissolved [as Cu]	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
					Sample															
01049	Lead, dissolved [as Pb]	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
					Sample															
34230	Benzo[b]fluoranthene	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
					Sample															
34242	Benzo[k]fluoranthene	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
					Sample															
34247	Benzo[a]pyrene	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
					Sample															
34320	Chrysene	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY MN		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
					Sample															
34403	Indeno[1,2,3-cd]pyrene	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
					Sample															
34526	Benzo[a]anthracene	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
					Sample															
34556	Dibenz[a,h]anthracene	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
					Sample															
39032	Pentachlorophenol	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
					Sample															
39100	Di[2-ethylhexyl] phthalate [DEHP]	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
					Sample															
39120	Benzidine	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
					Sample															
39380	Dieldrin	1 - Effluent Gross	0	--	Permit Req.									Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI									9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
					Sample															
					Permit														02/PT - Twice Per Permit	CP -

39516	Polychlorinated biphenyls [PCBs]	1 - Effluent Gross	0	--	Req.								Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		Term	COMPOS
					Value NODI								9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
51040	E. coli	1 - Effluent Gross	0	--	Sample														
					Permit Req.								Req Mon DA GEOAV		Req Mon DAILY MX	3Z - CFU/100mL		02/PT - Twice Per Permit Term	GR - GRAB
					Value NODI								9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
70295	Solids, total dissolved	1 - Effluent Gross	0	--	Sample														
					Permit Req.								Req Mon DAILY AV		Req Mon DAILY MX	19 - mg/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI								9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
80029	Alpha gross radioactivity	1 - Effluent Gross	0	--	Sample														
					Permit Req.								Req Mon DAILY AV		Req Mon DAILY MX	17 - pCi/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI								9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
81302	Dibenzofuran	1 - Effluent Gross	0	--	Sample														
					Permit Req.								Req Mon DAILY AV		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI								9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				
81607	Tetrahydrofuran	1 - Effluent Gross	0	--	Sample														
					Permit Req.								Req Mon DAILY MN		Req Mon DAILY MX	28 - ug/L		02/PT - Twice Per Permit Term	CP - COMPOS
					Value NODI								9 - Conditional Monitoring - Not Required This Period		9 - Conditional Monitoring - Not Required This Period				

Submission Note

If a parameter row does not contain any values for the Sample nor Effluent Trading, then none of the following fields will be submitted for that row: Units, Number of Excursions, Frequency of Analysis, and Sample Type.

Edit Check Errors

No errors.

Comments

One dry sample was obtained during this monitoring period reported on 002-D - no additional sampling was required during this period.

Attachments

No attachments.

Report Last Saved By

CITY OF ALBUQUERQUE (COA)

User:	seaton@cabq.gov
Name:	Shellie Eaton
E-Mail:	seaton@cabq.gov
Date/Time:	2017-11-29 15:35 (Time Zone: -06:00)

Report Last Signed By

User:	MLOZOYA1
Name:	Melissa Lozoya
E-Mail:	mlozoya@cabq.gov
Date/Time:	2017-11-30 10:07 (Time Zone: -06:00)

Cooperative Monitoring Compliance (CMC)
Waste Load Allocation (WLA) Calculation
FY 2017 - Wet Season Wet Weather Sampling

Date: 12/14/16

Storm Event Date: 7/6/2016

Table 1

Stormwater Sample Analysis Results for E. coli:

Monitoring Location	E. coli Concentration (CFU/100 ml)
Rio Grande North	41.0
Rio Grande South	246

Notes:

1. Hall Environmental Analysis Laboratory (HEAL) lab report for Rio Grande North: Order number_____
2. HEAL lab report for Rio Grande South: Order number _____
3. HEAL lab method: SM 9223B Fecal Indicator

Table 2

Rio Grande Flow:

USGS Gage & Location	Daily Mean Flow (cfs) 7/6/16
08329928 - Rio Grande near Alameda	772
0833000 - Rio Grande at Albuquerque, NM (Central)	631

Notes:

1. See 'USGS Daily Mean Discharge' worksheet for data obtained from USGS website on 12/15/16.
2. Since this storm spans 2 days - BHI checked mean flow by calculating mean flow from the time of collectio
   However, the data for 9/22/2016 is in increments of 2 hours and not 15 minutes like previously used so m
   11:00 AM on 9/21/16 and spaned until 11:00 AM on 9/22/2016. Results were similar to 9/22/16 daily mea
   calculation, used 9/21/16 Daily Mean Flow.

Table 3

Determination of Storm Event Flow Conditions - As Defined in the MS4 Permit and NMED TMDL Report:

Stream Segment	Stream Name / Related USGS Gage	High (>3,360 cfs)
	Alameda to Angostura	
2105.1_00	Non-Pueblo Alameda Bridge to Angostura Diversion / 08329928 - Rio Grande near Alameda	
	Isleta to Alameda	
2105_50	Isleta Pueblo Boundary to Alameda Street Bridge / 0833000 - Rio Grande at Albuquerque, NM (Central)	

Table 4

Calculate E. coli Loading for Rio Grande North and Rio Grande South and Delta in E. coli Loading Between N

Monitoring Location	E. coli Concentration (CFU/100 mL)
Rio Grande North	41.0
Rio Grande South	246
Delta in E. coli Loading Between North and South Locations	

Notes:

1. Used Daily Mean Flow from 9/21/16 in the loading calculation.

E. Coli Loading Calculation:

$E.Coli\ Concentration\ \left(\frac{CFU}{100mL}\right) x\ 28{,}316.85\ \left(\frac{mL}{ft^3}\right) x$ Mean Daily Flow $\left(\frac{ft^3}{sec}\right)$ x 3,600 $\left(\frac{sec}{hr}\right)$ x 24 $\left(\frac{h}{d}\right.$

Not all E. coli sampled in the Rio Grande is related to MS4 activities. This storm event E. coli loading must l loading so that a comparison can be made to the MS4 Waste Load Allocations (WLAs).

The NMED presented a Jurisdictional Area Approach in Appendix F of the US EPA Approved, Total Maximu Grande Watershed, June 30, 2010. This approach in 2010 still had the MS4s divided into Phase I and Phase

The NMED report was used in this calculation to determine the percent that the MS4s contribute to each s stream segment for the Middle Rio Grand MS4s are based on NMED's Jurisdictional Area Approach:

Rio Grande - Alameda to Angostura - 6 %
Rio Grande - Isleta to Alameda - 10 %

The remaining percentages are designated for non-point sources and natural background occurrences of E

These WLA percentages already account for the drainage areas reaching each stream segment.

The CMC does not have an interim E. coli sample at the Alameda Bridge, which is the division of the two st the E. coli loading for the northern stream segment (Alameda to Angostura), a ratio needs to be applied to NMED's Jurisdictional Area Approach in Appendix F of the US EPA Approved, Total Maximum Daily Load (T June 30, 2010 were used to determine this ratio. The total contributing watershed area for the Alameda t the total contributing watershed area = 2084.15 sq. mi.

$$\frac{1612.72\ sq.mi.}{2084.15\ sq.mi.} = 0.77 \quad \text{or } 77\%$$

Table 5

Calculate E. coli Loading Per Stream Segment Reach:

Stream Segment	Stream Name / Related USGS Gage	Contributing Area Ratio for Each Segment

2105.1_00	***Alameda to Angostura*** Non-Pueblo Alameda Bridge to Angostura Diversion / 08329928 - Rio Grande near Alameda	0.77
2105_50	***Isleta to Alameda*** Isleta Pueblo Boundary to Alameda Street Bridge / 0833000 - Rio Grande at Albuquerque, NM (Central)	1

Table 6

Calculate MS4 E. coli Loading Per Stream Segment Reach:

Stream Segment	Stream Name / Related USGS Gage	Percent of E. coli Associated with MS4s
2105.1_00	***Alameda to Angostura*** Non-Pueblo Alameda Bridge to Angostura Diversion / 08329928 - Rio Grande near Alameda	6%
2105_50	***Isleta to Alameda*** Isleta Pueblo Boundary to Alameda Street Bridge / 0833000 - Rio Grande at Albuquerque, NM (Central)	10%

Table 7

Calculate CMC E. coli Loading Per Stream Segment Reach (CMC has 12 MS4s). This Sub Measureable Goal v

Stream Segment	Stream Name / Related USGS Gage	Flow Conditions
2105.1_00	***Alameda to Angostura*** Non-Pueblo Alameda Bridge to Angostura Diversion / 08329928 - Rio Grande near Alameda	Dry (319-664 cfs)
2105_50	***Isleta to Alameda*** Isleta Pueblo Boundary to Alameda Street Bridge / 0833000 - Rio Grande at Albuquerque, NM (Central)	Low (0-319 cfs)

Notes:

1. Refer to "WLAs From NMED" worksheet for WLA for Percent of E. coli Associated with CMC.

Table 8

Compare Storm Event E. coli Loading to WLA for CMC:

Stream Segment	Stream Name / Related USGS Gage	CMC E. coli Loading (CFU/day) for Each Segment
2105.1_00	***Alameda to Angostura*** Non-Pueblo Alameda Bridge to Angostura Diversion / 08329928 - Rio Grande near Alameda	1.40E+11
2105_50	***Isleta to Alameda*** Isleta Pueblo Boundary to Alameda Street Bridge / 0833000 - Rio Grande at Albuquerque, NM (Central)	1.99E+11

Notes:

1. Refer to "WLAs From NMED" worksheet for WLA for CMC for Storm Event.

2. Flow Conditions were defined in Table 3 above.

US EPA Approved, Total Maximum Daily Load (TMDL) for the Middle Rio Grande Watershed, Ju

It is important to remember that the TMDL is a planning tool to be used to achieve water qualit
throughout the year in these systems the target load will vary based on the changing flow. Man
stream water quality and meet water quality criteria should be a goal to be attained. Meeting t
difficult objective.

Date & Time of Sample	Date & Time Sample Delivered to HEAL
7/6/2016*	7/6/2016*
7/6/2016*	7/6/2016*

*Don't have this data since this is a simple example

Calculated Mean Flow (cfs) from 7/6/16 12:00 AM to 7/6/16 12:00 PM
772
631

ın at 12:15 PM on 9/21/16.
ean flow calcualtions started at
an flows. For this storm event

Flow Conditions (from MS4 Permit Appendix B)			
Moist (923-3,360 cfs)	Mid (664-929 cfs)	Dry (319-664 cfs)	Low (0-319 cfs)
	7/6/2016 Storm Event Mean Flow = 772 cfs		
		7/6/2016 Storm Event Mean Flow = 631 cfs	

North and South Locations:

Daily Mean Flow (cfs)	E. coli Loading (CFU/day)
772	7.74E+11
631	3.80E+12
	3.02E+12

$\left(\frac{hr}{day}\right)$ = E. coli Loading $\left(\frac{CFU}{day}\right)$

be reduced to only represent the MS4 E. coli

m Daily Load (TMDL) for the Middle Rio
e II permittees, which no longer applies.

stream segment. These values for each

:. coil.

:ream segments. Therefore, to determine
) the E. coli loading. The areas used in
'MDL) for the Middle Rio Grande Watershed,
o Angostura segment = 1,612.72 sq. mi. with

E. coli Loading (CFU/day) for Each Segment

2.33E+12
3.02E+12

Total MS4 E. coli Loading (CFU/day) for Each Segment
1.40E+11
3.02E+11

*

was Provided by NMED.

Percent of E. coli Associated with CMC	CMC E. coli Loading (CFU/day) for Each Segment	Notes
99.88%	1.40E+11	A very small percentage is designated from NM Expo
66%	1.99E+11	The remaining percentage is for Sandia National Labs and Kirtland AF Base

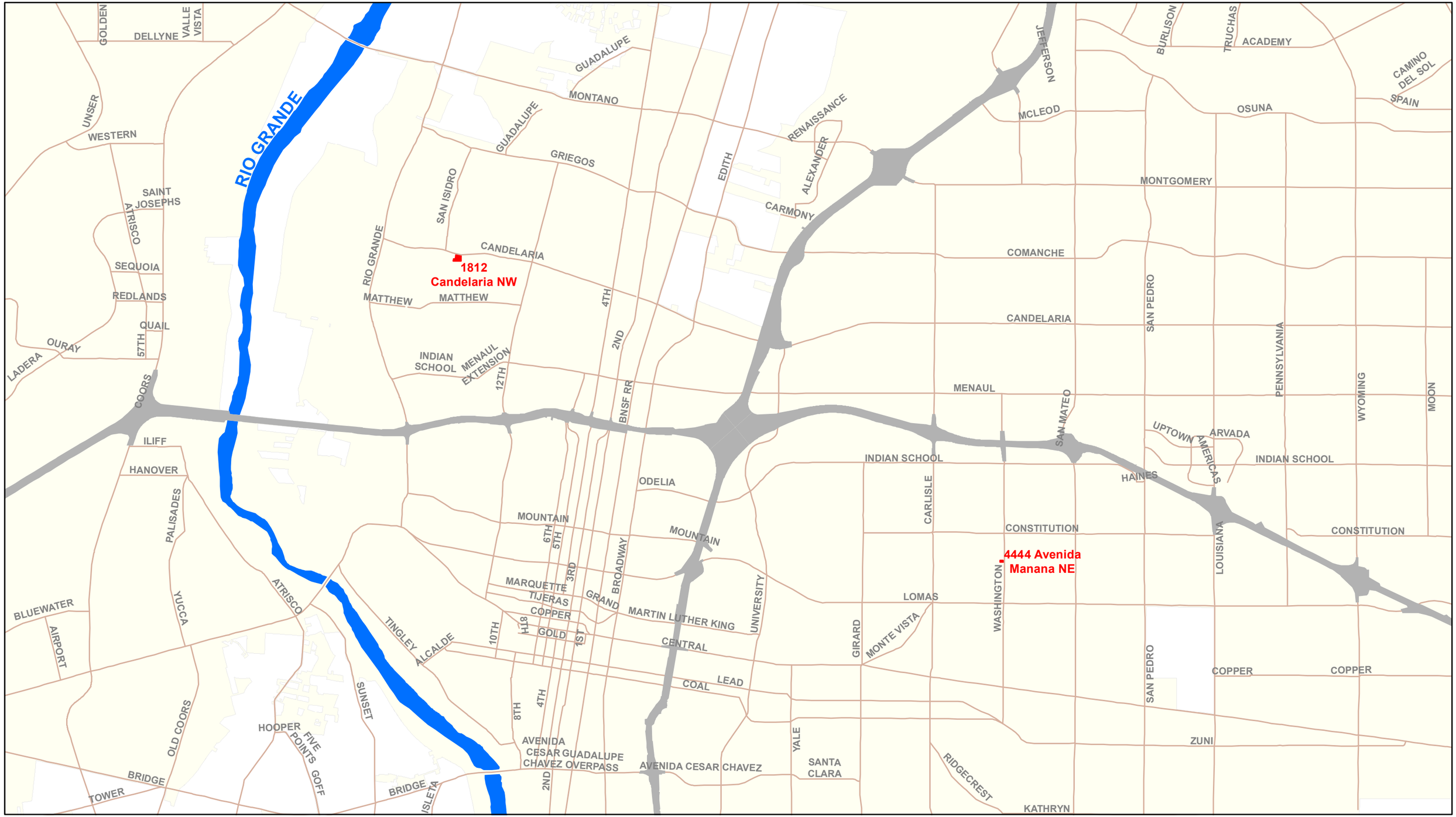
Flow Conditions	WLA for CMC for Storm Event on 9/21 - 9/22/16	WLA - Exceedance or Acceptable
Dry (319-664 cfs)	3.24E+10	WLA Exceedance
Low (0-319 cfs)	3.42E+09	WLA Exceedance

ne 30, 2010, page 40:

ty standards. Since flows vary
nagement of the load to improve
he calculated TMDL may be a

Attachment 3

Map of Repaired Cross Connections



N

CROSS CONNECTION SITES

0 0.5 1 2

Miles

cross connections

Address	**1812 Candelaria NW**
Building type	city government office
SD size-inch	36
building name	Valle del Norte Family Development Center
confirmed date	1/21/2015
fixed date	5/6/2015
cost	$12,098.00
ID	1
who paid for it	Department of Family and Community Services, COA

video pict



const pict



Address	**4444 avenida manana ne**

Building type	home	SD size-inch	24

building name	na

confirmed date	5/11/2015	fixed date	4/15/2016

cost	$12,381.73	ID	2

who paid for it	Engineering/Storm/DMD

video pict

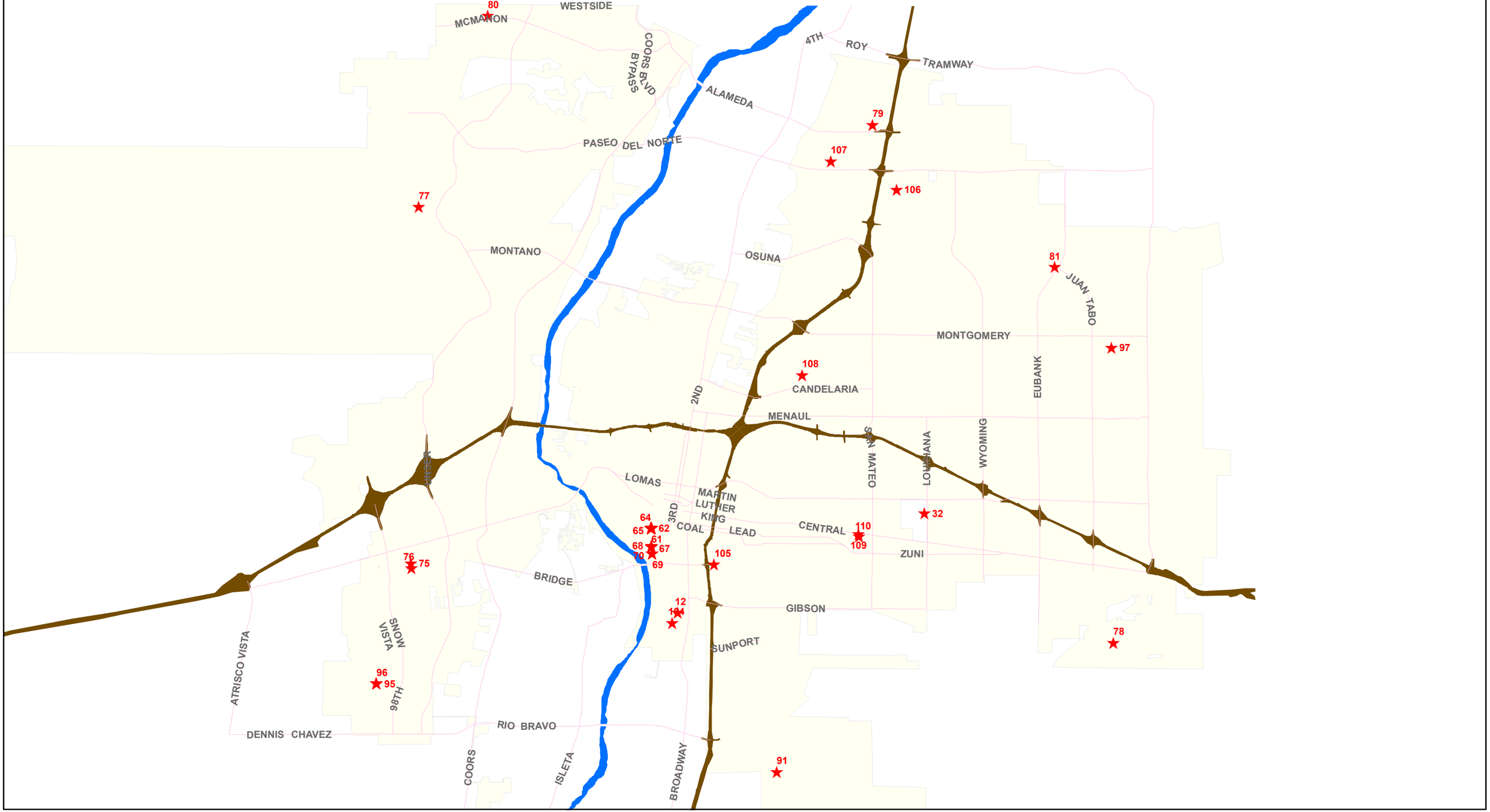


const pict



Attachment 4

Listing, Map, and Description of Storm Water Quality Feature



N

Stormwater Quality Features

0 1.5 3 6

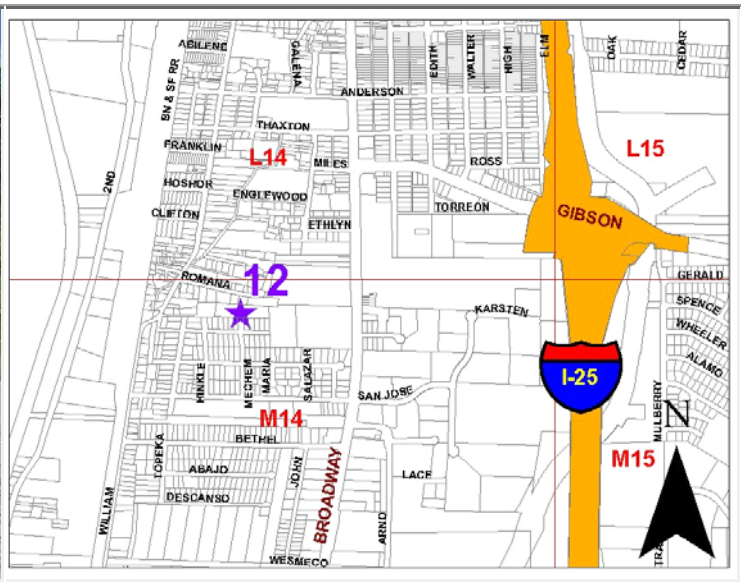
Miles

SWQ Features

Ported Riser

Ported Riser at Mechem Pond



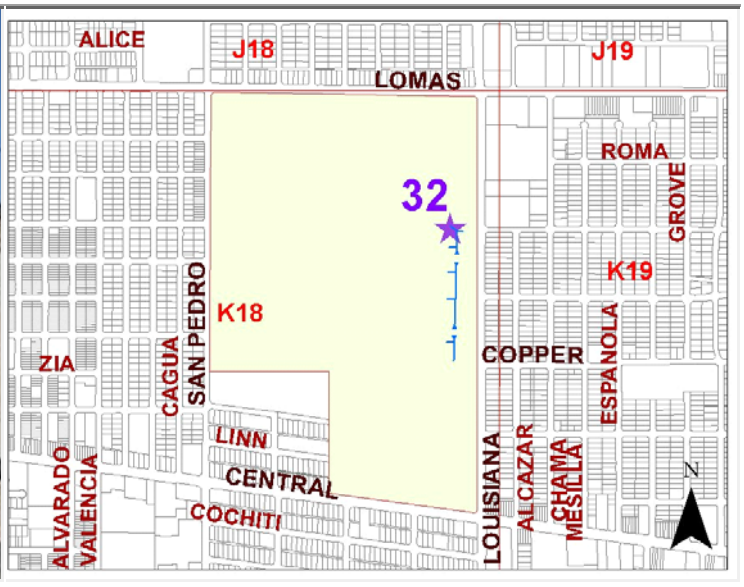


MAP_KEY	M14	City Quad	SE
ARROYO	STORM DRAIN		
Year_Built	2015	NUMBER	12
PROJECT NO	792602	cost	
NOTES	INSIDE MECHEM'S POND		
RACK SIZE			
UPSTREAM SIZE	POND		
DOWNSTREAM SI	24"RCP		

Ported Riser

Expo NM Pond at LOMAS AND LOUISIANA





MAP_KEY	K18	City Quad	NE
ARROYO	STORM DRAIN		
Year_Built	2015	NUMBER	32
PROJECT NO	730491	cost	
NOTES	replace old rack-LOCATED INSIDE NM-EXPO (STATE TAIR GROUND)-730491		
RACK SIZE			
UPSTREAM SIZE	POND		
DOWNSTREAM SI	36" ACP		

Inlets with Trash Screen

8th west of 717 stover sw





MAP_KEY	K13	City Quad	SW
ARROYO	STORM DRAIN		
Year_Built	2015	NUMBER	59
PROJECT NO	648391	cost	1000
NOTES			
RACK SIZE			
UPSTREAM SIZE			
DOWNSTREAM SI			

Inlets with Trash Screen

8th st sw west of 717 stover sw





MAP_KEY	K13	City Quad	SW
ARROYO	STORM DRAIN		
Year_Built	2015	NUMBER	60
PROJECT NO	648391	cost	
NOTES			
RACK SIZE			
UPSTREAM SIZE			
DOWNSTREAM SI			

Inlets with Trash Screen

8th east of 801 stover sw





MAP_KEY	K13	City Quad	SW
ARROYO	STORM DRAIN		
Year_Built	2015	NUMBER	61
PROJECT NO	648391	cost	
NOTES			
RACK SIZE			
UPSTREAM SIZE			
DOWNSTREAM SI			

Inlets with Trash Screen

801 stover sw





MAP_KEY	K13	City Quad	SW
ARROYO	STORM DRAIN		
Year_Built	2015	NUMBER	62
PROJECT NO	648391	cost	
NOTES			
RACK SIZE			
UPSTREAM SIZE			
DOWNSTREAM SI			

Inlets with Trash Screen

800 stover sw





MAP_KEY	K13	City Quad	SW
ARROYO	STORM DRAIN		
Year_Built	2015	NUMBER	63
PROJECT NO	648391	cost	
NOTES			
RACK SIZE			
UPSTREAM SIZE			
DOWNSTREAM SI			

Inlets with Trash Screen

8th east of 800 stover sw





MAP_KEY	K13	City Quad	SW
ARROYO	STORM DRAIN		
Year_Built	2015	NUMBER	64
PROJECT NO	648391	cost	
NOTES			
RACK SIZE			
UPSTREAM SIZE			
DOWNSTREAM SI			

Inlets with Trash Screen

8th west of 724 stover sw



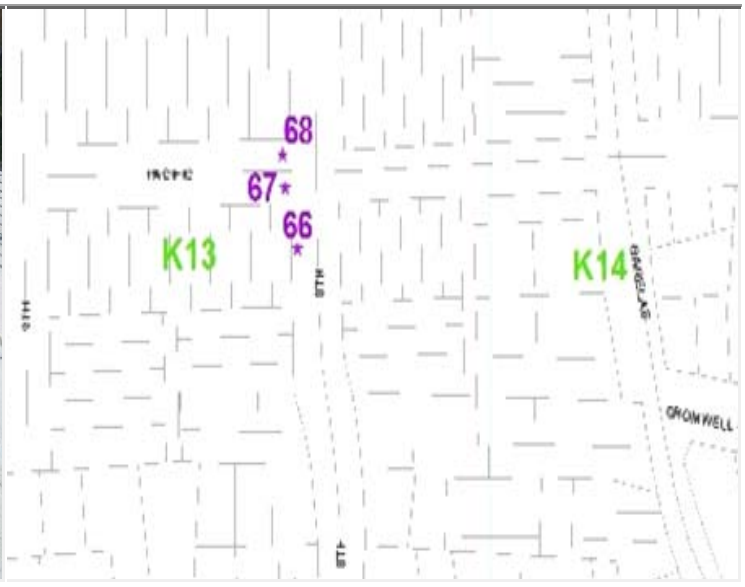


MAP_KEY	K13	City Quad	SW
ARROYO	STORM DRAIN		
Year_Built	2015	NUMBER	65
PROJECT NO	648391	cost	
NOTES			
RACK SIZE			
UPSTREAM SIZE			
DOWNSTREAM SI			

Inlets with Trash Screen

8th east of 800 pacific sw



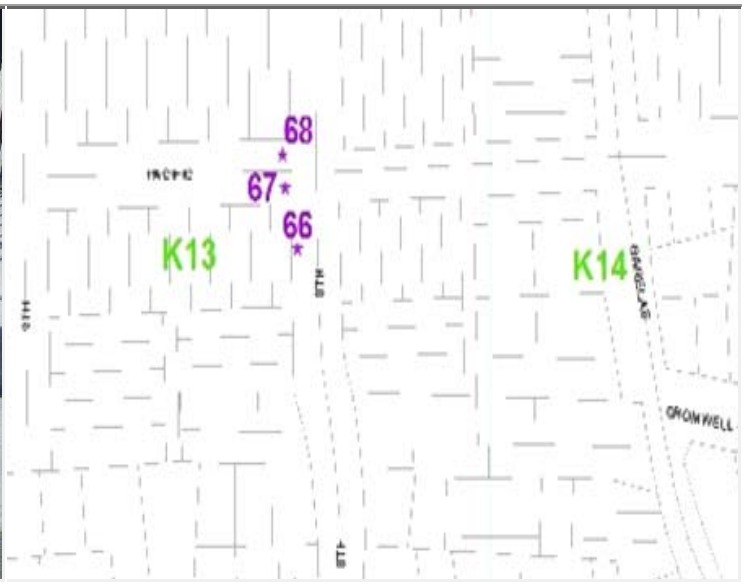


MAP_KEY	K13	City Quad	SW
ARROYO	STORM DRAIN		
Year_Built	2015	NUMBER	66
PROJECT NO	648391	cost	
NOTES			
RACK SIZE			
UPSTREAM SIZE			
DOWNSTREAM SI			

Inlets with Trash Screen

800 pacific sw



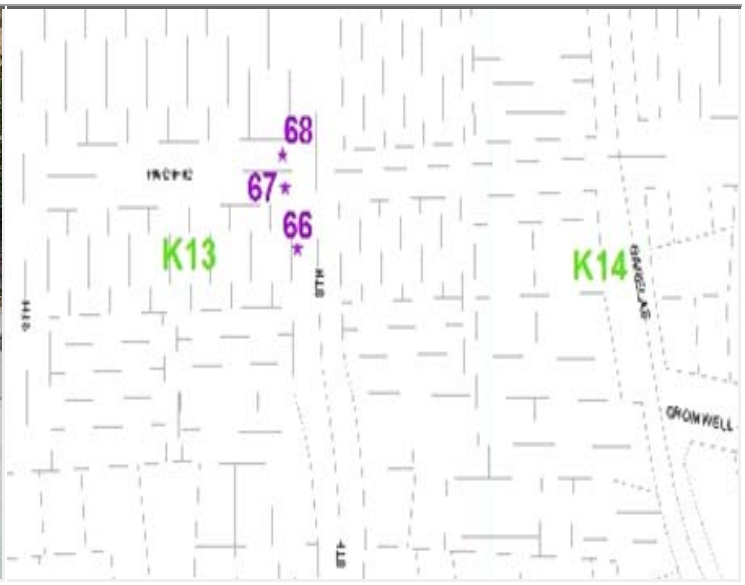


MAP_KEY	K13	City Quad	SW
ARROYO	STORM DRAIN		
Year_Built	2015	NUMBER	67
PROJECT NO	648391	cost	
NOTES			
RACK SIZE			
UPSTREAM SIZE			
DOWNSTREAM SI			

Inlets with Trash Screen

pacific s of 1017 8th sw





MAP_KEY	K13	City Quad	SW
ARROYO	STORM DRAIN		
Year_Built	2015	NUMBER	68
PROJECT NO	648391	cost	
NOTES			
RACK SIZE			
UPSTREAM SIZE			
DOWNSTREAM SI			

Inlets with Trash Screen

806 Marquez sw





MAP_KEY	K13	City Quad	SW
ARROYO	STORM DRAIN		
Year_Built	2015	NUMBER	69
PROJECT NO	648391	cost	
NOTES			
RACK SIZE			
UPSTREAM SIZE			
DOWNSTREAM SI			

Inlet with Trash Screen

Marquez south of 1223 8th sw





MAP_KEY	K13	City Quad	SW
ARROYO	STORM DRAIN		
Year_Built	2015	NUMBER	70
PROJECT NO	648391	cost	
NOTES			
RACK SIZE			
UPSTREAM SIZE			
DOWNSTREAM SI			

Trash Screen

90th st se, 150 ft south of sunset gardens se





MAP_KEY	L9	City Quad	SW
ARROYO	ODIN st sw		
Year_Built	2016	NUMBER	75
PROJECT NO		cost	1743
NOTES	3"x3" clear openings-3/4" D bars-5/8"x6" plate-installed by ed on 9-6-2016		
RACK SIZE	3' x 16'		
UPSTREAM SIZE	street		
DOWNSTREAM SI	street		

Trash Screen

90th st se, 550 ft south of sunset gardens se



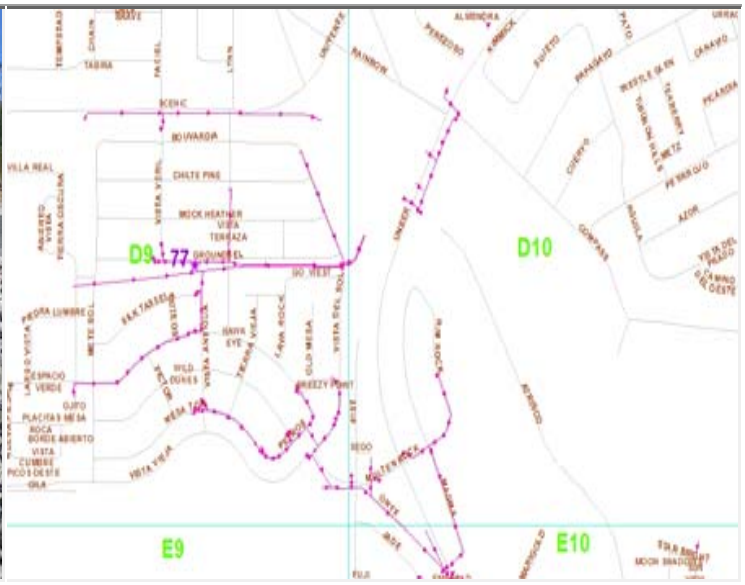


MAP_KEY	L9	City Quad	SW
ARROYO	THOR st SW		
Year_Built	2016	NUMBER	76
PROJECT NO		cost	1743
NOTES	3"x3" clear openings-3/4" D bars-5/8"x6" plate-installed by ed on 9-6-2016		
RACK SIZE	3' x 16'		
UPSTREAM SIZE	street		
DOWNSTREAM SI	street		

Trash Screen

8501 Groundsel nw



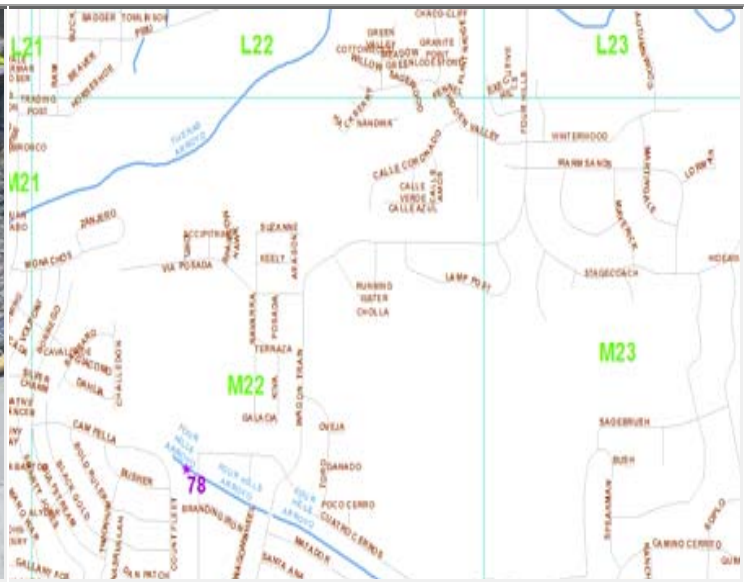


MAP_KEY	D9	City Quad	NW
ARROYO	24 in storm drain		
Year_Built	2016	NUMBER	77
PROJECT NO		cost	1678
NOTES	3"x3" clear openings-3/4" D bars-installed by ed on 11-10-2016		
RACK SIZE	19 w1x 48L x 53W2 and 13h x 53w2 in		
UPSTREAM SIZE	pond		
DOWNSTREAM SI	24 in rcp		

Trash Screen

four hills arroyo at sage brush





MAP_KEY	m22	City Quad	se
ARROYO	four hills		
Year_Built	2015	NUMBER	78
PROJECT NO	756392	cost	
NOTES	5 in x 5 in oc spacing and 15 deg from horiz		
RACK SIZE	22'w1x16'w2x11'L+ 22' wx 2'h vertical		
UPSTREAM SIZE	16'w1 x 22' w2 x 5'h		
DOWNSTREAM SI	16'w1 x 22' w2 x 5'h		

Security Rack

5117 blue sage ne (and san mateo)





MAP_KEY	c17	City Quad	ne
ARROYO	storm drains		
Year_Built	2015	NUMBER	79
PROJECT NO		cost	1535
NOTES	3 cmp security racks		
RACK SIZE	24 in dia		
UPSTREAM SIZE	24 in		
DOWNSTREAM SI	drainage easement channel		

Trash Screen

6200 Nueva Espana nw



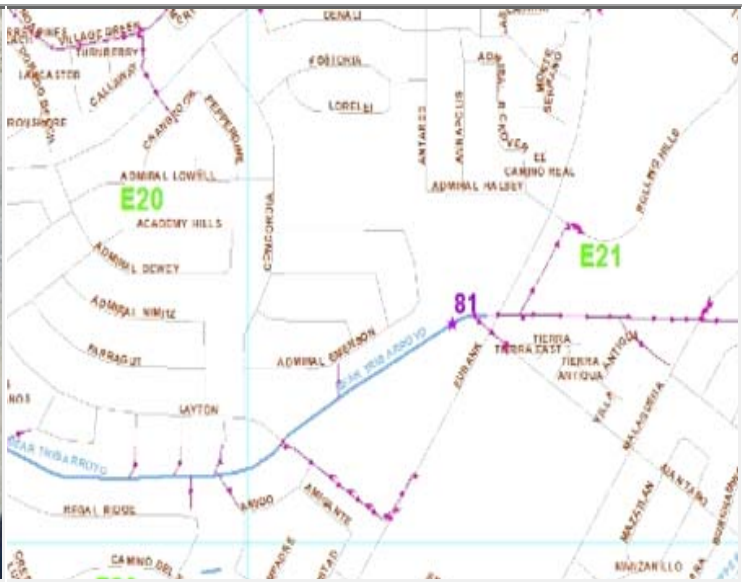


MAP_KEY	a10	City Quad	nw
ARROYO	storm drain inlet		
Year_Built	2015	NUMBER	80
PROJECT NO		cost	695
NOTES	expanded metal 3/4 in 9 gage		
RACK SIZE	8' x 25 in horiz+12'x6 in vertical		
UPSTREAM SIZE	street		
DOWNSTREAM SI	18 in rcp		

Trash Screen

Academy hills park-Eubank and Juan Tabo



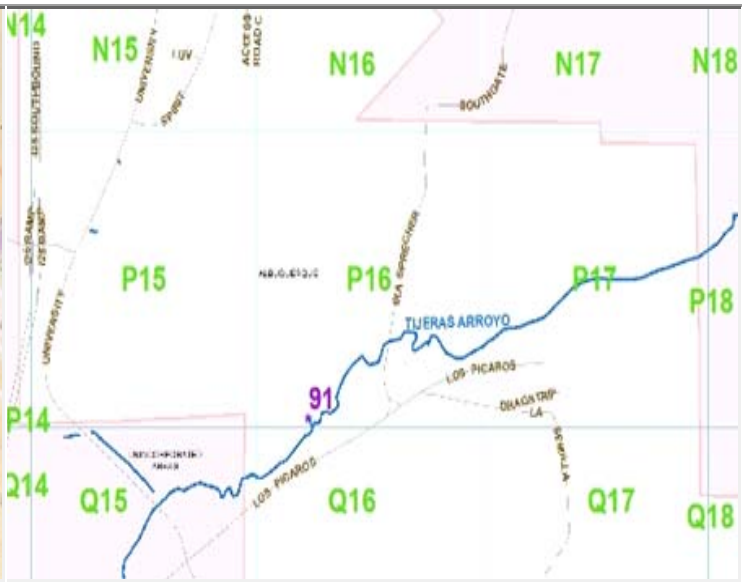


MAP_KEY	e21	City Quad	ne
ARROYO	bear trib		
Year_Built	2016	NUMBER	81
PROJECT NO		cost	1923
NOTES	6" spacing, 3/4" bars		
RACK SIZE	2' w x 2' h x 8'L		
UPSTREAM SIZE	arroyo		
DOWNSTREAM SI	underground		

Security Screen

Airport-Tijeras outfall





MAP_KEY	P16	City Quad	se
ARROYO	Tijeras		
Year_Built	2015	NUMBER	91
PROJECT NO		cost	
NOTES	installed by street maintenance after a TV story that a man came out a MH inside the airport		
RACK SIZE	9 ft Dia (108") , 6" x 6" c-c		
UPSTREAM SIZE	108 in		
DOWNSTREAM SI	arroyo		

Trash screen

sierra sunset park-south 54 in pipe





MAP_KEY	n8	City Quad	sw
ARROYO	storm drain		
Year_Built	2015	NUMBER	95
PROJECT NO		cost	
NOTES			
RACK SIZE			
UPSTREAM SIZE	54		
DOWNSTREAM SI	pond		

Trash screen

SIERRA SUNSET PARK-NORTH 48 IN PIPE





MAP_KEY	n8	City Quad	sw
ARROYO	storm drain		
Year_Built	2015	NUMBER	96
PROJECT NO		cost	
NOTES			
RACK SIZE			
UPSTREAM SIZE	48		
DOWNSTREAM SI	pond		

Security screen

11805 la Charles NE





MAP_KEY	g22	City Quad	ne
ARROYO	storm drain		
Year_Built	2015	NUMBER	97
PROJECT NO		cost	
NOTES			
RACK SIZE	48 in dia		
UPSTREAM SIZE	48		
DOWNSTREAM SI	arroyo		

Stormceptor

Stormceptor at san jose and topeka se



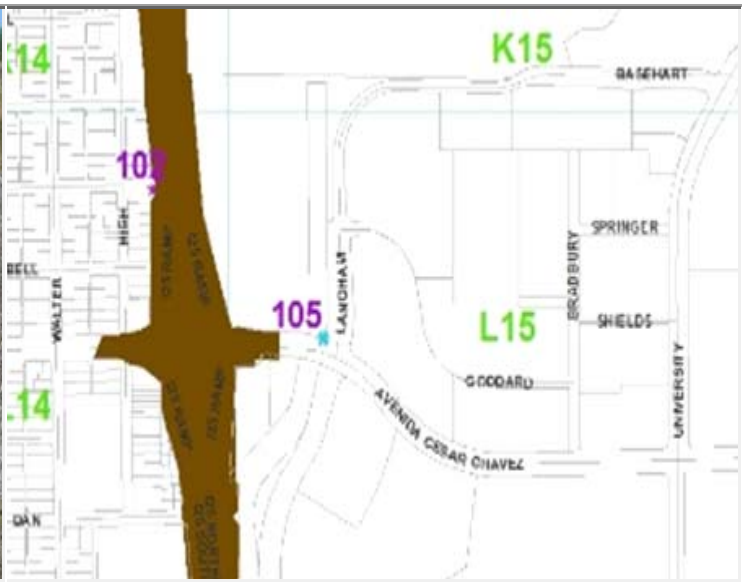


MAP_KEY	M-14	City Quad	SE
ARROYO			
Year_Built	2015	NUMBER	104
PROJECT NO	792602	cost	
NOTES	stc 2400 precast		
RACK SIZE			
UPSTREAM SIZE			
DOWNSTREAM SI			

SWQ MH

Avanida Cezar Chavez SE at I-25





MAP_KEY	L-15	City Quad	SE
ARROYO			
Year_Built	2015	NUMBER	105
PROJECT NO	501507	cost	
NOTES			
RACK SIZE			
UPSTREAM SIZE			
DOWNSTREAM SI			

permeable pavement

pino yard at pino and I-25





MAP_KEY	D-18	City Quad	NW
ARROYO			
Year_Built	2015	NUMBER	106
PROJECT NO	528000	cost	
NOTES			
RACK SIZE			
UPSTREAM SIZE			
DOWNSTREAM SI			

SWQ structure

outh Domingo Baca Arroyo west of washington bridg





MAP_KEY	C-17	City Quad	NW
ARROYO			
Year_Built	2015	NUMBER	107
PROJECT NO	800291	cost	
NOTES			
RACK SIZE			
UPSTREAM SIZE			
DOWNSTREAM SI			

2 SWQ Inlets

Aztec and Bryn Mawr ne





MAP_KEY	G-16	City Quad	NE
ARROYO			
Year_Built	2017	NUMBER	108
PROJECT NO	784903	cost	
NOTES			
RACK SIZE			
UPSTREAM SIZE			
DOWNSTREAM SI			

Permeable pavers

Highland Senior Center at 131 Monroe St NE





MAP_KEY	K-17	City Quad	NE
ARROYO			
Year_Built	2016	NUMBER	109
PROJECT NO	658802	cost	
NOTES			
RACK SIZE			
UPSTREAM SIZE			
DOWNSTREAM SI			

Bio-Swales

Highland Senior Center at 131 Monroe St NE



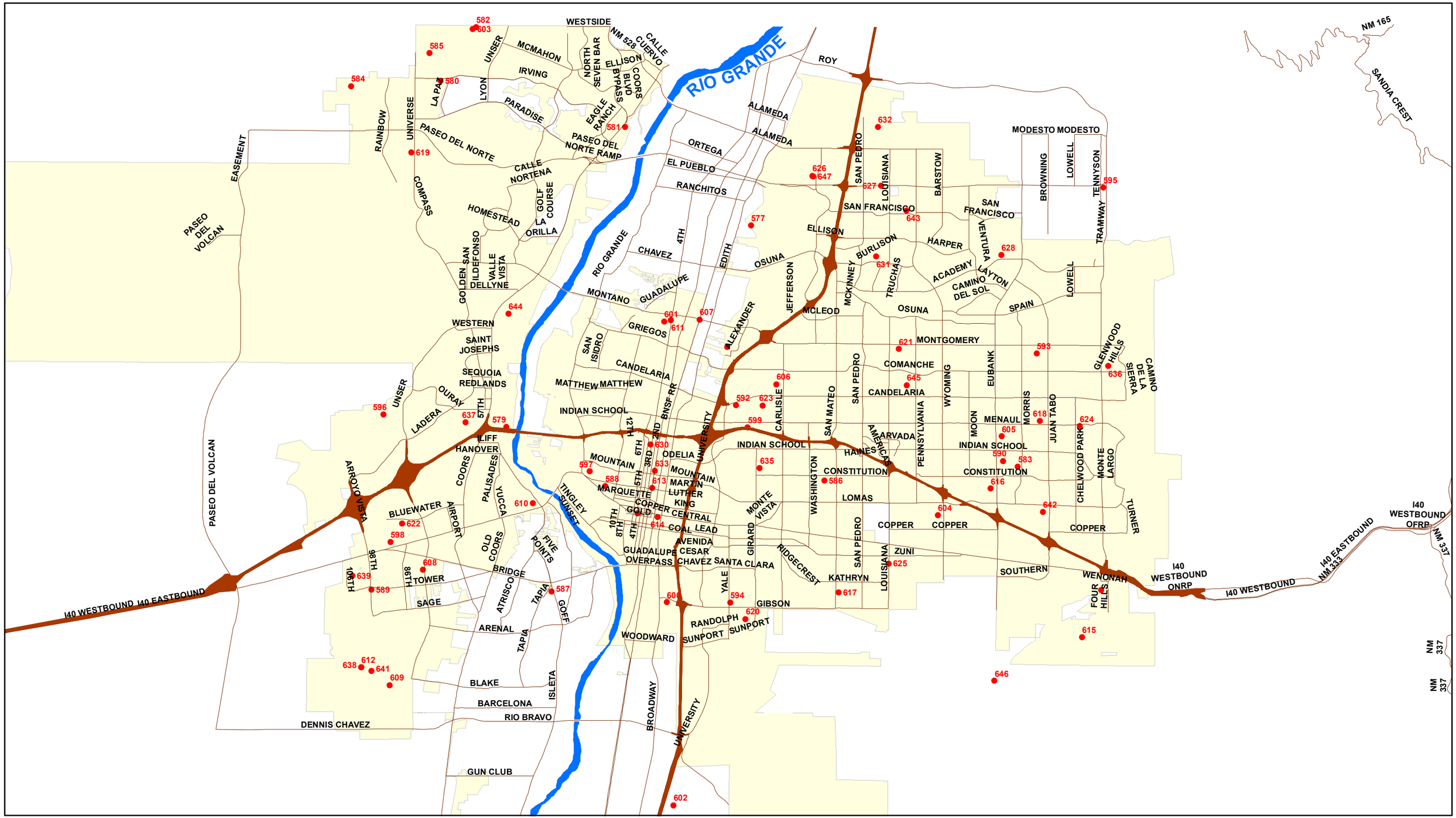


MAP_KEY	K-17	City Quad	NE
ARROYO			
Year_Built	2016	NUMBER	110
PROJECT NO	658802	cost	
NOTES			
RACK SIZE			
UPSTREAM SIZE			
DOWNSTREAM SI			

date	year	project	cost	PN
6/21/2011	2011	Louisiana-hahn-security rack	$2,400	
7/5/2011	2011	Amole pond out let rack at 98th and cent	$2,600	
10/13/2011	2011	48 inch rack at 10128 Calle Chulita NW	$2,900	
11/15/2011	2011	south broadway pond rack adjustmewnt	$2,200	
1/4/2012	2012	ported riser design	$52,000	
2/2/2012	2012	odelia tunnels racks	$18,000	
3/13/2012	2012	Dumpester for PS-43 Urban	$1,100	
9/24/2012	2012	ported riser at Piedra Lisa dam	$22,000	440000
1/29/2013	2013	ported riser at Bluewater-Unser pond	$21,000	440003
2/6/2013	2013	ported riser at Odelia pond	$24,000	440004
2/26/2013	2013	trash screen at Ladera16 pond	$15,000	440002
7/11/2013	2013	Dumpester for PS-30 Duranes	$2,300	
11/19/2013	2013	trash screen for ps-36 Princton	$200	
3/31/2014	2014	Pino Yards LID Retrofit	$101,000	528000
9/15/2014	2014	8th St Streetscape Improvements	$1,503,000	648391
10/1/2014	2014	South Broadway Drainage Project WQ	$393,000	792602
12/1/2014	2014	pino yard permeable pavement	$182,000	528002
12/21/2014	2014	Avenida Cesar Chavez Drainage Inlet	$848,000	501507
3/4/2015	2015	Retanas nw-Lions-inlet-screen	$700	
6/9/2015	2015	Louisiana & Lomas SD Improvements	$1,900,000	730491
6/14/2015	2015	Four Hills Arroyo Debris&float Rack	$116,000	756392
6/25/2015	2015	Santa Fe Village Flood Mitigation	$68,000	785604
6/29/2015	2015	safety grate at la Charles NE culvert	$700	
10/9/2015	2015	Siera sunset park- 2 trash racks	$3,300	
10/28/2015	2015	Blake-Amole security gate	$1,200	
11/11/2015	2015	Pollution prevention fish hanger-2000-ct	$1,600	
12/7/2015	2015	adding gate to ladera-16 trsh rack	$2,200	
1/20/2016	2016	Grate at Academy Hills park	$1,900	
9/22/2016	2016	Unser and Paseo Grate	$1,700	
10/6/2016	2016	90th st-sunset gardens-SW-grates	$3,500	
11/22/2016	2016	Highland Senior Center Parking Lot	$387,000	658802
4/19/2017	2017	Bryn Mawr Storm Drain Improvements	$998,000	784903

Attachment 5

Map and Description of 311 Complaints



N

311 CALLS 2016-2017

0 1.5 3 6

Miles

Address 7428 VIA DESIERTO NE

Event ID 577 **REPORTING SOURCE** 311 **Complaint Date** 7/12/2016

CUSTOMER ANONYMOUS **311CASE ID** 15103570 **e-mail** na

CUSTOMER Ph# SharePointLink: ..\2016\2016-07-12-15103570-7428 via desierto ne

Complaint: the neighbor is dumping sewage in the storm drain in front of this address, caller wanted someone to look into.

Suspected Facility **Type of Complaint** SEWAGE

Inspection Date 7/13/2016 **Number of Field Visits** 1 **Inspector** SK

Facility Contact RESIDENT **Facility Ph. #**

FIELD OBSERVATION there were no visible sewage at this address and the resident denying dumping any sewage from his RV

INITIAL ACTION I distributed pollution prevention brochures at this neighborhood



Address 4321 YALE NE- PREMIER DISTRIBUTING CO

Event ID 578 **REPORTING SOURCE** E-MAIL **Complaint Date** 7/19/2016

CUSTOMER KALI BRONSON **311CASE ID** E-MAIL **e-mail** kbronson@bernco.gov

CUSTOMER Ph# 848-1544 SharePointLink: Z:\MUNICIPAL DEVELOPMENT\SHARE\MD-Storm\7_NPDES\311_SWQ_

Complaint: odors of yeast and beer at the pond, and had a slight odor and excess algal growth. PDM told him that when the beer they keep expires they destroy containers and the liquids go to the storm drain outlet.

Suspected Facility PREMIER DISTRIBUTING CO **Type of Complaint** GREY WATER

Inspection Date 7/19/2016 **Number of Field Visits** 1 **Inspector** SK

Facility Contact MAINTENANCE MANAGER **Facility Ph. #**

FIELD OBSERVATION there was a continous low flow in the BC pond at gregoes and RR track. Also I saw a continous water discharging into the storm drain.Lee, maintenance manager, told me that this is fron condensed water coming from the refregrated warehouse.they have also a truck wash bay that is connected to the storm darin.

INITIAL ACTION we sent a letter on 7-27-16 to this company asking to fix the problem.



Address 5005 BRIDGESS NW

Event ID 579 **REPORTING SOURCE** 311 **Complaint Date** 7/21/2016

CUSTOMER ANONYMOUS **311CASE ID** 15129805 **e-mail**

CUSTOMER Ph# SharePointLink: Z:\MUNICIPAL DEVELOPMENT\SHARE\MD-Storm\7_NPDES\311_SWQ_

Complaint: A lot of oil dumped in road by neighbor tried rinsing with hose inot gutter.

Suspected Facility HOME **Type of Complaint** OIL

Inspection Date 7/22/2016 **Number of Field Visits** 1 **Inspector** SK

Facility Contact RESIDENT **Facility Ph. #**

FIELD OBSERVATION it looks like used oil spill washed down to the gutter.

INITIAL ACTION Nobody was home at the time of my visit. I distributed pollution prevention brochures at this neighborhood.



Address	KAYENTA & IRVING NW

Event ID	580	**REPORTING SOURCE**	311	**Complaint Date**	7/25/2016
CUSTOMER	ANONYMOUS	**311CASE ID**	15139356	**e-mail**	na
CUSTOMER Ph#	na	SharePointLink:	..\2016\2016-07-25-15139356-kayenta and irving nw		

Complaint: Oil leaking from car

Suspected Facility	HOME	**Type of Complaint**	OIL
Inspection Date	7/26/2016	**Number of Field Visits**	1
Inspector	SK		
Facility Contact	NA	**Facility Ph. #**	na

FIELD OBSERVATION I saw some oil spots on the street at 6131 Bisbee NW

INITIAL ACTION I covered the oil spots with absorbent and distributed pollution prevention brochures at this neighborhood.



Address	9798 COORS NW

Event ID	581	**REPORTING SOURCE**	311	**Complaint Date**	7/22/2016
CUSTOMER	LYNNE CORDOVA	**311CASE ID**	15133709	**e-mail**	na
CUSTOMER Ph#	269-3700	SharePointLink:	..\2016\2016-07-25-15133709-9798 coors nw		

Complaint: Black substance resembling oil coming from behind Integrity Auto. It is draining from the Auto Dealership, to another business landscaping, then into the arroyo.

Suspected Facility	INTEGRITY AUTOMOTIVE-WESTSIDE	**Type of Complaint**	HAZARDOUS MATERIAL

Inspection Date	7/26/2016	**Number of Field Visits**	1	**Inspector**	SK
Facility Contact	MANAGER	**Facility Ph. #**	503-1416		

FIELD OBSERVATION: I saw black dry residu leaving from auto delar yard to the next business's parking lot. Also I noticed the power wash equipment on the site.

INITIAL ACTION: I spoke to to manager and asked him to stop dump any dirty washwater to the parking lot of the business next door.he agreed to do so.



Address	6115 RED ROCK PARK NW

Event ID	582	**REPORTING SOURCE**	311	**Complaint Date**	7/25/2016
CUSTOMER	CITY OF ALBUQUERQUE MOBILE	**311CASE ID**	15141734	**e-mail**	http://seeclickfix.com/issues/2729
CUSTOMER Ph#		SharePointLink:	..\2016\2016-07-26-15141734-6115 red rock park nw		

Complaint: Chemical washed down storm drain. Blue chemical of some sort running down the gutter from this house into storm drain on Milky Way just before black arroyo
View the location on a map here: http://seeclickfix.com/issues/2729810

Suspected Facility	PREVENTATIVE PEST CONTROL	**Type of Complaint**	HAZARDOUS MATERIAL

Inspection Date	7/26/2016	**Number of Field Visits**	1	**Inspector**	SK
Facility Contact	CONTRACTOR	**Facility Ph. #**	792-8380		

FIELD OBSERVATION I say dry blue color residue along the gutter stating from this address.the resident told me that their pest control contractor spilled the dye on the street.

INITIAL ACTION The pest control contractor told me that the blue color chemical is a dye spilled by accident this dye is called spray indicator xl by Helen mixed with herbicide to show the sprayed area.It is a safe dye.I also distributed pollution prevention brochures at this neighborhood.



Address 10816 MAHLON NE

Event ID 583 **REPORTING SOURCE** 311 **Complaint Date** 8/4/2016

CUSTOMER ANONYMOUS **311CASE ID** 15170299 **e-mail** na

CUSTOMER Ph# na SharePointLink: ..\2016\2016-08-04-15170299-10816 mahlon ne

Complaint: Diesel spill from truck parked in the street.

Suspected Facility HOME **Type of Complaint** OIL

Inspection Date 8/4/2016 **Number of Field Visits** 1 **Inspector** SK

Facility Contact NA **Facility Ph. #** na

FIELD OBSERVATION there was a big spot of dissolved asphalt at this location.

INITIAL ACTION it has been cleaned up and no further action was necessary. I distributed pollution prevention brochures at this neighborhood



Address	7904 UNIONVILLE CT NW

Event ID	584	**REPORTING SOURCE**	311	**Complaint Date**	8/9/2016
CUSTOMER	ANONYMOUS	**311CASE ID**	WEB	**e-mail**	nana
CUSTOMER Ph#	na	SharePointLink:	..\2016\2016-08-09-web-7904 unionville nw\2016-08-12		

Complaint: motor and gear oil

Suspected Facility	HOME	**Type of Complaint**	OIL
Inspection Date	8/12/2016	**Number of Field Visits**	1
Inspector	SK		
Facility Contact	NA	**Facility Ph. #**	na

FIELD OBSERVATION there were several oil spots

INITIAL ACTION covered the oil spots with absorbent and distributed pollution prevention brochures at this neighborhood



Address	6324 CORTE ALZIRA NW

Event ID	585	**REPORTING SOURCE**	311	**Complaint Date**	8/10/2016
CUSTOMER	CHRIS GUTHART	**311CASE ID**	15187642	**e-mail**	
CUSTOMER Ph#	321-9140	SharePointLink:	..\2016\2016-08-11-15187642-6324 corte alzira nw		

Complaint: Oil leaking from somewhere on property

Suspected Facility	HOME	**Type of Complaint**	OIL
Inspection Date	8/12/2016	**Number of Field Visits**	1
Inspector	SK		
Facility Contact	NA	**Facility Ph. #**	

FIELD OBSERVATION the dry oil residue was visible that was originated from this address.

INITIAL ACTION It was dry and nothing can be done about it. I distributed pollution prevention brochures at this neighborhood



Address 908 MONROE NE

Event ID 586 **REPORTING SOURCE** WEB **Complaint Date** 8/23/2016

CUSTOMER J **311CASE ID** 15230948 **e-mail** jhwdwrd@yahoo.com

CUSTOMER Ph# 550-1090 SharePointLink:

Complaint: yard wast, construction debris in the alley behind this house

Suspected Facility HOME **Type of Complaint** TRASH

Inspection Date 8/25/2016 **Number of Field Visits** 0 **Inspector** SK

Facility Contact NA **Facility Ph. #** na

FIELD OBSERVATION no visit

INITIAL ACTION created a 311 case 15230948. a violation letter 2016020270 sent by PS at 924-3451

Address 1711 SIRIUS SW

Event ID 587 **REPORTING SOURCE** 311 **Complaint Date** 8/11/2016

CUSTOMER LILIA ANDRADE **311CASE ID** 15191714 **e-mail**

CUSTOMER Ph# 688-2447 SharePointLink: ..\2016\2016-08-11-15191714-1711 sirius sw

Complaint: Oil is on Dryco SW located north of 1711 Sirius SW

Suspected Facility HOME **Type of Complaint** OIL

Inspection Date 8/29/2016 **Number of Field Visits** 1 **Inspector** SK

Facility Contact NA **Facility Ph. #**

FIELD OBSERVATION I saw two minor dried oil spots at this location.

INITIAL ACTION I distributed pollution prevention brochures at this neighborhood.



Address	1508 FRUIT AVE NW						
Event ID	588	**REPORTING SOURCE**	311	**Complaint Date**	8/26/2016		
CUSTOMER	ANONYMOUS	**311CASE ID**	15234014	**e-mail**			
CUSTOMER Ph#	na	SharePointLink:	..\2016\2016-08-29-15234014-1508-fruit nw				
Complaint:	Bottle of oil sitting out, spreading due to rain, staining the ground and wall around it.						
Suspected Facility	HOME			**Type of Complaint**	OIL		
Inspection Date	8/30/2016	**Number of Field Visits**	1	**Inspector**	SK		
Facility Contact	RESIDENT	**Facility Ph. #**					
FIELD OBSERVATION	the oil containers were gone but still there were oil around the dumpester						
INITIAL ACTION	I covered the oil spots with oil absorbent. Also distributed pollution prevention brochures at this neighborhood.						



Address O'REILEY'S STORE AT 9750 TOWER SW

Event ID 589 **REPORTING SOURCE** 311 **Complaint Date** 9/6/2016

CUSTOMER ISSAC SISNEROS **311CASE ID** 15262436 **e-mail**

CUSTOMER Ph# 505/450-8587 SharePointLink: ..\2016\2016-09-06-15262436-oreiley at tower-97th st sw

Complaint: Oil running down the street from an O'Reiley's Store

Suspected Facility O'REILEY'S STORE **Type of Complaint** OIL

Inspection Date 9/7/2016 **Number of Field Visits** 1 **Inspector** SK

Facility Contact MANAGER **Facility Ph. #** 575-956-5550

FIELD OBSERVATION the manager told me that someone dumped used oil and trash at night into their dumpster area,

INITIAL ACTION he said he will clean it up by the end of this week. I left some pollution prevention brochures with manager.



Address	10210 EDEN CT NE

Event ID	590	**REPORTING SOURCE**	311	**Complaint Date**	9/6/2016
CUSTOMER	RICHARD TYE	**311CASE ID**	15260640	**e-mail**	
CUSTOMER Ph#	974-7949	SharePointLink:	..\2016\2016-09-06-15260640-10210 eden ct ne		

Complaint: Occasionally at least 1 or 2 times a week there are chemicals (possiblly paint) that are draining into the storm drain.

Suspected Facility	HOME	**Type of Complaint**	PAINT

Inspection Date	9/7/2016	**Number of Field Visits**	1	**Inspector**	SK
Facility Contact	RESIDENT	**Facility Ph. #**	na		

FIELD OBSERVATION: the home owner at 10210 was doing some stucco work and they washed away white colored paint.

INITIAL ACTION: I asked them to stop releasing dirty water into the street. also I distributed pollution prevention brochures at this neighborhood



Address WEEMS AV. SW & DEAN DR. SW

Event ID 591 **REPORTING SOURCE** 311 **Complaint Date** 9/12/2016

CUSTOMER FRANK ROMERO **311CASE ID** 15280655 **e-mail**

CUSTOMER Ph# 505/463-5619 SharePointLink: ..\2016\2016-09-13-15280655-weems-dean-sw

Complaint: Oil is underneath parked car.

Suspected Facility HOME **Type of Complaint** OIL

Inspection Date 9/14/2016 **Number of Field Visits** 1 **Inspector** SK

Facility Contact NA **Facility Ph. #**

FIELD OBSERVATION the oil spots has been covered with absorbent.

INITIAL ACTION I distributed pollution prevention brochures at this neighborhood



Address	FMH AT 2108 CANDELARIA NE

Event ID	592	**REPORTING SOURCE**	EMAIL	**Complaint Date**	9/13/2016

CUSTOMER	PATRICK CHAVEZ	**311CASE ID**	NA	**e-mail**	pchavez@amafca.org

CUSTOMER Ph#	884-2215	SharePointLink:	..\2016\2016-09-13-email-fmh solution at 2108 candelaria ne

Complaint: we noticed some staining out the back of fmh material handling solutions

Suspected Facility	FMH BUSINESS	**Type of Complaint**	HAZARDOUS MATERIAL

Inspection Date	9/14/2016	**Number of Field Visits**	1	**Inspector**	SK

Facility Contact	MANAGER	**Facility Ph. #**	

FIELD OBSERVATION I saw light brown color staining in the alley behind this business. The manager showed me the backyard of the business and I did not see any source of liquid dumping. I noticed several piles of batteries and machine parts on palets.it looks like the source of staining is the rust from the machine parts stored outside. The manager told me that the stain has been there as long as he remembers back since 15 years ago.

INITIAL ACTION I gave them several copies of pollution prevention brochures for their employees.



Address	4000 TARA NE

Event ID	593	**REPORTING SOURCE**	WEB	**Complaint Date**	9/25/2016
CUSTOMER	S. SHAW	**311CASE ID**	NA	**e-mail**	sterrigney@gmail.com
CUSTOMER Ph#	296-5149	SharePointLink:	..\2016\2016-09-24-web-4000 tara ne		

Complaint: motor oil visible trail in the driveway, down the gutter, to the storm drain witnessed neighbor trying to wash away with garden hose

Suspected Facility	HOME	**Type of Complaint**	OIL
Inspection Date	9/26/2016	**Number of Field Visits**	1
Inspector	SK		
Facility Contact	RESIDENT	**Facility Ph. #**	

FIELD OBSERVATION there was oil trail coming out from this address

INITIAL ACTION I spoke to the resident and he told me that their used oil pan spilled on the driving pad and they tried clean it up with water. I distributed pollution prevention brochures at this neighborhood.



Address YALE SE & CENTRE SE

Event ID 594 **REPORTING SOURCE** 311 **Complaint Date** 9/30/2016

CUSTOMER EDDIE CHAVEZ **311CASE ID** 15331392 **e-mail**

CUSTOMER Ph# 505/573-1123 SharePointLink: ..\2016\2016-09-30-15331392-yale-centre se

Complaint: someone was dumping large bins of fluid into the gutter at this location

Suspected Facility TRUCK **Type of Complaint** CONSTRUCTION

Inspection Date 10/4/2016 **Number of Field Visits** 1 **Inspector** SK

Facility Contact NA **Facility Ph. #** na

FIELD OBSERVATION the white material on the topof grate is stucco.it looks like some construction company dumped their dirty water in to this inlet.

INITIAL ACTION UNIT 415 CLEANED 5 INLETS/LATERALS 20'



Address	7849 TRAMWAY BLVD NE

Event ID	595	**REPORTING SOURCE**	311	**Complaint Date**	10/10/2016
CUSTOMER	ANN MARIE CAFFREY	**311CASE ID**	15357838	**e-mail**	
CUSTOMER Ph#	505 259 2004	SharePointLink:	..\2016\2016-10-10-15357838-7849 tramway ne		

Complaint: Antifreeze Coolant on the ground in a puddle on the north west corner of the building on the other side of the curb (about 3x3 puddle)

Suspected Facility	VALVOLINE INSTANT OIL CHANGE	**Type of Complaint**	OIL

Inspection Date	10/11/2016	**Number of Field Visits**	1	**Inspector**	SK
Facility Contact	MANAGER	**Facility Ph. #**			

FIELD OBSERVATION this is the only oil spot I saw, it was a minor and dried.

INITIAL ACTION I distributed pollution prevention brochures at this complex



Address	2200 WEDGEWOOD CT NW

Event ID	596	**REPORTING SOURCE**	WEB	**Complaint Date**	10/17/2016
CUSTOMER	ANONYMOUS	**311CASE ID**	NA	**e-mail**	
CUSTOMER Ph#		SharePointLink:	..\2016\2016-10-17-web-2200 wedgewood ct nw		

Complaint: Oil Containers and Liquid Material on North side of house spilling out and leaking out to other areas

Suspected Facility	HOME	**Type of Complaint**	OIL
Inspection Date	10/18/2016	**Number of Field Visits**	1
Inspector	SK		
Facility Contact	RESIDENT	**Facility Ph. #**	na

FIELD OBSERVATION I saw two coverd 5 gallon buckets near the trash can, not leaking.

INITIAL ACTION no action was necessary. I distributed pollution prevention brochures at this neighborhood.



Address LA PLACITA DINING ROOMS AT 206 SAN FELIPE NW

Event ID 597 **REPORTING SOURCE** 311 **Complaint Date** 10/18/2016

CUSTOMER MIKE SMITH **311CASE ID** 15378172 **e-mail**

CUSTOMER Ph# 489-0050 SharePointLink: ..\2016\2016-10-18-15378172-old town rd and san pasquale nw

Complaint: The kitchen was power washed and sludge and grease were washed out.

Suspected Facility PLACITAS DINING ROOM **Type of Complaint** GREY WATER

Inspection Date 10/19/2016 **Number of Field Visits** 1 **Inspector** SK

Facility Contact MANAGER **Facility Ph. #** 247-2204

FIELD OBSERVATION the manager denied dumping any thing to storm inlet.

INITIAL ACTION I left several pollution prevention brochures at this place.



Address	90TH ST AND VOLCANO NW

Event ID	598	**REPORTING SOURCE**	WEB	**Complaint Date**	10/24/2016
CUSTOMER	WAYNE SHRUBSALL AND BARBARA	**311CASE ID**	NA	**e-mail**	wayneshrubsall@q.com
CUSTOMER Ph#	505-944-5348	SharePointLink:	..\2016\2016-10-24-web-90th st and volcano nw		

Complaint: people have dumped varieties of trash, several couches, and other litter.

Suspected Facility	CITY VACANT LAND	**Type of Complaint**	TRASH
Inspection Date	10/27/2016	**Number of Field Visits**	1
Inspector	SK		
Facility Contact	NA	**Facility Ph. #**	na

FIELD OBSERVATION I observed several big pieces of furnitures and trash dumping on this lot. This is a city owned land.

INITIAL ACTION I created two 311 cases (15387085 and 15387110) to clean up this area.



Address 2300 MENAUL NE (BEHIND THE BUILDING)

Event ID 599 **REPORTING SOURCE** WEB **Complaint Date** 11/4/2016

CUSTOMER CINDY FELIZ **311CASE ID** NA **e-mail** cfeliz@salud.unm.edu

CUSTOMER Ph# (505)225-4162 SharePointLink: ..\2016\2016-11-7-2300 menaul ne

Complaint: Trash between fence and I-40.

Suspected Facility I-40 **Type of Complaint** TRASH

Inspection Date 11/9/2016 **Number of Field Visits** 1 **Inspector** SK

Facility Contact TIMOTHY TRUJILLO **Facility Ph. #**

FIELD OBSERVATION there were a lot of trash between the fence and freeway.

INITIAL ACTION forwarded to NMDOT



Address EDITH AND TORREON NE

Event ID 600 **REPORTING SOURCE** E-MAIL **Complaint Date** 11/7/2016

CUSTOMER KALI BRONSON **311CASE ID** NA **e-mail** kbronson@bernco.gov

CUSTOMER Ph# SharePointLink: ..\2016\2016-11-7-edith-torreon

Complaint: There is a lot (!) of cloudy water coming from a pipe just behind Bernco pw by the big cell tower off Edith, south of Gibson.

Suspected Facility UNKNOWN **Type of Complaint** COLORD LIQUID

Inspection Date 11/9/2016 **Number of Field Visits** 1 **Inspector**

Facility Contact **Facility Ph. #**

FIELD OBSERVATION I could not determin where this pipe was coming from.

INITIAL ACTION I asked ABCWUA if this pipe was from their water transmition line, but they said no.



Address 5308 6TH ST NW

Event ID 601 **REPORTING SOURCE** 311 **Complaint Date** 11/18/2016

CUSTOMER JESSE VANDERGRIFF **311CASE ID** 161118-001569 **e-mail**

CUSTOMER Ph# (505) 331-3441 SharePointLink: ..\2016\2016-11-18-161118-001569-5308 6th st nw

Complaint: Anti freeze and oil dumped into street from property resident

Suspected Facility HOME **Type of Complaint** OIL & ANTIFREEZE

Inspection Date 11/28/2016 **Number of Field Visits** 1 **Inspector** SK

Facility Contact RESIDENT **Facility Ph. #**

FIELD OBSERVATION every thing was dried and covered with absorbent.

INITIAL ACTION I distributed pollution prevention brochures at this neighborhood.



Address LOS PICAROS RD SE

Event ID 602 **REPORTING SOURCE** WEB **Complaint Date** 11/22/2016

CUSTOMER JUDITH WYMAN **311CASE ID** NA **e-mail** jwyman@sandia.gov

CUSTOMER Ph# 505-944-5348 SharePointLink: ..\2016\2016-11-22-los picaros rd se

Complaint: trash on the road

Suspected Facility **Type of Complaint** TRASH

Inspection Date 11/28/2016 **Number of Field Visits** 1 **Inspector** SK

Facility Contact NA **Facility Ph. #**

FIELD OBSERVATION no trash found

INITIAL ACTION I spoke to the caller and she said that the trash was removed next day after she reported.



Address 6140 MALPAIS PARK NW

Event ID 603 **REPORTING SOURCE** 311 **Complaint Date** 11/28/2016

CUSTOMER SELBY LUCERO **311CASE ID** 161126-000366 **e-mail** nmrkatk@hotmail.com

CUSTOMER Ph# (505) 506-0318 SharePointLink: ..\2016\2016-11-26-161126-000366-6140 malpais park nw

Complaint: Oil is running down the street from truck parked in the street. Citizen states it is running like water

Suspected Facility UNKNOWN **Type of Complaint** OIL

Inspection Date 11/29/2016 **Number of Field Visits** 1 **Inspector** SK

Facility Contact RESIDENT **Facility Ph. #**

FIELD OBSERVATION there was a large amount of oil on the street at this location. Nobody was home at this address and the truck was gone.

INITIAL ACTION I covered the oil spots with absorbent and distributed pollution prevention brochures at this neighborhood.



Address 600 VIRGINIA ST NE

Event ID 604 **REPORTING SOURCE** 311 **Complaint Date** 1/9/2017

CUSTOMER ANONYMOUS **311CASE ID** 170109-001452 **e-mail**

CUSTOMER Ph# SharePointLink: ..\2017\2017-01-09-170109-001452-600 virginia ne

Complaint: Black Cadillac and Green Car Leaking oil onto the street

Suspected Facility HOME **Type of Complaint** OIL

Inspection Date 1/12/2017 **Number of Field Visits** 1 **Inspector:** sk

Facility Contact RESIDENT **Facility Ph. #**

FIELD OBSERVATION the resident had car problem causing oil spill.

INITIAL ACTION I covered the oil spots and distributed pollution prevention brochures at this neighborhood.



Address	EMBUDITO ARROYO AND MENAUL

Event ID	605	**REPORTING SOURCE**	WEB	**Complaint Date**	1/10/2017
CUSTOMER	DOVEE RODRIGUES	**311CASE ID**	NA	**e-mail**	lemondrophc@live.com
CUSTOMER Ph#	322-3047	SharePointLink:			

Complaint: Excessive full garbage bags and misc trash illegally dumped on the west side of the arroyo.

Suspected Facility	ARROYO	**Type of Complaint**	TRASH
Inspection Date	1/10/2017	**Number of Field Visits**	1
Inspector:	sk		
Facility Contact		**Facility Ph. #**	

FIELD OBSERVATION

INITIAL ACTION forwarded to arroyo maintenance for clean up.

Address 3308 TULANE NE

Event ID 606 **REPORTING SOURCE** 311 **Complaint Date** 1/10/2017

CUSTOMER ANONYMOUS **311CASE ID** 170110-000237 **e-mail**

CUSTOMER Ph# SharePointLink: ..\2017\2017-01-10-170110-000237-3308 tulane ne

Complaint: Large amount of leaking oil from car at this area

Suspected Facility HOME **Type of Complaint** OIL

Inspection Date 1/12/2017 **Number of Field Visits** 1 **Inspector:** sk

Facility Contact RESIDENT **Facility Ph. #**

FIELD OBSERVATION the resident had car problem causing oil spill.

INITIAL ACTION I covered the oil spots and distributed pollution prevention brochures at this neighborhood.



Address MONTANIO AT RAIL ROAD CROSSING BETWEEN EDITH AND 2ND AT

Event ID 607 **REPORTING SOURCE** 311 **Complaint Date** 1/10/2017

CUSTOMER RICHARD MONTOYA **311CASE ID** 170110-003112 **e-mail** mr.fixitrich@yahoo.com

CUSTOMER Ph# 340-4322 SharePointLink: ..\2017\2017-01-10-170110-003112-montanio-rr

Complaint: Citizen reports that at 830pm at the rail crossing he observed a fuel train car spilling liquid. It came out at the crossing and may have been spilling along the tracks for some time and continue to do so.

Suspected Facility NM RAIL RUNNER **Type of Complaint** HAZARDOUS MATERIAL

Inspection Date 1/12/2017 **Number of Field Visits** 1 **Inspector:** sk

Facility Contact NA **Facility Ph. #**

FIELD OBSERVATION I went there and did not see any spill.reported the issue to fire department.

INITIAL ACTION this case has been reported to fire department.



Address	544 WHISPER MESA SW						
Event ID	608	**REPORTING SOURCE**	311	**Complaint Date**	1/30/2017		
CUSTOMER	ANONYMOUS	**311CASE ID**	170130-002820	**e-mail**			
CUSTOMER Ph#		SharePointLink:	..\2017\2017-01-30-170130-002820-544 whisper sw				
Complaint:	leaks oil into the street and every time they drive down the street.						
Suspected Facility	HOME			**Type of Complaint**	OIL		
Inspection Date	2/1/2017	**Number of Field Visits**	1	**Inspector:**	sk		
Facility Contact		**Facility Ph. #**					
FIELD OBSERVATION	there was a big oil spot at this location						
INITIAL ACTION	I covered all oil spots with absorbent and distributed pollution prevention brochures at this neighborhood.						



Address	9515 VALLE VIDAL PL SW

Event ID	609	**REPORTING SOURCE**	311	**Complaint Date**	2/1/2017
CUSTOMER	LEROY CORDOVA	**311CASE ID**	170201-001057	**e-mail**	leeleeinabq@yahoo.com
CUSTOMER Ph#	873-1542	SharePointLink:	..\2017\2017-02-01-170201-001057-9515 valle vidal pl sw		

Complaint: Car, BMW, on the street leaking a lot of oil. Been on the street for about a month.

Suspected Facility	HOME	**Type of Complaint**	OIL
Inspection Date	2/6/2017	**Number of Field Visits**	1
Inspector:	sk		
Facility Contact		**Facility Ph. #**	

FIELD OBSERVATION there was a cardboard under the car, no oil on the street.

INITIAL ACTION I distributed pollution prevention brochures at this neighborhood.



Address	EL SUPER AT 4201 CENTRAL NW				
Event ID	610	**REPORTING SOURCE**	311	**Complaint Date**	1/24/2017
CUSTOMER	ANONYMOUS	**311CASE ID**	170124-002510	**e-mail**	
CUSTOMER Ph#		SharePointLink:	..\2017\170124-002510-el super at central and atrisco		

Complaint: El super store is dumping old lard into the sewer drain behind the store. There is a strong order of old lard. Citizen states she drove behind store and the lard is all over her car tires.

Suspected Facility	EL SUPER STORE	**Type of Complaint**	COOKING GREASE
Inspection Date	2/8/2017	**Number of Field Visits**	1
Inspector:	sk		
Facility Contact	MANAGER	**Facility Ph. #**	

FIELD OBSERVATION I spoke to the manager and he told me that their grease trap tank overflowed , but they fixed it and cleaned up the area.

INITIAL ACTION I gave him some of our pollution prevention brochures for his employees.



Address EL PAYASO RESTAURANT AT 5333 4TH ST NW

Event ID 611 **REPORTING SOURCE** 311 **Complaint Date** 2/8/2017

CUSTOMER ANONYMOUS **311CASE ID** 170208-001733 **e-mail**

CUSTOMER Ph# SharePointLink: ..\2017\170208-001733-el payaso at 5333 4th st nw

Complaint: El Payaso restaurant has oil leaking from the dumpster they dug a trench and the oil runs into that and could travel to the storm drain citizen feels the department should go out to inspect.

Suspected Facility EL PAYASO RESTAURANT **Type of Complaint** COOKING GREASE

Inspection Date 2/10/2017 **Number of Field Visits** 1 **Inspector:** sk

Facility Contact MANAGER **Facility Ph. #**

FIELD OBSERVATION there was some cooking oil dumped near the dumpster by the previous restaurant owner.

INITIAL ACTION the manager told me that she will clean it up immediately.



Address 10209 SANDY RIDGE SW

Event ID 612 **REPORTING SOURCE** 311 **Complaint Date** 2/11/2017

CUSTOMER ANONYMOUS **311CASE ID** 170211-001629 **e-mail**

CUSTOMER Ph# SharePointLink: ..\2017\170211-001626-10209 sandy ridge sw

Complaint: black chevy impala renters allowing a car to leak all the oil onto street.

Suspected Facility HOME **Type of Complaint** OIL

Inspection Date 2/14/2017 **Number of Field Visits** 1 **Inspector:** sk

Facility Contact RESIDENT **Facility Ph. #**

FIELD OBSERVATION there was a big oil spot at this location. No body was home at the time of my inspection.

INITIAL ACTION I covered the oil spots with absorbent and distributed pollution prevention brochures at this neighborhood



Address 816 1ST ST NW

Event ID 613 **REPORTING SOURCE** 311 **Complaint Date** 2/13/2017

CUSTOMER GLENN DE GUZMAN **311CASE ID** 170213-000301 **e-mail**

CUSTOMER Ph# 314-0329 SharePointLink: ..\2017\170213-000301-816 1st st nw

Complaint: Toxic Chemicals getting dumped into city Drains.

Suspected Facility SHERWIN WILLIAMS PAINTS **Type of Complaint** HAZARDOUS MATERIAL

Inspection Date 2/14/2017 **Number of Field Visits** 1 **Inspector:** sk

Facility Contact MANAGER **Facility Ph. #**

FIELD OBSERVATION I did not see any storm inlets or chemicals around this area. the manager denied dumping any thing to the storm drains or street.

INITIAL ACTION



Address 111 UNION SQUARE SE

Event ID 614 **REPORTING SOURCE** 311 **Complaint Date** 1/26/2017

CUSTOMER **311CASE ID** 170126-000854 **e-mail**

CUSTOMER Ph# 314-0352 SharePointLink:

Complaint: Bernalillo County code enforcement officer would like to speak with street maintenance regarding our standard practice and procedure for oil/hazardous waste calls in streets. Please call back.

Suspected Facility **Type of Complaint** HAZARDOUS MATERIAL

Inspection Date 2/16/2017 **Number of Field Visits** 1 **Inspector:** kv

Facility Contact **Facility Ph. #**

FIELD OBSERVATION

INITIAL ACTION I called Carlos, the 311 caller who's interested in our spill procedures. He wasn't in so I left a message. I explained that we were still crafting a procedure for our Right of Way and Streets but had procedures for our maintenance facilities and transit. I gave Bryan's number in the message and also requested for Carlos to call me back so that I could find out what they were doing at the County. Thanks, Kathy

Address 804 WAGON TRAIN DR SE

Event ID 615 **REPORTING SOURCE** 311 **Complaint Date** 2/27/2017

CUSTOMER JERRY DOW **311CASE ID** 170227-001963 **e-mail** jdow10@comcast.net

CUSTOMER Ph# 239-9445 SharePointLink: ..\2017\170227-001963-804 wagon train se

Complaint: There is a blue film residue that is still present along the gutter

Suspected Facility HOME **Type of Complaint** PAINT

Inspection Date 3/1/2017 **Number of Field Visits** 1 **Inspector:** sk

Facility Contact RESIDENT **Facility Ph. #**

FIELD OBSERVATION this was dried residue of blue paint wash out from this home, no body was home.

INITIAL ACTION I distributed pollution prevention brochures at this neighborhood.



Address	1131 WESTERFELD NE

Event ID	616	**REPORTING SOURCE**	HOT LINE	**Complaint Date**	3/1/2017

CUSTOMER	MIKE	**311CASE ID**	NA	**e-mail**	

CUSTOMER Ph#	296-8675	SharePointLink:	..\2017\170228-ph-call-mike-1131 westerfeld-ne-296-8675

Complaint:	dumping lundry washwater into the street

Suspected Facility	HOME	**Type of Complaint**	GREY WATER

Inspection Date	3/1/2017	**Number of Field Visits**	1	**Inspector:**	sk

Facility Contact	RESIDENT	**Facility Ph. #**	

FIELD OBSERVATION	I saw some dry residue on the drivepad coming from the garage. The resident told me that they fixed the lineand they will not dump again.

INITIAL ACTION	I distributed pollution prevention at this neighborhood.



Address	1233 ORTIZ SE

Event ID	617	**REPORTING SOURCE**	311	**Complaint Date**	3/5/2017
CUSTOMER	CHRISTOPHER ROMERO	**311CASE ID**	170305-000491	**e-mail**	
CUSTOMER Ph#	917-561-3987	SharePointLink:	..\2017\170305-000491-1233 ortiz se		

Complaint: RV dumping sanitary waste into storm inlet

Suspected Facility	RV	**Type of Complaint**	SEWAGE

Inspection Date	3/9/2017	**Number of Field Visits**	1	**Inspector:**	sk
Facility Contact		**Facility Ph. #**			

FIELD OBSERVATION there was some dry sewage residue in the inlet

INITIAL ACTION forwarded the case to storm maintainance for clean up



Address 11004 WOODLAND NE

Event ID 618 **REPORTING SOURCE** WEB **Complaint Date** 3/13/2017

CUSTOMER ANONYMOUS **311CASE ID** WEB **e-mail**

CUSTOMER Ph# SharePointLink: ..\2017\170301-11004 woodland ne-web

Complaint: motor oil appears to be dumped in arroyo behind residence

Suspected Facility HOME **Type of Complaint** OIL

Inspection Date 3/13/2017 **Number of Field Visits** 1 **Inspector:** sk

Facility Contact RESIDENT **Facility Ph. #** na

FIELD OBSERVATION unable to see any oil dumping evidence along this arroyo (piedra lisa)

INITIAL ACTION I distributed pollution prevention brochures at this neighborhood



Address	6831 KAYSER MILL RD NW

Event ID	619	**REPORTING SOURCE**	311	**Complaint Date**	3/9/2017
CUSTOMER		**311CASE ID**	170309-002651	**e-mail**	
CUSTOMER Ph#	505-440-2080	SharePointLink:	..\2017\170309-002651-6831 KAYSER MILL NW		

Complaint: Oil or transmission fluid- Concern about oil on the drive way, gutter and street

Suspected Facility	HOME	**Type of Complaint**	OIL
Inspection Date	3/13/2017	**Number of Field Visits**	1
Inspector:	sk		
Facility Contact		**Facility Ph. #**	

FIELD OBSERVATION there was a big oil spot at this address.

INITIAL ACTION I covered the oil spots with absorbent and distributed pollution prevention brochures at this neighborhood.



Address 2525 ALAMO SE

Event ID 620 **REPORTING SOURCE** WEB **Complaint Date** 3/22/2017

CUSTOMER VERN HERSHBERGER **311CASE ID** NA **e-mail** vmhershberger@msn.com

CUSTOMER Ph# 269-8343 SharePointLink: ..\2017\170322-web-ph-2525 alamo se

Complaint: Asphalt resurfacing black material being washed into Alamo Ave. street gutter. from parking lot

Suspected Facility BUSINESS **Type of Complaint** HAZARDOUS MATERIAL

Inspection Date 3/27/2017 **Number of Field Visits** 1 **Inspector:** sk

Facility Contact LANDLORD JOHN LORENZO **Facility Ph. #** 480-3432

FIELD OBSERVATION the parking lot was coated with a black pavement coating. No dry residue found along the gutter.
the landlord told me that they washed their tools and parking lot, the running water went to the gutter.

INITIAL ACTION I asked the land lord to clean up the area and not to dump any hazardous waste to the gutter. I distributed pollution prevention brochures at this area.



Address	CHELSEA APTS AT 7100 NATALIE NE

Event ID	621	**REPORTING SOURCE**	EMAIL	**Complaint Date**	3/27/2017

CUSTOMER	KEVIN DAGGETT	**311CASE ID**	NA	**e-mail**	kdaggett@cabq.gov

CUSTOMER Ph#	768-2778	SharePointLink:	..\2017\170327-email-chelses village apt-

Complaint: washing paint into the street

Suspected Facility	CHELSEA VILLAGE APARTMENTS	**Type of Complaint**	PAINT

Inspection Date	3/28/2017	**Number of Field Visits**	1	**Inspector:**	sk

Facility Contact	MANAGER	**Facility Ph. #**	884-3892

FIELD OBSERVATION I saw red dry residue on the street apparently coming from this apartments.

INITIAL ACTION the manager said that the red sediment is from the rainwater runoff from the red landscaping sand on their backyard .I asked him to stop and dirt runoff from their backyard and left some pollution prevention brochouers at this complex.



Address	8904 SAWGRASS PL NW				
Event ID	622	**REPORTING SOURCE**	311	**Complaint Date**	3/31/2017
CUSTOMER	ANONYMOUS	**311CASE ID**	170331-000096	**e-mail**	
CUSTOMER Ph#		SharePointLink:	..\2017\170331-000096-8908 sawgrass pl nw		
Complaint:	vehicle parked in street is leaking oil				
Suspected Facility	HOME			**Type of Complaint**	OIL
Inspection Date	4/5/2017	**Number of Field Visits**	1	**Inspector:**	sk
Facility Contact	RESIDENT			**Facility Ph. #**	
FIELD OBSERVATION	there was a car parked at this location leaking oil				
INITIAL ACTION	I covered oil spots with absorbent and distributed pollution prevention brochures at this neighborhood.				



Address 2819 RICHMOND NE

Event ID 623 **REPORTING SOURCE** EMAIL **Complaint Date** 4/11/2017

CUSTOMER PATRICK CHAVEZ **311CASE ID** NA **e-mail** pchavez@amafca.org

CUSTOMER Ph# 884-2215 SharePointLink: ..\2017\170411-email-amafca-2819 richmond ne

Complaint: oil is flowing from all directions under the dumpster

Suspected Facility BUSINESS **Type of Complaint** OIL

Inspection Date 4/12/2017 **Number of Field Visits** 1 **Inspector:** sk

Facility Contact MANAGER **Facility Ph. #**

FIELD OBSERVATION some one left several plastic containers of used motor oil behinf
d dumpester that was leaking on the floor

INITIAL ACTION I spoke to the manager, she said that people left used oil near the dumpster and they will clean it up. I left some pollution prevention brochures at this business.



Address	12070 MENAUL NE				
Event ID	624	**REPORTING SOURCE**	311	**Complaint Date**	4/10/2017
CUSTOMER	ANONYMOUS	**311CASE ID**	170410-002754	**e-mail**	
CUSTOMER Ph#		SharePointLink:	..\2017\170410-002754-12070 menaul ne		
Complaint:	citizen rinsing paint rollers in water and its dripping into gutter and street				
Suspected Facility	HOME			**Type of Complaint**	PAINT
Inspection Date	4/12/2017	**Number of Field Visits**	1	**Inspector:**	sk
Facility Contact	NA			**Facility Ph. #**	

FIELD OBSERVATION

I saw some light white residue along the gutter at this apartment complex. Unable to determine which of the apartments was the source of dumping paint.

INITIAL ACTION

I distributed pollution prevention brochures at this apartment complex.



Address	501 LOUISIANA SE						
Event ID	625	**REPORTING SOURCE**	311	**Complaint Date**	4/15/2017		
CUSTOMER	JOHN	**311CASE ID**	170415-001858	**e-mail**			
CUSTOMER Ph#	304-5297	SharePointLink:	..\2017\170415-001858-501 louisiana se				
Complaint:	Sweeping dirt with oil in it onto street.						
Suspected Facility	CASILLAS TIRE SHOP			**Type of Complaint**	OIL		
Inspection Date	4/18/2017	**Number of Field Visits**	1	**Inspector:**	sk		
Facility Contact	MANAGER	**Facility Ph. #**	304-2142				
FIELD OBSERVATION	there were several oil spots covered with dirt at this location.						
INITIAL ACTION	I asked the manager to clean up this area and distributed pollution prevention brochures around this area						



Address DOMINGO BACA ARROYO AT WASHINGTON

Event ID 626 **REPORTING SOURCE** 311 **Complaint Date** 5/5/2017

CUSTOMER PATRICK CHAVEZ **311CASE ID** E-MAIL **e-mail** pchavez@amafca.org

CUSTOMER Ph# 362-7342or884-2215 SharePointLink: ..\2017\170505-domingo baca arroyo

Complaint: AMAFCA staff noticed an unusual discoloration along the bottom of the channel. Appears as though the gray is a result of fire(s) upstream of the Domingo Baca Water Quality Facility.

Suspected Facility ARROYO **Type of Complaint** HAZARDOUS MATERIAL

Inspection Date 5/5/2017 **Number of Field Visits** 1 **Inspector:** sk-bl-ac

Facility Contact NA **Facility Ph. #**

FIELD OBSERVATION there was no evidence of fire upstream of washington. There was illicit discharge from a storm pipe into the arroyo, but it was clean water.

INITIAL ACTION no action was necessary



Address	PASEO DEL NORTE AND SAN PEDRO

Event ID	627	**REPORTING SOURCE**	311	**Complaint Date**	5/10/2017
CUSTOMER	RAUL VASQUEZ	**311CASE ID**	170510-000788	**e-mail**	
CUSTOMER Ph#	228-5224	SharePointLink:	..\2017\2017-05-10-170510-000788 Paseo Del Norte - Betweeen Louisian		

Complaint: Sewer getting dumped down the storms drains East on Paseo Del Norte Between San Pedro and Lousiana.

Suspected Facility	ABCWUA	**Type of Complaint**	SEWAGE
Inspection Date	5/10/2017	**Number of Field Visits**	1
Inspector:	BL-AC-		
Facility Contact	NA	**Facility Ph. #**	na

FIELD OBSERVATION: it was sanitary MH overflow case and ABCWUA was handling the case appropriately.

INITIAL ACTION: no action was necessary



Address	9820 MURIFIELD CT NE

Event ID	628	**REPORTING SOURCE**	311	**Complaint Date**	5/10/2017

CUSTOMER	JOHN CATHEY	**311CASE ID**	170510-000892	**e-mail**	tanoan2@comcast.net

CUSTOMER Ph#	823-2307	SharePointLink:	

Complaint: Callback regarding signs that say "There is no poop fairy" for he can put in the neighborhood.

Suspected Facility	HOME	**Type of Complaint**	DOG POOPS

Inspection Date	5/17/2017	**Number of Field Visits**	1	**Inspector:**	BL

Facility Contact		**Facility Ph. #**	

FIELD OBSERVATION na

INITIAL ACTION Inspecton Byron Lueras took him sever of the requested sign.



Address	1849 GEORGIA ST NE

Event ID	629	**REPORTING SOURCE**	311	**Complaint Date**	5/12/2017
CUSTOMER	JAMES ALLEN	**311CASE ID**	170512-001941	**e-mail**	
CUSTOMER Ph#	(520) 975-0695	SharePointLink:	..\2017\170512-001941 - 1849 Georgia NE		

Complaint: Painting the house, they are washing the paint buckets and paint rollers outside and the paint is washing down the street.

Suspected Facility	HOME	**Type of Complaint**	PAINT
Inspection Date	5/17/2017	**Number of Field Visits**	1
Inspector:	GS		
Facility Contact	RESIDENT	**Facility Ph. #**	

FIELD OBSERVATION: inspector saw dry paint residue along the gutter

INITIAL ACTION: Inspector Gary Sandoval visited the site and asked the resident to stop washing off paint rollers in to the street. also he distributed pollution prevention brochures at this neighborhood.



Address 4TH ST NW-HAINES AVE NW

Event ID 630 **REPORTING SOURCE** 311 **Complaint Date** 5/10/2017

CUSTOMER ANONYMOUS **311CASE ID** 170510-003017 **e-mail**

CUSTOMER Ph# SharePointLink: ..\2017\170510-003017 4th & Haines

Complaint: they witnessed an individual dumping tens of gallons of paint down the storm drain in front of the Albuquerque Tattoo Company. The business is located on the northwest side of the intersection.

Suspected Facility BUSINESS **Type of Complaint** PAINT

Inspection Date 5/17/2017 **Number of Field Visits** 1 **Inspector:** AC

Facility Contact NA **Facility Ph. #**

FIELD OBSERVATION inspector Andrew Chavez visited the site and did not find any paint dumping evidence.

INITIAL ACTION he distributed pollution prevention brochures around this area



Address	6608 AVENIDA LA COSTA NE

Event ID	631	**REPORTING SOURCE**	311	**Complaint Date**	5/27/2017
CUSTOMER	ANONYMOUS	**311CASE ID**	170527-002370	**e-mail**	
CUSTOMER Ph#		SharePointLink:	..\2017\170527-002370 6608 Avenida la Costa ne		

Complaint: Neighbor pouring pool water down the storm drain, Citizen says it is going west from address to south to west .

Suspected Facility	HOME	**Type of Complaint**	NUSIANCE WATER
Inspection Date	5/30/2017	**Number of Field Visits**	1
Inspector:	AC		
Facility Contact	RESIDENT	**Facility Ph. #**	

FIELD OBSERVATION inspector Andrew Chavez inspected this claim on 5-30. no one was home.

INITIAL ACTION he distributed pollution prevention brochures at this neighborhood.



Address	GLENDALE AVENUE EAST OF SAN PEDRO NE

Event ID	632	**REPORTING SOURCE**	WEB	**Complaint Date**	5/24/2017
CUSTOMER	GWEN CUSTER	**311CASE ID**	NA	**e-mail**	gcuster44@gmail.com
CUSTOMER Ph#		SharePointLink:	..\2017\170530 - Illegal dumping on Glendale NE		

Complaint: Mattress and box spring dumped on the street

Suspected Facility	STREET	**Type of Complaint**	TRASH

Inspection Date	5/30/2017	**Number of Field Visits**	1	**Inspector:**	
Facility Contact	NA	**Facility Ph. #**			

FIELD OBSERVATION there were several big items dumped along the street

INITIAL ACTION asaked street maintenance to pick up those items and they did.



Address REINCARNATION AUTO REPAIR AT 1300 2ND ST NW

Event ID 633 **REPORTING SOURCE** 311 **Complaint Date** 5/31/2017

CUSTOMER **311CASE ID** 170531-002366 **e-mail**

CUSTOMER Ph# SharePointLink: ..\2017\170601 - 1300 2nd St

Complaint: Employee at Reincarnation is dumping antifreeze and cleaning solvent on the street along the curb. He is dumping it on Rosemont St. on south side of business.

Suspected Facility REINCARNATION AUTO REPAIR **Type of Complaint** ANTIFREEZE

Inspection Date 6/1/2017 **Number of Field Visits** 1 **Inspector:** GS

Facility Contact MANAGER **Facility Ph. #**

FIELD OBSERVATION The owner stated that they do discard the mop water onto the street, but would refrain from that practice in the future.

INITIAL ACTION we distributed pollution prevention brochures at this area.

Address 509 EUGENE CT SE

Event ID 634 **REPORTING SOURCE** 311 **Complaint Date** 5/31/2017

CUSTOMER ANONYMOUS **311CASE ID** 170531-001630 **e-mail**

CUSTOMER Ph# SharePointLink: ..\2017\170601 - Eugene NE

Complaint: leaves and brush are being blown into the storm drain by neighbor's landscapers.

Suspected Facility HOME **Type of Complaint** LEAVES

Inspection Date 6/1/2017 **Number of Field Visits** 1 **Inspector:** GS

Facility Contact RESIDENT **Facility Ph. #** na

FIELD OBSERVATION The inlet was clean and clear of debris.the resident denied the claim.

INITIAL ACTION distributed pollution prevention brochures at this neighborhood

Address	1302 DARTMOUTH NE				
Event ID	635	**REPORTING SOURCE**	311	**Complaint Date**	6/3/2017
CUSTOMER	LINDA ROMERO	**311CASE ID**	170603-000264	**e-mail**	romero.linda2011@gmail.com
CUSTOMER Ph#	(505) 239-0761	SharePointLink:	..\2017\170603-000264 - Aspen at Dartmouth		
Complaint:	the owner of the triplex at 1302 Dartmouth NE was pouring stucco and other debris in the drain. This was done on 6/2/17.				
Suspected Facility	HOME			**Type of Complaint**	CONSTRUCTION
Inspection Date	6/6/2017	**Number of Field Visits**	1	**Inspector:**	AC
Facility Contact				**Facility Ph. #**	
FIELD OBSERVATION	No one on site when we arrived. Evidence of some stucco staining on retaining wall and around inlets on both Dartmouth and Aspen.				
INITIAL ACTION	pollution prevention brochures distributed at this neighborhood				



Address	CALLE CEREZA AND CALLE OLIVO NE

Event ID	636	**REPORTING SOURCE**	311	**Complaint Date**	6/7/2017
CUSTOMER	ANONYMOUS	**311CASE ID**	170607-003054	**e-mail**	
CUSTOMER Ph#		SharePointLink:	..\2017\20170607 - Calle Cereza NE		

Complaint: Oil Dripping into the Street on a Trailer may go into the storm Drain

Suspected Facility	TRAILER	**Type of Complaint**	OIL

Inspection Date	6/8/2017	**Number of Field Visits**	1	**Inspector:**	BL
Facility Contact	NA	**Facility Ph. #**	na		

FIELD OBSERVATION

We found no potential illicit discharge per the 311. I took photos of the storm water inlet. There were no signs of a trailer on the road in question.

INITIAL ACTION

pollution prevention brochoure distributed at this neighborhood



Address 6216 SUNRAY RD NW

Event ID 637 **REPORTING SOURCE** 311 **Complaint Date** 5/23/2017

CUSTOMER DON LEWIS **311CASE ID** 170523-001910 **e-mail**

CUSTOMER Ph# (505) 227-6593 SharePointLink: ..\2017\170523-001910 6216 Sunray Rd NW

Complaint: Car leaking oil

Suspected Facility HOME **Type of Complaint** OIL

Inspection Date 6/8/2017 **Number of Field Visits** 1 **Inspector:** BL

Facility Contact RESIDENT **Facility Ph. #**

FIELD OBSERVATION the car was parked on the owner's drivway with oil spots covered with absorbent.

INITIAL ACTION Inspector spoke to the owner and advised him to contain the oil leak, spread absorbent and pick it up and/or fix the leaking oil. Homeowner stated that the car will be removed as early as tomorrow. Pollution prevention brochures distributed at this neighborhood.



Address	10209 SANDY RIDGE SW

Event ID	638	**REPORTING SOURCE**	311	**Complaint Date**	6/8/2017
CUSTOMER	ANONYMOUS	**311CASE ID**	170608-003238	**e-mail**	
CUSTOMER Ph#	na	SharePointLink:	..\2017\170612 - 10209 Sandy Ridge SW		

Complaint: Citizen states the neighbor's black Malibu 2008 is parked in the street and continually leaks oil.

Suspected Facility	HOME	**Type of Complaint**	OIL
Inspection Date	6/12/2017	**Number of Field Visits**	1
Inspector:	GS		
Facility Contact	RESIDENT	**Facility Ph. #**	

FIELD OBSERVATION: There was no answer at the door

INITIAL ACTION: Inspector covered oil spots with absrbent and left a SW brochure at the home, as well as several other homes in the neighborhood.



Address	10415 LOST ARROWHEAD AVE SW

Event ID	639	**REPORTING SOURCE**	WEB	**Complaint Date**	6/12/2017

CUSTOMER	ANONYMOUS	**311CASE ID**	NA	**e-mail**	na

CUSTOMER Ph#	na	SharePointLink:	..\2017\170612 - 10415 Lost Arrowhead SW

Complaint: a pile of rocks piled up on the sidewalk

Suspected Facility	HOME	**Type of Complaint**	CONSTRUCTION

Inspection Date	6/12/2017	**Number of Field Visits**	1	**Inspector:**	GS

Facility Contact		**Facility Ph. #**	

FIELD OBSERVATION there was a pile of gravel blocking the sidewalk

INITIAL ACTION no body was home at the time of inspection. Created a 311 case for blocking sidewalk. The inspector distributed pollution prevention brochures at this neighborhood.



Address ALLEY BEHIND EFFEX NIGHT CLUB AT 421 GOLD AVE SW

Event ID 640 **REPORTING SOURCE** E-MAIL **Complaint Date** 6/19/2017

CUSTOMER BRYAN S REID **311CASE ID** NA **e-mail** bryan.reid@gsa.gov

CUSTOMER Ph# 248-7329 SharePointLink: ..\2017\170619 - 421 Gold Alleyway

Complaint: Solid Waste Management collects garbage, strewn all over the alley, and decants poisonous liquids on the alley floor, where it streams to the storm drain, eventually ending up in the Rio Grande.

Suspected Facility EFFEX NIGHT CLUB **Type of Complaint** COOKING GREASE

Inspection Date 6/27/2017 **Number of Field Visits** 1 **Inspector:** BL-GS

Facility Contact MANAGER-BOBBY GANGSTER **Facility Ph. #** 842-8870

FIELD OBSERVATION the inspectors observed the problem with the dumpster and unsanitary condition in the alley.

INITIAL ACTION the inspectors talked to the manager about the problem and the manager promissed to fix the problem.



Address	10024 GARDEN GATE LN SW

Event ID	641	**REPORTING SOURCE**	311	**Complaint Date**	6/26/2017
CUSTOMER	DIANA CAMPBELL	**311CASE ID**	170626-002050	**e-mail**	
CUSTOMER Ph#	217-8717	SharePointLink:			

Complaint: Citizen received a industrial high risk storm pollution letter to verify multi sector compliance, an MS4 inspection. Citizen has a sewing/craft business and doesn't use water except for residential purpose from her home where she take crafts to shows to sell. Please callback and leave a full voicemail with callback number and extension if get voicemail to answer if this is really necessary for her home business.

Suspected Facility	SEWING/CRAFT BUSINESS	**Type of Complaint**	MSGP PERMIT

Inspection Date	6/27/2017	**Number of Field Visits**	1	**Inspector:**	BL
Facility Contact	OWNER	**Facility Ph. #**	217-8717		

FIELD OBSERVATION no visit

INITIAL ACTION the inspector talked to her explaining the situation.

Address	813 MILDRED ST NE

Event ID	642	**REPORTING SOURCE**	311	**Complaint Date**	6/26/2017

CUSTOMER	BRENDA SCHMIEDICKE	**311CASE ID**	170626-000071	**e-mail**	designsinwood@gmail.com

CUSTOMER Ph#	298-2362	SharePointLink:	

Complaint: Call back requested regarding letter received on inspection

Suspected Facility	BUSINESS	**Type of Complaint**	MSGP PERMIT

Inspection Date	6/27/2017	**Number of Field Visits**	1	**Inspector:**	BL

Facility Contact	OWNER	**Facility Ph. #**	298-2362

FIELD OBSERVATION no visit

INITIAL ACTION the inspector e-mailed her with a respoce.

Address	7601 SCOTTS PL. NE				
Event ID	643	**REPORTING SOURCE**	311	**Complaint Date**	6/23/2017
CUSTOMER	SUZANNE MORENO	**311CASE ID**	170623-003187	**e-mail**	
CUSTOMER Ph#	306-0722	SharePointLink:	..\2017\170628 - 7601 Scotts Plc NE		
Complaint:	Citizen says a neighbor is powering spraying a engine block into the gutter for 15 minutes. Citizen has a picture. Gunk is in the street				
Suspected Facility	HOME	**Type of Complaint**	OIL		
Inspection Date	6/28/2017	**Number of Field Visits**	1	**Inspector:**	GS
Facility Contact	RESIDENT	**Facility Ph. #**	na		
FIELD OBSERVATION	There was a drip pan on site and there was no evidence of oil discharge on the driveway, sidewalk or gutter.				
INITIAL ACTION	The homeowner was not present. The inspector left a SW brochure on the door handle and distributed more brochures at this neighborhood..				



Address	5132 SAN ADAN DR. NW						
Event ID	644	**REPORTING SOURCE**	EMAIL	**Complaint Date**	6/27/2017		
CUSTOMER	KATHLEEN VERHAGE	**311CASE ID**	NA	**e-mail**	kverhage@cabq.gov		
CUSTOMER Ph#	768-3654	SharePointLink:	..\2017\170628-Mi Cordelia & San Adan NW				
Complaint:	Sand entering Storm Drain from Residential construction.						
Suspected Facility	HOME UNDER CONSTRUCTION			**Type of Complaint**	CONSTRUCTION		
Inspection Date	6/28/2017	**Number of Field Visits**	1	**Inspector:**	GS		
Facility Contact	CONTRACTOR MICHAEL MONTOYA			**Facility Ph. #**			
FIELD OBSERVATION	The storm drain was visually clean and there was no sand/dirt near the storm drain or evidence that there was sand that had flowed towards the storm drain.						
INITIAL ACTION	the inspector asked the contractor to keep the area clean.						



Address 7308 AZTEC RD NE

Event ID 645 **REPORTING SOURCE** 311 **Complaint Date** 6/22/2017

CUSTOMER ANONYMOUS **311CASE ID** 170622-001467 **e-mail**

CUSTOMER Ph# SharePointLink: ..\2017\170622-001467-7308 Aztec NE

Complaint: someone at the address reported is dumping paint and paint debris in the gutter and in the street, caller wanted this looked into.

Suspected Facility HOME **Type of Complaint** PAINT

Inspection Date 7/13/2017 **Number of Field Visits** 1 **Inspector:** GS

Facility Contact RESIDENT **Facility Ph. #**

FIELD OBSERVATION There was no evidence of an illicit discharge of salt or paint.

INITIAL ACTION Inspector left a brochure at the address.



Address	EUBANK OUTFALL

Event ID	646	**REPORTING SOURCE**	E-MAIL	**Complaint Date**	6/28/2017
CUSTOMER		**311CASE ID**	NA	**e-mail**	
CUSTOMER Ph#		SharePointLink:	..\2017\170717-Eubank Outfall		

Complaint: illicit discharge at this outfall at all the time with sewage odor.

Suspected Facility	UNKNOWN	**Type of Complaint**	SEWAGE

Inspection Date	6/28/2017	**Number of Field Visits**	1	**Inspector:**	AS
Facility Contact	NA	**Facility Ph. #**	na		

FIELD OBSERVATION invistigation is not complete yet

INITIAL ACTION inspector started opening MHs on the lines that leeds to this outfall. So far unable to locate the source.the invistigation still going on.



Address DOMINGO BACA AT WASHINGTON

Event ID 647 **REPORTING SOURCE** E-MAIL **Complaint Date** 6/28/2017

CUSTOMER CURTIS CHERNE **311CASE ID** NA **e-mail** ccherne@cabq.gov

CUSTOMER Ph# 924-3420 SharePointLink:

Complaint: illicit flow to the arroyo from a big pipe

Suspected Facility SANTA FE FEDERAL CREDIT UNION **Type of Complaint** GREY WATER

Inspection Date 6/28/2017 **Number of Field Visits** 1 **Inspector:** GS

Facility Contact HEADS UP **Facility Ph. #**

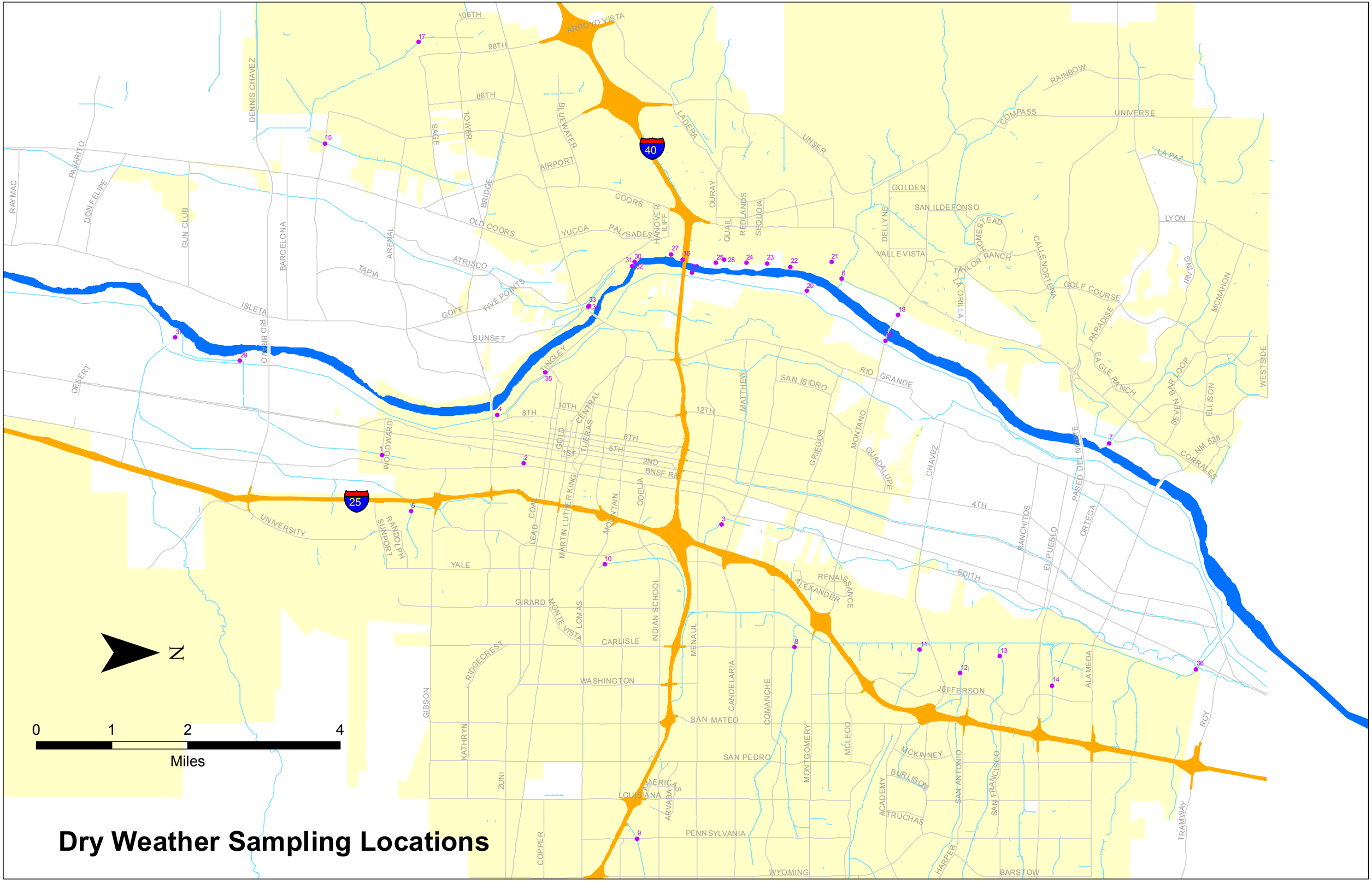
FIELD OBSERVATION the source of flow was leaks from irrigation system of the bank at 7101 Jefferson St NE

INITIAL ACTION the ground keeper started fixing the leak



Attachment 6

Dry Weather Screening Results


106TH
98TH
86TH
ARROYO VISTA
DENNIS CHAVEZ
SAGE
TOWER
BLUEWATER
BRIDGE
AIRPORT
LADERA
UNSER
RAINBOW
COMPASS
UNIVERSE
LA PAZ
LYON
GOLDEN
SAN ILDEFONSO
POMEROY
DELLYNE
VALLE VISTA
TAYLOR RANCH
LA ORILLA
CALLENORTENA
GOLF COURSE
PARADISE
EAGLE RANCH
SEVEN BAR LOOP
ELLISON
WESTSIDE
IRVING
MCMAHON
ROY
TRAMWAY
NM 528
CORRALES
RAYMAC
PAJARITO
DON FELIPE
GUN CLUB
BARCELONA
ARENAL
COORS
OLD COORS
YUCCA
PALISADES
HANOVER
ILIFF
OURAY
QUAIL
REDLANDS
SEQUOIA
ATRISCO
TAPIA
FIVE POINTS
GOFF
ISLETA
SUNSET
RIO BRAVO
DESERT
INGLEY
RIO GRANDE
SAN ISIDRO
MATTHEW
GRIEGOS
MONTANO
GUADALUPE
CHAVEZ
PASEO DEL NORTE
RANCHITOS
EL PUEBLO
ORTEGA
EDITH
RENAISSANCE
ALEXANDER
8TH
10TH
12TH
6TH
5TH
1ST
2ND
4TH
BNSF RR
CENTRAL
GOLD
TIJERAS
MARTIN LUTHER KING
MOUNTAIN
ODELIA
COAL
LEAD
WOODWARD
RANDOLPH
SUNPORT
UNIVERSITY
YALE
GIRARD
MONTE VISTA
LOMAS
INDIAN SCHOOL
MENAUL
CARLISLE
WASHINGTON
RIDGECREST
GIBSON
KATHRYN
ZUNI
COPPER
CANDELARIA
COMANCHE
SAN MATEO
SAN PEDRO
MONTGOMERY
MCLEOD
LOUISIANA
ARVADA
AMERICA
PENNSYLVANIA
WYOMING
JEFFERSON
ALAMEDA
MCKINNEY
BURLISON
ACADEMY
ATRUCHAS
SAN ANTONITO
SAN FRANCISCO
HARPER
BARSTOW
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Miles
Dry Weather Sampling Locations

Location 01	SAN JOSE DRAIN AT WOODWARD

DATE	12/7/2016	TIME	11:50 AM	WEATHER	sunny

SUSPECTED SOURCE	NO FLOW	EST. FlOW, CFS	0.00
SUSPECTED PROBLEM TYPE		APPEARANCE	

AIR TEMP,°F	46.0	OBSERV GROSS POLLUT:	
WATER TEMP,°F			
PH:		E_coli_Coliform mpn/100ml:	
DISS OXYGEN, MG/L:		OIL and GREASE, MG/L:	
CONDUCTIVITY, µmos/cm		AMMONIA, MG/L N:	
BOD, MG/L:		Nitrite NO2, MG/L:	
COD, MG/L:		Nitrate NO3, MG/L:	
TSS, MG/L:		NITRATE+NITRITE, MG/L N:	
TDS, MG/L:		TOTAL KJELDAHL N, MG/L N:	
		TOTAL PHOSPHORUS, MG/L P	
		INSPECTOR	SK



Location 02	BROADWAY POND INFLOW CHANNEL

DATE	12/12/2016	TIME	1:50 AM	WEATHER	cloudy

SUSPECTED SOURCE	over flow from cooling tower at lovelace medical center-downtown at 601 dr martin luther king ne	EST. FlOW, CFS	0.01

SUSPECTED PROBLEM TYPE		APPEARANCE	CLEAR

AIR TEMP,°F	56.0	OBSERV GROSS POLLUT:	
WATER TEMP,°F	50.0		
PH:	8.37	E_coli_Coliform mpn/100ml:	10.9
DISS OXYGEN, MG/L:	7.0	OIL and GREASE, MG/L:	< 10.4
CONDUCTIVITY, µmos/cm	880.0	AMMONIA, MG/L N:	< 1
BOD, MG/L:	< 2	Nitrite NO2, MG/L:	< 0.1
COD, MG/L:	31.3	Nitrate NO3, MG/L:	0.55
TSS, MG/L:	< 4	NITRATE+NITRITE, MG/L N:	< 0.65
TDS, MG/L:	585	TOTAL KJELDAHL N, MG/L N:	< 1
		TOTAL PHOSPHORUS, MG/L P	0.76
		INSPECTOR	SK



Location 03	MENAUL POND INFLOW CHANNEL

DATE	11/30/2016	TIME	11:20 AM	WEATHER	sunny

SUSPECTED SOURCE	NO FLOW	EST. FlOW, CFS	0.00
SUSPECTED PROBLEM TYPE		APPEARANCE	

AIR TEMP,°F	50.0	OBSERV GROSS POLLUT:	
WATER TEMP,°F			
PH:		E_coli_Coliform mpn/100ml:	
DISS OXYGEN, MG/L:		OIL and GREASE, MG/L:	
CONDUCTIVITY, µmos/cm		AMMONIA, MG/L N:	
BOD, MG/L:		Nitrite NO2, MG/L:	
COD, MG/L:		Nitrate NO3, MG/L:	
TSS, MG/L:		NITRATE+NITRITE, MG/L N:	
TDS, MG/L:		TOTAL KJELDAHL N, MG/L N:	
		TOTAL PHOSPHORUS, MG/L P	
		INSPECTOR	SK



Location 04	BARELAS PS-32

DATE	12/7/2016	TIME	12:30 PM	WEATHER	sunny

SUSPECTED SOURCE	groundwater infiltrarion	EST. FlOW, CFS	0.50
SUSPECTED PROBLEM TYPE	Nuisance Flow	APPEARANCE	CLEAR

AIR TEMP,°F	46.0	OBSERV GROSS POLLUT:	papers and leaves
WATER TEMP,°F	54.0		
PH:	8.01	E_coli_Coliform mpn/100ml:	686.7
DISS OXYGEN, MG/L:	7.0	OIL and GREASE, MG/L:	< 9.84
CONDUCTIVITY, µmos/cm	640.0	AMMONIA, MG/L N:	< 1
BOD, MG/L:	<2	Nitrite NO2, MG/L:	< 0.1
COD, MG/L:	<10.0	Nitrate NO3, MG/L:	0.22
TSS, MG/L:	<4	NITRATE+NITRITE, MG/L N:	< 0.32
TDS, MG/L:	429	TOTAL KJELDAHL N, MG/L N:	< 1.0
		TOTAL PHOSPHORUS, MG/L P	< 0.5
		INSPECTOR	SK



Location 05	KIRTLAND CHANNEL AT SOUTH DIVERSION CHANNEL

DATE	11/30/2016	TIME	11:45 AM	WEATHER	sunny

SUSPECTED SOURCE	NO FLOW	EST. FlOW, CFS	0.00

SUSPECTED PROBLEM TYPE		APPEARANCE	

AIR TEMP,°F	50.0	OBSERV GROSS POLLUT:	
WATER TEMP,°F			
PH:		E_coli_Coliform mpn/100ml:	
DISS OXYGEN, MG/L:		OIL and GREASE, MG/L:	
CONDUCTIVITY, µmos/cm		AMMONIA, MG/L N:	
BOD, MG/L:		Nitrite NO2, MG/L:	
COD, MG/L:		Nitrate NO3, MG/L:	
TSS, MG/L:		NITRATE+NITRITE, MG/L N:	
TDS, MG/L:		TOTAL KJELDAHL N, MG/L N:	
		TOTAL PHOSPHORUS, MG/L P	
		INSPECTOR	SK



Location 06	SAN ANTONIO ARROYO AT USGS GAGE (RIVER)

DATE	12/9/2016	TIME	9:20 AM	WEATHER	sunny

SUSPECTED SOURCE	NO FLOW	EST. FlOW, CFS	0.00

SUSPECTED PROBLEM TYPE		APPEARANCE	

AIR TEMP,°F	36.0	OBSERV GROSS POLLUT:	
WATER TEMP,°F			
PH:		E_coli_Coliform mpn/100ml:	
DISS OXYGEN, MG/L:		OIL and GREASE, MG/L:	
CONDUCTIVITY, µmos/cm		AMMONIA, MG/L N:	
BOD, MG/L:		Nitrite NO2, MG/L:	
COD, MG/L:		Nitrate NO3, MG/L:	
TSS, MG/L:		NITRATE+NITRITE, MG/L N:	
TDS, MG/L:		TOTAL KJELDAHL N, MG/L N:	
		TOTAL PHOSPHORUS, MG/L P	
		INSPECTOR	SK



Location 07	CALABACILLAS ARROYO AT RIO GRANDE

DATE	11/29/2016	TIME	2:45 PM	WEATHER	p.cloudy

SUSPECTED SOURCE	NO FLOW	EST. FlOW, CFS	0.00
SUSPECTED PROBLEM TYPE		APPEARANCE	

AIR TEMP,°F	54.0	OBSERV GROSS POLLUT:	
WATER TEMP,°F			
PH:		E_coli_Coliform mpn/100ml:	
DISS OXYGEN, MG/L:		OIL and GREASE, MG/L:	
CONDUCTIVITY, µmos/cm		AMMONIA, MG/L N:	
BOD, MG/L:		Nitrite NO2, MG/L:	
COD, MG/L:		Nitrate NO3, MG/L:	
TSS, MG/L:		NITRATE+NITRITE, MG/L N:	
TDS, MG/L:		TOTAL KJELDAHL N, MG/L N:	
		TOTAL PHOSPHORUS, MG/L P	
		INSPECTOR	SK



Location 08	HAHN ARROYO AT CARLISLE

DATE	11/30/2016	TIME	12:05 PM	WEATHER	sunny

SUSPECTED SOURCE	NO FLOW	EST. FlOW, CFS	0.00

SUSPECTED PROBLEM TYPE		APPEARANCE	

AIR TEMP,°F	52.0	OBSERV GROSS POLLUT:	
WATER TEMP,°F			
PH:		E_coli_Coliform mpn/100ml:	
DISS OXYGEN, MG/L:		OIL and GREASE, MG/L:	
CONDUCTIVITY, µmos/cm		AMMONIA, MG/L N:	
BOD, MG/L:		Nitrite NO2, MG/L:	
COD, MG/L:		Nitrate NO3, MG/L:	
TSS, MG/L:		NITRATE+NITRITE, MG/L N:	
TDS, MG/L:		TOTAL KJELDAHL N, MG/L N:	
		TOTAL PHOSPHORUS, MG/L P	
		INSPECTOR	SK



Location 09	EMBUDO ARROYO AT PENNSYLVANIA

DATE	11/30/2016	TIME	2:20 PM	WEATHER	sunny

SUSPECTED SOURCE	NO FLOW	EST. FlOW, CFS	0.00
SUSPECTED PROBLEM TYPE		APPEARANCE	

AIR TEMP,°F	54.0	OBSERV GROSS POLLUT:	
WATER TEMP,°F			
PH:		E_coli_Coliform mpn/100ml:	
DISS OXYGEN, MG/L:		OIL and GREASE, MG/L:	
CONDUCTIVITY, µmos/cm		AMMONIA, MG/L N:	
BOD, MG/L:		Nitrite NO2, MG/L:	
COD, MG/L:		Nitrate NO3, MG/L:	
TSS, MG/L:		NITRATE+NITRITE, MG/L N:	
TDS, MG/L:		TOTAL KJELDAHL N, MG/L N:	
		TOTAL PHOSPHORUS, MG/L P	
		INSPECTOR	SK



Location 10	HIGHLANDS SYSTEM OUTFALL AT UNM HOSPITAL

DATE	12/7/2016	TIME	11:30 AM	WEATHER	sunny

SUSPECTED SOURCE	NO FLOW	EST. FlOW, CFS	0.00
SUSPECTED PROBLEM TYPE		APPEARANCE	

AIR TEMP,°F	46.0	OBSERV GROSS POLLUT:	
WATER TEMP,°F			
PH:		E_coli_Coliform mpn/100ml:	
DISS OXYGEN, MG/L:		OIL and GREASE, MG/L:	
CONDUCTIVITY, µmos/cm		AMMONIA, MG/L N:	
BOD, MG/L:		Nitrite NO2, MG/L:	
COD, MG/L:		Nitrate NO3, MG/L:	
TSS, MG/L:		NITRATE+NITRITE, MG/L N:	
TDS, MG/L:		TOTAL KJELDAHL N, MG/L N:	
		TOTAL PHOSPHORUS, MG/L P	
		INSPECTOR	SK



Location 11	BEAR CANYON ARROYO AT NORTH DIVERSION CHANNEL-OSUNA

DATE	12/2/2016	TIME	1:35 PM	WEATHER	cloudy

SUSPECTED SOURCE	NO FLOW	EST. FlOW, CFS	0.00
SUSPECTED PROBLEM TYPE		APPEARANCE	

AIR TEMP,°F	52.0	OBSERV GROSS POLLUT:	
WATER TEMP,°F			
PH:		E_coli_Coliform mpn/100ml:	
DISS OXYGEN, MG/L:		OIL and GREASE, MG/L:	
CONDUCTIVITY, µmos/cm		AMMONIA, MG/L N:	
BOD, MG/L:		Nitrite NO2, MG/L:	
COD, MG/L:		Nitrate NO3, MG/L:	
TSS, MG/L:		NITRATE+NITRITE, MG/L N:	
TDS, MG/L:		TOTAL KJELDAHL N, MG/L N:	
		TOTAL PHOSPHORUS, MG/L P	
		INSPECTOR	SK



Location 12	SOUTH PINO ARROYO AT WASHINGTON

DATE	12/2/2016	TIME	1:45 PM	WEATHER	cloudy

SUSPECTED SOURCE	NO FLOW	EST. FlOW, CFS	0.00

SUSPECTED PROBLEM TYPE		APPEARANCE	

AIR TEMP,°F	52.0	OBSERV GROSS POLLUT:	
WATER TEMP,°F			
PH:		E_coli_Coliform mpn/100ml:	
DISS OXYGEN, MG/L:		OIL and GREASE, MG/L:	
CONDUCTIVITY, µmos/cm		AMMONIA, MG/L N:	
BOD, MG/L:		Nitrite NO2, MG/L:	
COD, MG/L:		Nitrate NO3, MG/L:	
TSS, MG/L:		NITRATE+NITRITE, MG/L N:	
TDS, MG/L:		TOTAL KJELDAHL N, MG/L N:	
		TOTAL PHOSPHORUS, MG/L P	
		INSPECTOR	SK



Location 13	NORTH PINO ARROYO AT NORTH DIVERSION CHANNEL

DATE	12/2/2016	TIME	2:10 PM	WEATHER	cloudy

SUSPECTED SOURCE	NO FLOW	EST. FlOW, CFS	0.00
SUSPECTED PROBLEM TYPE	na	APPEARANCE	

AIR TEMP,°F	52.0	OBSERV GROSS POLLUT:	na
WATER TEMP,°F			
PH:		E_coli_Coliform mpn/100ml:	
DISS OXYGEN, MG/L:		OIL and GREASE, MG/L:	
CONDUCTIVITY, µmos/cm		AMMONIA, MG/L N:	
BOD, MG/L:		Nitrite NO2, MG/L:	
COD, MG/L:		Nitrate NO3, MG/L:	
TSS, MG/L:		NITRATE+NITRITE, MG/L N:	
TDS, MG/L:		TOTAL KJELDAHL N, MG/L N:	
		TOTAL PHOSPHORUS, MG/L P	
		INSPECTOR	SK

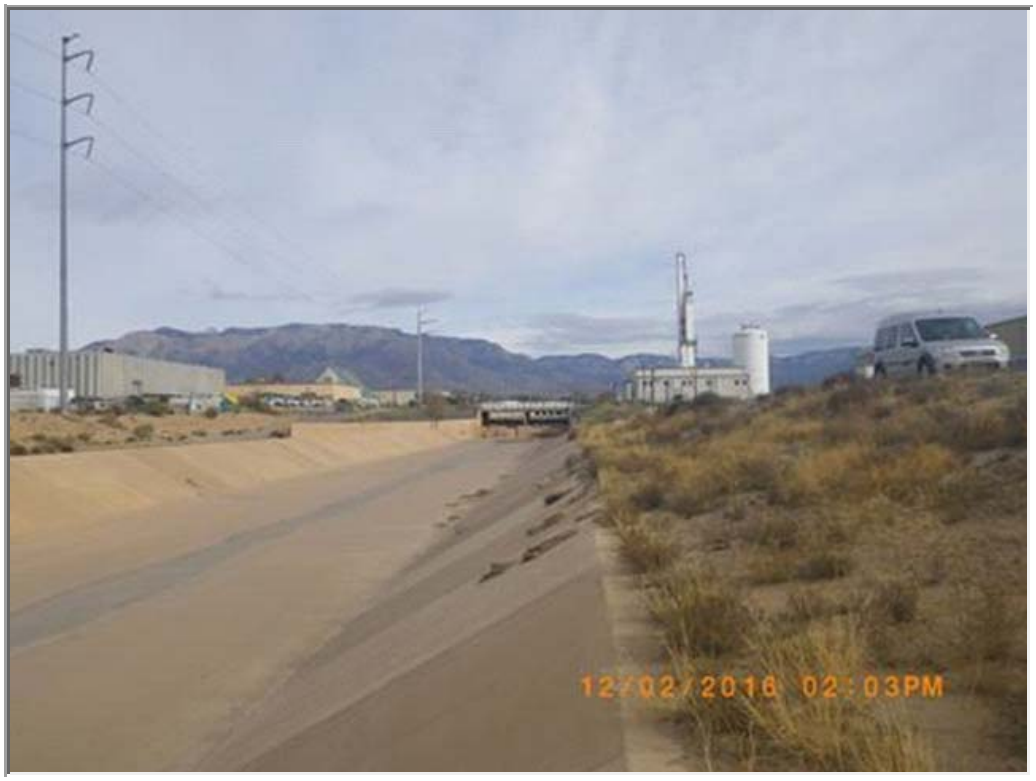


Location 14	SOUTH DOMINGO BACA ARROYO AT WASHINGTON

DATE	12/2/2016	TIME	2:00 PM	WEATHER	cloudy

SUSPECTED SOURCE	NO FLOW	EST. FlOW, CFS	0.00
SUSPECTED PROBLEM TYPE	na	APPEARANCE	na

AIR TEMP,°F	52.0	OBSERV GROSS POLLUT:	na
WATER TEMP,°F			
PH:		E_coli_Coliform mpn/100ml:	
DISS OXYGEN, MG/L:		OIL and GREASE, MG/L:	
CONDUCTIVITY, µmos/cm		AMMONIA, MG/L N:	
BOD, MG/L:		Nitrite NO2, MG/L:	
COD, MG/L:		Nitrate NO3, MG/L:	
TSS, MG/L:		NITRATE+NITRITE, MG/L N:	
TDS, MG/L:		TOTAL KJELDAHL N, MG/L N:	
		TOTAL PHOSPHORUS, MG/L P	
		INSPECTOR	SK



Location 15	AMOLE DEL NORTE CHANNEL AT BLAKE RD

DATE	12/8/2016	TIME	9:15 AM	WEATHER	sunny

SUSPECTED SOURCE	irrigation water from tower pond park at 700 86th st nw	EST. FlOW, CFS	0.01

SUSPECTED PROBLEM TYPE	Nuisance Flow	APPEARANCE	CLEAR

AIR TEMP,°F	36.0	OBSERV GROSS POLLUT:	none
WATER TEMP,°F	48.0		
PH:	8.88	E_coli_Coliform mpn/100ml:	< 1
DISS OXYGEN, MG/L:	7.0	OIL and GREASE, MG/L:	< 9.92
CONDUCTIVITY, µmos/cm	470.0	AMMONIA, MG/L N:	< 1.0
BOD, MG/L:	< 2.0	Nitrite NO2, MG/L:	< 0.1
COD, MG/L:	< 10	Nitrate NO3, MG/L:	1.1
TSS, MG/L:	< 4	NITRATE+NITRITE, MG/L N:	< 1.2
TDS, MG/L:	351	TOTAL KJELDAHL N, MG/L N:	1.0
		TOTAL PHOSPHORUS, MG/L P	< 0.5
		INSPECTOR	SK

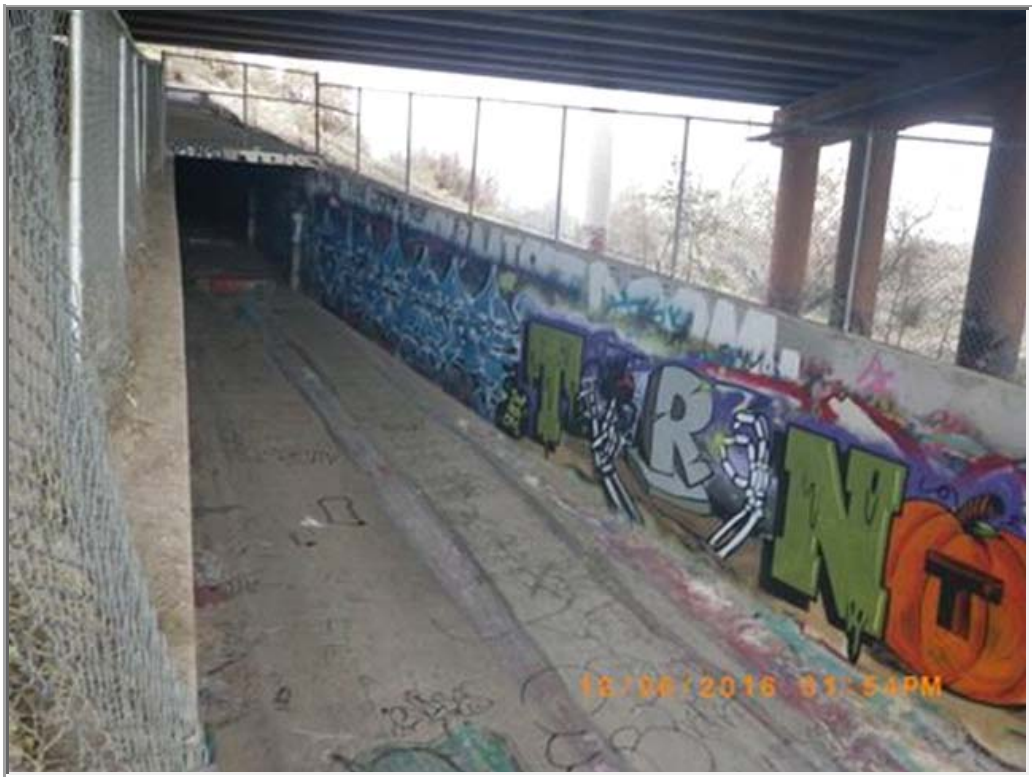


Location 16	WEST BLUFF I-40 OUTFALL AT RIO GRANDE

DATE	12/6/2016	TIME	1:55 PM	WEATHER	cloudy

SUSPECTED SOURCE	NO FLOW	EST. FlOW, CFS	0.00
SUSPECTED PROBLEM TYPE		APPEARANCE	

AIR TEMP,°F	50.0	OBSERV GROSS POLLUT:	
WATER TEMP,°F			
PH:		E_coli_Coliform mpn/100ml:	
DISS OXYGEN, MG/L:		OIL and GREASE, MG/L:	
CONDUCTIVITY, µmos/cm		AMMONIA, MG/L N:	
BOD, MG/L:		Nitrite NO2, MG/L:	
COD, MG/L:		Nitrate NO3, MG/L:	
TSS, MG/L:		NITRATE+NITRITE, MG/L N:	
TDS, MG/L:		TOTAL KJELDAHL N, MG/L N:	
		TOTAL PHOSPHORUS, MG/L P	
		INSPECTOR	SK



Location 17	SNOW VISTA ARROYO AT SAGE RD

DATE	12/5/2016	TIME	1:55 PM	WEATHER	sunny

SUSPECTED SOURCE	NO FLOW	EST. FlOW, CFS	0.00

SUSPECTED PROBLEM TYPE		APPEARANCE	

AIR TEMP,°F	58.0	OBSERV GROSS POLLUT:	
WATER TEMP,°F			
PH:		E_coli_Coliform mpn/100ml:	
DISS OXYGEN, MG/L:		OIL and GREASE, MG/L:	
CONDUCTIVITY, µmos/cm		AMMONIA, MG/L N:	
BOD, MG/L:		Nitrite NO2, MG/L:	
COD, MG/L:		Nitrate NO3, MG/L:	
TSS, MG/L:		NITRATE+NITRITE, MG/L N:	
TDS, MG/L:		TOTAL KJELDAHL N, MG/L N:	
		TOTAL PHOSPHORUS, MG/L P	
		INSPECTOR	SK



Location 18	Montano East of Coors

DATE	12/1/2016	TIME	11:00 AM	WEATHER	sunny

SUSPECTED SOURCE	NO FLOW	EST. FlOW, CFS	0.00
SUSPECTED PROBLEM TYPE		APPEARANCE	

AIR TEMP,°F	46.0	OBSERV GROSS POLLUT:	
WATER TEMP,°F			
PH:		E_coli_Coliform mpn/100ml:	
DISS OXYGEN, MG/L:		OIL and GREASE, MG/L:	
CONDUCTIVITY, µmos/cm		AMMONIA, MG/L N:	
BOD, MG/L:		Nitrite NO2, MG/L:	
COD, MG/L:		Nitrate NO3, MG/L:	
TSS, MG/L:		NITRATE+NITRITE, MG/L N:	
TDS, MG/L:		TOTAL KJELDAHL N, MG/L N:	
		TOTAL PHOSPHORUS, MG/L P	
		INSPECTOR	SK



Location 19	Montano PS-47 west of Rio Grande Blvd

DATE	12/1/2016	TIME	10:45 AM	WEATHER	sunny

SUSPECTED SOURCE	NO FLOW	EST. FlOW, CFS	0.00
SUSPECTED PROBLEM TYPE		APPEARANCE	

AIR TEMP,°F	46.0	OBSERV GROSS POLLUT:	
WATER TEMP,°F			
PH:		E_coli_Coliform mpn/100ml:	
DISS OXYGEN, MG/L:		OIL and GREASE, MG/L:	
CONDUCTIVITY, µmos/cm		AMMONIA, MG/L N:	
BOD, MG/L:		Nitrite NO2, MG/L:	
COD, MG/L:		Nitrate NO3, MG/L:	
TSS, MG/L:		NITRATE+NITRITE, MG/L N:	
TDS, MG/L:		TOTAL KJELDAHL N, MG/L N:	
		TOTAL PHOSPHORUS, MG/L P	
		INSPECTOR	SK



Location 20	Candelaria PS-40

DATE	12/9/2016	TIME	11:20 AM	WEATHER	sunny

SUSPECTED SOURCE	NO FLOW	EST. FlOW, CFS	0.00
SUSPECTED PROBLEM TYPE		APPEARANCE	

AIR TEMP,°F	42.0	OBSERV GROSS POLLUT:	
WATER TEMP,°F			
PH:		E_coli_Coliform mpn/100ml:	
DISS OXYGEN, MG/L:		OIL and GREASE, MG/L:	
CONDUCTIVITY, µmos/cm		AMMONIA, MG/L N:	
BOD, MG/L:		Nitrite NO2, MG/L:	
COD, MG/L:		Nitrate NO3, MG/L:	
TSS, MG/L:		NITRATE+NITRITE, MG/L N:	
TDS, MG/L:		TOTAL KJELDAHL N, MG/L N:	
		TOTAL PHOSPHORUS, MG/L P	
		INSPECTOR	SK



Location 21	Namaste and Coors

DATE	12/1/2016	TIME	11:30 AM	WEATHER	sunny

SUSPECTED SOURCE	NO FLOW	EST. FlOW, CFS	0.00
SUSPECTED PROBLEM TYPE		APPEARANCE	

AIR TEMP,°F	48.0	OBSERV GROSS POLLUT:	
WATER TEMP,°F			
PH:		E_coli_Coliform mpn/100ml:	
DISS OXYGEN, MG/L:		OIL and GREASE, MG/L:	
CONDUCTIVITY, µmos/cm		AMMONIA, MG/L N:	
BOD, MG/L:		Nitrite NO2, MG/L:	
COD, MG/L:		Nitrate NO3, MG/L:	
TSS, MG/L:		NITRATE+NITRITE, MG/L N:	
TDS, MG/L:		TOTAL KJELDAHL N, MG/L N:	
		TOTAL PHOSPHORUS, MG/L P	
		INSPECTOR	SK



Location 22	Snow Goose at Oxbow Bluff

DATE	12/14/2016	TIME	2:00 PM	WEATHER	Sunny

SUSPECTED SOURCE	NO FLOW	EST. FlOW, CFS	0.00
SUSPECTED PROBLEM TYPE		APPEARANCE	

AIR TEMP,°F	60.0	OBSERV GROSS POLLUT:	
WATER TEMP,°F			
PH:		E_coli_Coliform mpn/100ml:	
DISS OXYGEN, MG/L:		OIL and GREASE, MG/L:	
CONDUCTIVITY, µmos/cm		AMMONIA, MG/L N:	
BOD, MG/L:		Nitrite NO2, MG/L:	
COD, MG/L:		Nitrate NO3, MG/L:	
TSS, MG/L:		NITRATE+NITRITE, MG/L N:	
TDS, MG/L:		TOTAL KJELDAHL N, MG/L N:	
		TOTAL PHOSPHORUS, MG/L P	
		INSPECTOR	SK



Location 23	Sequoia

DATE	12/13/2016	TIME	2:45 PM	WEATHER	sunny

SUSPECTED SOURCE	discharge from gonzales 3 water well	EST. FlOW, CFS	0.30
SUSPECTED PROBLEM TYPE	Nuisance Flow	APPEARANCE	clear

AIR TEMP,°F	58.0	OBSERV GROSS POLLUT:	none
WATER TEMP,°F	66.0		
PH:	8.37	E_coli_Coliform mpn/100ml:	< 1
DISS OXYGEN, MG/L:	6.0	OIL and GREASE, MG/L:	< 9.76
CONDUCTIVITY, µmos/cm	420.0	AMMONIA, MG/L N:	<1
BOD, MG/L:	< 2	Nitrite NO2, MG/L:	< 0.1
COD, MG/L:	18.2	Nitrate NO3, MG/L:	0.31
TSS, MG/L:	< 4	NITRATE+NITRITE, MG/L N:	< 0.41
TDS, MG/L:	322	TOTAL KJELDAHL N, MG/L N:	<1
		TOTAL PHOSPHORUS, MG/L P	< 0.5
		INSPECTOR	SK



Location 24	Redlands-Grande Vista

DATE	12/9/2016	TIME	2:10 PM	WEATHER	sunny

SUSPECTED SOURCE	NO FLOW	EST. FlOW, CFS	0.00
SUSPECTED PROBLEM TYPE		APPEARANCE	

AIR TEMP,°F	45.0	OBSERV GROSS POLLUT:	
WATER TEMP,°F			
PH:		E_coli_Coliform mpn/100ml:	
DISS OXYGEN, MG/L:		OIL and GREASE, MG/L:	
CONDUCTIVITY, µmos/cm		AMMONIA, MG/L N:	
BOD, MG/L:		Nitrite NO2, MG/L:	
COD, MG/L:		Nitrate NO3, MG/L:	
TSS, MG/L:		NITRATE+NITRITE, MG/L N:	
TDS, MG/L:		TOTAL KJELDAHL N, MG/L N:	
		TOTAL PHOSPHORUS, MG/L P	
		INSPECTOR	SK



Location 25	Paseo del rey-ouray-vista grande

DATE	12/13/2016	TIME	2:10 PM	WEATHER	sunny

SUSPECTED SOURCE	NO FLOW	EST. FlOW, CFS	0.00
SUSPECTED PROBLEM TYPE		APPEARANCE	

AIR TEMP,°F	58.0	OBSERV GROSS POLLUT:	
WATER TEMP,°F			
PH:		E_coli_Coliform mpn/100ml:	
DISS OXYGEN, MG/L:		OIL and GREASE, MG/L:	
CONDUCTIVITY, µmos/cm		AMMONIA, MG/L N:	
BOD, MG/L:		Nitrite NO2, MG/L:	
COD, MG/L:		Nitrate NO3, MG/L:	
TSS, MG/L:		NITRATE+NITRITE, MG/L N:	
TDS, MG/L:		TOTAL KJELDAHL N, MG/L N:	
		TOTAL PHOSPHORUS, MG/L P	
		INSPECTOR	SK



Location	26	Duranes PS

DATE	12/9/2016	TIME	10:45 AM	WEATHER	sunny

SUSPECTED SOURCE	NO FLOW	EST. FlOW, CFS	0.00
SUSPECTED PROBLEM TYPE		APPEARANCE	

AIR TEMP,°F	40.0	OBSERV GROSS POLLUT:	
WATER TEMP,°F			
PH:		E_coli_Coliform mpn/100ml:	
DISS OXYGEN, MG/L:		OIL and GREASE, MG/L:	
CONDUCTIVITY, µmos/cm		AMMONIA, MG/L N:	
BOD, MG/L:		Nitrite NO2, MG/L:	
COD, MG/L:		Nitrate NO3, MG/L:	
TSS, MG/L:		NITRATE+NITRITE, MG/L N:	
TDS, MG/L:		TOTAL KJELDAHL N, MG/L N:	
		TOTAL PHOSPHORUS, MG/L P	
		INSPECTOR	SK



Location 27	calle del vista-Atrisco

DATE	12/6/2016	TIME	1:35 PM	WEATHER	cloudy

SUSPECTED SOURCE	NO FLOW	EST. FlOW, CFS	0.00

SUSPECTED PROBLEM TYPE		APPEARANCE	

AIR TEMP,°F	50.0	OBSERV GROSS POLLUT:	
WATER TEMP,°F			
PH:		E_coli_Coliform mpn/100ml:	
DISS OXYGEN, MG/L:		OIL and GREASE, MG/L:	
CONDUCTIVITY, µmos/cm		AMMONIA, MG/L N:	
BOD, MG/L:		Nitrite NO2, MG/L:	
COD, MG/L:		Nitrate NO3, MG/L:	
TSS, MG/L:		NITRATE+NITRITE, MG/L N:	
TDS, MG/L:		TOTAL KJELDAHL N, MG/L N:	
		TOTAL PHOSPHORUS, MG/L P	
		INSPECTOR	SK



Location	28	westcliffe and josephine nw

DATE	12/13/2016	TIME	2:00 PM	WEATHER	sunny

SUSPECTED SOURCE	NO FLOW	EST. FlOW, CFS	0.00

SUSPECTED PROBLEM TYPE		APPEARANCE	

AIR TEMP,°F	58.0	OBSERV GROSS POLLUT:	
WATER TEMP,°F			
PH:		E_coli_Coliform mpn/100ml:	
DISS OXYGEN, MG/L:		OIL and GREASE, MG/L:	
CONDUCTIVITY, µmos/cm		AMMONIA, MG/L N:	
BOD, MG/L:		Nitrite NO2, MG/L:	
COD, MG/L:		Nitrate NO3, MG/L:	
TSS, MG/L:		NITRATE+NITRITE, MG/L N:	
TDS, MG/L:		TOTAL KJELDAHL N, MG/L N:	
		TOTAL PHOSPHORUS, MG/L P	
		INSPECTOR	SK



Location 29	San Jose drain at abq riverside drain

DATE	12/5/2016	TIME	11:10 AM	WEATHER	sunny

SUSPECTED SOURCE	NO FLOW	EST. FlOW, CFS	0.00
SUSPECTED PROBLEM TYPE		APPEARANCE	

AIR TEMP,°F	52.0	OBSERV GROSS POLLUT:	
WATER TEMP,°F			
PH:		E_coli_Coliform mpn/100ml:	
DISS OXYGEN, MG/L:		OIL and GREASE, MG/L:	
CONDUCTIVITY, µmos/cm		AMMONIA, MG/L N:	
BOD, MG/L:		Nitrite NO2, MG/L:	
COD, MG/L:		Nitrate NO3, MG/L:	
TSS, MG/L:		NITRATE+NITRITE, MG/L N:	
TDS, MG/L:		TOTAL KJELDAHL N, MG/L N:	
		TOTAL PHOSPHORUS, MG/L P	
		INSPECTOR	SK



Location 30	Atrisco-Atrisco Pl-riverview

DATE	12/6/2016	TIME	2:45 PM	WEATHER	cloudy

SUSPECTED SOURCE	NO FLOW	EST. FlOW, CFS	0.00

SUSPECTED PROBLEM TYPE		APPEARANCE	

AIR TEMP,°F	48.0	OBSERV GROSS POLLUT:	
WATER TEMP,°F			
PH:		E_coli_Coliform mpn/100ml:	
DISS OXYGEN, MG/L:		OIL and GREASE, MG/L:	
CONDUCTIVITY, µmos/cm		AMMONIA, MG/L N:	
BOD, MG/L:		Nitrite NO2, MG/L:	
COD, MG/L:		Nitrate NO3, MG/L:	
TSS, MG/L:		NITRATE+NITRITE, MG/L N:	
TDS, MG/L:		TOTAL KJELDAHL N, MG/L N:	
		TOTAL PHOSPHORUS, MG/L P	
		INSPECTOR	SK



Location	31	Labajada-atrisco-north 30 in pipe

DATE	12/6/2016	TIME	2:20 PM	WEATHER	cloudy

SUSPECTED SOURCE	NO FLOW	EST. FlOW, CFS	0.00
SUSPECTED PROBLEM TYPE		APPEARANCE	

AIR TEMP,°F	48.0	OBSERV GROSS POLLUT:	
WATER TEMP,°F			
PH:		E_coli_Coliform mpn/100ml:	
DISS OXYGEN, MG/L:		OIL and GREASE, MG/L:	
CONDUCTIVITY, µmos/cm		AMMONIA, MG/L N:	
BOD, MG/L:		Nitrite NO2, MG/L:	
COD, MG/L:		Nitrate NO3, MG/L:	
TSS, MG/L:		NITRATE+NITRITE, MG/L N:	
TDS, MG/L:		TOTAL KJELDAHL N, MG/L N:	
		TOTAL PHOSPHORUS, MG/L P	
		INSPECTOR	SK



Location 32	Labajada-atrisco-south 36 in pipe

DATE	12/6/2016	TIME	2:20 PM	WEATHER	cloudy

SUSPECTED SOURCE	NO FLOW	EST. FlOW, CFS	0.00
SUSPECTED PROBLEM TYPE		APPEARANCE	

AIR TEMP,°F	48.0	OBSERV GROSS POLLUT:	
WATER TEMP,°F			
PH:		E_coli_Coliform mpn/100ml:	
DISS OXYGEN, MG/L:		OIL and GREASE, MG/L:	
CONDUCTIVITY, µmos/cm		AMMONIA, MG/L N:	
BOD, MG/L:		Nitrite NO2, MG/L:	
COD, MG/L:		Nitrate NO3, MG/L:	
TSS, MG/L:		NITRATE+NITRITE, MG/L N:	
TDS, MG/L:		TOTAL KJELDAHL N, MG/L N:	
		TOTAL PHOSPHORUS, MG/L P	
		INSPECTOR	SK



Location 33	central-sunset-Osage PS-44-2 pipes 36 and 42 in

DATE	12/5/2016	TIME	2:20 PM	WEATHER	sunny

SUSPECTED SOURCE	NO FLOW	EST. FlOW, CFS	0.00

SUSPECTED PROBLEM TYPE		APPEARANCE	

AIR TEMP,°F	58.0	OBSERV GROSS POLLUT:	
WATER TEMP,°F			
PH:		E_coli_Coliform mpn/100ml:	
DISS OXYGEN, MG/L:		OIL and GREASE, MG/L:	
CONDUCTIVITY, µmos/cm		AMMONIA, MG/L N:	
BOD, MG/L:		Nitrite NO2, MG/L:	
COD, MG/L:		Nitrate NO3, MG/L:	
TSS, MG/L:		NITRATE+NITRITE, MG/L N:	
TDS, MG/L:		TOTAL KJELDAHL N, MG/L N:	
		TOTAL PHOSPHORUS, MG/L P	
		INSPECTOR	SK



Location 34	central-sunset-Osage PS-44-6 in pipe

DATE	12/7/2016	TIME	1:15 PM	WEATHER	sunny

SUSPECTED SOURCE	groundwater infiltrarion	EST. FlOW, CFS	0.30
SUSPECTED PROBLEM TYPE	Nuisance Flow	APPEARANCE	CLEAR

AIR TEMP,°F	46.0	OBSERV GROSS POLLUT:	NONE
WATER TEMP,°F	55.0		
PH:	7.85	E_coli_Coliform mpn/100ml:	218.7
DISS OXYGEN, MG/L:	8.0	OIL and GREASE, MG/L:	< 10.2
CONDUCTIVITY, µmos/cm	720.0	AMMONIA, MG/L N:	< 1.0
BOD, MG/L:	< 2	Nitrite NO2, MG/L:	< 0.1
COD, MG/L:	< 10	Nitrate NO3, MG/L:	0.27
TSS, MG/L:	< 4	NITRATE+NITRITE, MG/L N:	< 0.37
TDS, MG/L:	494	TOTAL KJELDAHL N, MG/L N:	< 1.0
		TOTAL PHOSPHORUS, MG/L P	< 0.5
		INSPECTOR	SK



Location	35	Alcalde PS-41

DATE	12/5/2016	TIME	12:00 PM	WEATHER	sunny

SUSPECTED SOURCE	NO FLOW	EST. FlOW, CFS	0.00
SUSPECTED PROBLEM TYPE		APPEARANCE	

AIR TEMP,°F	52.0	OBSERV GROSS POLLUT:	
WATER TEMP,°F			
PH:		E_coli_Coliform mpn/100ml:	
DISS OXYGEN, MG/L:		OIL and GREASE, MG/L:	
CONDUCTIVITY, µmos/cm		AMMONIA, MG/L N:	
BOD, MG/L:		Nitrite NO2, MG/L:	
COD, MG/L:		Nitrate NO3, MG/L:	
TSS, MG/L:		NITRATE+NITRITE, MG/L N:	
TDS, MG/L:		TOTAL KJELDAHL N, MG/L N:	
		TOTAL PHOSPHORUS, MG/L P	
		INSPECTOR	SK



Location 36	NDC at Edith

DATE	12/8/2016	TIME	10:30 AM	WEATHER	sunny

SUSPECTED SOURCE	Mostly from drinking water wells wash outs	EST. FlOW, CFS	0.10
SUSPECTED PROBLEM TYPE	Nuisance Flow	APPEARANCE	turbid

AIR TEMP,°F	40.0	OBSERV GROSS POLLUT:	
WATER TEMP,°F	36.0		
PH:	7.86	E_coli_Coliform mpn/100ml:	63
DISS OXYGEN, MG/L:	8.0	OIL and GREASE, MG/L:	< 9.64
CONDUCTIVITY, µmos/cm	910.0	AMMONIA, MG/L N:	< 1.0
BOD, MG/L:	20.0	Nitrite NO2, MG/L:	< 0.5
COD, MG/L:	46.3	Nitrate NO3, MG/L:	< 0.5
TSS, MG/L:	74	NITRATE+NITRITE, MG/L N:	< 1.0
TDS, MG/L:	590	TOTAL KJELDAHL N, MG/L N:	2.5
		TOTAL PHOSPHORUS, MG/L P	< 2.5
		INSPECTOR	SK



Location	37	Tijeras at 2nd st-valley high sw

DATE	12/5/2016	TIME	11:35 AM	WEATHER	sunny

SUSPECTED SOURCE	NO FLOW	EST. FlOW, CFS	0.00
SUSPECTED PROBLEM TYPE		APPEARANCE	

AIR TEMP,°F	52.0	OBSERV GROSS POLLUT:	
WATER TEMP,°F			
PH:		E_coli_Coliform mpn/100ml:	
DISS OXYGEN, MG/L:		OIL and GREASE, MG/L:	
CONDUCTIVITY, µmos/cm		AMMONIA, MG/L N:	
BOD, MG/L:		Nitrite NO2, MG/L:	
COD, MG/L:		Nitrate NO3, MG/L:	
TSS, MG/L:		NITRATE+NITRITE, MG/L N:	
TDS, MG/L:		TOTAL KJELDAHL N, MG/L N:	
		TOTAL PHOSPHORUS, MG/L P	
		INSPECTOR	SK



Attachment 7

Visual Monitoring Results

Weston Solutions, Inc.
3840 Commons Ave. NE
Albuquerque, NM 87109
505-837-6520 Fax 505-837-6550
www.westonsolutions.com

October 7, 2016

Ms. Kathy Verhage, P.E.
Department of Municipal Development - Storm Drainage Design
City of Albuquerque
P.O. Box 1293
Albuquerque, NM 87103

Reference: PROJECT NO. 8010 CITYWIDE ON-CALL NPDES AND MS4 ENGINEERING SUPPORT SERVICES 3nd QUARTER 2016 UPDATE TASK 3 VISUAL STORM WATER INSPECTIONS

Dear Ms. Verhage:

This Memo describes the results of the 2016 Quarter 3 Visual Storm Water Inspections for 16 City of Albuquerque (City) facilities. This evaluation and memo has been prepared to address the requirements of the U.S. Environmental Protection Agency's (EPA) Municipal Separate Storm Sewer System (MS4) Permit issued to the City in 2014 and the Multi Sector General Permit for Storm Water Discharges Associated with Industrial Activity (MSGP) at City-owned facilities. Its purpose is to document the City's compliance with the requirements relative to quarterly storm water monitoring.

To comply with the MS4 and MSGP's requirements for storm water monitoring, Weston Solutions and CDM Smith were tasked with performing quarterly visual storm monitoring at 17 City-owned facilities which meet the definition of an industrial facility in the MSGP based on audits of city owned facilities performed between 2012 and 2016. The following facilities were monitored for visual inspection, locations of these facilities are also shown in Figure 1.

- Arroyo Del Oso Golf Course
- Arroyo Maintenance Facility
- Balloon Fiesta Park/ Golf Training Center
- Albuquerque BioPark Facilities*
- Daytona Transit Center
- Fire Department Mechanical Shop
- Fleet- 4th Street Fuel Station
- Fleet- Lomas Fuel Station
- Ladera Golf Course
- Los Altos Golf Course
- Montessa Park Open Space
- Pino Yards
- Puerto del Sol Golf Course
- Street Satellite #1
- Street Satellite #2
- Street Satellite #3
- Yale Transit Center

visual monitoring for the ABQ BioPark Facilities will begin after the implementation of their SWPPP, SPCC Plan, training, and Implementation Inspection estimated for 4th Quarter 2016

Table 1 shows the Outfall identification names along with the inspection team responsible for monitoring the particular outfall.

Figure 1: Facility Site Locations

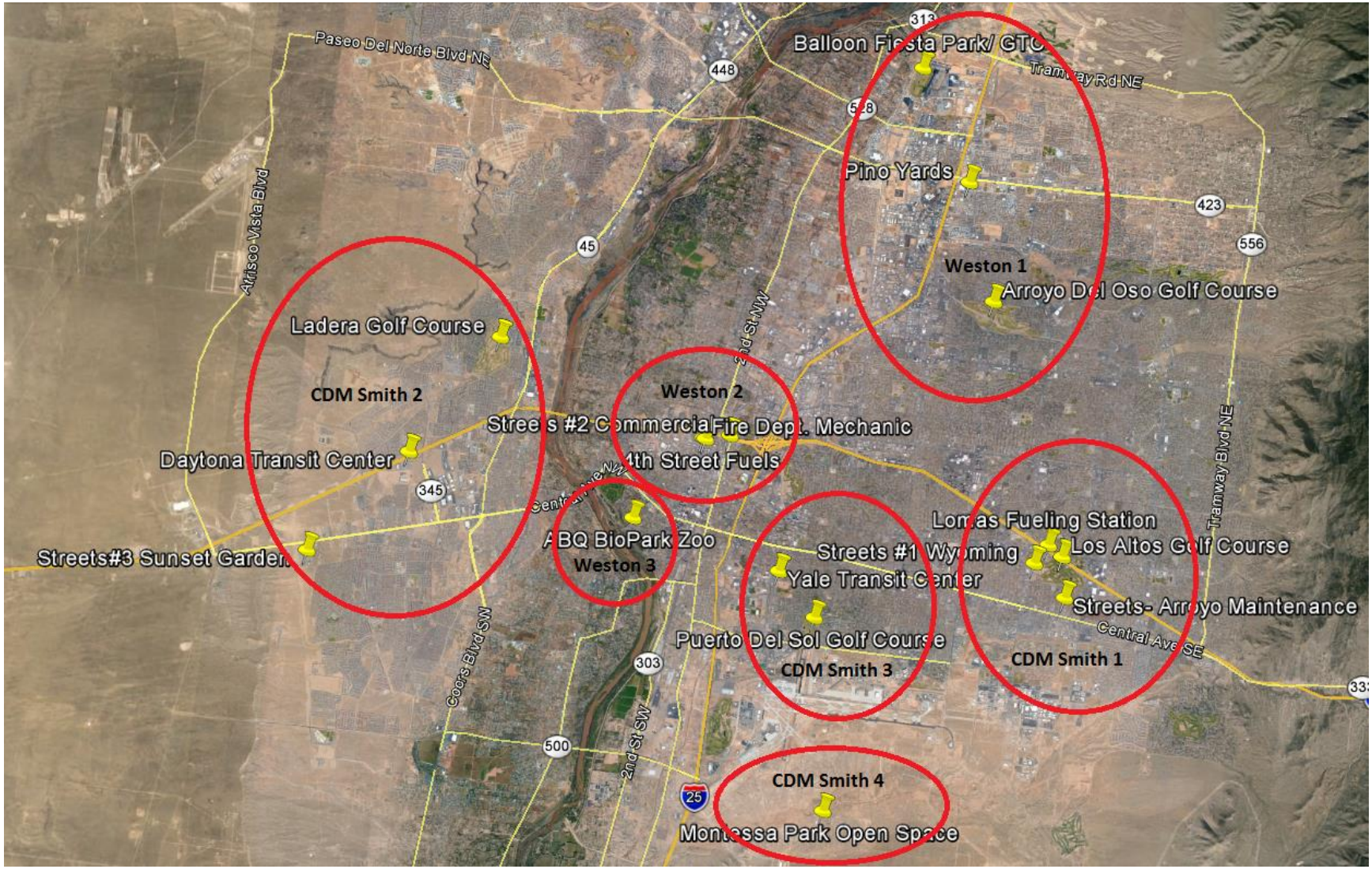


Table 1: Outfall ID and Designees

Site	Outfall ID
Weston 1	
Balloon Fiesta Park/ Golf Training Center	BFP1
	BFP2
	BFP3
	BFP4
	BFP5
Pino Yards	PY1
	PY2
	PY3
Arroyo Del Oso Golf Course	ADO1
	ADO2
Weston 2	
Fleet- 4th Street Fuels	FS1
Fire Department Mechanic Shop	FM1
	FM2
Street Satellite #2	SS2
CDM Smith 1	
Los Altos Golf Course	LA1
	LA2
Fleet- Lomas Fuel Station	L1
Arroyo Maintenance Facility	AM1
Street Satellite #1	SS1A
	SS1B
CDM Smith 2	
Daytona Transit Center	D1
	D2
Ladera Golf Course	LGC1
	LGC2
Street Satellite #3	SS3
CDM Smith 3	
Puerto Del Sol Golf Course	PDS1
	PDS2
Yale Transit Facility	Y1
CDM Smith 4	
Montessa Park Open Space	MP1
	MP2
***Weston 3**	
*ABQ BioPark Facilities	*BP1

visual monitoring for the ABQ BioPark Facilities will begin after the implementation of their SWPPP, SPCC Plan, training and implementation inspection estimated for 4th Quarter 2016 (SWPPP and SPCC in place Aug 2016)

Background

The MSGP establishes requirements for monitoring the quality of storm water discharges depending on the activities at the different types of industrial facility. Although benchmark monitoring is not required, the MSGP does require quarterly visual assessment of storm water quality. Visual assessment consists of the collection of grab samples from each outfall (subject to demonstration of substantially identical outfalls) and examination for the presence of color, odor, clarity, floating solids, settled solids, suspended solids, foam, oil sheen, or other indicators of storm water pollution.

Certain criteria regarding the precipitation event must be met for an assessment event. Visual assessment of storm water must occur:

- During daylight hours
- Within 30 minutes of the start of storm water discharge (or as soon as practicable
- thereafter)
- At least 72 hours after the previous storm water discharge event

Weston will follow the City's existing storm water monitoring protocol outlining the locations and descriptions of all outfalls to be monitored. The protocol identifies contact persons at each facility for use in notifying City personnel when members of the storm water monitoring team are mobilizing to that location. A standard visual assessment form will be used by all staff to document the monitoring activities.

Quarter 3 Monitoring Results

Kick-off for this work was on June 8th 2016. The sampling period ran from July 1 to September 30. Weston Team 1 mobilized 10 times during the three months to collect samples from storm events. A visual sample was collected from all outfalls over the course of the 10 mobilizations. 4 repeat samples (2 for ADO and 2 for BFP) were also collected. Weston Team 2 mobilized 5 times and collected a sample from all outfalls over the course of the 5 mobilizations. 3 repeat samples were also collected (1 for Fire Mechanic, 1 for 4th Street Fuels and 1 for Streets #2). CDM Smith Team 1 mobilized 1 time during the three months to collect samples from storm events. A visual sample was collected from 1 outfall over the course of the 1 mobilization. No repeat samples were collected. CDM Smith Team 2 mobilized 2 times during the three months to collect samples from storm events. A visual sample was collected from 2 outfalls over the course of the 2 mobilizations. No repeat samples were collected. CDM Smith Team 3 mobilized 1 time during the three months to collect samples from storm events. A visual sample was collected from 2 outfalls over the course of the 1 mobilization. No repeat samples were collected. CDM Smith Team 4 mobilized 1 time during the three months to collect samples from storm events. No visual sample was collected from any outfalls over the course of the 1 mobilization. No repeat samples were collected. The monitoring reports and photo logs from Weston Team 1 and Weston Team 2 and CDM Team 1-4 can be found in the Appendix. Any outfalls that were not monitored in Quarter 3 will be attempted to be made up during Quarter 4 pending weather conditions.

Observed Problems

In general very few pollution problems were observed at any of the outfalls with few exceptions. Many of the grab samples exhibited presence of sediment, but no pollutants caused for follow up inspections or actions to occur.

Results from the Quarter 3 Visual Inspections can be found in the Appendix. Both visual observations and grab samples were noted at most facilities during the third quarter. The only facilities that were not observed during the third quarter were Streets Maintenance #1, Streets Maintenance #3 and Montessa Park All facilities that did not produce a sample in Quarter 3 will be attempted to be made up in the coming months.

We appreciate the opportunity to provide professional consulting services to you and we look forward to assisting you in the next quarter. Please contact me at (505) 837-6548 (Dana.Peterson@WestonSolutions.com) or Brad Sumrall at (505) 837-6566 (Brad.Sumrall@WestonSolutions.com) if you have any questions or need additional information.

Sincerely,
WESTON SOLUTIONS, INC.

Dana Peterson, PE
Project Engineer

APPENDIX: Q2 INSPECTION FORMS AND PHOTO LOGS

APPENDIX: Q3 INSPECTION FORMS & PHOTO LOGS- VISUAL INSPECTIONS

STREETS SATELLITE #1

City of Albuquerque

Street Maintenance Satellite #1

Quarterly Visual Monitoring of
Storm Water Outfall Discharges
☐Q1 ☐Q2 ☑Q3 ☐Q4

Date: 6 SEPT. 2016 **Weather:** RAINY

Time: 5:25p **Storm Precip:** < 0.1 inches

Inspector: ROCHELLE LARSON **Last 72 hour Precip:** none

Photo: none

Outfall ID:	**SS1A**		**SS1B**	
Flow Observed:	☐Yes	☐No	☐Yes	☐No
Description of Monitoring Site:				
Flow Estimate (include units and method of estimation):				
Other Observations:				
Color (describe):				
Turbidity:	☐Clear ☐Slightly Cloudy ☐Very Cloudy ☐Opaque		☐Clear ☐Slightly Cloudy ☐Very Cloudy ☐Opaque	
Floating Solids:	☐Yes	☐No	☐Yes	☐No
Suspended Solids:	☐Yes	☐No	☐Yes	☐No
Settled Solids:	☐Yes	☐No	☐Yes	☐No
Sheen Present:	☐Yes	☐No	☐Yes	☐No
Odor:	☐Yes	☐No	☐Yes	☐No
Foam Present:	☐Yes	☐No	☐Yes	☐No
Describe:				

Additional Comments: SITE IS LOCKED AND COULD NOT GET A HOLD OF MANAGER. TO OPEN GATE.

CDM Smith

STREETS SATELLITE #2

City of Albuquerque
Street Maintenance Satellite #2

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☐ Q1 ☐ Q2 ☐ Q3 ☐ Q4

Date: 7/1/16
Time: 8:15PM
Inspector: Dana Peterson
Signature:

Weather: wet/ light rain
Storm Precip:
Last 72 Hour Precip: -
Photo: 162

Outfall ID:	SS2
Flow Observed:	☐ Yes ☐ No
Description of Monitoring Site:	
Flow Estimate (include units and method of estimation) :	Discharge
Other Observations:	
Color (Describe):	
Turbidity:	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque
Floating Solids:	☐ Yes ☐ No
Suspended Solids:	☐ Yes ☐ No
Settled Solids:	☐ Yes ☐ No
Sheen Present:	☐ Yes ☐ No
Odor:	☐ Yes ☐ No
Foam Present:	☐ Yes ☐ No
Describe:	

Additional Comments: wet/cloudy light rain no discharge

WESTON SOLUTIONS

Date: July 1, 2016

Event: MS4 Visual storm Water Monitoring

Inspector: Dana Peterson (Weston)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

Street Maintenance #2	
 No Discharge observed	

City of Albuquerque

Street Maintenance Satellite #2

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☐ Q1 ☐ Q2 ☑ Q3 ☐ Q4

Date: 7/18/16
Time: 6:45 pm
Inspector: Savannah Martinez
Signature: [signature]

Weather: Cloudy / Rainy
Storm Precip: 0.16 inches
Last 72 Hour Precip: N/A
Photo: yes

Outfall ID:	SS2
Flow Observed:	☒ Yes ☐ No
Description of Monitoring Site:	Still Raining w/ Little Runoff
Flow Estimate (include units and method of estimation) :	< 1 CFS
Other Observations:	Runoff was very slow
Color (Describe):	Dark Brown cloudy
Turbidity:	☐ Clear ☐ Slightly Cloudy ☒ Very Cloudy ☐ Opaque
Floating Solids:	☐ Yes ☒ No
Suspended Solids:	☒ Yes ☐ No
Settled Solids:	☐ Yes ☒ No
Sheen Present:	☐ Yes ☒ No
Odor:	☐ Yes ☒ No
Foam Present:	☐ Yes ☒ No
Describe:	Looked very similar to chocolate milk

Additional Comments: arrived near end of storm so runoff was slowing down. Storm precip was taken from NWS @ ABQ international Airport

WESTON SOLUTIONS

Date: July 18, 2016

Event: MS4 Visual storm Water Monitoring

Inspector: Savannah Martinez (Weston)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

Street Maintenance #2	
 Discharge observed	
 **Brown Color discharge**	

City of Albuquerque
Street Maintenance Satellite #2

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☐ Q1 ☐ Q2 ☒ Q3 ☐ Q4

Date: 7/24/16
Time: 6:30 pm
Inspector: Savannah Martinez
Signature: Sah MZ

Weather: Raining
Storm Precip: NA
Last 72 Hour Precip: NA
Photo: Yes

Outfall ID:	SS2
Flow Observed:	☐ Yes ☒ No
Description of Monitoring Site:	Ground was dry but raining
Flow Estimate (include units and method of estimation) :	
Other Observations:	
Color (Describe):	
Turbidity:	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque
Floating Solids:	☐ Yes ☐ No
Suspended Solids:	☐ Yes ☐ No
Settled Solids:	☐ Yes ☐ No
Sheen Present:	☐ Yes ☐ No
Odor:	☐ Yes ☐ No
Foam Present:	☐ Yes ☐ No
Describe:	

Additional Comments: Ground was dry but it was raining

WESTON SOLUTIONS

Date: July 24, 2016

Event: MS4 Visual storm Water Monitoring

Inspector: Savannah Martinez (Weston)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

Street Maintenance #2	
 **No discharge observed**	

City of Albuquerque
Street Maintenance Satellite #2

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☐ Q1 ☐ Q2 ☒ Q3 ☐ Q4

Date: 8/6/16
Time: 5:30 pm
Inspector: Savannah Martinez
Signature: Sah Mg

Weather: Rainy
Storm Precip:
Last 72 Hour Precip:
Photo: yes

Outfall ID:	SS2
Flow Observed:	☐ Yes ☒ No
Description of Monitoring Site:	Puddle near Site
Flow Estimate (include units and method of estimation) :	
Other Observations:	
Color (Describe):	
Turbidity:	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque
Floating Solids:	☐ Yes ☐ No
Suspended Solids:	☐ Yes ☐ No
Settled Solids:	☐ Yes ☐ No
Sheen Present:	☐ Yes ☐ No
Odor:	☐ Yes ☐ No
Foam Present:	☐ Yes ☐ No
Describe:	

Additional Comments: No runoff

WESTON SOLUTIONS

Date: August 6, 2016

Event: MS4 Visual storm Water Monitoring

Inspector: Savannah Martinez (Weston)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

Street Maintenance #2	
 **No discharge observed**	 **No discharge observed**

City of Albuquerque
Street Maintenance Satellite #2

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☐ Q1 ☐ Q2 ☒ Q3 ☐ Q4

Date: 8/8/16
Time: 4:30 pm
Inspector: Savannah Martinez
Signature: Sah Mz

Weather: Raining and Windy
Storm Precip: ≈0.35"
Last 72 Hour Precip: N/A
Photo: yes

Outfall ID:	SS2
Flow Observed:	☒ Yes ☐ No
Description of Monitoring Site:	A lot of runoff!
Flow Estimate (include units and method of estimation) :	> 1 CFS | H20 was flowing very quickly lot of volume
Other Observations:	A lot of H20 coming off site
Color (Describe):	Slightly grey
Turbidity:	☐ Clear ☒ Slightly Cloudy ☐ Very Cloudy ☐ Opaque
Floating Solids:	☐ Yes ☒ No
Suspended Solids:	☐ Yes ☒ No
Settled Solids:	☐ Yes ☒ No
Sheen Present:	☐ Yes ☒ No
Odor:	☐ Yes ☒ No
Foam Present:	☐ Yes ☒ No
Describe:	No sign of any sticks or red color

Additional Comments:

Date: August 8, 2016

Event: MS4 Visual storm Water Monitoring

Inspector: Savannah Martinez (Weston)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

Street Maintenance #2	
 **Discharge observed**	 **Discharge observed**
 **Sample Collected**	

STREETS SATELLITE #3

STREETS SATELLITE ARROYO MAINTENANCE

City of Albuquerque

Storm Drainage Maintenance Arroyo Maintenance Section

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☐Q1 ☐Q2 ☑Q3 ☐Q4

Date: 6 SEPT. 2016 **Weather:** RAINY

Time: 5:33p **Storm Precip:** < 0.1 inches

Inspector: Rochelle Larson **Last 72 hour Precip:** none

Photo: 4 photos

Outfall ID:	**AM1**
Flow Observed:	☑Yes ☐No
Description of Monitoring Site:	ponding upstream of outfall; salt storage nearby
Flow Estimate (include units and method of estimation):	< 1 cfs
Other Observations:	sheet flow occurring over entire site
Color (describe):	yellow; light brown
Turbidity:	☐Clear ☐Slightly Cloudy ☐Very Cloudy ☑Opaque
Floating Solids:	☑Yes ☐No
Suspended Solids:	☑Yes ☐No
Settled Solids:	☐Yes ☑No
Sheen Present:	☐Yes ☑No
Odor:	☐Yes ☑No
Foam Present:	☐Yes ☑No
Describe:	site is closed for the day

Additional Comments: no apparent stormwater quality issues

DATE: 09/06/2016

EVENT: MS4 Visual Storm Water Monitoring Assessment

INSPECTORS(S): Rochelle Larson (CDM Smith)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

STORM DRAINAGE MAINTENANCE ARROYO MAINTENANCE SECTION



Visual sample collected at AM1



Runoff observed in curb.



Ponded water observed near outfall.

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PINO YARDS

City of Albuquerque
Pino Yards Complex

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☐ Q1 ☐ Q2 ☒ Q3 ☐ Q4

Date: July 1, 2016
Time: 3:15 PM
Inspector: Sarah Luckie
Signature: Sarah Luckie

Weather: Light Rain
Storm Precip: —
Last 72 Hour Precip: —
Photo: No

Outfall ID:	PY1	PY2	PY3
Flow Observed:	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☐ No
Description of Monitoring Site:	Light rain	in area but no discharge observed.	
Flow Estimate (include units and method of estimation) :			
Other Observations:			
Color (Describe):			
Turbidity:	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque
Floating Solids:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Suspended Solids:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Settled Solids:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Sheen Present:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Odor:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Foam Present:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Describe:			

Additional Comments: No discharge.

City of Albuquerque
Pino Yards Complex

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☐ Q1 ☐ Q2 ☒ Q3 ☐ Q4

Date: 7/18/16
Time: 7:00 PM
Inspector: Sarah Luckie
Signature: Sarah Luckie

Weather: Light Rain
Storm Precip: —
Last 72 Hour Precip: —
Photo: yes

Outfall ID:	PY1	PY2	PY3
Flow Observed:	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
Description of Monitoring Site:	Light rain in the area but no discharge observed.		
Flow Estimate (include units and method of estimation) :			
Other Observations:			
Color (Describe):			
Turbidity:	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque
Floating Solids:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Suspended Solids:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Settled Solids:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Sheen Present:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Odor:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Foam Present:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Describe:			

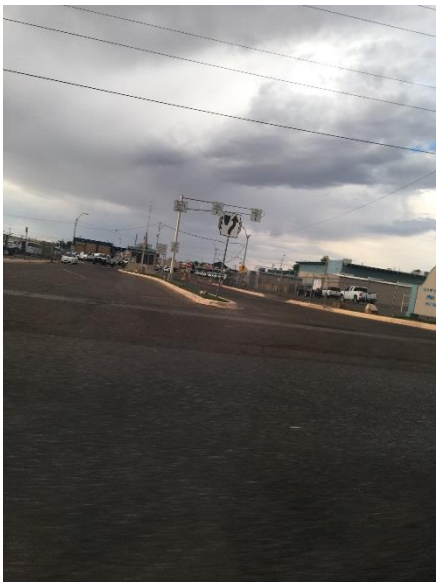
Additional Comments:

Date: July 18, 2016

Event: MS4 Visual Monitoring Assessment

Inspector: Sarah Luckie (Weston)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

Pino Yards	
	
No discharge in area	

City of Albuquerque
Pino Yards Complex

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☐ Q1 ☐ Q2 ☒ Q3 ☐ Q4

Date: July 24, 2016
Time: 7:25PM
Inspector: Sarah Lychie
Signature: Sarah Lychie

Weather: Light Rain
Storm Precip: —
Last 72 Hour Precip: —
Photo: yes

Outfall ID:	PY1	PY2	PY3
Flow Observed:	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
Description of Monitoring Site:	Light rain in the area, no discharge was observed.		
Flow Estimate (include units and method of estimation) :			
Other Observations:			
Color (Describe):			
Turbidity:	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque
Floating Solids:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Suspended Solids:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Settled Solids:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Sheen Present:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Odor:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Foam Present:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Describe:			

Additional Comments:

Date: July 24, 2016

Event: MS4 Visual Monitoring Assessment

Inspector: Sarah Luckie (Weston)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

Pino Yards	
	
No discharge in area	

City of Albuquerque
Pino Yards Complex

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☐ Q1 ☐ Q2 ☒ Q3 ☐ Q4

Date: 8/4/2016
Time: 5:10 PM
Inspector: Sarah Luckie
Signature: Sarah Luckie

Weather: Clouds
Storm Precip: —
Last 72 Hour Precip: —
Photo: yes

Outfall ID:	PY1	PY2	PY3
Flow Observed:	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
Description of Monitoring Site:	Radar indicated precipitation in area, none observed.		
Flow Estimate (include units and method of estimation) :			
Other Observations:			
Color (Describe):			
Turbidity:	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque
Floating Solids:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Suspended Solids:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Settled Solids:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Sheen Present:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Odor:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Foam Present:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Describe:			

Additional Comments:

Date: August 4, 2016

Event: MS4 Visual Monitoring Assessment

Inspector: Sarah Luckie (Weston)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

Pino Yards	
	
No discharge in area	

City of Albuquerque
Pino Yards Complex

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☐ Q1 ☐ Q2 ☒ Q3 ☐ Q4

Date: 8/4/2016
Time: 8:45 PM
Inspector: Sarah Luchie
Signature: Sarah Luchie

Weather: Rain
Storm Precip: 0.5 inches
Last 72 Hour Precip: —
Photo: no

Outfall ID:	PY1	PY2	PY3
Flow Observed:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Description of Monitoring Site:	Was actively raining but the sun had already set.		
Flow Estimate (include units and method of estimation) :			
Other Observations:			
Color (Describe):			
Turbidity:	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque
Floating Solids:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Suspended Solids:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Settled Solids:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Sheen Present:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Odor:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Foam Present:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Describe:			

Additional Comments: Was after sunset by the time I got to Pino Yards.

City of Albuquerque
Pino Yards Complex

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☐ Q1 ☐ Q2 ☒ Q3 ☐ Q4

Date: 8/8/2016
Time: 4:15 PM
Inspector: Sarah Luchie
Signature: Sarah Luchie

Weather: Rain
Storm Precip: –
Last 72 Hour Precip: –
Photo: yes

Outfall ID:	PY1	PY2	PY3
Flow Observed:	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
Description of Monitoring Site:	Rain in area but not discharge	enough to	
Flow Estimate (include units and method of estimation) :			
Other Observations:			
Color (Describe):			
Turbidity:	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque
Floating Solids:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Suspended Solids:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Settled Solids:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Sheen Present:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Odor:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Foam Present:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Describe:			

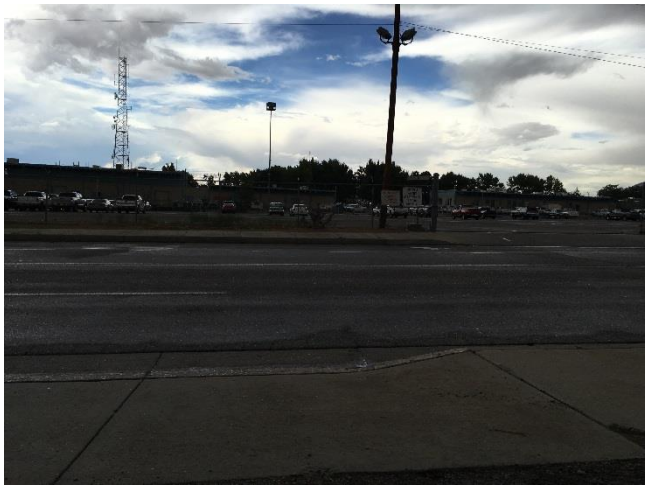
Additional Comments: Waited from 4:15 to 4:45 PM, rain but no discharge.

Date: August 8, 2016

Event: MS4 Visual Monitoring Assessment

Inspector: Sarah Luckie (Weston)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

Pino Yards	
	
No discharge in area	

City of Albuquerque
Pino Yards Complex

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☐ Q1 ☐ Q2 ☒ Q3 ☐ Q4

Date: 8/16/2016
Time: 6:10
Inspector: Sarah Luchie
Signature: Sarah Luchie

Weather: Light rain
Storm Precip: —
Last 72 Hour Precip: —
Photo: yes

Outfall ID:	PY1	PY2	PY3
Flow Observed:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Description of Monitoring Site:	light rain	w/ wind but no discharge	
Flow Estimate (include units and method of estimation) :			
Other Observations:			
Color (Describe):			
Turbidity:	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque
Floating Solids:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Suspended Solids:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Settled Solids:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Sheen Present:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Odor:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Foam Present:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Describe:			

Additional Comments:

Date: August 16, 2016

Event: MS4 Visual Monitoring Assessment

Inspector: Sarah Luckie (Weston)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

Pino Yards	
	No discharge in area

City of Albuquerque
Pino Yards Complex

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☐ Q1 ☐ Q2 ☒ Q3 ☐ Q4

Date: 8/18/2016
Time: 4:40PM
Inspector: Sarah Luckie
Signature: Sarah Luckie

Weather: Light Rain
Storm Precip: .1
Last 72 Hour Precip: —
Photo: yes

Outfall ID:	PY1	PY2	PY3
Flow Observed:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Description of Monitoring Site:	Radar indicated storm, not enough to cause discharge		
Flow Estimate (include units and method of estimation) :			
Other Observations:			
Color (Describe):			
Turbidity:	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque
Floating Solids:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Suspended Solids:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Settled Solids:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Sheen Present:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Odor:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Foam Present:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Describe:			

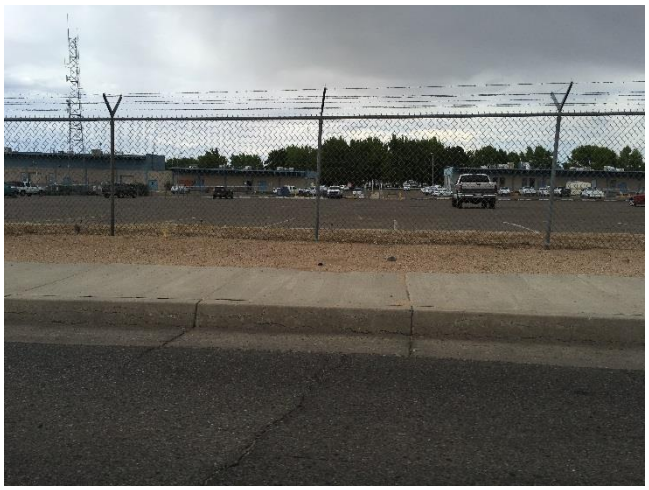
Additional Comments:

Date: August 18, 2016

Event: MS4 Visual Monitoring Assessment

Inspector: Sarah Luckie (Weston)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

Pino Yards	
	No discharge in area

City of Albuquerque
Pino Yards Complex

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☐ Q1 ☐ Q2 ☒ Q3 ☐ Q4

Date: 8/22/2016
Time: 6:20 PM
Inspector: Sarah Luckie
Signature: Sarah Luckie

Weather: Hard Rain
Storm Precip: 0.75 in
Last 72 Hour Precip: —
Photo: yes

Outfall ID:	PY1	PY2	PY3
Flow Observed:	☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No
Description of Monitoring Site:	sheet flow	sheet flow	sheet flow down street
Flow Estimate (include units and method of estimation) :	7.1 cfs	7.1 cfs	7.1 cfs
Other Observations:	Wattles are	effective	pond quite full
Color (Describe):	yellow	yellow/clear	yellow/clear
Turbidity:	☐ Clear ☒ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☒ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☒ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque
Floating Solids:	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
Suspended Solids:	☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No
Settled Solids:	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
Sheen Present:	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
Odor:	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
Foam Present:	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
Describe:	some sediment	some sediment	Some sediment in sample

Additional Comments:

WESTON SOLUTIONS

Date: August 22, 2016

Event: MS4 Visual Monitoring Assessment

Inspector: Sarah Luckie (Weston)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

Pino Yards



PY3 Discharge



PY2 Discharge





PY1 Discharge

City of Albuquerque
Pino Yards Complex

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☐ Q1 ☐ Q2 ☒ Q3 ☐ Q4

Date: 9/12/2016
Time: 6:30PM
Inspector: Sarah Luchie
Signature: Sarah Luchie

Weather: Cloudy
Storm Precip: —
Last 72 Hour Precip: —
Photo: yes

Outfall ID:	PY1	PY2	PY3
Flow Observed:	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
Description of Monitoring Site:	No discharge observed		
Flow Estimate (include units and method of estimation) :			
Other Observations:			
Color (Describe):			
Turbidity:	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque
Floating Solids:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Suspended Solids:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Settled Solids:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Sheen Present:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Odor:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Foam Present:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Describe:			

Additional Comments: Storm moved too far east and missed site.

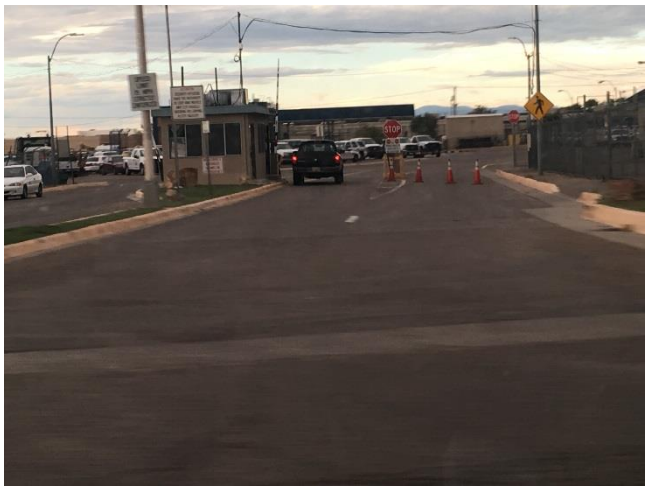
WESTON SOLUTIONS

Date: Septemebr 12, 2016

Event: MS4 Visual Monitoring Assessment

Inspector: Sarah Luckie (Weston)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

Pino Yards	
	

TRANSIT- YALE

City of Albuquerque
Yale Maintenance Facility

Quarterly Visual Monitoring of
Storm Water Outfall Discharges
☐Q1 ☐Q2 ☒Q3 ☐Q4

Date: 09/06/2016 **Weather:** light rain
Time: 5:00 **Storm Precip:** ~0.1 inches
Inspector: Greg Larson **Last 72 hour Precip:** none
Photo: yes

Outfall ID:	**Y1**
Flow Observed:	☒Yes ☐No
Description of Monitoring Site:	inlet to stormceptor water quality device
Flow Estimate (include units and method of estimation):	low 0-10 gpm (visual)
Other Observations:	none newly constructed area
Color (describe):	clear
Turbidity:	☒Clear ☐Slightly Cloudy ☐Very Cloudy ☐Opaque
Floating Solids:	☐Yes ☒No
Suspended Solids:	☐Yes ☒No
Settled Solids:	☐Yes ☒No
Sheen Present:	☐Yes ☒No
Odor:	☐Yes ☒No
Foam Present:	☐Yes ☒No
Describe:	

Additional Comments: no stormwater quality issues observed

CDM Smith

DATE: 09/06/2016

EVENT: MS4 Visual Storm Water Monitoring Assessment

INSPECTORS(S): Gregory Larson (CDM Smith)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

YALE MAINTENANCE FACILITY



Flow observed entering water quality structure inlet structure.



Visual sample collected at inlet to storm water quality structure.

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TRANSIT- DAYTONA

City of Albuquerque

West Side Maintenance Facility (Daytona)

Quarterly Visual Monitoring of
Storm Water Outfall Discharges
☐Q1 ☐Q2 ☒Q3 ☐Q4

Date: 09/06/2016 **Weather:** rain

Time: 4:15 **Storm Precip:** ~0.1 inches

Inspector: Greg Larson **Last 72 hour Precip:** none

Photo: yes

Outfall ID:	**D1**	**D2**
Flow Observed:	☒Yes ☐No	☒Yes ☐No
Description of Monitoring Site:	manhole	manhole
Flow Estimate (include units and method of estimation):	unable to estimate visually ~3-6 inches of flow depth	unable to estimate visually ~3-6 inches of flow depth
Other Observations:		
Color (describe):	pale/gray	pale gray
Turbidity:	☐Clear ☒Slightly Cloudy ☐Very Cloudy ☐Opaque	☐Clear ☒Slightly Cloudy ☐Very Cloudy ☐Opaque
Floating Solids:	☐Yes ☒No	☐Yes ☒No
Suspended Solids:	☐Yes ☒No	☐Yes ☒No
Settled Solids:	☐Yes ☒No	☐Yes ☒No
Sheen Present:	☐Yes ☒No	☐Yes ☒No
Odor:	☐Yes ☒No	☐Yes ☒No
Foam Present:	☐Yes ☒No	☐Yes ☒No
Describe:		

Additional Comments: no major impacts to stormwater quality observed. Some sediment washout observed from unlandscaped areas.

CDM Smith

DATE: 09/06/2016

EVENT: MS4 Visual Storm Water Monitoring Assessment

INSPECTORS(S): Gregory Larson (CDM Smith)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

WEST SIDE MAINTENANCE FACILITY (DAYTONA)



Visual sample collected from Outfall D1



Some evidence of erosion near employee parking lot.

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DATE: 09/06/2016

EVENT: MS4 Visual Storm Water Monitoring Assessment

INSPECTORS(S): Gregory Larson (CDM Smith)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

WEST SIDE MAINTENANCE FACILITY (DAYTONA)



Flow observed in Outfall D1.



Visual sample collected from Outfall D1

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City of Albuquerque

West Side Maintenance Facility (Daytona)

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☐Q1 ☐Q2 ☒Q3 ☐Q4

Date: 8/16/2016 **Weather:** Cloudy / no rain

Time: 4:00 **Storm Precip:**

Inspector: Greg Larson **Last 72 hour Precip:**

Photo:

Outfall ID:	**D1**		**D2**	
Flow Observed:	☐Yes	☒No	☐Yes	☒No
Description of Monitoring Site:				
Flow Estimate (include units and method of estimation):				
Other Observations:				
Color (describe):				
Turbidity:	☐Clear ☐Slightly Cloudy ☐Very Cloudy ☐Opaque		☐Clear ☐Slightly Cloudy ☐Very Cloudy ☐Opaque	
Floating Solids:	☐Yes	☐No	☐Yes	☐No
Suspended Solids:	☐Yes	☐No	☐Yes	☐No
Settled Solids:	☐Yes	☐No	☐Yes	☐No
Sheen Present:	☐Yes	☐No	☐Yes	☐No
Odor:	☐Yes	☐No	☐Yes	☐No
Foam Present:	☐Yes	☐No	☐Yes	☐No
Describe:				

Additional Comments: false start - little TO
no rain - no runoff observed

CDM Smith

BALLOON FIESTA PARK/ GOLF TRAINING CENTER

City of Albuquerque

Balloon Fiesta Park and Golf Training Center

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☐ Q1 ☐ Q2 ☒ Q3 ☐ Q4

Date: July 1, 2016
Time: 3:00 PM
Inspector: Sarah Luckie
Signature: Sarah Luckie

Weather: Light Rain
Storm Precip: —
Last 72 Hour Precip: —
Photo: yes

Outfall ID:	BFP1	BFP2	BFP3
Flow Observed:	☒ Yes ☐ No	☐ Yes ☒ No	☐ Yes ☒ No
Description of Monitoring Site:	Wet in area Slight run off		
Flow Estimate (include units and method of estimation) :	< 1 cfs		
Other Observations:	Recently mowed for July 4th festivities		
Color (Describe):	yellow / brown		
Turbidity:	☐ Clear ☒ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque
Floating Solids:	☒ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Suspended Solids:	☒ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Settled Solids:	☐ Yes ☒ No	☐ Yes ☐ No	☐ Yes ☐ No
Sheen Present:	☐ Yes ☒ No	☐ Yes ☐ No	☐ Yes ☐ No
Odor:	☐ Yes ☒ No	☐ Yes ☐ No	☐ Yes ☐ No
Foam Present:	☐ Yes ☒ No	☐ Yes ☐ No	☐ Yes ☐ No
Describe:	floating grass and sediment in sample		

Additional Comments: Discharge only occuring at North part of BFP

City of Albuquerque

Balloon Fiesta Park and Golf Training Center

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☐ Q1 ☐ Q2 ☒ Q3 ☐ Q4

Date: July 1, 2016
Time: 3:00 PM
Inspector: Sarah Luckie
Signature: Sarah Luckie

Weather: Light Rain
Storm Precip: —
Last 72 Hour Precip: —
Photo: yes

Outfall ID:	~~BFP4~~ BFP5	~~BFP5~~ BFP4
Flow Observed:	☒ Yes ☒ No	☒ Yes ☒ No
Description of Monitoring Site:	Wet in area slight run off	
Flow Estimate (include units and method of estimation) :	< 1 cfs	
Other Observations:	Recently mowed for July 4th festivities	
Color (Describe):	yellow / brown	
Turbidity:	☐ Clear ☒ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque
Floating Solids:	☒ Yes ☐ No	☐ Yes ☐ No
Suspended Solids:	☒ Yes ☐ No	☐ Yes ☐ No
Settled Solids:	☐ Yes ☒ No	☐ Yes ☐ No
Sheen Present:	☐ Yes ☒ No	☐ Yes ☐ No
Odor:	☐ Yes ☒ No	☐ Yes ☐ No
Foam Present:	☐ Yes ☒ No	☐ Yes ☐ No
Describe:	Some grass from mowing opps was in sample + sediment	

Additional Comments: Discharge observed at BFP5, ponding observed.

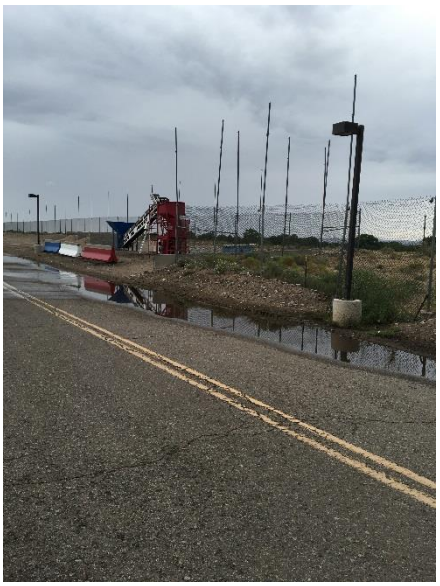
Date:	July 1, 2016
Event:	MS4 Stormwater Visual Monitoring
Inspector:	Sarah Luckie (Weston)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

Balloon Fiesta Park



Grab Sample from BFP1, floating grass in sample



Ponding observed at BFP5



Grab Sample from BFP5, floating grass in sample



No Discharge Observed

Balloon Fiesta Park	
 No discharge observed	 No discharge observed

City of Albuquerque

Balloon Fiesta Park and Golf Training Center

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☐ Q1 ☐ Q2 ☒ Q3 ☐ Q4

Date: 7/18/2016
Time: 6:15 PM
Inspector: Sarah Luckie
Signature: Sarah Luckie

Weather: Light Rain
Storm Precip: —
Last 72 Hour Precip: —
Photo: yes

Outfall ID:	BFP1	BFP2	BFP3
Flow Observed:	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
Description of Monitoring Site:	Isolated storms in the area, including light rain - no discharge observed.		
Flow Estimate (include units and method of estimation) :			
Other Observations:			
Color (Describe):			
Turbidity:	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque
Floating Solids:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Suspended Solids:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Settled Solids:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Sheen Present:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Odor:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Foam Present:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Describe:			

Additional Comments:

City of Albuquerque

Balloon Fiesta Park and Golf Training Center

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☐ Q1 ☐ Q2 ☑ Q3 ☐ Q4

Date: 7/18/16
Time: 6:15 PM
Inspector: Sarah Luchie
Signature: Sarah Luchie

Weather: Light Rain
Storm Precip: —
Last 72 Hour Precip: —
Photo: yes

Outfall ID:	BFP4	BFP5
Flow Observed:	☐ Yes ☒ No	☐ Yes ☒ No
Description of Monitoring Site:	No discharge observed.	
Flow Estimate (include units and method of estimation) :		
Other Observations:		
Color (Describe):		
Turbidity:	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque
Floating Solids:	☐ Yes ☐ No	☐ Yes ☐ No
Suspended Solids:	☐ Yes ☐ No	☐ Yes ☐ No
Settled Solids:	☐ Yes ☐ No	☐ Yes ☐ No
Sheen Present:	☐ Yes ☐ No	☐ Yes ☐ No
Odor:	☐ Yes ☐ No	☐ Yes ☐ No
Foam Present:	☐ Yes ☐ No	☐ Yes ☐ No
Describe:		

Additional Comments:

WESTON SOLUTIONS

Date: July 18, 2016

Event: MS4 Stormwater Visual Monitoring

Inspector: Sarah Luckie (Weston)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

Balloon Fiesta Park	
	No discharge observed

City of Albuquerque

Balloon Fiesta Park and Golf Training Center

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☐ Q1 ☐ Q2 ☒ Q3 ☐ Q4

Date: July 24, 2016
Time: 6:20PM
Inspector: Sarah Luckie
Signature: Sarah Luckie

Weather: Dark Rain clouds
Storm Precip: —
Last 72 Hour Precip: —
Photo: yes

Outfall ID:	BFP1	BFP2	BFP3
Flow Observed:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Description of Monitoring Site:	No	Discharge	observed.
Flow Estimate (include units and method of estimation) :			
Other Observations:			
Color (Describe):			
Turbidity:	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque
Floating Solids:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Suspended Solids:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Settled Solids:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Sheen Present:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Odor:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Foam Present:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Describe:			

Additional Comments: Was very dark west of BFP - light rain but no discharge observed. Got there @ 6:20PM checked back @ 7:45PM

WESTON SOLUTIONS

City of Albuquerque

Balloon Fiesta Park and Golf Training Center

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☐ Q1 ☐ Q2 ☒ Q3 ☐ Q4

Date: July 24, 2016
Time: 6:20 PM
Inspector: Sarah Luchie
Signature: Sarah Luchie

Weather: Dark Clouds
Storm Precip: —
Last 72 Hour Precip: —
Photo: yes

Outfall ID:	BFP4	BFP5
Flow Observed:	☐ Yes ☒ No	☐ Yes ☒ No
Description of Monitoring Site:	No Discharge	
Flow Estimate (include units and method of estimation) :		
Other Observations:		
Color (Describe):		
Turbidity:	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque
Floating Solids:	☐ Yes ☐ No	☐ Yes ☐ No
Suspended Solids:	☐ Yes ☐ No	☐ Yes ☐ No
Settled Solids:	☐ Yes ☐ No	☐ Yes ☐ No
Sheen Present:	☐ Yes ☐ No	☐ Yes ☐ No
Odor:	☐ Yes ☐ No	☐ Yes ☐ No
Foam Present:	☐ Yes ☐ No	☐ Yes ☐ No
Describe:		

Additional Comments:

WESTON SOLUTIONS

Date:	July 24, 2016
Event:	MS4 Stormwater Visual Monitoring
Inspector:	Sarah Luckie (Weston)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

Balloon Fiesta Park	
	 No discharge observed

City of Albuquerque

Balloon Fiesta Park and Golf Training Center

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☐ Q1 ☐ Q2 ☒ Q3 ☐ Q4

Date: 8/4/2016
Time: 4:30 PM
Inspector: Sarah Luckie
Signature: Sarah Luckie

Weather: Clouds
Storm Precip: —
Last 72 Hour Precip: —
Photo: yes

Outfall ID:	BFP1	BFP2	BFP3
Flow Observed:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Description of Monitoring Site:	Radar indicated storm,		no precip.
Flow Estimate (include units and method of estimation) :			
Other Observations:			
Color (Describe):			
Turbidity:	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque
Floating Solids:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Suspended Solids:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Settled Solids:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Sheen Present:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Odor:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Foam Present:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Describe:			

Additional Comments:

City of Albuquerque

Balloon Fiesta Park and Golf Training Center

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☐ Q1 ☐ Q2 ☒ Q3 ☐ Q4

Date: 8/4/2016
Time: 4:30 PM
Inspector: Sarah Luchie
Signature: Sarah Luchie

Weather: Clouds
Storm Precip: —
Last 72 Hour Precip: —
Photo: yes

Outfall ID:	BFP4	BFP5
Flow Observed:	☐ Yes ☒ No	☐ Yes ☒ No
Description of Monitoring Site:	Radar indicated rain no precip.	
Flow Estimate (include units and method of estimation) :		
Other Observations:		
Color (Describe):		
Turbidity:	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque
Floating Solids:	☐ Yes ☐ No	☐ Yes ☐ No
Suspended Solids:	☐ Yes ☐ No	☐ Yes ☐ No
Settled Solids:	☐ Yes ☐ No	☐ Yes ☐ No
Sheen Present:	☐ Yes ☐ No	☐ Yes ☐ No
Odor:	☐ Yes ☐ No	☐ Yes ☐ No
Foam Present:	☐ Yes ☐ No	☐ Yes ☐ No
Describe:		

Additional Comments:

Date:	August 4, 2016
Event:	MS4 Stormwater Visual Monitoring
Inspector:	Sarah Luckie (Weston)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

Balloon Fiesta Park	
	 No discharge observed

City of Albuquerque

Balloon Fiesta Park and Golf Training Center

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☐ Q1 ☐ Q2 ☒ Q3 ☐ Q4

Date: 8/4/2016
Time: 8:10 PM
Inspector: Sarah Luckie
Signature: Sarah Luckie

Weather: Rain
Storm Precip: 0.5 inches
Last 72 Hour Precip: —
Photo: yes

Outfall ID:	BFP1	BFP2	BFP3
Flow Observed:	☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No
Description of Monitoring Site:	Raining with discharge		
Flow Estimate (include units and method of estimation) :	< 1 cfs	< 1 cfs	< 1 cfs
Other Observations:			
Color (Describe):	yellow	brown/clear	yellow
Turbidity:	☒ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☐ Clear ☒ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☒ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque
Floating Solids:	☒ Yes ☐ No	☐ Yes ☒ No	☐ Yes ☒ No
Suspended Solids:	☐ Yes ☒ No	☒ Yes ☐ No	☒ Yes ☐ No
Settled Solids:	☒ Yes ☐ No	☐ Yes ☒ No	☐ Yes ☒ No
Sheen Present:	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
Odor:	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
Foam Present:	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
Describe:	Grass in sample	Sample was murky but clean	yellow color but mostly clear

Additional Comments:

City of Albuquerque

Balloon Fiesta Park and Golf Training Center

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☐ Q1 ☐ Q2 ☒ Q3 ☐ Q4

Date: 8/4/2016
Time: 8:10 PM
Inspector: Sarah Luchie
Signature: Sarah Luchie

Weather: _____
Storm Precip: _____
Last 72 Hour Precip: _____
Photo: _____

Outfall ID:	BFP4	BFP5
Flow Observed:	☒ Yes ☐ No	☒ Yes ☐ No
Description of Monitoring Site:	Slight discharge.	Discharge & ponding
Flow Estimate (include units and method of estimation) :	< 1 cfs	< 1 cfs
Other Observations:		
Color (Describe):	yellow	Yellow
Turbidity:	☐ Clear ☒ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☐ Clear ☒ Slightly Cloudy ☐ Very Cloudy ☐ Opaque
Floating Solids:	☐ Yes ☒ No	☐ Yes ☒ No
Suspended Solids:	☒ Yes ☐ No	☒ Yes ☐ No
Settled Solids:	☐ Yes ☒ No	☐ Yes ☒ No
Sheen Present:	☐ Yes ☒ No	☐ Yes ☒ No
Odor:	☐ Yes ☒ No	☐ Yes ☒ No
Foam Present:	☐ Yes ☒ No	☐ Yes ☒ No
Describe:	Smaller sample, some sediment	Some sediment present in sample

Additional Comments: _____

WESTON SOLUTIONS

Date:	August 4, 2016
Event:	MS4 Stormwater Visual Monitoring
Inspector:	Sarah Luckie (Weston)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

Balloon Fiesta Park



BFP 1



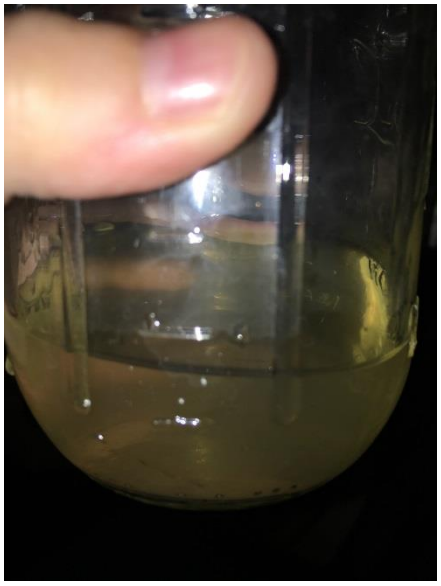
BFP 5



BFP 2



BFP 4



BFP 3

City of Albuquerque

Balloon Fiesta Park and Golf Training Center

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☐ Q1 ☐ Q2 ☐ Q3 ☐ Q4

Date: 8/8/2016
Time: _____
Inspector: _____
Signature: _____

Weather: _____
Storm Precip: _____
Last 72 Hour Precip: _____
Photo: _____

Outfall ID:	BFP1	BFP2	BFP3
Flow Observed:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Description of Monitoring Site:	~~Not observed~~ out	Did not go to Balloon Fiesta	
Flow Estimate (include units and method of estimation) :			
Other Observations:			
Color (Describe):			
Turbidity:	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque
Floating Solids:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Suspended Solids:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Settled Solids:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Sheen Present:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Odor:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Foam Present:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Describe:			

Additional Comments: _____

WESTON SOLUTIONS

City of Albuquerque

Balloon Fiesta Park and Golf Training Center

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☐ Q1 ☐ Q2 ☐ Q3 ☐ Q4

Date: 8/8/2016
Time: _____
Inspector: _____
Signature: _____

Weather: _____
Storm Precip: _____
Last 72 Hour Precip: _____
Photo: _____

Outfall ID:	BFP4	BFP5
Flow Observed:	☐ Yes ☐ No	☐ Yes ☐ No
Description of Monitoring Site:	Did not go to BFP	
Flow Estimate (include units and method of estimation) :		
Other Observations:		
Color (Describe):		
Turbidity:	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque
Floating Solids:	☐ Yes ☐ No	☐ Yes ☐ No
Suspended Solids:	☐ Yes ☐ No	☐ Yes ☐ No
Settled Solids:	☐ Yes ☐ No	☐ Yes ☐ No
Sheen Present:	☐ Yes ☐ No	☐ Yes ☐ No
Odor:	☐ Yes ☐ No	☐ Yes ☐ No
Foam Present:	☐ Yes ☐ No	☐ Yes ☐ No
Describe:		

Additional Comments: _____

City of Albuquerque

Balloon Fiesta Park and Golf Training Center

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☐ Q1 ☐ Q2 ☒ Q3 ☐ Q4

Date: 8/16/2016
Time: 5:20
Inspector: Sarah Luchie
Signature: Sarah Luchie

Weather: Light rain
Storm Precip: —
Last 72 Hour Precip: —
Photo: yes

Outfall ID:	BFP1	BFP2	BFP3
Flow Observed:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Description of Monitoring Site:	Light rain in area, no discharge		
Flow Estimate (include units and method of estimation) :			
Other Observations:			
Color (Describe):			
Turbidity:	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque
Floating Solids:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Suspended Solids:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Settled Solids:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Sheen Present:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Odor:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Foam Present:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Describe:			

Additional Comments:

City of Albuquerque

Balloon Fiesta Park and Golf Training Center

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☐ Q1 ☐ Q2 ☒ Q3 ☐ Q4

Date: 8/16/2016
Time: 5:20
Inspector: Sarah Luchie
Signature: Sarah Luchie

Weather: Light rain
Storm Precip: —
Last 72 Hour Precip: —
Photo: yes

Outfall ID:	BFP4	BFP5
Flow Observed:	☐ Yes ☐ No	☐ Yes ☐ No
Description of Monitoring Site:	Light rain in area, no discharge	
Flow Estimate (include units and method of estimation) :		
Other Observations:		
Color (Describe):		
Turbidity:	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque
Floating Solids:	☐ Yes ☐ No	☐ Yes ☐ No
Suspended Solids:	☐ Yes ☐ No	☐ Yes ☐ No
Settled Solids:	☐ Yes ☐ No	☐ Yes ☐ No
Sheen Present:	☐ Yes ☐ No	☐ Yes ☐ No
Odor:	☐ Yes ☐ No	☐ Yes ☐ No
Foam Present:	☐ Yes ☐ No	☐ Yes ☐ No
Describe:		

Additional Comments:

WESTON SOLUTIONS

Date:	August 16, 2016
Event:	MS4 Stormwater Visual Monitoring
Inspector:	Sarah Luckie (Weston)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

Balloon Fiesta Park	
	

City of Albuquerque

Balloon Fiesta Park and Golf Training Center

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☐ Q1 ☐ Q2 ☒ Q3 ☐ Q4

Date: 8/18/2016
Time: 5:15 PM
Inspector: Sarah Luckie
Signature: Sarah Luckie

Weather: —
Storm Precip: —
Last 72 Hour Precip: —
Photo: No

Outfall ID:	BFP1	BFP2	BFP3
Flow Observed:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Description of Monitoring Site:	No	Discharge	observed
Flow Estimate (include units and method of estimation) :			
Other Observations:			
Color (Describe):			
Turbidity:	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque
Floating Solids:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Suspended Solids:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Settled Solids:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Sheen Present:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Odor:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Foam Present:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Describe:			

Additional Comments:

WESTON SOLUTIONS

City of Albuquerque

Balloon Fiesta Park and Golf Training Center

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☐ Q1 ☐ Q2 ☒ Q3 ☐ Q4

Date: 8/18/2016
Time: 5:15 PM
Inspector: Sarah Luckie
Signature: Sarah Luckie

Weather: —
Storm Precip: —
Last 72 Hour Precip: —
Photo: No

Outfall ID:	BFP4	BFP5
Flow Observed:	☐ Yes ☐ No	☐ Yes ☐ No
Description of Monitoring Site:	No discharge observed	
Flow Estimate (include units and method of estimation) :		
Other Observations:		
Color (Describe):		
Turbidity:	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque
Floating Solids:	☐ Yes ☐ No	☐ Yes ☐ No
Suspended Solids:	☐ Yes ☐ No	☐ Yes ☐ No
Settled Solids:	☐ Yes ☐ No	☐ Yes ☐ No
Sheen Present:	☐ Yes ☐ No	☐ Yes ☐ No
Odor:	☐ Yes ☐ No	☐ Yes ☐ No
Foam Present:	☐ Yes ☐ No	☐ Yes ☐ No
Describe:		

Additional Comments: _____

City of Albuquerque

Balloon Fiesta Park and Golf Training Center

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☐ Q1 ☐ Q2 ☒ Q3 ☐ Q4

Date: 8/22/2016
Time: 7:20 PM
Inspector: Sarah Luchie
Signature: Sarah Luchie

Weather: Rain
Storm Precip: 0.5 in
Last 72 Hour Precip: —
Photo: yes

Outfall ID:	BFP1	BFP2	BFP3
Flow Observed:	☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No
Description of Monitoring Site:	discharge	discharge	discharge
Flow Estimate (include units and method of estimation) :	≈ 1 cfs	< 1 cfs	< 1 cfs
Other Observations:			
Color (Describe):	clear	brown	clear
Turbidity:	☒ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☐ Clear ☒ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☒ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque
Floating Solids:	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
Suspended Solids:	☐ Yes ☒ No	☒ Yes ☐ No	☐ Yes ☒ No
Settled Solids:	☒ Yes ☐ No	☐ Yes ☒ No	☐ Yes ☒ No
Sheen Present:	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
Odor:	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
Foam Present:	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
Describe:	grass in sample	sediment	no pollutants

Additional Comments:

WESTON SOLUTIONS

City of Albuquerque

Balloon Fiesta Park and Golf Training Center

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☐ Q1 ☐ Q2 ☒ Q3 ☐ Q4

Date: 8/22/2016
Time: 7:30 PM
Inspector: Sarah Luckie
Signature: Sarah Luckie

Weather: Rain
Storm Precip: 0.5 in
Last 72 Hour Precip:
Photo:

Outfall ID:	BFP4	BFP5
Flow Observed:	☒ Yes ☐ No	☒ Yes ☐ No
Description of Monitoring Site:	≈ 1cfs	≈ 1 cfs
Flow Estimate (include units and method of estimation) :	discharge	discharge
Other Observations:		
Color (Describe):	whitish	clear
Turbidity:	☐ Clear ☒ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☒ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque
Floating Solids:	☐ Yes ☒ No	☐ Yes ☒ No
Suspended Solids:	☒ Yes ☐ No	☐ Yes ☒ No
Settled Solids:	☐ Yes ☒ No	☐ Yes ☒ No
Sheen Present:	☐ Yes ☒ No	☐ Yes ☒ No
Odor:	☐ Yes ☒ No	☐ Yes ☒ No
Foam Present:	☐ Yes ☒ No	☐ Yes ☒ No
Describe:	murkey / milk color	no pollutants

Additional Comments:

WESTON SOLUTIONS

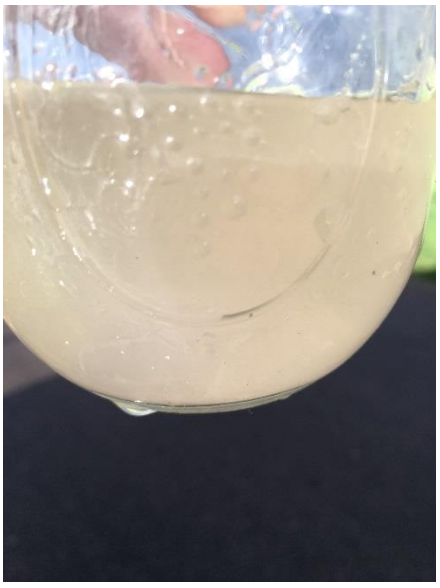
Date:	August 22, 2016
Event:	MS4 Stormwater Visual Monitoring
Inspector:	Sarah Luckie (Weston)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

Balloon Fiesta Park



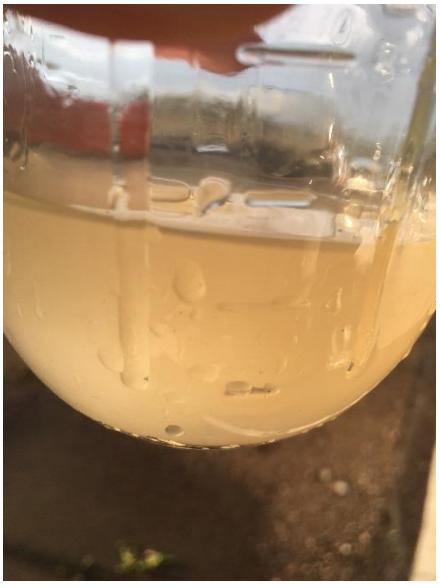
BFP1 Discharge



BFP4 Discharge



BFP5 Discharge



BFP2 Discharge



BFP3 Discharge

City of Albuquerque

Balloon Fiesta Park and Golf Training Center

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☐ Q1 ☐ Q2 ☒ Q3 ☐ Q4

Date: 9/12 / 2016
Time: 6:00 PM
Inspector: Sarah Luchie
Signature: Sarah Luchie

Weather: Cloudy
Storm Precip: —
Last 72 Hour Precip: —
Photo: NC

Outfall ID:	BFP1	BFP2	BFP3
Flow Observed:	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
Description of Monitoring Site:	No discharge observed		
Flow Estimate (include units and method of estimation) :			
Other Observations:			
Color (Describe):			
Turbidity:	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque
Floating Solids:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Suspended Solids:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Settled Solids:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Sheen Present:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Odor:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Foam Present:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Describe:			

Additional Comments: Radar indicated large storm cell, storm moved too far east and missed site.

WESTON SOLUTIONS

City of Albuquerque

Balloon Fiesta Park and Golf Training Center

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☐ Q1 ☐ Q2 ☐ Q3 ☐ Q4

Date: 9/12/2016
Time: 6:00 PM
Inspector: Sarah Luckie
Signature: Sarah Luckie

Weather: Cloudy
Storm Precip: —
Last 72 Hour Precip: —
Photo: No

Outfall ID:	BFP4	BFP5
Flow Observed:	☐ Yes ☒ No	☐ Yes ☒ No
Description of Monitoring Site:	No Discharge	
Flow Estimate (include units and method of estimation) :		
Other Observations:		
Color (Describe):		
Turbidity:	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque
Floating Solids:	☐ Yes ☐ No	☐ Yes ☐ No
Suspended Solids:	☐ Yes ☐ No	☐ Yes ☐ No
Settled Solids:	☐ Yes ☐ No	☐ Yes ☐ No
Sheen Present:	☐ Yes ☐ No	☐ Yes ☐ No
Odor:	☐ Yes ☐ No	☐ Yes ☐ No
Foam Present:	☐ Yes ☐ No	☐ Yes ☐ No
Describe:		

Additional Comments: Radar indicated large storm cell, storm moved too far east & missed site.

WESTON SOLUTIONS

MONTESSA PARK

City of Albuquerque

Montessa Park Open Space

Quarterly Visual Monitoring of
Storm Water Outfall Discharges
☐Q1 ☐Q2 ☑Q3 ☐Q4

Date: 8/16/2016 **Weather:** cloudy / no rain

Time: 4:00 **Storm Precip:**

Inspector: Rochelle Larson **Last 72 hour Precip:**

Photo:

Outfall ID:	**MP1**		**MP2**	
Flow Observed:	☐Yes	☑No	☐Yes	☑No
Description of Monitoring Site:				
Flow Estimate (include units and method of estimation):				
Other Observations:				
Color (describe):				
Turbidity:	☐Clear ☐Slightly Cloudy ☐Very Cloudy ☐Opaque		☐Clear ☐Slightly Cloudy ☐Very Cloudy ☐Opaque	
Floating Solids:	☐Yes	☐No	☐Yes	☐No
Suspended Solids:	☐Yes	☑No	☐Yes	☐No
Settled Solids:	☐Yes	☐No	☐Yes	☐No
Sheen Present:	☐Yes	☐No	☐Yes	☐No
Odor:	☐Yes	☐No	☐Yes	☐No
Foam Present:	☐Yes	☐No	☐Yes	☐No
Describe:				

Additional Comments: False start - never rained at facility

CDM Smith

LOS ALTOS GOLF COURSE

City of Albuquerque

Los Altos Golf Course

Quarterly Visual Monitoring of
Storm Water Outfall Discharges
☐Q1 ☐Q2 ☒Q3 ☐Q4

Date: 6 SEPT. 2016 **Weather:** RAINY

Time: 5:11p **Storm Precip:** < 0.1 inches

Inspector: ROCHELLE LARSON **Last 72 hour Precip:** none

Photo: 2 (overall site)

Outfall ID:	**LA1**		**LA2**	
Flow Observed:	☐Yes	☐No	☐Yes	☑No
Description of Monitoring Site:			no runoff from maintenance bldg, fuel area, was observed	
Flow Estimate (include units and method of estimation):			Ø	
Other Observations:				
Color (describe):				
Turbidity:	☐Clear ☐Slightly Cloudy ☐Very Cloudy ☐Opaque		☐Clear ☐Slightly Cloudy ☐Very Cloudy ☐Opaque	
Floating Solids:	☐Yes	☐No	☐Yes	☐No
Suspended Solids:	☐Yes	☐No	☐Yes	☐No
Settled Solids:	☐Yes	☐No	☐Yes	☐No
Sheen Present:	☐Yes	☐No	☐Yes	☐No
Odor:	☐Yes	☐No	☐Yes	☐No
Foam Present:	☐Yes	☐No	☐Yes	☐No
Describe:				

Additional Comments: visual observation of the site completed; no apparent stormwater quality issues

CDM Smith

DATE: 09/06/2016

EVENT: MS4 Visual Storm Water Monitoring Assessment

INSPECTORS(S): Rochelle Larson (CDM Smith)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

LOS ALTOS GOLF COURSE



No runoff observed by golf maintenance wash pad.



No runoff observed from outfall LA2.

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PUERTO DEL SOL GOLF COURSE

City of Albuquerque

Puerto del Sol Golf Course

Quarterly Visual Monitoring of
Storm Water Outfall Discharges
☐Q1 ☐Q2 ☒Q3 ☐Q4

Date: 09/06/2016 **Weather:** Overcast / rainy (light)

Time: 5:20 **Storm Precip:** ~0.1 inches

Inspector: Greg Larson **Last 72 hour Precip:** none

Photo: yes

Outfall ID:	**PDS1**	**PDS2**
Flow Observed:	☒Yes ☐No	☐Yes ☒No
Description of Monitoring Site:	grated inlet	grated inlet
Flow Estimate (include units and method of estimation):	low flow <5 gpm (visual)	Ø
Other Observations:		
Color (describe):	clear/pale yellow	
Turbidity:	☒Clear ☐Slightly Cloudy ☐Very Cloudy ☐Opaque	☐Clear ☐Slightly Cloudy ☐Very Cloudy ☐Opaque
Floating Solids:	☐Yes ☒No	☐Yes ☐No
Suspended Solids:	☐Yes ☒No	☐Yes ☐No
Settled Solids:	☐Yes ☒No	☐Yes ☐No
Sheen Present:	☐Yes ☒No	☐Yes ☐No
Odor:	☐Yes ☒No	☐Yes ☐No
Foam Present:	☐Yes ☒No	☐Yes ☐No
Describe:	Ø	

Additional Comments: no apparent stormwater quality issues

CDM Smith

DATE: 09/06/2016

EVENT: MS4 Visual Storm Water Monitoring Assessment

INSPECTORS(S): Gregory Larson (CDM Smith)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

PUERTO DEL SOL GOLF COURSE



Concrete curb from maintenance area to outfall.



Evidence of grass clippings and sediment entering outfall.

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DATE: 09/06/2016

EVENT: MS4 Visual Storm Water Monitoring Assessment

INSPECTORS(S): Gregory Larson (CDM Smith)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

PUERTO DEL SOL GOLF COURSE



Visual sample collected at Outfall PDS1.



New containment provided for used oil tank.

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LADERA GOLF COURSE

City of Albuquerque

Ladera Golf Course

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☐Q1 ☐Q2 ☒Q3 ☐Q4

Date: 09/06/2016 **Weather:** rain

Time: 4:30 **Storm Precip:** ~0.1 inches

Inspector: Greg Larson **Last 72 hour Precip:** none

Photo: yes

Outfall ID:	**LGC1**		**LGC2**	
Flow Observed:	☐Yes	☐No	☒Yes	☐No
Description of Monitoring Site:	course closed due		maintenance area	
Flow Estimate (include units and method of estimation):	~~0~~ rain could not			
Other Observations:	access LGC1		some sediment washout observed / but remained on-site	
Color (describe):			pale grey	
Turbidity:	☐Clear ☐Slightly Cloudy ☐Very Cloudy ☐Opaque		☒Clear ☐Slightly Cloudy ☐Very Cloudy ☐Opaque	
Floating Solids:	☐Yes	☐No	☐Yes	☒No
Suspended Solids:	☐Yes	☐No	☐Yes	☒No
Settled Solids:	☐Yes	☐No	☐Yes	☒No
Sheen Present:	☐Yes	☐No	☐Yes	☒No
Odor:	☐Yes	☐No	☐Yes	☒No
Foam Present:	☐Yes	☐No	☐Yes	☒No
Describe:				

Additional Comments: observed runoff from maintenance area, no apparent stormwater issues.

CDM Smith

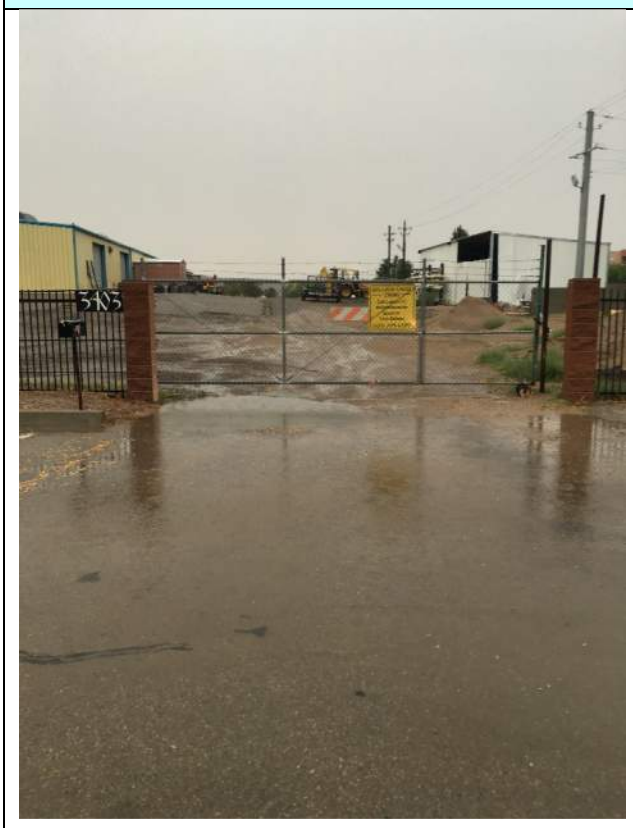
DATE: 09/06/2016

EVENT: MS4 Visual Storm Water Monitoring Assessment

INSPECTORS(S): Gregory Larson (CDM Smith)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

LADERA GOLF COURSE



Runoff from maintenance area.



Runoff to Outfall LGC2

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ARROYO DEL OSO GOLF COURSE

City of Albuquerque
Arroyo Del Oso Golf Course

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☐ Q1 ☐ Q2 ☒ Q3 ☐ Q4

Date: July 1, 2016
Time: 2:30PM
Inspector: Sarah Luckie
Signature: Sarah Luckie

Weather: Light rain
Storm Precip: —
Last 72 Hour Precip: —
Photo: yes

Outfall ID:	ADO1	ADO2
Flow Observed:	☐ Yes ☒ No	☐ Yes ☒ No
Description of Monitoring Site:	Light Rain in the area but no discharge observed.	
Flow Estimate (include units and method of estimation) :		
Other Observations:		
Color (Describe):		
Turbidity:	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque
Floating Solids:	☐ Yes ☐ No	☐ Yes ☐ No
Suspended Solids:	☐ Yes ☐ No	☐ Yes ☐ No
Settled Solids:	☐ Yes ☐ No	☐ Yes ☐ No
Sheen Present:	☐ Yes ☐ No	☐ Yes ☐ No
Odor:	☐ Yes ☐ No	☐ Yes ☐ No
Foam Present:	☐ Yes ☐ No	☐ Yes ☐ No
Describe:		

Additional Comments: Small amount of water observed in ADO1, not enough to get grab sample - see photo log.

WESTON SOLUTIONS

Date: July 1, 2016

Event: MS4 Stormwater Visual Inspection

Inspector: Sarah Luckie (Weston)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

Arroyo Del Oso Golf Course	
	
	 Not enough Discharge to take sample

City of Albuquerque
Arroyo Del Oso Golf Course

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☐ Q1 ☐ Q2 ☒ Q3 ☐ Q4

Date: 7/18/2016
Time: 5:40 PM
Inspector: Sarah Luchie
Signature: Sarah Luchie

Weather: Light Rain
Storm Precip: —
Last 72 Hour Precip: —
Photo: yes

Outfall ID:	ADO1	ADO2
Flow Observed:	☐ Yes ☒ No	☐ Yes ☒ No
Description of Monitoring Site:	Isolated storms in area but no discharge observed.	
Flow Estimate (include units and method of estimation) :		
Other Observations:		
Color (Describe):		
Turbidity:	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque
Floating Solids:	☐ Yes ☐ No	☐ Yes ☐ No
Suspended Solids:	☐ Yes ☐ No	☐ Yes ☐ No
Settled Solids:	☐ Yes ☐ No	☐ Yes ☐ No
Sheen Present:	☐ Yes ☐ No	☐ Yes ☐ No
Odor:	☐ Yes ☐ No	☐ Yes ☐ No
Foam Present:	☐ Yes ☐ No	☐ Yes ☐ No
Describe:		

Additional Comments:

WESTON SOLUTIONS

Date: July 18, 2016

Event: MS4 Stormwater Visual Inspection

Inspector: Sarah Luckie (Weston)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

Arroyo Del Oso Golf Course	
	
 Shopping cart and debris in Arroyo	 Not enough Discharge to take sample

City of Albuquerque
Arroyo Del Oso Golf Course

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☐ Q1 ☐ Q2 ☒ Q3 ☐ Q4

Date: July 24, 2016
Time: 6:40 PM
Inspector: Sarah Luckie
Signature: Sarah Luckie

Weather: Rain in Area, wind
Storm Precip: —
Last 72 Hour Precip: —
Photo: yes

Outfall ID:	ADO1	ADO2
Flow Observed:	☐ Yes ☐ No	☐ Yes ☐ No
Description of Monitoring Site:	Rain in area with a lot of wind, no discharge	
Flow Estimate (include units and method of estimation) :		
Other Observations:		
Color (Describe):		
Turbidity:	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque
Floating Solids:	☐ Yes ☐ No	☐ Yes ☐ No
Suspended Solids:	☐ Yes ☐ No	☐ Yes ☐ No
Settled Solids:	☐ Yes ☐ No	☐ Yes ☐ No
Sheen Present:	☐ Yes ☐ No	☐ Yes ☐ No
Odor:	☐ Yes ☐ No	☐ Yes ☐ No
Foam Present:	☐ Yes ☐ No	☐ Yes ☐ No
Describe:		

Additional Comments:

Date:	July 24, 2016
Event:	MS4 Stormwater Visual Inspection
Inspector:	Sarah Luckie (Weston)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

Arroyo Del Oso Golf Course	
	
	

City of Albuquerque

Arroyo Del Oso Golf Course

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☐ Q1 ☐ Q2 ☒ Q3 ☐ Q4

Date: 4:00 PM
Time: 8/4/2016
Inspector: Sarah Luchie
Signature: Sarah Luchie

Weather: Clouds
Storm Precip: —
Last 72 Hour Precip: —
Photo: yes

Outfall ID:	ADO1	ADO2
Flow Observed:	☐ Yes ☒ No	☐ Yes ☒ No
Description of Monitoring Site:	Radar indicated storm, no precipitation	
Flow Estimate (include units and method of estimation) :		
Other Observations:		
Color (Describe):		
Turbidity:	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque
Floating Solids:	☐ Yes ☐ No	☐ Yes ☐ No
Suspended Solids:	☐ Yes ☐ No	☐ Yes ☐ No
Settled Solids:	☐ Yes ☐ No	☐ Yes ☐ No
Sheen Present:	☐ Yes ☐ No	☐ Yes ☐ No
Odor:	☐ Yes ☐ No	☐ Yes ☐ No
Foam Present:	☐ Yes ☐ No	☐ Yes ☐ No
Describe:		

Additional Comments:

Date:	August 4, 2016
Event:	MS4 Stormwater Visual Inspection
Inspector:	Sarah Luckie (Weston)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

Arroyo Del Oso Golf Course	
	
	

City of Albuquerque
Arroyo Del Oso Golf Course

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☐ Q1 ☐ Q2 ☒ Q3 ☐ Q4

Date: 8/4/2016
Time: 7:30 PM
Inspector: Sarah Luckie
Signature: Sarah Luckie

Weather: Rain
Storm Precip: 0.5 inches
Last 72 Hour Precip: —
Photo: yes

Outfall ID:	ADO1	ADO2
Flow Observed:	☐ Yes ☒ No	☒ Yes ☐ No
Description of Monitoring Site:	Rain but no discharge	discharge in Arroyo
Flow Estimate (include units and method of estimation) :		< 1 cfs
Other Observations:		clean Arroyo
Color (Describe):		clear / yellow
Turbidity:	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☐ Clear ☒ Slightly Cloudy ☐ Very Cloudy ☐ Opaque
Floating Solids:	☐ Yes ☐ No	☒ Yes ☐ No
Suspended Solids:	☐ Yes ☐ No	☐ Yes ☒ No
Settled Solids:	☐ Yes ☐ No	☐ Yes ☒ No
Sheen Present:	☐ Yes ☐ No	☐ Yes ☒ No
Odor:	☐ Yes ☐ No	☐ Yes ☒ No
Foam Present:	☐ Yes ☐ No	☐ Yes ☒ No
Describe:		overall, mostly clean

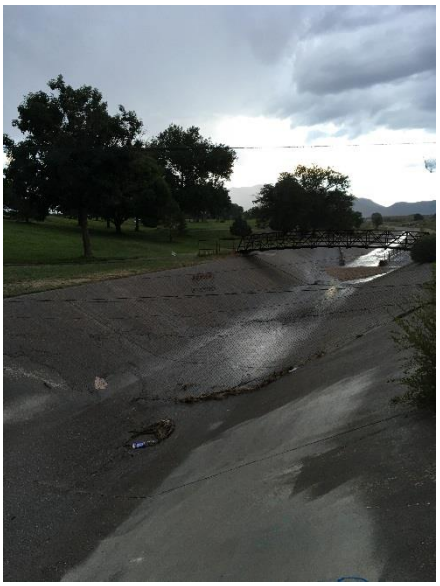
Additional Comments:

Date: August 4, 2016

Event: MS4 Stormwater Visual Inspection

Inspector: Sarah Luckie (Weston)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

Arroyo Del Oso Golf Course	
	
	

City of Albuquerque

Arroyo Del Oso Golf Course

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☐ Q1 ☐ Q2 ☒ Q3 ☐ Q4

Date: 8/8/2016
Time: 5:00 PM
Inspector: Sarah Luchie
Signature: Sarah Luchie

Weather: Rain
Storm Precip: 0.5 in
Last 72 Hour Precip: —
Photo: yes

Outfall ID:	AD01	AD02
Flow Observed:	☒ Yes ☐ No	☒ Yes ☐ No
Description of Monitoring Site:	Rain in area discharge	Rain + discharge
Flow Estimate (include units and method of estimation) :	< 1 cfs	< 1 cfs
Other Observations:	ponding in parking lot	—
Color (Describe):	brown	brown
Turbidity:	☐ Clear ☒ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☐ Clear ☒ Slightly Cloudy ☐ Very Cloudy ☐ Opaque
Floating Solids:	☐ Yes ☒ No	☒ Yes ☐ No
Suspended Solids:	☒ Yes ☐ No	☒ Yes ☐ No
Settled Solids:	☒ Yes ☐ No	☐ Yes ☒ No
Sheen Present:	☐ Yes ☒ No	☐ Yes ☒ No
Odor:	☐ Yes ☒ No	☐ Yes ☒ No
Foam Present:	☐ Yes ☒ No	☐ Yes ☒ No
Describe:	Sediment in sample	Sediment

Additional Comments:

Date: August 8, 2016

Event: MS4 Stormwater Visual Inspection

Inspector: Sarah Luckie (Weston)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

Arroyo Del Oso Golf Course	
 ADO1	
	 ADO2

City of Albuquerque

Arroyo Del Oso Golf Course

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☐ Q1 ☐ Q2 ☒ Q3 ☐ Q4

Date: 8/16/2016
Time: 4:45 PM
Inspector: Sarah Luckie
Signature: Sarah Luckie

Weather: Light rain
Storm Precip: —
Last 72 Hour Precip: —
Photo: yes

Outfall ID:	ADO1	ADO2
Flow Observed:	☐ Yes ☐ No	☐ Yes ☐ No
Description of Monitoring Site:	Light rain but observed in	no discharge area
Flow Estimate (include units and method of estimation) :		
Other Observations:		
Color (Describe):		
Turbidity:	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque
Floating Solids:	☐ Yes ☐ No	☐ Yes ☐ No
Suspended Solids:	☐ Yes ☐ No	☐ Yes ☐ No
Settled Solids:	☐ Yes ☐ No	☐ Yes ☐ No
Sheen Present:	☐ Yes ☐ No	☐ Yes ☐ No
Odor:	☐ Yes ☐ No	☐ Yes ☐ No
Foam Present:	☐ Yes ☐ No	☐ Yes ☐ No
Describe:		

Additional Comments:

Date: August 16, 2016

Event: MS4 Stormwater Visual Inspection

Inspector: Sarah Luckie (Weston)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

Arroyo Del Oso Golf Course	
	

City of Albuquerque

Arroyo Del Oso Golf Course

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☐ Q1 ☐ Q2 ☒ Q3 ☐ Q4

Date: 8/18/2016
Time: 4:00PM
Inspector: Sarah Luchie
Signature: Sarah Luchie

Weather: Light rain
Storm Precip: —
Last 72 Hour Precip: —
Photo: yes

Outfall ID:	ADO1	ADO2
Flow Observed:	☐ Yes ☐ No	☐ Yes ☐ No
Description of Monitoring Site:	Radar indicated storm, light rain, no discharge	
Flow Estimate (include units and method of estimation) :		
Other Observations:		
Color (Describe):		
Turbidity:	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque
Floating Solids:	☐ Yes ☐ No	☐ Yes ☐ No
Suspended Solids:	☐ Yes ☐ No	☐ Yes ☐ No
Settled Solids:	☐ Yes ☐ No	☐ Yes ☐ No
Sheen Present:	☐ Yes ☐ No	☐ Yes ☐ No
Odor:	☐ Yes ☐ No	☐ Yes ☐ No
Foam Present:	☐ Yes ☐ No	☐ Yes ☐ No
Describe:		

Additional Comments:

Date: August 18, 2016

Event: MS4 Stormwater Visual Inspection

Inspector: Sarah Luckie (Weston)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

Arroyo Del Oso Golf Course	
	

City of Albuquerque

Arroyo Del Oso Golf Course

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☐ Q1 ☐ Q2 ☒ Q3 ☐ Q4

Date: 6:45 PM
Time: 8/22/2016
Inspector: Sarah Luckie
Signature: Sarah Luckie

Weather: Light Rain
Storm Precip: 0.5 in
Last 72 Hour Precip: —
Photo: yes

Outfall ID:	ADO1	ADO2
Flow Observed:	☒ Yes ☐ No	☒ Yes ☐ No
Description of Monitoring Site:	rain + discharge	Light rain + discharge
Flow Estimate (include units and method of estimation) :	< 1 cfs	< 1 cfs
Other Observations:		~~bare weeds~~
Color (Describe):	yellow/brown	brown
Turbidity:	☐ Clear ☒ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☐ Clear ☒ Slightly Cloudy ☐ Very Cloudy ☐ Opaque
Floating Solids:	☐ Yes ☒ No	☐ Yes ☒ No
Suspended Solids:	☒ Yes ☐ No	☒ Yes ☐ No
Settled Solids:	☐ Yes ☒ No	☐ Yes ☒ No
Sheen Present:	☐ Yes ☒ No	☐ Yes ☒ No
Odor:	☐ Yes ☒ No	☐ Yes ☒ No
Foam Present:	☒ Yes ☐ No	☐ Yes ☒ No
Describe:	slight foam & sediment	sediment in sample

Additional Comments:

Date:	August 22, 2016
Event:	MS4 Stormwater Visual Inspection
Inspector:	Sarah Luckie (Weston)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

Arroyo Del Oso Golf Course	
 ADO1 Discharge	 ADO2 Discharge

City of Albuquerque

Arroyo Del Oso Golf Course

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☐ Q1 ☐ Q2 ☒ Q3 ☐ Q4

Date: 9/12/2016
Time: 5:15 PM
Inspector: Sarah Luckie
Signature: Sarah Luckie

Weather: Light rain
Storm Precip: —
Last 72 Hour Precip: —
Photo: yes

Outfall ID:	ADO1	ADO2
Flow Observed:	☐ Yes ☒ No	☐ Yes ☒ No
Description of Monitoring Site:	Radar indicated large cell, no precipitation accumulation	
Flow Estimate (include units and method of estimation) :		
Other Observations:		
Color (Describe):		
Turbidity:	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque
Floating Solids:	☐ Yes ☐ No	☐ Yes ☐ No
Suspended Solids:	☐ Yes ☐ No	☐ Yes ☐ No
Settled Solids:	☐ Yes ☐ No	☐ Yes ☐ No
Sheen Present:	☐ Yes ☐ No	☐ Yes ☐ No
Odor:	☐ Yes ☐ No	☐ Yes ☐ No
Foam Present:	☐ Yes ☐ No	☐ Yes ☐ No
Describe:		

Additional Comments: Storm moved too far east and mostly missed site

WESTON SOLUTIONS

Date: September 12, 2016

Event: MS4 Stormwater Visual Inspection

Inspector: Sarah Luckie (Weston)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

Arroyo Del Oso Golf Course	
	

FIRE DEPARTMENT MECHANIC

City of Albuquerque
Fire Department Mechanic Shop

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☐ Q1 ☐ Q2 ☐ Q3 ☐ Q4

Date: 7/1/16
Time: 2:02 PM
Inspector: Dana Peterson
Signature:

Weather: light Rain
Storm Precip:
Last 72 Hour Precip:
Photo: ~~160~~/~~161~~ 151–159

Outfall ID:	FM1	FM2
Flow Observed:	☐ Yes ☒ No	☐ Yes ☒ No
Description of Monitoring Site:		
Flow Estimate (include units and method of estimation) :	No discharge	
Other Observations:		
Color (Describe):		
Turbidity:	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque
Floating Solids:	☐ Yes ☐ No	☐ Yes ☒ No
Suspended Solids:	☐ Yes ☐ No	☐ Yes ☐ No
Settled Solids:	☐ Yes ☐ No	☐ Yes ☐ No
Sheen Present:	☐ Yes ☐ No	☐ Yes ☐ No
Odor:	☐ Yes ☐ No	☐ Yes ☐ No
Foam Present:	☐ Yes ☐ No	☐ Yes ☐ No
Describe:		

Additional Comments: Wet w/ light rain puddling on road but no flow

WESTON SOLUTIONS

Date: July 1, 2016

Event: MS4 Visual Storm Water Monitoring

Inspector: Dana Peterson (Weston)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

Fire Mechanic Shop	
	
No discharge observed	No discharge observed
	

City of Albuquerque
Fire Department Mechanic Shop

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☐ Q1 ☐ Q2 ☒ Q3 ☐ Q4

Date: 7/18/16
Time: 6:25pm
Inspector: Savannah Martinez
Signature: Sah Mz

Weather: Cloudy/Rainy
Storm Precip: 0.16
Last 72 Hour Precip: N/A
Photo: Yes

Outfall ID:	FM1	FM2
Flow Observed:	☒ Yes ☐ No	☒ Yes ☐ No
Description of Monitoring Site:	Water was puddled behind waddle and running offsite	Water was puddled behind waddle no runoff offsite.
Flow Estimate (include units and method of estimation) :	<1 CFS	0 CFS
Other Observations:	Water was following path of previous oil spill (see picture)	Waddle was doing a great job of preventing runoff
Color (Describe):	Light gray/Brown color Cloudy	Dark Brown puddle
Turbidity:	☐ Clear ☒ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque
Floating Solids:	☐ Yes ☒ No	☐ Yes ☐ No
Suspended Solids:	☐ Yes ☒ No	☐ Yes ☐ No
Settled Solids:	☐ Yes ☒ No	☐ Yes ☐ No
Sheen Present:	☐ Yes ☒ No	☐ Yes ☐ No
Odor:	☐ Yes ☒ No	☐ Yes ☐ No
Foam Present:	☐ Yes ☒ No	☐ Yes ☐ No
Describe:	Not too much flow Still a bit cloudy	

Additional Comments: Since time of storm was after hours, was unable to sample FM2. But took photo of puddle. Storm precip came from NWS @ ABQ Int. Airport

WESTON SOLUTIONS

Date:	July 18, 2016
Event:	MS4 Visual Storm Water Monitoring
Inspector:	Savannah Martinez (Weston)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

Fire Mechanic Shop	
 **FM1** Discharge observed	 **FM1** Discharge observed
 **FM1** Brown and cloudy discharge	 **FM2** Discharge observed and puddled; sample was unable to be taken

City of Albuquerque
Fire Department Mechanic Shop

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☐ Q1 ☐ Q2 ☒ Q3 ☐ Q4

Date: 7/24/16
Time: 10:20 pm
Inspector: Savannah Martinez
Signature: Sah Mtz

Weather: Raining
Storm Precip: NA
Last 72 Hour Precip: NA
Photo: yes

Outfall ID:	FM1	FM2
Flow Observed:	☐ Yes ☒ No	☐ Yes ☒ No
Description of Monitoring Site:	Raining but dry	Raining but dry
Flow Estimate (include units and method of estimation) :		
Other Observations:		
Color (Describe):		
Turbidity:	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque
Floating Solids:	☐ Yes ☐ No	☐ Yes ☐ No
Suspended Solids:	☐ Yes ☐ No	☐ Yes ☐ No
Settled Solids:	☐ Yes ☐ No	☐ Yes ☐ No
Sheen Present:	☐ Yes ☐ No	☐ Yes ☐ No
Odor:	☐ Yes ☐ No	☐ Yes ☐ No
Foam Present:	☐ Yes ☐ No	☐ Yes ☐ No
Describe:		

Additional Comments: Ground was dry but it was raining dirt seemed to be piled up behind waddles from previous storm

Date: July 24, 2016

Event: MS4 Visual Storm Water Monitoring

Inspector: Savannah Martinez (Weston)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

Fire Mechanic Shop	
 **FM1** No discharge observed	 **FM1** Discharge observed

City of Albuquerque

Fire Department Mechanic Shop

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☐ Q1 ☐ Q2 ☒ Q3 ☐ Q4

Date: 8/16/16
Time: 5:10pm
Inspector: Savannah Martinez
Signature: [signature]

Weather: Rainy
Storm Precip:
Last 72 Hour Precip:
Photo: yes

Outfall ID:	FM1	FM2
Flow Observed:	☐ Yes ☒ No	☐ Yes ☒ No
Description of Monitoring Site:	Ground was wet	But no runoff Puddle behind wattle
Flow Estimate (include units and method of estimation) :		
Other Observations:		
Color (Describe):		
Turbidity:	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque
Floating Solids:	☐ Yes ☐ No	☐ Yes ☐ No
Suspended Solids:	☐ Yes ☐ No	☐ Yes ☐ No
Settled Solids:	☐ Yes ☐ No	☐ Yes ☐ No
Sheen Present:	☐ Yes ☐ No	☐ Yes ☐ No
Odor:	☐ Yes ☐ No	☐ Yes ☐ No
Foam Present:	☐ Yes ☐ No	☐ Yes ☐ No
Describe:		

Additional Comments: Water was pooling behind FM2 waddle and FM1 waddle looked new.

WESTON SOLUTIONS

Date:	August 6, 2016
Event:	MS4 Visual Storm Water Monitoring
Inspector:	Savannah Martinez (Weston)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

Fire Mechanic Shop	
 **FM1** No discharge observed	 **FM1** Discharge observed
 **FM2** Ponding behind wattle	

City of Albuquerque
Fire Department Mechanic Shop

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☐ Q1 ☐ Q2 ☒ Q3 ☐ Q4

Date: 8/8/16
Time: 4:45pm
Inspector: Swannah Martinez
Signature: Swannah Martinez

Weather: Rainy and Windy
Storm Precip: ≈ 0.35
Last 72 Hour Precip: N/A
Photo: yes

Outfall ID:	FM1	FM2
Flow Observed:	☒ Yes ☐ No	☒ Yes ☐ No
Description of Monitoring Site:	H_2O was running off from site	H_2O ponded behind waddle
Flow Estimate (include units and method of estimation) :	1 CFS - H_2O took a few seconds to fill jar	0 CFS | H_2O was Ponded
Other Observations:	2 samples were taken inside site and on street. street was dirtier than site.	No runoff into street
Color (Describe):	Brown Black	Slightly Cloudy [Grey]
Turbidity:	☐ Clear ☐ Slightly Cloudy ☒ Very Cloudy ☐ Opaque	☐ Clear ☒ Slightly Cloudy ☐ Very Cloudy ☐ Opaque
Floating Solids:	☐ Yes ☒ No	☒ Yes ☐ No
Suspended Solids:	☐ Yes ☒ No	☐ Yes ☒ No
Settled Solids:	☐ Yes ☒ No	☐ Yes ☒ No
Sheen Present:	☐ Yes ☒ No	☐ Yes ☒ No
Odor:	☐ Yes ☒ No	☐ Yes ☒ No
Foam Present:	☐ Yes ☒ No	☐ Yes ☒ No
Describe:	Street sample had more evidence of oil/gas that site sample	A few little sticks and a bit of dirt suspended in sample

Additional Comments: At FM1, street sample was very large puddle that was being mixed by cars driving by [See photos]

WESTON SOLUTIONS

Date:	August 8, 2016
Event:	MS4 Visual Storm Water Monitoring
Inspector:	Savannah Martinez (Weston)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

Fire Mechanic Shop



FM1

Discharge observed



FM1

Sample Collected inside site



FM1
Lots of runoff ponding on street



FM1
Runoff Collect



FM2
Ponding behind wattle



FM2
Ponding inside site



FM2
Sample collected inside site

4TH STREET FUELS

City of Albuquerque
4th Street Fuel Station

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☐ Q1 ☐ Q2 ☐ Q3 ☐ Q4

Date: 7/1/16
Time: 807 PM
Inspector: Dana Peterson
Signature:

Weather: Wet/light rain
Storm Precip:
Last 72 Hour Precip: —
Photo: ~~162~~ 160/161

Outfall ID:	FS1
Flow Observed:	☐ Yes ☐ No
Description of Monitoring Site:	
Flow Estimate (include units and method of estimation):	0
Other Observations:	discharge
Color (Describe):	
Turbidity:	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque
Floating Solids:	☐ Yes ☐ No
Suspended Solids:	☐ Yes ☐ No
Settled Solids:	☐ Yes ☐ No
Sheen Present:	☐ Yes ☐ No
Odor:	☐ Yes ☐ No
Foam Present:	☐ Yes ☐ No
Describe:	

Additional Comments: Wet w/ light rain, but no discharge

WESTON SOLUTIONS

Date:	July 1, 2016
Event:	MS4 Visual Storm Monitoring
Inspector:	Dana Peterson (Weston)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

4th Street Fuels	
	
No runoff observed	No runoff observed

City of Albuquerque
4th Street Fuel Station

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☐ Q1 ☐ Q2 ☒ Q3 ☐ Q4

Date: 7/18/16
Time: 6:15 PM
Inspector: Savannah Martinez
Signature: Savannah Martinez

Weather: Cloudy / Rainy
Storm Precip: 0.16 inches
Last 72 Hour Precip: None
Photo: yes

Outfall ID:	FS1
Flow Observed:	☒ Yes ☐ No
Description of Monitoring Site:	Raining and runoff coming off site
Flow Estimate (include units and method of estimation) :	~~1~~ CFS, how quickly mason jar filled up
Other Observations:	Area was still raining
Color (Describe):	Black or very dark brown
Turbidity:	☐ Clear ☐ Slightly Cloudy ☒ Very Cloudy ☐ Opaque
Floating Solids:	☐ Yes ☒ No
Suspended Solids:	☒ Yes ☐ No
Settled Solids:	☒ Yes ☐ No
Sheen Present:	☐ Yes ☒ No
Odor:	☐ Yes ☒ No
Foam Present:	☐ Yes ☒ No
Describe:	Very dark, black in color very cloudy with some solids (settling and mov yard)

Additional Comments: Area was raining slightly
Storm precip was taken ~~out~~ from National Weather Service at ABQ International Airport

WESTON SOLUTIONS

Date: July 18, 2016

Event: MS4 Visual Storm Monitoring

Inspector: Savannah Martinez (Weston)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

4th Street Fuels	
 Runoff observed	 Runoff very dark and cloudy

City of Albuquerque
4th Street Fuel Station

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☐ Q1 ☐ Q2 ☒ Q3 ☐ Q4

Date: 7/24/16
Time: 6:15 pm
Inspector: Savannah Martinez
Signature:

Weather: Raining
Storm Precip: N/A
Last 72 Hour Precip: N/A
Photo: yes

Outfall ID:	FS1
Flow Observed:	☐ Yes ☒ No
Description of Monitoring Site:	Raining but no discharge
Flow Estimate (include units and method of estimation) :	
Other Observations:	
Color (Describe):	
Turbidity:	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque
Floating Solids:	☐ Yes ☐ No
Suspended Solids:	☐ Yes ☐ No
Settled Solids:	☐ Yes ☐ No
Sheen Present:	☐ Yes ☐ No
Odor:	☐ Yes ☐ No
Foam Present:	☐ Yes ☐ No
Describe:	

Additional Comments: Ground was wet and it was raining but no discharge

WESTON SOLUTIONS

Date: July 24, 2016

Event: MS4 Visual Storm Monitoring

Inspector: Savannah Martinez (Weston)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

4th Street Fuels	
 No discharge observed	

City of Albuquerque
4th Street Fuel Station

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☐ Q1 ☐ Q2 ☑ Q3 ☐ Q4

Date: 8/16/16
Time: 5:00pm
Inspector: Savannah Martinez
Signature:

Weather: Rainy
Storm Precip:
Last 72 Hour Precip:
Photo: yes

Outfall ID:	FS1
Flow Observed:	☐ Yes ☒ No
Description of Monitoring Site:	wet with puddles No runoff
Flow Estimate (include units and method of estimation) :	
Other Observations:	
Color (Describe):	
Turbidity:	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque
Floating Solids:	☐ Yes ☐ No
Suspended Solids:	☐ Yes ☐ No
Settled Solids:	☐ Yes ☐ No
Sheen Present:	☐ Yes ☐ No
Odor:	☐ Yes ☐ No
Foam Present:	☐ Yes ☐ No
Describe:	

Additional Comments: puddles near site but no runoff

Date:	August 6, 2016
Event:	MS4 Visual Storm Monitoring
Inspector:	Savannah Martinez (Weston)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

4th Street Fuels	
 No discharge observed	 No discharge observed

City of Albuquerque
4th Street Fuel Station

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☐ Q1 ☐ Q2 ☒ Q3 ☐ Q4

Date: 8/8/16
Time: 4:40pm
Inspector: Savannah Martinez
Signature: Sah Mz

Weather: Raining + Windy
Storm Precip: 0.35"
Last 72 Hour Precip: N/A
Photo: yes

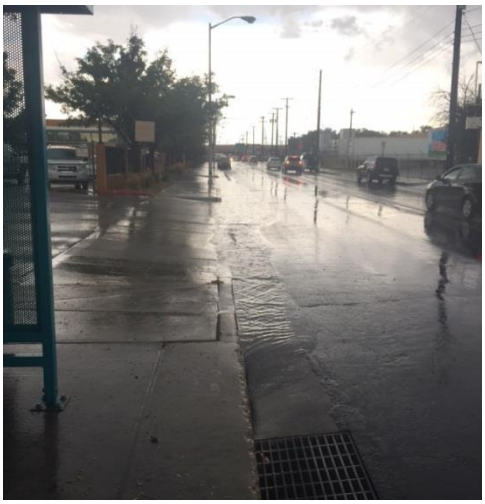
Outfall ID:	FS1
Flow Observed:	☒ Yes ☐ No
Description of Monitoring Site:	Flowing
Flow Estimate (include units and method of estimation) :	1 CFS | mason jar took 2 seconds to fill
Other Observations:	A few little sticks inside sample
Color (Describe):	Clear - little Cloudy
Turbidity:	☐ Clear ☒ Slightly Cloudy ☐ Very Cloudy ☐ Opaque
Floating Solids:	☐ Yes ☒ No
Suspended Solids:	☒ Yes ☐ No
Settled Solids:	☐ Yes ☒ No
Sheen Present:	☐ Yes ☒ No
Odor:	☐ Yes ☒ No
Foam Present:	☐ Yes ☒ No
Describe:	Very clear and there was a lot of H_2O

Additional Comments: Very large storm, several inches of H_2O ponding and running offsite. Sample was relatively clean, but perhaps it was b/c I had gotten there at the tail end of the storm.

WESTON SOLUTIONS

Date:	August 8, 2016
Event:	MS4 Visual Storm Monitoring
Inspector:	Savannah Martinez (Weston)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

4th Street Fuels	
 Discharge observed	 Discharge observed
	

LOMAS FUELS

City of Albuquerque
Lomas Fuel Station

Quarterly Visual Monitoring of
Storm Water Outfall Discharges
☐Q1 ☐Q2 ☒Q3 ☐Q4

Date: 6 SEPT. 2016 **Weather:** RAINY

Time: 5:17p **Storm Precip:** < 0.1 inches

Inspector: Rochelle Larson **Last 72 hour Precip:** none

Photo: 1 (overall site)

Outfall ID:	L1
Flow Observed:	☑Yes ☐No
Description of Monitoring Site:	No spills present and no fueling (Fuel station)
Flow Estimate (include units and method of estimation):	< 2 cfs
Other Observations:	sheet flow occurring over entire site
Color (describe):	
Turbidity:	☐Clear ☐Slightly Cloudy ☐Very Cloudy ☐Opaque
Floating Solids:	☐Yes ☐No
Suspended Solids:	☐Yes ☐No
Settled Solids:	☐Yes ☐No
Sheen Present:	☐Yes ☐No
Odor:	☐Yes ☐No
Foam Present:	☐Yes ☐No
Describe:	no grab sample collected

Additional Comments: visual observation of the site; no apparent stormwater quality issues

CDM Smith

DATE: 09/06/2016

EVENT: MS4 Visual Storm Water Monitoring Assessment

INSPECTORS(S): Rochelle Larson (CDM Smith)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

LOMAS FUEL STATION	
 Runoff observed at Lomas Fuel Station	

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Albuquerque, NM 87109
505-837-6520 Fax 505-837-6550
www.westonsolutions.com

January 9, 2016

Ms. Kathy Verhage, P.E.
Department of Municipal Development - Storm Drainage Design
City of Albuquerque
P.O. Box 1293
Albuquerque, NM 87103

Reference: PROJECT NO. 8010 CITYWIDE ON-CALL NPDES AND MS4 ENGINEERING SUPPORT SERVICES 4th QUARTER 2016 UPDATE FOR TASK 3 VISUAL STORM WATER INSPECTIONS

Dear Ms. Verhage:

This Memo describes the results of the 2016 Quarter 4 Visual Storm Water Inspections for 16 City of Albuquerque (City) facilities. This evaluation and memo has been prepared to address the requirements of the U.S. Environmental Protection Agency's (EPA) Municipal Separate Storm Sewer System (MS4) Permit issued to the City in 2014 and the Multi Sector General Permit for Storm Water Discharges Associated with Industrial Activity (MSGP) at City-owned facilities. Its purpose is to document the City's compliance with the requirements relative to quarterly storm water monitoring.

To comply with the MS4 and MSGP's requirements for storm water monitoring, Weston Solutions and CDM Smith were tasked with performing quarterly visual storm monitoring at 17 City-owned facilities which meet the definition of an industrial facility in the MSGP based on audits of city owned facilities performed between 2012 and 2016. The following facilities were monitored for visual inspection, locations of these facilities are also shown in Figure 1.

- Arroyo Del Oso Golf Course
- Arroyo Maintenance Facility
- Balloon Fiesta Park/ Golf Training Center
- Albuquerque BioPark Facilities*
- Daytona Transit Center
- Fire Department Mechanical Shop
- Fleet- 4th Street Fuel Station
- Fleet- Lomas Fuel Station
- Ladera Golf Course
- Los Altos Golf Course
- Montessa Park Open Space
- Pino Yards
- Puerto del Sol Golf Course
- Street Satellite #1
- Street Satellite #2
- Street Satellite #3
- Yale Transit Center

visual monitoring for the ABQ BioPark Facilities will begin after the implementation of their SWPPP, SPCC Plan, training, and implementation inspection estimated for 1st Quarter 2017

Table 1 shows the Outfall identification names along with the inspection team responsible for monitoring the particular outfall.

Figure 1: Facility Site Locations

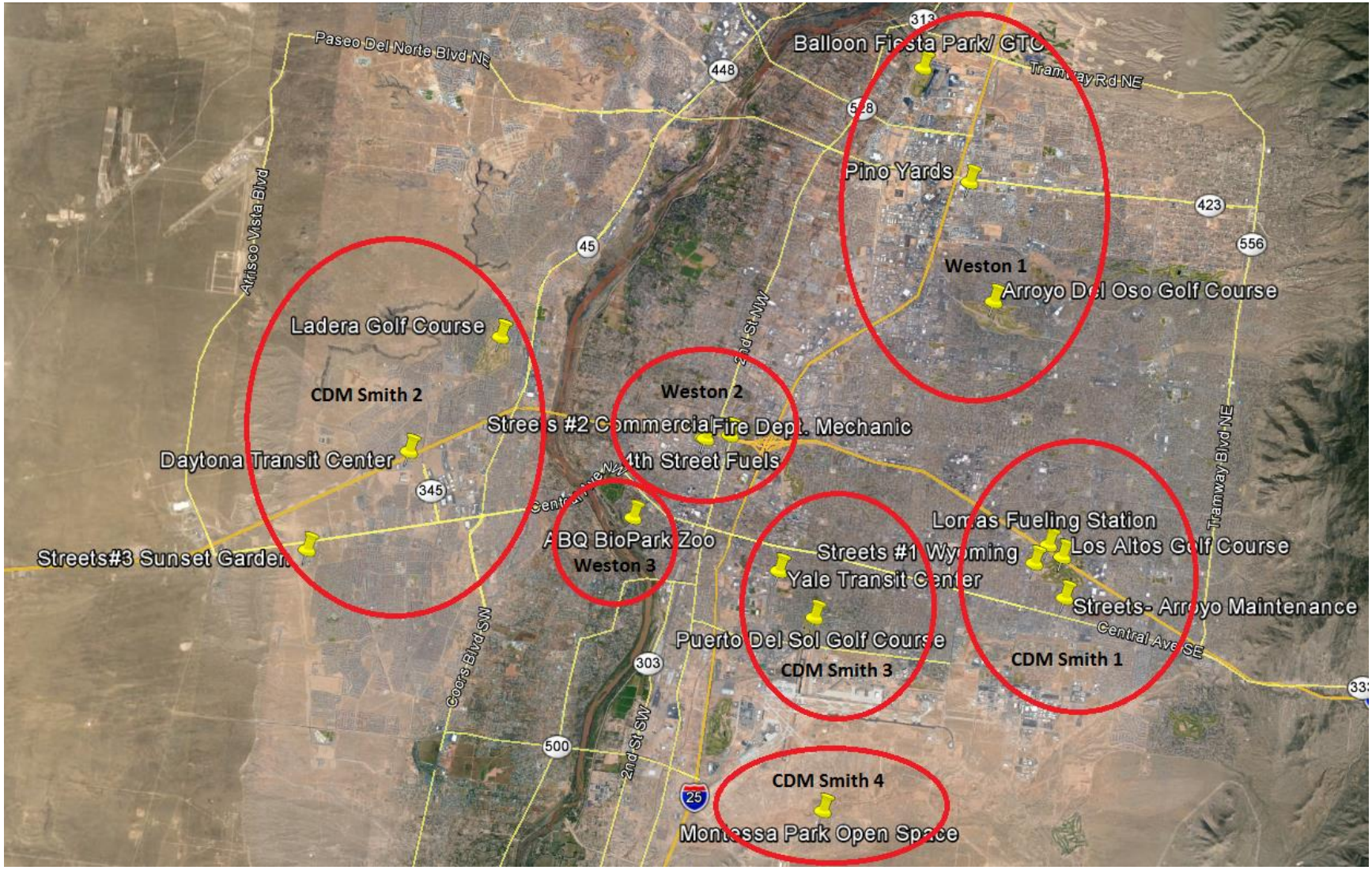


Table 1: Outfall ID and Designees

Site	Outfall ID
Weston 1	
Balloon Fiesta Park/ Golf Training Center	BFP1
	BFP2
	BFP3
	BFP4
	BFP5
Pino Yards	PY1
	PY2
	PY3
Arroyo Del Oso Golf Course	ADO1
	ADO2
Weston 2	
Fleet- 4th Street Fuels	FS1
Fire Department Mechanic Shop	FM1
	FM2
Street Satellite #2	SS2
CDM Smith 1	
Los Altos Golf Course	LA1
	LA2
Fleet- Lomas Fuel Station	L1
Arroyo Maintenance Facility	AM1
Street Satellite #1	SS1A
	SS1B
CDM Smith 2	
Daytona Transit Center	D1
	D2
Ladera Golf Course	LGC1
	LGC2
Street Satellite #3	SS3
CDM Smith 3	
Puerto Del Sol Golf Course	PDS1
	PDS2
Yale Transit Facility	Y1
CDM Smith 4	
Montessa Park Open Space	MP1
	MP2
***Weston 3**	
*ABQ BioPark Facilities	*BP1

visual monitoring for the ABQ BioPark Facilities will begin after the implementation of their SWPPP, SPCC Plan, training and implementation inspection estimated for 1st Quarter 2017 (SWPPP and SPCC in place Aug 2016)

Background

The MSGP establishes requirements for monitoring the quality of storm water discharges depending on the activities at the different types of industrial facility. Although benchmark monitoring is not required, the MSGP does require quarterly visual assessment of storm water quality. Visual assessment consists of the collection of grab samples from each outfall (subject to demonstration of substantially identical outfalls) and examination for the presence of color, odor, clarity, floating solids, settled solids, suspended solids, foam, oil sheen, or other indicators of storm water pollution.

Certain criteria regarding the precipitation event must be met for an assessment event. Visual assessment of storm water must occur:

- During daylight hours
- Within 30 minutes of the start of storm water discharge (or as soon as practicable
- thereafter)
- At least 72 hours after the previous storm water discharge event

Weston will follow the City's existing storm water monitoring protocol outlining the locations and descriptions of all outfalls to be monitored. The protocol identifies contact persons at each facility for use in notifying City personnel when members of the storm water monitoring team are mobilizing to that location. A standard visual assessment form will be used by all staff to document the monitoring activities.

Quarter 4 Monitoring Results

The 4th Quarter sampling period ran from October 1 to December 31, 2016.

- Weston Team 1 mobilized 2 times during the three months to collect samples from storm events. A visual sample was collected from all outfalls over the course of the 2 mobilizations. No repeat samples were collected.
- Weston Team 2 mobilized 1 time and collected a sample from all outfalls over the course of the 1 mobilization. No repeat samples were also collected.
- CDM Smith Team 1 mobilized 1 time during the three months to collect samples from storm events. No visual samples were collected from any outfalls during the 1 mobilization. No repeat samples were collected.
- CDM Smith Team 2 mobilized 1 time during the three months to collect samples from storm events. A visual sample was collected from 3 outfalls over the course of the 1 mobilization. No repeat samples were collected.
- CDM Smith Team 3 did not mobilize during the three months to collect samples from storm events. No visual samples were collected. No repeat samples were collected.
- CDM Smith Team 4 did not mobilize during the three months to collect samples from storm events. No visual sample was collected from any outfalls. No repeat samples were collected.

The monitoring reports and photo logs from Weston Teams 1-2 and CDM Teams 1-4 can be found in the Appendix. Any outfalls that were not monitored in Quarter 4 will be attempted to be made up during Quarter 1 of 2017 pending weather conditions.

Observed Problems

In general very few pollution problems were observed at any of the outfalls with few exceptions. Many of the grab samples exhibited presence of sediment, but no pollutants required follow up inspections or actions to occur.

Results from the Quarter 4 Visual Inspections can be found in the Appendix. Both visual observations and grab samples were noted at most facilities during the 4th Quarter. The only facilities that were not observed during the 4th Quarter were Los Altos Golf Course, Lomas Fuel Station, Arroyo Maintenance, Streets Maintenance #1, Ladera Golf Course, Puerto Del Sol Golf Course, Yale Transit, and Montessa Park. All facilities that did not produce a sample in Quarter 4 2016 will be attempted to be made up in the coming months.

We appreciate the opportunity to provide professional consulting services to you and we look forward to assisting you in the next quarter. Please contact Sarah Luckie at (505) 837-6540 (Sarah.Luckie@WestonSolutions.com) or Brad Sumrall at (505) 837-6566 (Brad.Sumrall@WestonSolutions.com) if you have any questions or need additional information.

Sincerely,
WESTON SOLUTIONS, INC.

Dana Peterson, PE
Project Engineer

APPENDIX: Q4 INSPECTION FORMS AND PHOTO LOGS

APPENDIX: Q3 INSPECTION FORMS & PHOTO LOGS- VISUAL INSPECTIONS

STREETS SATELLITE #1

STREETS SATELLITE #2

City of Albuquerque
Street Maintenance Satellite #2

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☐ Q1 ☐ Q2 ☐ Q3 ☒ Q4

Date: 11/4/2016
Time: 3:15 PM
Inspector: Sarah Luckie
Signature: Sarah Luckie

Weather: Rain
Storm Precip: 0.5 in
Last 72 Hour Precip: —
Photo: yes

Outfall ID:	SS2
Flow Observed:	☒ Yes ☐ No
Description of Monitoring Site:	running down gutter
Flow Estimate (include units and method of estimation) :	< 1 cfs
Other Observations:	Bubbles seen exiting site
Color (Describe):	orange/brown
Turbidity:	☐ Clear ☒ Slightly Cloudy ☐ Very Cloudy ☐ Opaque
Floating Solids:	☐ Yes ☒ No
Suspended Solids:	☒ Yes ☐ No
Settled Solids:	☐ Yes ☒ No
Sheen Present:	☐ Yes ☒ No
Odor:	☐ Yes ☒ No
Foam Present:	☒ Yes ☐ No
Describe:	

Additional Comments: Some foam present exiting site - small amount, no noticable sheen in sample and no smell. (see site photos)

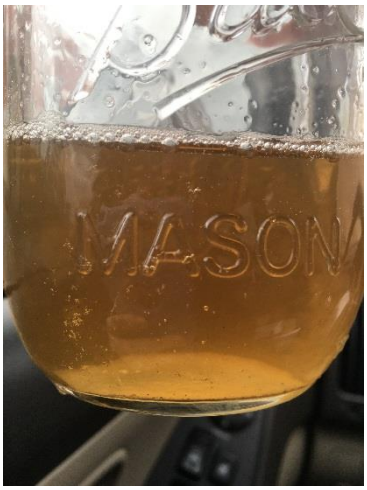
WESTON SOLUTIONS

Date: November 4, 2016

Event: MS4 Visual storm Water Monitoring

Inspector: Sarah Luckie (Weston)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

Street Maintenance #2	
 Sample Collected	 Some foam/bubbles present

STREETS SATELLITE #3

City of Albuquerque

Street Maintenance Satellite #3

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☐Q1 ☐Q2 ☐Q3 ☒Q4

Date: 11/14/16

Time: 9:17

Inspector: GREG LARSON
CON

Weather: LIGHT RAIN

Storm Precip: 0.09 inches @ Sunport thru 4:15pm

Last 72 hour Precip: NO

Photo: YES

Outfall ID:	SS3
Flow Observed:	☒Yes ☐No
Description of Monitoring Site:	
Flow Estimate (include units and method of estimation):	LOW
Other Observations:	WADDLE INSTALLED
Color (describe):	PALE BROWN
Turbidity:	☐Clear ☐Slightly Cloudy ☒Very Cloudy ☐Opaque
Floating Solids:	☒Yes ☐No MINOR
Suspended Solids:	☐Yes ☒No
Settled Solids:	☐Yes ☒No
Sheen Present:	☒Yes ☐No
Odor:	☐Yes ☒No
Foam Present:	☐Yes ☒No
Describe:	

Additional Comments: SHEEN PRESENT UPSTREAM FROM WADDLE SEEMED TO ORIGINATE FROM WHERE STREET SWEEPERS/VEHICLES WERE PARKED.

CDM Smith

DATE: 11/04/2016

EVENT: MS4 Visual Storm Water Monitoring Assessment

INSPECTORS(S): Connor Kelley, Greg Larson (CDM Smith)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

LOMAS FUEL STATION



Sheen observed in runoff upstream of outfall.



Wattles installed upstream of outfall.

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DATE: 11/04/2016

EVENT: MS4 Visual Storm Water Monitoring Assessment

INSPECTORS(S): Connor Kelley, Greg Larson (CDM Smith)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

LOMAS FUEL STATION



Small sheen present in sample collected upstream of outfall.



Outfall discharges to detention pond.

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DATE: 11/04/2016

EVENT: MS4 Visual Storm Water Monitoring Assessment

INSPECTORS(S): Connor Kelley, Greg Larson (CDM Smith)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

LOMAS FUEL STATION



Sheen appeared to originate from pavement stains neared parked vehicles.



Street sweeper was cleaning the site's paved area during inspection event.

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STREETS SATELLITE ARROYO MAINTENANCE

PINO YARDS

City of Albuquerque
Pino Yards Complex

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☐ Q1 ☐ Q2 ☐ Q3 ☒ Q4

Date: 10/8/2016
Time: 11:15 AM
Inspector: Sarah Luckie
Signature: Sarah Luckie

Weather: Rain
Storm Precip: 0.4 in
Last 72 Hour Precip: —
Photo: yes

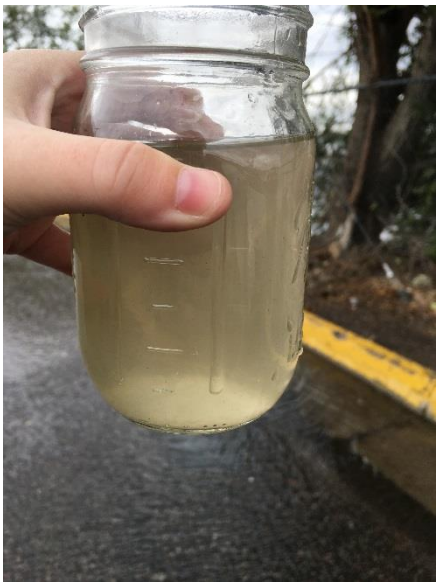
Outfall ID:	PY1	PY2	PY3
Flow Observed:	☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No
Description of Monitoring Site:	some litter in grate	clean grate	discharge down street
Flow Estimate (include units and method of estimation) :	< 1 cfs	< 1 cfs	≈ 1 cfs
Other Observations:			
Color (Describe):	yellow	clear	yellow
Turbidity:	☐ Clear ☒ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☒ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☐ Clear ☒ Slightly Cloudy ☐ Very Cloudy ☐ Opaque
Floating Solids:	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
Suspended Solids:	☒ Yes ☐ No	☐ Yes ☒ No	☒ Yes ☐ No
Settled Solids:	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
Sheen Present:	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
Odor:	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
Foam Present:	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
Describe:	fairly clean	clean	some sediment overall clean

Additional Comments:

Date:	October 08, 2016
Event:	MS4 Visual Monitoring Assessment
Inspector:	Sarah Luckie (Weston)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

Pino Yards



PY3 Sample



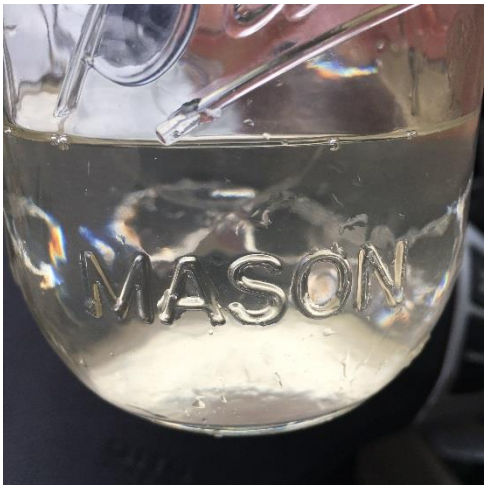
PY3 Discharge





PY1 Sample

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

Pino Yards	
 PY2 Sample	

TRANSIT- YALE

TRANSIT- DAYTONA

City of Albuquerque

West Side Maintenance Facility (Daytona)

Quarterly Visual Monitoring of
Storm Water Outfall Discharges
☐Q1 ☐Q2 ☐Q3 ☒Q4

Date: 11/4/16 **Weather:** rain

Time: 8:56 AM **Storm Precip:** 0.09 inches @Sunport thru 4:15pm

Inspector: Grey Larson, Connor Kelley **Last 72 hour Precip:** no

Photo: yes

Outfall ID:	D1	D2
Flow Observed:	☐Yes ☐No	☒Yes ☐No
Description of Monitoring Site:	MANHOLE	manhole
Flow Estimate (include units and method of estimation):	MEDIUM / MODERATE FLOW (VISUAL)	medium/ moderate flow (visual)
Other Observations:		
Color (describe):	PALE/GRAY	pale/yellow
Turbidity:	☐Clear ☒Slightly Cloudy ☐Very Cloudy ☐Opaque	☐Clear ☒Slightly Cloudy ☐Very Cloudy ☐Opaque
Floating Solids:	☐Yes ☒No	☒Yes ☐No
Suspended Solids:	☐Yes ☒No	☐Yes ☒No
Settled Solids:	☐Yes ☒No	☐Yes ☒No
Sheen Present:	☐Yes ☒No	☐Yes ☒No
Odor:	☐Yes ☒No	☐Yes ☒No
Foam Present:	☐Yes ☒No	☐Yes ☒No
Describe:		

Additional Comments: no apparent issues

CDM Smith

DATE: 11/4/2016

EVENT: MS4 Visual Storm Water Monitoring Assessment

INSPECTORS(S): Greg Larson, Connor Kelley (CDM Smith)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

DAYTONA TRANSIT CENTER



Outfall D2 – Bailer used to retrieve stormwater sample for visual observation.



Outfall D2 – Stormwater sample was pale yellow. No major impacts to stormwater quality observed.



Outfall D1 – Stormwater sample collected from manhole



Outfall D1 – No apparent stormwater quality issues.

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BALLOON FIESTA PARK/ GOLF TRAINING CENTER

City of Albuquerque

Balloon Fiesta Park and Golf Training Center

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☐ Q1 ☐ Q2 ☐ Q3 ☒ Q4

Date: 11/4/2016
Time: 10:30 AM
Inspector: Sarah Luckie
Signature: Sarah Luckie

Weather: Light Rain
Storm Precip: 0.10 in
Last 72 Hour Precip: —
Photo: yes

Outfall ID:	BFP1	BFP2	BFP3
Flow Observed:	☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No
Description of Monitoring Site:	Light rain in the area with small amount of discharge		
Flow Estimate (include units and method of estimation) :	< 1 cfs	< 1 cfs	< 1 cfs
Other Observations:			
Color (Describe):	clear / yellow	White	brown
Turbidity:	☒ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☐ Clear ☒ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☐ Clear ☒ Slightly Cloudy ☐ Very Cloudy ☐ Opaque
Floating Solids:	☒ Yes ☐ No	☐ Yes ☒ No	☐ Yes ☒ No
Suspended Solids:	☐ Yes ☒ No	☒ Yes ☐ No	☒ Yes ☐ No
Settled Solids:	☐ Yes ☒ No	☐ Yes ☒ No	☒ Yes ☐ No
Sheen Present:	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
Odor:	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
Foam Present:	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
Describe:	Some sediment and grass	Sample milky but clean	Sediment in sample

Additional Comments:

WESTON SOLUTIONS

City of Albuquerque

Balloon Fiesta Park and Golf Training Center

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☐ Q1 ☐ Q2 ☐ Q3 ☒ Q4

Date: 11/4/16
Time: 10:30 AM
Inspector: Sarah Luckie
Signature: Sarah Luckie

Weather: Light rain
Storm Precip: 0.10 in
Last 72 Hour Precip: —
Photo: yes

Outfall ID:	BFP4	BFP5
Flow Observed:	☒ Yes ☐ No	☒ Yes ☐ No
Description of Monitoring Site:	Light rain with small discharge	
Flow Estimate (include units and method of estimation) :	< 1 cfs	< 1 cfs
Other Observations:		
Color (Describe):	brown	brown
Turbidity:	☐ Clear ☒ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☐ Clear ☒ Slightly Cloudy ☐ Very Cloudy ☐ Opaque
Floating Solids:	☐ Yes ☒ No	☒ Yes ☐ No
Suspended Solids:	☒ Yes ☐ No	☒ Yes ☐ No
Settled Solids:	☐ Yes ☒ No	☐ Yes ☒ No
Sheen Present:	☐ Yes ☒ No	☐ Yes ☒ No
Odor:	☐ Yes ☒ No	☐ Yes ☒ No
Foam Present:	☐ Yes ☒ No	☐ Yes ☒ No
Describe:	Some sediment in sample	grass & sediment in sample

Additional Comments:

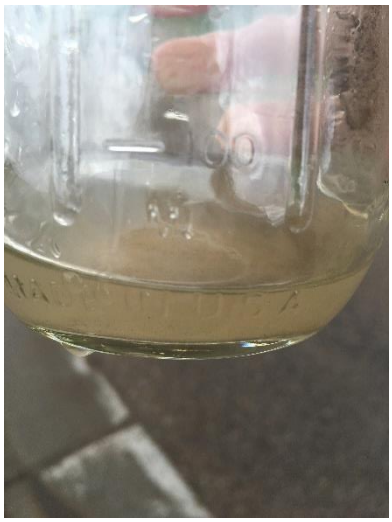
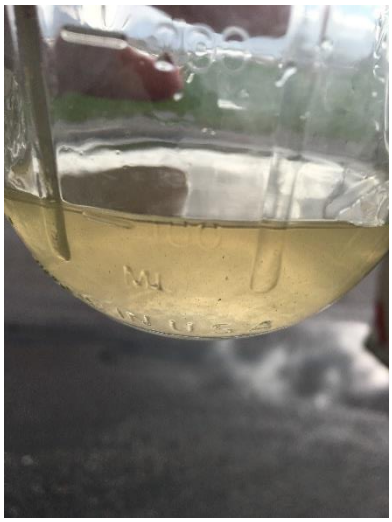
WESTON SOLUTIONS

Date: November 4, 2016

Event: MS4 Stormwater Visual Monitoring

Inspector: Sarah Luckie (Weston)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

Balloon Fiesta Park	
 BFP1 Discharge	 BFP4 Discharge
 BFP5 Discharge	 BFP2 Discharge



BFP3 Discharge

MONTESSA PARK

LOS ALTOS GOLF COURSE

City of Albuquerque

Los Altos Golf Course

Quarterly Visual Monitoring of
Storm Water Outfall Discharges
☐Q1 ☐Q2 ☐Q3 ☒Q4

Date: 4 NOV 2016 **Weather:** RAIN

Time: 2:19 PM **Storm Precip:** LO. 1 in.

Inspector: AMY REED **Last 72 hour Precip:** NONE

Photo: #1

Outfall ID:	**LA1**		**LA2**	
Flow Observed:	☐Yes	☑No	☐Yes	☑No
Description of Monitoring Site:	on golf course		No Runoff currently present from maintenance bldg	
Flow Estimate (include units and method of estimation):	Ø		Ø	
Other Observations:				
Color (describe):				
Turbidity:	☐Clear ☐Slightly Cloudy ☐Very Cloudy ☐Opaque		☐Clear ☐Slightly Cloudy ☐Very Cloudy ☐Opaque	
Floating Solids:	☐Yes	☐No	☐Yes	☐No
Suspended Solids:	☐Yes	☐No	☐Yes	☐No
Settled Solids:	☐Yes	☐No	☐Yes	☐No
Sheen Present:	☐Yes	☐No	☐Yes	☐No
Odor:	☐Yes	☐No	☐Yes	☐No
Foam Present:	☐Yes	☐No	☐Yes	☐No
Describe:	no flow			

Additional Comments: OBSERVATION: NO STORMWATER RUNOFF CONTAMINATION OBSERVED in pooling water by LA2 or by wet surrounding SURFACES

CDM Smith

DATE: 11/04/2016

EVENT: MS4 Visual Storm Water Monitoring Assessment

INSPECTORS(S): Amy Reed (CDM Smith)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

LOS ALTOS GOLF COURSE	
 Outfall LA2: No apparent impact to stormwater quality observed in pooled runoff.	

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PUERTO DEL SOL GOLF COURSE

LADERA GOLF COURSE

City of Albuquerque
Ladera Golf Course

Quarterly Visual Monitoring of
Storm Water Outfall Discharges
☐Q1 ☐Q2 ☐Q3 ☒Q4

Date: 11/4/16 **Weather:** CLOUDY

Time: 9:50 **Storm Precip:** 0.09 inches @ Sunport thru 4:15pm

Inspector: GREG LARSON, CONNOR KELLEY **Last 72 hour Precip:** NO

Photo: YES

Outfall ID:	LGC1		LGC2	
Flow Observed:	☐Yes	☒No	☐Yes	☒No
Description of Monitoring Site:				
Flow Estimate (include units and method of estimation):	NONE			
Other Observations:				
Color (describe):				
Turbidity:	☐Clear ☐Slightly Cloudy ☐Very Cloudy ☐Opaque		☐Clear ☐Slightly Cloudy ☐Very Cloudy ☐Opaque	
Floating Solids:	☐Yes	☐No	☐Yes	☐No
Suspended Solids:	☐Yes	☐No	☐Yes	☐No
Settled Solids:	☐Yes	☐No	☐Yes	☐No
Sheen Present:	☐Yes	☐No	☐Yes	☐No
Odor:	☐Yes	☐No	☐Yes	☐No
Foam Present:	☐Yes	☐No	☐Yes	☐No
Describe:				

Additional Comments: TRASH/DEBRIS OBSERVED IN GGC1
JUST FINISHED RAINING

CDM Smith

DATE: 11/04/2016

EVENT: MS4 Visual Storm Water Monitoring Assessment

INSPECTORS(S): Connor Kelley, Gregory Larson (CDM Smith)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

LADERA GOLF COURSE



Runoff not observed at Outfall LGC@.



Debris observed in Outfall LGC1

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ARROYO DEL OSO GOLF COURSE

City of Albuquerque
Arroyo Del Oso Golf Course

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☐ Q1 ☐ Q2 ☐ Q3 ☒ Q4

Date: 10/8/2016
Time: 10:45 AM
Inspector: Sarah Luchie
Signature: Sarah Luchie

Weather: Rain
Storm Precip: 0.4 inch
Last 72 Hour Precip: —
Photo: yes

Outfall ID:	ADO1	ADO2
Flow Observed:	☒ Yes ☐ No	☒ Yes ☐ No
Description of Monitoring Site:	Light rain, discharge	discharge
Flow Estimate (include units and method of estimation) :	< 1 cfs	< 1 cfs
Other Observations:		
Color (Describe):	gray	brown
Turbidity:	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☒ Opaque	☐ Clear ☐ Slightly Cloudy ☒ Very Cloudy ☐ Opaque
Floating Solids:	☒ Yes ☐ No	☒ Yes ☐ No
Suspended Solids:	☒ Yes ☐ No	☒ Yes ☐ No
Settled Solids:	☐ Yes ☒ No	☐ Yes ☒ No
Sheen Present:	☐ Yes ☒ No	☐ Yes ☒ No
Odor:	☐ Yes ☒ No	☐ Yes ☒ No
Foam Present:	☐ Yes ☒ No	☐ Yes ☒ No
Describe:	small grass bits & sediment	debris and sediment in sample

Additional Comments:

Date: October 08, 2016

Event: MS4 Stormwater Visual Inspection

Inspector: Sarah Luckie (Weston)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

Arroyo Del Oso Golf Course	
 ADO1 Sample	 ADO2 Sample

FIRE DEPARTMENT MECHANIC

City of Albuquerque
Fire Department Mechanic Shop

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☐ Q1 ☐ Q2 ☐ Q3 ☒ Q4

Date: 11/4/2016
Time: 2:45 PM
Inspector: Sarah Luckie
Signature: Sarah Luckie

Weather: Rain
Storm Precip: 0.7in
Last 72 Hour Precip: —
Photo: yes

Outfall ID:	FM1	FM2
Flow Observed:	☒ Yes ☐ No	☒ Yes ☐ No
Description of Monitoring Site:	Rain, discharge down gutter	discharge, ponding gutter buddie.
Flow Estimate (include units and method of estimation) :	≈1 cfs	<1 cfs
Other Observations:		
Color (Describe):	gray/brown	yellow
Turbidity:	☐ Clear ☒ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☐ Clear ☒ Slightly Cloudy ☐ Very Cloudy ☐ Opaque
Floating Solids:	☐ Yes ☒ No	☐ Yes ☒ No
Suspended Solids:	☒ Yes ☐ No	☒ Yes ☐ No
Settled Solids:	☒ Yes ☐ No	☐ Yes ☒ No
Sheen Present:	☐ Yes ☒ No	☐ Yes ☒ No
Odor:	☐ Yes ☒ No	☐ Yes ☒ No
Foam Present:	☐ Yes ☒ No	☐ Yes ☒ No
Describe:	some sediment and leafs	some sediment mostly clear gutter buddie works.

Additional Comments:

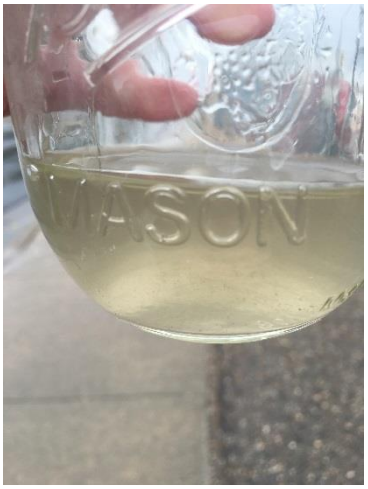
WESTON SOLUTIONS

Date: November 4, 2016

Event: MS4 Visual Storm Water Monitoring

Inspector: Sarah Luckie(Weston)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

Fire Mechanic Shop	
 **FM2**	 **FM1**

4TH STREET FUELS

City of Albuquerque
4th Street Fuel Station

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☐ Q1 ☐ Q2 ☐ Q3 ☒ Q4

Date: 11/4/2016
Time: 2:30 PM
Inspector: Sarah Luckie
Signature: Sarah Luckie

Weather: Rain
Storm Precip: 0.7in
Last 72 Hour Precip: —
Photo: yes

Outfall ID:	FS1
Flow Observed:	☒ Yes ☐ No
Description of Monitoring Site:	Rain, discharge down gutter
Flow Estimate (include units and method of estimation) :	~ 1 cfs
Other Observations:	
Color (Describe):	Clear
Turbidity:	☒ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque
Floating Solids:	☐ Yes ☒ No
Suspended Solids:	☒ Yes ☐ No
Settled Solids:	☐ Yes ☒ No
Sheen Present:	☐ Yes ☒ No
Odor:	☐ Yes ☒ No
Foam Present:	☐ Yes ☒ No
Describe:	Some sediment in sample

Additional Comments:

Date: November 4, 2016

Event: MS4 Visual Storm Monitoring

Inspector: Sarah Luckie (Weston)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

4th Street Fuels	
 Sample	

LOMAS FUELS

City of Albuquerque

Lomas Fuel Station

Quarterly Visual Monitoring of
Storm Water Outfall Discharges
☐Q1 ☐Q2 ☐Q3 ☑Q4

Date: 4 NOV 2016 **Weather:** RAIN

Time: 2:14pm **Storm Precip:** <0.1 inches

Inspector: Amy REED **Last 72 hour Precip:** NONE

Photo: 1

Outfall ID:	L1
Flow Observed:	☑Yes ☐No
Description of Monitoring Site:	NO SPILLS NO CARS CURRENTLY FUELING
Flow Estimate (include units and method of estimation):	1-2 cfs
Other Observations:	SHEET FLOW OVER SITE.
Color (describe):	
Turbidity:	☐Clear ☐Slightly Cloudy ☐Very Cloudy ☐Opaque
Floating Solids:	☐Yes ☐No
Suspended Solids:	☐Yes ☐No
Settled Solids:	☐Yes ☐No
Sheen Present:	☑Yes ☐No
Odor:	☐Yes ☐No
Foam Present:	☐Yes ☐No
Describe:	NO GRAB SAMPLE COLLECTED

Additional Comments: OBSERVATION: STORMWATER RUNOFF QUALITY SHOWS NO SIGNS OF ISSUES OR APPARENT CONTAMINATION

CDM Smith

DATE: 11/04/2016

EVENT: MS4 Visual Storm Water Monitoring Assessment

INSPECTORS(S): Amy Reed (CDM Smith)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

LOMAS FUEL STATION



Outfall L1: No apparent impacts to stormwater quality apparent in pooled runoff.



Outfall L1: No apparent impacts to stormwater quality apparent in pooled runoff.

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6000 Uptown Blvd. NE, Suite 200
Albuquerque, NM 87110
tel: 505 243-3200
fax: 505 243-2700

January 6, 2016

Mr. Brad Sumrall, P.E.
Weston Solutions
3840 Commons Ave NE
Albuquerque, New Mexico 87109

Subject: Visual Stormwater Monitoring at the City of Albuquerque —Fourth Quarter 2016 (Task 03 Visual Stormwater Monitoring)
CDM Smith Project No: 76998-114606

Dear Mr. Sumrall:

CDM Smith Inc. (CDM Smith) herein notifies Weston Solutions (Weston) that a visual stormwater monitoring event was not conducted for the following City of Albuquerque facilities during the fourth quarter: Arroyo Maintenance, Montessa Park, Puerto Del Sol Golf Course, Street Satellite #1, and the Yale Transit Yard. National Weather Service (NWS) data, from a weather station located approximately between two and eight miles from the facilities, provided precipitation events for October through December 2016 is included in **Attachment A**. Daily weather reports, with data obtained from the weather station, for days when precipitation was observed, according to NWS data, are included in **Attachment B**. The events with measurable precipitation occurring during this time are summarized in **Table 1**.

Section 3.2 of 2015 Multi Sector General Permit (MSGP) describes the criteria regarding the precipitation event that must be met to qualify as an assessment event. Visual assessment of stormwater must occur:

- On samples collected within the first 30 minutes of an actual discharge from a storm event. If it is not possible to collect the sample within the first 30 minutes of discharge, the sample must be collected as soon as practicable after the first 30 minutes and you must document why it was not possible to take the sample within the first 30 minutes.
- For storm events, on discharges that occur at least 72 hours (three days) from the previous discharge.

An additional limitation on the timing of sampling activities within the City of Albuquerque is contained in the City's Storm Water Management Plan (SWMP, December, 2016). Section 13.3.1.2 of the SWMP limits sampling to normal business hours – Monday through Friday, 7:30 am to 5:00 pm and not required on the following observed holidays: Memorial Day; Independence Day; Labor

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Day; Thanksgiving Day; and Christmas Day through New Year's Day. Therefore, storm events that occur outside of normal business hours or on a holiday are not considered qualifying events.

CDM Smith's past visual monitoring experience for City of Albuquerque facilities has shown that stormwater discharges from facilities typically does not occur for precipitation events of less than 0.1 inches of measurable rainfall. Therefore, events with less than 0.1 inch of measurable rainfall do not create a discharge and are not considered for visual assessment.

Table 1 Fourth Quarter 2016 Precipitation Events

Date	Total Precipitation (Inches)	Event Start Time	Notes
Monday, 10/3/2016	0.05	2:52 am	Light rain started at 2:52 am. Non qualifying event due to insufficient precipitation to create discharge and outside normal business hours.
Saturday, 10/8/2016	0.01	4:52 pm	Light rain started at 4:52 pm. Non qualifying event due to insufficient precipitation to create discharge and outside normal business hours.
Sunday, 10/9/2016	0.33	5:52 pm	Rain and thunderstorm started at 5:52 pm. Non qualifying event due to event starting outside normal business hours.
Wednesday, 11/2/2016	0.02	10:52 pm	Rain started at 10:52 pm. Non qualifying event due to insufficient precipitation to create discharge and outside normal business hours.
Thursday, 11/3/2016	0.04	12:52 am	Light thunderstorms and rain started at 12:52 am. Non qualifying event due to insufficient precipitation to create discharge and outside normal business hours.
Friday, 11/4/2016	**0.22**	**7:52 am**	**Isolated showers throughout various areas of Albuquerque.**
Saturday, 11/5/2016	0.55	12:52 am	Rain started at 12:52 am. Non qualifying event due to rain in past 72 hours and outside normal business hours.
Thursday, 12/22/2016	0.44	2:18 am	Rain started at 2:18 am. Non qualifying event due to event occurring and outside normal business hours.
Friday, 12/23/2016	0.04	12:05 am	Thunderstorms and rain started at 12:05 am. Non qualifying event due to rain in past 72 hours and outside normal business hours.
Saturday, 12/31/2016	0.05	8:40 am	Light thunderstorms and rain started at 8:40 am. Non qualifying event due to insufficient precipitation to create discharge and outside normal business hours.

Table Notes: Events shaded in gray are non-qualifying events. Bold indicates qualifying events.

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As seen in **Table 1**, of the 10 storm events with measurable precipitation that occurred in the fourth quarter, only one of the events are considered a qualifying assessment event per the criteria listed above. During this event which occurred November 4th 2016, CDM Smith mobilized to the following sites to perform visual stormwater monitoring: Ladera Golf Course, Lomas Fuel Station, Los Altos Golf Course, Streets Satellite #3 and the West Transit Facility (Daytona). During this event, CDM Smith made the determination not to perform visual monitoring at the other facilities due to the observed lack of rainfall at the sites based on visual storm tracking and radar data provided by weather tracking websites. Due to these circumstances a visual monitoring event was not performed during the fourth quarter of 2016 at the aforementioned facilities.

CDM Smith will attempt to perform multiple stormwater monitoring events in the first and second quarters of 2017 in order to capture 4 total monitoring events at each facility between July 2016 and June 2017.

Please contact CDM Smith at (505) 243-3200 if you have any questions or comments regarding this report.

Sincerely,

Gregory S. Larson, P.E.
Project Engineer
CDM Smith Inc.

Kelly A. Collins, PG, BCES
Principal, Task Order Manager
CDM Smith Inc.

Attachments

cc: File

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ATTACHMENT A

NWS WEATHER SUMMARY OCTOBER 1, 2016 TO DECEMBER 31, 2016

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report this ad

Kirtland AFB, NM

Albuquerque International Sunport

2:23 PM MST on January 06, 2017 (GMT -0700)

Weather History for KABQ - October, 2016

From:

October

1

2016

To:

December

31

2016

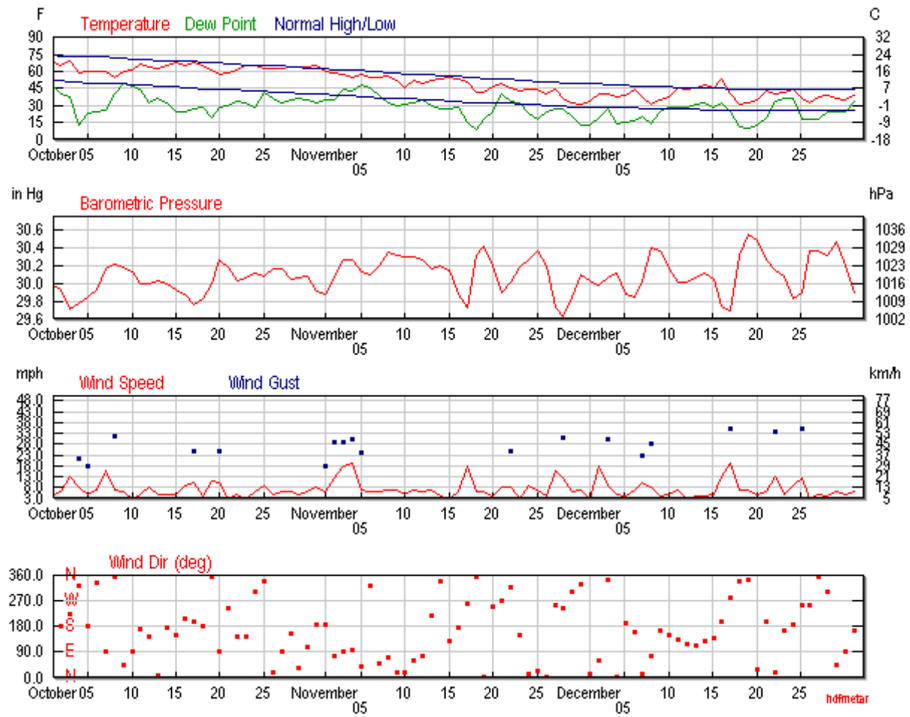
Get History

Daily | Weekly | Monthly | **Custom**

	Max	Avg	Min	Sum
Temperature				
Max Temperature	**85** °F	**61** °F	**39** °F	
Mean Temperature	**69** °F	**50** °F	**31** °F	
Min Temperature	**58** °F	**39** °F	**20** °F	
Degree Days				
Heating Degree Days (base 65)	34	15	0	1354
Cooling Degree Days (base 65)	4	0	0	18
Growing Degree Days (base 50)	18	5	0	466
Dew Point				
Dew Point	**56** °F	**29** °F	**-5** °F	
Precipitation				
Precipitation	**0.40** in	**0.03** in	**0.00** in	**2.28** in
Snowdepth	**0.0** in	**0.0** in	**0.0** in	-
Wind				

	Max	Avg	Min	Sum
Wind	**44** mph	**7** mph	**0** mph	
Gust Wind	**56** mph	**27** mph	**16** mph	
Sea Level Pressure				
Sea Level Pressure	**30.65** in	**30.08** in	**29.36** in	

Custom Weather History Graph



report this ad | why ads?

Search for Another Location

Airport or City:

KABQ

Submit

Trip Planner

Search our weather history database for the weather conditions in past years. The results will help you decide how hot, cold, wet, or windy it might be!

Date:

October

1

Submit

report this ad | why ads?
report this ad | why ads?

Weather History & Observations

2016	Temp. (°F)			Dew Point (°F)			Humidity (%)			Sea Level Press. (in)			Visibility (mi)			Wind (mph)			Precip. (in)	Events
Oct	high	avg	low	high	avg	low	high	avg	low	high	avg	low	high	avg	low	high	avg	high	sum	
	80	68	56	56	47	38	93	58	23	30.06	29.98	29.89	10	10	10	14	5	19	0.00	
	79	66	53	45	41	37	64	44	23	30.00	29.92	29.82	10	10	10	15	6	19	0.00	
	80	69	58	54	38	20	86	49	11	29.81	29.71	29.58	10	10	10	29	13	38	0.05	Rain
	70	59	47	19	13	9	26	18	10	29.86	29.77	29.68	10	10	10	17	8	23	0.00	
	75	60	44	28	23	18	40	28	16	29.94	29.85	29.77	10	10	10	21	5	26	0.00	
	73	60	47	32	24	15	46	31	15	30.03	29.93	29.84	10	10	10	18	7	22	0.00	
	70	60	49	34	26	13	52	35	18	30.25	30.16	30.05	10	10	10	28	16	35	0.00	
	62	55	47	52	41	27	100	69	38	30.38	30.22	30.14	10	10	4	25	7	32	0.34	Rain , Thunderstorm
	71	60	49	53	50	47	100	72	44	30.33	30.18	30.06	10	10	4	15	6	18	0.35	Rain , Thunderstorm
	74	61	48	51	47	39	100	66	31	30.31	30.13	30.02	10	10	10	12	3	15	0.00	Fog
	79	67	54	51	44	31	89	57	25	30.11	30.00	29.89	10	10	10	10	5	15	0.00	
	78	64	50	42	33	24	59	37	15	30.08	30.00	29.95	10	10	10	29	8	35	0.00	
	77	63	49	43	37	26	80	48	16	30.19	30.03	29.96	10	10	10	16	5	20	0.00	
	79	65	51	40	32	23	59	36	12	30.09	29.99	29.88	10	10	10	14	5	16	0.00	
	85	68	51	30	25	18	44	27	9	30.00	29.92	29.83	10	10	10	13	5	15	0.00	
	83	66	49	30	24	15	41	25	8	29.99	29.87	29.76	10	10	10	22	9	31	0.00	
	85	68	51	31	27	21	38	24	10	29.84	29.76	29.66	10	10	10	25	10	31	0.00	
	80	65	50	32	29	25	50	32	13	29.93	29.83	29.75	10	10	10	14	4	19	0.00	
	72	62	51	33	19	0	43	25	7	30.18	30.00	29.85	10	10	10	28	11	34	0.00	
	66	57	47	34	28	12	50	35	19	30.37	30.27	30.17	10	10	10	24	10	32	0.00	
	73	59	44	33	30	27	58	40	22	30.39	30.18	30.05	10	10	10	9	3	13	0.00	
	77	62	47	37	34	30	66	42	18	30.14	30.03	29.92	10	10	10	9	5	11	0.00	
	80	66	51	37	33	30	54	36	17	30.15	30.06	30.01	10	10	10	9	3	10	0.00	
	77	65	52	33	29	26	35	26	16	30.21	30.11	30.04	10	10	10	13	6	16	0.00	
	73	63	53	50	42	33	60	47	34	30.20	30.07	30.00	10	10	10	25	9	27	T	Rain
	75	63	50	43	36	27	68	42	16	30.25	30.17	30.11	10	10	10	16	5	23	0.00	
	76	63	50	37	33	30	50	36	21	30.27	30.16	30.08	10	10	10	12	6	15	0.00	
	75	64	53	37	35	31	50	36	21	30.13	30.04	29.96	10	10	10	12	6	16	0.00	

2016	Temp. (°F)			Dew Point (°F)			Humidity (%)			Sea Level Press. (in)			Visibility (mi)			Wind (mph)			Precip. (in)	Events
	78	64	50	39	37	36	59	41	22	30.11	30.06	30.01	10	10	10	16	5	22	0.00	
	77	64	51	37	35	33	54	38	22	30.19	30.08	29.99	10	10	10	16	6	19	0.00	
	75	65	54	37	32	25	50	33	16	30.00	29.91	29.81	10	10	10	21	8	26	0.00	
2016	Temp. (°F)			Dew Point (°F)			Humidity (%)			Sea Level Press. (in)			Visibility (mi)			Wind (mph)			Precip. (in)	Events
Nov	high	avg	low	high	avg	low	high	avg	low	high	avg	low	high	avg	low	high	avg	high	sum	
	70	60	50	39	35	30	54	39	23	30.07	29.87	29.80	10	10	10	16	6	21	0.00	
	72	59	45	47	35	28	71	46	20	30.25	30.06	29.93	10	10	10	30	12	39	0.02	Rain
	64	57	50	47	44	39	83	66	48	30.34	30.27	30.19	10	10	10	30	18	39	0.04	Rain
	60	55	49	47	43	40	93	72	51	30.42	30.26	30.20	10	9	2	37	19	42	0.20	Rain
	65	57	48	51	48	45	100	78	56	30.28	30.12	29.98	10	10	5	24	7	29	0.40	Rain , Thunderstorm
	62	55	47	51	46	40	100	72	43	30.19	30.09	30.00	10	8	1	16	6	21	0.00	
	68	55	42	43	39	27	96	63	29	30.30	30.20	30.11	10	10	10	20	6	25	0.00	
	64	56	47	36	32	28	60	45	30	30.44	30.35	30.26	10	10	10	26	7	34	0.00	
	64	52	40	34	30	19	79	50	20	30.42	30.32	30.21	10	10	10	17	7	22	0.00	
	56	46	36	35	31	26	70	54	38	30.37	30.29	30.23	10	10	10	12	5	16	0.00	
	64	52	40	36	33	28	79	53	27	30.38	30.30	30.21	10	10	10	21	7	24	0.00	
	59	50	40	36	35	33	85	63	40	30.38	30.26	30.16	10	10	10	17	6	22	0.00	
	66	52	38	37	30	23	79	50	21	30.25	30.17	30.08	10	10	10	17	7	21	0.00	
	65	53	40	30	27	23	62	42	22	30.27	30.20	30.13	10	10	10	10	4	12	0.00	
	70	55	39	29	27	24	55	37	18	30.33	30.14	30.04	10	10	10	8	3	10	0.00	
	66	53	39	32	28	24	65	44	22	30.02	29.88	29.69	10	10	10	17	6	22	0.00	
	63	51	38	30	15	-5	41	25	9	30.05	29.73	29.56	10	10	7	44	18	56	0.00	
	52	42	31	12	8	1	43	28	13	30.46	30.32	30.09	10	10	10	15	6	18	0.00	
	54	42	30	22	18	13	53	40	26	30.53	30.42	30.32	10	10	10	14	6	18	0.00	
	60	47	33	28	24	21	61	44	26	30.33	30.20	30.04	10	10	10	13	4	17	0.00	
	60	50	40	47	41	29	100	75	49	30.05	29.90	29.71	10	10	2	37	8	51	0.36	Rain , Thunderstorm
	52	46	39	35	34	32	79	65	50	30.20	30.01	29.86	10	10	10	20	8	26	0.00	
	53	43	32	36	32	30	96	69	41	30.26	30.18	30.12	10	10	9	12	3	13	0.00	
	53	44	34	31	23	15	82	53	24	30.36	30.26	30.14	10	10	10	20	9	25	0.00	
	53	44	35	24	18	13	54	38	22	30.49	30.37	30.30	10	10	10	22	7	28	0.00	
	49	40	30	34	25	21	69	54	38	30.35	30.20	29.90	10	10	10	13	4	16	0.00	
	51	44	36	38	27	14	86	55	24	29.86	29.73	29.63	10	10	8	36	16	44	T	Rain

2016	Temp. (°F)			Dew Point (°F)			Humidity (%)			Sea Level Press. (in)			Visibility (mi)			Wind (mph)			Precip. (in)	Events
	41	36	30	33	27	21	100	73	45	29.70	29.63	29.55	10	10	4	32	12	41	0.01	Snow
	40	32	24	30	20	17	92	66	40	30.11	29.85	29.62	10	10	5	16	6	20	T	Snow
	42	31	20	19	13	7	84	54	23	30.18	30.10	30.03	10	10	10	18	7	27	0.00	
2016	Temp. (°F)			Dew Point (°F)			Humidity (%)			Sea Level Press. (in)			Visibility (mi)			Wind (mph)			Precip. (in)	Events
Dec	high	avg	low	high	avg	low	high	avg	low	high	avg	low	high	avg	low	high	avg	high	sum	
	45	34	22	15	13	11	65	46	27	30.10	30.02	29.95	10	10	10	9	3	11	0.00	
	49	40	31	25	19	14	64	45	26	30.05	29.98	29.91	10	10	9	33	18	40	T	Snow
	48	40	32	31	27	17	92	67	41	30.12	30.06	29.94	10	9	6	31	9	35	T	Snow
	48	38	28	19	14	12	69	47	25	30.21	30.11	30.03	10	10	10	13	5	16	0.00	
	54	39	23	19	15	12	55	40	24	29.99	29.87	29.74	10	10	10	10	4	13	0.00	
	53	44	35	21	17	14	47	36	24	29.93	29.84	29.74	10	10	10	17	7	24	0.00	
	45	38	30	27	20	14	59	48	37	30.22	30.02	29.81	10	10	10	26	10	29	0.00	
	39	31	23	19	14	12	65	53	40	30.47	30.39	30.25	10	10	10	28	8	33	0.00	
	45	35	25	27	24	18	81	65	49	30.47	30.37	30.29	10	10	10	12	4	16	0.00	
	51	38	25	30	28	23	92	67	42	30.30	30.16	30.01	10	10	10	13	5	16	0.00	
	59	46	32	36	29	25	82	56	30	30.09	30.01	29.94	10	10	10	16	7	21	0.00	
	56	44	31	33	29	25	78	61	43	30.07	30.01	29.92	10	10	10	12	3	14	0.00	
	58	46	33	34	31	27	75	61	46	30.14	30.06	29.99	10	10	10	10	4	12	0.00	
	60	48	35	36	32	28	85	60	35	30.17	30.11	30.06	10	10	10	14	4	19	0.00	
	57	46	35	33	29	27	76	55	33	30.14	30.04	29.89	10	10	10	12	5	14	0.00	
	60	53	45	40	32	21	61	48	34	29.87	29.74	29.47	10	10	10	37	13	46	0.00	
	53	41	28	39	24	12	61	47	33	30.15	29.70	29.36	10	10	4	38	19	47	0.15	Rain
	40	31	21	15	11	5	68	46	23	30.47	30.32	30.17	10	10	10	12	7	15	0.00	
	43	32	21	14	10	8	65	45	24	30.65	30.54	30.48	10	10	10	17	7	21	0.00	
	47	35	23	15	13	8	68	45	22	30.61	30.48	30.36	10	10	10	12	5	15	0.00	
	56	43	30	25	19	13	63	43	22	30.33	30.26	30.17	10	10	10	30	6	37	0.00	
	45	40	35	37	34	25	100	73	45	30.28	30.14	30.07	10	7	0	30	13	39	0.31	Fog , Rain
	50	42	33	40	37	33	100	83	66	30.13	30.08	30.02	10	6	0	13	5	14	0.02	Fog , Rain
	55	44	32	40	36	31	100	75	50	30.03	29.83	29.53	10	10	10	28	9	35	T	Rain
	45	37	28	30	18	11	100	66	32	30.18	29.90	29.63	10	10	9	33	12	42	T	Snow
	41	32	22	20	18	15	84	59	34	30.46	30.36	30.19	10	10	10	9	3	11	0.00	
	50	38	26	23	18	13	69	48	27	30.46	30.37	30.27	10	10	10	13	5	15	0.00	

2016	Temp. (°F)			Dew Point (°F)			Humidity (%)			Sea Level Press. (in)			Visibility (mi)			Wind (mph)			Precip. (in)	Events
	50	39	27	26	24	21	78	57	36	30.39	30.31	30.22	10	10	10	13	4	17	0.00	
	43	36	29	25	24	22	72	59	46	30.53	30.47	30.39	10	10	10	14	6	17	0.00	
	46	35	24	28	24	20	88	67	45	30.43	30.20	29.98	10	10	10	10	5	13	0.00	Fog
	49	39	29	40	34	29	100	83	66	29.99	29.90	29.82	10	9	5	17	6	19	0.03	Rain , Thunderstorm

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ATTACHMENT B

DAILY WEATHER REPORTS FOR PRECIPITATION EVENTS OCCURRING IN FOURTH QUARTER 2016

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Kirtland AFB, NM

Albuquerque International Sunport

5:19 PM MST on January 03, 2017 (GMT -0700)

Weather History for KABQ - October, 2016

October

3

2016

View

Monday, October 3, 2016

Daily | Weekly | Monthly | Custom

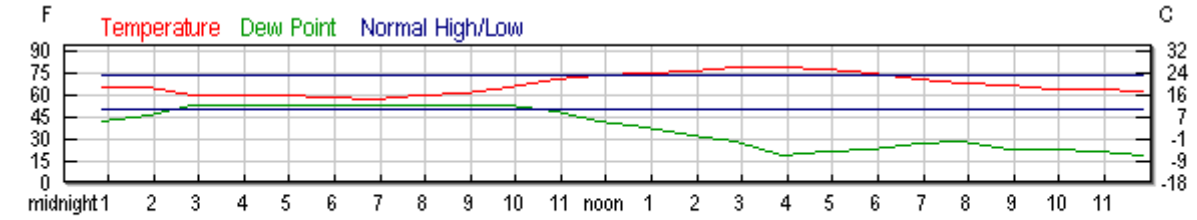
	Actual	Average	Record
Temperature			
Mean Temperature	**69** °F	-	
Max Temperature	**80** °F	-	- []
Min Temperature	**58** °F	-	- []
Cooling Degree Days	4		
Month to date cooling degree days	8		
Year to date cooling degree days	1515		
Growing Degree Days	18 [Base 50]		
Moisture			
Dew Point	**38** °F		
Average Humidity	49		
Maximum Humidity	86		
Minimum Humidity	11		
Precipitation			
Precipitation	-	-	- []
Month to date precipitation	0.05		

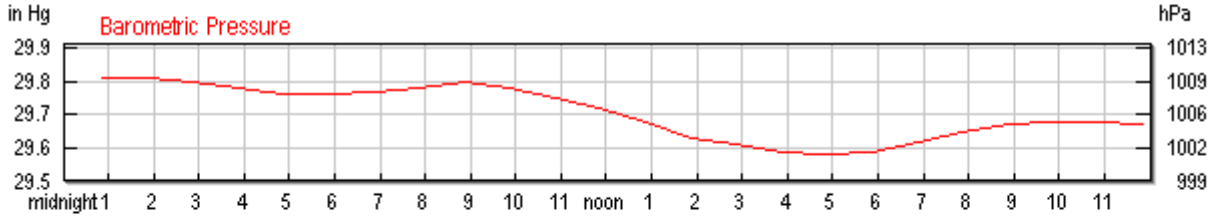
	Actual	Average	Record
Year to date precipitation	4.45		
Snow			
Snow	**0.00** in	-	- []
Month to date snowfall	0.0		
Snow Depth	**0.00** in		
Sea Level Pressure			
Sea Level Pressure	**29.71** in		
Wind			
Wind Speed	**13** mph [SW]		
Max Wind Speed	**29** mph		
Max Gust Speed	**38** mph		
Visibility	**10** miles		
Events	Rain		

T = Trace of Precipitation, MM = Missing Value

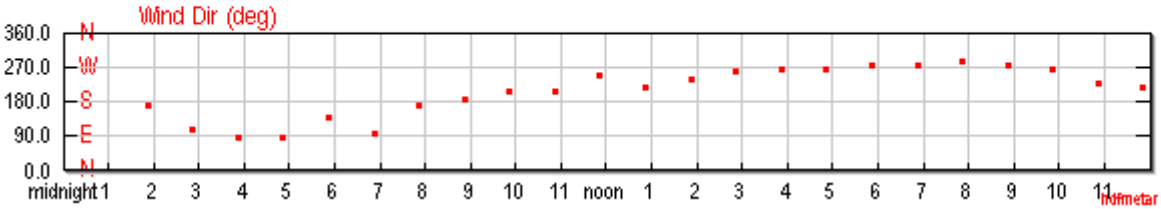
Source: NWS Daily Summary

Daily Weather History Graph









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Search our weather history database for the weather conditions in past years. The results will help you decide how hot, cold, wet, or windy it might be!

Date:

October

3

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Astronomy

Oct. 03, 2016	Rise	Set
Actual Time	7:03 AM MDT	6:46 PM MDT
Civil Twilight	6:37 AM MDT	7:12 PM MDT
Nautical Twilight	6:08 AM MDT	7:41 PM MDT
Astronomical Twilight	5:39 AM MDT	8:10 PM MDT
Moon	9:20 AM MDT (10/3)	8:36 PM MDT (10/3)
Length of Visible Light	12h 34m	
Length of Day	11h 43m	

Waxing Crescent, 7% of the Moon is Illuminated

Oct 3	Oct 8	Oct 15	Oct 22	Oct 30
Waxing Crescent	First Quarter	Full	Last Quarter	New

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Hourly Weather History & Observations

Time (MDT)	Temp.	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events	Condition
12:52 AM	**66.0** °F	**43.0** °F	43%	**29.81** in	**10.0** mi	SSW	**8.1** mph	-	N/A		Overcast
1:52 AM	**66.0** °F	**46.9** °F	50%	**29.81** in	**10.0** mi	South	**6.9** mph	-	N/A		Overcast
2:52 AM	**61.0** °F	**53.1** °F	75%	**29.80** in	**10.0** mi	ESE	**5.8** mph	-	**0.01** in	Rain	Light Rai
3:52 AM	**60.1** °F	**54.0** °F	80%	**29.78** in	**10.0** mi	East	**4.6** mph	-	**0.03** in		Overcast
4:52 AM	**61.0** °F	**54.0** °F	78%	**29.76** in	**10.0** mi	East	**4.6** mph	-	**0.01** in		Mostly Cloudy
5:52 AM	**59.0** °F	**54.0** °F	83%	**29.76** in	**10.0** mi	SE	**6.9** mph	-	N/A		Scattered Clouds
6:52 AM	**57.9** °F	**53.1** °F	84%	**29.77** in	**10.0** mi	East	**4.6** mph	-	N/A		Mostly Cloudy
7:52 AM	**60.1** °F	**53.1** °F	78%	**29.78** in	**10.0** mi	South	**8.1** mph	-	N/A		Scattered Clouds
8:52 AM	**62.1** °F	**53.1** °F	72%	**29.80** in	**10.0** mi	South	**9.2** mph	-	N/A		Partly Cloudy

Time (MDT)	Temp.	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events	Condition
9:52 AM	**66.0** °F	**53.1** °F	63%	**29.78** in	**10.0** mi	SSW	**11.5** mph	-	N/A		Partly Cloudy
10:52 AM	**71.1** °F	**48.9** °F	45%	**29.75** in	**10.0** mi	SSW	**17.3** mph	**25.3** mph	N/A		Mostly Cloudy
11:52 AM	**73.9** °F	**43.0** °F	33%	**29.72** in	**10.0** mi	WSW	**16.1** mph	-	N/A		Scattered Clouds
12:52 PM	**75.9** °F	**39.0** °F	26%	**29.68** in	**10.0** mi	SW	**13.8** mph	-	N/A		Scattered Clouds
1:52 PM	**77.0** °F	**33.1** °F	20%	**29.63** in	**10.0** mi	WSW	**17.3** mph	**24.2** mph	N/A		Scattered Clouds
2:52 PM	**79.0** °F	**28.9** °F	16%	**29.61** in	**10.0** mi	West	**17.3** mph	**32.2** mph	N/A		Scattered Clouds
3:52 PM	**79.0** °F	**19.9** °F	11%	**29.59** in	**10.0** mi	West	**24.2** mph	**33.4** mph	N/A		Scattered Clouds
4:52 PM	**78.1** °F	**21.9** °F	12%	**29.58** in	**10.0** mi	West	**20.7** mph	**33.4** mph	N/A		Mostly Cloudy
5:52 PM	**75.0** °F	**23.0** °F	14%	**29.59** in	**10.0** mi	West	**19.6** mph	**27.6** mph	N/A		Mostly Cloudy
6:52 PM	**72.0** °F	**27.0** °F	19%	**29.62** in	**10.0** mi	West	**19.6** mph	**27.6** mph	N/A		Overcast
7:52 PM	**69.1** °F	**28.9** °F	22%	**29.65** in	**10.0** mi	WNW	**19.6** mph	-	N/A		Mostly Cloudy
8:52 PM	**66.9** °F	**24.1** °F	20%	**29.67** in	**10.0** mi	West	**21.9** mph	**29.9** mph	N/A		Scattered Clouds
9:52 PM	**64.0** °F	**24.1** °F	22%	**29.68** in	**10.0** mi	West	**12.7** mph	-	N/A		Mostly Cloudy
10:52 PM	**64.0** °F	**21.9** °F	20%	**29.68** in	**10.0** mi	SW	**12.7** mph	-	N/A		Overcast
11:52 PM	**63.0** °F	**19.9** °F	19%	**29.67** in	**10.0** mi	SW	**15.0** mph	-	N/A		Mostly Cloudy

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Kirtland AFB, NM

Albuquerque International Sunport

5:23 PM MST on January 03, 2017 (GMT -0700)

Weather History for KABQ - October, 2016

October

8

2016

View
Saturday, October 8, 2016

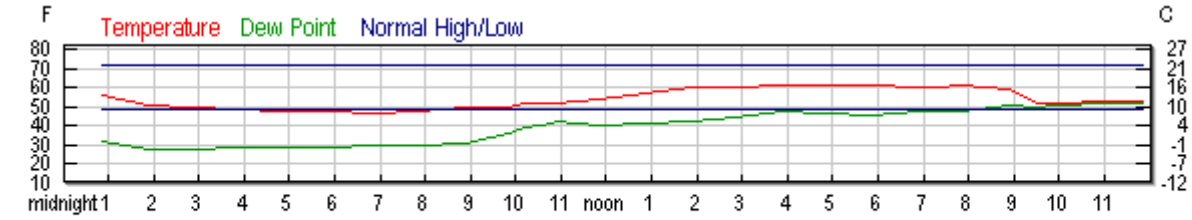
Daily | Weekly | Monthly | Custom

	Actual	Average	Record
Temperature			
Mean Temperature	**55** °F	-	
Max Temperature	**62** °F	-	- []
Min Temperature	**47** °F	-	- []
Degree Days			
Heating Degree Days	10		
Month to date heating degree days	31		
Growing Degree Days	4 [Base 50]		
Moisture			
Dew Point	**41** °F		
Average Humidity	69		
Maximum Humidity	100		
Minimum Humidity	38		
Precipitation			
Precipitation	-	-	- []
Month to date precipitation	0.39		

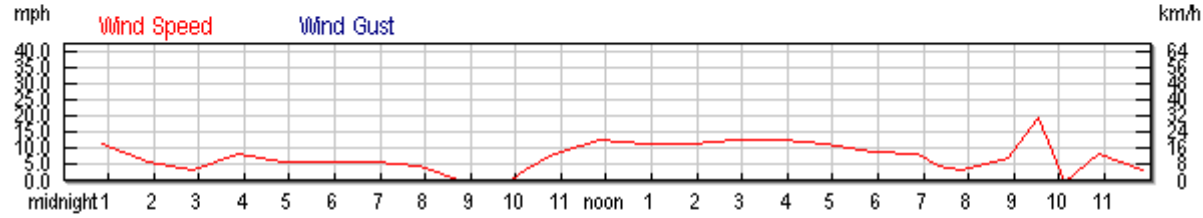
	Actual	Average	Record
Year to date precipitation	4.79		
Snow			
Snow	**0.00** in	-	- []
Month to date snowfall	0.0		
Snow Depth	**0.00** in		
Sea Level Pressure			
Sea Level Pressure	**30.22** in		
Wind			
Wind Speed	**7** mph [North]		
Max Wind Speed	**25** mph		
Max Gust Speed	**32** mph		
Visibility	**10** miles		
Events	Rain , Thunderstorm		

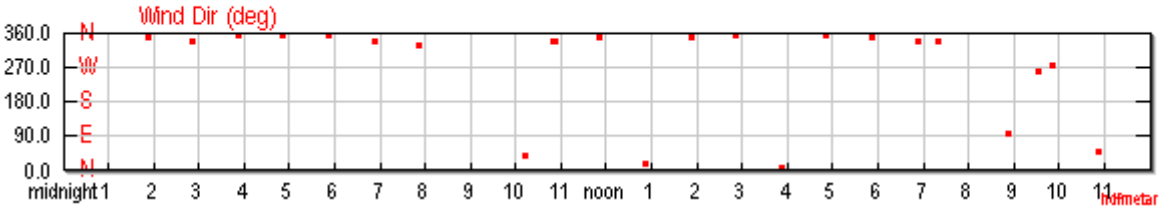
T = Trace of Precipitation, MM = Missing Value Source: NWS Daily Summary

Daily Weather History Graph









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Search our weather history database for the weather conditions in past years. The results will help you decide how hot, cold, wet, or windy it might be!

Date:

October

8

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Astronomy

Oct. 08, 2016	Rise	Set
Actual Time	7:07 AM MDT	6:39 PM MDT
Civil Twilight	6:41 AM MDT	7:05 PM MDT
Nautical Twilight	6:12 AM MDT	7:34 PM MDT
Astronomical Twilight	5:43 AM MDT	8:03 PM MDT
Moon	1:39 PM MDT (10/8)	No Moon Set
Length of Visible Light	12h 23m	
Length of Day	11h 32m	

Waxing Crescent, 46% of the Moon is Illuminated

Oct 8	Oct 8	Oct 15	Oct 22	Oct 30
Waxing Crescent	First Quarter	Full	Last Quarter	New

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Hourly Weather History & Observations

Time (MDT)	Temp.	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events
12:52 AM	**55.9** °F	**32.0** °F	40%	**30.17** in	**10.0** mi	NE	**11.5** mph	-	N/A	
1:52 AM	**51.1** °F	**27.0** °F	39%	**30.18** in	**10.0** mi	North	**5.8** mph	-	N/A	
2:52 AM	**50.0** °F	**28.0** °F	43%	**30.19** in	**10.0** mi	NNW	**3.5** mph	-	N/A	
3:52 AM	**48.9** °F	**28.9** °F	46%	**30.18** in	**10.0** mi	North	**8.1** mph	-	N/A	
4:52 AM	**48.0** °F	**28.9** °F	48%	**30.19** in	**10.0** mi	North	**5.8** mph	-	N/A	
5:52 AM	**48.0** °F	**28.9** °F	48%	**30.20** in	**10.0** mi	North	**5.8** mph	-	N/A	
6:52 AM	**46.9** °F	**30.0** °F	52%	**30.22** in	**10.0** mi	NNW	**5.8** mph	-	N/A	
7:52 AM	**48.0** °F	**30.0** °F	50%	**30.24** in	**10.0** mi	NNW	**4.6** mph	-	N/A	
8:52 AM	**50.0** °F	**30.9** °F	48%	**30.26** in	**10.0** mi	Calm	Calm	-	N/A	

Time (MDT)	Temp.	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events
9:52 AM	**50.0** °F	**36.0** °F	59%	**30.26** in	**10.0** mi	Calm	Calm	-	**0.00** in	Rain
10:13 AM	**52.0** °F	**39.0** °F	61%	**30.37** in	**10.0** mi	NE	**3.5** mph	-	**0.00** in	Rain , Thunderstorm
10:50 AM	**51.8** °F	**41.0** °F	67%	**30.37** in	**10.0** mi	NNW	**8.1** mph	-	**0.00** in	
10:52 AM	**52.0** °F	**42.1** °F	69%	**30.25** in	**10.0** mi	NNW	**8.1** mph	-	**0.00** in	
11:52 AM	**54.0** °F	**39.9** °F	59%	**30.24** in	**10.0** mi	North	**12.7** mph	-	N/A	
12:52 PM	**57.0** °F	**41.0** °F	55%	**30.21** in	**10.0** mi	NNE	**11.5** mph	-	N/A	
1:52 PM	**60.1** °F	**42.1** °F	51%	**30.18** in	**10.0** mi	North	**11.5** mph	-	N/A	
2:52 PM	**60.1** °F	**44.1** °F	55%	**30.17** in	**10.0** mi	North	**12.7** mph	-	N/A	
3:52 PM	**61.0** °F	**48.0** °F	62%	**30.16** in	**10.0** mi	North	**12.7** mph	-	**0.00** in	Rain
4:52 PM	**61.0** °F	**46.9** °F	60%	**30.14** in	**10.0** mi	North	**11.5** mph	-	**0.01** in	
5:52 PM	**61.0** °F	**46.0** °F	58%	**30.14** in	**10.0** mi	North	**9.2** mph	-	N/A	
6:52 PM	**60.1** °F	**48.0** °F	64%	**30.14** in	**10.0** mi	NNW	**8.1** mph	-	N/A	
7:20 PM	**60.1** °F	**48.0** °F	64%	**30.26** in	**10.0** mi	NNW	**4.6** mph	-	N/A	Thunderstorm
7:52 PM	**61.0** °F	**48.0** °F	62%	**30.15** in	**10.0** mi	Variable	**3.5** mph	-	N/A	Thunderstorm
8:52 PM	**59.0** °F	**51.1** °F	75%	**30.19** in	**10.0** mi	East	**6.9** mph	-	**0.06** in	Rain , Thunderstorm
9:33 PM	**52.0** °F	**50.0** °F	93%	**30.37** in	**6.0** mi	West	**19.6** mph	**32.2** mph	**0.06** in	Rain , Thunderstorm
9:52 PM	**52.0** °F	**51.1** °F	97%	**30.30** in	**4.0** mi	West	**9.2** mph	-	**0.21** in	Rain , Thunderstorm
10:08 PM	**52.0** °F	**51.1** °F	97%	**30.38** in	**5.0** mi	Calm	Calm	-	**0.03** in	Rain
10:52 PM	**53.1** °F	**52.0** °F	96%	**30.25** in	**10.0** mi	NE	**8.1** mph	-	**0.06** in	

Time (MDT)	Temp.	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events
11:52 PM	**53.1** °F	**52.0** °F	96%	**30.21** in	**10.0** mi	Variable	**3.5** mph	-	**0.00** in	

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Kirtland AFB, NM

Albuquerque International Sunport

5:24 PM MST on January 03, 2017 (GMT -0700)

Weather History for KABQ - October, 2016

October

9

2016

View

Sunday, October 9, 2016

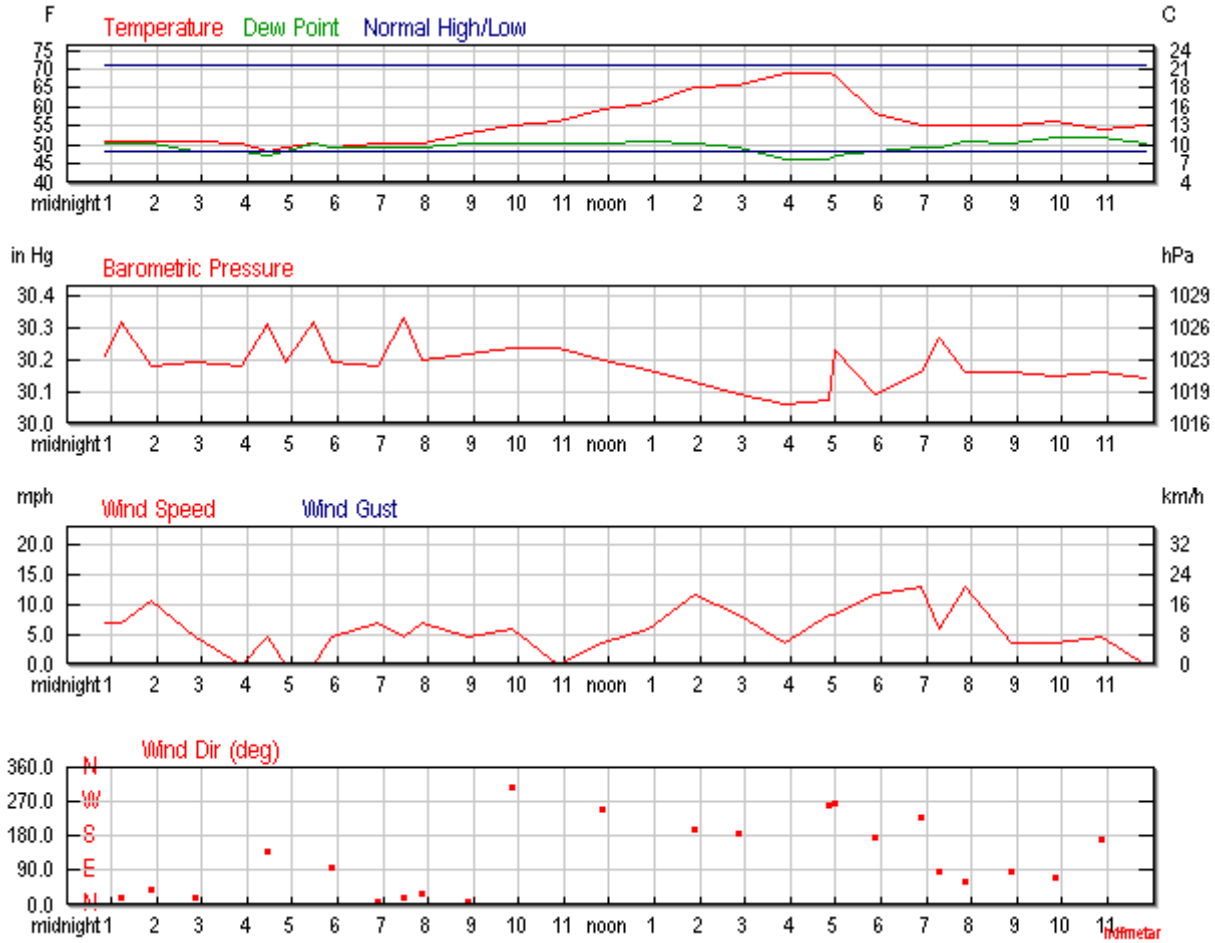
Daily | Weekly | Monthly | Custom

	Actual	Average	Record
Temperature			
Mean Temperature	**60** °F	-	
Max Temperature	**71** °F	-	- []
Min Temperature	**49** °F	-	- []
Degree Days			
Heating Degree Days	5		
Month to date heating degree days	36		
Growing Degree Days	10 [Base 50]		
Moisture			
Dew Point	**50** °F		
Average Humidity	72		
Maximum Humidity	100		
Minimum Humidity	44		
Precipitation			
Precipitation	-	-	- []
Month to date precipitation	0.74		

	Actual	Average	Record
Year to date precipitation	5.14		
Snow			
Snow	**0.00** in	-	- []
Month to date snowfall	0.0		
Snow Depth	**0.00** in		
Sea Level Pressure			
Sea Level Pressure	**30.18** in		
Wind			
Wind Speed	**6** mph [NE]		
Max Wind Speed	**15** mph		
Max Gust Speed	**18** mph		
Visibility	**10** miles		
Events	Rain , Thunderstorm		

T = Trace of Precipitation, MM = Missing Value Source: NWS Daily Summary

Daily Weather History Graph



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Search for Another Location

Airport or City:

KABQ

Submit

Trip Planner

Search our weather history database for the weather conditions in past years. The results will help you decide how hot, cold, wet, or windy it might be!

Date:

October

9

Submit

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Astronomy

Oct. 09, 2016	Rise	Set
Actual Time	7:07 AM MDT	6:38 PM MDT
Civil Twilight	6:42 AM MDT	7:03 PM MDT
Nautical Twilight	6:13 AM MDT	7:33 PM MDT
Astronomical Twilight	5:43 AM MDT	8:02 PM MDT
Moon	2:26 PM MDT (10/9)	12:12 AM MDT (10/9)
Length of Visible Light	12h 21m	
Length of Day	11h 30m	

First Quarter, 56% of the Moon is Illuminated

Oct 9	Oct 15	Oct 22	Oct 30	Nov 7
First Quarter	Full	Last Quarter	New	First Quarter

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Hourly Weather History & Observations

Time (MDT)	Temp.	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events	Co
12:52 AM	**52.0** °F	**51.1** °F	97%	**30.21** in	**10.0** mi	North	**6.9** mph	-	N/A		Mc
1:14 AM	**52.0** °F	**51.1** °F	97%	**30.32** in	**10.0** mi	NNE	**6.9** mph	-	N/A		Mc
1:52 AM	**52.0** °F	**51.1** °F	97%	**30.18** in	**10.0** mi	NE	**10.4** mph	-	N/A		Ov
2:52 AM	**52.0** °F	**48.9** °F	89%	**30.19** in	**10.0** mi	NNE	**4.6** mph	-	N/A		Mc
3:52 AM	**51.1** °F	**48.9** °F	92%	**30.18** in	**10.0** mi	Calm	Calm	-	N/A		Ov
4:27 AM	**48.9** °F	**48.0** °F	97%	**30.31** in	**10.0** mi	SE	**4.6** mph	-	N/A		Ov
4:52 AM	**50.0** °F	**48.9** °F	96%	**30.19** in	**10.0** mi	Calm	Calm	-	N/A		Ov
5:29 AM	**51.1** °F	**51.1** °F	100%	**30.32** in	**8.0** mi	Calm	Calm	-	N/A		Ov
5:52 AM	**50.0** °F	**50.0** °F	100%	**30.19** in	**10.0** mi	East	**4.6** mph	-	N/A		Ov

Time (MDT)	Temp.	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events	Co
6:52 AM	**51.1** °F	**50.0** °F	96%	**30.18** in	**10.0** mi	North	**6.9** mph	-	N/A		Mc
7:29 AM	**51.1** °F	**50.0** °F	96%	**30.33** in	**10.0** mi	NNE	**4.6** mph	-	N/A		Mc
7:52 AM	**51.1** °F	**50.0** °F	96%	**30.20** in	**10.0** mi	NNE	**6.9** mph	-	N/A		Mc
8:52 AM	**54.0** °F	**51.1** °F	90%	**30.22** in	**10.0** mi	North	**4.6** mph	-	N/A		Mc
9:52 AM	**55.9** °F	**51.1** °F	84%	**30.24** in	**10.0** mi	NW	**5.8** mph	-	**0.00** in		Mc
10:52 AM	**57.0** °F	**51.1** °F	81%	**30.24** in	**10.0** mi	Calm	Calm	-	N/A		Mc
11:52 AM	**60.1** °F	**51.1** °F	72%	**30.20** in	**10.0** mi	WSW	**3.5** mph	-	N/A		Mc
12:52 PM	**62.1** °F	**52.0** °F	70%	**30.17** in	**10.0** mi	Variable	**5.8** mph	-	N/A		Pa
1:52 PM	**66.0** °F	**51.1** °F	59%	**30.13** in	**10.0** mi	SSW	**11.5** mph	-	N/A		Sc Clc
2:52 PM	**66.9** °F	**50.0** °F	54%	**30.09** in	**10.0** mi	South	**8.1** mph	-	N/A		Sc Clc
3:52 PM	**70.0** °F	**46.9** °F	44%	**30.06** in	**10.0** mi	Variable	**3.5** mph	-	N/A		Sc Clc
4:52 PM	**70.0** °F	**46.9** °F	44%	**30.07** in	**10.0** mi	West	**8.1** mph	-	N/A	Thunderstorm	Mc
4:58 PM	**69.1** °F	**48.0** °F	47%	**30.23** in	**10.0** mi	West	**8.1** mph	-	N/A	Thunderstorm	Th
5:52 PM	**59.0** °F	**48.9** °F	69%	**30.09** in	**4.0** mi	South	**11.5** mph	-	**0.19** in	Rain , Thunderstorm	Th an
6:52 PM	**55.9** °F	**50.0** °F	80%	**30.16** in	**7.0** mi	SW	**12.7** mph	-	**0.14** in	Rain , Thunderstorm	Lig Th an
7:18 PM	**55.9** °F	**50.0** °F	80%	**30.27** in	**10.0** mi	East	**5.8** mph	-	**0.00** in		Sc Clc
7:52 PM	**55.9** °F	**52.0** °F	87%	**30.16** in	**10.0** mi	ENE	**12.7** mph	-	**0.00** in		Mc
8:52 PM	**55.9** °F	**51.1** °F	84%	**30.16** in	**10.0** mi	East	**3.5** mph	-	**0.00** in		Sc Clc
9:52 PM	**57.0** °F	**53.1** °F	87%	**30.15** in	**10.0** mi	ENE	**3.5** mph	-	**0.02** in		Sc Clc

Time (MDT)	Temp.	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events	Co
10:52 PM	**55.0** °F	**53.1** °F	93%	**30.16** in	**10.0** mi	South	**4.6** mph	-	N/A		Cle
11:52 PM	**55.9** °F	**51.1** °F	84%	**30.14** in	**10.0** mi	Calm	Calm	-	N/A		Cle

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Albuquerque International Sunport

5:25 PM MST on January 03, 2017 (GMT -0700)

Weather History for KABQ - October, 2016

October

25

2016

View
Tuesday, October 25, 2016

Daily | Weekly | Monthly | Custom

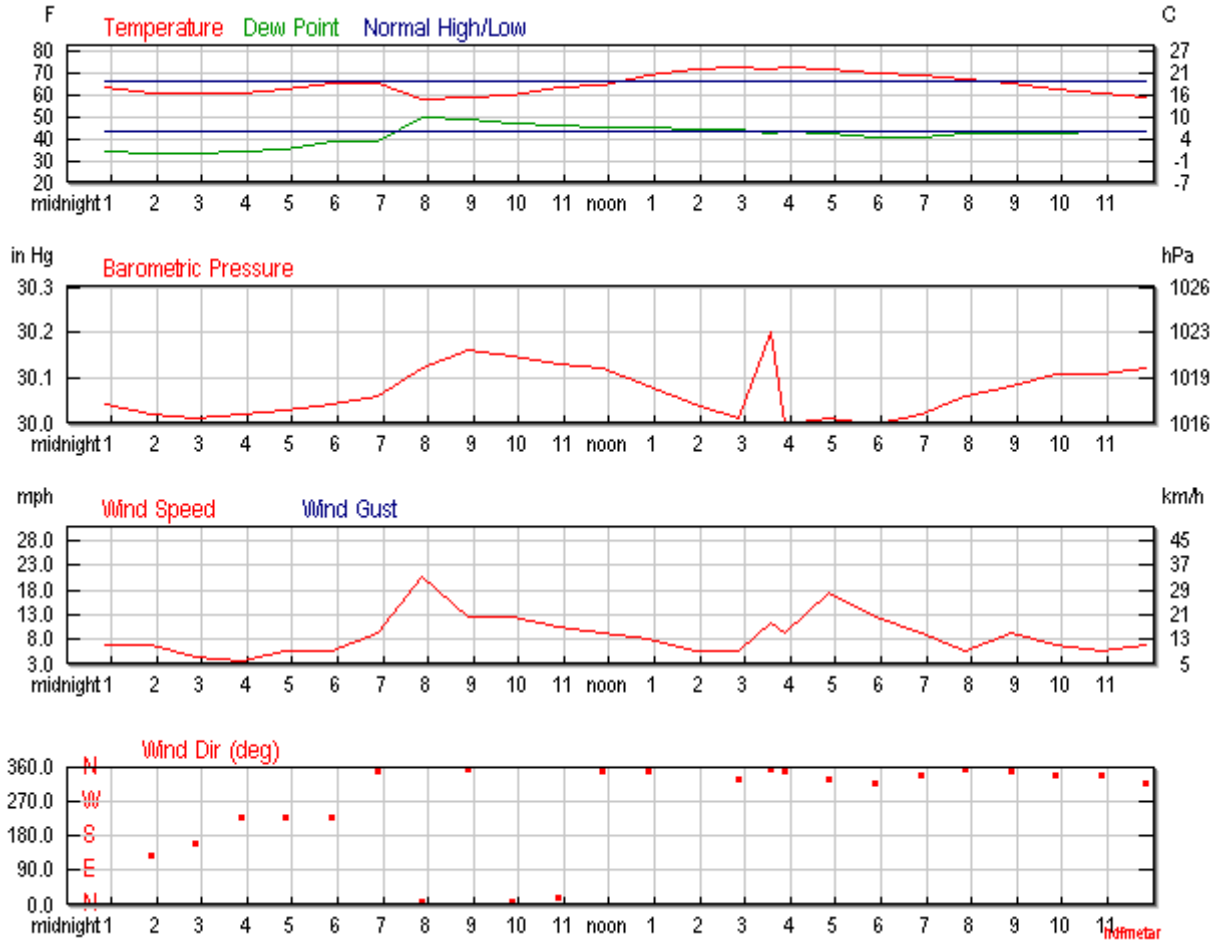
	Actual	Average	Record
Temperature			
Mean Temperature	**63** °F	-	
Max Temperature	**73** °F	-	- {}
Min Temperature	**53** °F	-	- {}
Degree Days			
Heating Degree Days	2		
Month to date heating degree days	65		
Growing Degree Days	15 (Base 50)		
Moisture			
Dew Point	**42** °F		
Average Humidity	47		
Maximum Humidity	60		
Minimum Humidity	34		
Precipitation			
Precipitation	-	-	- {}
Month to date precipitation	0.74		

	Actual	Average	Record
Year to date precipitation	5.14		
Snow			
Snow	**0.00** in	-	- {}
Month to date snowfall	0.0		
Snow Depth	**0.00** in		
Sea Level Pressure			
Sea Level Pressure	**30.07** in		
Wind			
Wind Speed	**9** mph [NNW]		
Max Wind Speed	**25** mph		
Max Gust Speed	**27** mph		
Visibility	**10** miles		
Events	Rain		

T = Trace of Precipitation, MM = Missing Value

Source: NWS Daily Summary

Daily Weather History Graph



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Search for Another Location

Airport or City:

KABQ

Submit

Trip Planner

Search our weather history database for the weather conditions in past years. The results will help you decide how hot, cold, wet, or windy it might be!

Date:

October

25

Submit

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Astronomy

Oct. 25, 2016	Rise	Set
Actual Time	7:21 AM MDT	6:18 PM MDT
Civil Twilight	6:55 AM MDT	6:44 PM MDT
Nautical Twilight	6:25 AM MDT	7:14 PM MDT
Astronomical Twilight	5:56 AM MDT	7:43 PM MDT
Moon	2:40 AM MDT (10/25)	3:54 PM MDT (10/25)
Length of Visible Light	11h 48m	
Length of Day	10h 57m	

Waning Crescent, 22% of the Moon is Illuminated

Oct 25	Oct 30	Nov 7	Nov 14	Nov 21
Waning Crescent	New	First Quarter	Full	Last Quarter

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Hourly Weather History & Observations

Time (MDT)	Temp.	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events	Condition
12:52 AM	**63.0** °F	**34.0** °F	34%	**30.04** in	**10.0** mi	SSE	**6.9** mph	-	N/A		Overcast
1:52 AM	**61.0** °F	**33.1** °F	35%	**30.02** in	**10.0** mi	SE	**6.9** mph	-	N/A		Mostly Cloudy
2:52 AM	**61.0** °F	**33.1** °F	35%	**30.01** in	**10.0** mi	SSE	**4.6** mph	-	N/A		Scattered Clouds
3:52 AM	**61.0** °F	**34.0** °F	36%	**30.02** in	**10.0** mi	SW	**3.5** mph	-	N/A		Mostly Cloudy
4:52 AM	**62.1** °F	**35.1** °F	37%	**30.03** in	**10.0** mi	SW	**5.8** mph	-	N/A		Mostly Cloudy
5:52 AM	**64.9** °F	**39.0** °F	39%	**30.04** in	**10.0** mi	SW	**5.8** mph	-	N/A		Overcast
6:52 AM	**64.9** °F	**39.0** °F	39%	**30.06** in	**10.0** mi	North	**9.2** mph	-	N/A		Overcast
7:52 AM	**57.9** °F	**50.0** °F	75%	**30.12** in	**10.0** mi	North	**20.7** mph	-	**0.00** in	Rain	Light Rain
8:52 AM	**59.0** °F	**48.9** °F	69%	**30.16** in	**10.0** mi	North	**12.7** mph	-	**0.00** in		Mostly Cloudy

Time (MDT)	Temp.	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events	Condition
9:52 AM	**60.1** °F	**46.9** °F	62%	**30.15** in	**10.0** mi	North	**12.7** mph	-	N/A		Mostly Cloudy
10:52 AM	**63.0** °F	**46.0** °F	54%	**30.13** in	**10.0** mi	NNE	**10.4** mph	-	N/A		Scattered Clouds
11:52 AM	**64.0** °F	**45.0** °F	50%	**30.12** in	**10.0** mi	North	**9.2** mph	-	N/A		Scattered Clouds
12:52 PM	**69.1** °F	**45.0** °F	42%	**30.08** in	**10.0** mi	North	**8.1** mph	-	N/A		Scattered Clouds
1:52 PM	**71.1** °F	**44.1** °F	38%	**30.04** in	**10.0** mi	Variable	**5.8** mph	-	N/A		Scattered Clouds
2:52 PM	**72.0** °F	**44.1** °F	37%	**30.01** in	**10.0** mi	NNW	**5.8** mph	-	N/A		Mostly Cloudy
3:34 PM	**71.1** °F	**42.1** °F	35%	**30.20** in	**10.0** mi	North	**11.5** mph	-	N/A		Mostly Cloudy
3:52 PM	**72.0** °F	**43.0** °F	35%	**30.00** in	**10.0** mi	North	**9.2** mph	-	N/A		Mostly Cloudy
4:52 PM	**71.1** °F	**42.1** °F	35%	**30.01** in	**10.0** mi	NNW	**17.3** mph	-	N/A		Mostly Cloudy
5:52 PM	**70.0** °F	**41.0** °F	35%	**30.00** in	**10.0** mi	NW	**12.7** mph	-	N/A		Scattered Clouds
6:52 PM	**69.1** °F	**41.0** °F	36%	**30.02** in	**10.0** mi	NNW	**9.2** mph	-	N/A		Partly Cloudy
7:52 PM	**66.9** °F	**42.1** °F	40%	**30.06** in	**10.0** mi	North	**5.8** mph	-	N/A		Partly Cloudy
8:52 PM	**64.9** °F	**42.1** °F	43%	**30.08** in	**10.0** mi	North	**9.2** mph	-	N/A		Clear
9:52 PM	**62.1** °F	**42.1** °F	48%	**30.11** in	**10.0** mi	NNW	**6.9** mph	-	N/A		Clear
10:52 PM	**61.0** °F	**43.0** °F	52%	**30.11** in	**10.0** mi	NNW	**5.8** mph	-	N/A		Clear
11:52 PM	**59.0** °F	**43.0** °F	55%	**30.12** in	**10.0** mi	NW	**6.9** mph	-	N/A		Clear

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Kirtland AFB, NM

Albuquerque International Sunport

5:25 PM MST on January 03, 2017 (GMT -0700)

Weather History for KABQ - November, 2016

November

2

2016

View
Wednesday, November 2, 2016

Daily | Weekly | Monthly | Custom

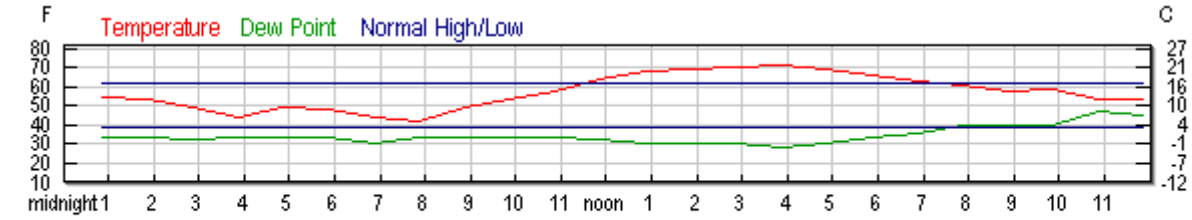
	Actual	Average	Record
Temperature			
Mean Temperature	**59** °F	-	
Max Temperature	**72** °F	-	- {}
Min Temperature	**45** °F	-	- {}
Degree Days			
Heating Degree Days	6		
Month to date heating degree days	11		
Growing Degree Days	7 (Base 50)		
Moisture			
Dew Point	**35** °F		
Average Humidity	46		
Maximum Humidity	71		
Minimum Humidity	20		
Precipitation			
Precipitation	-	-	- {}
Month to date precipitation	0.02		

	Actual	Average	Record
Year to date precipitation	5.16		
Snow			
Snow	**0.00** in	-	- {}
Month to date snowfall	0.0		
Snow Depth	**0.00** in		
Sea Level Pressure			
Sea Level Pressure	**30.06** in		
Wind			
Wind Speed	**12** mph [ENE]		
Max Wind Speed	**30** mph		
Max Gust Speed	**39** mph		
Visibility	**10** miles		
Events	Rain		

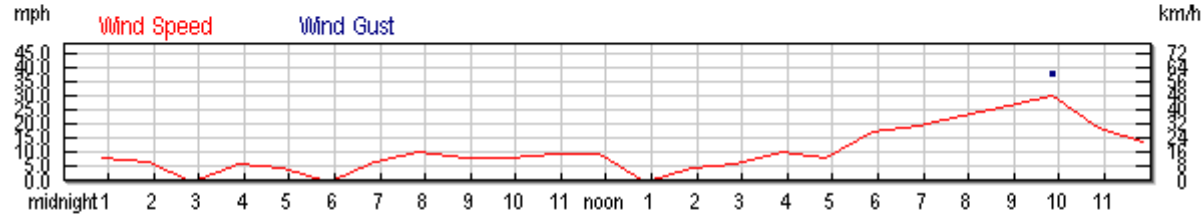
T = Trace of Precipitation, MM = Missing Value

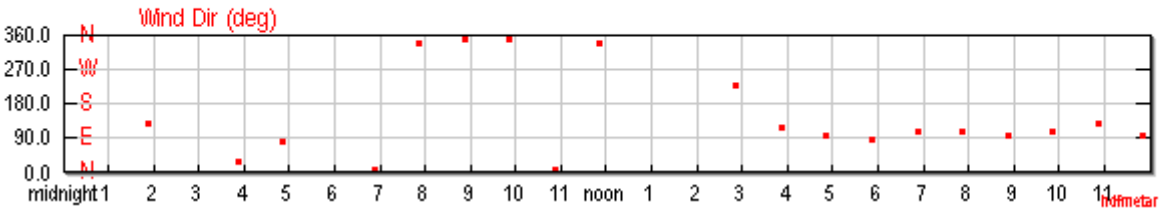
Source: NWS Daily Summary

Daily Weather History Graph









report this ad | why ads?

Search for Another Location

Airport or City:

KABQ

Submit

Trip Planner

Search our weather history database for the weather conditions in past years. The results will help you decide how hot, cold, wet, or windy it might be!

Date:

November

2

Submit

report this ad | why ads?

Astronomy

Nov. 02, 2016	Rise	Set
Actual Time	7:28 AM MDT	6:10 PM MDT
Civil Twilight	7:02 AM MDT	6:36 PM MDT
Nautical Twilight	6:32 AM MDT	7:06 PM MDT
Astronomical Twilight	6:03 AM MDT	7:36 PM MDT
Moon	9:54 AM MDT (11/2)	8:31 PM MDT (11/2)
Length of Visible Light	11h 34m	
Length of Day	10h 41m	

Waxing Crescent, 8% of the Moon is Illuminated

Nov 2	Nov 7	Nov 14	Nov 21	Nov 29
Waxing Crescent	First Quarter	Full	Last Quarter	New

report this ad | why ads?

Hourly Weather History & Observations

Time (MDT)	Temp.	Windchill	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Even
12:52 AM	**54.0** °F	-	**34.0** °F	47%	**29.93** in	**10.0** mi	SSE	**8.1** mph	-	N/A	
1:52 AM	**53.1** °F	-	**34.0** °F	48%	**29.94** in	**10.0** mi	SE	**6.9** mph	-	N/A	
2:52 AM	**48.9** °F	-	**32.0** °F	52%	**29.95** in	**10.0** mi	Calm	Calm	-	N/A	
3:52 AM	**44.1** °F	**40.8** °F	**34.0** °F	68%	**29.96** in	**10.0** mi	NNE	**5.8** mph	-	N/A	
4:52 AM	**48.9** °F	-	**34.0** °F	56%	**29.96** in	**10.0** mi	East	**4.6** mph	-	N/A	
5:52 AM	**48.0** °F	-	**34.0** °F	58%	**29.99** in	**10.0** mi	Calm	Calm	-	N/A	
6:52 AM	**44.1** °F	**40.1** °F	**30.0** °F	58%	**30.03** in	**10.0** mi	North	**6.9** mph	-	N/A	
7:52 AM	**42.1** °F	**36.1** °F	**34.0** °F	73%	**30.07** in	**10.0** mi	NNW	**10.4** mph	-	N/A	
8:52 AM	**48.9** °F	-	**33.1** °F	54%	**30.07** in	**10.0** mi	North	**8.1** mph	-	N/A	

Time (MDT)	Temp.	Windchill	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Even
9:52 AM	**53.1** °F	-	**33.1** °F	47%	**30.07** in	**10.0** mi	North	**8.1** mph	-	N/A	
10:52 AM	**57.9** °F	-	**33.1** °F	39%	**30.08** in	**10.0** mi	North	**9.2** mph	-	N/A	
11:52 AM	**64.0** °F	-	**32.0** °F	30%	**30.21** in	**10.0** mi	NNW	**9.2** mph	-	N/A	
12:52 PM	**68.0** °F	-	**30.9** °F	25%	**30.03** in	**10.0** mi	Calm	Calm	-	N/A	
1:52 PM	**69.1** °F	-	**30.0** °F	23%	**30.01** in	**10.0** mi	Variable	**4.6** mph	-	N/A	
2:52 PM	**70.0** °F	-	**30.0** °F	23%	**30.00** in	**10.0** mi	SW	**5.8** mph	-	N/A	
3:52 PM	**71.1** °F	-	**28.0** °F	20%	**30.02** in	**10.0** mi	ESE	**10.4** mph	**19.6** mph	N/A	
4:52 PM	**69.1** °F	-	**30.9** °F	24%	**30.04** in	**10.0** mi	East	**8.1** mph	-	N/A	
5:52 PM	**66.0** °F	-	**33.1** °F	29%	**30.06** in	**10.0** mi	East	**17.3** mph	-	N/A	
6:52 PM	**63.0** °F	-	**36.0** °F	37%	**30.12** in	**10.0** mi	ESE	**19.6** mph	**25.3** mph	N/A	
7:52 PM	**61.0** °F	-	**39.9** °F	46%	**30.16** in	**10.0** mi	ESE	**23.0** mph	-	N/A	
8:52 PM	**57.9** °F	-	**39.9** °F	51%	**30.17** in	**10.0** mi	East	**26.5** mph	**34.5** mph	N/A	
9:52 PM	**59.0** °F	-	**39.9** °F	49%	**30.19** in	**10.0** mi	ESE	**29.9** mph	**38.0** mph	N/A	
10:52 PM	**53.1** °F	-	**46.9** °F	80%	**30.25** in	**10.0** mi	SE	**18.4** mph	-	**0.01** in	Rain
11:52 PM	**53.1** °F	-	**45.0** °F	74%	**30.23** in	**10.0** mi	East	**13.8** mph	-	**0.01** in	Rain

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Kirtland AFB, NM

Albuquerque International Sunport

5:26 PM MST on January 03, 2017 (GMT -0700)

Weather History for KABQ - November, 2016

November

3

2016

View
Thursday, November 3, 2016

Daily | Weekly | Monthly | Custom

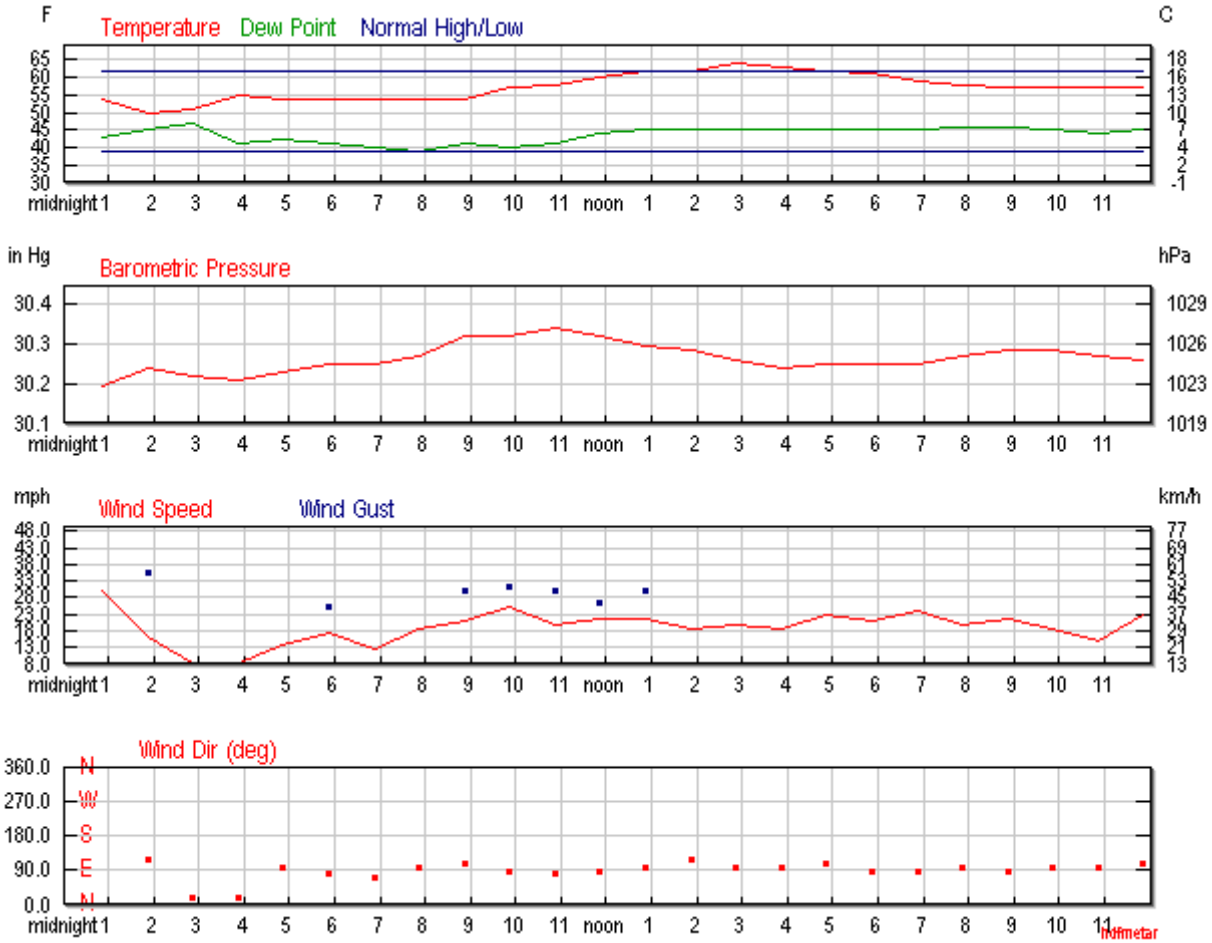
	Actual	Average	Record
Temperature			
Mean Temperature	**57** °F	-	
Max Temperature	**64** °F	-	- {}
Min Temperature	**50** °F	-	- {}
Degree Days			
Heating Degree Days	8		
Month to date heating degree days	19		
Growing Degree Days	8 (Base 50)		
Moisture			
Dew Point	**44** °F		
Average Humidity	66		
Maximum Humidity	83		
Minimum Humidity	48		
Precipitation			
Precipitation	-	-	- {}
Month to date precipitation	0.06		

	Actual	Average	Record
Year to date precipitation	5.20		
Snow			
Snow	**0.00** in	-	- {}
Month to date snowfall	0.0		
Snow Depth	**0.00** in		
Sea Level Pressure			
Sea Level Pressure	**30.27** in		
Wind			
Wind Speed	**18** mph (East)		
Max Wind Speed	**30** mph		
Max Gust Speed	**39** mph		
Visibility	**10** miles		
Events	Rain		

T = Trace of Precipitation, MM = Missing Value

Source: NWS Daily Summary

Daily Weather History Graph



report this ad | why ads?

Search for Another Location

Airport or City:

KABQ

Submit

Trip Planner

Search our weather history database for the weather conditions in past years. The results will help you decide how hot, cold, wet, or windy it might be!

Date:

November

3

Submit

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Astronomy

Nov. 03, 2016	Rise	Set
Actual Time	7:29 AM MDT	6:09 PM MDT
Civil Twilight	7:03 AM MDT	6:35 PM MDT
Nautical Twilight	6:33 AM MDT	7:05 PM MDT
Astronomical Twilight	6:03 AM MDT	7:35 PM MDT
Moon	10:45 AM MDT (11/3)	9:16 PM MDT (11/3)
Length of Visible Light	11h 32m	
Length of Day	10h 39m	

Waxing Crescent, 14% of the Moon is Illuminated

Nov 3	Nov 7	Nov 14	Nov 21	Nov 29
Waxing Crescent	First Quarter	Full	Last Quarter	New

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Hourly Weather History & Observations

Time (MDT)	Temp.	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events	Condition
12:52 AM	**54.0** °F	**43.0** °F	66%	**30.19** in	**10.0** mi	East	**29.9** mph	**39.1** mph	**0.00** in	Rain	Light Rain
1:52 AM	**50.0** °F	**45.0** °F	83%	**30.24** in	**10.0** mi	ESE	**16.1** mph	**35.7** mph	**0.01** in	Rain	Light Rain
2:52 AM	**51.1** °F	**46.9** °F	86%	**30.22** in	**10.0** mi	NNE	**8.1** mph	-	**0.03** in	Rain	Light Rain
3:52 AM	**55.0** °F	**41.0** °F	59%	**30.21** in	**10.0** mi	NNE	**8.1** mph	-	**0.00** in		Overcast
4:52 AM	**54.0** °F	**42.1** °F	64%	**30.23** in	**10.0** mi	East	**13.8** mph	**21.9** mph	N/A		Overcast
5:52 AM	**54.0** °F	**41.0** °F	62%	**30.25** in	**10.0** mi	East	**17.3** mph	**25.3** mph	N/A		Mostly Cloudy
6:52 AM	**54.0** °F	**39.9** °F	59%	**30.25** in	**10.0** mi	ENE	**12.7** mph	-	N/A		Scattered Clouds
7:52 AM	**54.0** °F	**39.0** °F	57%	**30.27** in	**10.0** mi	East	**18.4** mph	**27.6** mph	N/A		Overcast
8:52 AM	**54.0** °F	**41.0** °F	62%	**30.32** in	**10.0** mi	ESE	**20.7** mph	**29.9** mph	N/A		Mostly Cloudy

Time (MDT)	Temp.	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events	Condition
9:52 AM	**57.0** °F	**39.9** °F	53%	**30.32** in	**10.0** mi	East	**25.3** mph	**31.1** mph	**0.00** in		Mostly Cloudy
10:52 AM	**57.9** °F	**41.0** °F	53%	**30.34** in	**10.0** mi	East	**19.6** mph	**29.9** mph	N/A		Mostly Cloudy
11:52 AM	**60.1** °F	**44.1** °F	55%	**30.32** in	**10.0** mi	East	**21.9** mph	**26.5** mph	N/A		Mostly Cloudy
12:52 PM	**62.1** °F	**45.0** °F	53%	**30.29** in	**10.0** mi	East	**21.9** mph	**29.9** mph	N/A		Mostly Cloudy
1:52 PM	**62.1** °F	**45.0** °F	53%	**30.28** in	**10.0** mi	ESE	**18.4** mph	-	N/A		Mostly Cloudy
2:52 PM	**64.0** °F	**45.0** °F	50%	**30.26** in	**10.0** mi	East	**19.6** mph	-	N/A		Scattered Clouds
3:52 PM	**63.0** °F	**45.0** °F	52%	**30.24** in	**10.0** mi	East	**18.4** mph	**28.8** mph	N/A		Scattered Clouds
4:52 PM	**62.1** °F	**45.0** °F	53%	**30.25** in	**10.0** mi	ESE	**23.0** mph	-	N/A		Scattered Clouds
5:52 PM	**61.0** °F	**45.0** °F	56%	**30.25** in	**10.0** mi	East	**20.7** mph	-	N/A		Scattered Clouds
6:52 PM	**59.0** °F	**45.0** °F	60%	**30.25** in	**10.0** mi	East	**24.2** mph	-	N/A		Scattered Clouds
7:52 PM	**57.9** °F	**46.0** °F	65%	**30.27** in	**10.0** mi	East	**19.6** mph	-	N/A		Scattered Clouds
8:52 PM	**57.0** °F	**46.0** °F	67%	**30.28** in	**10.0** mi	East	**21.9** mph	**25.3** mph	N/A		Partly Cloudy
9:52 PM	**57.0** °F	**45.0** °F	64%	**30.28** in	**10.0** mi	East	**18.4** mph	-	N/A		Scattered Clouds
10:52 PM	**57.0** °F	**44.1** °F	62%	**30.27** in	**10.0** mi	East	**15.0** mph	-	N/A		Mostly Cloudy
11:52 PM	**57.0** °F	**45.0** °F	64%	**30.26** in	**10.0** mi	ESE	**23.0** mph	-	N/A		Mostly Cloudy

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Kirtland AFB, NM

Albuquerque International Sunport

5:27 PM MST on January 03, 2017 [GMT -0700]

Weather History for KABQ - November, 2016

November

4

2016

View

Friday, November 4, 2016

Daily | Weekly | Monthly | Custom

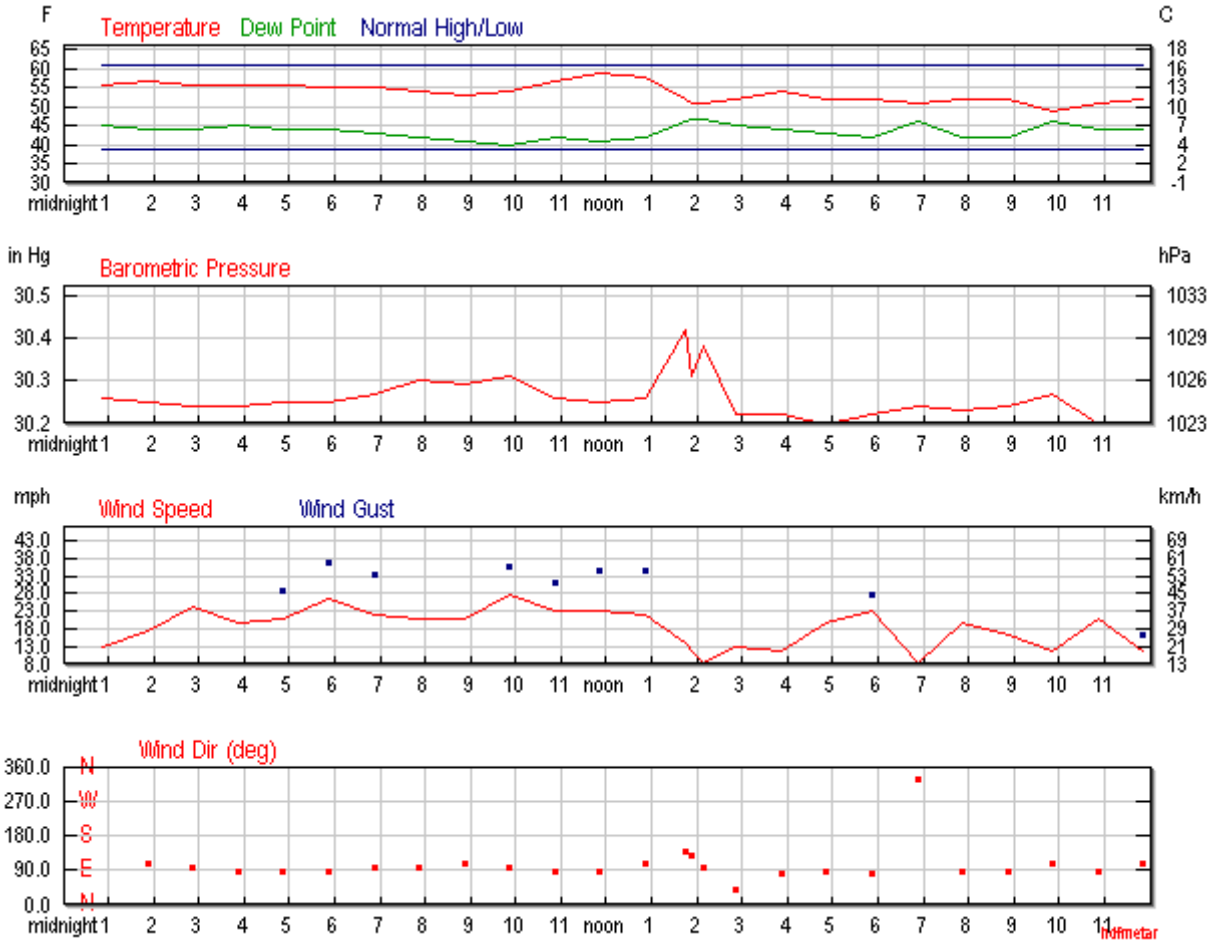
	Actual	Average	Record
Temperature			
Mean Temperature	**55** °F	-	
Max Temperature	**60** °F	-	- {}
Min Temperature	**49** °F	-	- {}
Degree Days			
Heating Degree Days	10		
Month to date heating degree days	29		
Growing Degree Days	4 [Base 50]		
Moisture			
Dew Point	**43** °F		
Average Humidity	72		
Maximum Humidity	93		
Minimum Humidity	51		
Precipitation			
Precipitation	-	-	- {}
Month to date precipitation	0.26		

	Actual	Average	Record
Year to date precipitation	5.40		
Snow			
Snow	**0.00** in	-	- {}
Month to date snowfall	0.0		
Snow Depth	**0.00** in		
Sea Level Pressure			
Sea Level Pressure	**30.26** in		
Wind			
Wind Speed	**19** mph (East)		
Max Wind Speed	**37** mph		
Max Gust Speed	**42** mph		
Visibility	**9** miles		
Events	Rain		

T = Trace of Precipitation, MM = Missing Value

Source: NWS Daily Summary

Daily Weather History Graph



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Search for Another Location

Airport or City:

KABQ

Submit

Trip Planner

Search our weather history database for the weather conditions in past years. The results will help you decide how hot, cold, wet, or windy it might be!

Date:

November

4

Submit

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Astronomy

Nov. 04, 2016	Rise	Set
Actual Time	7:30 AM MDT	6:08 PM MDT
Civil Twilight	7:04 AM MDT	6:35 PM MDT
Nautical Twilight	6:34 AM MDT	7:05 PM MDT
Astronomical Twilight	6:04 AM MDT	7:34 PM MDT
Moon	11:35 AM MDT	10:05 PM MDT
Length of Visible Light	11h 30m	
Length of Day	10h 37m	

Waxing Crescent, 21% of the Moon is Illuminated

Nov 4	Nov 7	Nov 14	Nov 21	Nov 29
Waxing Crescent	First Quarter	Full	Last Quarter	New

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Hourly Weather History & Observations

Time (MDT)	Temp.	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events	Condition
12:52 AM	**55.9** °F	**45.0** °F	67%	**30.26** in	**10.0** mi	ESE	**12.7** mph	-	N/A		Scattered Clouds
1:52 AM	**57.0** °F	**44.1** °F	62%	**30.25** in	**10.0** mi	ESE	**17.3** mph	**25.3** mph	N/A		Scattered Clouds
2:52 AM	**55.9** °F	**44.1** °F	64%	**30.24** in	**10.0** mi	East	**24.2** mph	-	N/A		Mostly Cloudy
3:52 AM	**55.9** °F	**45.0** °F	67%	**30.24** in	**10.0** mi	East	**19.6** mph	**27.6** mph	N/A		Mostly Cloudy
4:52 AM	**55.9** °F	**44.1** °F	64%	**30.25** in	**10.0** mi	East	**20.7** mph	**28.8** mph	N/A		Scattered Clouds
5:52 AM	**55.0** °F	**44.1** °F	67%	**30.25** in	**10.0** mi	East	**26.5** mph	**36.8** mph	N/A		Scattered Clouds
6:52 AM	**55.0** °F	**43.0** °F	64%	**30.27** in	**10.0** mi	East	**21.9** mph	**33.4** mph	N/A		Overcast
7:52 AM	**54.0** °F	**42.1** °F	64%	**30.30** in	**10.0** mi	East	**20.7** mph	-	**0.00** in	Rain	Light Rain
8:52 AM	**53.1** °F	**41.0** °F	64%	**30.29** in	**10.0** mi	ESE	**20.7** mph	**32.2** mph	**0.01** in	Rain	Light Rain

Time (MDT)	Temp.	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events	Condition
9:52 AM	**54.0** °F	**39.9** °F	59%	**30.31** in	**10.0** mi	East	**27.6** mph	**35.7** mph	**0.00** in	Rain	Light Rain
10:52 AM	**57.0** °F	**42.1** °F	57%	**30.26** in	**10.0** mi	East	**23.0** mph	**31.1** mph	**0.00** in		Scattered Clouds
11:52 AM	**59.0** °F	**41.0** °F	51%	**30.25** in	**10.0** mi	East	**23.0** mph	**34.5** mph	N/A		Mostly Cloudy
12:52 PM	**57.9** °F	**42.1** °F	56%	**30.26** in	**10.0** mi	ESE	**21.9** mph	**34.5** mph	**0.00** in		Overcast
1:44 PM	**52.0** °F	**46.0** °F	80%	**30.42** in	**2.5** mi	SE	**13.8** mph	-	**0.06** in	Rain	Rain
1:52 PM	**51.1** °F	**46.9** °F	86%	**30.31** in	**2.5** mi	SE	**11.5** mph	-	**0.06** in	Rain	Light Rain
2:10 PM	**51.1** °F	**46.9** °F	86%	**30.38** in	**8.0** mi	East	**8.1** mph	-	**0.03** in	Rain	Light Rain
2:52 PM	**52.0** °F	**45.0** °F	77%	**30.22** in	**10.0** mi	NE	**12.7** mph	**21.9** mph	**0.03** in		Overcast
3:52 PM	**54.0** °F	**44.1** °F	69%	**30.22** in	**10.0** mi	East	**11.5** mph	-	**0.00** in		Overcast
4:52 PM	**52.0** °F	**43.0** °F	71%	**30.20** in	**10.0** mi	East	**19.6** mph	**29.9** mph	**0.00** in		Mostly Cloudy
5:52 PM	**52.0** °F	**42.1** °F	69%	**30.22** in	**10.0** mi	East	**23.0** mph	**27.6** mph	N/A		Overcast
6:52 PM	**51.1** °F	**46.0** °F	83%	**30.24** in	**10.0** mi	NNW	**8.1** mph	-	**0.00** in		Overcast
7:52 PM	**52.0** °F	**42.1** °F	69%	**30.23** in	**10.0** mi	East	**19.6** mph	**27.6** mph	N/A		Mostly Cloudy
8:52 PM	**52.0** °F	**42.1** °F	69%	**30.24** in	**10.0** mi	East	**16.1** mph	-	**0.00** in	Rain	Light Rain
9:52 PM	**48.9** °F	**46.0** °F	90%	**30.27** in	**7.0** mi	ESE	**11.5** mph	-	**0.07** in	Rain	Rain
10:52 PM	**51.1** °F	**44.1** °F	77%	**30.20** in	**10.0** mi	East	**20.7** mph	**29.9** mph	**0.03** in		Overcast
11:52 PM	**52.0** °F	**44.1** °F	74%	**30.20** in	**10.0** mi	ESE	**11.5** mph	**16.1** mph	**0.00** in		Overcast

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Kirtland AFB, NM

Albuquerque International Sunport

5:27 PM MST on January 03, 2017 (GMT -0700)

Weather History for KABQ - November, 2016

November

5

2016

View
Saturday, November 5, 2016

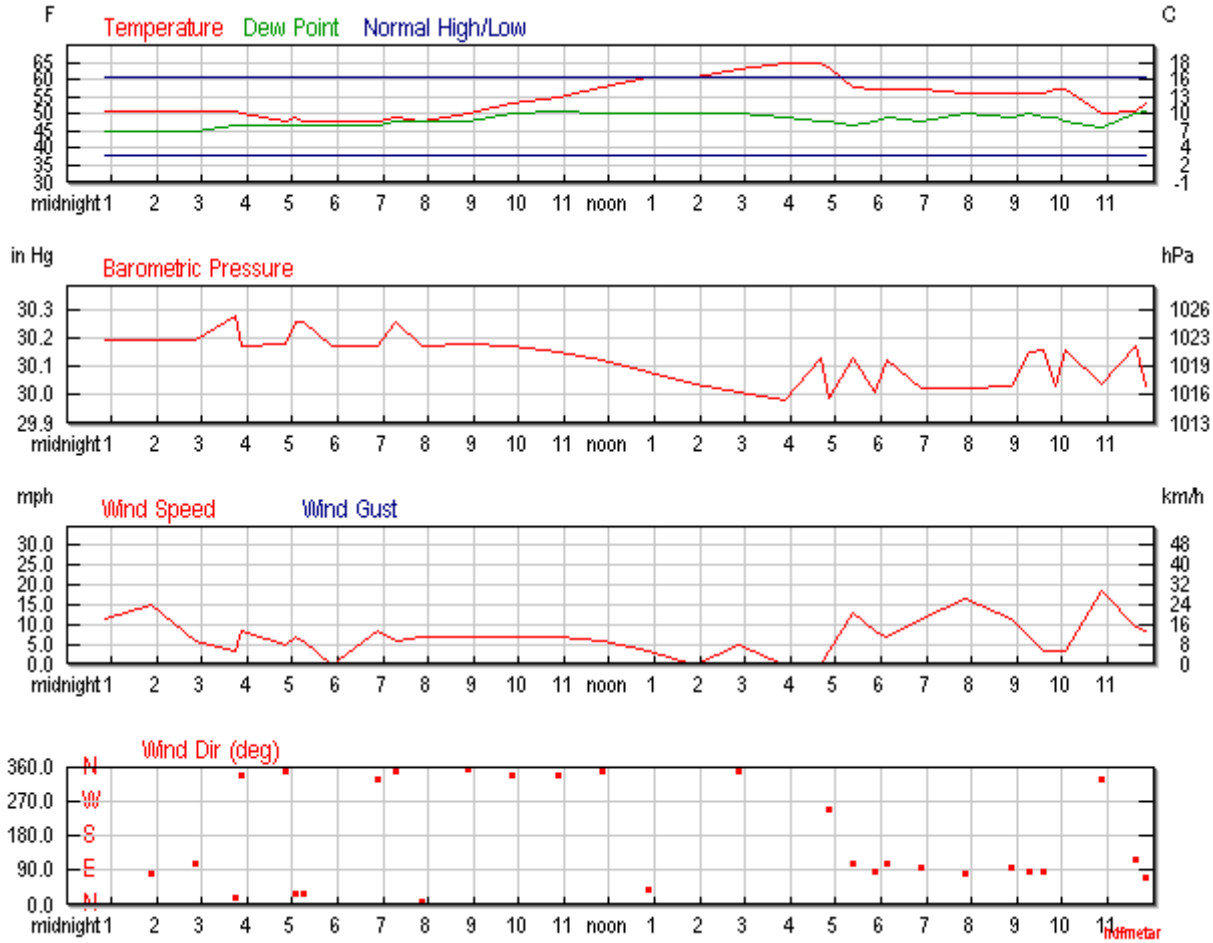
Daily | Weekly | Monthly | Custom

	Actual	Average	Record
Temperature			
Mean Temperature	**57** °F	-	
Max Temperature	**65** °F	-	- []
Min Temperature	**48** °F	-	- []
Degree Days			
Heating Degree Days	8		
Month to date heating degree days	37		
Growing Degree Days	6 [Base 50]		
Moisture			
Dew Point	**48** °F		
Average Humidity	78		
Maximum Humidity	100		
Minimum Humidity	56		
Precipitation			
Precipitation	-	-	- []
Month to date precipitation	0.66		

	Actual	Average	Record
Year to date precipitation	5.80		
Snow			
Snow	**0.00** in	-	- []
Month to date snowfall	0.0		
Snow Depth	**0.00** in		
Sea Level Pressure			
Sea Level Pressure	**30.12** in		
Wind			
Wind Speed	**7** mph [NE]		
Max Wind Speed	**24** mph		
Max Gust Speed	**29** mph		
Visibility	**10** miles		
Events	Rain , Thunderstorm		

T = Trace of Precipitation, MM = Missing Value Source: NWS Daily Summary

Daily Weather History Graph



report this ad | why ads?

Search for Another Location

Airport or City:

KABQ

Submit

Trip Planner

Search our weather history database for the weather conditions in past years. The results will help you decide how hot, cold, wet, or windy it might be!

Date:

November

5

Submit

report this ad | why ads?

Astronomy

Nov. 05, 2016	Rise	Set
Actual Time	7:31 AM MDT	6:07 PM MDT
Civil Twilight	7:05 AM MDT	6:34 PM MDT
Nautical Twilight	6:35 AM MDT	7:04 PM MDT
Astronomical Twilight	6:05 AM MDT	7:34 PM MDT
Moon	12:22 PM MDT (11/5)	10:57 PM MDT (11/5)
Length of Visible Light	11h 28m	
Length of Day	10h 36m	

Waxing Crescent, 30% of the Moon is Illuminated

Nov 5	Nov 7	Nov 14	Nov 21	Nov 29
Waxing Crescent	First Quarter	Full	Last Quarter	New

report this ad | why ads?

Hourly Weather History & Observations

Time (MDT)	Temp.	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events
12:52 AM	**51.1** °F	**45.0** °F	80%	**30.19** in	**10.0** mi	East	**11.5** mph	-	**0.00** in	Rain
1:52 AM	**51.1** °F	**45.0** °F	80%	**30.19** in	**10.0** mi	East	**15.0** mph	-	**0.00** in	
2:52 AM	**51.1** °F	**45.0** °F	80%	**30.19** in	**10.0** mi	ESE	**5.8** mph	-	**0.00** in	Rain
3:44 AM	**51.1** °F	**46.9** °F	86%	**30.28** in	**10.0** mi	NNE	**3.5** mph	-	**0.00** in	Rain
3:52 AM	**50.0** °F	**46.9** °F	89%	**30.17** in	**10.0** mi	NNW	**8.1** mph	-	**0.00** in	Rain
4:52 AM	**48.0** °F	**46.9** °F	96%	**30.18** in	**5.0** mi	North	**4.6** mph	-	**0.02** in	Rain
5:04 AM	**48.9** °F	**46.9** °F	93%	**30.26** in	**6.0** mi	NNE	**6.9** mph	-	**0.04** in	Rain
5:15 AM	**48.0** °F	**46.9** °F	96%	**30.26** in	**10.0** mi	NNE	**5.8** mph	-	**0.04** in	
5:52 AM	**48.0** °F	**46.9** °F	96%	**30.17** in	**10.0** mi	Calm	Calm	-	**0.04** in	

Time (MDT)	Temp.	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events
6:52 AM	**48.0** °F	**46.9** °F	96%	**30.17** in	**10.0** mi	NNW	**8.1** mph	-	N/A	
7:17 AM	**48.9** °F	**48.0** °F	97%	**30.26** in	**10.0** mi	North	**5.8** mph	-	N/A	
7:52 AM	**48.0** °F	**48.0** °F	100%	**30.17** in	**10.0** mi	North	**6.9** mph	-	N/A	
8:52 AM	**50.0** °F	**48.0** °F	93%	**30.18** in	**10.0** mi	North	**6.9** mph	-	N/A	
9:52 AM	**53.1** °F	**50.0** °F	89%	**30.17** in	**10.0** mi	NNW	**6.9** mph	-	N/A	
10:52 AM	**55.0** °F	**51.1** °F	86%	**30.15** in	**10.0** mi	NNW	**6.9** mph	-	N/A	
11:52 AM	**57.9** °F	**50.0** °F	75%	**30.12** in	**10.0** mi	North	**5.8** mph	-	N/A	
12:52 PM	**61.0** °F	**50.0** °F	67%	**30.08** in	**10.0** mi	NE	**3.5** mph	-	N/A	
1:52 PM	**61.0** °F	**50.0** °F	67%	**30.04** in	**10.0** mi	Calm	Calm	-	N/A	
2:52 PM	**63.0** °F	**50.0** °F	63%	**30.01** in	**10.0** mi	North	**4.6** mph	-	N/A	
3:52 PM	**64.9** °F	**48.9** °F	56%	**29.98** in	**10.0** mi	Calm	Calm	-	N/A	
4:41 PM	**64.9** °F	**48.0** °F	54%	**30.13** in	**10.0** mi	Calm	Calm	-	N/A	Thunderstorm
4:52 PM	**64.0** °F	**48.0** °F	56%	**29.99** in	**10.0** mi	WSW	**3.5** mph	-	N/A	Thunderstorm
5:23 PM	**57.9** °F	**46.9** °F	67%	**30.13** in	**10.0** mi	ESE	**12.7** mph	-	N/A	Thunderstorm
5:52 PM	**57.0** °F	**48.0** °F	72%	**30.01** in	**10.0** mi	East	**8.1** mph	-	N/A	Thunderstorm
6:07 PM	**57.0** °F	**48.9** °F	74%	**30.12** in	**10.0** mi	ESE	**6.9** mph	-	N/A	
6:52 PM	**57.0** °F	**48.0** °F	72%	**30.02** in	**10.0** mi	East	**11.5** mph	-	N/A	
7:52 PM	**55.9** °F	**50.0** °F	80%	**30.02** in	**10.0** mi	East	**16.1** mph	-	**0.00** in	Rain
8:52 PM	**55.9** °F	**48.9** °F	77%	**30.03** in	**10.0** mi	East	**11.5** mph	-	**0.00** in	
9:16 PM	**55.9** °F	**50.0** °F	80%	**30.15** in	**10.0** mi	East	**6.9** mph	-	N/A	Thunderstorm

Time (MDT)	Temp.	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events
9:35 PM	**55.9** °F	**48.9** °F	77%	**30.16** in	**10.0** mi	East	**3.5** mph	-	N/A	Thunderstorm
9:52 PM	**57.0** °F	**48.9** °F	74%	**30.03** in	**10.0** mi	Variable	**3.5** mph	-	N/A	
10:05 PM	**57.0** °F	**48.0** °F	72%	**30.16** in	**10.0** mi	Variable	**3.5** mph	-	N/A	Thunderstorm
10:52 PM	**50.0** °F	**46.0** °F	86%	**30.04** in	**5.0** mi	NNW	**18.4** mph	**24.2** mph	**0.26** in	Rain , Thunderstorm
11:38 PM	**51.1** °F	**50.0** °F	96%	**30.17** in	**10.0** mi	ESE	**9.2** mph	-	**0.07** in	Rain
11:52 PM	**53.1** °F	**51.1** °F	93%	**30.03** in	**10.0** mi	ENE	**8.1** mph	-	**0.08** in	Rain

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Kirtland AFB, NM

Albuquerque International Sunport

5:27 PM MST on January 03, 2017 (GMT -0700)

Weather History for KABQ - December, 2016

December

22

2016

View
Thursday, December 22, 2016

Daily | Weekly | Monthly | Custom

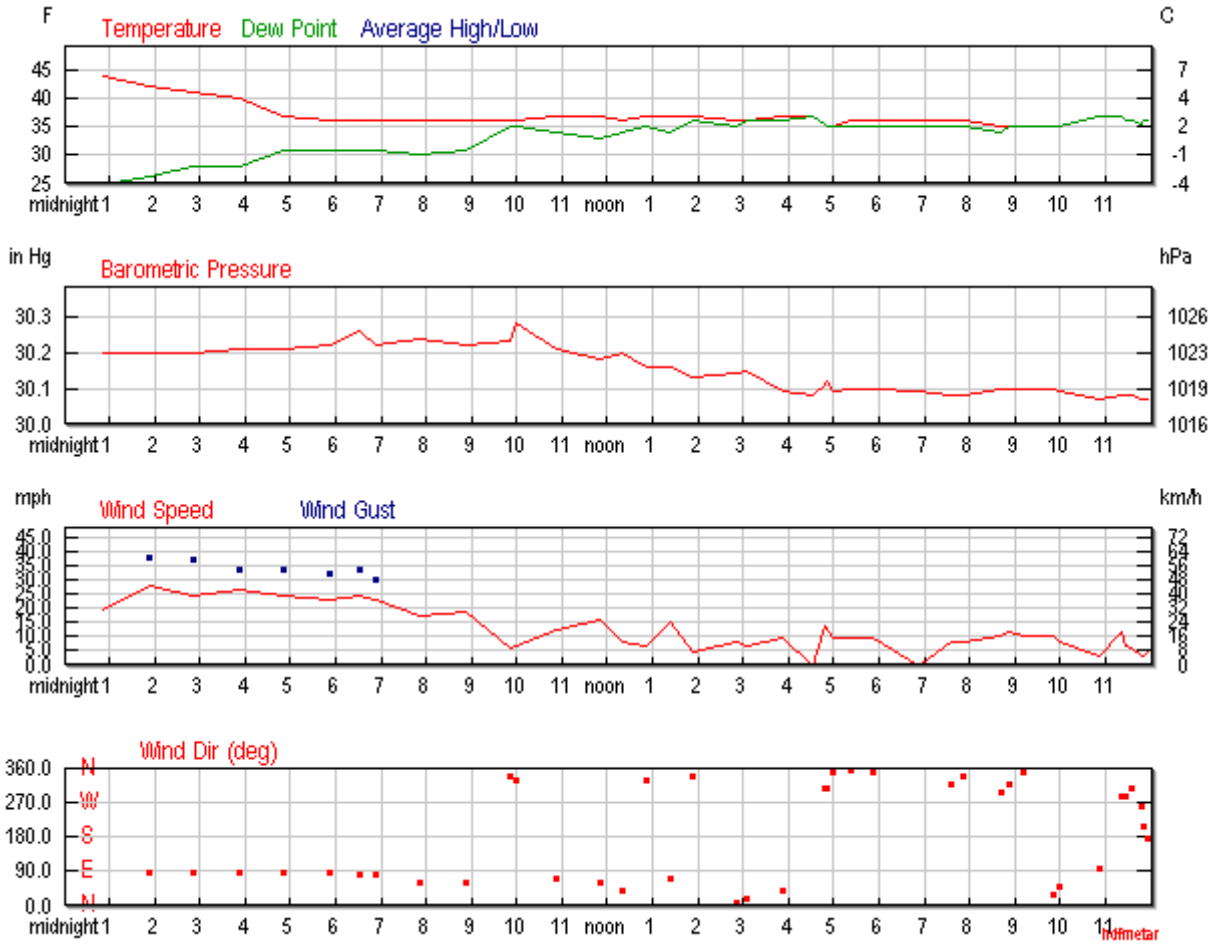
	Actual	Average	Record
Temperature			
Mean Temperature	**40** °F	-	
Max Temperature	**44** °F	-	- []
Min Temperature	**35** °F	-	- []
Degree Days			
Heating Degree Days	26		
Moisture			
Dew Point	**34** °F		
Average Humidity	91		
Maximum Humidity	100		
Minimum Humidity	47		
Precipitation			
Precipitation	**0.30** in	-	- []
Sea Level Pressure			
Sea Level Pressure	**30.14** in		
Wind			

	Actual	Average	Record
Wind Speed	**14** mph []		
Max Wind Speed	**28** mph		
Max Gust Speed	**38** mph		
Visibility	**6.5** miles		
Events	Fog , Rain		

T = Trace of Precipitation, MM = Missing Value

Source: Averaged Metar Reports

Daily Weather History Graph



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Search for Another Location

Airport or City:

KABQ

Submit

Trip Planner

Search our weather history database for the weather conditions in past years. The results will help you decide how hot, cold, wet, or windy it might be!

Date:

December

22

Submit

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Astronomy

Dec. 22, 2016	Rise	Set
Actual Time	7:11 AM MST	4:59 PM MST
Civil Twilight	6:43 AM MST	5:27 PM MST
Nautical Twilight	6:11 AM MST	5:59 PM MST
Astronomical Twilight	5:40 AM MST	6:30 PM MST
Moon	1:09 AM MST (12/22)	1:07 PM MST (12/22)
Length of Visible Light	10h 44m	
Length of Day	9h 47m	

Waning Crescent, 34% of the Moon is Illuminated

Dec 22	Dec 28	Jan 5	Jan 12	Jan 19
Waning Crescent	New	First Quarter	Full	Last Quarter

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Hourly Weather History & Observations

Time (MST)	Temp.	Windchill	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events
12:52 AM	**44.1** °F	**35.9** °F	**25.0** °F	47%	**30.20** in	**10.0** mi	East	**19.6** mph	**36.8** mph	N/A	
1:52 AM	**42.1** °F	**31.7** °F	**26.1** °F	53%	**30.20** in	**10.0** mi	East	**27.6** mph	**38.0** mph	N/A	
2:52 AM	**41.0** °F	**30.9** °F	**28.0** °F	60%	**30.20** in	**10.0** mi	East	**24.2** mph	**36.8** mph	**0.00** in	Rain

Time (MST)	Temp.	Windchill	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events
3:52 AM	**39.9** °F	**29.0** °F	**28.0** °F	63%	**30.21** in	**10.0** mi	East	**26.5** mph	**33.4** mph	**0.00** in	Rain
4:52 AM	**37.0** °F	**25.6** °F	**30.9** °F	79%	**30.21** in	**10.0** mi	East	**24.2** mph	**33.4** mph	**0.03** in	Rain
5:52 AM	**36.0** °F	**24.4** °F	**30.9** °F	82%	**30.22** in	**10.0** mi	East	**23.0** mph	**32.2** mph	**0.03** in	Rain
6:31 AM	**36.0** °F	**24.2** °F	**30.9** °F	82%	**30.26** in	**9.0** mi	East	**24.2** mph	**33.4** mph	**0.02** in	Rain
6:52 AM	**36.0** °F	**24.4** °F	**30.9** °F	82%	**30.22** in	**9.0** mi	East	**23.0** mph	**29.9** mph	**0.03** in	Rain
7:52 AM	**36.0** °F	**26.0** °F	**30.0** °F	79%	**30.24** in	**10.0** mi	ENE	**17.3** mph	-	**0.01** in	Rain
8:52 AM	**36.0** °F	**25.6** °F	**30.9** °F	82%	**30.22** in	**10.0** mi	ENE	**18.4** mph	-	**0.00** in	Rain
9:52 AM	**36.0** °F	**31.1** °F	**35.1** °F	97%	**30.23** in	**10.0** mi	NNW	**5.8** mph	-	**0.00** in	
10:00 AM	**36.0** °F	**30.3** °F	**35.1** °F	97%	**30.28** in	**8.0** mi	NNW	**6.9** mph	-	N/A	
10:52 AM	**37.0** °F	**28.9** °F	**34.0** °F	89%	**30.21** in	**8.0** mi	ENE	**12.7** mph	-	**0.00** in	Rain
11:52 AM	**37.0** °F	**27.7** °F	**33.1** °F	86%	**30.18** in	**10.0** mi	ENE	**16.1** mph	-	**0.00** in	Rain
12:20 PM	**36.0** °F	**29.6** °F	**34.0** °F	93%	**30.20** in	**5.0** mi	NE	**8.1** mph	-	**0.01** in	Rain
12:52 PM	**37.0** °F	**31.6** °F	**35.1** °F	93%	**30.16** in	**6.0** mi	NNW	**6.9** mph	-	**0.01** in	Rain
1:23 PM	**37.0** °F	**28.1** °F	**34.0** °F	89%	**30.16** in	**4.0** mi	ENE	**15.0** mph	-	**0.03** in	Rain
1:52 PM	**37.0** °F	**33.3** °F	**36.0** °F	96%	**30.13** in	**7.0** mi	NNW	**4.6** mph	-	**0.03** in	
2:52 PM	**36.0** °F	**29.6** °F	**35.1** °F	97%	**30.14** in	**4.0** mi	North	**8.1** mph	-	**0.02** in	Rain
3:05 PM	**36.0** °F	**30.3** °F	**36.0** °F	100%	**30.15** in	**4.0** mi	NNE	**6.9** mph	-	**0.01** in	Rain
3:52 PM	**37.0** °F	**30.4** °F	**36.0** °F	96%	**30.09** in	**4.0** mi	NE	**9.2** mph	-	**0.04** in	Rain
4:32 PM	**37.0** °F	-	**37.0** °F	100%	**30.08** in	**8.0** mi	Calm	Calm	-	**0.00** in	
4:47 PM	**35.6** °F	**26.6** °F	**35.6** °F	100%	**30.11** in	**9.0** mi	NW	**13.8** mph	-	**0.00** in	

Time (MST)	Temp.	Windchill	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events
4:52 PM	**35.1** °F	**26.4** °F	**35.1** °F	100%	**30.12** in	**0.5** mi	NW	**12.7** mph	-	**0.00** in	
4:58 PM	**35.1** °F	**27.9** °F	**35.1** °F	100%	**30.09** in	**0.5** mi	North	**9.2** mph	-	N/A	
5:23 PM	**36.0** °F	**29.0** °F	**35.1** °F	97%	**30.10** in	**10.0** mi	North	**9.2** mph	-	N/A	
5:52 PM	**36.0** °F	**29.0** °F	**35.1** °F	97%	**30.10** in	**10.0** mi	North	**9.2** mph	-	N/A	
6:52 PM	**36.0** °F	-	**35.1** °F	97%	**30.09** in	**10.0** mi	Calm	Calm	-	N/A	
7:36 PM	**36.0** °F	**29.6** °F	**35.1** °F	97%	**30.08** in	**10.0** mi	NW	**8.1** mph	-	N/A	
7:52 PM	**36.0** °F	**29.6** °F	**35.1** °F	97%	**30.08** in	**10.0** mi	NNW	**8.1** mph	-	N/A	
8:41 PM	**35.1** °F	**27.4** °F	**34.0** °F	96%	**30.10** in	**3.0** mi	WNW	**10.4** mph	-	**0.02** in	Rain
8:52 PM	**35.1** °F	**26.9** °F	**35.1** °F	100%	**30.10** in	**4.0** mi	NW	**11.5** mph	-	**0.05** in	Rain
9:10 PM	**35.1** °F	**27.4** °F	**35.1** °F	100%	**30.10** in	**7.0** mi	North	**10.4** mph	-	**0.00** in	Rain
9:52 PM	**35.1** °F	**27.4** °F	**35.1** °F	100%	**30.10** in	**5.0** mi	NNE	**10.4** mph	-	**0.01** in	Rain
9:59 PM	**35.1** °F	**28.6** °F	**35.1** °F	100%	**30.09** in	**6.0** mi	NE	**8.1** mph	-	**0.00** in	Rain
10:52 PM	**37.0** °F	**34.5** °F	**37.0** °F	100%	**30.07** in	**7.0** mi	East	**3.5** mph	-	**0.02** in	Rain
11:21 PM	**37.0** °F	**29.3** °F	**37.0** °F	100%	**30.08** in	**1.2** mi	WNW	**11.5** mph	-	**0.01** in	Rain
11:28 PM	**36.0** °F	**30.3** °F	**36.0** °F	100%	**30.08** in	**0.2** mi	WNW	**6.9** mph	-	**0.01** in	Fog , Rain
11:35 PM	**36.0** °F	**31.1** °F	**36.0** °F	100%	**30.08** in	**0.5** mi	NW	**5.8** mph	-	**0.01** in	Fog , Rain
11:47 PM	**35.6** °F	**32.8** °F	**35.6** °F	100%	**30.07** in	**1.2** mi	West	**3.5** mph	-	**0.02** in	Rain
11:52 PM	**36.0** °F	**33.3** °F	**36.0** °F	100%	**30.07** in	**1.5** mi	SSW	**3.5** mph	-	**0.02** in	Rain
11:55 PM	**36.0** °F	**32.1** °F	**36.0** °F	100%	**30.07** in	**2.0** mi	South	**4.6** mph	-	**0.01** in	Rain

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Kirtland AFB, NM

Albuquerque International Sunport

5:28 PM MST on January 03, 2017 (GMT -0700)

Weather History for KABQ - December, 2016

December

23

2016

View
Friday, December 23, 2016

Daily | Weekly | Monthly | Custom

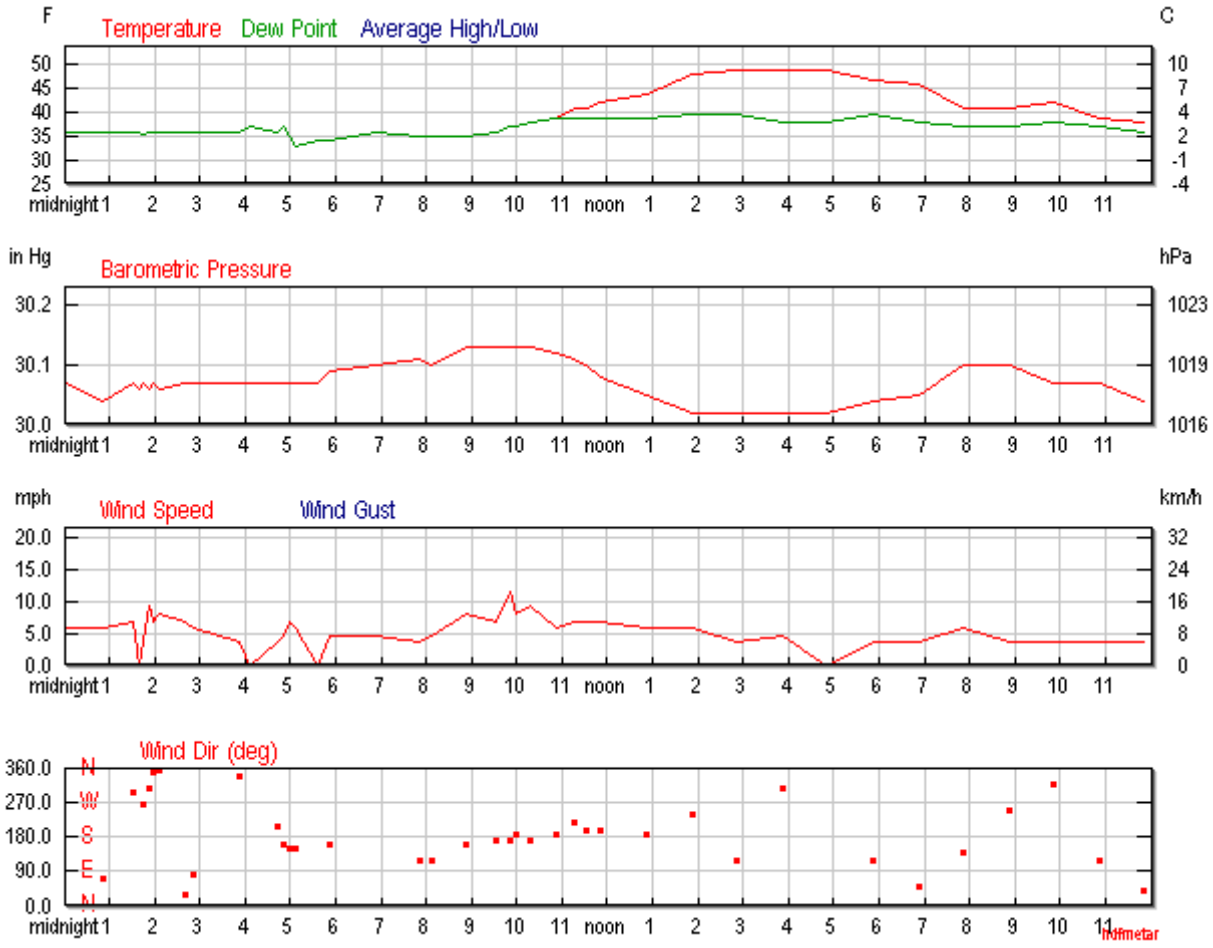
	Actual	Average	Record
Temperature			
Mean Temperature	**40** °F	-	
Max Temperature	**48** °F	-	- {}
Min Temperature	**33** °F	-	- {}
Degree Days			
Heating Degree Days	24		
Moisture			
Dew Point	**37** °F		
Average Humidity	93		
Maximum Humidity	100		
Minimum Humidity	66		
Precipitation			
Precipitation	**0.03** in	-	- {}
Sea Level Pressure			
Sea Level Pressure	**30.08** in		
Wind			

	Actual	Average	Record
Wind Speed	**5** mph []		
Max Wind Speed	**12** mph		
Max Gust Speed	-		
Visibility	**6.0** miles		
Events	Fog , Rain		

T = Trace of Precipitation, MM = Missing Value

Source: Averaged Metar Reports

Daily Weather History Graph



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Search for Another Location

Airport or City:

KABQ

Submit

Trip Planner

Search our weather history database for the weather conditions in past years. The results will help you decide how hot, cold, wet, or windy it might be!

Date:

December

23

Submit

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Astronomy

Dec. 23, 2016	**Rise**	**Set**
Actual Time	7:11 AM MST	4:59 PM MST
Civil Twilight	6:43 AM MST	5:28 PM MST
Nautical Twilight	6:11 AM MST	5:59 PM MST
Astronomical Twilight	5:41 AM MST	6:30 PM MST
Moon	2:03 AM MST (12/23)	1:39 PM MST (12/23)
Length of Visible Light	10h 44m	
Length of Day	9h 48m	

Waning Crescent, 25% of the Moon is Illuminated

Dec 23	Dec 28	Jan 5	Jan 12	Jan 19
Waning Crescent	New	First Quarter	Full	Last Quarter

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Hourly Weather History & Observations

Time (MST)	**Temp.**	**Windchill**	**Dew Point**	**Humidity**	**Pressure**	**Visibility**	**Wind Dir**	**Wind Speed**	**Gust Speed**	**Precip**	**Events**
12:05 AM	**36.0** °F	**31.1** °F	**36.0** °F	100%	**30.07** in	**4.0** mi	Variable	**5.8** mph	-	**0.01** in	Rain
12:52 AM	**36.0** °F	**31.1** °F	**36.0** °F	100%	**30.04** in	**3.0** mi	ENE	**5.8** mph	-	**0.03** in	Rain
1:32 AM	**36.0** °F	**30.3** °F	**36.0** °F	100%	**30.07** in	**2.0** mi	WNW	**6.9** mph	-	**0.00** in	

Time (MST)	Temp.	Windchill	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events
1:39 AM	**36.0** °F	-	**36.0** °F	100%	**30.06** in	**1.2** mi	Calm	Calm	-	**0.00** in	
1:46 AM	**35.6** °F	**32.8** °F	**35.6** °F	100%	**30.07** in	**0.8** mi	West	**3.5** mph	-	**0.00** in	
1:52 AM	**36.0** °F	**29.0** °F	**36.0** °F	100%	**30.06** in	**0.5** mi	NW	**9.2** mph	-	**0.00** in	Fog
1:59 AM	**36.0** °F	**30.3** °F	**36.0** °F	100%	**30.07** in	**2.5** mi	North	**6.9** mph	-	N/A	
2:06 AM	**36.0** °F	**29.6** °F	**36.0** °F	100%	**30.06** in	**10.0** mi	North	**8.1** mph	-	N/A	
2:42 AM	**36.0** °F	**30.3** °F	**36.0** °F	100%	**30.07** in	**10.0** mi	NNE	**6.9** mph	-	N/A	
2:52 AM	**36.0** °F	**31.1** °F	**36.0** °F	100%	**30.07** in	**10.0** mi	East	**5.8** mph	-	N/A	
3:52 AM	**36.0** °F	**33.3** °F	**36.0** °F	100%	**30.07** in	**10.0** mi	NNW	**3.5** mph	-	N/A	
4:06 AM	**37.0** °F	-	**37.0** °F	100%	**30.07** in	**10.0** mi	Calm	Calm	-	N/A	
4:42 AM	**36.0** °F	**33.3** °F	**36.0** °F	100%	**30.07** in	**10.0** mi	SSW	**3.5** mph	-	N/A	
4:52 AM	**37.0** °F	**33.3** °F	**37.0** °F	100%	**30.07** in	**10.0** mi	SSE	**4.6** mph	-	N/A	
5:00 AM	**35.1** °F	**29.3** °F	**35.1** °F	100%	**30.07** in	**1.5** mi	SSE	**6.9** mph	-	N/A	
5:06 AM	**33.1** °F	**27.7** °F	**33.1** °F	100%	**30.07** in	**0.2** mi	SSE	**5.8** mph	-	N/A	Fog
5:36 AM	**34.0** °F	-	**34.0** °F	100%	**30.07** in	**0.2** mi	Calm	Calm	-	N/A	Fog
5:52 AM	**34.0** °F	**29.8** °F	**34.0** °F	100%	**30.09** in	**0.2** mi	SSE	**4.6** mph	-	N/A	Fog
6:52 AM	**36.0** °F	**32.1** °F	**36.0** °F	100%	**30.10** in	**0.2** mi	Variable	**4.6** mph	-	N/A	Fog
7:52 AM	**35.1** °F	**32.2** °F	**35.1** °F	100%	**30.11** in	**0.2** mi	ESE	**3.5** mph	-	N/A	Fog
8:08 AM	**35.1** °F	**31.0** °F	**35.1** °F	100%	**30.10** in	**0.2** mi	ESE	**4.6** mph	-	N/A	Fog
8:52 AM	**35.1** °F	**28.6** °F	**35.1** °F	100%	**30.13** in	**0.2** mi	SSE	**8.1** mph	-	N/A	Fog
9:32 AM	**36.0** °F	**30.3** °F	**36.0** °F	100%	**30.13** in	**0.5** mi	South	**6.9** mph	-	N/A	Fog

Time (MST)	Temp.	Windchill	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events
9:52 AM	**37.0** °F	**29.3** °F	**37.0** °F	100%	**30.13** in	**0.5** mi	South	**11.5** mph	-	N/A	Fog
9:58 AM	**37.0** °F	**31.0** °F	**37.0** °F	100%	**30.13** in	**1.5** mi	South	**8.1** mph	-	N/A	
10:17 AM	**37.9** °F	**31.5** °F	**37.9** °F	100%	**30.13** in	**5.0** mi	South	**9.2** mph	-	N/A	
10:52 AM	**39.0** °F	**34.8** °F	**39.0** °F	100%	**30.12** in	**6.0** mi	South	**5.8** mph	-	N/A	
11:16 AM	**41.0** °F	**36.4** °F	**39.0** °F	93%	**30.11** in	**10.0** mi	SW	**6.9** mph	-	N/A	
11:33 AM	**41.0** °F	**36.4** °F	**39.0** °F	93%	**30.10** in	**10.0** mi	SSW	**6.9** mph	-	N/A	
11:52 AM	**42.1** °F	**37.7** °F	**39.0** °F	89%	**30.08** in	**10.0** mi	SSW	**6.9** mph	-	N/A	
12:52 PM	**44.1** °F	**40.8** °F	**39.0** °F	82%	**30.05** in	**10.0** mi	South	**5.8** mph	-	N/A	
1:52 PM	**48.0** °F	-	**39.9** °F	74%	**30.02** in	**10.0** mi	WSW	**5.8** mph	-	N/A	
2:52 PM	**48.9** °F	-	**39.9** °F	71%	**30.02** in	**10.0** mi	ESE	**3.5** mph	-	N/A	
3:52 PM	**48.9** °F	-	**37.9** °F	66%	**30.02** in	**10.0** mi	NW	**4.6** mph	-	N/A	
4:52 PM	**48.9** °F	-	**37.9** °F	66%	**30.02** in	**10.0** mi	Calm	Calm	-	N/A	
5:52 PM	**46.9** °F	-	**39.9** °F	77%	**30.04** in	**10.0** mi	ESE	**3.5** mph	-	N/A	
6:52 PM	**46.0** °F	**44.8** °F	**37.9** °F	73%	**30.05** in	**10.0** mi	NE	**3.5** mph	-	N/A	
7:52 PM	**41.0** °F	**37.1** °F	**37.0** °F	86%	**30.10** in	**10.0** mi	SE	**5.8** mph	-	N/A	
8:52 PM	**41.0** °F	**39.0** °F	**37.0** °F	86%	**30.10** in	**10.0** mi	WSW	**3.5** mph	-	N/A	
9:52 PM	**42.1** °F	**40.2** °F	**37.9** °F	85%	**30.07** in	**10.0** mi	NW	**3.5** mph	-	N/A	
10:52 PM	**39.0** °F	**36.8** °F	**37.0** °F	93%	**30.07** in	**10.0** mi	ESE	**3.5** mph	-	N/A	
11:52 PM	**37.9** °F	**35.5** °F	**36.0** °F	93%	**30.04** in	**10.0** mi	NE	**3.5** mph	-	N/A	

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Albuquerque International Sunport

5:29 PM MST on January 03, 2017 [GMT -0700]

Weather History for KABQ - December, 2016

December

24

2016

View

Saturday, December 24, 2016

Daily | Weekly | Monthly | Custom

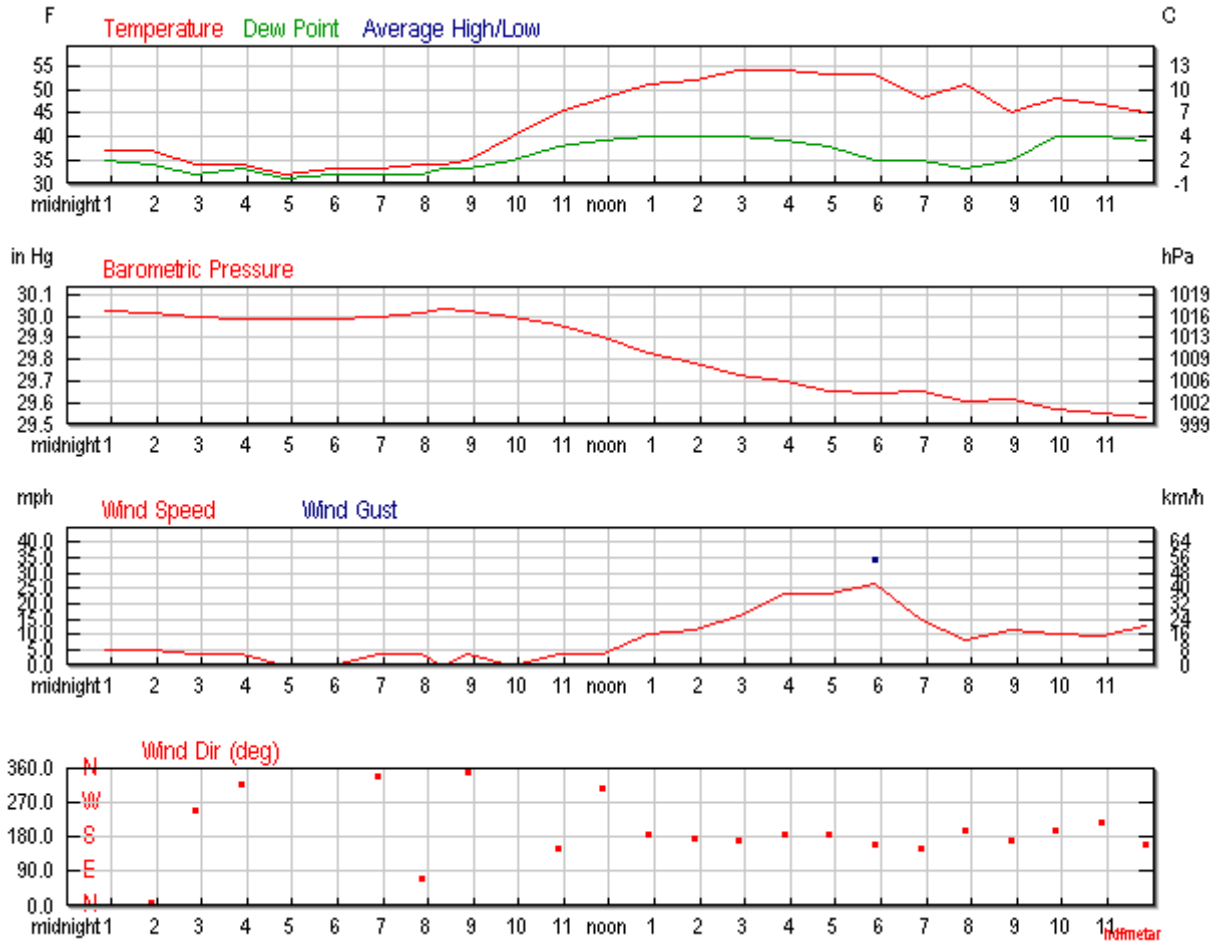
	Actual	Average	Record
Temperature			
Mean Temperature	**43** °F	-	
Max Temperature	**54** °F	-	- []
Min Temperature	**32** °F	-	- []
Degree Days			
Heating Degree Days	22		
Moisture			
Dew Point	**36** °F		
Average Humidity	77		
Maximum Humidity	96		
Minimum Humidity	50		
Precipitation			
Precipitation	**0.00** in	-	- []
Sea Level Pressure			
Sea Level Pressure	**29.83** in		
Wind			

	Actual	Average	Record
Wind Speed	**6** mph []		
Max Wind Speed	**26** mph		
Max Gust Speed	**34** mph		
Visibility	**10.0** miles		
Events	Rain		

T = Trace of Precipitation, MM = Missing Value

Source: Averaged Metar Reports

Daily Weather History Graph



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Search our weather history database for the weather conditions in past years. The results will help you decide how hot, cold, wet, or windy it might be!

Date:

December

24

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Astronomy

Dec. 24, 2016	**Rise**	**Set**
Actual Time	7:12 AM MST	5:00 PM MST
Civil Twilight	6:44 AM MST	5:28 PM MST
Nautical Twilight	6:12 AM MST	6:00 PM MST
Astronomical Twilight	5:41 AM MST	6:31 PM MST
Moon	2:57 AM MST (12/24)	2:13 PM MST (12/24)
Length of Visible Light	10h 44m	
Length of Day	9h 48m	

Waning Crescent, 18% of the Moon is Illuminated

Dec 24	Dec 28	Jan 5	Jan 12	Jan 19
Waning Crescent	New	First Quarter	Full	Last Quarter

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Hourly Weather History & Observations

Time (MST)	**Temp.**	**Windchill**	**Dew Point**	**Humidity**	**Pressure**	**Visibility**	**Wind Dir**	**Wind Speed**	**Gust Speed**	**Precip**	**Events**
12:52 AM	**37.0** °F	**33.3** °F	**35.1** °F	93%	**30.02** in	**10.0** mi	NNE	**4.6** mph	-	N/A	
1:52 AM	**37.0** °F	**33.3** °F	**34.0** °F	89%	**30.01** in	**10.0** mi	North	**4.6** mph	-	N/A	
2:52 AM	**34.0** °F	**31.0** °F	**32.0** °F	92%	**30.00** in	**10.0** mi	WSW	**3.5** mph	-	N/A	

Time (MST)	Temp.	Windchill	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events
3:52 AM	**34.0** °F	**31.0** °F	**33.1** °F	96%	**29.99** in	**10.0** mi	NW	**3.5** mph	-	N/A	
4:52 AM	**32.0** °F	-	**30.9** °F	96%	**29.99** in	**10.0** mi	Calm	Calm	-	N/A	
5:52 AM	**33.1** °F	-	**32.0** °F	96%	**29.99** in	**10.0** mi	Calm	Calm	-	N/A	
6:52 AM	**33.1** °F	**30.0** °F	**32.0** °F	96%	**30.00** in	**10.0** mi	NNW	**3.5** mph	-	N/A	
7:52 AM	**34.0** °F	**31.0** °F	**32.0** °F	92%	**30.01** in	**10.0** mi	ENE	**3.5** mph	-	N/A	
8:18 AM	**34.0** °F	-	**33.1** °F	96%	**30.03** in	**10.0** mi	Calm	Calm	-	N/A	
8:52 AM	**35.1** °F	**32.2** °F	**33.1** °F	92%	**30.02** in	**10.0** mi	North	**3.5** mph	-	N/A	
9:52 AM	**39.9** °F	-	**35.1** °F	83%	**30.00** in	**10.0** mi	Calm	Calm	-	N/A	
10:52 AM	**45.0** °F	**43.5** °F	**37.9** °F	76%	**29.96** in	**10.0** mi	SSE	**3.5** mph	-	N/A	
11:52 AM	**48.0** °F	-	**39.0** °F	71%	**29.90** in	**10.0** mi	NW	**3.5** mph	-	N/A	
12:52 PM	**51.1** °F	-	**39.9** °F	66%	**29.83** in	**10.0** mi	South	**10.4** mph	-	N/A	
1:52 PM	**52.0** °F	-	**39.9** °F	63%	**29.78** in	**10.0** mi	South	**11.5** mph	-	N/A	
2:52 PM	**54.0** °F	-	**39.9** °F	59%	**29.73** in	**10.0** mi	South	**16.1** mph	-	N/A	
3:52 PM	**54.0** °F	-	**39.0** °F	57%	**29.70** in	**10.0** mi	South	**23.0** mph	-	N/A	
4:52 PM	**53.1** °F	-	**37.9** °F	57%	**29.65** in	**10.0** mi	South	**23.0** mph	**29.9** mph	N/A	
5:52 PM	**53.1** °F	-	**35.1** °F	50%	**29.64** in	**10.0** mi	SSE	**26.5** mph	**34.5** mph	N/A	
6:52 PM	**48.0** °F	-	**35.1** °F	61%	**29.65** in	**10.0** mi	SSE	**15.0** mph	-	N/A	
7:52 PM	**51.1** °F	-	**33.1** °F	50%	**29.61** in	**10.0** mi	SSW	**8.1** mph	-	N/A	
8:52 PM	**45.0** °F	**39.3** °F	**35.1** °F	68%	**29.62** in	**10.0** mi	South	**11.5** mph	-	N/A	
9:52 PM	**48.0** °F	-	**39.9** °F	74%	**29.57** in	**10.0** mi	SSW	**10.4** mph	**24.2** mph	**0.00** in	Rain

Time (MST)	Temp.	Windchill	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events
10:52 PM	**46.9** °F	-	**39.9** °F	77%	**29.55** in	**10.0** mi	SW	**9.2** mph	-	**0.00** in	
11:52 PM	**45.0** °F	**38.9** °F	**39.0** °F	80%	**29.53** in	**10.0** mi	SSE	**12.7** mph	-	N/A	

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5:29 PM MST on January 03, 2017 [GMT -0700]

Weather History for KABQ - December, 2016

December

31

2016

View
Saturday, December 31, 2016

Daily | Weekly | Monthly | Custom

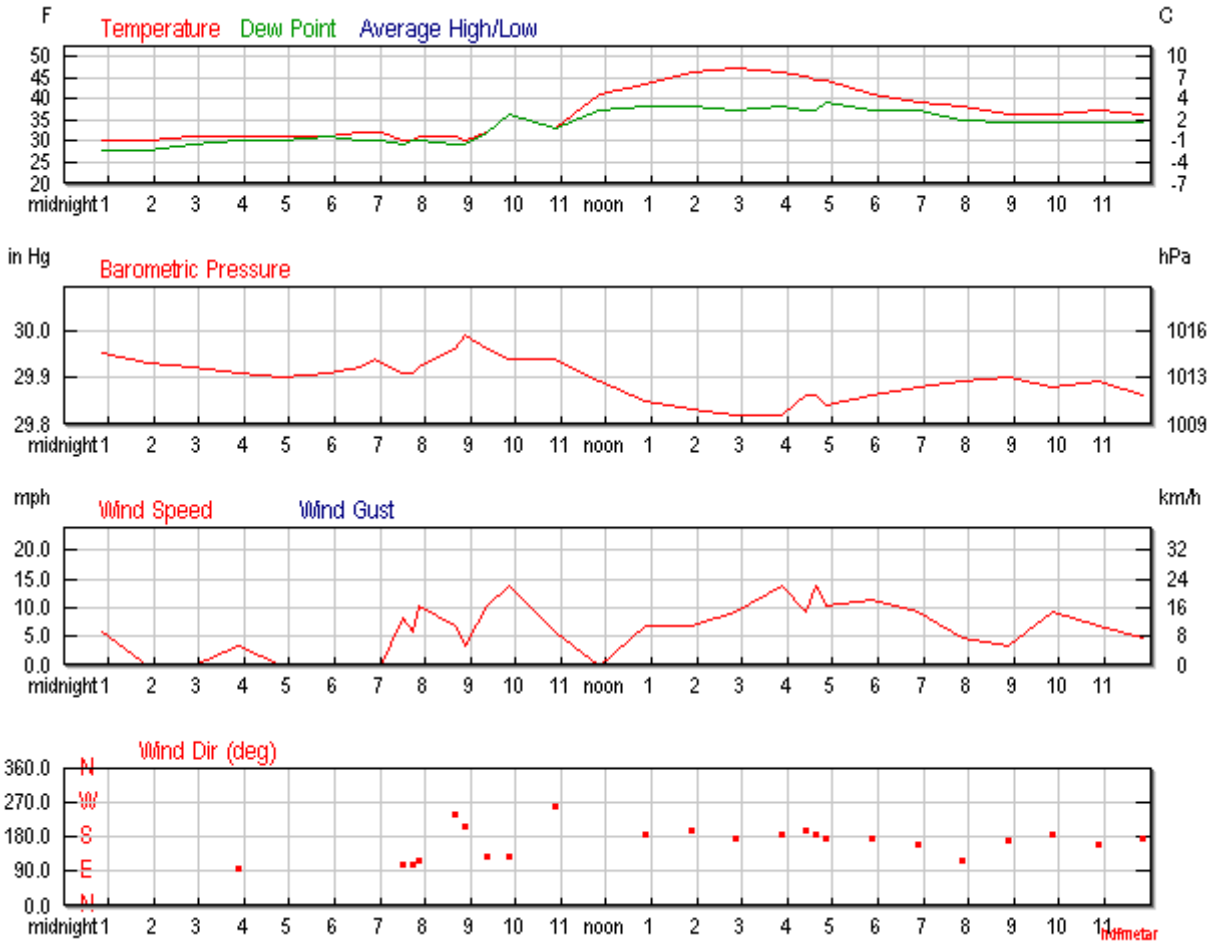
	Actual	Average	Record
Temperature			
Mean Temperature	**39** °F	-	
Max Temperature	**48** °F	-	- []
Min Temperature	**30** °F	-	- []
Degree Days			
Heating Degree Days	26		
Moisture			
Dew Point	**34** °F		
Average Humidity	90		
Maximum Humidity	100		
Minimum Humidity	68		
Precipitation			
Precipitation	**0.03** in	-	- []
Sea Level Pressure			
Sea Level Pressure	**29.90** in		
Wind			

	Actual	Average	Record
Wind Speed	**4** mph []		
Max Wind Speed	**14** mph		
Max Gust Speed	-		
Visibility	**9.4** miles		
Events	Rain , Thunderstorm		

T = Trace of Precipitation, MM = Missing Value

Source: Averaged Metar Reports

Daily Weather History Graph



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Trip Planner

Search our weather history database for the weather conditions in past years. The results will help you decide how hot, cold, wet, or windy it might be!

Date:

December

31

Submit

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Astronomy

Dec. 31, 2016	**Rise**	**Set**
Actual Time	7:14 AM MST	5:05 PM MST
Civil Twilight	6:46 AM MST	5:33 PM MST
Nautical Twilight	6:14 AM MST	6:04 PM MST
Astronomical Twilight	5:43 AM MST	6:35 PM MST
Moon	8:48 AM MST (12/31)	7:39 PM MST (12/31)
Length of Visible Light	10h 46m	
Length of Day	9h 50m	

Waxing Crescent, 6% of the Moon is Illuminated

Dec 31	Jan 5	Jan 12	Jan 19	Jan 27
Waxing Crescent	First Quarter	Full	Last Quarter	New

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Hourly Weather History & Observations

Time (MST)	**Temp.**	**Windchill**	**Dew Point**	**Humidity**	**Pressure**	**Visibility**	**Wind Dir**	**Wind Speed**	**Gust Speed**	**Precip**	**Events**
12:52 AM	**30.9** °F	**25.2** °F	**28.9** °F	92%	**29.95** in	**10.0** mi	ESE	**5.8** mph	-	N/A	
1:52 AM	**30.9** °F	-	**28.9** °F	92%	**29.93** in	**10.0** mi	Calm	Calm	-	N/A	
2:52 AM	**32.0** °F	-	**30.0** °F	92%	**29.92** in	**10.0** mi	Calm	Calm	-	N/A	

Time (MST)	Temp.	Windchill	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events
3:52 AM	**32.0** °F	**28.7** °F	**30.9** °F	96%	**29.91** in	**10.0** mi	East	**3.5** mph	-	N/A	
4:52 AM	**32.0** °F	-	**30.9** °F	96%	**29.90** in	**10.0** mi	Calm	Calm	-	N/A	
5:52 AM	**32.0** °F	-	**32.0** °F	100%	**29.91** in	**10.0** mi	Calm	Calm	-	**0.00** in	
6:35 AM	**33.1** °F	-	**30.9** °F	92%	**29.92** in	**10.0** mi	Calm	Calm	-	N/A	
6:52 AM	**33.1** °F	-	**30.9** °F	92%	**29.94** in	**10.0** mi	Calm	Calm	-	N/A	
7:01 AM	**33.1** °F	-	**30.9** °F	92%	**29.93** in	**10.0** mi	Calm	Calm	-	N/A	
7:30 AM	**30.9** °F	**23.5** °F	**30.0** °F	96%	**29.91** in	**10.0** mi	ESE	**8.1** mph	-	N/A	
7:43 AM	**30.9** °F	**25.2** °F	**30.9** °F	100%	**29.91** in	**10.0** mi	ESE	**5.8** mph	-	N/A	
7:52 AM	**32.0** °F	**23.6** °F	**30.9** °F	96%	**29.92** in	**10.0** mi	ESE	**10.4** mph	-	N/A	
8:40 AM	**32.0** °F	**25.6** °F	**30.0** °F	92%	**29.96** in	**6.0** mi	WSW	**6.9** mph	-	**0.00** in	Rain
8:52 AM	**30.9** °F	**27.5** °F	**30.0** °F	96%	**29.99** in	**5.0** mi	SSW	**3.5** mph	-	**0.01** in	Rain
9:23 AM	**33.1** °F	**24.9** °F	**33.1** °F	100%	**29.96** in	**6.0** mi	SE	**10.4** mph	-	**0.02** in	Rain
9:52 AM	**37.0** °F	**28.5** °F	**37.0** °F	100%	**29.94** in	**9.0** mi	SE	**13.8** mph	-	**0.02** in	
10:52 AM	**34.0** °F	**28.8** °F	**34.0** °F	100%	**29.94** in	**6.0** mi	West	**5.8** mph	-	N/A	
11:52 AM	**42.1** °F	-	**37.9** °F	85%	**29.89** in	**10.0** mi	Calm	Calm	-	N/A	
12:52 PM	**44.1** °F	**40.1** °F	**39.0** °F	82%	**29.85** in	**10.0** mi	South	**6.9** mph	-	N/A	
1:52 PM	**46.9** °F	-	**39.0** °F	74%	**29.83** in	**10.0** mi	SSW	**6.9** mph	-	N/A	
2:52 PM	**48.0** °F	-	**37.9** °F	68%	**29.82** in	**10.0** mi	South	**9.2** mph	-	N/A	
3:52 PM	**46.9** °F	-	**39.0** °F	74%	**29.82** in	**10.0** mi	South	**13.8** mph	-	N/A	
4:24 PM	**46.0** °F	**41.4** °F	**37.9** °F	73%	**29.86** in	**10.0** mi	SSW	**9.2** mph	-	N/A	Thunderst

Time (MST)	Temp.	Windchill	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events
4:37 PM	**45.0** °F	**38.5** °F	**37.9** °F	76%	**29.86** in	**10.0** mi	South	**13.8** mph	-	N/A	
4:52 PM	**45.0** °F	**39.7** °F	**39.9** °F	82%	**29.84** in	**10.0** mi	South	**10.4** mph	-	N/A	
5:52 PM	**42.1** °F	**35.7** °F	**37.9** °F	85%	**29.86** in	**10.0** mi	South	**11.5** mph	-	N/A	
6:52 PM	**39.9** °F	**33.9** °F	**37.9** °F	93%	**29.88** in	**10.0** mi	SSE	**9.2** mph	-	N/A	
7:52 PM	**39.0** °F	**35.7** °F	**36.0** °F	89%	**29.89** in	**10.0** mi	ESE	**4.6** mph	-	N/A	
8:52 PM	**37.0** °F	**34.5** °F	**35.1** °F	93%	**29.90** in	**10.0** mi	South	**3.5** mph	-	N/A	
9:52 PM	**37.0** °F	**30.4** °F	**35.1** °F	93%	**29.88** in	**10.0** mi	South	**9.2** mph	-	N/A	
10:52 PM	**37.9** °F	**32.7** °F	**35.1** °F	89%	**29.89** in	**10.0** mi	SSE	**6.9** mph	-	N/A	
11:52 PM	**37.0** °F	**33.3** °F	**35.1** °F	93%	**29.86** in	**10.0** mi	South	**4.6** mph	-	N/A	

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Weston Solutions, Inc.
3840 Commons Ave. NE
Albuquerque, NM 87109
505-837-6520 Fax 505-837-6550
www.westonsolutions.com

April 7, 2017

Ms. Kathy Verhage, P.E.
Department of Municipal Development - Storm Drainage Design
City of Albuquerque
P.O. Box 1293
Albuquerque, NM 87103

Reference: PROJECT NO. 8010 CITYWIDE ON-CALL NPDES AND MS4 ENGINEERING SUPPORT SERVICES 4th QUARTER 2016 UPDATE FOR TASK 3 VISUAL STORM WATER INSPECTIONS

Dear Ms. Verhage:

This Memo describes the results of the 2017 Quarter 1 Visual Storm Water Inspections for 17 City of Albuquerque (City) facilities. This evaluation and memo has been prepared to address the requirements of the U.S. Environmental Protection Agency's (EPA) Municipal Separate Storm Sewer System (MS4) Permit issued to the City in 2014 and the Multi Sector General Permit for Storm Water Discharges Associated with Industrial Activity (MSGP) at City-owned facilities. Its purpose is to document the City's compliance with the requirements relative to quarterly storm water monitoring.

To comply with the MS4 and MSGP's requirements for storm water monitoring, Weston Solutions and CDM Smith were tasked with performing quarterly visual storm monitoring at 17 City-owned facilities which meet the definition of an industrial facility in the MSGP based on audits of city owned facilities performed between 2012 and 2017. The following facilities were monitored for visual inspection, locations of these facilities are also shown in Figure 1.

- Arroyo Del Oso Golf Course
- Arroyo Maintenance Facility
- Balloon Fiesta Park/ Golf Training Center
- Albuquerque BioPark Facilities
- Daytona Transit Center
- Fire Department Mechanical Shop
- Fleet- 4th Street Fuel Station
- Fleet- Lomas Fuel Station
- Ladera Golf Course
- Los Altos Golf Course
- Montessa Park Open Space
- Pino Yards
- Puerto del Sol Golf Course
- Street Satellite #1
- Street Satellite #2
- Street Satellite #3
- Yale Transit Center

Table 1 shows the Outfall identification names along with the inspection team responsible for monitoring the particular outfall.

Figure 1: Facility Site Locations

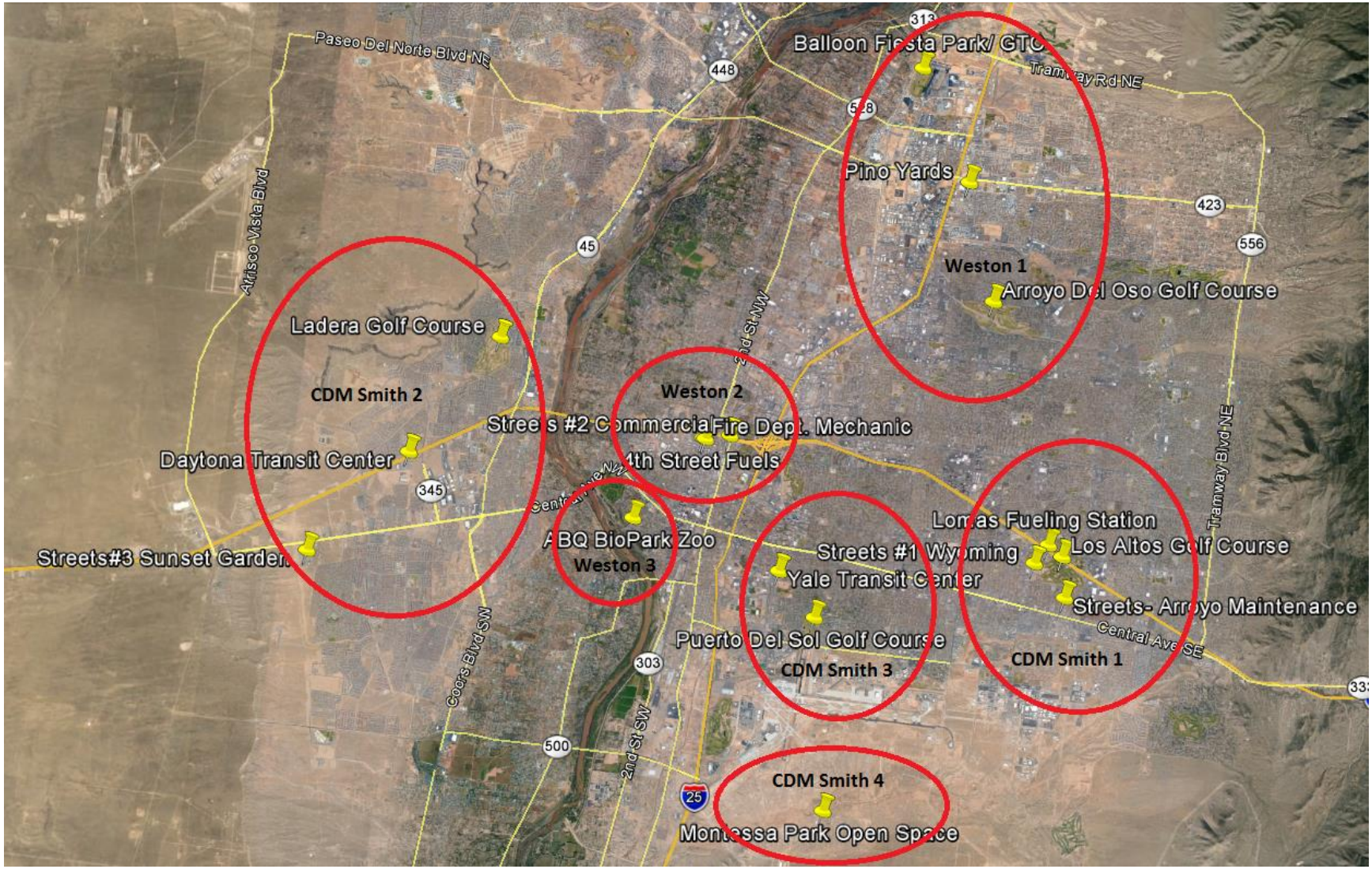


Table 1: Outfall ID and Designees

Site	Outfall ID
Weston 1	
Balloon Fiesta Park/ Golf Training Center	BFP1
	BFP2
	BFP3
	BFP4
	BFP5
Pino Yards	PY1
	PY2
	PY3
Arroyo Del Oso Golf Course	ADO1
	ADO2
Weston 2	
Fleet- 4th Street Fuels	FS1
Fire Department Mechanic Shop	FM1
	FM2
Street Satellite #2	SS2
CDM Smith 1	
Los Altos Golf Course	LA1
	LA2
Fleet- Lomas Fuel Station	L1
Arroyo Maintenance Facility	AM1
Street Satellite #1	SS1A
	SS1B
CDM Smith 2	
Daytona Transit Center	D1
	D2
Ladera Golf Course	LGC1
	LGC2
Street Satellite #3	SS3
CDM Smith 3	
Puerto Del Sol Golf Course	PDS1
	PDS2
Yale Transit Facility	Y1
CDM Smith 4	
Montessa Park Open Space	MP1
	MP2
Weston 3	
ABQ BioPark Facilities	BP1

Background

The MSGP establishes requirements for monitoring the quality of storm water discharges depending on the activities at the different types of industrial facility. Although benchmark monitoring is not required, the MSGP does require quarterly visual assessment of storm water quality. Visual assessment consists of the collection of grab samples from each outfall (subject to demonstration of substantially identical outfalls) and examination for the presence of color, odor, clarity, floating solids, settled solids, suspended solids, foam, oil sheen, or other indicators of storm water pollution.

Certain criteria regarding the precipitation event must be met for an assessment event. Visual assessment of storm water must occur:

- During daylight hours
- Within 30 minutes of start of storm water discharge (or as soon as practicable thereafter)
- At least 72 hours after the previous storm water discharge event

Weston follows the City's existing storm water monitoring protocol outlining the locations and descriptions of all outfalls to be monitored. The protocol identifies contact persons at each facility for use in notifying City personnel when members of the storm water monitoring team are mobilizing to that location. A standard visual assessment form is used by all staff to document the monitoring activities.

Quarter 1 Monitoring Results

The 1st Quarter sampling period ran from January 1 to March 31, 2017.

- Weston Sites Group 1 mobilized 3 times during the quarter to collect samples from storm events. A visual sample was collected from all outfalls over the course of the 3 mobilizations. No repeat samples were collected.
- Weston Sites Group 2 mobilized 2 times and collected a sample from all outfalls over the course of the 2 mobilizations. Three repeat samples were also collected.
- Weston Sites Group 3 mobilized 2 times and collected no samples from the one outfall over the course of the 2 mobilizations. No repeat samples were collected.
- CDM Smith Sites Group 1 mobilized 1 time during the quarter to collect samples from storm events. 3 visual samples were collected from 6 outfalls during the 1 mobilization. No repeat samples were collected.
- CDM Smith Sites Group 2 mobilized 1 time during the quarter to collect samples from storm events. 3 visual samples were collected from 5 outfalls during the 1 mobilization. No repeat samples were collected.
- CDM Smith Sites Group 3 mobilized 1 time during the quarter to collect samples from storm events. 1 visual sample was collected from 3 outfalls during the 1 mobilization. No repeat samples were collected.

- CDM Smith Sites Group 4 mobilized 1 time during the quarter to collect samples from storm events. 1 visual sample was collected from 2 outfalls during the 1 mobilization. No repeat samples were collected.

The monitoring reports and photo logs from Weston Sites Groups 1through3 and CDM Sites Groups 1 through 4 can be found in the Appendix. Any outfalls not monitored in Quarter 1 will be made up during Quarter 2 of 2017 pending suitable weather conditions.

Observed Problems

In general very few pollution problems were observed at any of the outfalls with few exceptions. Many of the grab samples exhibited presence of sediment, but no pollutants required follow up inspections or actions to occur. There were limited to no issues with oils, floatables, salts, chemicals, or other pollutant sources.

Results from the Quarter 1 Visual Inspections can be found in the Appendix. All facilities were observed during the 1st Quarter. Both visual observations and grab samples were noted at most facilities during the 1st Quarter. Any facilities or outfalls that did not produce a sample in Quarter 1 2017 will be made up in the coming months.

We appreciate the opportunity to provide professional consulting services to you and we look forward to assisting you in the next quarter. Please contact Sarah Luckie at (505) 837-6540 (Sarah.Luckie@WestonSolutions.com) or Brad Sumrall at (505) 837-6566 (Brad.Sumrall@WestonSolutions.com) if you have any questions or need additional information.

Sincerely,
WESTON SOLUTIONS, INC.



L. Brad Sumrall, PE
Albuquerque Operations Manager

APPENDIX: Q1 INSPECTION FORMS AND PHOTO LOGS

APPENDIX: Q1 INSPECTION FORMS & PHOTO LOGS- VISUAL INSPECTIONS

STREETS SATELLITE #1

City of Albuquerque
Street Maintenance Satellite #1

Quarterly Visual Monitoring of
Storm Water Outfall Discharges
☑Q1 ☐Q2 ☐Q3 ☐Q4

Date: ~~10:26~~ 3/28/17
Time: 10:26AM
Inspector: Reed, Amy

Weather: POST-RAIN | cloudy
Storm Precip: <0.1 in
Last 72 hour Precip: NONE
Photo: 4 of 5

Outfall ID:	**SS1A**		**SS1B**	
Flow Observed:	☐Yes	☑No	☐Yes	☑No
Description of Monitoring Site:	~~Straw wattle~~ ~~straw~~ STRAW & WADDLE AROUND STORM DRAIN		STRAW WATTLE AROUND STORM DRAIN	
Flow Estimate (include units and method of estimation):	∅		∅	
Other Observations:	Not high enough flow to pass through wattle. WATER ACCUMULATED ON barrier lining drain		Not high enough flow to pass through wattle to drain. WATER IN STORM DRAIN FROM RAIN	
Color (describe):				
Turbidity:	☐Clear ☐Slightly Cloudy ☐Very Cloudy ☐Opaque		☐Clear ☐Slightly Cloudy ☐Very Cloudy ☐Opaque	
Floating Solids:	☐Yes	☐No	☐Yes	☐No
Suspended Solids:	☐Yes	☐No	☐Yes	☐No
Settled Solids:	☐Yes	☐No	☐Yes	☐No
Sheen Present:	☐Yes	☐No	☐Yes	☐No
Odor:	☐Yes	☐No	☐Yes	☐No
Foam Present:	☐Yes	☐No	☐Yes	☐No
Describe:	No grab sample collected		No grab sample collected	

Additional Comments: STORMWATER puddles on site show no issues or signs of contamination. And water near or around drains shows no contamination either.

CDM Smith

DATE: 3/28/2017

EVENT: MS4 Visual Storm Water Monitoring Assessment

INSPECTORS(S): Amy Reed (CDM Smith)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

STREET MAINTENANCE SATELLITE 1

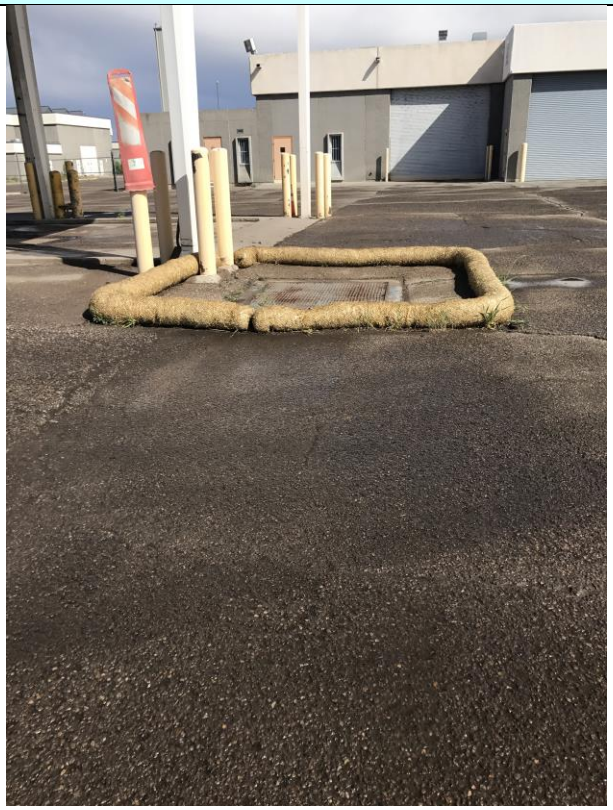


Photo 1: Water trail leading to outfall SS1B



Photo 2: Water pooled around wattle of outfall SS1B.

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STREETS SATELLITE #2

City of Albuquerque
Street Maintenance Satellite #2

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☑ Q1 ☐ Q2 ☐ Q3 ☐ Q4

Date:	1/6/17	Weather:	Sunny 31°
Time:	1420	Storm Precip:	0.07 inches of snow
Inspector:	Tommy Evans	Last 72 Hour Precip:	—
Signature:	Tommy Evans	Photo:	Yes

Outfall ID:	SS2
Flow Observed:	☑ Yes ☐ No
Description of Monitoring Site:	Water is coming from driveway into the property
Flow Estimate (include units and method of estimation) :	< 1 cfs
Other Observations:	
Color (Describe):	
Turbidity:	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque
Floating Solids:	☐ Yes ☐ No
Suspended Solids:	☐ Yes ☐ No
Settled Solids:	☐ Yes ☐ No
Sheen Present:	☐ Yes ☐ No
Odor:	☐ Yes ☐ No
Foam Present:	☐ Yes ☐ No
Describe:	

Additional Comments: Not enough flow to collect a sample. The flow is only going to the drain and not where the jar could be placed to collect water.

WESTON SOLUTIONS

City of Albuquerque
Street Maintenance Satellite #2

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☒ Q1 ☐ Q2 ☐ Q3 ☐ Q4

Date: 3/28/2017
Time: 8:45 AM
Inspector: Sarah Luckie (Weston)
Signature: Sarah Luckie

Weather: Rain
Storm Precip: 0.2 in
Last 72 Hour Precip: —
Photo: yes

Outfall ID:	SS2
Flow Observed:	☒ Yes ☐ No
Description of Monitoring Site:	running down curb.
Flow Estimate (include units and method of estimation) :	< 1 cfs
Other Observations:	—
Color (Describe):	yellow / brown
Turbidity:	☐ Clear ☒ Slightly Cloudy ☐ Very Cloudy ☐ Opaque
Floating Solids:	☐ Yes ☒ No
Suspended Solids:	☒ Yes ☐ No
Settled Solids:	☐ Yes ☒ No
Sheen Present:	☐ Yes ☒ No
Odor:	☐ Yes ☒ No
Foam Present:	☐ Yes ☒ No
Describe:	generally clean

Additional Comments:

Date: March 28, 2017

Event: MS4 Visual storm Water Monitoring

Inspector: Sarah Luckie (Weston)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

Street Maintenance #2	
	
	

STREETS SATELLITE #3

City of Albuquerque

Street Maintenance Satellite #3

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☐Q1 ☐Q2 ☐Q3 ☐Q4

Date: 3/28/17 **Weather:** lt rain

Time: ~~Arrived~~ 2:30 **Storm Precip:** ~0.5 inch

Inspector: S. Larson **Last 72 hour Precip:** 0

Photo: yes

Outfall ID:	SS3
Flow Observed:	☒Yes ☐No
Description of Monitoring Site:	Rock spillway to stormwater detention pond
Flow Estimate (include units and method of estimation):	low (usual)
Other Observations:	
Color (describe):	dark brown
Turbidity:	☐Clear ☐Slightly Cloudy ☐Very Cloudy ☒Opaque
Floating Solids:	☐Yes ☒No
Suspended Solids:	☒Yes ☐No
Settled Solids:	☒Yes ☐No
Sheen Present:	☒Yes ☐No
Odor:	☐Yes ☒No
Foam Present:	☐Yes ☒No
Describe:	

Additional Comments: Sheen observed in sample, likely from parked vehicles/equipment ~~Entrail~~

CDM Smith

DATE: 3/28/2017

EVENT: MS4 Visual Storm Water Monitoring Assessment

INSPECTORS(S): Greg Larson (CDM Smith)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

STREETS 3



Photo 1: SS3 Sample Location.



Photo 2: SS3 Grab Sample.

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STREETS SATELLITE ARROYO MAINTENANCE

City of Albuquerque

Storm Drainage Maintenance Arroyo Maintenance Section

Quarterly Visual Monitoring of
Storm Water Outfall Discharges
☑Q1 ☐Q2 ☐Q3 ☐Q4

Date: MAR. 28, 2017 **Weather:** post-rain

Time: 10:12 AM **Storm Precip:** < 0.1 in

Inspector: Reed, Amy **Last 72 hour Precip:** None

Photo: 4

Outfall ID:	**AM1**
Flow Observed:	☑Yes ☐No
Description of Monitoring Site:	ponding upstream of outfall. No spills observed onsite from CAE. GATE is locked.
Flow Estimate (include units and method of estimation):	< 1 cfs
Other Observations:	water observed in drainage channel running across site
Color (describe):	
Turbidity:	☐Clear ☑Slightly Cloudy ☐Very Cloudy ☐Opaque
Floating Solids:	☐Yes ☑No
Suspended Solids:	☑Yes ☐No
Settled Solids:	☐Yes ☑No
Sheen Present:	☐Yes ☑No
Odor:	☑Yes ☐No
Foam Present:	☐Yes ☑No
Describe:	Light brown. musty smell.

Additional Comments: observe no apparent stormwater quality issues.

DATE: 3/28/2017

EVENT: MS4 Visual Storm Water Monitoring Assessment

INSPECTORS(S): Amy Reed (CDM Smith)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

STORM DRAINAGE MAINTENANCE ARROYO



Photo 1: Grab Sample of water flowing from AM1 to curb side.



Photo 2: Leaves and some litter observed in AM1 outfall.

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PINO YARDS

City of Albuquerque
Pino Yards Complex

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☒ Q1 ☐ Q2 ☐ Q3 ☐ Q4

Date: 1/6/2017
Time: 1:55 PM
Inspector: Sarah Luckie (Weston)
Signature: Sarah Luckie

Weather: AM Snow
Storm Precip: 0.07 in snow
Last 72 Hour Precip: —
Photo: yes

Outfall ID:	PY1	PY2	PY3
Flow Observed:	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
Description of Monitoring Site:			
Flow Estimate (include units and method of estimation) :			
Other Observations:			
Color (Describe):			
Turbidity:	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque
Floating Solids:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Suspended Solids:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Settled Solids:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Sheen Present:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Odor:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Foam Present:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Describe:			

Additional Comments: Snow observed on grass surfaces. No discharge was observed flowing on site.

WESTON SOLUTIONS

City of Albuquerque
Pino Yards Complex

Quarterly Visual Monitoring of
Storm Water Outfall Discharges
☒ Q1 ☐ Q2 ☐ Q3 ☐ Q4

Date: 2/13/2017
Time: 1:20 PM
Inspector: Sarah Luckie
Signature: Sarah Luckie

Weather: Snow melt
Storm Precip: ≈ 1 in
Last 72 Hour Precip: —
Photo: yes

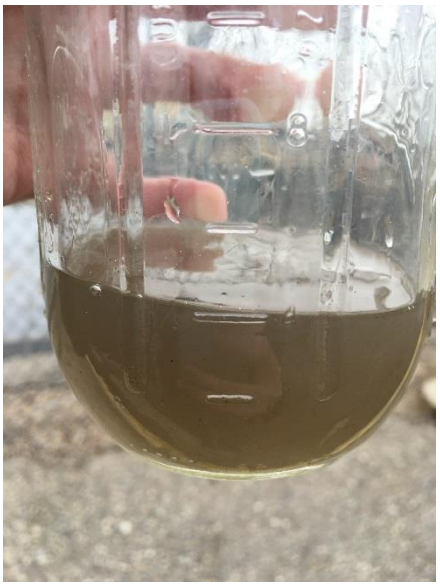
Outfall ID:	PY1	PY2	PY3
Flow Observed:	☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No
Description of Monitoring Site:	Wet in areas, grates mostly clean		runoff down both curbs.
Flow Estimate (include units and method of estimation) :	< 1 cfs	< 1 cfs	< 1 cfs
Other Observations:	—	—	dark
Color (Describe):	clear/yellow	clear / yellow	Brown
Turbidity:	☒ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☐ Clear ☒ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☐ Clear ☐ Slightly Cloudy ☒ Very Cloudy ☐ Opaque
Floating Solids:	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
Suspended Solids:	☐ Yes ☒ No	☐ Yes ☒ No	☒ Yes ☐ No
Settled Solids:	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
Sheen Present:	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
Odor:	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
Foam Present:	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
Describe:	mostly clear, clean sample	generally clear, slightly opaque, clean sample	Dark, sediment but overall clean

Additional Comments: —

Date:	February 13, 2017
Event:	MS4 Visual Monitoring Assessment
Inspector:	Sarah Luckie (Weston)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

Pino Yards



PY3 Sample





PY2 Sample



PY1 Sample

TRANSIT- YALE

City of Albuquerque

Yale Maintenance Facility

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☑Q1 ☐Q2 ☐Q3 ☐Q4

Date: 3/28/17 **Weather:** light rain

Time: 9:15 **Storm Precip:** 0.05 inch

Inspector: G. Larson **Last 72 hour Precip:** 0

Photo: Yes

Outfall ID:	**Y1**	
Flow Observed:	☑Yes	☐No
Description of Monitoring Site:	inlets to stormceptor	
Flow Estimate (include units and method of estimation):	low	
Other Observations:		
Color (describe):	clear/pale	
Turbidity:	☑Clear ☐Slightly Cloudy ☐Very Cloudy ☐Opaque	
Floating Solids:	☐Yes	☑No
Suspended Solids:	☐Yes	☑No
Settled Solids:	☐Yes	☑No
Sheen Present:	☐Yes	☑No
Odor:	☐Yes	☑No
Foam Present:	☐Yes	☑No
Describe:		

Additional Comments: observed flow into two inlets upstream of the stormceptor stormwater quality structure. No apparent pollutants entering the inlets

CDM Smith

DATE: 3/28/2017

EVENT: MS4 Visual Storm Water Monitoring Assessment

INSPECTORS(S): Greg Larson (CDM Smith)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

YALE MAINTENANCE FACILITY

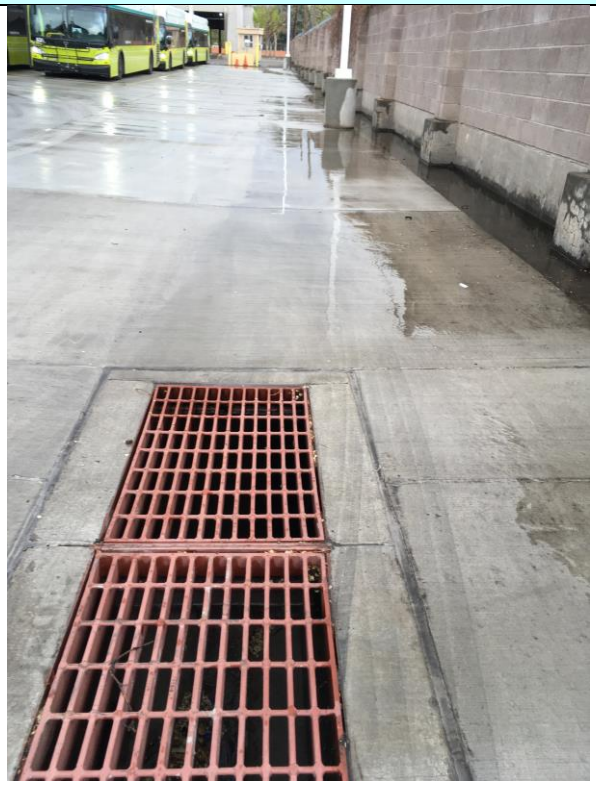


Photo 1: Inlet near bus fueling.



Photo 2: Inlet near bus fueling.

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TRANSIT- DAYTONA

City of Albuquerque

West Side Maintenance Facility (Daytona)

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☐Q1 ☐Q2 ☐Q3 ☐Q4

Date: 3/28/17 **Weather:** heavy rain

Time: ~~2:30~~ 2:15 **Storm Precip:** ~0.5 inch

Inspector: G. Larsen **Last 72 hour Precip:** 0

Photo: yes

Outfall ID:	**D1**	**D2**
Flow Observed:	☒Yes ☐No	☒Yes ☐No
Description of Monitoring Site:	manhole	manhole
Flow Estimate (include units and method of estimation):	high (visual)	high (visual)
Other Observations:	/	/
Color (describe):	pale yellow	pale brown
Turbidity:	☐Clear ☒Slightly Cloudy ☐Very Cloudy ☐Opaque	☐Clear ☐Slightly Cloudy ☒Very Cloudy ☐Opaque
Floating Solids:	☐Yes ☒No	☐Yes ☒No
Suspended Solids:	☐Yes ☒No	☐Yes ☐No
Settled Solids:	☐Yes ☒No	☒Yes ☐No (minimal)
Sheen Present:	☐Yes ☒No	☒Yes ☐No (minimal)
Odor:	☐Yes ☒No	☐Yes ☒No
Foam Present:	☐Yes ☒No	☐Yes ☒No
Describe:		slight sheen observed

Additional Comments: slight sheen observed in D2

CDM Smith

DATE: 03/28/2017

EVENT: MS4 Visual Storm Water Monitoring Assessment

INSPECTORS(S): Greg Larson (CDM Smith)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

DATONA



D1 Grab Sample



D2 Sample Location

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BALLOON FIESTA PARK/ GOLF TRAINING CENTER

City of Albuquerque

Balloon Fiesta Park and Golf Training Center

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☒ Q1 ☐ Q2 ☐ Q3 ☐ Q4

Date: 1/6/2017
Time: 1:15 PM
Inspector: Sarah Luckie (Weston)
Signature: Sarah Luckie

Weather: AM Snow
Storm Precip: 0.07 in snow
Last 72 Hour Precip: —
Photo: yes

Outfall ID:	BFP1	BFP2	BFP3
Flow Observed:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Description of Monitoring Site:			
Flow Estimate (include units and method of estimation) :			
Other Observations:			
Color (Describe):			
Turbidity:	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque
Floating Solids:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Suspended Solids:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Settled Solids:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Sheen Present:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Odor:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Foam Present:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Describe:			

Additional Comments: Attempted to access North Gate with key card. Card did not give access. Attempted to access from South enterance. Enterance was barricaded. Stoped by Parks dept. at GTC, doors locked. Will reach out to Susan Rice.

City of Albuquerque

Balloon Fiesta Park and Golf Training Center

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☒ Q1 ☐ Q2 ☐ Q3 ☐ Q4

Date: 1/6/2017
Time: 1:15 PM
Inspector: Sarah Luckie (Weston)
Signature: Sarah Luckie

Weather: AM snow
Storm Precip: 0.07 in snow
Last 72 Hour Precip: —
Photo: yes

Outfall ID:	BFP4	BFP5
Flow Observed:	☐ Yes ☐ No	☐ Yes ☐ No
Description of Monitoring Site:		
Flow Estimate (include units and method of estimation) :		
Other Observations:		
Color (Describe):		
Turbidity:	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque
Floating Solids:	☐ Yes ☐ No	☐ Yes ☐ No
Suspended Solids:	☐ Yes ☐ No	☐ Yes ☐ No
Settled Solids:	☐ Yes ☐ No	☐ Yes ☐ No
Sheen Present:	☐ Yes ☐ No	☐ Yes ☐ No
Odor:	☐ Yes ☐ No	☐ Yes ☐ No
Foam Present:	☐ Yes ☐ No	☐ Yes ☐ No
Describe:		

Additional Comments: Same as privious page.

City of Albuquerque

Balloon Fiesta Park and Golf Training Center

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☒ Q1 ☐ Q2 ☐ Q3 ☐ Q4

Date: 3/28/17
Time: 9:15 AM
Inspector: Sarah Luchie (Weston)
Signature: Sarah Luchie

Weather: Rain
Storm Precip: 0.2 in
Last 72 Hour Precip: —
Photo: yes

Outfall ID:	BFP1	BFP2	BFP3
Flow Observed:	☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No
Description of Monitoring Site:	Running into grates	—	Some ponding and discharge
Flow Estimate (include units and method of estimation) :	< 1 cfs	< 1 cfs	< 1 cfs
Other Observations:	discharge running down street into grates.	—	ponding
Color (Describe):	Clear	clear / gray	gray
Turbidity:	☒ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☐ Clear ☒ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☐ Clear ☒ Slightly Cloudy ☐ Very Cloudy ☐ Opaque
Floating Solids:	☐ Yes ☒ No	☒ Yes ☐ No	☐ Yes ☒ No
Suspended Solids:	☐ Yes ☒ No	☒ Yes ☐ No	☒ Yes ☐ No
Settled Solids:	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
Sheen Present:	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
Odor:	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
Foam Present:	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
Describe:	clean sample	generally clean sampe	generally clean

Additional Comments:

City of Albuquerque

Balloon Fiesta Park and Golf Training Center

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☒ Q1 ☐ Q2 ☐ Q3 ☐ Q4

Date: 3/28/2017
Time: 9:15 AM
Inspector: Sarah Luckie (Weston)
Signature: Sarah Luckie

Weather: Rain
Storm Precip: 0.2
Last 72 Hour Precip: —
Photo: yes

Outfall ID:	BFP4	BFP5
Flow Observed:	☒ Yes ☐ No	☒ Yes ☐ No
Description of Monitoring Site:	—	Large amount of ponding
Flow Estimate (include units and method of estimation) :	< 1 cfs	< 1 cfs
Other Observations:	—	ponding near lamp post
Color (Describe):	White	gray
Turbidity:	☐ Clear ☒ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☐ Clear ☒ Slightly Cloudy ☐ Very Cloudy ☐ Opaque
Floating Solids:	☐ Yes ☒ No	☐ Yes ☒ No
Suspended Solids:	☒ Yes ☐ No	☒ Yes ☐ No
Settled Solids:	☐ Yes ☒ No	☐ Yes ☒ No
Sheen Present:	☐ Yes ☒ No	☐ Yes ☒ No
Odor:	☐ Yes ☒ No	☐ Yes ☒ No
Foam Present:	☐ Yes ☒ No	☐ Yes ☒ No
Describe:	Clean, but Cloudy	Clean, but ponding occuring

Additional Comments: _____

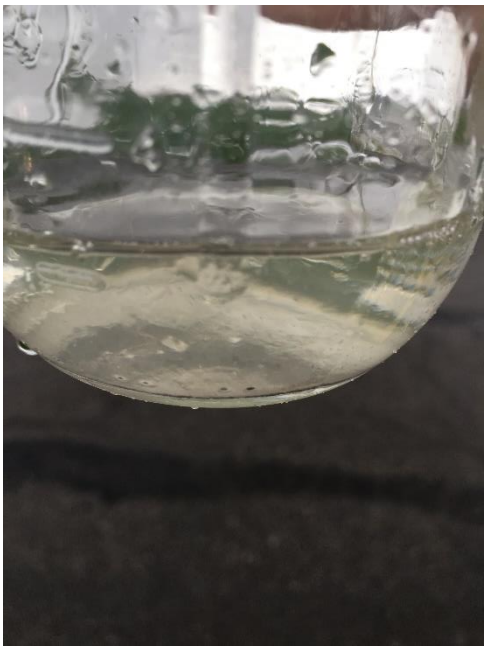
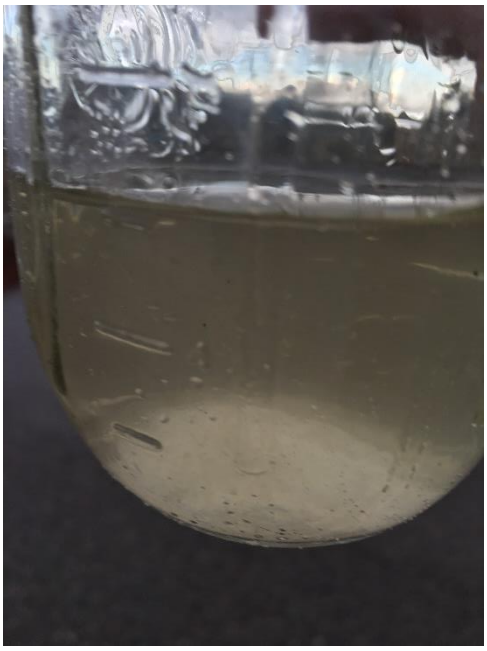
WESTON SOLUTIONS

Date: March 28, 2017

Event: MS4 Stormwater Visual Monitoring

Inspector: Sarah Luckie (Weston)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

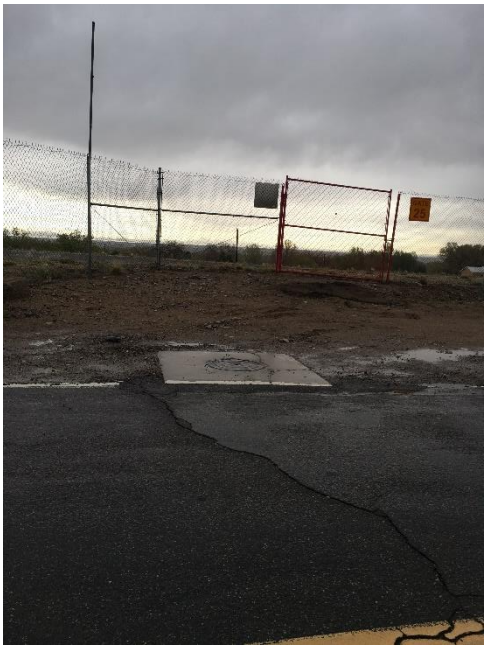
Balloon Fiesta Park	
 BFP1 Discharge	 BFP4 Discharge
 BFP5 Discharge	 BFP2 Discharge



BFP3 Discharge







MONTESSA PARK

City of Albuquerque

Montessa Park Open Space

Quarterly Visual Monitoring of
Storm Water Outfall Discharges
☒Q1 ☐Q2 ☐Q3 ☐Q4

Date: 3/28/17 **Weather:** SUNNY

Time: 10 50 **Storm Precip:**

Inspector: CONNOR KOLLER **Last 72 hour Precip:**

Photo: YES

Outfall ID:	**MP1**	**MP2**
Flow Observed:	☒Yes ☐No	☐Yes ☒No
Description of Monitoring Site:	OUTFLOW FROM PIPE ~~CUT~~ COMING OUT OF GROUND	OUTFALL APPEARS DESTROYED (SEE PICTURE)
Flow Estimate (include units and method of estimation):	VERY LOW - ONLY DRIPPING	
Other Observations:		
Color (describe):	CLEAR - LIGHT TAN	
Turbidity:	☐Clear ☒Slightly Cloudy ☐Very Cloudy ☐Opaque	☐Clear ☐Slightly Cloudy ☐Very Cloudy ☐Opaque
Floating Solids:	☐Yes ☒No	☐Yes ☐No
Suspended Solids:	☐Yes ☒No	☐Yes ☐No
Settled Solids:	☐Yes ☒No	☐Yes ☐No
Sheen Present:	☐Yes ☒No	☐Yes ☐No
Odor:	☐Yes ☒No	☐Yes ☐No
Foam Present:	☐Yes ☒No	☐Yes ☐No
Describe:		

Additional Comments: MP1 - TOOK SAMPLE FROM POOL BELOW PIPE DUE TO SUCH LOW FLOW FROM PIPE.

CDM Smith

DATE: 03/28/2017

EVENT: MS4 Visual Storm Water Monitoring Assessment

INSPECTORS(S): Connor Kelley (CDM Smith)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

MONTESSA PARK OPEN SPACE



Destroyed Outfall MP2



Took sample from pooled water at outfall MP1

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LOS ALTOS GOLF COURSE

City of Albuquerque

Los Altos Golf Course

Quarterly Visual Monitoring of
Storm Water Outfall Discharges
☑Q1 ☐Q2 ☐Q3 ☐Q4

Date: 28 AR 3/30/17 **Weather:** RAIN

Time: 9:25 AM **Storm Precip:** < 0.1 in

Inspector: Reed, A **Last 72 hour Precip:** NONE AR

Photo: 2 LA2, 1 LA1 AR

Outfall ID:	**LA1**		**LA2**	
Flow Observed:	☐Yes	☑No	☑Yes	☐No
Description of Monitoring Site:	on golf course		Low runoff from ~~machine~~ storage building; Lots of puddles	
Flow Estimate (include units and method of estimation):	0		Low	
Other Observations:	Not enough rain to produce run-off on vegetated area			
Color (describe):			Light brown/gray	
Turbidity:	☐Clear ☐Slightly Cloudy ☐Very Cloudy ☐Opaque		☐Clear ☐Slightly Cloudy ☑Very Cloudy ☐Opaque	
Floating Solids:	☐Yes	☐No	☑Yes	☐No
Suspended Solids:	☐Yes	☐No	☑Yes	☐No
Settled Solids:	☐Yes	☐No	☑Yes	☐No
Sheen Present:	☐Yes	☐No	☐Yes	☑No
Odor:	☐Yes	☐No	☑Yes	☐No
Foam Present:	☐Yes	☐No	☐Yes	☑No
Describe:	No flow		Discolored from dirt not oil	

Additional Comments: OBSERVATION: NO STORMWATER RUNOFF CONTAMINATION OBSERVED in water sample from LA2 or in puddles created from run off leaving Los Altos site.

CDM Smith

DATE: 3/28/2017

EVENT: MS4 Visual Storm Water Monitoring Assessment

INSPECTORS(S): Amy Reed (CDM Smith)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

LOS ALTOS GOLF COURSE



Photo 1: Water pooling on site coming from golf course storage shop.



Photo 2: Grab sample from runoff at LA2

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PUERTO DEL SOL GOLF COURSE

City of Albuquerque

Puerto del Sol Golf Course

Quarterly Visual Monitoring of
Storm Water Outfall Discharges
☒Q1 ☐Q2 ☐Q3 ☐Q4

Date: 3/28/17 **Weather:** It rain

Time: 9:25 **Storm Precip:** <0.5 inch

Inspector: G. Larson **Last 72 hour Precip:** 0

Photo: Yes

Outfall ID:	**PDS1**	**PDS2**
Flow Observed:	☐Yes ☒No	☐Yes ☒No
Description of Monitoring Site:	inlet	inlet
Flow Estimate (include units and method of estimation):	0	0
Other Observations:	Small amount of water and lots of leaves	leaves/grass clippings/sediment
Color (describe):	/	/
Turbidity:	☐Clear ☐Slightly Cloudy ☐Very Cloudy ☐Opaque	☐Clear ☐Slightly Cloudy ☐Very Cloudy ☐Opaque
Floating Solids:	☐Yes ☐No	☐Yes ☐No
Suspended Solids:	☐Yes ☐No	☐Yes ☐No
Settled Solids:	☐Yes ☐No	☐Yes ☐No
Sheen Present:	☐Yes ☐No	☐Yes ☐No
Odor:	☐Yes ☐No	☐Yes ☐No
Foam Present:	☐Yes ☐No	☐Yes ☐No
Describe:	see below	see below

Additional Comments: Leaves, grass clippings and sediment observed in PDS2, near golf maintenance. Significant amount of leaves and some trash in PDS1 inlet

CDM Smith

DATE: 3/28/2017

EVENT: MS4 Visual Storm Water Monitoring Assessment

INSPECTORS(S): Greg Larson (CDM Smith)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

PUERTO DEL SOL GOLF COURSE



Photo 1: Leaf and other litter observed in PDS1 inlet.



Photo 2: Leaves, sediment, and grass clippings in outfall PDS2.

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LADERA GOLF COURSE

City of Albuquerque
Ladera Golf Course

Quarterly Visual Monitoring of
Storm Water Outfall Discharges
☒Q1 ☐Q2 ☐Q3 ☐Q4

Date: 3/28/17 **Weather:** RAIN

Time: 1420 **Storm Precip:**

Inspector: CONNOR KELLEY **Last 72 hour Precip:**

Photo: YES

Outfall ID:	**LGC1**		**LGC2**	
Flow Observed:	☐Yes	☒No	☐Yes	☒No
Description of Monitoring Site:				
Flow Estimate (include units and method of estimation):				
Other Observations:				
Color (describe):				
Turbidity:	☐Clear ☐Slightly Cloudy ☐Very Cloudy ☐Opaque		☐Clear ☐Slightly Cloudy ☐Very Cloudy ☐Opaque	
Floating Solids:	☐Yes	☐No	☐Yes	☐No
Suspended Solids:	☐Yes	☐No	☐Yes	☐No
Settled Solids:	☐Yes	☐No	☐Yes	☐No
Sheen Present:	☐Yes	☐No	☐Yes	☐No
Odor:	☐Yes	☐No	☐Yes	☐No
Foam Present:	☐Yes	☐No	☐Yes	☐No
Describe:				

Additional Comments: THOUGH THE INSPECTION OCURRED DURING A STEADY TO HEAVY RAINFALL, NO FLOW WAS OBSERVED AT EITHER OUTFALL.

CDM Smith

DATE: 03/28/2017

EVENT: MS4 Visual Storm Water Monitoring Assessment

INSPECTORS(S): Connor Kelley (CDM Smith)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

LADERA GOLF COURSE



Runoff not observed at Outfall LGC1.



Debris observed in Outfall LGC1

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ARROYO DEL OSO GOLF COURSE

City of Albuquerque

Arroyo Del Oso Golf Course

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☒ Q1 ☐ Q2 ☐ Q3 ☐ Q4

Date: 1/6/2017
Time: 2:30 PM
Inspector: Sarah Luckie (Weston)
Signature: Sarah Luckie

Weather: AM snow
Storm Precip: 0.07 in snow
Last 72 Hour Precip: —
Photo: yes

Outfall ID:	ADO1	ADO2
Flow Observed:	☒ Yes ☐ No	☒ Yes ☐ No
Description of Monitoring Site:	snow melt, water in Arroyo	" "
Flow Estimate (include units and method of estimation) :	< 1cfs	< 1cfs
Other Observations:	water in Arroyo	" "
Color (Describe):	Clear	Slight yellow
Turbidity:	☒ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☒ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque
Floating Solids:	☐ Yes ☒ No	☐ Yes ☒ No
Suspended Solids:	☐ Yes ☒ No	☐ Yes ☒ No
Settled Solids:	☐ Yes ☒ No	☐ Yes ☒ No
Sheen Present:	☐ Yes ☒ No	☐ Yes ☒ No
Odor:	☐ Yes ☒ No	☐ Yes ☒ No
Foam Present:	☐ Yes ☒ No	☐ Yes ☒ No
Describe:	Clean sample	Clean sample

Additional Comments:

Date: January 6, 2017

Event: MS4 Stormwater Visual Inspection

Inspector: Sarah Luckie (Weston)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

Arroyo Del Oso Golf Course	
 ADO1 Sample	 ADO2 Sample
	

FIRE DEPARTMENT MECHANIC

City of Albuquerque
Fire Department Mechanic Shop

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☑ Q1 ☐ Q2 ☐ Q3 ☐ Q4

Date: 1/6/17
Time: 1335, 1345
Inspector: Tommy Evans
Signature: Tommy Evans

Weather: Sunny 31°
Storm Precip: 0.07 inches of snow
Last 72 Hour Precip: —
Photo: Yes

Outfall ID:	FM1	FM2
Flow Observed:	☐ Yes ☑ No	☐ Yes ☑ No
Description of Monitoring Site:	Standing water in channel and against the berm.	Standing water around the rail tracks, mud and plant debris built up at the berm.
Flow Estimate (include units and method of estimation) :	none	none
Other Observations:	Water continued to trickle outside the fence to the street	Accumulated snow on the south side of the tracks
Color (Describe):		clear
Turbidity:	☐ Clear ☑ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☑ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque
Floating Solids:	☑ Yes ☐ No	☑ Yes ☐ No
Suspended Solids:	☑ Yes ☐ No	☑ Yes ☐ No
Settled Solids:	☑ Yes ☐ No	☑ Yes ☐ No
Sheen Present:	☐ Yes ☑ No	☐ Yes ☑ No
Odor:	☐ Yes ☑ No	☐ Yes ☑ No
Foam Present:	☐ Yes ☑ No	☐ Yes ☑ No
Describe:		

Additional Comments: Could not collect a large volume of water.
Water is from snow/ice melt from precipitation event last night.

WESTON SOLUTIONS

Date: January 6, 2017

Event: MS4 Visual Storm Water Monitoring

Inspector: Tommy Evans (Weston)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

Fire Mechanic Shop – FM1	
	
	

Date: January 6, 2017

Event: MS4 Visual Storm Water Monitoring

Inspector: Tommy Evans (Weston)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

Fire Mechanic Shop – FM2	
	
	

City of Albuquerque
Fire Department Mechanic Shop

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☒ Q1 ☐ Q2 ☐ Q3 ☐ Q4

Date: 3/28/2017
Time: 8:40 AM
Inspector: Sarah Luchie (Weston)
Signature: Sarah Luchie

Weather: Rain
Storm Precip: 0.2 in
Last 72 Hour Precip: —
Photo: yes

Outfall ID:	FM1	FM2
Flow Observed:	☒ Yes ☐ No	☒ Yes ☐ No
Description of Monitoring Site:	some construction was occuring, sediment present	ponding behind wattle
Flow Estimate (include units and method of estimation) :	< 1 cfs	< 1 cfs
Other Observations:	sediment	ponding
Color (Describe):	brown	yellow
Turbidity:	☐ Clear ☐ Slightly Cloudy ☒ Very Cloudy ☐ Opaque	☐ Clear ☒ Slightly Cloudy ☐ Very Cloudy ☐ Opaque
Floating Solids:	☐ Yes ☒ No	☒ Yes ☐ No
Suspended Solids:	☒ Yes ☐ No	☒ Yes ☐ No
Settled Solids:	☐ Yes ☒ No	☐ Yes ☒ No
Sheen Present:	☐ Yes ☒ No	☒ Yes ☐ No
Odor:	☐ Yes ☒ No	☐ Yes ☒ No
Foam Present:	☐ Yes ☒ No	☐ Yes ☒ No
Describe:	sediment due to construction	some sheen

Additional Comments: Some issues with sediment in FM1, some sheen noticed behind FM2. wattle, but was not leaving site due to gutter buddie.

Date: March 28, 2017

Event: MS4 Visual Storm Water Monitoring

Inspector: Sarah Luckie (Weston)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

Fire Mechanic Shop	
 FM1	 FM1
 FM2	 FM2

4TH STREET FUELS

City of Albuquerque
4th Street Fuel Station

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☑ Q1 ☐ Q2 ☐ Q3 ☐ Q4

Date: 1/6/17
Time: 1315
Inspector: Tommy Evans
Signature: Tommy Evans

Weather: Sunny 31°
Storm Precip: 0.07 inches of snow
Last 72 Hour Precip: —
Photo: Yes

Outfall ID:	FS1
Flow Observed:	☑ Yes ☐ No
Description of Monitoring Site:	Evidence of snow Gutters are wet
Flow Estimate (include units and method of estimation) :	<1 cfs
Other Observations:	Plant debris near collection point.
Color (Describe):	light grey/brown
Turbidity:	☐ Clear ☐ Slightly Cloudy ☑ Very Cloudy ☐ Opaque
Floating Solids:	☑ Yes ☐ No
Suspended Solids:	☑ Yes ☐ No
Settled Solids:	☑ Yes ☐ No
Sheen Present:	☐ Yes ☑ No
Odor:	☐ Yes ☑ No
Foam Present:	☐ Yes ☑ No
Describe:	

Additional Comments: Water is from snow/ice melt from precipitation event last night.

WESTON SOLUTIONS

Date:	January 6, 2017
Event:	MS4 Visual Storm Monitoring
Inspector:	Tommy Evans (Weston)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

4th Street Fuels	
	
	

City of Albuquerque
4th Street Fuel Station

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☒ Q1 ☐ Q2 ☐ Q3 ☐ Q4

Date: 3/28/2017
Time: 8:35 AM
Inspector: Sarah Luckie (Weston)
Signature: Sarah Luckie

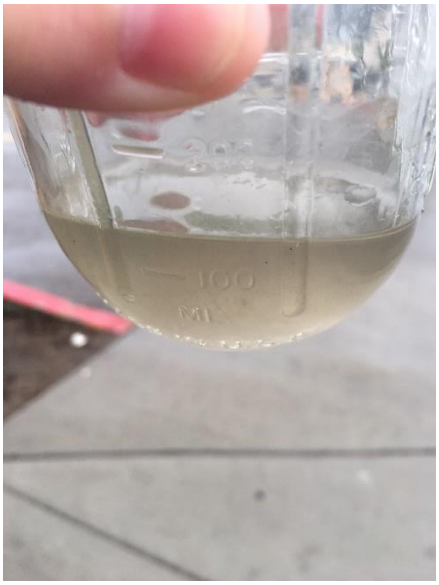
Weather: Rain
Storm Precip: 0.2in
Last 72 Hour Precip: —
Photo: yes

Outfall ID:	FS1
Flow Observed:	☒ Yes ☐ No
Description of Monitoring Site:	flow down gutter
Flow Estimate (include units and method of estimation) :	< 1 cfs
Other Observations:	—
Color (Describe):	clear/gray
Turbidity:	☐ Clear ☐ Slightly Cloudy ☒ Very Cloudy ☐ Opaque
Floating Solids:	☐ Yes ☒ No
Suspended Solids:	☒ Yes ☐ No
Settled Solids:	☐ Yes ☒ No
Sheen Present:	☐ Yes ☒ No
Odor:	☐ Yes ☒ No
Foam Present:	☐ Yes ☒ No
Describe:	generally clean

Additional Comments:

Date:	March 28, 2017
Event:	MS4 Visual Storm Monitoring
Inspector:	Sarah Luckie (Weston)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

4th Street Fuels	
	
	

LOMAS FUELS

City of Albuquerque

Lomas Fuel Station

Quarterly Visual Monitoring of
Storm Water Outfall Discharges
☑Q1 ☐Q2 ☐Q3 ☐Q4

Date: 3/28/17 **Weather:** RAIN

Time: 9:18AM **Storm Precip:** < 0.1 in

Inspector: Reed, Amy **Last 72 hour Precip:** NONE AR

Photo: 1 of site, 1 of sample AK

Outfall ID:	L1
Flow Observed:	☑Yes ☐No
Description of Monitoring Site:	No spills. Lots of puddles onsite, 1 car fueling.
Flow Estimate (include units and method of estimation):	2 cfs
Other Observations:	SHEET FLOW OVER SITE
Color (describe):	Light brown
Turbidity:	☐Clear ☑Slightly Cloudy ☐Very Cloudy ☐Opaque
Floating Solids:	☑Yes ☐No
Suspended Solids:	☑Yes ☐No
Settled Solids:	☑Yes ☐No
Sheen Present:	☐Yes ☑No
Odor:	☑Yes ☐No
Foam Present:	☐Yes ☑No
Describe:	Color affected by dirt + sediment - not oil/fuel.

Additional Comments: OBSERVATION: NO APPARENT SIGNS OF CONTAMINATION IN STORM WATER FROM FUELING ACTIVITIES AT FUELING STATION.

CDM Smith

ABQ BIOPARK ZOO

City of Albuquerque
ABQ BioPark Zoo

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☑ Q1 ☐ Q2 ☐ Q3 ☐ Q4

Date:	1/6/17	Weather:	Rain
Time:	14:53	Storm Precip:	<1.0 inch
Inspector:	Tommy Evans	Last 72 Hour Precip:	—
Signature:	Tommy Evans	Photo:	Yes

Outfall ID:	BP1
Flow Observed:	☐ Yes ☑ No
Description of Monitoring Site:	Sediment inside the pipe.
Flow Estimate (include units and method of estimation) :	
Other Observations:	
Color (Describe):	
Turbidity:	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque
Floating Solids:	☐ Yes ☐ No
Suspended Solids:	☐ Yes ☐ No
Settled Solids:	☐ Yes ☐ No
Sheen Present:	☐ Yes ☐ No
Odor:	☐ Yes ☐ No
Foam Present:	☐ Yes ☐ No
Describe:	

Additional Comments: No discharge. Sediment inside the outfall pipe.

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City of Albuquerque
ABQ BioPark Zoo

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☑ Q1 ☐ Q2 ☐ Q3 ☐ Q4

Date:	3/28/17	Weather:	Light rain
Time:	09:30	Storm Precip:	0.04
Inspector:	Torrey Evans	Last 72 Hour Precip:	—
Signature:	Torrey Evans	Photo:	Yes

Outfall ID:	BP1
Flow Observed:	☐ Yes ☑ No
Description of Monitoring Site:	Sediment inside the pipe.
Flow Estimate (include units and method of estimation) :	—
Other Observations:	
Color (Describe):	—
Turbidity:	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque
Floating Solids:	☐ Yes ☐ No
Suspended Solids:	☐ Yes ☐ No
Settled Solids:	☐ Yes ☐ No
Sheen Present:	☐ Yes ☐ No
Odor:	☐ Yes ☐ No
Foam Present:	☐ Yes ☐ No
Describe:	

Additional Comments: There continues to be a layer of sediment (~1.0 inch) inside the outfall pipe. The sediment is much dryer towards the center of the pipe.

WESTON SOLUTIONS

Weston Solutions, Inc.
3840 Commons Ave. NE
Albuquerque, NM 87109
505-837-6520 Fax 505-837-6550
www.westonsolutions.com

July 10, 2017

Ms. Kathy Verhage, P.E.
Department of Municipal Development - Storm Drainage Design
City of Albuquerque
P.O. Box 1293
Albuquerque, NM 87103

Reference: PROJECT NO. 8010 CITYWIDE ON-CALL NPDES AND MS4 ENGINEERING SUPPORT SERVICES 2nd QUARTER 2017 UPDATE FOR TASK 3 VISUAL STORM WATER INSPECTIONS

Dear Ms. Verhage:

This Memo describes the results of the 2017 Quarter 2 Visual Storm Water Inspections for 17 City of Albuquerque (City) facilities. This evaluation and memo has been prepared to address the requirements of the U.S. Environmental Protection Agency's (EPA) Municipal Separate Storm Sewer System (MS4) Permit issued to the City in 2014 and the Multi Sector General Permit for Storm Water Discharges Associated with Industrial Activity (MSGP) at City-owned facilities. Its purpose is to document the City's compliance with the requirements relative to quarterly storm water monitoring.

To comply with the MS4 and MSGP's requirements for storm water monitoring, Weston Solutions and CDM Smith were tasked with performing quarterly visual storm monitoring at 17 City-owned facilities which meet the definition of an industrial facility in the MSGP based on audits of city owned facilities performed between 2012 and 2017. The following facilities were monitored using visual inspection methods to identify potential impacted water discharges. Locations of these facilities are also shown in Figure 1 which include:

- Arroyo Del Oso Golf Course
- Arroyo Maintenance Facility
- Balloon Fiesta Park/Golf Training Center
- Albuquerque BioPark Facilities
- Daytona Transit Center
- Fire Department Mechanical Shop
- Fleet- 4th Street Fuel Station
- Fleet- Lomas Fuel Station
- Ladera Golf Course
- Los Altos Golf Course
- Montessa Park Open Space
- Pino Yards
- Puerto del Sol Golf Course
- Street Satellite #1
- Street Satellite #2
- Street Satellite #3
- Yale Transit Center

Table 1 shows the Outfall identification names along with the inspection team responsible for monitoring the particular outfall.

Figure 1: Facility Site Locations

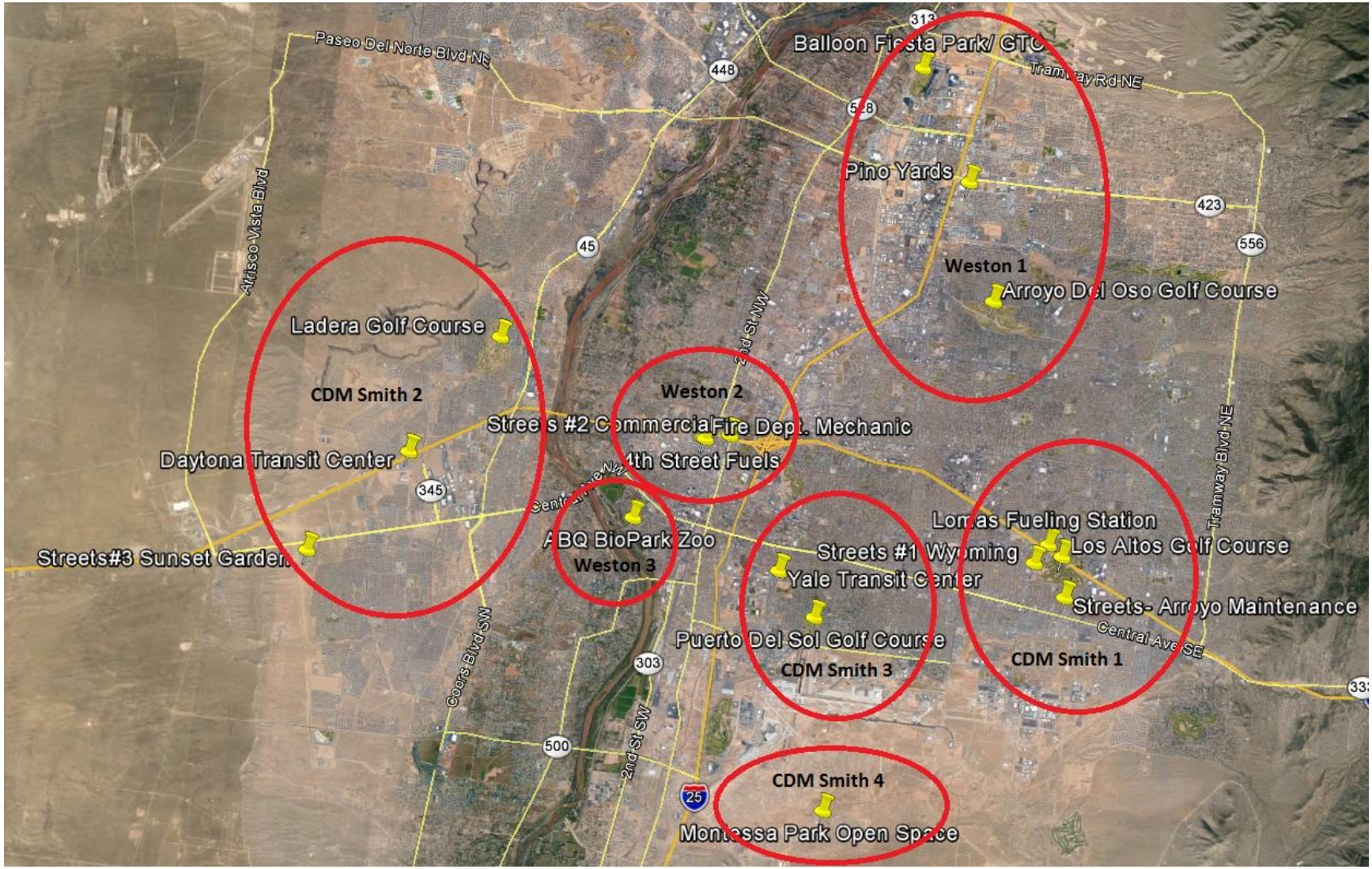


Table 1: Outfall ID and Designees

Site	Outfall ID
Weston 1	
Balloon Fiesta Park/ Golf Training Center	BFP1
	BFP2
	BFP3
	BFP4
	BFP5
Pino Yards	PY1
	PY2
	PY3
Arroyo Del Oso Golf Course	ADO1
	ADO2
Weston 2	
Fleet- 4th Street Fuels	FS1
Fire Department Mechanic Shop	FM1
	FM2
Street Satellite #2	SS2
CDM Smith 1	
Los Altos Golf Course	LA1
	LA2
Fleet- Lomas Fuel Station	L1
Arroyo Maintenance Facility	AM1
Street Satellite #1	SS1A
	SS1B
CDM Smith 2	
Daytona Transit Center	D1
	D2
Ladera Golf Course	LGC1
	LGC2
Street Satellite #3	SS3
CDM Smith 3	
Puerto Del Sol Golf Course	PDS1
	PDS2
Yale Transit Facility	Y1
CDM Smith 4	
Montessa Park Open Space	MP1
	MP2
Weston 3	
ABQ BioPark Facilities	BP1

Background

The MSGP establishes requirements for monitoring the quality of storm water discharges depending on the nature of activities performed at the various industrial facilities. Although benchmark monitoring is not required, the MSGP does require quarterly visual assessment of storm water quality. Visual assessment consists of the collection of grab samples from each outfall (subject to demonstration of substantially identical outfalls) and examination for the presence of color, odor, clarity, floating solids, settled solids, suspended solids, foam, oil sheen, or other indicators of storm water pollution.

Certain criteria regarding the precipitation event must be met for an assessment event. Visual assessment of storm water must occur:

- During daylight hours
- Within 30 minutes of start of storm water discharge (or as soon as practicable thereafter)
- At least 72 hours after the previous storm water discharge event

Weston follows the City's existing storm water monitoring protocol outlining the locations and descriptions of all outfalls to be monitored. The protocol identifies contact persons at each facility for use in notifying City personnel when members of the storm water monitoring team are mobilizing to that location. A standard visual assessment form is used by all staff to document the monitoring activities.

Quarter 2 Monitoring Results

The 2nd Quarter sampling period ran from April 1 to June 30, 2017.

- Weston Sites Group 1 mobilized one time during the quarter to collect samples from storm events. A visual sample was collected from all outfalls over the course of the single mobilization. No repeat samples were collected.
- Weston Sites Group 2 mobilized twice and collected a sample from all outfalls over the course of the two mobilizations. 4 repeat samples were also collected, one for each outfall.
- Weston Sites Group 3 mobilized twice and collected no samples from the one outfall over the course of the two mobilizations. No repeat samples were collected.
- CDM Smith Sites Group 1 mobilized once during the quarter to collect samples from storm events. A visual sample was collected from all outfalls during the mobilization. No repeat samples were collected.
- CDM Smith Sites Group 2 mobilized zero times during the quarter to collect samples from storm events. No visual samples were collected from five outfalls. No repeat samples were collected.
- CDM Smith Sites Group 3 mobilized once during the quarter to collect samples from storm events. Two visual sample was collected from three outfalls during the single mobilization. No repeat samples were collected.

- CDM Smith Sites Group 4 mobilized zero times during the quarter to collect samples from storm events. No visual samples was collected from the single outfall. No repeat samples were collected.

The monitoring reports and photo logs from Weston Sites Groups 1 through 3 and CDM Sites Groups 1 through 4 can be found in the Appendix. Any outfalls not monitored in Quarter 2 will be made up during Quarter 3 of 2017 pending suitable weather conditions.

Observed Problems

In general very few pollution problems were observed at any of the outfalls with few exceptions. Many of the grab samples exhibited presence of sediment, but no pollutants required follow up inspections or actions to occur. There were limited to no issues with oils, floatables, salts, chemicals, or other pollutant sources.

Results from the Quarter 2 Visual Inspections can be found in the Appendix. Thirteen out of seventeen facilities were observed during the 2nd Quarter. Both visual observations and grab samples were noted at thirteen facilities during the 2nd Quarter. Any facilities or outfalls that did not produce a sample in Quarter 2, 2017 will be made up in the coming months.

We appreciate the opportunity to provide professional consulting services to you and we look forward to assisting you in the next quarter. Please contact Sarah Luckie at (505) 837-6540 (Sarah.Luckie@WestonSolutions.com) or Brad Sumrall at (505) 837-6566 (Brad.Sumrall@WestonSolutions.com) if you have any questions or need additional information.

Sincerely,
WESTON SOLUTIONS, INC.



L. Brad Sumrall, PE
Albuquerque Operations Manager

APPENDIX:

ATTACHMENT A: Q2 INSPECTION FORMS AND PHOTO LOGS

ATTACHMENT B: CDM SMITH NON-QUALIFYING EVENT MEMO

ATTACHMENT A: Q2 INSPECTION FORMS AND PHOTO LOGS

STREETS SATELLITE #1

City of Albuquerque

Street Maintenance Satellite #1

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☐Q1 ☒Q2 ☐Q3 ☐Q4

Date: 4/25/17 **Weather:** rain

Time: ~~8~~ 9:00 **Storm Precip:** ~0.1 inch

Inspector: G. Larson **Last 72 hour Precip:** 0

Photo: yes

Outfall ID:	**SS1A**		**SS1B**	
Flow Observed:	☒Yes	☐No	☒Yes	☐No
Description of Monitoring Site:	grated inlet		grated inlet	
Flow Estimate (include units and method of estimation):	low (visual)		low (visual)	
Other Observations:	—		—	
Color (describe):	pale brown		pale brown	
Turbidity:	☐Clear ☒Slightly Cloudy ☐Very Cloudy ☐Opaque		☐Clear ☒Slightly Cloudy ☐Very Cloudy ☐Opaque	
Floating Solids:	☐Yes	☒No	☐Yes	☒No
Suspended Solids:	☒Yes	☐No	☒Yes	☐No
Settled Solids:	☐Yes	☒No	☐Yes	☒No
Sheen Present:	☐Yes	☒No	☐Yes	☒No
Odor:	☐Yes	☒No	☐Yes	☒No
Foam Present:	☐Yes	☒No	☐Yes	☒No
Describe:	—		—	

Additional Comments:

CDM Smith

DATE: 04/25/2017

EVENT: MS4 Visual Storm Water Monitoring Assessment

INSPECTORS(S): Greg Larson (CDM Smith)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

STREETS MAINTENANCE SATELLITE #1



Photo 1: Outfall SS1A. No storm water quality issues observed.



Photo 2: Outfall SS1B. No storm water quality issues observed.

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STREETS SATELLITE #2

City of Albuquerque

Street Maintenance Satellite #2

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☐ Q1 ☑ Q2 ☐ Q3 ☐ Q4

Date: 4/25/17
Time: 09:55
Inspector: Tommy Evans (Weston)
Signature: Tommy Evans

Weather: Rain
Storm Precip: < 1 inch
Last 72 Hour Precip: —
Photo: Yes

Outfall ID:	SS2
Flow Observed:	☑ Yes ☐ No
Description of Monitoring Site:	Flow coming from the driveway into the storm drain
Flow Estimate (include units and method of estimation) :	< 1 cfs
Other Observations:	
Color (Describe):	light brown/yellow
Turbidity:	☑ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque
Floating Solids:	☑ Yes ☐ No
Suspended Solids:	☐ Yes ☑ No
Settled Solids:	☐ Yes ☑ No
Sheen Present:	☐ Yes ☑ No
Odor:	☐ Yes ☑ No
Foam Present:	☐ Yes ☑ No
Describe:	

Additional Comments:

Date: April 25, 2017

Event: MS4 Visual storm Water Monitoring

Inspector: Tommy Evans (Weston)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

Street Maintenance #2	
	
	

STREETS SATELLITE #3

STREETS SATELLITE ARROYO MAINTENANCE

City of Albuquerque

Storm Drainage Maintenance Arroyo Maintenance Section

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☐Q1 ☒Q2 ☐Q3 ☐Q4

Date: 4/25/17 **Weather:** rain

Time: 8:55 **Storm Precip:** 0.1 inch

Inspector: G. Larson **Last 72 hour Precip:** 0

Photo: yes

Outfall ID:	**AM1**
Flow Observed:	☒Yes ☐No
Description of Monitoring Site:	Curb inlet
Flow Estimate (include units and method of estimation):	low (visual)
Other Observations:	/
Color (describe):	slightly reddish/brown
Turbidity:	☐Clear ☐Slightly Cloudy ☐Very Cloudy ☐Opaque
Floating Solids:	☐Yes ☒No
Suspended Solids:	☐Yes ☒No
Settled Solids:	☐Yes ☒No
Sheen Present:	☐Yes ☒No
Odor:	☐Yes ☒No
Foam Present:	☐Yes ☒No
Describe:	

Additional Comments: color observed from storial roadway deicing material - no issues

DATE: 4/25/2017

EVENT: MS4 Visual Storm Water Monitoring Assessment

INSPECTORS(S): Greg Larson (CDM Smith)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

STORM DRAINAGE MAINTENANCE ARROYO SECTION



Photo 1: Grab sample from outfall. Slight reddish color from scoria.



Photo 2: Wattle at upstream of outfall. Some roadway deicing material (scoria) observed in the area.

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PINO YARDS

City of Albuquerque
Pino Yards Complex

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☐ Q1 ☒ Q2 ☐ Q3 ☐ Q4

Date: 4/25/2017
Time:
Inspector: Sarah Luchie (Weston)
Signature: Sarah Luchie

Weather: Rain
Storm Precip: 0.25 in
Last 72 Hour Precip: —
Photo: yes

Outfall ID:	PY1	PY2	PY3
Flow Observed:	☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No
Description of Monitoring Site:	Wattles need replaced		—
Flow Estimate (include units and method of estimation) :	< 1 cfs	< 1 cfs	< 1 cfs
Other Observations:	—	—	—
Color (Describe):	clear	clear	dark brown
Turbidity:	☒ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☒ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☒ Opaque
Floating Solids:	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
Suspended Solids:	☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No
Settled Solids:	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
Sheen Present:	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
Odor:	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
Foam Present:	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
Describe:	clean	clean	dark sediment

Additional Comments: Wattle needs replaced

Date: April 25, 2017

Event: MS4 Visual Monitoring Assessment

Inspector: Sarah Luckie (Weston)

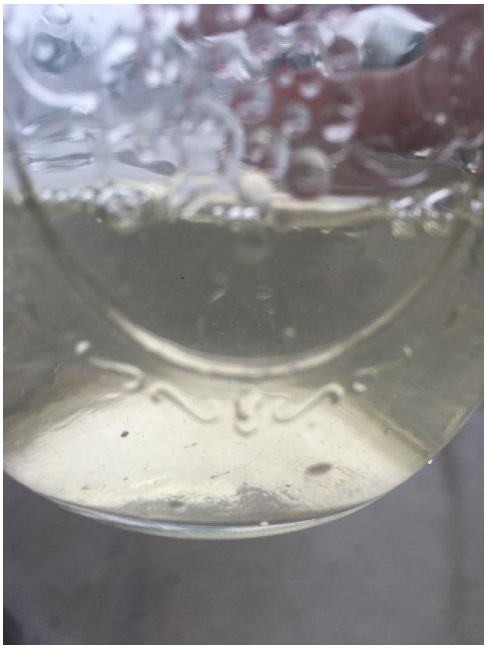
CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

Pino Yards



PY3 Sample





PY2 Sample



PY1 Sample

Pino Yards	
	Wattles need replacing.

TRANSIT- YALE

City of Albuquerque

Yale Maintenance Facility

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☐Q1 ☒Q2 ☐Q3 ☐Q4

Date: 4/25/2017 **Weather:** rain

Time: 9:20 **Storm Precip:** ~0.1 inch

Inspector: G. Larson **Last 72 hour Precip:** 0

Photo: yes

Outfall ID:	**Y1**
Flow Observed:	☒Yes ☐No
Description of Monitoring Site:	Stormwater Inlets to Stormceptor
Flow Estimate (include units and method of estimation):	low (visual)
Other Observations:	See below
Color (describe):	dark gray
Turbidity:	☐Clear ☒Slightly Cloudy ☐Very Cloudy ☐Opaque
Floating Solids:	☐Yes ☒No
Suspended Solids:	☒Yes ☐No
Settled Solids:	☐Yes ☒No
Sheen Present:	☐Yes ☒No
Odor:	☐Yes ☒No
Foam Present:	☐Yes ☒No
Describe:	0

Additional Comments: Some foam observed in runoff from roof drain

CDM Smith

DATE: 04/25/2017

EVENT: MS4 Visual Storm Water Monitoring Assessment

INSPECTORS(S): Greg Larson (CDM Smith)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

YALE BUS MAINTENANCE FACILITY



Photo 1: Grab sample collected at inlet to storm water quality treatment device. No apparent storm water quality issues.

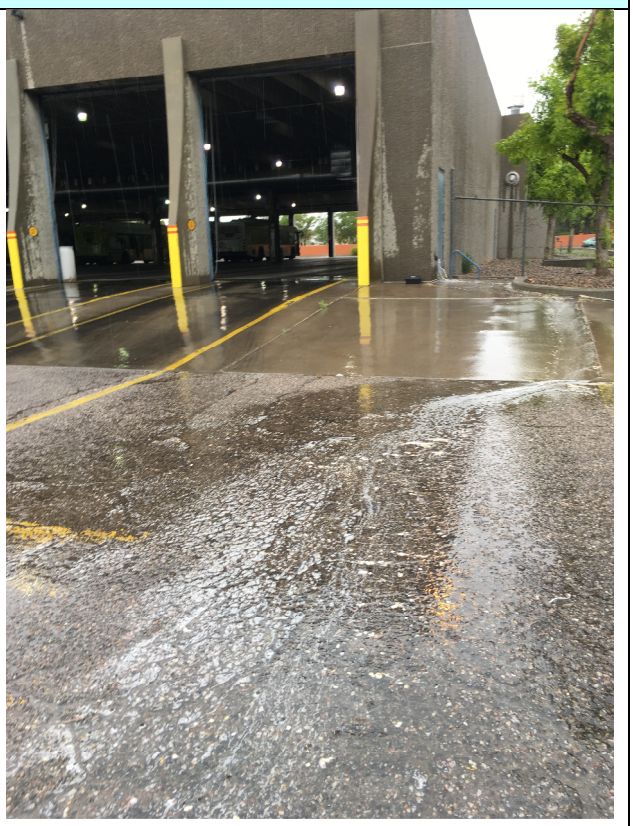


Photo 2: Some foam observed in runoff from roof drain.

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TRANSIT- DAYTONA

BALLOON FIESTA PARK/ GOLF TRAINING CENTER

City of Albuquerque

Balloon Fiesta Park and Golf Training Center

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☐ Q1 ☒ Q2 ☐ Q3 ☐ Q4

Date: 4/25/17
Time:
Inspector: Sarah Luckie (Weston)
Signature: Sarah Luckie

Weather: Rain
Storm Precip: 0.25 in
Last 72 Hour Precip: —
Photo: yes

Outfall ID:	BFP1	BFP2	BFP3
Flow Observed:	☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No
Description of Monitoring Site:	—	—	—
Flow Estimate (include units and method of estimation) :	< 1 cfs	< 1 cfs	< 1 cfs
Other Observations:	—	—	—
Color (Describe):	clear	clear / brown	clear
Turbidity:	☒ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☐ Clear ☒ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☐ Clear ☒ Slightly Cloudy ☐ Very Cloudy ☐ Opaque
Floating Solids:	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
Suspended Solids:	☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No
Settled Solids:	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
Sheen Present:	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
Odor:	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
Foam Present:	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
Describe:	clean	sediment	dirt

Additional Comments:

City of Albuquerque

Balloon Fiesta Park and Golf Training Center

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☐ Q1 ☒ Q2 ☐ Q3 ☐ Q4

Date: 4/25/2017
Time:
Inspector: Sarah Luchie (Weston)
Signature: Sarah Luchie

Weather: Rain
Storm Precip: 0.25 in
Last 72 Hour Precip: —
Photo: yes

Outfall ID:	BFP4	BFP5
Flow Observed:	☒ Yes ☐ No	☒ Yes ☐ No
Description of Monitoring Site:	—	slight ponding
Flow Estimate (include units and method of estimation) :	< 1 cfs	< 1 cfs
Other Observations:	—	—
Color (Describe):	clear	yellow/clean
Turbidity:	☒ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☒ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque
Floating Solids:	☐ Yes ☒ No	☒ Yes ☐ No
Suspended Solids:	☐ Yes ☒ No	☒ Yes ☐ No
Settled Solids:	☐ Yes ☒ No	☐ Yes ☒ No
Sheen Present:	☐ Yes ☒ No	☐ Yes ☒ No
Odor:	☐ Yes ☒ No	☐ Yes ☒ No
Foam Present:	☐ Yes ☒ No	☐ Yes ☒ No
Describe:	Clean	

Additional Comments:

Date:	April 25, 2017
Event:	MS4 Stormwater Visual Monitoring
Inspector:	Sarah Luckie (Weston)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

Balloon Fiesta Park



BFP1 Discharge



BFP4 Discharge



BFP5 Discharge



BFP2 Discharge

 BFP3 Discharge	

MONTESSA PARK

LOS ALTOS GOLF COURSE

City of Albuquerque

Los Altos Golf Course

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☐Q1 ☒Q2 ☐Q3 ☐Q4

Date: ~~8.25~~ 4/25/17 **Weather:** rain

Time: 8:45 **Storm Precip:** ~0.1 inch

Inspector: G. Larson **Last 72 hour Precip:** 0

Photo: yes

Outfall ID:	**LA1**		**LA2**	
Flow Observed:	☐Yes	☐No	☒Yes	☐No
Description of Monitoring Site:	pipe culvert / concrete v-curb		sheet flow over pavement	
Flow Estimate (include units and method of estimation):	low (visual)		low (visual)	
Other Observations:	/		/	
Color (describe):	brown		pale gray	
Turbidity:	☐Clear ☐Slightly Cloudy ☒Very Cloudy ☐Opaque		☐Clear ☒Slightly Cloudy ☐Very Cloudy ☐Opaque	
Floating Solids:	☒Yes	☐No	☐Yes	☒No
Suspended Solids:	☒Yes	☐No	☐Yes	☒No
Settled Solids:	☒Yes	☐No	☒Yes	☐No — sand
Sheen Present:	☐Yes	☒No	☐Yes	☒No
Odor:	☐Yes	☒No	☐Yes	☒No
Foam Present:	☐Yes	☐No	☐Yes	☐No
Describe:				

Additional Comments: Grass clippings and sediment near outfall from routine landscape / course maintenance operations. Not excessive.

CDM Smith

DATE: 4/25/2017

EVENT: MS4 Visual Storm Water Monitoring Assessment

INSPECTORS(S): Greg Larson (CDM Smith)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

LOS ALTOS GOLF COURSE



Photo 1: Surface runoff at outfall LA2.



Photo 2: Grass clippings and sediment at outfall LA1 as a result of routine golf course maintenance operations.

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PUERTO DEL SOL GOLF COURSE

City of Albuquerque

Puerto del Sol Golf Course

Quarterly Visual Monitoring of
Storm Water Outfall Discharges
☐Q1 ☒Q2 ☐Q3 ☐Q4

Date: 4/25/17 **Weather:** rain

Time: 9:10 **Storm Precip:** 0.1 inch

Inspector: G. Larson **Last 72 hour Precip:** 0

Photo: yes

Outfall ID:	**PDS1**	**PDS2**
Flow Observed:	☐Yes ☒No	☒Yes ☐No
Description of Monitoring Site:	grated inlet	grated inlet
Flow Estimate (include units and method of estimation):	0	low (visual)
Other Observations:	/	/
Color (describe):	/	Pale grey/green
Turbidity:	☐Clear ☐Slightly Cloudy ☐Very Cloudy ☐Opaque	☐Clear ☐Slightly Cloudy ☐Very Cloudy ☐Opaque
Floating Solids:	☐Yes ☐No	☐Yes ☒No
Suspended Solids:	☐Yes ☐No	☒Yes ☐No
Settled Solids:	☐Yes ☐No	☐Yes ☒No
Sheen Present:	☐Yes ☐No	☐Yes ☒No
Odor:	☐Yes ☐No	☐Yes ☒No
Foam Present:	☐Yes ☐No	☐Yes ☒No
Describe:		

Additional Comments: Leaves / debris in PDS1
Debris / leaves removed from PDS2
since last inspection.

CDM Smith

DATE: 04/25/2017

EVENT: MS4 Visual Storm Water Monitoring Assessment

INSPECTORS(S): Greg Larson (CDM Smith)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

PUERTO DEL SOL GOLF COURSE

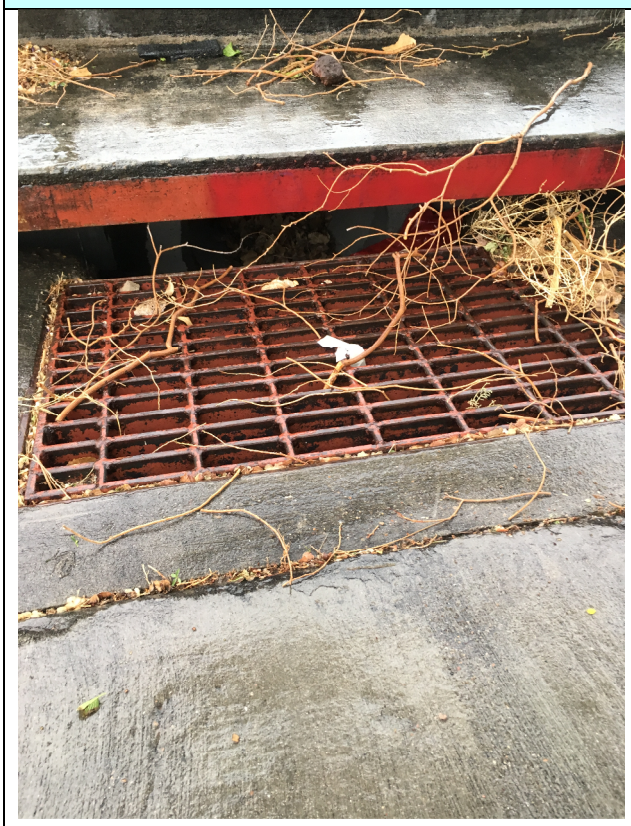


Photo 1: Outfall PDS1. Leaves and debris observed in outfall.



Photo 2: Outfall PDS1. Debris has been removed from outlet since last monitoring event. No apparent storm water quality issues.

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LADERA GOLF COURSE

ARROYO DEL OSO GOLF COURSE

City of Albuquerque

Arroyo Del Oso Golf Course

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☐ Q1 ☒ Q2 ☐ Q3 ☐ Q4

Date: 4/25/2017
Time:
Inspector: Sarah Luckie (Weston)
Signature: Sarah Luckie

Weather: Rain
Storm Precip: 0.25 in
Last 72 Hour Precip: —
Photo: yes

Outfall ID:	AD01	AD02
Flow Observed:	☒ Yes ☐ No	☒ Yes ☐ No
Description of Monitoring Site:	Rain & light ponding	rain.
Flow Estimate (include units and method of estimation) :	< 1cfs	< 1 cfs
Other Observations:	—	—
Color (Describe):	yellow/brown	yellow
Turbidity:	☐ Clear ☒ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☐ Clear ☒ Slightly Cloudy ☐ Very Cloudy ☐ Opaque
Floating Solids:	☐ Yes ☒ No	☐ Yes ☒ No
Suspended Solids:	☒ Yes ☐ No	☒ Yes ☐ No
Settled Solids:	☐ Yes ☒ No	☐ Yes ☒ No
Sheen Present:	☐ Yes ☒ No	☐ Yes ☒ No
Odor:	☐ Yes ☒ No	☐ Yes ☒ No
Foam Present:	☐ Yes ☒ No	☐ Yes ☒ No
Describe:	Slight sediment	Sediment

Additional Comments:

Date: April 25, 2017

Event: MS4 Stormwater Visual Inspection

Inspector: Sarah Luckie (Weston)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

Arroyo Del Oso Golf Course	
 ADO1 Sample	 ADO2 Sample

FIRE DEPARTMENT MECHANIC

City of Albuquerque

Fire Department Mechanic Shop

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☐ Q1 ☑ Q2 ☐ Q3 ☐ Q4

Date: 4/25/17
Time: FM2 - 09:25 FM1 - 09:35
Inspector: Tommy Evans (Weston)
Signature: Tommy Evans

Weather: Rain
Storm Precip: < 1 inch
Last 72 Hour Precip: —
Photo: Yes

Outfall ID:	FM1	FM2
Flow Observed:	☑ Yes ☐ No	☑ Yes ☐ No
Description of Monitoring Site:	Collected outside the fence. Water pooled against the roadside. Light flow to the street	Large amount of water collected at the roadside
Flow Estimate (include units and method of estimation) :	< 1 cfs	< 1 cfs
Other Observations:		light flow to the roadside
Color (Describe):	light brown	Clear / light brown
Turbidity:	☑ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque	☑ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque
Floating Solids:	☐ Yes ☑ No	☑ Yes ☐ No
Suspended Solids:	☐ Yes ☑ No	☐ Yes ☑ No
Settled Solids:	☐ Yes ☑ No	☐ Yes ☑ No
Sheen Present:	☐ Yes ☑ No	☐ Yes ☑ No
Odor:	☐ Yes ☑ No	☐ Yes ☑ No
Foam Present:	☐ Yes ☑ No	☐ Yes ☑ No
Describe:		

Additional Comments:

Date: April 25, 2017

Event: MS4 Visual Storm Water Monitoring

Inspector: Tommy Evans (Weston)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

Fire Mechanic Shop – FM1









Date:	April 25, 2017
Event:	MS4 Visual Storm Water Monitoring
Inspector:	Tommy Evans (Weston)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

Fire Mechanic Shop – FM2	
	
	

4TH STREET FUELS

City of Albuquerque
4th Street Fuel Station

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☐ Q1 ☑ Q2 ☐ Q3 ☐ Q4

Date: 4/25/17
Time: 09:15
Inspector: T. Evans (Weston)
Signature: Terry Evans

Weather: Rain
Storm Precip: < 1 inch
Last 72 Hour Precip: —
Photo: Yes

Outfall ID:	FS1
Flow Observed:	☑ Yes ☐ No
Description of Monitoring Site:	Collected at curb before entering the drain
Flow Estimate (include units and method of estimation) :	~1 cfs
Other Observations:	
Color (Describe):	light brown / ~~clear~~ grey
Turbidity:	☐ Clear ☑ Slightly Cloudy ☐ Very Cloudy ☐ Opaque
Floating Solids:	☑ Yes ☐ No
Suspended Solids:	☑ Yes ☐ No
Settled Solids:	☑ Yes ☐ No
Sheen Present:	☐ Yes ☑ No
Odor:	☐ Yes ☑ No
Foam Present:	☐ Yes ☑ No
Describe:	

Additional Comments:

Date: April 25, 2017

Event: MS4 Visual Storm Monitoring

Inspector: Tommy Evans (Weston)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

4th Street Fuels	
	
	

LOMAS FUELS

City of Albuquerque

Lomas Fuel Station

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☐Q1 ☒Q2 ☐Q3 ☐Q4

Date: 4/25/17 **Weather:** rain

Time: 8:40 **Storm Precip:** ~0.1 inch

Inspector: G. Larson **Last 72 hour Precip:** 0

Photo: yes

Outfall ID:	L1
Flow Observed:	☒Yes ☐No
Description of Monitoring Site:	fuel station
Flow Estimate (include units and method of estimation):	sheet flow (visual)
Other Observations:	
Color (describe):	no gray
Turbidity:	☒Clear ☐Slightly Cloudy ☐Very Cloudy ☐Opaque
Floating Solids:	☐Yes ☒No
Suspended Solids:	☐Yes ☒No
Settled Solids:	☐Yes ☒No
Sheen Present:	☐Yes ☒No
Odor:	☐Yes ☒No
Foam Present:	☐Yes ☒No
Describe:	

Additional Comments: no issues observed

CDM Smith

DATE: 04/25/2017

EVENT: MS4 Visual Storm Water Monitoring Assessment

INSPECTORS(S): Greg Larson (CDM Smith)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

LOMAS FUEL STATION



Photo 1: Sheetflow at fueling station looking east.



Photo 2: Sheetflow at fueling station looking south. No apparent storm water quality issues.

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ABQ BIOPARK ZOO

City of Albuquerque
ABQ BioPark Zoo

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

☐ Q1 ☑ Q2 ☐ Q3 ☐ Q4

Date:	4/25/17	Weather:	light rain
Time:	10:20	Storm Precip:	< 1 inch
Inspector:	Tommy Evans (Weston)	Last 72 Hour Precip:	—
Signature:	Tommy Evans	Photo:	Yes

Outfall ID:	BP1
Flow Observed:	☐ Yes ☑ No
Description of Monitoring Site:	Outfall site has become overgrown with vegetation
Flow Estimate (include units and method of estimation) :	NA
Other Observations:	Soil is dry inside the outfall pipe.
Color (Describe):	NA
Turbidity:	☐ Clear ☐ Slightly Cloudy ☐ Very Cloudy ☐ Opaque
Floating Solids:	☐ Yes ☐ No
Suspended Solids:	☐ Yes ☐ No
Settled Solids:	☐ Yes ☐ No
Sheen Present:	☐ Yes ☐ No
Odor:	☐ Yes ☐ No
Foam Present:	☐ Yes ☐ No
Describe:	

Additional Comments: _____

Date:	April 25, 2017
Event:	MS4 Visual Storm Monitoring
Inspector:	Tommy Evans (Weston)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

BioPark Zoo	
	
	

ATTACHMENT B: CDM SMITH NON-QUALIFYING EVENT MEMO

6001 Indian School Rd. NE, Suite 310
Albuquerque, NM 87110
tel: 505 243-3200
fax: 505 243-2700

July 7, 2017

Mr. Brad Sumrall, P.E.
Weston Solutions
3840 Commons Ave NE
Albuquerque, New Mexico 87109

Subject: Visual Stormwater Monitoring at the City of Albuquerque —Fourth Quarter 2016 (Task 03 Visual Stormwater Monitoring)
CDM Smith Project No: 76998-114606

Dear Mr. Sumrall:

CDM Smith Inc. (CDM Smith) herein notifies Weston Solutions (Weston) that a visual stormwater monitoring event was not conducted for the following City of Albuquerque facilities during the second quarter of 2017: Montessa Park, Daytona Transit Facility, Street Satellite #3, and Ladera Golf Course. National Weather Service (NWS) data, from a weather station located approximately between two and eight miles from the facilities, provided precipitation events for April through June 2017 is included in **Attachment A**. Daily weather reports, with data obtained from the weather station, for days when precipitation was observed, according to NWS data, are included in **Attachment B**. The events with measurable precipitation occurring during this time are summarized in **Table 1**.

Section 3.2 of 2015 Multi Sector General Permit (MSGP) describes the criteria regarding the precipitation event that must be met to qualify as an assessment event. Visual assessment of stormwater must occur:

- On samples collected within the first 30 minutes of an actual discharge from a storm event. If it is not possible to collect the sample within the first 30 minutes of discharge, the sample must be collected as soon as practicable after the first 30 minutes and you must document why it was not possible to take the sample within the first 30 minutes.
- For storm events, on discharges that occur at least 72 hours (three days) from the previous discharge.

An additional limitation on the timing of sampling activities within the City of Albuquerque is contained in the City's Storm Water Management Plan (SWMP, December, 2016). Section 13.3.1.2 of the SWMP limits sampling to normal business hours – Monday through Friday, 7:30 am to 5:00 pm and not required on the following observed holidays: Memorial Day; Independence Day; Labor

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Day; Thanksgiving Day; and Christmas Day through New Year's Day. Therefore, storm events that occur outside of normal business hours or on a holiday are not considered qualifying events.

CDM Smith's past visual monitoring experience for City of Albuquerque facilities has shown that stormwater discharges from facilities typically does not occur for precipitation events of less than 0.1 inches of measurable rainfall. Therefore, events with less than 0.1 inch of measurable rainfall do not create a discharge and are not considered for visual assessment.

Table 1 Second Quarter 2017 Precipitation Events

Date	Total Precipitation (Inches)	Event Start Time	Notes
Saturday, 4/1/2017	0.21	5:52 am	Light rain started at 5:52 am. Non qualifying due to event occurring outside of normal business hours.
Tuesday, 4/25/2017	**0.21**	**7:52 am**	**Light rain started at 7:52 am developing which developed into isolated showers throughout various areas of Albuquerque.**
Friday, 4/28/2017	0.13	11:40 am	Light rain started at 11:40 am. Non qualifying due to event due to rain in the past 72 hours.
Saturday, 4/29/2017	0.23	1:52 am	Light rain started at 1:52 am. Non qualifying event due to event occurring outside of normal business hours.
Monday, 5/1/2017	0.10	1:52 am	Light rain started at 1:52 am. Non qualifying event due to start of event occurring outside normal business hours.
Tuesday, 5/16/2017	0.05	12:30 pm	Isolated thunderstorms started at 12:30 pm. Recordable precipitation (0.05 inches) occurred between 5:30 and 6:52 pm. Non qualifying event due to measurable precipitation associated with event occurred outside of business hours.
Thursday, 5/18/2017	0.01	5:52 am	Light rain started at 5:52 pm. Non qualifying event due to rain in past 72 hours and outside normal business hours.
Wednesday, 5/31/2017	0.08	1:52 pm	Rain started at 1:52 pm with isolated thunderstorms occurring throughout the afternoon. Insufficient precipitation (less than 0.01 inches) occurred between 1:51 PM and 6:00 PM. 0.07 inches of rain was recorded between 6:00 pm and 7:00 pm. Non qualifying event due to measurable precipitation occurring outside of business hours.
Monday, 6/26/2017	0.48	6:45 pm	Thunderstorms and rain started at 6:45 pm. Non qualifying event due event occurring outside normal business hours.

Notes: Events shaded in gray are non-qualifying events. Bold indicates qualifying events.

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As seen in **Table 1**, of the 9 storm events with measurable precipitation that occurred in the second quarter, only one of the events is considered a qualifying assessment event per the criteria listed above. During the April 25th qualifying event, CDM Smith mobilized to the following sites to perform visual stormwater monitoring: Lomas Fuel Station, Los Altos and Puerto del Sol Golf Courses, Stormwater Drainage Maintenance Arroyo, Streets Satellite #1, and the Yale Transit Facility. During this event, CDM Smith made the determination not to perform visual monitoring at the other facilities due to the observed lack of rainfall at the sites based on visual storm tracking and radar data provided by weather tracking websites. Due to these circumstances a visual monitoring event was not performed during the second quarter of 2017 at the aforementioned facilities.

Please contact CDM Smith at (505) 243-3200 if you have any questions or comments regarding this report.

Sincerely,

Gregory S. Larson, P.E.
Project Engineer
CDM Smith Inc.

Kelly A. Collins, PG, BCES
Principal, Task Order Manager
CDM Smith Inc.

Attachments

cc: File

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ATTACHMENT A

NWS WEATHER SUMMARY APRIL 1, 2017 TO JUNE 30, 2017

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Albuquerque, NM

Albuquerque International Sunport

11:50 AM MDT on July 07, 2017 (GMT -0600)

Weather History for KABQ - April, 2017

From:

April

1

2017

To:

June

30

2017

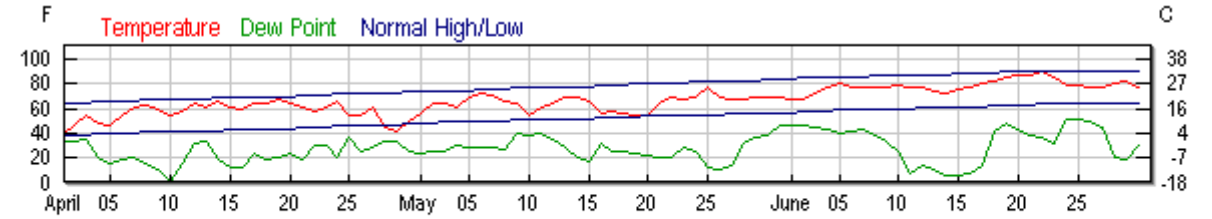
Get History

Daily | Weekly | Monthly | **Custom**

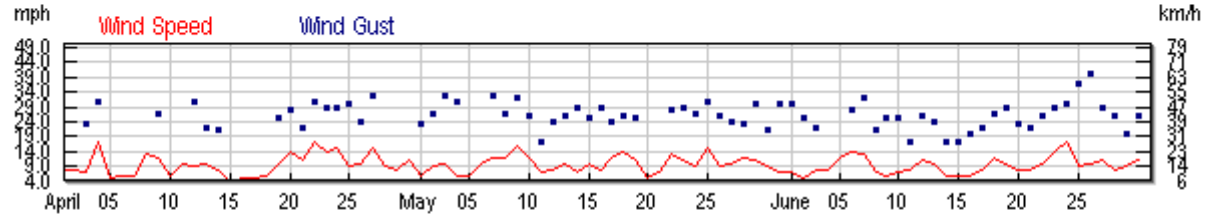
	Max	Avg	Min	Sum
Temperature				
Max Temperature	**103** °F	**81** °F	**45** °F	
Mean Temperature	**90** °F	**67** °F	**40** °F	
Min Temperature	**76** °F	**53** °F	**31** °F	
Degree Days				

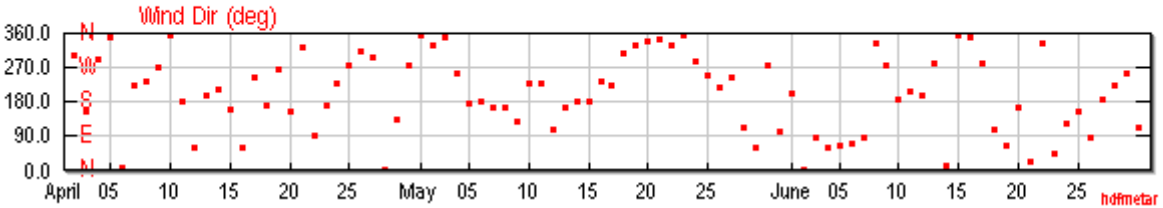
	Max	Avg	Min	Sum
Heating Degree Days (base 65)	25	3	0	310
Cooling Degree Days (base 65)	25	5	0	490
Growing Degree Days (base 50)	38	17	0	1559
Dew Point				
Dew Point	**55** °F	**28** °F	**-6** °F	
Precipitation				
Precipitation	**0.48** in	**0.02** in	**0.00** in	**1.50** in
Snowdepth	**0.0** in	**0.0** in	**0.0** in	-
Wind				
Wind	**52** mph	**10** mph	**0** mph	
Gust Wind	**65** mph	**26** mph	**16** mph	
Sea Level Pressure				
Sea Level Pressure	**30.26** in	**29.83** in	**29.37** in	

Custom Weather History Graph









Search for Another Location

Airport or City:

KABQ

Submit

Trip Planner

Search our weather history database for the weather conditions in past years. The results will help you decide how hot, cold, wet, or windy it might be!

Date:

April

1

Submit

Weather History & Observations

2017	Temp. (°F)			Dew Point (°F)			Humidity (%)			Sea Level Press. (in)			Visibility (mi)			Wind (mph)			Precip. (in)	Events
Apr	high	avg	low	high	avg	low	high	avg	low	high	avg	low	high	avg	low	high	avg	high	sum	
	45	**40**	**34**	**38**	**34**	**29**	**92**	**78**	**64**	**30.11**	**29.95**	**29.78**	**10**	**9**	**2**	**22**	**8**	**30**	**0.21**	Rain , Snow
	61	**46**	**31**	**36**	**33**	**30**	**100**	**66**	**32**	**30.08**	**29.92**	**29.78**	**10**	**10**	**8**	**26**	**8**	**35**	**0.00**	Fog
	66	**54**	**41**	**43**	**35**	**27**	**76**	**50**	**24**	**29.80**	**29.70**	**29.59**	**10**	**10**	**10**	**28**	**7**	**38**	**T**	Rain
	56	**48**	**40**	**35**	**20**	**1**	**65**	**38**	**11**	**30.08**	**29.80**	**29.65**	**10**	**10**	**10**	**31**	**17**	**40**	**T**	
	60	**47**	**34**	**21**	**16**	**10**	**51**	**33**	**14**	**30.26**	**30.17**	**30.10**	**10**	**10**	**10**	**12**	**5**	**15**	**0.00**	
	71	**55**	**39**	**22**	**18**	**11**	**45**	**28**	**11**	**30.18**	**30.08**	**29.98**	**10**	**10**	**10**	**12**	**6**	**14**	**0.00**	
	79	**62**	**44**	**28**	**20**	**7**	**41**	**24**	**7**	**30.05**	**29.95**	**29.84**	**10**	**10**	**10**	**21**	**6**	**26**	**0.00**	
	78	**63**	**48**	**22**	**16**	**7**	**34**	**21**	**7**	**29.90**	**29.78**	**29.64**	**10**	**10**	**10**	**28**	**13**	**34**	**0.00**	
	69	**59**	**49**	**21**	**11**	**-4**	**28**	**17**	**6**	**29.94**	**29.78**	**29.67**	**10**	**10**	**10**	**29**	**12**	**36**	**0.00**	
	67	**55**	**42**	**8**	**1**	**-4**	**18**	**12**	**6**	**30.11**	**30.02**	**29.95**	**10**	**10**	**10**	**14**	**6**	**17**	**0.00**	
	73	**58**	**42**	**29**	**16**	**7**	**31**	**20**	**9**	**30.11**	**30.00**	**29.91**	**10**	**10**	**10**	**20**	**10**	**25**	**0.00**	
	78	**64**	**50**	**43**	**32**	**10**	**59**	**33**	**7**	**30.00**	**29.92**	**29.83**	**10**	**10**	**10**	**35**	**9**	**42**	**0.00**	
	77	**62**	**47**	**41**	**33**	**23**	**82**	**48**	**14**	**30.02**	**29.91**	**29.79**	**10**	**10**	**10**	**23**	**10**	**32**	**0.00**	
	80	**66**	**51**	**31**	**19**	**8**	**38**	**23**	**7**	**29.87**	**29.77**	**29.65**	**10**	**10**	**10**	**22**	**8**	**28**	**0.00**	
	78	**62**	**45**	**18**	**13**	**9**	**28**	**18**	**7**	**29.94**	**29.85**	**29.79**	**10**	**10**	**10**	**15**	**4**	**19**	**0.00**	

2017	Temp. (°F)			Dew Point (°F)			Humidity (%)			Sea Level Press. (in)			Visibility (mi)			Wind (mph)			Precip. (in)	Events
	78	60	41	22	13	7	31	19	6	29.98	29.90	29.85	10	10	10	15	5	19	0.00	
	79	65	50	39	23	12	59	34	9	29.98	29.89	29.81	10	10	10	14	5	18	0.00	
	81	65	49	23	19	13	27	19	11	29.97	29.89	29.79	10	10	10	18	6	22	0.00	
	81	67	53	28	21	13	32	20	8	29.96	29.88	29.79	10	10	10	24	10	30	0.00	
	78	64	50	37	24	2	47	27	6	29.96	29.86	29.71	10	10	10	31	14	39	0.00	
	76	61	46	26	19	12	30	21	11	30.02	29.83	29.74	10	10	10	20	11	26	0.00	
	71	58	45	38	31	17	65	42	18	30.10	30.00	29.90	10	10	10	35	17	46	0.00	
	77	61	44	33	30	28	53	36	19	30.12	29.93	29.72	10	10	10	32	14	37	0.00	
	82	66	49	31	21	12	46	27	8	29.73	29.60	29.48	10	10	10	35	15	44	0.00	
	65	55	45	46	37	20	93	56	18	29.75	29.58	29.44	10	9	4	28	9	39	0.21	Rain , Thunderstorm
	68	55	41	33	25	14	62	38	13	29.85	29.73	29.63	10	10	10	24	10	34	0.00	
	74	62	50	34	29	23	48	32	16	29.63	29.51	29.37	10	10	10	39	15	65	0.00	
	52	45	38	39	34	26	92	66	39	29.83	29.70	29.58	10	10	5	21	9	26	0.13	Rain
	49	41	32	38	33	28	100	73	46	30.09	29.91	29.77	10	8	0	22	8	24	0.23	Fog , Rain , Snow
	65	50	35	35	25	10	100	56	12	30.08	29.99	29.86	10	10	8	29	11	38	0.00	

2017	Temp. (°F)			Dew Point (°F)			Humidity (%)			Sea Level Press. (in)			Visibility (mi)			Wind (mph)			Precip. (in)	Events
May	high	avg	low	high	avg	low	high	avg	low	high	avg	low	high	avg	low	high	avg	high	sum	
	74	57	40	33	24	17	53	34	15	29.99	29.90	29.81	10	10	10	24	6	29	0.00	
	81	65	48	33	26	19	56	33	10	29.89	29.80	29.67	10	10	10	26	9	35	0.00	
	76	65	53	38	26	15	51	31	10	30.18	29.93	29.78	10	10	10	29	10	35	0.00	
	77	62	46	38	31	22	66	40	13	30.17	30.08	29.98	10	10	10	33	6	38	0.00	
	85	69	53	34	29	24	41	26	11	30.00	29.89	29.76	10	10	10	14	6	20	0.00	
	87	72	56	37	29	17	33	21	8	29.94	29.74	29.60	10	10	10	35	10	46	T	Rain

2017	Temp. (°F)			Dew Point (°F)			Humidity (%)			Sea Level Press. (in)			Visibility (mi)			Wind (mph)			Precip. (in)	Events
	82	71	59	39	28	17	46	28	9	29.74	29.65	29.57	10	10	10	33	12	59	0.00	
	81	66	51	36	27	13	44	26	8	29.81	29.69	29.59	10	10	10	30	12	39	0.00	
	75	64	52	50	40	29	65	43	20	29.93	29.73	29.60	10	10	3	52	16	63	T	Thunderstorm
	60	54	47	46	38	24	86	57	28	30.01	29.86	29.75	10	9	4	26	12	33	0.10	Rain , Thunderstorm
	74	61	48	47	40	34	93	59	25	30.08	30.02	29.96	10	10	10	20	7	23	0.00	
	78	65	51	43	35	24	71	43	15	30.07	29.95	29.81	10	10	10	25	8	30	0.00	
	85	70	55	34	29	21	43	27	11	29.83	29.73	29.60	10	10	10	25	10	35	0.00	
	82	69	55	27	20	10	30	19	7	29.91	29.75	29.68	10	10	10	28	7	35	0.00	
	81	66	51	30	17	10	30	19	8	29.80	29.69	29.57	10	10	10	32	10	41	0.00	
	67	57	46	43	32	16	80	49	17	29.88	29.72	29.63	10	10	6	33	8	41	0.05	Rain , Thunderstorm
	73	58	43	33	25	18	56	35	13	29.90	29.68	29.51	10	10	10	24	12	31	0.00	
	68	56	44	38	26	11	76	44	12	29.83	29.73	29.62	10	10	10	28	14	35	0.01	Rain
	66	54	42	33	23	13	62	38	14	29.99	29.88	29.77	10	10	10	23	11	29	T	
	71	55	39	25	22	19	51	33	15	30.11	29.96	29.89	10	10	10	16	5	23	0.00	
	81	65	49	26	20	14	35	22	8	30.03	29.93	29.83	10	10	10	20	7	28	0.00	
	80	69	57	31	21	13	30	19	8	30.12	29.89	29.81	10	10	10	29	13	38	0.00	
	79	67	55	45	29	11	66	37	7	30.02	29.90	29.82	10	10	10	28	11	36	0.00	
	89	70	50	33	26	16	52	30	7	29.89	29.72	29.54	10	10	10	28	9	33	0.00	
	86	77	67	25	13	-1	18	11	4	29.69	29.56	29.49	10	10	10	33	15	45	0.00	
	86	69	52	15	11	5	19	12	5	29.91	29.75	29.66	10	10	10	28	9	35	0.00	
	84	68	51	22	14	7	19	13	6	30.08	29.86	29.77	10	10	10	25	10	32	0.00	
	80	68	56	42	32	22	61	36	11	30.07	29.98	29.91	10	10	10	31	12	36	0.00	

2017	Temp. (°F)			Dew Point (°F)			Humidity (%)			Sea Level Press. (in)			Visibility (mi)			Wind (mph)			Precip. (in)	Events
	81	70	58	43	36	29	51	34	17	30.12	29.98	29.88	10	10	10	32	11	40	T	
	84	69	54	44	38	19	71	41	10	30.08	29.99	29.90	10	10	10	23	9	28	0.00	
	78	69	59	54	46	39	78	53	27	30.17	29.96	29.87	10	10	5	31	7	38	0.08	Rain , Thunderstorm

2017	Temp. (°F)			Dew Point (°F)			Humidity (%)			Sea Level Press. (in)			Visibility (mi)			Wind (mph)			Precip. (in)	Events
Jun	high	avg	low	high	avg	low	high	avg	low	high	avg	low	high	avg	low	high	avg	high	sum	
	82	67	51	54	46	33	89	54	18	29.97	29.89	29.78	10	10	10	24	7	40	0.00	
	78	68	58	51	47	42	72	52	31	30.04	29.87	29.81	10	10	10	22	5	29	T	Rain , Thunderstorm
	87	73	59	50	45	39	64	42	20	30.12	29.90	29.81	10	10	10	22	8	31	T	Thunderstorm
	91	77	63	50	43	33	56	35	14	30.14	29.83	29.69	10	10	10	23	8	28	0.00	Rain
	93	80	67	47	40	23	48	28	8	29.85	29.77	29.68	10	10	10	36	12	45	0.00	
	88	77	66	46	42	34	42	29	15	30.12	29.89	29.80	10	10	10	38	14	44	0.00	
	90	78	65	50	44	30	52	33	13	30.16	29.93	29.78	10	10	10	36	13	47	T	Rain , Thunderstorm
	93	78	62	52	38	14	67	37	6	30.04	29.84	29.69	10	10	10	26	7	33	0.00	
	95	78	61	48	33	20	52	30	7	29.82	29.72	29.62	10	10	10	22	6	31	0.00	
	95	79	63	31	25	3	28	17	5	29.73	29.64	29.52	10	10	10	22	7	27	0.00	
	91	77	63	15	7	1	12	8	3	29.75	29.68	29.61	10	10	9	23	8	29	0.00	
	93	77	61	24	14	9	16	11	5	29.79	29.70	29.60	10	10	10	30	11	35	0.00	
	86	75	63	24	10	-4	17	10	3	29.81	29.76	29.70	10	10	10	25	10	33	0.00	
	90	72	54	15	5	-4	15	9	3	29.91	29.84	29.77	10	10	10	14	6	17	0.00	
	96	76	56	20	6	-6	19	11	2	29.91	29.82	29.74	10	10	9	14	6	18	0.00	
	98	78	57	22	7	0	14	9	3	29.86	29.77	29.66	10	10	10	17	6	20	0.00	
	100	80	59	22	14	7	13	9	4	29.76	29.68	29.60	10	10	10	25	8	33	0.00	

2017	Temp. (°F)			Dew Point (°F)			Humidity (%)			Sea Level Press. (in)			Visibility (mi)			Wind (mph)			Precip. (in)	Events
	97	82	67	51	41	23	49	30	11	29.98	29.73	29.63	10	10	10	32	12	41	0.00	
	99	85	70	55	48	31	53	32	10	30.08	29.84	29.77	10	10	10	28	10	33	0.00	Rain , Thunderstorm
	101	88	74	55	44	15	46	26	5	29.96	29.85	29.72	10	10	9	25	8	30	0.00	
	102	88	73	49	39	27	41	25	8	29.97	29.75	29.60	10	10	10	22	8	30	0.00	
	103	90	76	48	36	23	33	20	7	29.73	29.64	29.54	10	10	10	28	10	35	T	
	100	85	70	54	32	12	49	27	4	30.01	29.76	29.63	10	10	10	31	14	43	0.00	
	90	79	68	55	51	46	55	40	24	30.01	29.94	29.81	10	10	9	40	17	50	0.00	
	91	79	66	55	51	46	68	46	23	30.23	30.04	29.91	10	10	2	39	9	50	T	Thunderstorm
	90	77	64	54	50	40	67	42	17	30.21	30.03	29.86	10	9	2	47	10	58	0.48	Rain , Thunderstorm
	92	78	63	53	45	38	67	42	16	30.18	29.89	29.68	10	10	8	32	11	40	T	Rain , Thunderstorm
	95	80	64	42	21	5	33	18	3	29.98	29.73	29.63	10	10	7	24	8	30	0.00	
	96	83	69	29	19	11	19	12	5	29.82	29.73	29.65	10	10	10	20	9	27	0.00	
	95	78	61	51	30	14	46	27	8	29.84	29.79	29.73	10	10	9	36	11	44	T	

ATTACHMENT B

DAILY WEATHER REPORTS FOR PRECIPITATION EVENTS OCCURRING IN SECOND QUARTER 2017

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Albuquerque, NM

Albuquerque International Sunport

1:53 PM MDT on July 07, 2017 (GMT -0600)

Weather History for KABQ - April, 2017

April

1

2017

View
Saturday, April 1, 2017

Daily | Weekly | Monthly | Custom

	Actual	Average	Record
Temperature			
Mean Temperature	**40** °F	**52** °F	
Max Temperature	**45** °F	**65** °F	**81** °F (2011)
Min Temperature	**34** °F	**39** °F	**13** °F (1896)
Degree Days			
Heating Degree Days	25	13	
Month to date heating degree days	25	13	
Since 1 July heating degree days	3015	3840	
Cooling Degree Days	0	0	

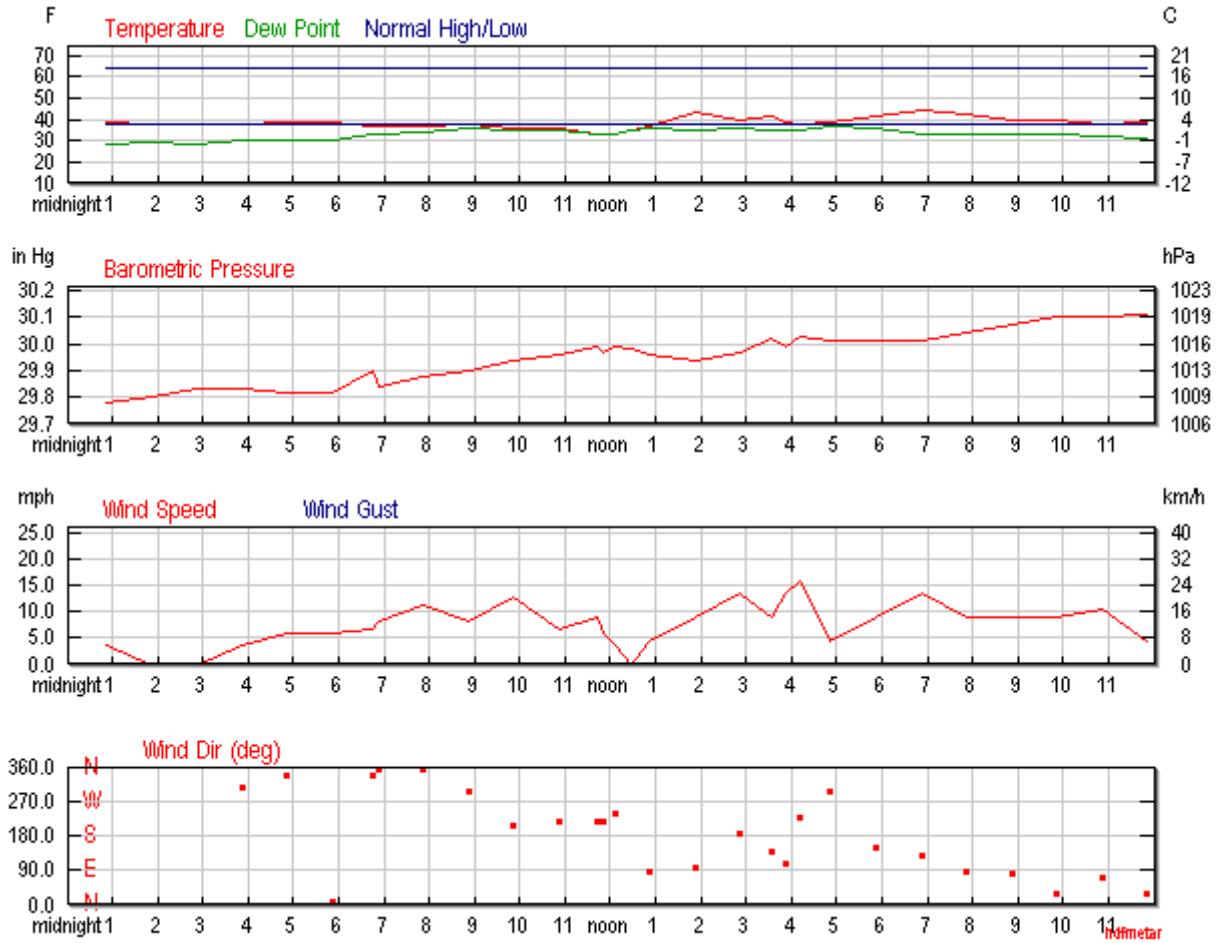
	Actual	Average	Record
Month to date cooling degree days	0	0	
Year to date cooling degree days	1	0	
Moisture			
Dew Point	**34** °F		
Average Humidity	78		
Maximum Humidity	92		
Minimum Humidity	64		
Precipitation			
Precipitation	**0.21** in	**0.02** in	**1.90** in (1905)
Month to date precipitation	0.21	0.02	
Year to date precipitation	1.80	1.45	
Snow			
Snow	**T** in	-	- ()
Month to date snowfall	T		
Since 1 July snowfall	2.9		
Snow Depth	**0.00** in		
Sea Level Pressure			
Sea Level Pressure	**29.95** in		
Wind			
Wind Speed	**8** mph (NE)		
Max Wind Speed	**22** mph		
Max Gust Speed	**30** mph		
Visibility	**9** miles		

	Actual	Average	Record
Events	Rain , Snow		

T = Trace of Precipitation, MM = Missing Value

Source: NWS Daily Summary

Daily Weather History Graph



Search for Another Location

Airport or City:

KABQ

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Trip Planner

Search our weather history database for the weather conditions in past years. The results will help you decide how hot, cold, wet, or windy it might be!

Date:

April

1

Submit

Astronomy

Apr. 01, 2017	**Rise**	**Set**
Actual Time	6:52 AM MDT	7:28 PM MDT
Civil Twilight	6:27 AM MDT	7:53 PM MDT
Nautical Twilight	5:57 AM MDT	8:23 PM MDT
Astronomical Twilight	5:26 AM MDT	8:54 PM MDT
Moon	10:30 AM MDT (4/1)	No Moon Set
Length of Visible Light	13h 26m	
Length of Day	12h 35m	

Waxing Crescent, 27% of the Moon is Illuminated

Apr 1	Apr 3	Apr 11	Apr 19	Apr 26
Waxing Crescent	First Quarter	Full	Last Quarter	New

Hourly Weather History & Observations

Time (MDT)	Temp.	Windchill	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events	Conditions
12:52 AM	**39.9** °F	**37.8** °F	**28.9** °F	65%	**29.78** in	**10.0** mi	NNW	**3.5** mph	-	N/A		Scattered Clouds
1:52 AM	**39.0** °F	-	**30.0** °F	70%	**29.80** in	**10.0** mi	Calm	Calm	-	N/A		Mostly Cloudy
2:52 AM	**39.0** °F	-	**28.9** °F	67%	**29.83** in	**10.0** mi	Calm	Calm	-	N/A		Mostly Cloudy
3:52 AM	**39.0** °F	**36.8** °F	**30.9** °F	73%	**29.83** in	**10.0** mi	NW	**3.5** mph	-	N/A		Overcast
4:52 AM	**39.9** °F	**35.8** °F	**30.9** °F	70%	**29.82** in	**10.0** mi	NNW	**5.8** mph	-	**0.00** in		Overcast
5:52 AM	**39.9** °F	**35.8** °F	**30.9** °F	70%	**29.82** in	**9.0** mi	North	**5.8** mph	-	**0.00** in	Rain	Light Rain
6:45 AM	**37.9** °F	**32.7** °F	**34.0** °F	86%	**29.90** in	**10.0** mi	NNW	**6.9** mph	-	**0.01** in		Overcast
6:52 AM	**37.9** °F	**32.1** °F	**34.0** °F	86%	**29.84** in	**10.0** mi	North	**8.1** mph	-	**0.01** in		Overcast
7:52 AM	**37.9** °F	**30.5** °F	**35.1** °F	89%	**29.88** in	**10.0** mi	North	**11.5** mph	-	**0.00** in		Overcast
8:52 AM	**39.0** °F	**33.4** °F	**37.0** °F	93%	**29.90** in	**10.0** mi	WNW	**8.1** mph	-	**0.01** in		Overcast
9:52 AM	**37.0** °F	**28.9** °F	**36.0** °F	96%	**29.94** in	**7.0** mi	SSW	**12.7** mph	-	**0.01** in	Rain	Light Rain
10:52 AM	**37.0** °F	**31.6** °F	**36.0** °F	96%	**29.96** in	**5.0** mi	SW	**6.9** mph	-	**0.02** in	Rain	Rain
11:42 AM	**34.0** °F	**26.6** °F	**34.0** °F	100%	**29.99** in	**1.8** mi	SW	**9.2** mph	-	**0.10** in	Rain , Snow	Light Rain
11:52 AM	**34.0** °F	**28.8** °F	**34.0** °F	100%	**29.97** in	**2.5** mi	SW	**5.8** mph	-	**0.12** in	Rain , Snow	Light Rain
12:06 PM	**34.0** °F	**31.0** °F	**34.0** °F	100%	**29.99** in	**5.0** mi	WSW	**3.5** mph	-	**0.01** in	Rain	Light Rain
12:27 PM	**36.0** °F	-	**36.0** °F	100%	**29.98** in	**10.0** mi	Calm	Calm	-	**0.01** in		Overcast
12:52 PM	**37.9** °F	**34.4** °F	**37.0** °F	97%	**29.96** in	**10.0** mi	East	**4.6** mph	-	**0.01** in		Overcast
1:52 PM	**44.1** °F	**39.0** °F	**36.0** °F	73%	**29.94** in	**10.0** mi	East	**9.2** mph	-	N/A		Overcast
2:52 PM	**41.0** °F	**33.5** °F	**37.0** °F	86%	**29.97** in	**10.0** mi	South	**13.8** mph	-	**0.01** in	Rain	Light Rain
3:34 PM	**42.1** °F	**36.6** °F	**36.0** °F	79%	**30.02** in	**9.0** mi	SE	**9.2** mph	-	**0.01** in	Rain	Light Rain
3:52 PM	**39.9** °F	**32.1** °F	**36.0** °F	86%	**29.99** in	**10.0** mi	ESE	**13.8** mph	-	**0.02** in	Rain	Light Rain
4:12 PM	**39.0** °F	**30.3** °F	**36.0** °F	89%	**30.03** in	**10.0** mi	SW	**16.1** mph	-	**0.00** in	Rain	Light Rain
4:52 PM	**39.9** °F	**36.7** °F	**37.9** °F	93%	**30.01** in	**10.0** mi	WNW	**4.6** mph	-	**0.00** in		Mostly Cloudy

Time (MDT)	Temp.	Windchill	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events	Conditions
5:52 PM	**42.1** °F	**36.6** °F	**37.0** °F	82%	**30.01** in	**10.0** mi	SSE	**9.2** mph	-	N/A		Mostly Cloudy
6:52 PM	**45.0** °F	**38.5** °F	**34.0** °F	65%	**30.01** in	**10.0** mi	SE	**13.8** mph	-	N/A		Mostly Cloudy
7:52 PM	**43.0** °F	**37.7** °F	**34.0** °F	71%	**30.04** in	**10.0** mi	East	**9.2** mph	-	N/A		Mostly Cloudy
8:52 PM	**41.0** °F	**35.2** °F	**34.0** °F	76%	**30.07** in	**10.0** mi	East	**9.2** mph	-	N/A		Scattered Clouds
9:52 PM	**41.0** °F	**35.2** °F	**34.0** °F	76%	**30.10** in	**10.0** mi	NNE	**9.2** mph	-	N/A		Scattered Clouds
10:52 PM	**39.0** °F	**32.3** °F	**33.1** °F	79%	**30.10** in	**10.0** mi	ENE	**10.4** mph	-	N/A		Partly Cloudy
11:52 PM	**39.9** °F	**36.7** °F	**32.0** °F	73%	**30.11** in	**10.0** mi	NNE	**4.6** mph	-	N/A		Scattered Clouds

Albuquerque, NM

Albuquerque International Sunport

1:54 PM MDT on July 07, 2017 (GMT -0600)

Weather History for KABQ - April, 2017

April

25

2017

View
Tuesday, April 25, 2017

Daily | Weekly | Monthly | Custom

	Actual	Average	Record
Temperature			
Mean Temperature	**55** °F	**59** °F	
Max Temperature	**65** °F	**72** °F	**86** °F (1981)
Min Temperature	**45** °F	**46** °F	**25** °F (1921)
Degree Days			
Heating Degree Days	10	7	
Month to date heating degree days	166	249	
Since 1 July heating degree days	3156	4076	
Cooling Degree Days	0	1	

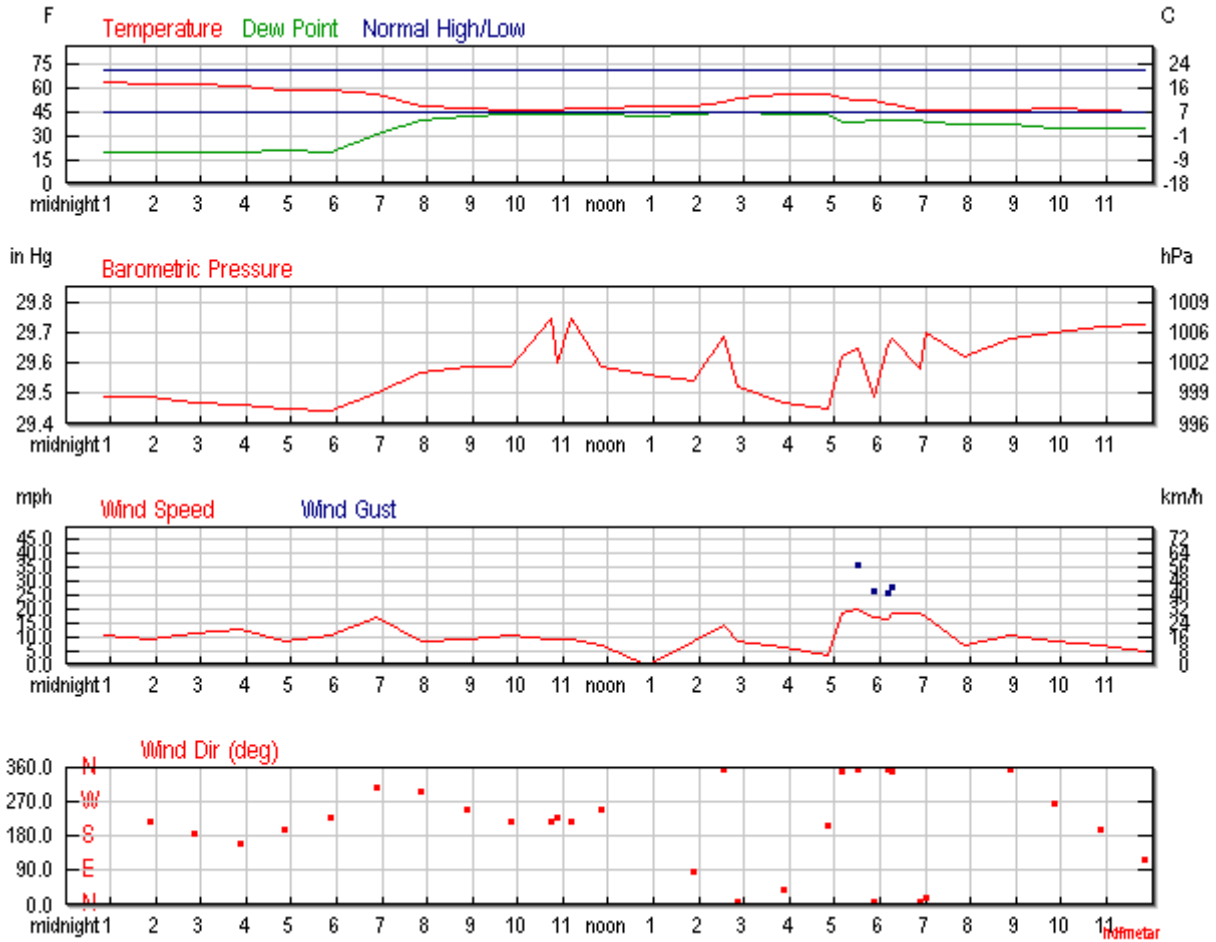
	Actual	Average	Record
Month to date cooling degree days	4	1	
Year to date cooling degree days	5	1	
Growing Degree Days	6 (Base 50)		
Moisture			
Dew Point	**37** °F		
Average Humidity	56		
Maximum Humidity	93		
Minimum Humidity	18		
Precipitation			
Precipitation	**0.21** in	**0.02** in	**0.86** in (1990)
Month to date precipitation	0.42	0.52	
Year to date precipitation	2.01	1.95	
Snow			
Snow	**0.00** in	-	- ()
Month to date snowfall	T		
Since 1 July snowfall	2.9		
Snow Depth	**0.00** in		
Sea Level Pressure			
Sea Level Pressure	**29.58** in		
Wind			
Wind Speed	**9** mph (West)		
Max Wind Speed	**28** mph		
Max Gust Speed	**39** mph		

	Actual	Average	Record
Visibility	**9** miles		
Events	Rain , Thunderstorm		

T = Trace of Precipitation, MM = Missing Value

Source: NWS Daily Summary

Daily Weather History Graph



Search for Another Location

Airport or City:

KABQ

Submit

Trip Planner

Search our weather history database for the weather conditions in past years. The results will help you decide how hot, cold, wet, or windy it might be!

Date:

April

25

Submit

Astronomy

Apr. 25, 2017	**Rise**	**Set**
Actual Time	6:21 AM MDT	7:47 PM MDT
Civil Twilight	5:55 AM MDT	8:14 PM MDT
Nautical Twilight	5:23 AM MDT	8:46 PM MDT
Astronomical Twilight	4:49 AM MDT	9:19 PM MDT
Moon	6:04 AM MDT (4/25)	7:05 PM MDT (4/25)
Length of Visible Light	14h 19m	
Length of Day	13h 25m	

Waning Crescent, 1% of the Moon is Illuminated

Apr 25	Apr 26	May 2	May 10	May 18
Waning Crescent	New	First Quarter	Full	Last Quarter

Hourly Weather History & Observations

Time (MDT)	Temp.	Windchill	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events	Conditions
12:52 AM	**64.9** °F	-	**19.9** °F	18%	**29.49** in	**10.0** mi	WSW	**10.4** mph	-	N/A		Mostly Cloudy
1:52 AM	**64.0** °F	-	**21.0** °F	19%	**29.49** in	**10.0** mi	SW	**9.2** mph	-	N/A		Mostly Cloudy
2:52 AM	**63.0** °F	-	**21.0** °F	20%	**29.47** in	**10.0** mi	South	**11.5** mph	-	N/A		Overcast
3:52 AM	**62.1** °F	-	**21.0** °F	21%	**29.46** in	**10.0** mi	SSE	**12.7** mph	-	N/A		Overcast
4:52 AM	**60.1** °F	-	**21.9** °F	23%	**29.45** in	**10.0** mi	SSW	**8.1** mph	-	N/A		Overcast
5:52 AM	**60.1** °F	-	**19.9** °F	21%	**29.44** in	**10.0** mi	SW	**10.4** mph	-	N/A		Mostly Cloudy
6:52 AM	**57.0** °F	-	**32.0** °F	39%	**29.50** in	**10.0** mi	NW	**17.3** mph	**23.0** mph	N/A		Overcast
7:52 AM	**50.0** °F	-	**41.0** °F	71%	**29.57** in	**9.0** mi	WNW	**8.1** mph	-	**0.00** in	Rain	Light Rain
8:52 AM	**48.0** °F	-	**43.0** °F	83%	**29.59** in	**4.0** mi	WSW	**9.2** mph	-	**0.09** in	Rain	Light Rain
9:52 AM	**46.9** °F	-	**44.1** °F	90%	**29.59** in	**5.0** mi	SW	**10.4** mph	-	**0.05** in	Rain	Light Rain
10:43 AM	**46.9** °F	-	**45.0** °F	93%	**29.75** in	**9.0** mi	SW	**9.2** mph	-	**0.03** in	Rain	Light Rain
10:52 AM	**46.9** °F	-	**45.0** °F	93%	**29.60** in	**7.0** mi	SW	**9.2** mph	-	**0.04** in	Rain	Light Rain
11:11 AM	**48.0** °F	-	**45.0** °F	89%	**29.75** in	**10.0** mi	SW	**9.2** mph	-	N/A		Overcast
11:52 AM	**48.0** °F	-	**44.1** °F	86%	**29.59** in	**10.0** mi	WSW	**6.9** mph	-	**0.00** in	Rain	Light Rain
12:52 PM	**50.0** °F	-	**43.0** °F	77%	**29.56** in	**10.0** mi	Calm	Calm	-	**0.00** in		Mostly Cloudy
1:52 PM	**50.0** °F	-	**45.0** °F	83%	**29.54** in	**10.0** mi	East	**8.1** mph	-	N/A		Overcast
2:32 PM	**52.0** °F	-	**46.0** °F	80%	**29.69** in	**10.0** mi	North	**13.8** mph	**39.1** mph	**0.00** in	Rain , Thunderstorm	Light Rain
2:52 PM	**55.0** °F	-	**46.0** °F	72%	**29.52** in	**10.0** mi	North	**8.1** mph	-	**0.00** in		Mostly Cloudy
3:52 PM	**57.0** °F	-	**44.1** °F	62%	**29.47** in	**10.0** mi	NE	**5.8** mph	-	**0.00** in		Scattered Clouds
4:52 PM	**57.0** °F	-	**44.1** °F	62%	**29.45** in	**10.0** mi	SSW	**3.5** mph	-	N/A		Mostly Cloudy

Time (MDT)	Temp.	Windchill	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events	Conditions
5:10 PM	**55.0** °F	-	**39.9** °F	57%	**29.62** in	**10.0** mi	North	**18.4** mph	**33.4** mph	**0.00** in	Rain , Thunderstorm	Light Rain
5:31 PM	**54.0** °F	-	**39.0** °F	57%	**29.65** in	**10.0** mi	North	**19.6** mph	**35.7** mph	**0.00** in		Scattered Clouds
5:52 PM	**53.1** °F	-	**41.0** °F	64%	**29.49** in	**10.0** mi	North	**17.3** mph	**26.5** mph	**0.00** in		Mostly Cloudy
6:10 PM	**51.1** °F	-	**41.0** °F	68%	**29.66** in	**10.0** mi	North	**16.1** mph	**25.3** mph	**0.00** in	Rain , Thunderstorm	Light Rain
6:17 PM	**51.1** °F	-	**41.0** °F	68%	**29.68** in	**10.0** mi	North	**18.4** mph	**27.6** mph	**0.00** in	Rain , Thunderstorm	Light Thunderstorms and Rain
6:52 PM	**46.9** °F	-	**41.0** °F	80%	**29.58** in	**8.0** mi	North	**18.4** mph	-	**0.03** in	Rain , Thunderstorm	Light Rain
7:00 PM	**46.9** °F	-	**39.9** °F	77%	**29.70** in	**10.0** mi	NNE	**17.3** mph	-	**0.00** in		Mostly Cloudy
7:52 PM	**46.9** °F	-	**37.9** °F	71%	**29.62** in	**10.0** mi	Variable	**6.9** mph	-	**0.00** in		Mostly Cloudy
8:52 PM	**46.9** °F	-	**37.9** °F	71%	**29.68** in	**10.0** mi	North	**10.4** mph	-	N/A		Mostly Cloudy
9:52 PM	**48.0** °F	-	**36.0** °F	63%	**29.70** in	**10.0** mi	West	**8.1** mph	-	N/A		Mostly Cloudy
10:52 PM	**46.9** °F	-	**36.0** °F	66%	**29.72** in	**10.0** mi	SSW	**6.9** mph	-	N/A		Scattered Clouds
11:52 PM	**46.0** °F	**43.9** °F	**35.1** °F	66%	**29.73** in	**10.0** mi	ESE	**4.6** mph	-	N/A		Partly Cloudy

Albuquerque, NM

Albuquerque International Sunport

1:56 PM MDT on July 07, 2017 (GMT -0600)

Weather History for KABQ - April, 2017

April

28

2017

View
Friday, April 28, 2017

Daily | Weekly | Monthly | Custom

	Actual	Average	Record
Temperature			
Mean Temperature	**45** °F	**60** °F	
Max Temperature	**52** °F	**73** °F	**87** °F (1981)
Min Temperature	**38** °F	**47** °F	**27** °F (1918)
Degree Days			
Heating Degree Days	20	6	
Month to date heating degree days	199	267	
Since 1 July heating degree days	3189	4094	
Cooling Degree Days	0	1	

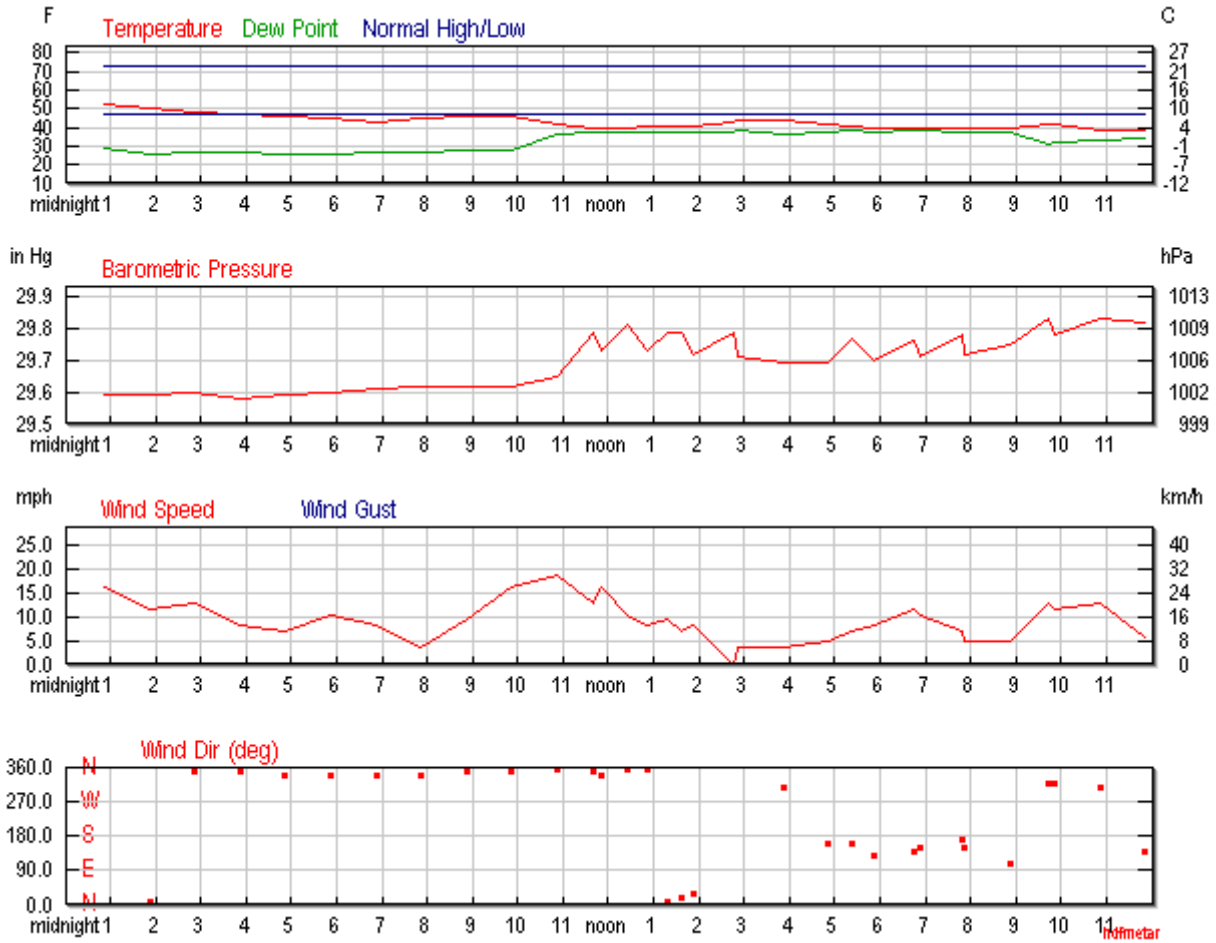
	Actual	Average	Record
Month to date cooling degree days	4	4	
Year to date cooling degree days	5	4	
Moisture			
Dew Point	**34** °F		
Average Humidity	66		
Maximum Humidity	92		
Minimum Humidity	39		
Precipitation			
Precipitation	**0.13** in	**0.02** in	**1.17** in (1985)
Month to date precipitation	0.55	0.58	
Year to date precipitation	2.14	2.01	
Snow			
Snow	**T** in	-	- ()
Month to date snowfall	T		
Since 1 July snowfall	2.9		
Snow Depth	**0.00** in		
Sea Level Pressure			
Sea Level Pressure	**29.70** in		
Wind			
Wind Speed	**9** mph (North)		
Max Wind Speed	**21** mph		
Max Gust Speed	**26** mph		
Visibility	**10** miles		

	Actual	Average	Record
Events	Rain		

T = Trace of Precipitation, MM = Missing Value

Source: NWS Daily Summary

Daily Weather History Graph



Search for Another Location

Airport or City:

KABQ

Submit

Trip Planner

Search our weather history database for the weather conditions in past years. The results will help you decide how hot, cold, wet, or windy it might be!

Date:

April

28

Submit

Astronomy

Apr. 28, 2017	**Rise**	**Set**
Actual Time	6:18 AM MDT	7:49 PM MDT
Civil Twilight	5:51 AM MDT	8:16 PM MDT
Nautical Twilight	5:19 AM MDT	8:49 PM MDT
Astronomical Twilight	4:45 AM MDT	9:23 PM MDT
Moon	8:19 AM MDT (4/28)	10:33 PM MDT (4/28)
Length of Visible Light	14h 25m	
Length of Day	13h 31m	

Waxing Crescent, 7% of the Moon is Illuminated

Apr 28	May 2	May 10	May 18	May 25
Waxing Crescent	First Quarter	Full	Last Quarter	New

Hourly Weather History & Observations

Time (MDT)	Temp.	Windchill	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events	Conditions
12:52 AM	**52.0** °F	-	**28.9** °F	41%	**29.59** in	**10.0** mi	North	**16.1** mph	-	N/A		Partly Cloudy
1:52 AM	**50.0** °F	-	**26.1** °F	39%	**29.59** in	**10.0** mi	North	**11.5** mph	-	N/A		Partly Cloudy
2:52 AM	**48.0** °F	-	**27.0** °F	44%	**29.60** in	**10.0** mi	North	**12.7** mph	-	N/A		Clear
3:52 AM	**46.9** °F	-	**27.0** °F	46%	**29.58** in	**10.0** mi	North	**8.1** mph	-	N/A		Clear
4:52 AM	**46.0** °F	**42.5** °F	**26.1** °F	46%	**29.59** in	**10.0** mi	NNW	**6.9** mph	-	N/A		Clear
5:52 AM	**45.0** °F	**39.7** °F	**26.1** °F	48%	**29.60** in	**10.0** mi	NNW	**10.4** mph	-	N/A		Mostly Cloudy
6:52 AM	**43.0** °F	**38.2** °F	**27.0** °F	53%	**29.61** in	**10.0** mi	NNW	**8.1** mph	-	N/A		Scattered Clouds
7:52 AM	**45.0** °F	**43.5** °F	**27.0** °F	49%	**29.62** in	**10.0** mi	NNW	**3.5** mph	-	N/A		Mostly Cloudy
8:52 AM	**46.0** °F	**41.4** °F	**28.0** °F	50%	**29.62** in	**10.0** mi	North	**9.2** mph	-	N/A		Overcast
9:52 AM	**46.0** °F	**39.3** °F	**28.0** °F	50%	**29.62** in	**10.0** mi	North	**16.1** mph	-	N/A		Overcast
10:52 AM	**42.1** °F	**33.6** °F	**36.0** °F	79%	**29.65** in	**10.0** mi	North	**18.4** mph	-	**0.00** in		Overcast
11:40 AM	**39.9** °F	**32.5** °F	**37.9** °F	93%	**29.79** in	**10.0** mi	North	**12.7** mph	-	**0.00** in	Rain	Light Rain
11:52 AM	**39.9** °F	**31.4** °F	**37.0** °F	89%	**29.73** in	**10.0** mi	NNW	**16.1** mph	-	**0.00** in	Rain	Light Rain
12:24 PM	**39.9** °F	**33.4** °F	**37.0** °F	89%	**29.81** in	**10.0** mi	North	**10.4** mph	-	**0.01** in	Rain	Light Rain
12:52 PM	**41.0** °F	**35.8** °F	**37.9** °F	89%	**29.73** in	**10.0** mi	North	**8.1** mph	-	**0.01** in	Rain	Light Rain
1:19 PM	**41.0** °F	**35.2** °F	**37.9** °F	89%	**29.79** in	**6.0** mi	North	**9.2** mph	-	N/A	Rain	Light Rain
1:38 PM	**41.0** °F	**36.4** °F	**37.9** °F	89%	**29.79** in	**6.0** mi	NNE	**6.9** mph	-	**0.01** in	Rain	Light Rain
1:52 PM	**41.0** °F	**35.8** °F	**37.0** °F	86%	**29.72** in	**6.0** mi	NNE	**8.1** mph	-	**0.02** in	Rain	Light Rain
2:46 PM	**42.8** °F	-	**37.4** °F	81%	**29.79** in	**10.0** mi	Calm	Calm	-	**0.00** in	Rain	Light Rain
2:52 PM	**44.1** °F	**42.5** °F	**39.0** °F	82%	**29.71** in	**10.0** mi	Variable	**3.5** mph	-	**0.00** in	Rain	Light Rain
3:52 PM	**44.1** °F	**42.5** °F	**36.0** °F	73%	**29.69** in	**10.0** mi	NW	**3.5** mph	-	**0.00** in		Overcast
4:52 PM	**42.1** °F	**39.2** °F	**37.0** °F	82%	**29.69** in	**10.0** mi	SSE	**4.6** mph	-	**0.04** in	Rain	Light Rain
5:23 PM	**41.0** °F	**36.4** °F	**39.0** °F	93%	**29.77** in	**5.0** mi	SSE	**6.9** mph	-	**0.03** in	Rain	Light Rain

Time (MDT)	Temp.	Windchill	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events	Conditions
5:52 PM	**39.9** °F	**34.5** °F	**37.0** °F	89%	**29.70** in	**10.0** mi	SE	**8.1** mph	-	**0.03** in	Rain	Light Rain
6:44 PM	**39.9** °F	**32.9** °F	**39.0** °F	97%	**29.76** in	**10.0** mi	SE	**11.5** mph	-	**0.02** in		Mostly Cloudy
6:52 PM	**39.9** °F	**33.4** °F	**39.0** °F	97%	**29.71** in	**10.0** mi	SSE	**10.4** mph	-	**0.02** in		Mostly Cloudy
7:48 PM	**39.2** °F	**34.2** °F	**37.4** °F	93%	**29.78** in	**10.0** mi	South	**6.9** mph	-	**0.00** in		Overcast
7:52 PM	**39.9** °F	**36.7** °F	**37.9** °F	93%	**29.72** in	**10.0** mi	SSE	**4.6** mph	-	**0.00** in		Overcast
8:52 PM	**39.9** °F	**36.7** °F	**37.9** °F	93%	**29.75** in	**10.0** mi	ESE	**4.6** mph	-	**0.01** in	Rain	Light Rain
9:44 PM	**42.1** °F	**35.2** °F	**30.9** °F	65%	**29.83** in	**10.0** mi	NW	**12.7** mph	-	**0.00** in		Overcast
9:52 PM	**42.1** °F	**35.7** °F	**32.0** °F	67%	**29.78** in	**10.0** mi	NW	**11.5** mph	-	**0.00** in		Overcast
10:52 PM	**39.0** °F	**31.4** °F	**33.1** °F	79%	**29.83** in	**10.0** mi	NW	**12.7** mph	-	N/A		Overcast
11:52 PM	**39.0** °F	**34.8** °F	**34.0** °F	82%	**29.82** in	**10.0** mi	SE	**5.8** mph	-	N/A		Overcast

Albuquerque, NM

Albuquerque International Sunport

1:58 PM MDT on July 07, 2017 (GMT -0600)

Weather History for KABQ - April, 2017

April

29

2017

View
Saturday, April 29, 2017

Daily | Weekly | Monthly | Custom

	Actual	Average	Record
Temperature			
Mean Temperature	**41** °F	**60** °F	
Max Temperature	**49** °F	**73** °F	**88** °F (1943)
Min Temperature	**32** °F	**47** °F	**31** °F (1991)
Degree Days			
Heating Degree Days	24	5	
Month to date heating degree days	223	272	
Since 1 July heating degree days	3213	4099	
Cooling Degree Days	0	1	

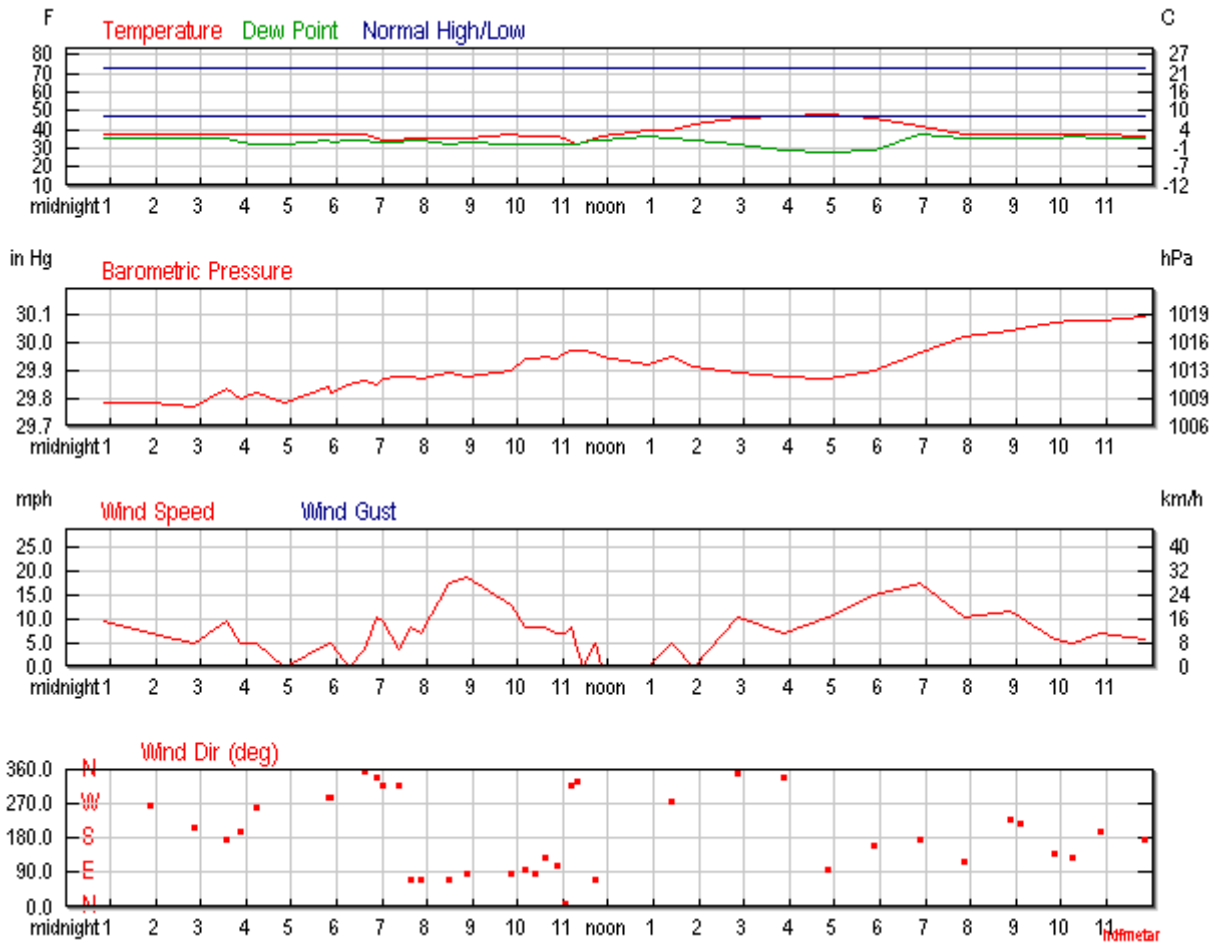
	Actual	Average	Record
Month to date cooling degree days	4	5	
Year to date cooling degree days	5	5	
Moisture			
Dew Point	**33** °F		
Average Humidity	73		
Maximum Humidity	100		
Minimum Humidity	46		
Precipitation			
Precipitation	**0.23** in	**0.01** in	**1.28** in (1907)
Month to date precipitation	0.78	0.59	
Year to date precipitation	2.37	2.02	
Snow			
Snow	**0.70** in	-	- ()
Month to date snowfall	0.7		
Since 1 July snowfall	3.6		
Snow Depth	**0.00** in		
Sea Level Pressure			
Sea Level Pressure	**29.91** in		
Wind			
Wind Speed	**8** mph (SE)		
Max Wind Speed	**22** mph		
Max Gust Speed	**24** mph		
Visibility	**8** miles		

	Actual	Average	Record
Events	Fog , Rain , Snow		

T = Trace of Precipitation, MM = Missing Value

Source: NWS Daily Summary

Daily Weather History Graph



Search for Another Location

Airport or City:

KABQ

Submit

Trip Planner

Search our weather history database for the weather conditions in past years. The results will help you decide how hot, cold, wet, or windy it might be!

Date:

April

29

Submit

Astronomy

Apr. 29, 2017	**Rise**	**Set**
Actual Time	6:17 AM MDT	7:50 PM MDT
Civil Twilight	5:50 AM MDT	8:17 PM MDT
Nautical Twilight	5:18 AM MDT	8:50 PM MDT
Astronomical Twilight	4:44 AM MDT	9:24 PM MDT
Moon	9:14 AM MDT (4/29)	11:38 PM MDT (4/29)
Length of Visible Light	14h 27m	
Length of Day	13h 33m	

Waxing Crescent, 15% of the Moon is Illuminated

Apr 29	May 2	May 10	May 18	May 25
Waxing Crescent	First Quarter	Full	Last Quarter	New

Hourly Weather History & Observations

Time (MDT)	Temp.	Windchill	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events	Conditions
12:52 AM	**37.9** °F	**31.5** °F	**35.1** °F	89%	**29.78** in	**10.0** mi	WSW	**9.2** mph	-	N/A		Overcast
1:52 AM	**37.0** °F	**31.6** °F	**35.1** °F	93%	**29.78** in	**9.0** mi	West	**6.9** mph	-	**0.00** in	Rain	Light Rain
2:52 AM	**37.0** °F	**33.3** °F	**35.1** °F	93%	**29.77** in	**10.0** mi	SSW	**4.6** mph	-	**0.00** in		Overcast
3:33 AM	**37.0** °F	**30.4** °F	**35.1** °F	93%	**29.83** in	**10.0** mi	South	**9.2** mph	-	N/A		Overcast
3:52 AM	**37.0** °F	**33.3** °F	**33.1** °F	86%	**29.80** in	**10.0** mi	SSW	**4.6** mph	-	N/A		Overcast
4:14 AM	**37.0** °F	**33.3** °F	**32.0** °F	82%	**29.82** in	**10.0** mi	West	**4.6** mph	-	N/A		Overcast
4:52 AM	**37.0** °F	-	**32.0** °F	82%	**29.78** in	**10.0** mi	Calm	Calm	-	N/A		Overcast
5:50 AM	**37.4** °F	**33.8** °F	**33.8** °F	87%	**29.84** in	**10.0** mi	WNW	**4.6** mph	-	**0.00** in	Rain	Light Rain
5:52 AM	**37.0** °F	**33.3** °F	**33.1** °F	86%	**29.82** in	**8.0** mi	WNW	**4.6** mph	-	**0.00** in	Rain	Light Rain
6:17 AM	**37.0** °F	-	**34.0** °F	89%	**29.85** in	**8.0** mi	Calm	Calm	-	**0.01** in	Rain	Light Rain
6:36 AM	**37.0** °F	**34.5** °F	**34.0** °F	89%	**29.86** in	**6.0** mi	North	**3.5** mph	-	**0.01** in	Rain , Snow	Light Snow
6:52 AM	**35.1** °F	**27.4** °F	**33.1** °F	92%	**29.85** in	**2.0** mi	NNW	**10.4** mph	-	**0.03** in	Rain , Snow	Light Snow
7:00 AM	**34.0** °F	**26.6** °F	**33.1** °F	96%	**29.87** in	**2.0** mi	NW	**9.2** mph	-	**0.01** in	Rain , Snow	Light Snow
7:22 AM	**34.0** °F	**31.0** °F	**33.1** °F	96%	**29.88** in	**2.0** mi	NW	**3.5** mph	-	**0.02** in	Snow	Light Snow
7:39 AM	**35.1** °F	**28.6** °F	**34.0** °F	96%	**29.88** in	**4.0** mi	ENE	**8.1** mph	-	**0.03** in	Snow	Light Snow
7:52 AM	**35.1** °F	**29.3** °F	**34.0** °F	96%	**29.87** in	**4.0** mi	ENE	**6.9** mph	-	**0.03** in	Rain	Light Rain
8:29 AM	**35.1** °F	**24.8** °F	**32.0** °F	89%	**29.89** in	**10.0** mi	ENE	**17.3** mph	-	**0.00** in		Overcast
8:52 AM	**35.1** °F	**24.5** °F	**33.1** °F	92%	**29.88** in	**10.0** mi	East	**18.4** mph	-	**0.00** in		Overcast
9:52 AM	**37.0** °F	**28.9** °F	**32.0** °F	82%	**29.90** in	**10.0** mi	East	**12.7** mph	-	N/A		Overcast
10:09 AM	**36.0** °F	**29.6** °F	**32.0** °F	86%	**29.94** in	**3.0** mi	East	**8.1** mph	-	**0.00** in	Snow	Light Snow
10:22 AM	**36.0** °F	**29.6** °F	**32.0** °F	86%	**29.94** in	**2.5** mi	East	**8.1** mph	-	**0.00** in	Snow	Light Snow
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10:52 AM	**36.0** °F	**30.3** °F	**32.0** °F	86%	**29.94** in	**6.0** mi	ESE	**6.9** mph	-	**0.00** in	Snow	Light Snow

Time (MDT)	Temp.	Windchill	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events	Conditions
11:03 AM	**35.1** °F	**29.3** °F	**32.0** °F	89%	**29.96** in	**1.0** mi	North	**6.9** mph	-	**0.01** in	Snow	Light Snow
11:10 AM	**33.1** °F	**26.1** °F	**32.0** °F	96%	**29.97** in	**0.5** mi	NW	**8.1** mph	-	**0.02** in	Fog , Snow	Snow
11:18 AM	**32.0** °F	**28.7** °F	**32.0** °F	100%	**29.97** in	**0.2** mi	NNW	**3.5** mph	-	**0.05** in	Fog , Snow	Heavy Snow
11:27 AM	**33.1** °F	-	**33.1** °F	100%	**29.97** in	**1.0** mi	Calm	Calm	-	**0.06** in	Snow	Light Snow
11:44 AM	**35.1** °F	**31.0** °F	**34.0** °F	96%	**29.96** in	**5.0** mi	ENE	**4.6** mph	-	**0.07** in		Overcast
11:52 AM	**36.0** °F	-	**34.0** °F	93%	**29.95** in	**5.0** mi	Calm	Calm	-	**0.07** in		Overcast
12:52 PM	**39.9** °F	-	**36.0** °F	86%	**29.92** in	**10.0** mi	Calm	Calm	-	N/A		Overcast
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1:52 PM	**43.0** °F	-	**34.0** °F	71%	**29.91** in	**10.0** mi	Calm	Calm	-	N/A		Overcast
2:52 PM	**46.0** °F	**41.0** °F	**32.0** °F	58%	**29.89** in	**10.0** mi	North	**10.4** mph	-	**0.00** in		Mostly Cloudy
3:52 PM	**46.9** °F	-	**28.9** °F	50%	**29.88** in	**10.0** mi	NNW	**6.9** mph	-	N/A		Mostly Cloudy
4:52 PM	**48.0** °F	-	**28.0** °F	46%	**29.87** in	**10.0** mi	East	**10.4** mph	-	N/A		Mostly Cloudy
5:52 PM	**46.0** °F	**39.6** °F	**28.9** °F	51%	**29.90** in	**10.0** mi	SSE	**15.0** mph	-	N/A		Mostly Cloudy
6:52 PM	**42.1** °F	**33.9** °F	**37.9** °F	85%	**29.96** in	**10.0** mi	South	**17.3** mph	-	**0.01** in		Mostly Cloudy
7:52 PM	**37.9** °F	**30.9** °F	**35.1** °F	89%	**30.02** in	**10.0** mi	ESE	**10.4** mph	-	**0.00** in	Rain	Light Rain
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9:05 PM	**37.9** °F	**30.9** °F	**35.1** °F	89%	**30.05** in	**10.0** mi	SW	**10.4** mph	-	**0.00** in	Rain	Light Rain
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Albuquerque, NM

Albuquerque International Sunport

1:58 PM MDT on July 07, 2017 (GMT -0600)

Weather History for KABQ - April, 2017

May

1

2017

View
Saturday, April 29, 2017

Daily | Weekly | Monthly | Custom

	Actual	Average	Record
Temperature			
Mean Temperature	**41** °F	**60** °F	
Max Temperature	**49** °F	**73** °F	**88** °F (1943)
Min Temperature	**32** °F	**47** °F	**31** °F (1991)
Degree Days			
Heating Degree Days	24	5	
Month to date heating degree days	223	272	
Since 1 July heating degree days	3213	4099	
Cooling Degree Days	0	1	

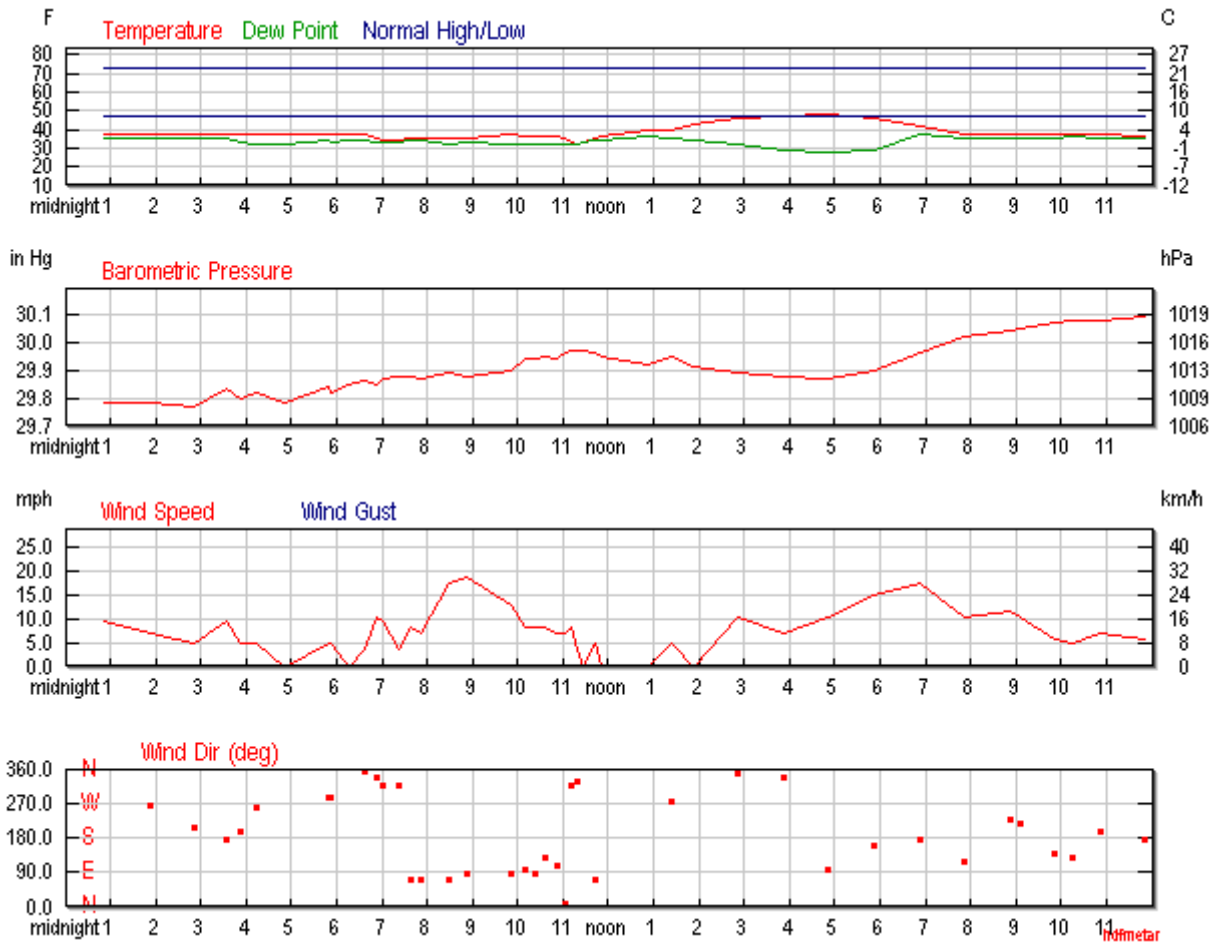
	Actual	Average	Record
Month to date cooling degree days	4	5	
Year to date cooling degree days	5	5	
Moisture			
Dew Point	**33** °F		
Average Humidity	73		
Maximum Humidity	100		
Minimum Humidity	46		
Precipitation			
Precipitation	**0.23** in	**0.01** in	**1.28** in (1907)
Month to date precipitation	0.78	0.59	
Year to date precipitation	2.37	2.02	
Snow			
Snow	**0.70** in	-	- ()
Month to date snowfall	0.7		
Since 1 July snowfall	3.6		
Snow Depth	**0.00** in		
Sea Level Pressure			
Sea Level Pressure	**29.91** in		
Wind			
Wind Speed	**8** mph (SE)		
Max Wind Speed	**22** mph		
Max Gust Speed	**24** mph		
Visibility	**8** miles		

	Actual	Average	Record
Events	Fog , Rain , Snow		

T = Trace of Precipitation, MM = Missing Value

Source: NWS Daily Summary

Daily Weather History Graph



Search for Another Location

Airport or City:

KABQ

Submit

Trip Planner

Search our weather history database for the weather conditions in past years. The results will help you decide how hot, cold, wet, or windy it might be!

Date:

April

29

Submit

Astronomy

Apr. 29, 2017	**Rise**	**Set**
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Albuquerque, NM

Albuquerque International Sunport

2:01 PM MDT on July 07, 2017 (GMT -0600)

Weather History for KABQ - May, 2017

May

16

2017

View
Tuesday, May 16, 2017

Daily | Weekly | Monthly | Custom

	Actual	Average	Record
Temperature			
Mean Temperature	**57** °F	**66** °F	
Max Temperature	**67** °F	**79** °F	**93** °F (1996)
Min Temperature	**46** °F	**53** °F	**30** °F (1916)
Degree Days			
Heating Degree Days	8	2	
Month to date heating degree days	35	53	
Since 1 July heating degree days	3263	4157	
Cooling Degree Days	0	3	

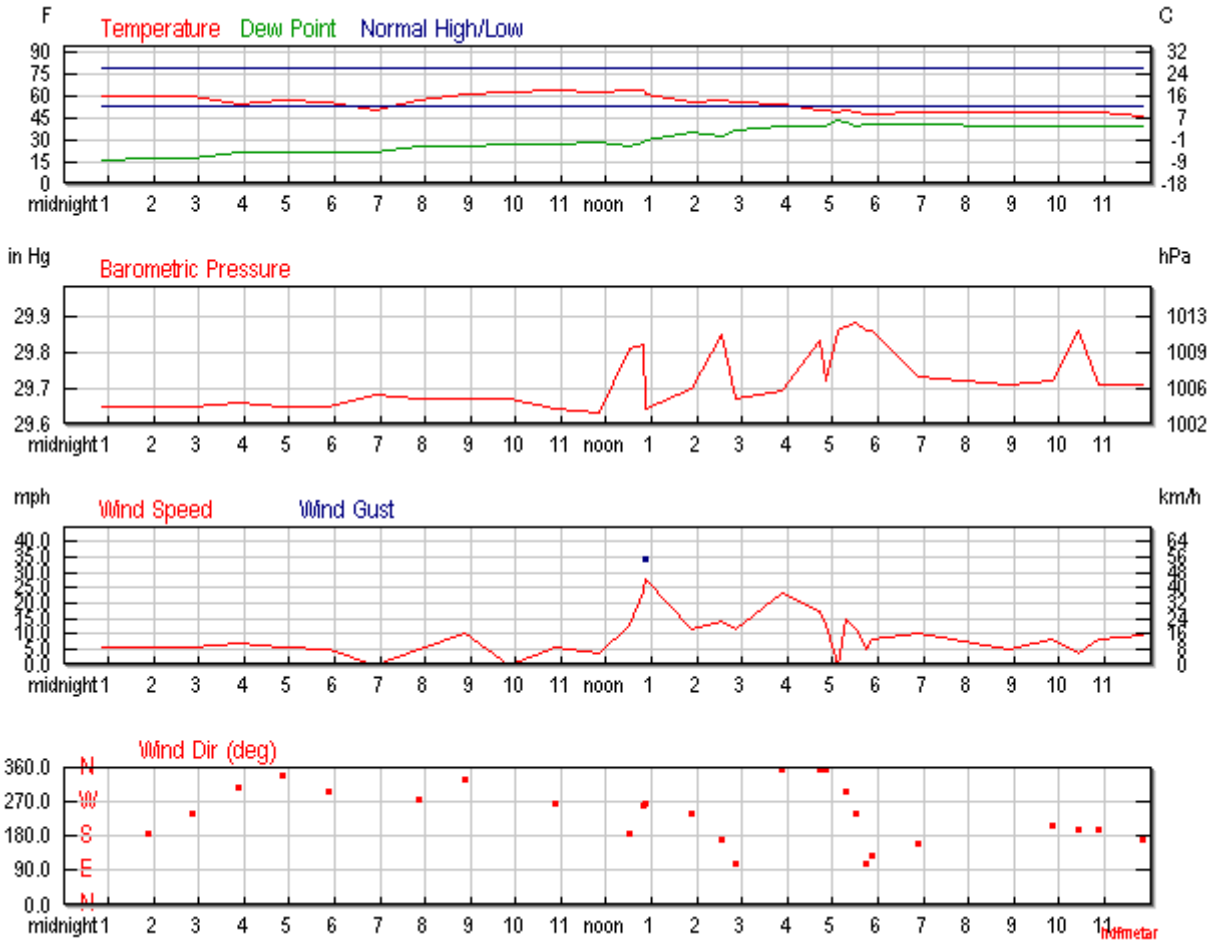
	Actual	Average	Record
Month to date cooling degree days	28	27	
Year to date cooling degree days	33	34	
Growing Degree Days	5 (Base 50)		
Moisture			
Dew Point	**32** °F		
Average Humidity	49		
Maximum Humidity	80		
Minimum Humidity	17		
Precipitation			
Precipitation	**0.05** in	**0.01** in	**0.71** in (2007)
Month to date precipitation	0.15	0.26	
Year to date precipitation	2.52	2.30	
Snow			
Snow	**0.00** in	-	- ()
Month to date snowfall	0.0		
Since 1 July snowfall	3.6		
Snow Depth	**0.00** in		
Sea Level Pressure			
Sea Level Pressure	**29.72** in		
Wind			
Wind Speed	**8** mph (WSW)		
Max Wind Speed	**33** mph		
Max Gust Speed	**41** mph		

	Actual	Average	Record
Visibility	**10** miles		
Events	Rain , Thunderstorm		

T = Trace of Precipitation, MM = Missing Value

Source: NWS Daily Summary

Daily Weather History Graph



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KABQ

Submit

Trip Planner

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Date:

May

16

Submit

Astronomy

May. 16, 2017	**Rise**	**Set**
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Civil Twilight	5:33 AM MDT	8:32 PM MDT
Nautical Twilight	4:59 AM MDT	9:06 PM MDT
Astronomical Twilight	4:22 AM MDT	9:43 PM MDT
Moon	12:06 AM MDT (5/16)	10:39 AM MDT (5/16)
Length of Visible Light	14h 58m	
Length of Day	14h 02m	

Waning Gibbous, 72% of the Moon is Illuminated

May 16	May 18	May 25	Jun 1	Jun 9
Waning Gibbous	Last Quarter	New	First Quarter	Full

Hourly Weather History & Observations

Time (MDT)	Temp.	Windchill	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events	Conditions
12:52 AM	**60.1** °F	-	**16.0** °F	18%	**29.65** in	**10.0** mi	SSE	**5.8** mph	-	N/A		Clear
1:52 AM	**60.1** °F	-	**17.1** °F	19%	**29.65** in	**10.0** mi	South	**5.8** mph	-	N/A		Clear
2:52 AM	**60.1** °F	-	**17.1** °F	19%	**29.65** in	**10.0** mi	WSW	**5.8** mph	-	N/A		Clear
3:52 AM	**55.0** °F	-	**21.0** °F	27%	**29.66** in	**10.0** mi	NW	**6.9** mph	-	N/A		Clear
4:52 AM	**57.0** °F	-	**21.0** °F	25%	**29.65** in	**10.0** mi	NNW	**5.8** mph	-	N/A		Clear
5:52 AM	**55.9** °F	-	**21.9** °F	27%	**29.65** in	**10.0** mi	WNW	**4.6** mph	-	N/A		Clear
6:52 AM	**51.1** °F	-	**21.9** °F	32%	**29.68** in	**10.0** mi	Calm	Calm	-	N/A		Clear
7:52 AM	**57.0** °F	-	**26.1** °F	30%	**29.67** in	**10.0** mi	West	**4.6** mph	-	N/A		Clear
8:52 AM	**61.0** °F	-	**26.1** °F	26%	**29.67** in	**10.0** mi	NNW	**10.4** mph	-	N/A		Partly Cloudy
9:52 AM	**63.0** °F	-	**27.0** °F	26%	**29.67** in	**10.0** mi	Calm	Calm	-	N/A		Partly Cloudy
10:52 AM	**64.9** °F	-	**27.0** °F	24%	**29.64** in	**10.0** mi	West	**5.8** mph	-	N/A		Partly Cloudy
11:52 AM	**63.0** °F	-	**28.0** °F	27%	**29.63** in	**10.0** mi	Variable	**3.5** mph	-	**0.00** in		Mostly Cloudy
12:30 PM	**64.9** °F	-	**26.1** °F	23%	**29.81** in	**10.0** mi	South	**12.7** mph	-	N/A	Thunderstorm	Mostly Cloudy
12:49 PM	**64.4** °F	-	**28.4** °F	26%	**29.82** in	**10.0** mi	West	**24.2** mph	**34.5** mph	N/A		Overcast
12:52 PM	**62.1** °F	-	**30.0** °F	30%	**29.64** in	**10.0** mi	West	**27.6** mph	**34.5** mph	N/A		Overcast
1:52 PM	**55.9** °F	-	**35.1** °F	45%	**29.70** in	**10.0** mi	WSW	**11.5** mph	-	**0.00** in		Overcast
2:34 PM	**57.0** °F	-	**33.1** °F	40%	**29.85** in	**10.0** mi	South	**13.8** mph	**18.4** mph	**0.00** in		Overcast
2:52 PM	**55.9** °F	-	**37.0** °F	49%	**29.67** in	**10.0** mi	ESE	**11.5** mph	-	**0.00** in		Mostly Cloudy
3:52 PM	**55.0** °F	-	**39.9** °F	57%	**29.69** in	**10.0** mi	North	**23.0** mph	**31.1** mph	**0.00** in		Mostly Cloudy
4:43 PM	**51.1** °F	-	**39.9** °F	66%	**29.83** in	**10.0** mi	North	**17.3** mph	-	N/A	Thunderstorm	Thunderstorm
4:52 PM	**51.1** °F	-	**39.9** °F	66%	**29.72** in	**10.0** mi	North	**12.7** mph	-	N/A	Thunderstorm	Overcast

Time (MDT)	Temp.	Windchill	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events	Conditions
5:08 PM	**48.9** °F	-	**43.0** °F	80%	**29.86** in	**6.0** mi	Calm	Calm	-	N/A	Rain	Light Rain
5:18 PM	**50.0** °F	-	**42.1** °F	74%	**29.87** in	**7.0** mi	WNW	**15.0** mph	**24.2** mph	N/A	Rain , Thunderstorm	Light Thunderstorms and Rain
5:30 PM	**48.9** °F	-	**39.9** °F	71%	**29.88** in	**9.0** mi	WSW	**11.5** mph	-	**0.01** in	Rain , Thunderstorm	Light Rain
5:43 PM	**48.0** °F	-	**41.0** °F	77%	**29.86** in	**6.0** mi	ESE	**4.6** mph	-	**0.02** in	Rain	Light Rain
5:52 PM	**48.0** °F	-	**41.0** °F	77%	**29.86** in	**6.0** mi	SE	**8.1** mph	-	**0.02** in	Rain	Light Rain
6:52 PM	**48.9** °F	-	**41.0** °F	74%	**29.73** in	**10.0** mi	SSE	**10.4** mph	-	**0.03** in		Mostly Cloudy
8:52 PM	**48.9** °F	-	**39.9** °F	71%	**29.71** in	**10.0** mi	Variable	**4.6** mph	-	N/A		Mostly Cloudy
9:52 PM	**48.9** °F	-	**39.9** °F	71%	**29.72** in	**10.0** mi	SSW	**8.1** mph	-	N/A		Overcast
10:27 PM	**48.9** °F	-	**39.9** °F	71%	**29.86** in	**10.0** mi	SSW	**3.5** mph	-	**0.00** in		Mostly Cloudy
10:52 PM	**48.9** °F	-	**39.9** °F	71%	**29.71** in	**10.0** mi	SSW	**8.1** mph	-	**0.00** in		Scattered Clouds
11:52 PM	**46.0** °F	**41.4** °F	**39.9** °F	79%	**29.71** in	**10.0** mi	South	**9.2** mph	-	N/A		Partly Cloudy

Albuquerque, NM

Albuquerque International Sunport

2:08 PM MDT on July 07, 2017 (GMT -0600)

Weather History for KABQ - May, 2017

May

18

2017

View
Thursday, May 18, 2017

Daily | Weekly | Monthly | Custom

	Actual	Average	Record
Temperature			
Mean Temperature	**56** °F	**66** °F	
Max Temperature	**68** °F	**79** °F	**94** °F (1996)
Min Temperature	**44** °F	**53** °F	**32** °F (1930)
Degree Days			
Heating Degree Days	9	2	
Month to date heating degree days	51	57	
Since 1 July heating degree days	3279	4161	
Cooling Degree Days	0	3	

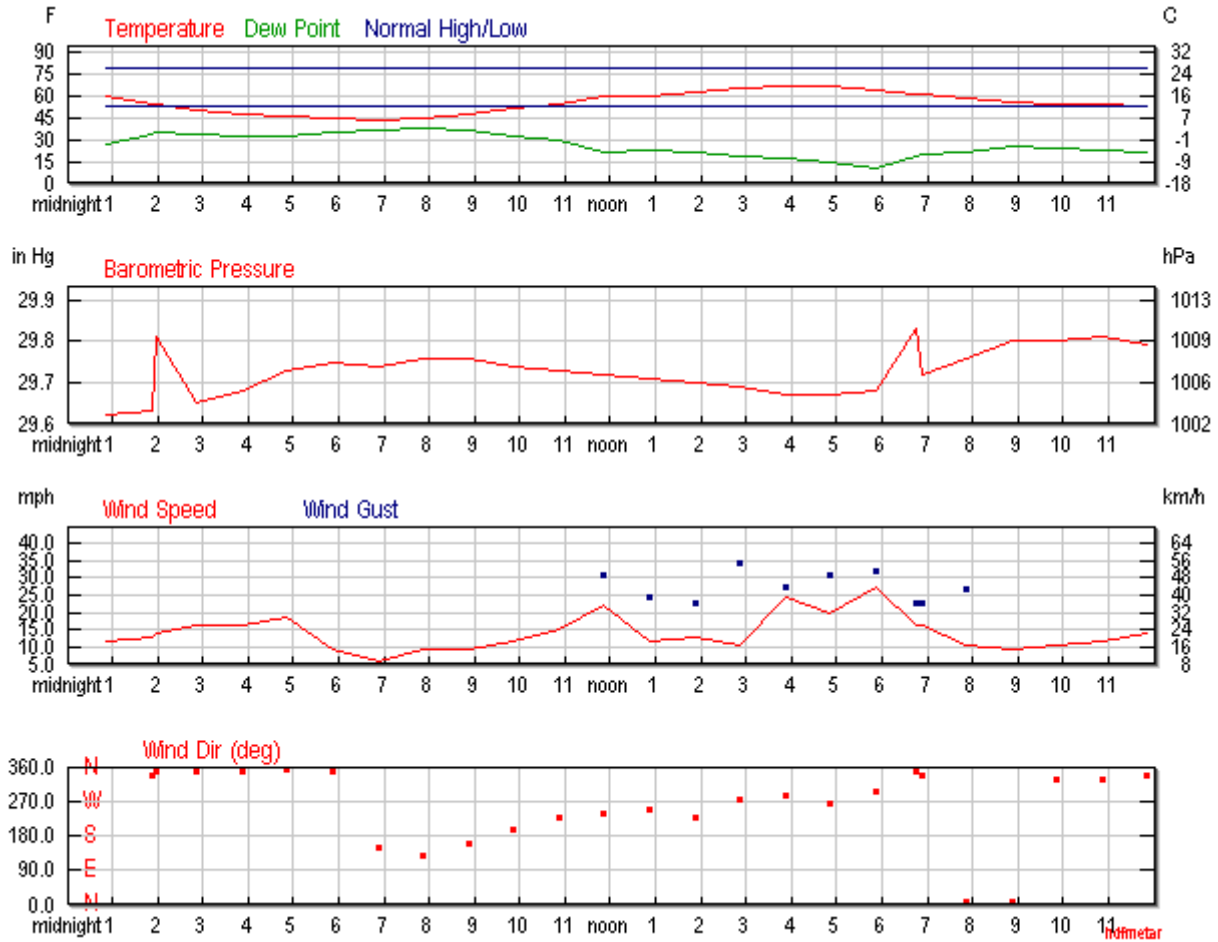
	Actual	Average	Record
Month to date cooling degree days	28	33	
Year to date cooling degree days	33	40	
Growing Degree Days	6 (Base 50)		
Moisture			
Dew Point	**26** °F		
Average Humidity	44		
Maximum Humidity	76		
Minimum Humidity	12		
Precipitation			
Precipitation	**0.01** in	**0.01** in	**0.63** in (1910)
Month to date precipitation	0.16	0.29	
Year to date precipitation	2.53	2.33	
Snow			
Snow	**0.00** in	-	- ()
Month to date snowfall	0.0		
Since 1 July snowfall	3.6		
Snow Depth	**0.00** in		
Sea Level Pressure			
Sea Level Pressure	**29.73** in		
Wind			
Wind Speed	**14** mph (NW)		
Max Wind Speed	**28** mph		
Max Gust Speed	**35** mph		

	Actual	Average	Record
Visibility	**10** miles		
Events	Rain		

T = Trace of Precipitation, MM = Missing Value

Source: NWS Daily Summary

Daily Weather History Graph



Search for Another Location

Airport or City:

KABQ

Submit

Trip Planner

Search our weather history database for the weather conditions in past years. The results will help you decide how hot, cold, wet, or windy it might be!

Date:

May

18

Submit

Astronomy

May. 18, 2017	**Rise**	**Set**
Actual Time	6:00 AM MDT	8:05 PM MDT
Civil Twilight	5:32 AM MDT	8:34 PM MDT
Nautical Twilight	4:57 AM MDT	9:08 PM MDT
Astronomical Twilight	4:20 AM MDT	9:46 PM MDT
Moon	1:28 AM MDT (5/18)	12:30 PM MDT (5/18)
Length of Visible Light	15h 02m	
Length of Day	14h 05m	

Waning Gibbous, 53% of the Moon is Illuminated

May 18	May 18	May 25	Jun 1	Jun 9
Waning Gibbous	Last Quarter	New	First Quarter	Full

Hourly Weather History & Observations

Time (MDT)	Temp.	Windchill	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events	Conditions
12:52 AM	**60.1** °F	-	**27.0** °F	28%	**29.62** in	**10.0** mi	West	**11.5** mph	**19.6** mph	N/A		Mostly Cloudy
1:52 AM	**55.0** °F	-	**34.0** °F	45%	**29.63** in	**10.0** mi	NNW	**12.7** mph	-	N/A		Overcast
1:59 AM	**54.0** °F	-	**35.1** °F	49%	**29.81** in	**10.0** mi	North	**13.8** mph	-	N/A		Overcast
2:52 AM	**50.0** °F	-	**34.0** °F	54%	**29.65** in	**10.0** mi	North	**16.1** mph	-	N/A		Overcast
3:52 AM	**48.0** °F	-	**33.1** °F	56%	**29.68** in	**10.0** mi	North	**16.1** mph	**26.5** mph	N/A		Overcast
4:52 AM	**46.9** °F	-	**32.0** °F	56%	**29.73** in	**10.0** mi	North	**18.4** mph	-	N/A		Mostly Cloudy
5:52 AM	**45.0** °F	**40.1** °F	**35.1** °F	68%	**29.75** in	**10.0** mi	North	**9.2** mph	-	**0.01** in	Rain	Light Rain
6:52 AM	**44.1** °F	**40.8** °F	**37.0** °F	76%	**29.74** in	**10.0** mi	SSE	**5.8** mph	-	**0.00** in		Mostly Cloudy
7:52 AM	**45.0** °F	**40.1** °F	**37.9** °F	76%	**29.76** in	**10.0** mi	SE	**9.2** mph	-	N/A		Mostly Cloudy
8:52 AM	**48.0** °F	-	**36.0** °F	63%	**29.76** in	**10.0** mi	SSE	**9.2** mph	-	N/A		Scattered Clouds
9:52 AM	**52.0** °F	-	**32.0** °F	47%	**29.74** in	**10.0** mi	SSW	**11.5** mph	-	N/A		Partly Cloudy
10:52 AM	**54.0** °F	-	**30.0** °F	40%	**29.73** in	**10.0** mi	SW	**15.0** mph	**20.7** mph	N/A		Scattered Clouds
11:52 AM	**60.1** °F	-	**21.9** °F	23%	**29.72** in	**10.0** mi	WSW	**21.9** mph	**31.1** mph	N/A		Partly Cloudy
12:52 PM	**60.1** °F	-	**23.0** °F	24%	**29.71** in	**10.0** mi	WSW	**11.5** mph	**24.2** mph	N/A		Scattered Clouds
1:52 PM	**63.0** °F	-	**21.9** °F	21%	**29.70** in	**10.0** mi	SW	**12.7** mph	**23.0** mph	N/A		Mostly Cloudy
2:52 PM	**66.0** °F	-	**19.0** °F	17%	**29.69** in	**10.0** mi	West	**10.4** mph	**34.5** mph	N/A		Mostly Cloudy
3:52 PM	**66.9** °F	-	**17.1** °F	15%	**29.67** in	**10.0** mi	WNW	**24.2** mph	**27.6** mph	N/A		Scattered Clouds
4:52 PM	**66.9** °F	-	**15.1** °F	14%	**29.67** in	**10.0** mi	West	**19.6** mph	**31.1** mph	N/A		Scattered Clouds
5:52 PM	**64.9** °F	-	**10.9** °F	12%	**29.68** in	**10.0** mi	WNW	**27.6** mph	**32.2** mph	N/A		Mostly Cloudy
6:44 PM	**62.1** °F	-	**19.0** °F	19%	**29.83** in	**10.0** mi	North	**16.1** mph	**23.0** mph	N/A		Mostly Cloudy
6:52 PM	**62.1** °F	-	**19.9** °F	20%	**29.72** in	**10.0** mi	NNW	**16.1** mph	**23.0** mph	N/A		Mostly Cloudy
7:52 PM	**59.0** °F	-	**21.9** °F	24%	**29.76** in	**10.0** mi	North	**10.4** mph	**26.5** mph	**0.00** in		Mostly Cloudy

Time (MDT)	Temp.	Windchill	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events	Conditions
8:52 PM	**55.9** °F	-	**26.1** °F	32%	**29.80** in	**10.0** mi	North	**9.2** mph	-	N/A		Overcast
9:52 PM	**55.0** °F	-	**24.1** °F	30%	**29.80** in	**10.0** mi	NNW	**10.4** mph	-	**0.00** in		Scattered Clouds
10:52 PM	**54.0** °F	-	**23.0** °F	30%	**29.81** in	**10.0** mi	NNW	**11.5** mph	-	N/A		Mostly Cloudy
11:52 PM	**53.1** °F	-	**21.9** °F	30%	**29.79** in	**10.0** mi	NNW	**13.8** mph	-	N/A		Mostly Cloudy

Albuquerque, NM

Albuquerque International Sunport

2:14 PM MDT on July 07, 2017 (GMT -0600)

Weather History for KABQ - May, 2017

May

31

2017

View
Wednesday, May 31, 2017

Daily | Weekly | Monthly | Custom

	Actual	Average	Record
Temperature			
Mean Temperature	**69** °F	**70** °F	
Max Temperature	**78** °F	**84** °F	**97** °F (1956)
Min Temperature	**59** °F	**57** °F	**33** °F (1909)
Degree Days			
Heating Degree Days	0	1	
Month to date heating degree days	72	72	
Since 1 July heating degree days	3300	4175	
Cooling Degree Days	4	6	

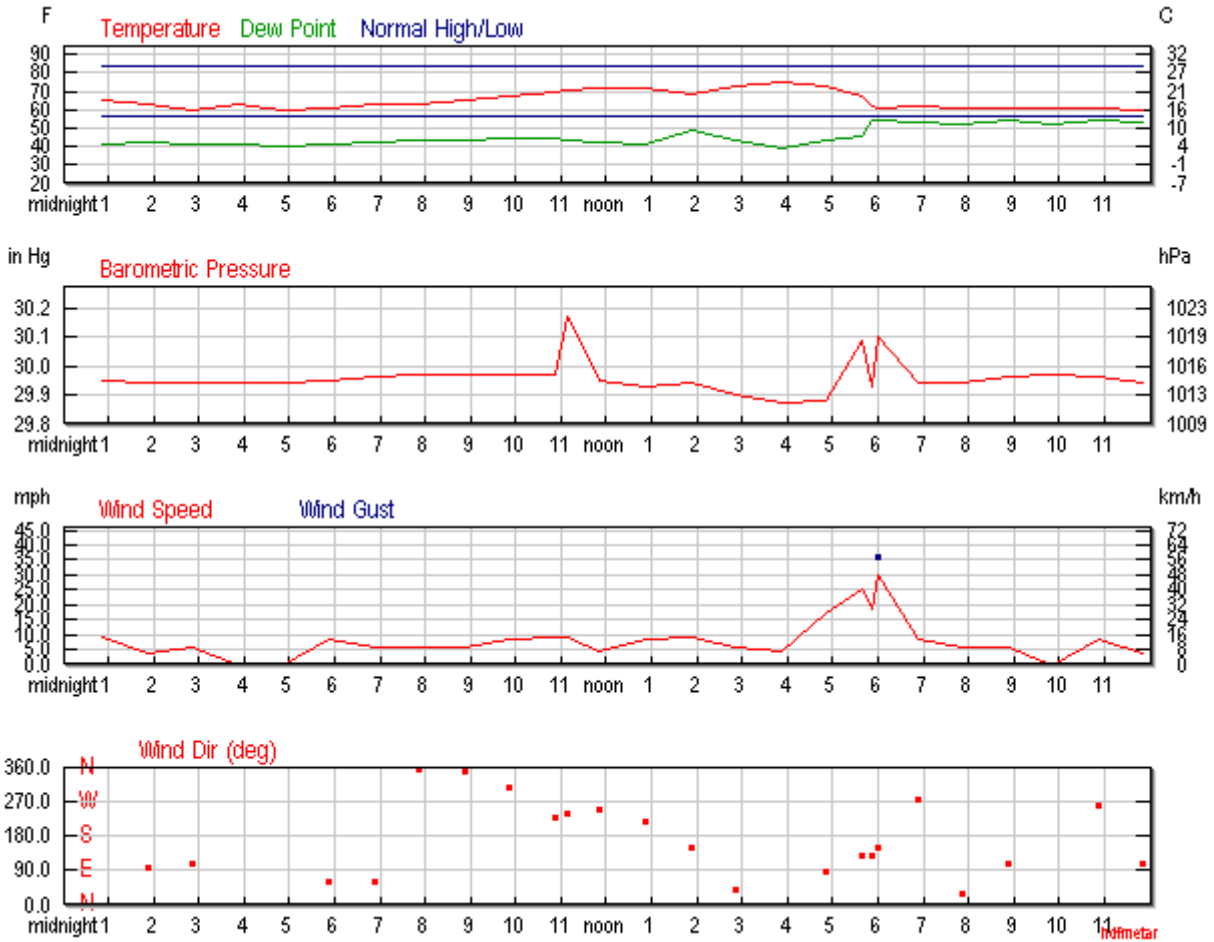
	Actual	Average	Record
Month to date cooling degree days	74	91	
Year to date cooling degree days	79	98	
Growing Degree Days	19 (Base 50)		
Moisture			
Dew Point	**46** °F		
Average Humidity	53		
Maximum Humidity	78		
Minimum Humidity	27		
Precipitation			
Precipitation	**0.08** in	**0.02** in	**0.50** in (1914)
Month to date precipitation	0.24	0.50	
Year to date precipitation	2.61	2.54	
Snow			
Snow	**0.00** in	-	- ()
Month to date snowfall	0.0		
Since 1 July snowfall	3.6		
Snow Depth	**0.00** in		
Sea Level Pressure			
Sea Level Pressure	**29.96** in		
Wind			
Wind Speed	**7** mph (ESE)		
Max Wind Speed	**31** mph		
Max Gust Speed	**38** mph		

	Actual	Average	Record
Visibility	**10** miles		
Events	Rain , Thunderstorm		

T = Trace of Precipitation, MM = Missing Value

Source: NWS Daily Summary

Daily Weather History Graph



Search for Another Location

Airport or City:

KABQ

Submit

Trip Planner

Search our weather history database for the weather conditions in past years. The results will help you decide how hot, cold, wet, or windy it might be!

Date:

May

31

Submit

Astronomy

May. 31, 2017	**Rise**	**Set**
Actual Time	5:53 AM MDT	8:14 PM MDT
Civil Twilight	5:24 AM MDT	8:44 PM MDT
Nautical Twilight	4:48 AM MDT	9:20 PM MDT
Astronomical Twilight	4:09 AM MDT	9:59 PM MDT
Moon	12:09 PM MDT (5/31)	12:54 AM MDT (5/31)
Length of Visible Light	15h 19m	
Length of Day	14h 21m	

Waxing Crescent, 42% of the Moon is Illuminated

May 31	Jun 1	Jun 9	Jun 17	Jun 23
Waxing Crescent	First Quarter	Full	Last Quarter	New

Hourly Weather History & Observations

Time (MDT)	Temp.	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events	Conditions
12:52 AM	**64.9** °F	**41.0** °F	42%	**29.95** in	**10.0** mi	East	**9.2** mph	-	N/A		Scattered Clouds
1:52 AM	**63.0** °F	**42.1** °F	46%	**29.94** in	**10.0** mi	East	**3.5** mph	-	N/A		Partly Cloudy
2:52 AM	**60.1** °F	**41.0** °F	49%	**29.94** in	**10.0** mi	ESE	**5.8** mph	-	N/A		Partly Cloudy
3:52 AM	**63.0** °F	**41.0** °F	45%	**29.94** in	**10.0** mi	Calm	Calm	-	N/A		Mostly Cloudy
4:52 AM	**60.1** °F	**39.9** °F	47%	**29.94** in	**10.0** mi	Calm	Calm	-	N/A		Mostly Cloudy
5:52 AM	**61.0** °F	**41.0** °F	48%	**29.95** in	**10.0** mi	ENE	**8.1** mph	-	N/A		Mostly Cloudy
6:52 AM	**63.0** °F	**42.1** °F	46%	**29.96** in	**10.0** mi	ENE	**5.8** mph	-	N/A		Mostly Cloudy
7:52 AM	**63.0** °F	**43.0** °F	48%	**29.97** in	**10.0** mi	North	**5.8** mph	-	N/A		Mostly Cloudy
8:52 AM	**64.9** °F	**43.0** °F	45%	**29.97** in	**10.0** mi	North	**5.8** mph	-	N/A		Overcast
9:52 AM	**66.9** °F	**44.1** °F	44%	**29.97** in	**10.0** mi	NW	**8.1** mph	-	N/A		Overcast
10:52 AM	**70.0** °F	**44.1** °F	39%	**29.97** in	**10.0** mi	SW	**9.2** mph	-	N/A	Thunderstorm	Overcast
11:08 AM	**71.1** °F	**43.0** °F	36%	**30.17** in	**10.0** mi	WSW	**9.2** mph	-	N/A		Overcast
11:52 AM	**72.0** °F	**42.1** °F	34%	**29.95** in	**10.0** mi	WSW	**4.6** mph	-	N/A		Overcast
12:52 PM	**72.0** °F	**41.0** °F	33%	**29.93** in	**10.0** mi	SW	**8.1** mph	-	N/A		Overcast
1:52 PM	**68.0** °F	**48.9** °F	50%	**29.94** in	**8.0** mi	SSE	**9.2** mph	-	**0.01** in	Rain	Light Rain
2:52 PM	**73.0** °F	**43.0** °F	34%	**29.90** in	**10.0** mi	NE	**5.8** mph	-	**0.00** in		Overcast
3:52 PM	**75.0** °F	**39.0** °F	27%	**29.87** in	**10.0** mi	Variable	**4.6** mph	-	N/A		Mostly Cloudy
4:52 PM	**73.0** °F	**43.0** °F	34%	**29.88** in	**10.0** mi	East	**17.3** mph	**26.5** mph	N/A		Mostly Cloudy
5:38 PM	**66.9** °F	**46.0** °F	47%	**30.09** in	**10.0** mi	SE	**25.3** mph	-	N/A	Thunderstorm	Overcast
5:52 PM	**62.1** °F	**54.0** °F	75%	**29.93** in	**9.0** mi	SE	**18.4** mph	**27.6** mph	**0.00** in	Rain , Thunderstorm	Light Rain
6:00 PM	**61.0** °F	**54.0** °F	78%	**30.10** in	**10.0** mi	SSE	**29.9** mph	**35.7** mph	**0.00** in	Rain	Light Rain
6:52 PM	**62.1** °F	**53.1** °F	72%	**29.94** in	**5.0** mi	West	**8.1** mph	-	**0.07** in	Rain	Rain

Time (MDT)	Temp.	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events	Conditions
7:52 PM	**61.0** °F	**52.0** °F	72%	**29.94** in	**10.0** mi	NNE	**5.8** mph	-	**0.00** in		Mostly Cloudy
8:52 PM	**61.0** °F	**54.0** °F	78%	**29.96** in	**10.0** mi	ESE	**5.8** mph	-	N/A		Mostly Cloudy
9:52 PM	**61.0** °F	**52.0** °F	72%	**29.97** in	**10.0** mi	Calm	Calm	-	N/A		Mostly Cloudy
10:52 PM	**61.0** °F	**54.0** °F	78%	**29.96** in	**10.0** mi	West	**8.1** mph	-	N/A		Mostly Cloudy
11:52 PM	**60.1** °F	**53.1** °F	78%	**29.94** in	**10.0** mi	ESE	**3.5** mph	-	N/A		Mostly Cloudy

Albuquerque, NM

Albuquerque International Sunport

2:15 PM MDT on July 07, 2017 (GMT -0600)

Weather History for KABQ - June, 2017

June

26

2017

View

Monday, June 26, 2017

Daily | Weekly | Monthly | Custom

	Actual	Average	Record
Temperature			
Mean Temperature	**77** °F	**78** °F	
Max Temperature	**90** °F	**91** °F	**107** °F (1994)
Min Temperature	**64** °F	**65** °F	**45** °F (1916)
Degree Days			
Heating Degree Days	0	0	
Month to date heating degree days	0	0	
Since 1 June heating degree days	0	0	
Since 1 July heating degree days	3300	4175	

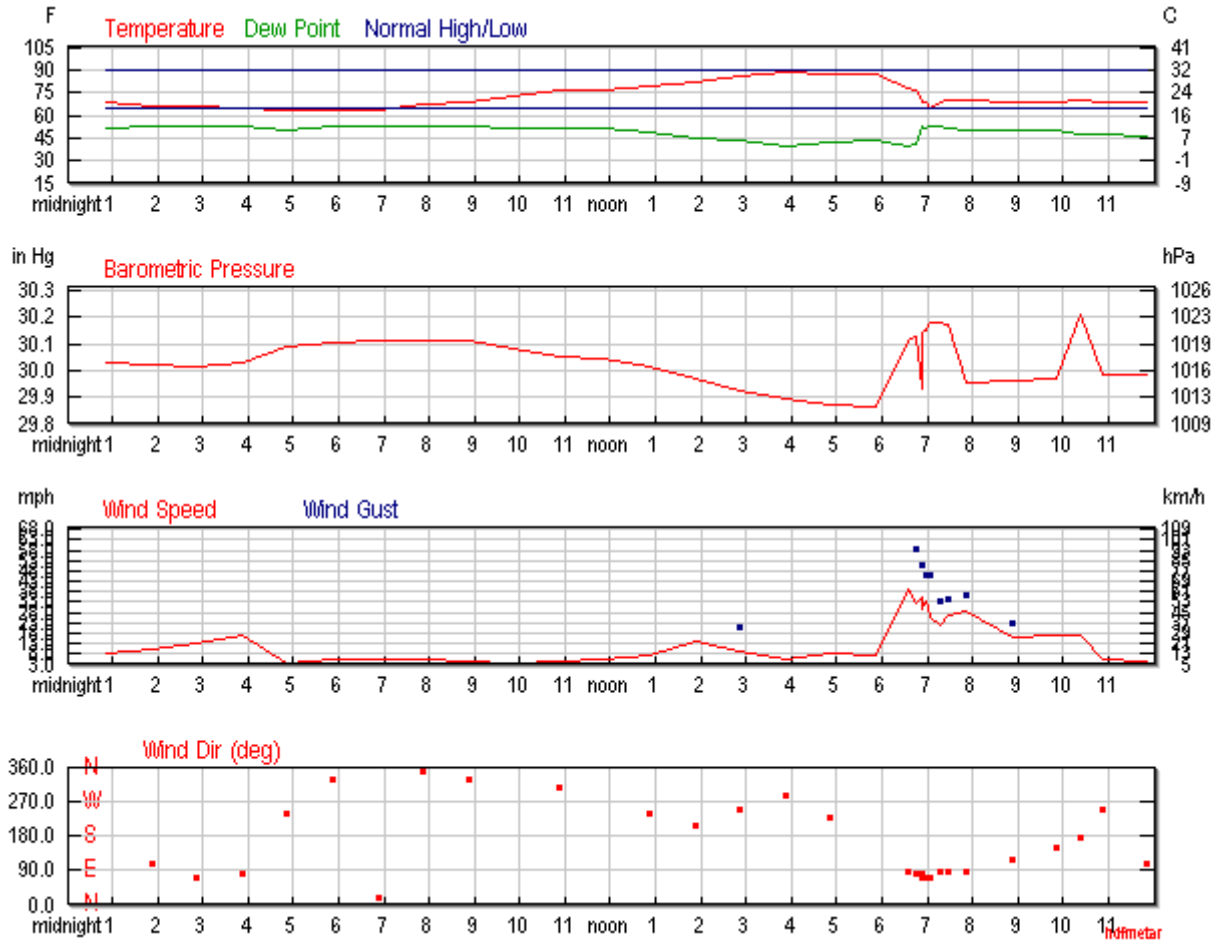
	Actual	Average	Record
Cooling Degree Days	12	13	
Month to date cooling degree days	353	249	
Year to date cooling degree days	432	347	
Since 1 June cooling degree days	353	249	
Growing Degree Days	27 (Base 50)		
Moisture			
Dew Point	**50** °F		
Average Humidity	42		
Maximum Humidity	67		
Minimum Humidity	17		
Precipitation			
Precipitation	**0.48** in	**0.04** in	**0.96** in (1937)
Month to date precipitation	0.48	0.53	
Year to date precipitation	3.09	3.07	
Snow			
Snow	**T** in	-	- ()
Month to date snowfall	T		
Since 1 June snowfall	T		
Since 1 July snowfall	3.6		
Snow Depth	**0.00** in		
Sea Level Pressure			
Sea Level Pressure	**30.03** in		
Wind			

	Actual	Average	Record
Wind Speed	**10** mph (East)		
Max Wind Speed	**47** mph		
Max Gust Speed	**58** mph		
Visibility	**9** miles		
Events	Rain , Thunderstorm		

T = Trace of Precipitation, MM = Missing Value

Source: NWS Daily Summary

Daily Weather History Graph



Search for Another Location

Airport or City:

KABQ

Submit

Trip Planner

Search our weather history database for the weather conditions in past years. The results will help you decide how hot, cold, wet, or windy it might be!

Date:

June

26

Submit

Astronomy

Jun. 26, 2017	**Rise**	**Set**
Actual Time	5:54 AM MDT	8:24 PM MDT
Civil Twilight	5:24 AM MDT	8:54 PM MDT
Nautical Twilight	4:47 AM MDT	9:30 PM MDT
Astronomical Twilight	4:07 AM MDT	10:11 PM MDT
Moon	8:48 AM MDT (6/26)	10:48 PM MDT (6/26)
Length of Visible Light	15h 29m	
Length of Day	14h 30m	
Waxing Crescent, 10% of the Moon is Illuminated		

Jun 26	Jun 30	Jul 8	Jul 16	Jul 23
Waxing Crescent	First Quarter	Full	Last Quarter	New

Hourly Weather History & Observations

Time (MDT)	Temp.	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events	Conditions
12:52 AM	**69.1** °F	**52.0** °F	54%	**30.03** in	**10.0** mi	ESE	**8.1** mph	-	N/A		Scattered Clouds
1:52 AM	**66.9** °F	**53.1** °F	61%	**30.02** in	**10.0** mi	ESE	**10.4** mph	-	N/A		Partly Cloudy
2:52 AM	**66.9** °F	**53.1** °F	61%	**30.01** in	**10.0** mi	ENE	**12.7** mph	-	N/A		Mostly Cloudy
3:52 AM	**66.0** °F	**54.0** °F	65%	**30.03** in	**10.0** mi	East	**17.3** mph	-	N/A		Mostly Cloudy
4:52 AM	**64.9** °F	**51.1** °F	61%	**30.09** in	**10.0** mi	WSW	**3.5** mph	-	N/A		Mostly Cloudy
5:52 AM	**64.0** °F	**53.1** °F	67%	**30.10** in	**10.0** mi	NNW	**5.8** mph	-	N/A		Scattered Clouds
6:52 AM	**64.9** °F	**54.0** °F	68%	**30.11** in	**10.0** mi	NNE	**5.8** mph	-	N/A		Scattered Clouds
7:52 AM	**68.0** °F	**53.1** °F	59%	**30.11** in	**10.0** mi	North	**5.8** mph	-	N/A		Scattered Clouds
8:52 AM	**70.0** °F	**54.0** °F	57%	**30.11** in	**10.0** mi	NNW	**4.6** mph	-	N/A		Scattered Clouds
9:52 AM	**73.9** °F	**52.0** °F	46%	**30.08** in	**10.0** mi	Variable	**3.5** mph	-	N/A		Scattered Clouds
10:52 AM	**77.0** °F	**52.0** °F	42%	**30.05** in	**10.0** mi	NW	**4.6** mph	-	N/A		Partly Cloudy
11:52 AM	**78.1** °F	**52.0** °F	40%	**30.04** in	**10.0** mi	Variable	**5.8** mph	-	N/A		Mostly Cloudy
12:52 PM	**80.1** °F	**50.0** °F	35%	**30.01** in	**10.0** mi	WSW	**6.9** mph	-	N/A		Mostly Cloudy
1:52 PM	**82.9** °F	**46.0** °F	27%	**29.97** in	**10.0** mi	SSW	**13.8** mph	**20.7** mph	N/A		Scattered Clouds
2:52 PM	**87.1** °F	**44.1** °F	22%	**29.92** in	**10.0** mi	WSW	**9.2** mph	**20.7** mph	N/A		Partly Cloudy
3:52 PM	**89.1** °F	**39.9** °F	18%	**29.89** in	**10.0** mi	WNW	**5.8** mph	-	N/A		Scattered Clouds
4:52 PM	**88.0** °F	**43.0** °F	21%	**29.87** in	**10.0** mi	SW	**8.1** mph	-	N/A		Mostly Cloudy

Time (MDT)	Temp.	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events	Conditions
5:52 PM	**88.0** °F	**44.1** °F	22%	**29.86** in	**10.0** mi	Variable	**6.9** mph	-	N/A		Mostly Cloudy
6:35 PM	**79.0** °F	**41.0** °F	26%	**30.11** in	**2.5** mi	East	**39.1** mph	**57.5** mph	N/A		Widespread Dust
6:45 PM	**77.0** °F	**42.1** °F	29%	**30.13** in	**5.0** mi	East	**32.2** mph	**58.7** mph	**0.00** in	Rain , Thunderstorm	Light Thunderstorms and Rain
6:52 PM	**69.1** °F	**53.1** °F	57%	**29.93** in	**5.0** mi	East	**35.7** mph	**50.6** mph	**0.03** in	Rain , Thunderstorm	Heavy Thunderstorms and Rain
6:54 PM	**69.1** °F	**53.1** °F	57%	**30.14** in	**5.0** mi	ENE	**29.9** mph	**50.6** mph	**0.03** in	Rain , Thunderstorm	Heavy Thunderstorms with Small Hail
6:59 PM	**69.1** °F	**52.0** °F	54%	**30.15** in	**5.0** mi	ENE	**33.4** mph	**46.0** mph	**0.05** in	Rain , Thunderstorm	Light Thunderstorms and Rain
7:05 PM	**66.0** °F	**54.0** °F	65%	**30.18** in	**1.8** mi	ENE	**25.3** mph	**46.0** mph	**0.07** in	Rain , Thunderstorm	Heavy Thunderstorms and Rain
7:17 PM	**70.0** °F	**53.1** °F	55%	**30.18** in	**4.0** mi	East	**21.9** mph	**33.4** mph	**0.45** in	Rain , Thunderstorm	Light Thunderstorms and Rain
7:27 PM	**71.1** °F	**52.0** °F	51%	**30.17** in	**10.0** mi	East	**26.5** mph	**34.5** mph	**0.45** in	Thunderstorm	Mostly Cloudy
7:52 PM	**71.1** °F	**51.1** °F	49%	**29.95** in	**10.0** mi	East	**28.8** mph	**36.8** mph	**0.45** in		Mostly Cloudy
8:52 PM	**70.0** °F	**51.1** °F	51%	**29.96** in	**10.0** mi	ESE	**16.1** mph	**23.0** mph	N/A		Mostly Cloudy
9:52 PM	**70.0** °F	**51.1** °F	51%	**29.97** in	**10.0** mi	SSE	**17.3** mph	-	N/A		Scattered Clouds
10:23 PM	**71.1** °F	**48.9** °F	45%	**30.21** in	**10.0** mi	South	**17.3** mph	-	N/A		Scattered Clouds
10:52 PM	**70.0** °F	**48.9** °F	47%	**29.98** in	**10.0** mi	WSW	**5.8** mph	-	N/A		Scattered Clouds
11:52 PM	**69.1** °F	**46.9** °F	45%	**29.98** in	**10.0** mi	ESE	**4.6** mph	-	N/A		Scattered Clouds

Attachment 8

Education and Outreach Outcomes Report

Mid Rio Grande Stormwater Quality Team

www.keeptheriogrand.org

Outcomes Report

for

Fiscal Year 2016-2017

(July 1, 2016 - June 30, 2017)

presented by

Phyllis Baker

CWA Strategic Communications

During the period from July 1, 2016 through June 30, 2017, the Mid Rio Grande Stormwater Quality Team (MRGSQT) continued its educational partnerships with the Bosque Ecosystem Monitoring Program (B.E.M.P.) and RiverXchange. The team continued to post relevant information to its website and Facebook page, and also participated in a number of high-profile community events, including the KOB TV Health & Wellness Fair in January 2017. The team moved its interactive kiosk to Rio Rancho's Loma Colorado Public Library at the beginning of 2017 and held a news conference there in June in conjunction with the onset of the beginning of the monsoon season in July. Several team members were booked on morning radio and TV talk shows to discuss stormwater quality and ways to keep pollutants out of the Rio Grande. The team decided to concentrate on educating contractors and people in the construction field about the new 2017 Construction General Permit changes and additions by creating a presentation and holding an educational breakfast seminar at the end of June.

Team partners and supporters disseminated information on stormwater through municipal water quality reports to stakeholders. Specialty advertising giveaways relating to stormwater quality awareness were ordered/reordered for use at public events. The overall budget spent on these activities, excluding donated hours by team members and RiverXchange and B.E.M.P., was $44,555.98. The contractor, CWA Strategic Communications, donated $3,399.04 in services during the 12-month period. We have summarized the activities below and on the following pages:

WEBSITE (www.keeptheriogrand.org)

New visitors accounted for 77% of the total 1,675 website visitors. A majority of visitors continue to access the website using their desktop computers but mobile access continues to increase: out of 254 sessions, 199 sessions were conducted via mobile devices.

A detailed Google Analytics Report is included as an attachment to this report, labeled Exhibit 1.

Estimated number of individuals reached by this activity: 1,675
Permit Reference(s): General SWP, Construction, Pet Waste, Household Hazardous Waste
Audience(s): Children, Adults

FACEBOOK PAGE

In conjunction with the SQT website, a Facebook page contains posts and updated information at: (https://www.facebook.com/Keeptheriogrand). Total "likes" for the page increased from 134 in the last year to 141 during this year, a 1 percent increase.

A detailed report is included as an attachment to this report, labeled Exhibit 2.

Estimated number of individuals reached by this activity: 141
Permit Reference(s): General SWP, Construction, Pet Waste
Audience(s): Children, Adults

EVENTS

Between July 1, 2016 and June 30, 2017, MRGSQT members and their partner agencies reported participating in a total of 68 community outreach/educational events and reaching 14,084 adults and children. ***Details can be found in Exhibit 3 at the end of this report.***

Estimated number of individuals reached by these community outreach/education events (with duplications): 14,084
Permit Reference(s): General SWP, Construction, Pet Waste, Construction, Household Hazardous Waste, Illicit Discharge and Animal Sources
Audience(s): Children, Adults

GENERAL MATERIALS DISTRIBUTION

As appropriate, team members distribute materials at events. While the MRGSQT is focusing less on printed collateral pieces and more on community outreach through partnerships and participation in community events, we have included inventories of materials on hand as of July 1, 2016 through June 30, 2017.
Total estimated number of people reached by these activities: 6,738
Cost per person reached (may be some duplication): $1.38
Permit Reference(s): General SWP, Pet Waste, Household Hazardous Waste
Audience(s): Children, Adults

EDUCATIONAL ACTIVITIES

Educational Kiosk at the Children's Library at the Main Albuquerque Public Library Albuquerque and Rio Rancho's Main Loma Colorado Library.

STORMWATER QUALITY TEAM Inventory				
Item	**Starting Qty as of 7/1/2016**	**Distributed**	**Ending Quantity as of 6/30/2017**	**Cost of Materials Distributed**
"Keep the Rio Grand" Bumper Stickers	1228	430	798	$167.58
"Reduce Stormwater Pollution at Home" brochure	811	641	170	$224.35
SQT Brochure - "New Dog or Cat"	2740	680	2620	$204.00
Dog-shaped Poop Bag Dispensers	1496	1070	426	$426.00
"Don't Contaminate the River" stickers	3000	1960	1040	$1,040.00
Poo Emoji Squeezies (added 2/14/17)	5000	430	4570	$4,570.00
"Scoop the Poop" Rack Card	244	244	0	$-
"Yard Mess" Brochure	513	513	0	$-
Morphing Fish Bags	957	770	187	$2,664.20
		6,738		**$9,296.13**

On January 2, 2017, the Mid Rio Grande Stormwater Quality Team moved its educational kiosk from the Albuquerque main library to the Loma Colorado Library in Rio Rancho. A news conference was held on June 14, just before the beginning of the area's monsoon season, to introduce the kiosk to the community and educate citizens about stormwater issues. The kiosk features:

- An interactive stormwater system map where children can press various points to learn the roles arroyos and channels play in the stormwater system and how to keep from polluting that system. The system stretches from Bernalillo on the north through Rio Rancho and into Albuquerque.
- A "Scoop the Poop" game that lets children choose one of three dogs and learn how to properly pick up after that dog. This is important, according to the MRGSQT, because pet waste is a major source of E coli contamination in the Rio Grande.
- An educational panel on common types of trash, debris and chemicals that pollute the Rio Grande including appliances and electronics, automotive products such as oil, batteries and gasoline, glass and cement, household cleaners, yard waste, prescription and over-the-counter medicines.
- A touch screen that includes facts about each arroyo and the Rio Grande.

Total number of children and adults viewing the kiosk from January 2 through June 31, 2017 is broken down on the right:

JAN	15,999
FEB	18,181
MAR	17,955
APR	16,509
MAY	16,546
JUN	19,777
TOTAL	**104,967**

STUDENTS AND TEACHERS REACHED THROUGH PARTNER EDUCATIONAL PROGRAMS – RIVERXCHANGE AND BOSQUE ECOSYSTEM MONITORING PROGRAM (B.E.M.P.)

RiverXchange

RiverXchange is an innovative, long-term outreach program that integrates water resource topics with computer technology, student writing, and a hands-on curriculum to meet specific, measurable outcomes.

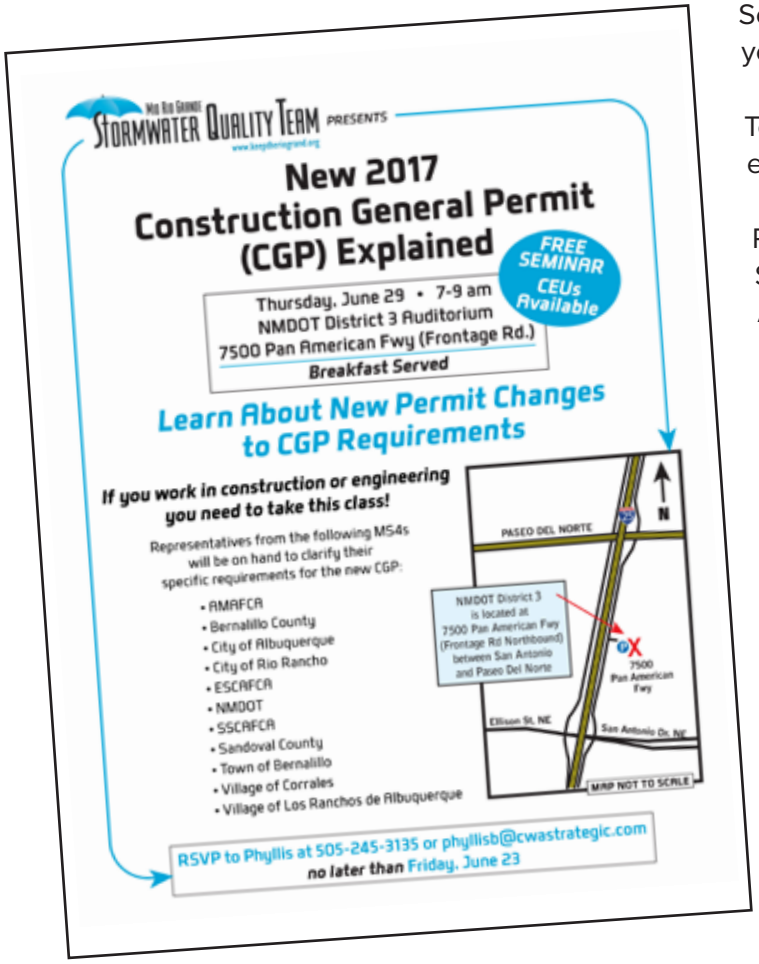
Since 2007, the program has enabled upper elementary classes from New Mexico to become "high tech pen pals" with a class outside the state to share what they learn about the geography, culture, and ecology of their local river and watershed. Including these partner classes, the program has served over 14,000 students. Each student spends about 25 hours engaged with the program over the course of the school year. The curriculum incorporates hands-on activities, multiple classroom presentations by local water resources. During the 2016-2017 season, there were 42 classes in New Mexico, 23 of which were Title I schools. RiverXchange conducted:

- 19 classes in the Albuquerque Public School Sytyem
- 18 classes in the Rio Rancho Public School System
- 5 classes in the Bernalillo Public School System
- 32 "Watershed on Wheels" (WOW) offerings (National Fish and Wildlife Foundation)

For more information, see Exhibit 4, RiverXchange's 2016-2017 report to the Mid Rio Grande Stormwater Quality Team.

B.E.M.P.

The main objective of the *Stormwater Science* outreach education program of the Bosque Ecosystem Monitoring Program (B.E.M.P.) is to teach students that the health of the Rio Grande is directly related to the health of the surrounding watershed. The Stormwater Science program includes a one and one-half hour classroom activity, and a 4-5 hour study trip to the Rio Grande. During the 2016-2017 school year 1,775 students AND teachers participated in *Stormwater Science* activities in their classrooms, in the field or both. The one and one-half hour classroom program was delivered to 1,269 students in 32 classrooms in 19 different schools in Bernalillo, Rio Rancho, Albuquerque, Los Lunas and Belen.



See ***Exhibit 5*** for the BEMP Report on the 2016-2017 school year and its *Stormwater Science* report.

Total estimated number of people reached by these educational activities: 108,011

Permit Reference(s): General SWP, Pet Waste, Animal Sources, Household Hazardous Waste, Illicit Discharges
Audience(s): Children, Adults

Construction General Permit (CGP) Seminar

The Stormwater Team realized the importance of outreach to contractors and construction professionals about the changes and adjustments to the 2017 CGP. They planned a seminar and invited members of those groups to attend. The breakfast seminar was held at the NM Department of Transportation District 3 Auditorium. Fifty-three attendees (16 contractors and 37 government employees) learned about the updates to the 2017 CGP. Response to the seminar was very positive.

Total estimated number of people reached by these educational activities: 53
Permit Reference(s): General SWP, Illicit Discharges
Audience(s): Adults

Kids learn about stormwater

BY GARY HERRON
Assistant Editor



GARY HERRON/Observer
A group of youngsters from The MAC, a short walk from Loma Colorado Main Library, listen to Catherine Conran.

Sure, you can understand that the Southern Sandoval County Arroyo Control Authority (SSCAFCA) has a valid interest in the Rio Grande — what's flowing into it, what's flowing out of it — and the Mid Rio Grande Stormwater Quality Team members showing up at Loma Colorado Main Library on June 14 to talk about facets of stormwater and more.

It turns out we're all in this together.

The MRGSQT, a multi-agency team formed in 2004 to educate individuals and businesses on reducing stormwater pollution by keeping trash, chemicals and other debris out of our stormwater system to protect the Rio Grande, took the lead here. SSCAFCA and the Albuquerque Metropolitan Arroyo Flood Control Authority (AMAFCA) are on that team, as are Rio Rancho, Corrales and Bernalillo.

A couple dozen youngsters being entertained at The MAC, a short walk away, sat on the floor and listened as Catherine Conran, the education outreach director, talked about the team's goals.

A few steps away, youngsters could play an interactive — and quite popular, wouldn't you know — game called "Scoop the Poop." Using their fingers on a screen, they could "scoop" doggy do-do into bags, keeping it from ending up in a drain and, ultimately, the Rio Grande.

Hence, "Keep the Rio Grand" is great slogan.

To get thing started, MRGSQT partnered with the Bosque Ecosystem Monitoring Program (BEMP) to monitor four sites on the Rio Grande and to provide educational activities on water quality relating to watershed management in Bernalillo and Sandoval counties. Those monitoring sites are located along the Rio Grande in Bernalillo and Sandoval counties adjacent to existing BEMP site.

Sites included were at the US 550 bridge in Bernalillo, the Alameda and Montano bridges within Albuquerque, and south of Tijeras Arroyo and north of Isleta Pueblo in Albuquerque. Weekly monitoring measured levels of the bacteria known as Escherichia coli (E. coli) in the river.

Although the bacteria occurs naturally in the Rio Grande, levels can also be temporarily elevated after a storm if animal wastes are washed into the river. For example, storm sewers in the Albuquerque and Rio Rancho areas can potentially carry E. coli from rain contact with wastes from domestic animals, wildlife, birds, pets — and even humans — into the Rio Grande.

The area's stormwater system contains approximately 16,100 storm inlets leading to 722 miles of storm pipes leading to the Rio Grande. As the area grows, more waste is created. For example, there are at least 43,000 licensed dogs in Albuquerque alone, creating more than 20 tons of dog waste a day. That waste can end up in the river if it's left in a yard or not disposed of properly in household trash containers.

Conran said analysis of the E. coli's "DNA" revealed 22 percent of it came from dog waste.

Youngsters listening to Conran didn't need to know all that, of course. She said the team takes this approach — having children "teach," or remind — the adults when the time comes. They were more interested in the interactive three-sided kiosk that included games, videos and touch-screen maps to engage and teach them about our area's stormwater drainage system and what they can do to prevent stormwater pollution.

Stormwater, the leading source of pollution in the Rio Grande and that pollution is largely human-caused. There are no filters to keep trash, debris and chemicals dumped into our area's nearly 1,000 miles of stormwater pipelines, lined channels and unlined arroyos from flowing into and polluting the Rio Grande.

There was a lot to be learned in a little time, with the main message being for pet owners to pick up after their dogs.

The kiosk will remain at Loma Colorado Main Library for about six months, then moved — probably to Bernalillo — where its important messages can be repeated.

EARNED MEDIA

• Rio Rancho's local newspaper, *The Observer,* did a story on the kiosk that appeared in the state's largest newspaper the next day.

Total number of estimated readers for article on the kiosk in the *The Observer:* 23,500

Permit Reference(s): General SWP, Pet Waste, Household Hazardous Waste
Audience(s): Adults

• The local CBS-affiliate KRQE also attended the news conference and subsequently ran a story which was also posted on the station's website.

• Stormwater Team members Steve Glass (Ciudad SWCD), Dave Gatterman (SSCAFCA), Fred Marquez (Sandoval County) and Tim McDonough (Village of Los Ranchos) were booked on several morning talk shows (TV and radio) to talk about the SQT and best practices to follow during the upcoming monsoon season:

- **Cumulus Media: Pat Allen's public affairs show:** 4,200 listeners were reached through traditional radio broadcast throughout the local Cumulus media system: (KBZU-FM 96.3 NASH ICON - Country, KKOB-AM 770 News Talk Radio (The Talk Monster), KMGA-FM 99.5 Magic FM (Magic's Best Mix of Yesterday and Today), KBZU-FM 96.3 (Country), KNML-AM 610 (The Sports Animal), KKOB-FM 93.3 KOB-FM (Albuquerque's #1 Hit Music Station), KRST-FM NASH FM 92.3 KRST (Country), and KTBL-AM 1050 (News andTalk).

  There are no specific streaming numbers for Pat Allen's show, but we know that 59,413 people listen to KKOB 770-AM via streaming each month.

- **iheart media: Donnie Chase Show** 10,100 listeners throughout the local

iheart media stations: 100.3 The Peak (Mix and varietry), Big I 107.9 (Country), 94 Rock, The Edge 104.1 (Alternative), 104.7 KABQ (Mix and Variety), 98.1 The Bull (Country), Hot 95.1 (Old School Hip Hop and R&B), AM1350 (News and Talk), and 100.9 The Beat (Hip Hop and R&B).



- **KOB-4: Good Day New Mexico**
  Show has a 1.1-1.3 HH rating and audience averaged about 38,737

- **KRQE-13: This Morning**
  7am --- rtg: 0.6 shr: 8,568
  8am --- rtg: 0.8 shr: 11,424
  9am --- rtg: 0.8 shr: 11,424



A total of 163,166 listeners were reached through these articles and interviews.

PUBLIC EDUCATION CAMPAIGNS ON PROPER DISPOSAL OF FATS, OILS & GREASE

In November and December 2016, the City of Rio Rancho and the Albuquerque Bernalillo County Water Utility Authority (ABCWUA) planned and implemented public education campaigns on how to dispose of cooking grease properly. The campaigns were timed to coincide with the holiday cooking season (Thanksgiving through Christmas). The City of Rio Rancho campaign included:



Print Ads – Quarter Page (4 col. x 8") full-color ad in The Observer, running 2 Sundays in November (11/20 & 11/27) and 2 Sundays in December (12/18 & 12/25), reaching 94,000 readers (with duplication).

Digital Outdoor Boards – 7 digital outdoor boards running in November (11/21-11/27) and 7 boards running in December (12/19-12/25) reaching an estimated audience of 501,897 adults (18 years of age and older) with duplication

Movie Theaters – One 15-second spot running in Rio Rancho's 14-plex Premiere Theater for one week in November and one week in December, reaching approximately 40,000 people with duplications.

Total number of estimated people reached (with duplications): 635,897

In addition, in November and December 2016, the ABCWUA (a Stormwater Team supporter) planned and implemented public education campaigns on how to dispose of cooking grease properly. The campaigns were timed to coincide with the holiday cooking season (Thanksgiving through Christmas). The Water Authority's campaign included:

Digital Outdoor Boards – 7 digital outdoor boards running in November and December (4 in November; 3 in December) reaching an estimated audience of 491,451 adults (18 years of age and older) with duplication



Television – A total of 646 30-second television spots reaching an estimated audience of 2,259,978 with duplications.

Bill inserts – Three bill inserts for Water Authority utility bills reaching an estimated audience of 210,000 with duplication

Movie Theaters – One 30-second spot running in five of the Albuquerque metropolitan area's most popular theaters reaching an estimated 329,036 people with duplications.

Point of Purchase – 53 Johnny Boards (billboards in public restrooms) reaching an estimated 51,638 people with duplications

Total number of estimated people reached (with duplications): 3,342,103

DONATIONS

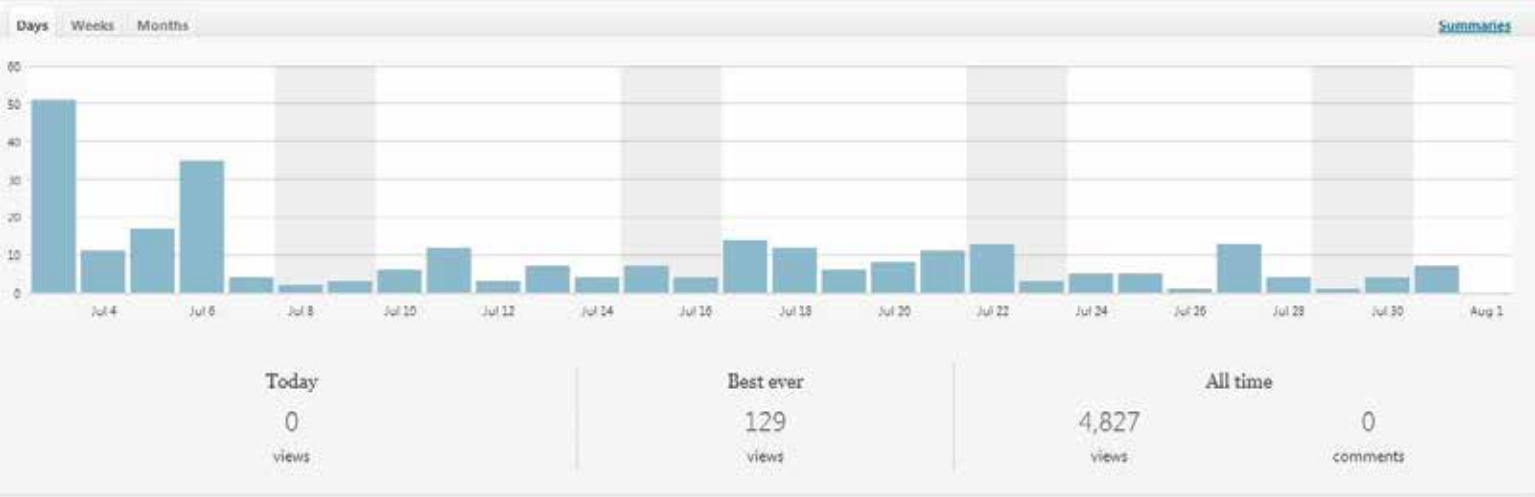
The City Of Albuquerque donated $85,000 to The Nature Conservancy, RiverXchange and EarthForce for additional educational programs that reached 649 people (571 children and 78 adults). ***See Exhibits 5 and 6 for reports from The Nature Conservancy and Earth Force.***

TOTAL NUMBER OF PEOPLE REACHED THROUGH ALL ADVERTISING, EDUCATIONAL AND PUBLIC OUTREACH ACTIVITIES DURING 2016-2017:

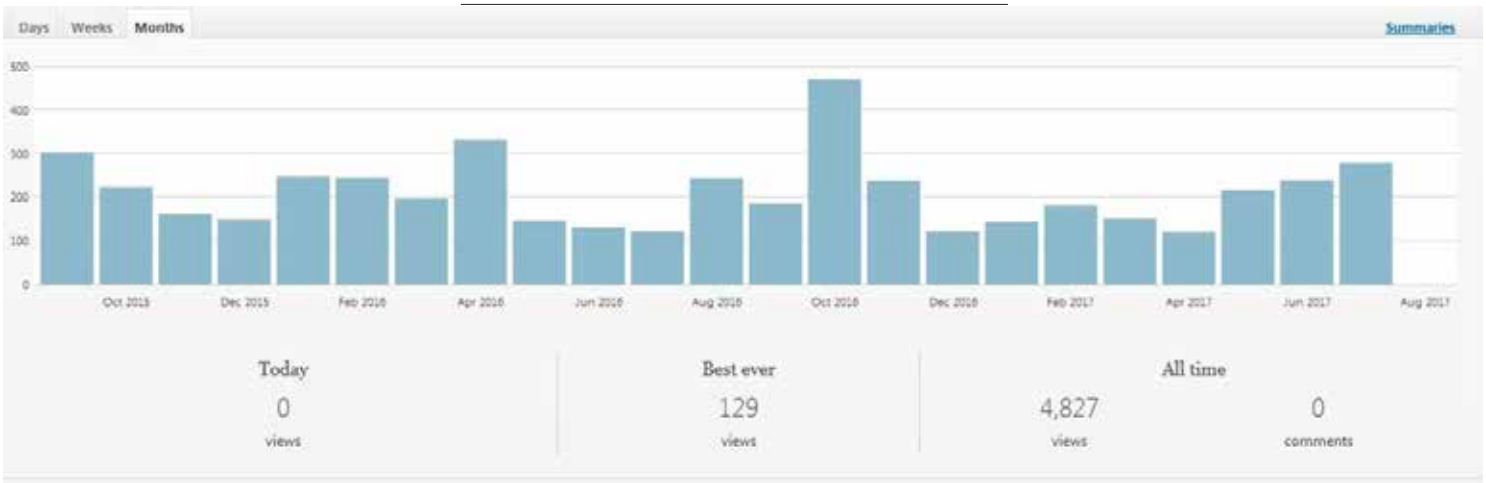
Obviously, some people were reached by more than one activity, but in gross numbers an estimated **4,244,484** people were reached with a stormwater quality/stormwater pollution prevention message during the 2016-2017 fiscal year.

Exhibit 1 - Website Analytics

DAILY Direct Website Traffic



MONTHLY Direct Website Traffic



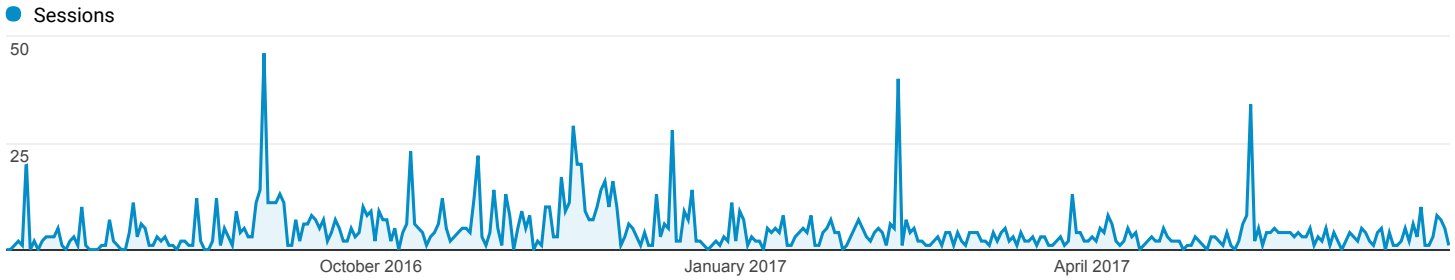
Browser & OS

Jul 1, 2016 - Jun 30, 2017

All Users
100.00% Sessions

Explorer

Summary



Browser	Acquisition			Behavior			Conversions		
	Sessions	% New Sessions	New Users	Bounce Rate	Pages / Session	Avg. Session Duration	Goal Conversion Rate	Goal Completions	Goal Value
	1,675 % of Total: 100.00% (1,675)	76.96% Avg for View: 76.96% (0.00%)	1,289 % of Total: 100.00% (1,289)	49.13% Avg for View: 49.13% (0.00%)	2.12 Avg for View: 2.12 (0.00%)	00:01:44 Avg for View: 00:01:44 (0.00%)	0.00% Avg for View: 0.00% (0.00%)	0 % of Total: 0.00% (0)	$0.00 % of Total: 0.00% ($0.00)
1. Chrome	**883** (52.72%)	91.17%	805 (62.45%)	45.75%	2.10	00:00:48	0.00%	0 (0.00%)	$0.00 (0.00%)
2. Safari	**239** (14.27%)	62.76%	150 (11.64%)	56.07%	1.70	00:02:16	0.00%	0 (0.00%)	$0.00 (0.00%)
3. Internet Explorer	**220** (13.13%)	60.91%	134 (10.40%)	50.91%	2.45	00:02:26	0.00%	0 (0.00%)	$0.00 (0.00%)
4. Firefox	**215** (12.84%)	67.91%	146 (11.33%)	59.07%	2.53	00:03:10	0.00%	0 (0.00%)	$0.00 (0.00%)
5. google.com	**57** (3.40%)	3.51%	2 (0.16%)	3.51%	1.96	00:06:18	0.00%	0 (0.00%)	$0.00 (0.00%)
6. Edge	**27** (1.61%)	74.07%	20 (1.55%)	55.56%	2.26	00:03:06	0.00%	0 (0.00%)	$0.00 (0.00%)
7. Mozilla Compatible Agent	**12** (0.72%)	100.00%	12 (0.93%)	100.00%	1.00	00:00:00	0.00%	0 (0.00%)	$0.00 (0.00%)
8. Mozilla	**6** (0.36%)	100.00%	6 (0.47%)	100.00%	1.00	00:00:00	0.00%	0 (0.00%)	$0.00 (0.00%)
9. Opera	**4** (0.24%)	75.00%	3 (0.23%)	50.00%	1.50	00:00:30	0.00%	0 (0.00%)	$0.00 (0.00%)
10. Safari (in-app)	**4** (0.24%)	100.00%	4 (0.31%)	75.00%	1.25	00:01:04	0.00%	0 (0.00%)	$0.00 (0.00%)

Rows 1 - 10 of 17

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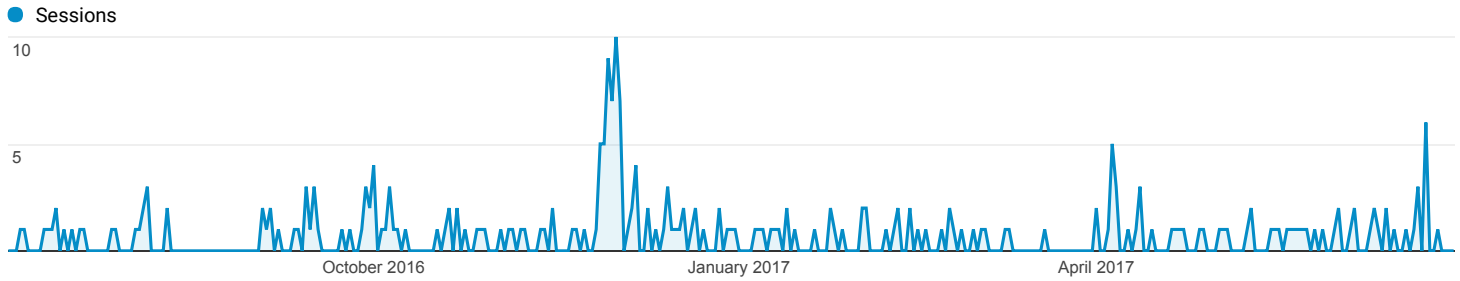
Devices

Jul 1, 2016 - Jun 30, 2017

All Users
15.16% Sessions

Explorer

Summary



Mobile Device Info	Acquisition			Behavior			Conversions		
	Sessions	% New Sessions	New Users	Bounce Rate	Pages / Session	Avg. Session Duration	Goal Conversion Rate	Goal Completions	Goal Value
	254 % of Total: 15.16% (1,675)	72.44% Avg for View: 76.96% (-5.87%)	184 % of Total: 14.27% (1,289)	55.91% Avg for View: 49.13% (13.78%)	1.59 Avg for View: 2.12 (-25.29%)	00:01:38 Avg for View: 00:01:44 (-6.21%)	0.00% Avg for View: 0.00% (0.00%)	0 % of Total: 0.00% (0)	$0.00 % of Total: 0.00% ($0.00)
1. Apple iPhone	**148** **(58.27%)**	57.43%	85 (46.20%)	52.03%	1.53	00:02:17	0.00%	0 (0.00%)	$0.00 (0.00%)
2. Apple iPad	**21** **(8.27%)**	95.24%	20 (10.87%)	61.90%	1.62	00:00:26	0.00%	0 (0.00%)	$0.00 (0.00%)
3. Microsoft Xbox One	**5** **(1.97%)**	80.00%	4 (2.17%)	60.00%	2.00	00:00:48	0.00%	0 (0.00%)	$0.00 (0.00%)
4. LG K330 Tribute 5	**4** **(1.57%)**	75.00%	3 (1.63%)	0.00%	3.25	00:03:49	0.00%	0 (0.00%)	$0.00 (0.00%)
5. Samsung SCH i545 Galaxy S4	**4** **(1.57%)**	100.00%	4 (2.17%)	50.00%	1.75	00:01:36	0.00%	0 (0.00%)	$0.00 (0.00%)
6. Samsung SM-N920V Galaxy Note 5	**4** **(1.57%)**	100.00%	4 (2.17%)	50.00%	1.50	00:00:09	0.00%	0 (0.00%)	$0.00 (0.00%)
7. (not set)	**3** **(1.18%)**	100.00%	3 (1.63%)	33.33%	2.33	00:01:54	0.00%	0 (0.00%)	$0.00 (0.00%)
8. Motorola XT1254 Droid Turbo	**3** **(1.18%)**	66.67%	2 (1.09%)	100.00%	1.00	00:00:00	0.00%	0 (0.00%)	$0.00 (0.00%)
9. Samsung SM-G930T Galaxy S7	**3** **(1.18%)**	100.00%	3 (1.63%)	100.00%	1.00	00:00:00	0.00%	0 (0.00%)	$0.00 (0.00%)
10. Samsung SM-G930V Galaxy S7	**3** **(1.18%)**	100.00%	3 (1.63%)	66.67%	2.67	00:02:08	0.00%	0 (0.00%)	$0.00 (0.00%)

Rows 1 - 10 of 55

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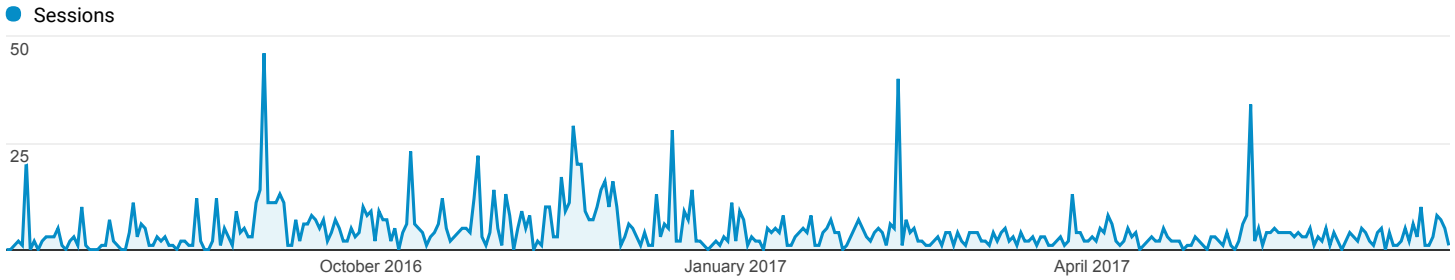
New vs Returning

Jul 1, 2016 - Jun 30, 2017

All Users
100.00% Sessions

Explorer

Summary



User Type	Acquisition			Behavior			Conversions		
	Sessions	% New Sessions	New Users	Bounce Rate	Pages / Session	Avg. Session Duration	Goal Conversion Rate	Goal Completions	Goal Value
	1,675 % of Total: 100.00% (1,675)	76.96% Avg for View: 76.96% (0.00%)	1,289 % of Total: 100.00% (1,289)	49.13% Avg for View: 49.13% (0.00%)	2.12 Avg for View: 2.12 (0.00%)	00:01:44 Avg for View: 00:01:44 (0.00%)	0.00% Avg for View: 0.00% (0.00%)	0 % of Total: 0.00% (0)	$0.00 % of Total: 0.00% ($0.00)
1. New Visitor	**1,289** (76.96%)	100.00%	1,289 (100.00%)	53.92%	1.94	00:00:56	0.00%	0 (0.00%)	$0.00 (0.00%)
2. Returning Visitor	**386** (23.04%)	0.00%	0 (0.00%)	33.16%	2.72	00:04:27	0.00%	0 (0.00%)	$0.00 (0.00%)

Rows 1 - 2 of 2

© 2017 Google

Exhibit 2 - Facebook Analytics

Facebook Engagement

Actions on Page
July 3 - July 30

We don't have data to show you this week.

Page Views
July 3 - July 30

2

Total Page Views ▼82%



Page Previews
July 3 - July 30

We don't have data to show you this week.

Page Likes
July 3 - July 30

1

Page Likes ▼67%

Reach
July 3 - July 30

192

People Reached ▼93%



Post Engagements
July 3 - July 30

60

Post Engagement ▼87%



Videos
July 3 - July 30

5

Total Video Views ▲0%



Page Followers
July 3 - July 30

1

Page Followers ▼67%

Facebook Engagement by Posts

07/06/2017 3:00 pm		Last week we came together to discuss how local construction p			174		2 4	Boost Post
07/05/2017 1:26 pm		Our talk show tour continued this week when we sat down with KR			35		1 4	Boost Post
06/30/2017 1:18 pm		A HUGE thank you to Good Day New Mexico for having us on to d			126		7 12	Boost Post
06/15/2017 1:51 pm		Yesterday, we unveiled our intera ctive kiosk that teaches children			171		10 12	Boost Post
06/09/2017 1:43 pm		Join us Wednesday, June 14th a t Rio Rancho's Loma Colorado L			2.5K		36 25	View Results Boosted: **$35.00**
05/17/2017 3:12 pm		This free breakfast/seminar is fo r construction professionals so t			0		0 0	
05/17/2017 3:06 pm		Calling all construction professi onals! If you're wondering how th			100		5 4	Boost Post
11/10/2016 4:41 pm		New post (MRGSQT Doggie Das h & Dawdle Signs) has been pu			16		0 0	Boost Post
11/08/2016 5:13 pm		We had a terrific time at the Dog gie Dash 'N Dawdle! We'd like to			26		14 3	Boost Post
11/04/2016 1:01 pm		Looking for something fun to do t his Sunday? Stop by our booth in			95		0 0	Boost Post
08/10/2016 5:30 pm		Members of the Stormwater Qua lity Team met with EPA Region 6			354		57 15	Boost Post

The success of different post types based on average reach and engagement.

Show All Posts ▾

Reach Post Clicks Reactions, Comments & Shares

Type	Average Reach	Average Engagement
Photo	913	14 11
Link	111	6 9
Status	0	0 0

Exhibit 3 - Event Participation

PROGRAM/EVENT	EVENT DATE	PRESENTER/ REPORTED BY	TYPE OF AUDIENCE	ATTENDEES	TOTAL PARTICIPANTS	PERMIT REFERENCE	NOTES
2016							
Isleta Pueblo Enviromental Fair	7/16/16	Steve Glass, Tom Allen			N/A	PW, SWP	
Tijeras Watershed Education Project (Vista Grande CC)	7/20/16	Jennifer Moss			80	AS, PW, SWP	
Santa Ana Environmental Fair	8/13/16	Steve Glass			N/A	AS, SWP	
Toss No Mas	9/12/16	Catherine Conran	Mixed		280	PW,SWP	
Open Space Visitor's Center	9/17/16	Steve Glass			N/A	AS, SWP	
Valle de Oro NWR 4th Birthday Bash	9/24/16	Steve Glass			N/A	AS, SWP	
East Mountain Celebration (BCOS)	9/25/16	Jennifer Moss			100	PW, SWP	
RR Children's Water Festival	10/24/16	Steve Glass, Jennifer Moss			150	PW, SWP	
RR Children's Water Festival	10/25/16	Steve Glass, Jennifer Moss			150	PW, SWP	
Animal Humane NM Doggie Dash 'n Dawdle	11/2/16	Patti Watson (CWA Strategic)	Adults and Children		290	PW, SWP	Annual event featuring a race and booths for pet lovers and friends. SQT hosted a booth to educate attendees on proper disposal of pet waste. 290 surveys administered; talked w/people about pet waste as a major polluter of the Rio Grande.
20-Year SOILebration	11/12/16	Tom Allen			N/A	PW, SWP	
Rio Rancho and Bernalillo teacher 4th grade packets	11/24/16	Catherine Conran	4th-grade Students		82	PW, SWP	
Children's Water Festival	11/24-11/25 2016	Catherine Conran	4th-grade Students	Classes from Town of Bernalillo and City of Rio Rancho	1,487	PW, SWP	
Bernalillo County Holiday Mercado	12/2/16	Jennifer Moss			100	SWP	
2017							
NMDOT Paving Conference	1/4-1/5 2017	Catherine Conran	Adults	Professionals	100	CO, ID, SWP	
KOB 4 Health & Wellness Fair	1/23-1/24 2017	SQT members	Adults and children	Community Members	8,000	HHW, PW, SWP	Annual event focusing on wellness; handed out giveaways, 290 surveys were filled out
Classroom Presentations (Sandia Vista Elementary)	2/16/17	RMYC	Elementary School Children		60	PW, SWP	
ARID LID preconfer-ence event field trip	2/22/17	Catherine Conran	Adults	Community Members	29	ID, SWP	
Classroom Presentations (Osuna Elementary)	3/2/17	RMYC	Elementary School Children		80	PW, SWP	
Classroom Presentations (Cochiti Elementary)	3/3/17	RMYC	Elementary School Children		65	PW, SWP	

AS: Animal Sources
CON: Construction
HHW: Household Hazardous Waste
ID: Illicit Discharges
PW: Pet Waste
SSS: Septic & Sanitary Sewer Systems
SWP: General Stormwater Pollution Prevention

PROGRAM/EVENT	EVENT DATE	PRESENTER/ REPORTED BY	TYPE OF AUDIENCE	ATTENDEES	TOTAL PARTICIPANTS	PERMIT REFERENCE	NOTES
Classroom Presentations (Rio Rancho Elementary)	3/6/17	RMYC	Elementary School		100	PW, SWP	
Classroom Presentations (Georgia O'Keefe)	3/7/17	RMYC	Elementary School Children		85	PW, SWP	
Classroom Presentations (Zia Elementary)	3/15/17	RMYC	Elementary School Children		50	PW, SWP	
Route 66 Cleanup	3/25/17	City of Albuquerque	Adults and Children	Community Members	20	HHW, SWP	Picked up: 85 bags of trash and 2 tires; 5 bags mixed recycling; 5 5-gal. buckets and 2 bags of broken glass; 4 bags aluminum cans, 1 box spring, 1 shopping cart, variety of large metal objects, variety of lumber, cleaned up at least 6 illegal campsites including tents, sleeping bags and clothing.
Classroom Presentations (Lew Wallace Elementary)	3/28/17	RMYC	Elementary School Children		25	PW, SWP	
Classroom Presentations (Colinas del Norte)	3/30/17	RMYC	Elementary School Children		100	PW, SWP	
Classroom Presentations (Mountain View Elementary)	4/5/17	RMYC	Elementary School Children		60	SWP	
Indian School Cleanup	4/9/17	City of Albuquerque	Adults and Children	Community Members	74	PW, SWP	Picked up: 40 lbs. of dog poop; 7 bags of trash; 3 bags mixed recycling; 7 buckets of broken glass; 1 bucket of aluminum cans.
4 Trail crews performed trail maintenance on approx. 1.7 miles of trail.					20	HHW, PW, SWP	
100s pf cactus cuttings were planted on shortcut trails as a deterrent.					N/A	SWP	
Menaul Cleanup	4/15/17	City of Albuquerque	Adults and Children	Community Members	40	PW, SWP	Picked up: 30 lbs. of dog poop; 3 bags of trash; 3 bags mixed recycling; 1 5-gal. bucket of broken glass; 1/2 bag of aluminum cans.
6 Trail crews performed trail maintenance on several different trails.					30	PW, SWP	
Classroom Presentations (Bandelier Elementary)	4/18/17	RMYC	Elementary School Children		50	PW, SWP	
Science in the Community Day (Wilson Mid School)	4/19/17	Steve Glass, Tom Allen	Elementary School Children		200	AS, SWP	
Earth Day Puesta Del Sol Elementary	4/20/17	Catherine Conran	Children	Elementary School Children	600	PW, SWP	
Rotary Club in Albuquerque	4/20/17	Catherine Conran	Adults		40	SWP	
Earth Day (Manzano Day School)	4/20/17	Steve Glass	Elementary School Children		100	PW, SWP	
CORR tree give away	4/22/17	Catherine Conran	Adults	Community Members	N/A	SWP	

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SWP: General Stormwater Pollution Prevention

PROGRAM/EVENT	EVENT DATE	PRESENTER/ REPORTED BY	TYPE OF AUDIENCE	ATTENDEES	TOTAL PARTICIPANTS	PERMIT REFERENCE	NOTES
Earth Day- CORR	4/22/17	Catherine Conran	Adults and Children	Mixed Audience, Mostly Adults	300	SWP	
Great American Cleanup	4/22/17	Catherine Conran	Mixed	Community Members	1200	HHW, SWP	
Great American Cleanup Campus Contests	4/22/17	Catherine Conran	Adults	School-based Clean Up Events for GAC	3384	SWP	
Earth Day Piedra Lisa Cleanup	4/22/17	City of Albuquerque	Adults and Children	Community Members	55	CON, PW, SWP	Picked up: 18 lbs. of dog poop; 3 bags of trash; 2 bags mixed recycling; 2.5 5-gal. bucket of broken glass; 1 5-gal. bucket of rusty metal; 1 bag aluminum cans.
6 Trail crews performed trail maintenance on several different trails.					30	PW, SWP	
Environmental Justice Fair (Valle de Oro NWR)	4/22/17	Jessica Allen			40	HHW, SWP	
NMWC Rio Grande Water Festival (Sawmill Lofts)	4/22/17	Steve Glass			100	AS, SWP	
American Public Works Association New Mexico Spring Conference	4/27/17	Catherine Conran	Adults		30	CON, ID, SWP	
BEMP Student Congess at Bosque School	4/28/17	Steve Glass	Elementary School Children		100	AS, PW, SWP	
Recycled Art Fair at Open Space Visitors Center	4/30/17	Steve Glass			75	AS, SWP	
Rio Grande Report (Tierra Antigua Elementary)	5/5/17	Logan Moss (Jennifer Moss)	Elementary School Children		45	PW, SWP	
Classroom Presentations (Bernalillo Elementary)	5/8/17	Rocky Mountain Youth Corp	Elementary School Children		45	PW, SWP	
River Cleanup	5/13/17	City of Albuquerque	Adults and Children	Community Members	57	PW, SWP	Picked up: 18 lbs. of dog poop; 250 cubic yds. (54 bags of trash and 9 tires); 11 bags mixed recycling; 4 bags of broken glass; 2 bags aluminum cans. Crews hit all 4 corners of Central Bridge, west side or Bridge, west side of Rio Bravo, a remote location on westside, north of Central and Pat Baca Open Space. Also had 2 rafts, 2 canoes and 2 kayaks on River cleaning from Montano to Central.
Ravena Grass Removal	5/13/17	City of Albuquerque	Adults and Children	Community Members	50	SWP	Crew in Tingley area working on Ravena grass removal.
Tree Stewards Trainings	5/14,21,28 2016	Catherine Conran	Adults	Over 2262 Hours Volunteered for Trees	N/A	SWP	
Cielo Azul Elementary School field day presentation	5/18/17	Steve Glass	Elementary School Children		60	AS, PW, SWP	

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PROGRAM/EVENT	EVENT DATE	PRESENTER/ REPORTED BY	TYPE OF AUDIENCE	ATTENDEES	TOTAL PARTICIPANTS	PERMIT REFERENCE	NOTES
Monte Vista Elementary School	5/23/17	Steve Glass			60	AS, PW, SWP	
Albuquerque Country Club Summer Program	6/20/17	Astrid Hueglin			24	HHW, SWP	
Moms Group at Tijeras Creek Restoration Project	7/11/17	Steve Glass, Connie Crandall, Jennifer Moss, Melissa McLamb			20	AS, SWP	
Isleta Pueblo Enviromental Fair	7/15/17	Steve Glass, Amelia Symonds			50	AS, SWP	
Water Day at Railyards Market	7/16/17	Tom Allen, TTYL				SWP	
Copper Cleanup		City of Albuquerque	Adults and Children	Community Members	35	PW, SWP	Picked up: 60 lbs. of dog poop; 2 bags of trash; 1 bags mixed recycling; 1/2 bucket of broken glass; 1/2 bag of aluminum cans.
3 Trail crews performed trail maintenance on approx. 1.7 miles of trail.					15	PW, SWP	
Arid LID Conference	2/23-2/24/2017	Catherine Conran	Adults	Community Members, Students, University Students and Industry	189	ID, SWP	
Elementary School Students Achieve For Excellence (S.A.F.E.) program	2016-2017	Catherine Conran	1st-5th-grade Students	Mixed Grades and Size of Program Ranged from 50 to 100 Students	250	PW, SWP	
Bosque Ecosystem Monitoring Project (BEMP)-MRGSWQT	2016-2017	Catherine Conran	Elementary School Children	472 Students in 18 Classes w/18 Teachers and 1-day Event for "Dia Del Rio" 17 Classes	492	AS, PW, SWP	
Bosque Ecosystem Monitoring Project (BEMP)-MRGSWQT	2016-2017	Catherine Conran	Mid-high School	610 with 25 Teachers	635	PW, SWP	
RiverXchange	2016-2017	Catherine Conran	5th-grade Students	1,200 Students and 53 Teachers	1253	PW, SWP	
SSCAFCA's Arroyo Classroom Program	2016-2017	Catherine Conran	3rd-grade Students	700 Students 28 Teachers	728	PW, SWP	
CORR animal control educational materials Scoop the poop	As needed	Catherine Conran	Adults and Children	Mixed Audience, Mostly Adults	100	PW	
NMDOT Paving Conference	1/7/16	Catherine Conran	Adults		100	CON, ID	
Rio Rancho Recycles Day		Catherine Conran	Mixed		200	SWP	
Tree Stewards Program	2016-2017	Catherine Conran	Adults	42 Trees Planted, 64 Plantings, 2 Edible Gardens	N/A	SWP	
Watermelon Ranch Educational Materials Scoop the Poop	As needed	Catherine Conran	Adults and Children	Mixed Audience, Mostly Adults	100	PW, SWP	

AS: Animal Sources
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PW: Pet Waste
SSS: Septic & Sanitary Sewer Systems
SWP: General Stormwater Pollution Prevention

Donations

MEMBER	AMOUNT DONATED	RECIPIENT	PURPOSE
City of Albuquerque	$20,000	The Nature Conservancy	For Education and Outreach
“	$45,000	RiverXchange	For Education and Outreach
“	$20,000	Earth Force	For Education and Outreach

Exhibit 4 - RiverXchange 2016-17

RIVERXchange™

2016-2017

Presented by: Melissa McLamb

CIUDAD SOIL & WATER CONSERVATION DISTRICT

What is RiverXchange?

- A year-long program connecting students around the world to learn about water resources
- Hands-on, multidisciplinary curriculum
  - Lessons incorporate science, social studies, and math to teach about major water issues
  - Informational texts and writing/communication projects help teachers teach Common Core Language Arts Standards
- Each New Mexico 5th grade class receives:
  - Teacher workshop
  - 4 guest speakers – local water management professionals
  - Service-learning field trip to the Rio Grande
  - Partnership matching and private web sharing platform
  - Support throughout the school year

RIVERXchange™

Why RiverXchange?

- Students gain a broad understanding of how our community's water issues fit together
- Long-term engagement with the topic reinforces learning
- Writing to a real audience reinforces learning, and helps teachers meet their goals (Common Core Standards)
- There are many resources available, but often teachers don't take advantage of them – RiverXchange provides a framework and a purpose.
- **Each student spends ~25 hours engaged with the program throughout the school year!**

RIVERXchange™

Multidisciplinary Curriculum

Through classroom activities, guest speakers and field trips, students study and explore the following themes throughout the year:

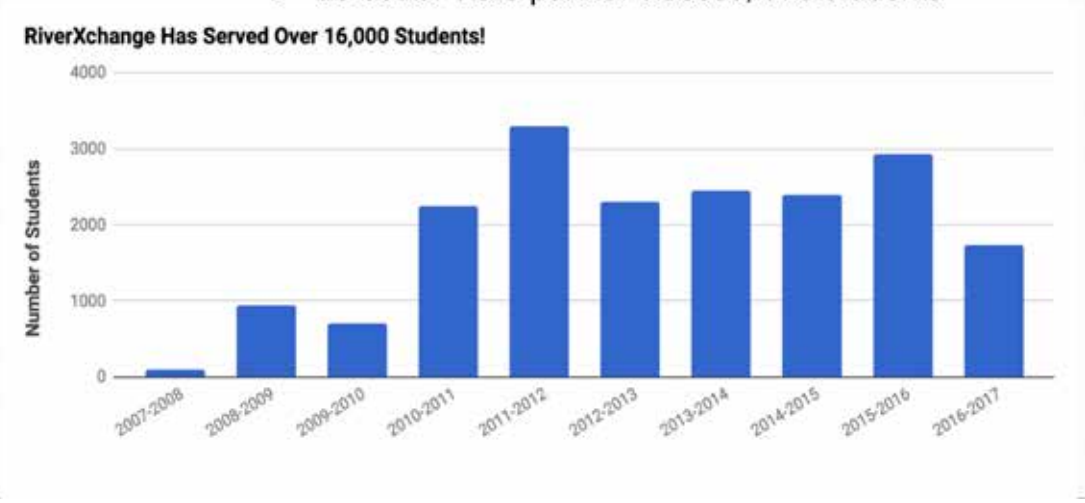
1. Understanding a Watershed
2. Water in Our Society
3. The River Ecosystem



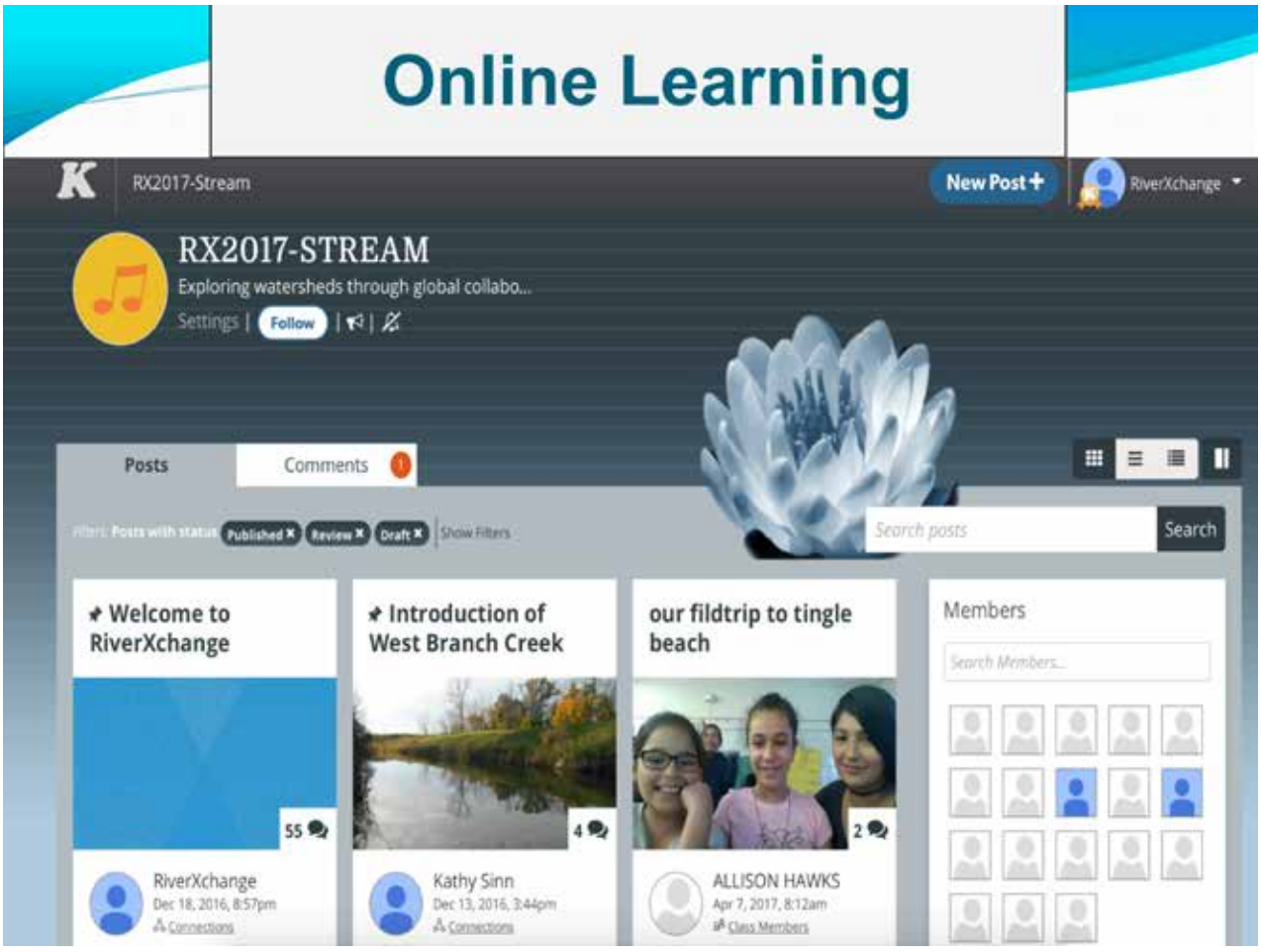
RIVERXchange™

2016-2017 Totals

- 42 New Mexico classes
- 19 classes Albuquerque Public Schools
- 18 classes Rio Rancho Public Schools
- 5 classes Bernalillo Public Schools
- 1,058 total New Mexico students
- 32 WOW offerings (NFWF)
- 23 classes (55%) are Title I schools
- 25 out-of-state partner classes, 675 students



Online Learning



Why Blogging Partnerships?

- Writing solidifies concepts in students' minds
- Learning about other rivers gives students perspective on their local situation and enhances understanding of larger water related issues
- Reflection groups and multi-class partner matching provides an authentic audience that motivates students to write and promotes collaboration both within and between classes
- Creative sharing develops 21st Century Skills!
- Private website provides a safe environment to teach internet safety skills

Students Talk!



Hello, we are The Rodriguez tutus, again and we have tested the water quality of our stream to show you. Water quality is the condition of the water, like the amount of pollution in it. It is important because without clean water, all life would perish and no animals, plants, or people can live. Earth would be lifeless. We tested for water pH and reasearched that a common pH for streams is between 6.5 to 8.5 in order for aquatic life to take place, and our stream has a pH of 8. Since our pH is of 8 it can sopport aquatic life and can be used for plant irrigation, to bath, sports and enjoyment. --Rodriguez (El Rio de Bayamón ,Puerto Rico)



As part of a local conservation effort, our class is raising native Rio Grande fish from January through May. It is our responsibility to keep the fish happy and healthy. In May, we will return the fish to the Rio Grande river. There are a large number of factors that we have to consider when raising our fish. -OlsonErosion, NM

I think that it is very neat that you guys raised fish and planned to return them to the Rio Grande River. We also raised mosquito fish and snails in our Eco-columns...part terrarium and part aquarium. They were a closed system where we could observe not only energy transfer within a food chain but also the water cycle...-OverbyEroison, NC





A creek with a very similar ecosystem as Beaver Creek in Alaska.

Hi! Thank you for responding to our post! We live in Homer Alaska and go to McNeil Canyon elementary. It sounds like your river is HUGE compared to our tiny creek. We have many types of animals, birds and fish. Is it sunny in Connecticut or is it rainy, snowy and cold? Does your river have a beach or rocks that slope into your water. Do you have wild boars in Connecticut around your river? Our creek has small rocks, pebbles and some small boulders that make a small slope into our river. Do you have a gigantic mountain that has a water flow that goes into your river? Where does your river originate from? How long is your river? Our creek flows from Bald Mountain and flows into the anchor river and then eventually into the Pacific ocean. Thank you for being amazing buddies! Sincerely: GreenWaterOtters, AK

Guest Speakers

Students learn from local resource professionals



RIVERXchange

Agriculture

Irrigation can be wasteful and helpful. There are different kinds of irrigation, the one you probably know most about is sprinkling and, as you guessed, it uses sprinklers, its not the most efficient way of irrigation but, it also isn't most inefficient way of irrigation.
The most inefficient way of irrigation is probably surface irrigation. Surface irrigation is basically near flooding plants in water, there are many disadvantages that come with surface irrigation such as: seeds washing away, plants getting over-watered and dying, and losing soil. Yet, surface irrigation is the most popular way of irrigation. Last but not least, the most efficient way of irrigation is drip irrigation...Drip irrigation...is a form of irrigation that lets water drip slowly into the roots of plants, it conserves water and soil. ... ~Elizabeth, MirabalOnline,NM

Drinking Water

Hello we are the Torres Owls and we are going to tell you about what happens when you have a leaky faucet. A leaky faucet is a faucet that drips even when the water is fully turned off. Over 3,000 gallons of water are wasted from one leaky faucet a year. That is a lot of water that is being wasted! A leaky faucet should be fixed by a plumber as soon as possible or a lot of water is wasted. Thank you for reading, I hope you enjoyed.
-TorresOwls, NM

Stormwater

How can we protect our local water? Don't throw plastic bags or let them fly away into the river. Pick up your dog's ecoli.

Get your car fixed so it won't leak oil everywhere. When you're camping don't throw your trash in the river. - AckermanStormwater,NM



"Storm water is water from rain,snow,hail,and sleet. After storm water falls and melts, it runs into the gutters, then it goes into the river. The water doesn't get cleaned. The water can have fertilizer,pesticides,trash,and animal waste. It then can harm animals. People can reduce pollution by not littering,being careful when using fertilizer and pesticides,and picking up after your animals. What is your storm water like? " -TorresRivulet, NM



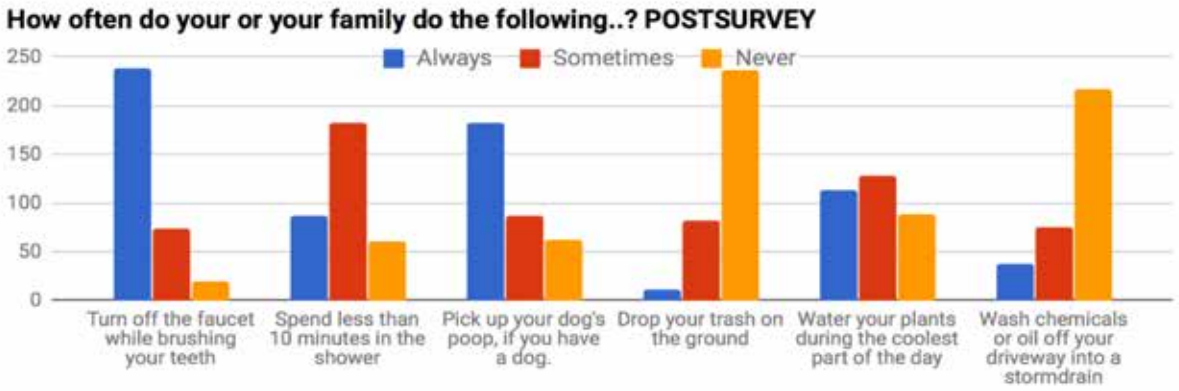
Wastewater

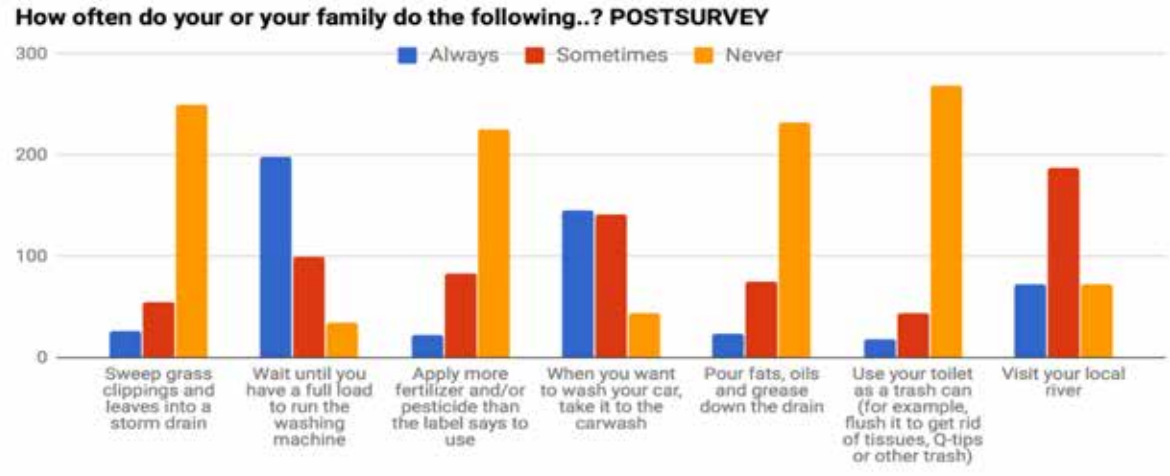
"I learned that wastewater can be recycled into drinking water. I also learned that all the sludge goes into public parks. I learned that the things that should go in the toilet are: poop, pee, vomit and toilet paper. I was surprised that waster water turned into drinking water. Whenever wipes say "flushable" they are really not flushable. "-ShaferRainforest, NM



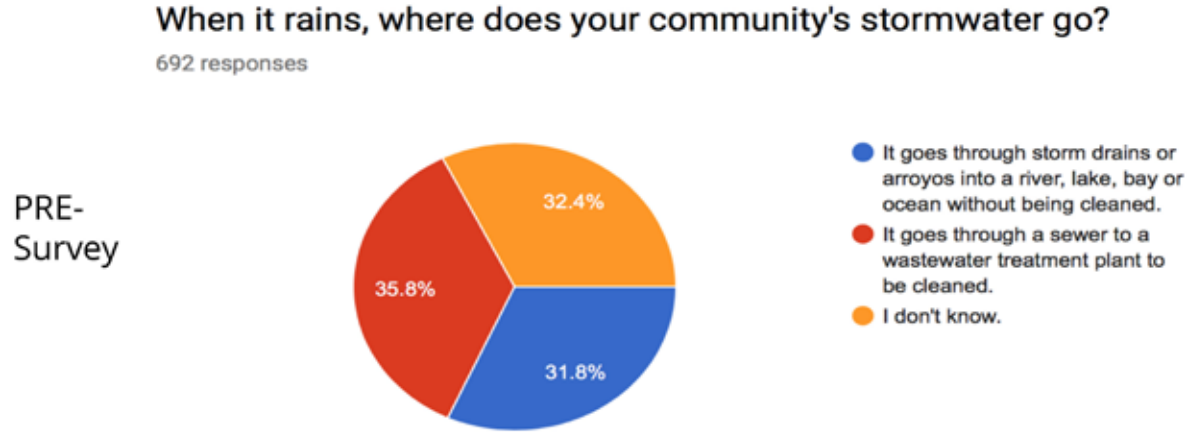
"...We learned what happens when you flush something down the toilet that is not meant to be flushed like, plastic soldiers, phones, glass, and garbage. These are some ways that water can be wasted, taking more than 5 minute showers, running the water while brushing your teeth, and flushing the toilet more than is necessary. ...we learned how much water we waste in a year or a day..." - MallettBrook, NM

Our class visited one of the three water treatment plants in our city, Winston-Salem, NC and learned how water taken from the Yadkin River is made safe for us to drink. -OverbyRiparian

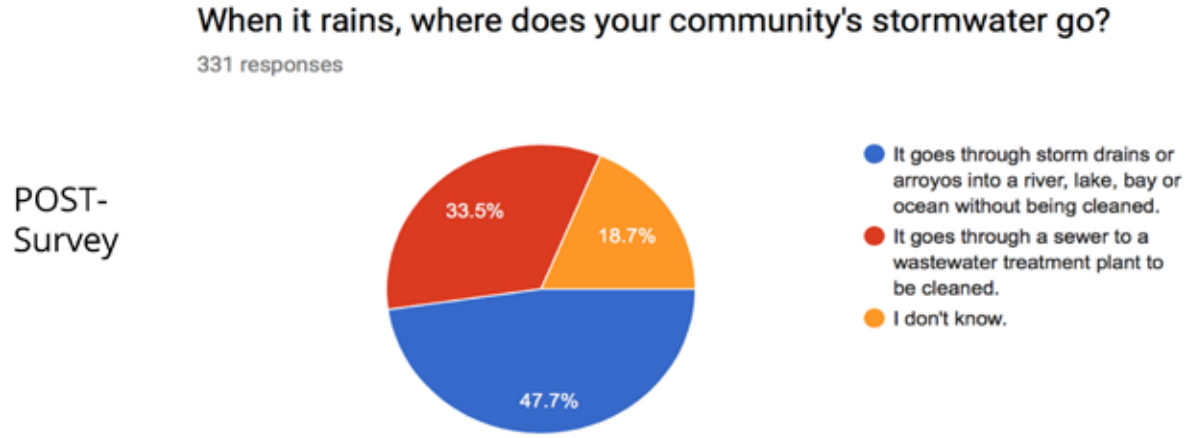


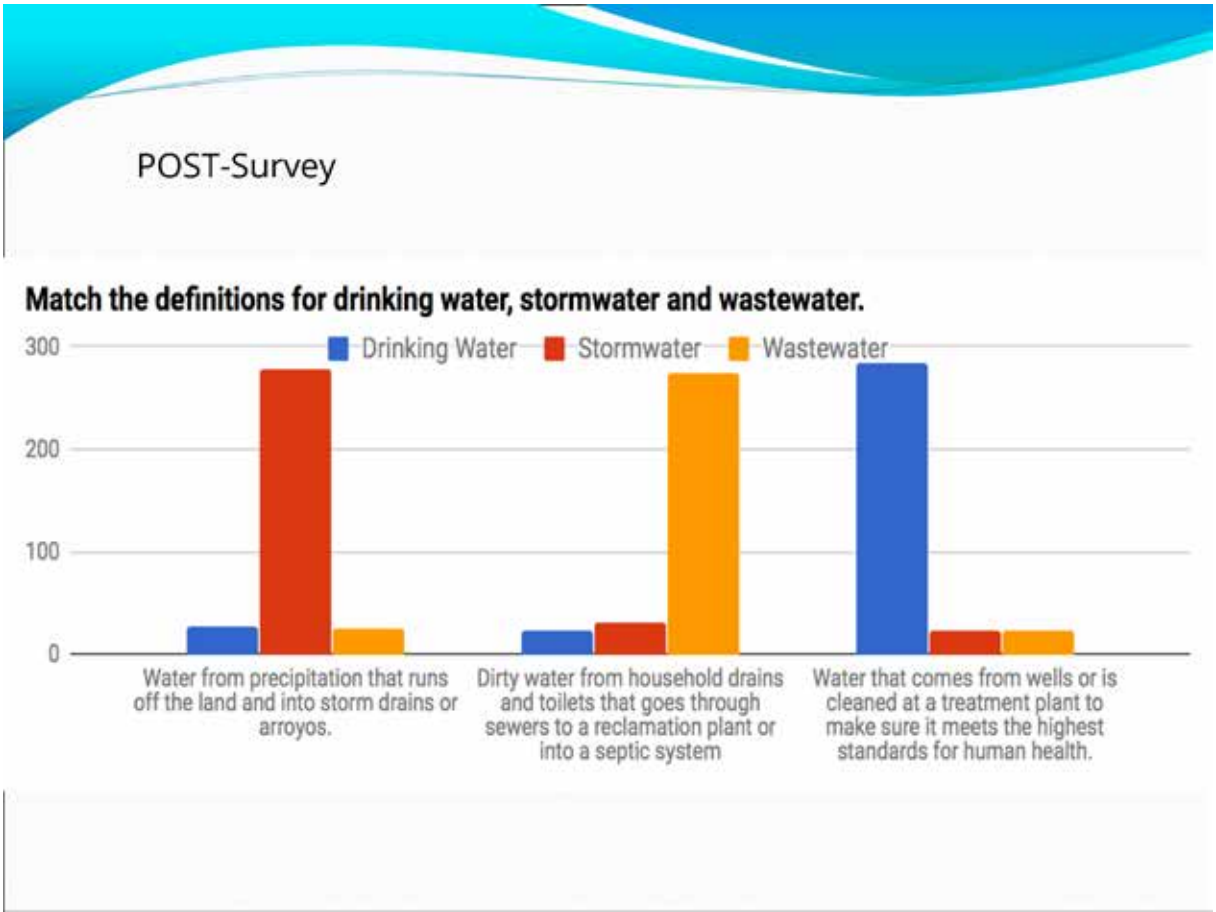


PRE-Survey



POST-Survey

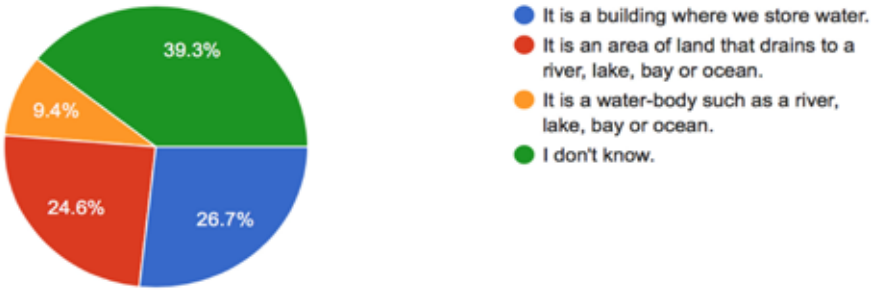




What is a Watershed (also known as a catchment or drainage basin)?

692 responses

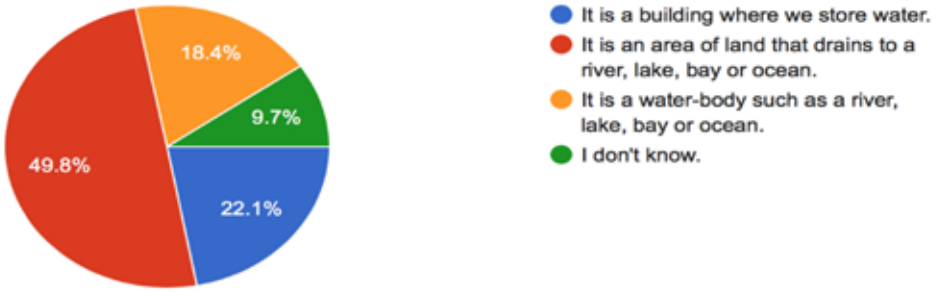
PRE-Survey



What is a Watershed (also known as a catchment or drainage basin)?

331 responses

POST-Survey



Tree Planting Field Trips



This year, RiverXchange students helped restore 4 acres of riparian habitat!

With the help of participating parents and teachers, we planted 245 cottonwood trees, 16 black willows, 191 willow whips and 26 baccharis shrubs!





What we learned about the Rio Grande is that we have not taken care of the river. It is impacting the Cottonwood trees in the area by giving them a worse chance to survive. Some common invasive species can be humans, tumbleweed, and Russian Olives. The invasive species impact the Bosque by littering and taking away water for the plants . Now let's talk about the process of planting trees. First you dig a hole with an auger , then you put the tree in the hole and push it down until it can't go any further. After you do that, you need to start putting dirt in the hole and pack it down until dirt fills the top. Then you do the happy dance because you are done. We plant trees in the winter because they are dormant, which means the tree is asleep. **After this field trip we do understand and see the Bosque differently by helping it maintain itself. We can apply what we learned on this field trip to use less water at home and at school.**

SandiaStreamers5 -Arroyo









Water Testing Field Trips

Students conduct water testing of the Rio Grande and Tingley Wetlands. Outcomes help teach about:

- The importance of water quality
- Consequences of human actions and development
- Identifying causes of pollutants and imbalances in water quality
- Finding solutions to prevent pollution and improve existing conditions



What are the greatest learning outcomes for your class as participants in RiverXchange?

What Teachers Have to Say

RiverXchange is a great program that gives students from our Title 1 school the opportunity to learn about the river and environments that are near the Rio Grande. The guest speakers and field trip expand their minds and understanding of the world that is around them and not just simply in their back yard or neighborhood. They simply cannot afford or simply don't know what is our there. ...Educating them about their relationship with it (the river) will help open their minds to how they are connected with many people, places, and things that they might not even imagine .- Cindy Shafer, RRPS (returning teacher)

I have been working with RiverXchange since it was in the pilot program stage. I love the way it gives students an authentic audience to connect with about their learning. -Lara Overby, NC (10th year participating)

This is a wonderful program and it teaches students so many different aspects about water and the many ways we here in New Mexico can learn to be better with how we use and treat water.- Andrew Vigil, APS (3rd year participating)

This program has been a pleasure and learning experience for all and I am truly amazed by how much students learn about their own environment. - Debbie Beer, APS (7th year participating)

How RiverXchange serves MRGSQT

- **Total cost of program this year: $42,065.89**
  -with 1,058 participating students, that's $39.76/student
- **In Kind Match to date - $179,953.92, meaning $170.09 was invested in each student.**
  -In Kind Match promised for FY2017 - $26,571.89
- 55% of our participating schools are Title I
- Strong learning outcomes for participants
- Collaborative work in our community benefits our watershed
- This year we met together with BEMP and NM Water Collaborative to develop coordination between programs to create a long term educational experience around watershed health and stormwater pollution prevention..

MRGSQT Programs:
Pet Waste, Household Hazardous Waste, General SWP, Septic, Illicit Discharges, Construction
Our educational presentations and curriculum excel at meeting most of these funding goals!

Our RiverXchange Vision for 2017-2018

With your continued support, we strive to help create a new generation of citizen scientists and stewards who are invested in the health of their local watershed here in the Middle Rio Grande Valley.

- Provide regular blog announcements and notices of excellent work with all teachers to encourage blog entries and responsiveness to partners
- Encourage classes to implement creative projects and/or create an end-of-year Storm Water Quality project to be presented to a broader audience, including MRGSQT
- Offer an additional Storm Water Quality field trip as a class incentive (Sanchez Farm, Valle de Oro)
- Provide technology incentives to returning classes who excel in their RiverXchange related writing and work

RIVERXchange™

Thanks So Much to Our Sponsors!



NFWF

Mid Rio Grande Stormwater Quality Team
www.keeptheriogrand.org

City of Albuquerque New Mexico 1706

Southern Sandoval County Arroyo Flood Control Authority

Funding Request for 2017-2018

The cost, per class, to continue improving our program, and to better-serve your permit requirements is $1,500.

We hope you can continue to support our efforts for 2017-2018!

Thank you!

RIVERXchange

Exhibit 4 - B.E.M.P. 2016-17

The University of New Mexico
Department of Biology
MSC03 2020
Albuquerque, NM 87131
505.277.0758

BEMP
Bosque Ecosystem Monitoring Program

BOSQUE SCHOOL
scholarship • community • integrity
BEMP Education Office
4000 Bosque School Road NW
Albuquerque, NM 87120
505.898.6388

Bosque Ecosystem Monitoring Program (BEMP)
2016-2017 Stormwater Science Education Overview

The main objective of the *Stormwater Science* outreach education program is to teach students that the health of the Rio Grande is directly related to the health of the surrounding watershed. The *Stormwater Science* program includes a one and one-half hour classroom activity, a four to five hour study trip to the Rio Grande and a water chemistry lab. **During the 2016-2017 school-year 1775 students participated in *Stormwater Science*** activities in their classrooms, in the field or both. The one and one-half hour classroom program was delivered to **1269 students** in **32 classrooms** at **19 different schools** in **Bernalillo, Rio Rancho, Albuquerque, Los Lunas, and Belen.**

During the 2016-2017 school-year Stormwater Science programing was focused on middle school and high school students emphasizing reaching students in multiple formats. BEMP has observed that it is often difficult for middle and high school teachers to take students into the field because they are only able to take a subset of their students out at a time. In an effort to simplify BEMP's practice of reaching students in multiple ways, we piloted a water chemistry lab class with middle school students this year. Teachers were given the choice to follow up their classroom lesson with either a study trip to the river or a water chemistry lab. Four hundred twenty six **(426)** students took part in a lab or study trip, which more than doubles the number of students who took part in study trips this year, as compared to last year. Both the study trip and water chemistry lab build upon the themes of the classroom presentation and provide a hands-on experience in water quality testing.

The classroom portion of the program demonstrates that runoff carries contamination to the Rio Grande. Students construct a model of the Rio Grande Watershed (see Page 6). The model watershed has five different communities along the river: a cattle ranch, up-and-downstream eco-friendly towns, an urban city, and agricultural fields. Students add different 'runoff cards' to the river downstream of the community where the runoff constituents originate. Some of the runoff is naturally occurring (turbidity), and others are human caused (pesticides, oil, etc.). The model runs through two different scenarios: (1) a *before-the-storm* and (2) an *after-the-storm* river. These two versions of a watershed demonstrate the harmful effects storm water contamination can have on aquatic organisms and downstream communities.

The classroom program then encourages students to observe their daily behavior and think about ways they can help to keep their watershed clean in alignment with the MRGSQT educational messaging. BEMP used the matrix provided by MRGSQT as a guideline to crafting the Stormwater Science messaging. Educators provide opportunities for students to come up with

their own suggestions for improving watershed health and provide a few suggestions students can do individually. The handout to accompany this activity is available to students in both English and Spanish; the classroom handout is included on Page 3 of this document.

The field portion of the program is a four to five hour trip to the Rio Grande during which students investigate how stormwater moves through the city. Students also collect and interpret water quality data. The program starts with a trail/arroyo survey which examines and categorizes the amount of visible pollutants (plastics, paper, dog poop, animal scat, etc.) in the San Antonio arroyo in Albuquerque which empties into the bosque. In the arroyo students survey for several types of litter and test water quality using a LaMotte water quality monitoring kit (see Page 6). When the students arrive at the bank of the Rio Grande, they do additional water quality testing and search for macro-invertebrates. Students then collectively share their results, compare them to results gathered by students in the past and to the data they gathered in the arroyo, and discuss what the data could mean in terms of river health.

During the water chemistry lab, students are in their own classroom and they perform water quality tests on river water, tap water, and water from school fish tanks or ponds (if available). Students learn what factors affect water quality, discuss the differences between the water in the river and the water they drink, and understand what makes a good freshwater habitat vs. what makes good drinking water. If time permits, students go outside their school to look for the paths stormwater takes when it falls on their school's campus.

In the 2016-2017 proposal, we proposed to develop a new Stormwater Science program to be delivered at BEMP monitoring sites along the bosque during BEMP's monthly monitoring/data collection for students in grades 2-12. Some activities were piloted during monthly monitoring this year with 2nd graders from Rio Grande Elementary at the Belen site and 4th graders from The International School at Mesa del Sol near Valle de Oro National Wildlife Refuge. Work on the monthly monitoring curriculum continues and BEMP educators plan to refine stormwater science activities during monthly monitoring field trips for elementary, middle and high school students to be delivered in the Spring of 2018.

Hundreds of students also took part in *Stormwater Science* related field activities at two BEMP events this year. The BEMP Student Congresses (~300 students, ~55 teachers/chaperones), was where BEMP students had the chance to share their research and experiences in the bosque, including watershed health observations, and BEMP's Otter Day (~125 students, ~25 teachers/chaperones), an event for first graders, hosted by high school students to teach about endangered animals in New Mexico (see Page 7).

During BEMP's monthly water chemistry testing for the MRGSQRT, which commenced in January 2017, BEMP scientists provide in-depth explanations of E. coli testing and abiotic parameter testing to a select group of high school and college students who assist with this dataset.

Classroom Handout – Mid/High School

Hydrologist: _____ Date: _____

Stormwater Science

What 2 sources can New Mexicans get their drinking water from?

1. _____

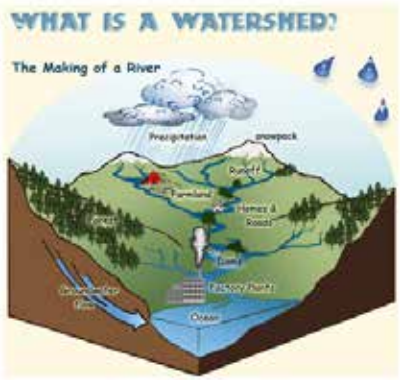
2. _____

Where does water go after we use it?

_____

A *watershed* is an area of land where all of the water that falls on it, or that is under it, drains to the lowest point.

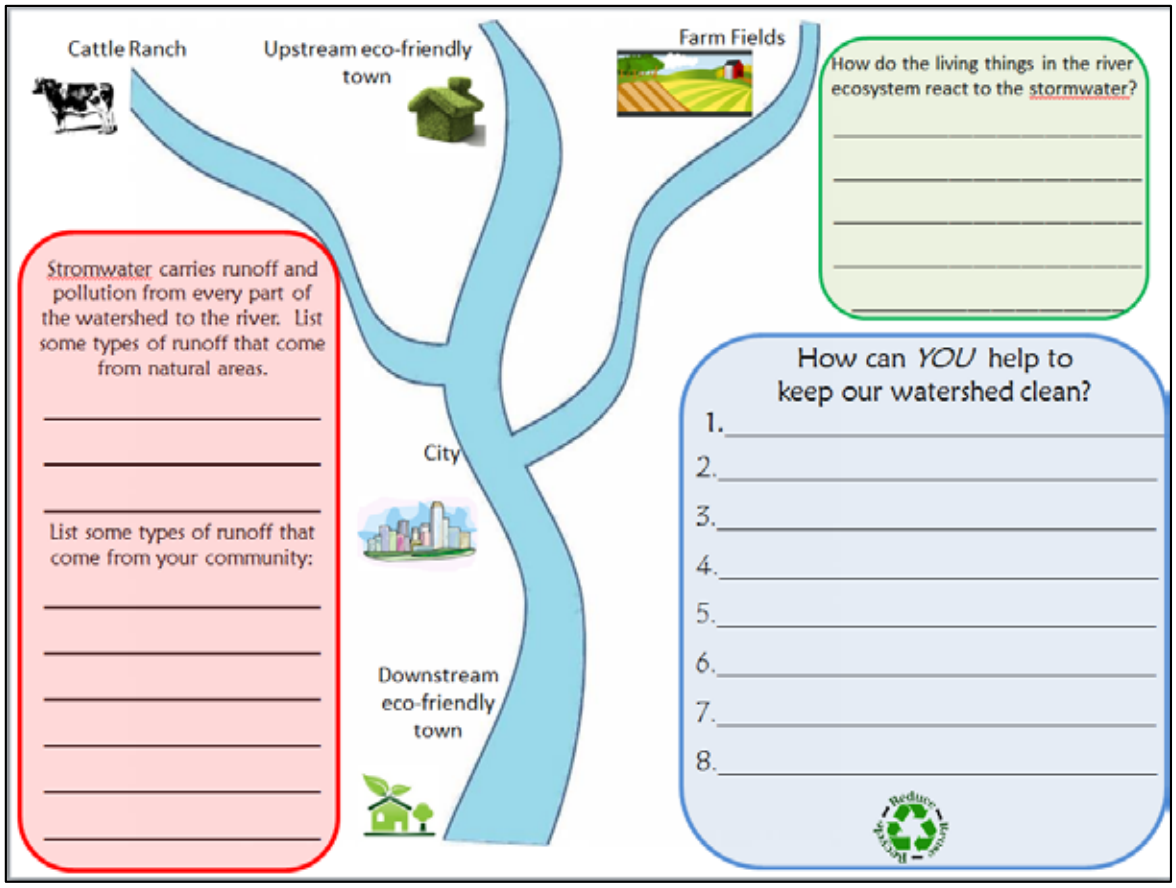




Draw a line from the word to its definition

Turbidity	♦ A stream or arroyo that brings water to the main channel of the river
Nonpoint source pollution	♦ Types of nutrients found in fertilizers that can lead to excess algae growth
E. coli	♦ A single location where pollution is being leaked into the environment
Point source pollution	♦ A type of *bacteria* found in warm blooded animal's intestines that can make people sick
Nitrates and phosphates	♦ Tiny 'water bugs' whose species are an indication of water quality
Tributary	♦ *Any* type of pollution that comes from *many different* sources
Macro-invertebrates	♦ A measure of water clarity based on the amount of suspended solids

Page 1



How do the living things in the river ecosystem react to the stormwater?

_____

_____

_____

_____

_____

Stromwater carries runoff and pollution from every part of the watershed to the river. List some types of runoff that come from natural areas.

_____

_____

_____

List some types of runoff that come from your community:

_____

_____

_____

_____

_____

_____

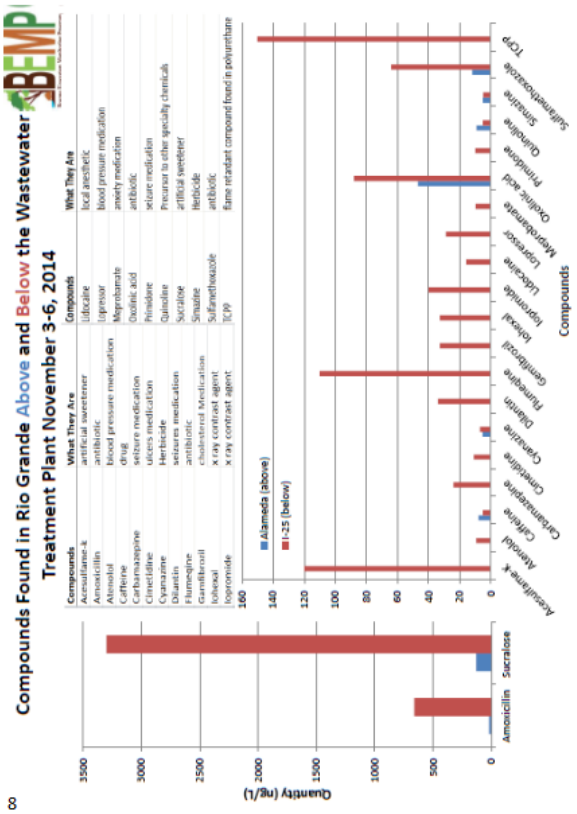
How can *YOU* help to keep our watershed clean?

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____

Page 2

Field Journal for outdoor study trips

Do you use any of these compounds?



8

Name:_____

Date:_____

Stormwater Science

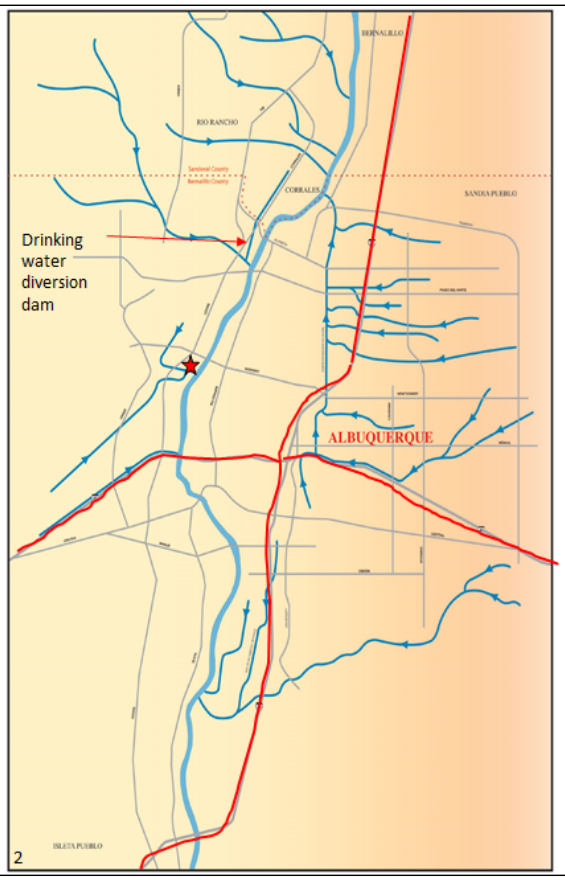
Field Journal

Bosque Ecosystem Monitoring Program



www.bemp.org

Page 1



2

Water Chemistry

	Arroyo	River
Temperature	°F / °C	°F / °C
Turbidity	JTU	JTU
Nitrate	ppm	ppm
Phosphate	ppm	ppm
pH		
Dissolved oxygen	ppm %	ppm %
E. coli	Present / Absent	Present / Absent

Temperature
8-12 °C- good
13-15 °C- fair
>15 °C- poor

Turbidity
Sources: erosion, fire
1-39 JTU- good
4--100 JTU- fair
>100 JTU- poor

Nitrates
Sources: plants, soil, fertilizer
1-4 ppm- good
5- 20 ppm- fair
>20 ppm- poor

Phosphates
Sources: plants, fertilizer, plastic
1 ppm- good
2 ppm- fair
4ppm- poor

pH
1-strong acid- poor
6-week acid- fair
7-neutral- good
8-week base-fair
14-strong base-poor

Dissolved Oxygen
1 ppm or 60-100% -good
4 ppm or 40-60%- fair
8 ppm or 0-40%- poor

E. coli
Sources: animal waste
E.coli will always be present in small amounts. Large amounts are harmful to humans and animals

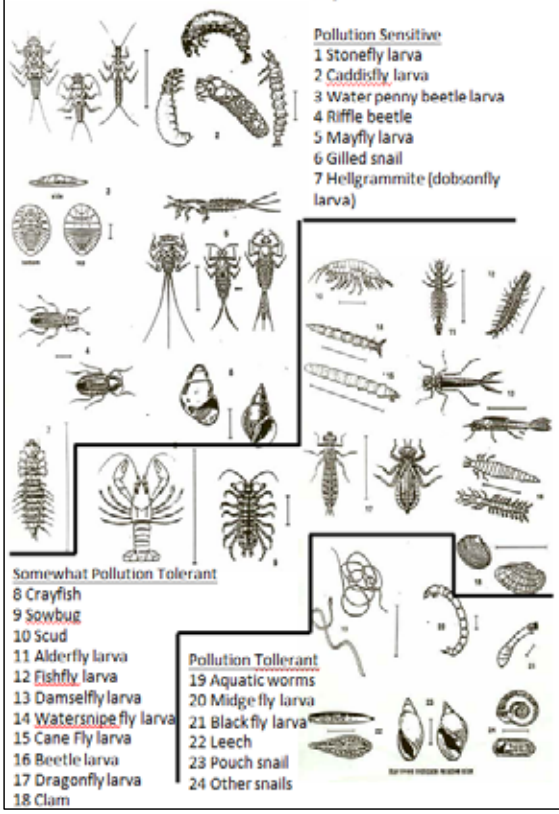
Overall river health: (circle one)

Good Fair Poor

7

Page 2

Macro-invertebrates: Ecosystem Indicators



Pollution Sensitive
1 Stonefly larva
2 Caddisfly larva
3 Water penny beetle larva
4 Riffle beetle
5 Mayfly larva
6 Gilled snail
7 Hellgrammite (dobsonfly larva)

Somewhat Pollution Tolerant
8 Crayfish
9 Sowbug
10 Scud
11 Alderfly larva
12 Fishfly larva
13 Damselfly larva
14 Watersnipe fly larva
15 Cane Fly larva
16 Beetle larva
17 Dragonfly larva
18 Clam

Pollution Tollerant
19 Aquatic worms
20 Midge fly larva
21 Black fly larva
22 Leech
23 Pouch snail
24 Other snails

Litter Survey

The San Antonio Arroyo collects runoff from all over the west side of Albuquerque, anything on the streets can end up in the arroyo. Record the litter you find throughout the day here.

Litter type	Arroyo	Bosque
Plastic		
Paper		
Glass		
Metal		
Cigarette butts		
Dog poop		
Animal scat		
Evidence of chemicals		
Other trash		

Who is responsible?

Point source pollution- comes from a specific place

Non-point source pollution- comes from many places and people

3

Page 3

How long will it take?

Every piece of trash has a face... where and WHO did it come from? It takes just a moment for an item to be carelessly discarded where it can be washed into a river or blown in by wind, but it can take many, many years for it to completely decompose. Test your knowledge about decomposition times below by drawing a line from the item to its decomposition time.

Banana peel	1 million years
Cigarette butt	600 years
Fishing line	450 years
Styrofoam cup	200 years
Milk carton	50 years
Plastic bottle	20 years
Aluminum can	5 years
Glass bottle	3 months
Plastic bag	4 weeks

Which of these things can be reused or recycled?

_____

_____

_____

4

Weather Report

1. Time: _____ am or pm
2. Today's Weather:
3. Cloud Cover: _____ %
4. Wind: Speed: _____ Direction: N W E S
   km/hr OR mph
5. Humidity: _____ %
6. Temp: It feels like: _____ °F It actually is.... _____ °F

Journal Space

5

Page 4

Middle school students at Harrison Middle School (right) and Albuquerque Institute of Math and Science (below) discuss runoff while they build a watershed model.







Jimmy Carter Middle School students test for dissolved oxygen in water in the San Antonio Arroyo



1st grade students build a puzzle to discover the "secret message" telling them how to keep the river clean and protect wildlife habitat during Otter Day 2017.

BEMP staff and students collecting water quality data in Jan. 2017



Exhibit 5 - Nature Conservancy 2016-17

The Nature Conservancy
Protecting nature. Preserving life.™

New Mexico
212 East Marcy, Suite 200
Santa Fe, New Mexico 87501

Tel (505) 988-3867 nature.org/new mexico
Fax (505) 988-4095

The Nature Conservancy in New Mexico
Rio Grande Watershed Educational Programs
Final Report to the City of Albuquerque: June 2017

Education Programs:
Between April and May 2017, The Nature Conservancy and project partners conducted a three-part series for 8 classes of 4th and 5th graders from Duranes and Whittier Elementary Schools. Approximately 160 students participated in hands-on activities exploring watershed health, forest health, and surface to groundwater interactions. There were also 67 adults that participated in the field trips to the top of the Sandias, providing a unique experience for underserved children and some of their family members. Topics included storm water management, water quality, watershed connections, the importance of forests and mountains as water towers, drinking water sources, impacts of drought, and ecological consequences of river management.

Part I: The In-Class Watershed Model Activity
Students received background information about the Rio Grande rift, the uplift of the Sandia Mountains, and how rocks from a 300 million-year-old ocean are up on top of Sandia Peak. Working with a model of the watershed made of wood, foil, nails for tree trunks and cotton balls for trees, the students watched where the water flows when it rains or snow melts from the mountain top. They then saw what happens if people add dog poop (chocolate sprinkles), trash (cut up straws), oil spots from cars (olive oil), fertilizer (green food coloring), and pesticides (red food coloring). Students then took off the cotton ball trees to represent a too-hot fire in an unhealthy forest habitat, and replaced the trees with chocolate powder to represent ashes. They learned about the Jemez fire and how it impacted the Rio Grande ecosystem and our ability to use river water for three months following the fire.



This river has been polluted with trash, dog poop, oil, fertilizer and pesticides.



This river has been choked with ashes from a fire that burned too because the forest was unhealthy.

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Part II: Ride to See the Rio Grande Watershed

The Tram Field Trip was connected to Next Gen Science Standards stating that four earth systems work together: Hydrosphere, Geosphere, Atmosphere, and Biosphere (we considered only plants). Students predicted what they would observe at the initial in-class meeting. Students were divided into small groups of 3 – 4 students and used the following materials to make observations. A notebook was provided with maps and information, as well as their lab sheet to collect observations.



A notebook was provided with maps and information, as well as their lab sheet to collect observations.

1. a soil sifter that separated soil into rocks, gravel, sand, clay, and silt and magnets to collect iron
2. a tree density gauge to measure how many big trees on top and bottom of mountain
3. a soil-water gauge
4. a water bottle to measure effects of air density

Students compared the amounts of soil types at school, the tram dock, and the crest. They found more rocks at the top, more gravel at the tram dock, and more sand at their school. Magnets at the tram dock collected

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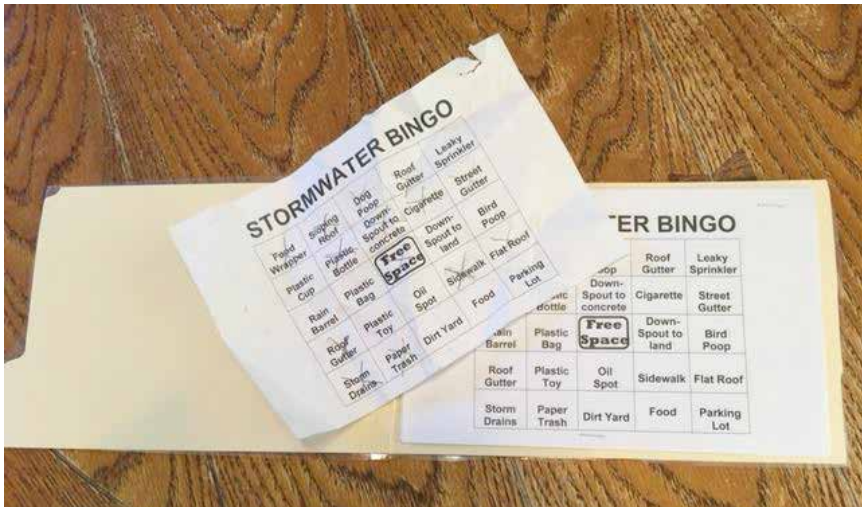
TONS of iron whereas the dirt at the top had very little. They learned that this is because water weathers and erodes rock, shaping the watershed and the soil in it.

Students compared the number of big trees at the tram dock and mountaintop. They learned that there are more big trees on top of the mountain and more cactus at the bottom tram dock. Students compared water in the soil and learned that there is more water in the soil at the top of the mountain. They also learned that the crest gets about 100 inches of snow each year compared to 7.8 inches of snow in town.

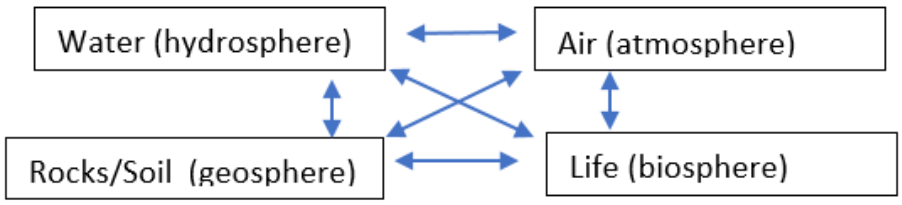
Students heard the air escape from the water bottle when air from the tram dock was brought to the top. They saw how the bottle became squashed by denser surrounding it when air from the top was brought down to the tram dock. They learned that rock, the mountain, effects the air density and the weather.

Part III - The Storm Water Bingo Walk and Art Project Wrap Up

Students went on a walk in the neighborhood or around their school campus to look for evidence of the storm water system and some of the bad things that get washed into the river. Bingo seems to be a VERY popular activity. They learned how hard surfaces shed the water into the storm drains that run into the river taking with it all the trash and dog poop that we leave behind.



Students discussed the connections between the four earth systems.



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Afterwards, students returned to the classroom to write haikus and make pictures that completed the sentence: "I am from the Rio Grande Watershed where . . ."





Students and teachers enjoyed this program. They learned about the watershed, storm water and had the opportunity to see the enormity of the Rio Grande watershed. From Mt. Taylor and Santa Fe, it looks immense from the crest, and it is only a small part of the Rio Grande Watershed. Students could feel connected to the watershed and see how water connects us all.

Partnering organizations for the program included: Sandia Mountain Natural History Center and the Cibola National Forest.

Marketing Services:
During the time of the Conservancy's contract with the city, we disseminated a media advisory about water fund educational outreach activities, which was pitched to regional media outlets. Two local news stations, KQRE and KOAT filmed the student's visit to the Sandias including the tram ride, but only KQRE aired the film. As well, all media coverage and releases are highlighted on the Conservancy's website and Facebook page. These educational programs will also be featured in the Rio Grande Water Fund Annual Report, which will be published in the fall 2017.

Exhibit 6 - Earth Force 2016-17

1. What are the goals you hoped to achieve and how did you meet the stated goals?
    a. The goal of this project was to leverage an urgent community need - stormwater management - to give young people a hands-on STEM experience. Participating classes collected water quality data, conducted a stormwater assessment and learned how Albuquerque manages stormwater. Students then developed a project that improves stormwater management at both the point of origin (their school) and at the point where it re-enters the natural environment (the refuge). Earth Force supported 11 educators in the Community Action & Problem-Solving Process, helping the educators gain the skills needed to implement the project-based learning approach. These educators guided students to create 7 projects.
2. What activities have occurred to date as a result of the City of Albuquerque contribution? Are there activities yet to get underway?
    a. 411 students participated in the six-step Community Action & Problem-Solving Process and developed 7 total projects that addressed stormwater in the Middle Rio Grande.
    b. Eighty students shared their environmental projects with peers and stakeholders from the community at the Youth Summit on May 12, 2017.All of the students created and shared presentations about their projects, including a remarkable presentation from students at the Native American Community Academy who made their presentations in at three different native languages. Their projects focussed around pollinator gardens and pollinator water ecosystems. Emerson Elementary School investigated their school's drinking water, as it was coming out of the faucets and drinking fountains brown. They tested their water and brought their results to the principle to fix the issue. Truman Middle School created a rain garden and mural at the Valle de Oro National Wildlife Refuge. The space will be utilized as an outdoor education space.
3. How many youth were impacted by Lockheed Martin/Sandia National Laboratories funding this request?
    a. # youth: 411
    b. # adults: 11
4. If your program is educational, how is it addressing the community's need for a future workforce and what is it doing to encourage students to achieve their highest potential?
    a. Young people in Earth Force programs design and implement projects that reflect issues they care about and their desire to address a local environmental issue, gaining hands-on experience by applying what they have learned in the classroom to real-world situations. Our program focuses on civic engagement, which helps students to become active participants in their communities by conducting balanced research, building strong community partnerships, and making decisions as a democratic group. These skills are vital for lifelong environmental citizenry and workforce development. Earth Force uses its Community Action & Problem-Solving Process, which helps students to gain workplace STEM skills such as using scientific tools to generate data, using data to problem-solve, and developing policies through the application of data.