

Stormwater Pollution Prevention Plan for:

Clean City Division - Pino Yards Complex
5501 Pino St NE – Building D
Albuquerque, NM 87109
(505) 259-4651

SWPPP Contact:

City of Albuquerque
Solid Waste Management Department
Jake Daugherty
5501 Pino St BE – Building D
Albuquerque, NM 87109
(505) 761-8324

SWPPP Preparation Date:

February 2014

Revision Date:

October 2016

Prepared By:



6000 Uptown Blvd. NE, Suite 200
Albuquerque, NM 87110
CDM Smith Project No.: 0668-113173

This Page Intentionally Left Blank

Contents

SECTION 1: Facility Description and Contact Information	3
1.1 Clean City Division	5
1.2 Contact Information/Responsible Parties	6
1.3 Storm Water Pollution Prevention Team (PPT)	6
1.4 Activities at the Facility	7
1.5 General Location Map	7
1.6 Site Maps	7
SECTION 2: POTENTIAL POLLUTANT SOURCES	9
2.1 Industrial Activity and Associated Pollutants	9
2.2 Spills and Leaks	9
2.3 Non-Storm Water Discharges Documentation	10
2.4 Salt Storage	12
2.5 Sampling Data Summary	12
SECTION 3: STORM WATER CONTROL MEASURES	13
3.1 Good Housekeeping	13
3.2 Minimize Exposure	14
3.3 Maintenance	14
3.4 Spill Prevention and Response	14
3.5 Erosion and Sediment Controls	15
3.6 Management of Runoff	15
3.7 Salt Storage Piles or Piles Containing Salt	15
3.8 MSGP Sector-Specific Non-Numeric Effluent Limits	15
3.9 Employee Training	15
3.10 Non-Storm Water Discharges	16
3.11 Waste, Garbage and Floatable Debris	16
3.12 Dust Generation and Vehicle Tracking of Industrial Materials	16
SECTION 4: SCHEDULES AND PROCEDURES	17
4.1 Schedules and Procedures Pertaining to Control Measures	17
4.2 Schedules and Procedures Pertaining to Inspections	17
4.3 Schedules and Procedures Pertaining to Monitoring	18
4.3.1 Quarterly Visual Storm Water Assessment	18
4.3.2 State- or Tribal-Specific Monitoring	18
4.3.3 Benchmark Monitoring	18
4.3.4 Impaired Waters Monitoring	18
4.3.5 Substantially Identical Outfall Exception	18
4.4 Schedules and Procedures Pertaining to Corrective Action	18
4.5 Schedules and Procedures Pertaining to Annual Reporting	19

SECTION 5: INSPECTIONS	21
5.1 Routine Facility Inspections.....	21
5.2 Quarterly Visual Storm Water Assessments.....	22
SECTION 6: DOCUMENTATION TO SUPPORT ELIGIBILITY CONSIDERATIONS UNDER OTHER FEDERAL LAWS	25
6.1 Documentation Regarding Endangered Species	25
6.2 Documentation Regarding Historic Properties	25
6.3 Documentation Regarding NEPA Review (if applicable).....	25
SECTION 7: SWPPP CERTIFICATION	27
SECTION 8: SWPPP MODIFICATIONS	29
SWPPP APPENDICES	31
Appendix A Pollution Prevention Team Members	
Appendix B Spill Response Plans	
Appendix C Multi-Sector General Permit 2015	
Appendix D Figures	
<i>Figure 1 Pino Yards Complex General Location Map</i>	
<i>Figure 1b Pino Yards Complex Site Map</i>	
<i>Figure 2a Clean City Division at PY Lot 1 Site, Drainage, and Activities Plan</i>	
<i>Figure 2b Clean City Division at PY Lot 2 Site, Drainage, and Activities Plan</i>	
<i>Figure 2c Clean City Division at PY Lot 3 Site, Drainage, and Activities Plan</i>	
Appendix E Evaluation of Non-Storm Water Discharges	
Appendix F Best Management Practices and CCPY Source Control BMPs	
Appendix G Training Records	
Appendix H Endangered and Threatened Species Screening Memorandum	
Appendix I Historic Properties Preservation Screening Memorandum	
Appendix J Copy of the Notice of Intent and Acknowledgement Letter	
Appendix K Documentation of Maintenance to Control Measures	
Appendix L Documentation of Corrective Action Taken	
Appendix M Reports	
<i>M1 – Quarterly Routine Facility Inspections</i>	
<i>M2 – Quarterly Storm Water Monitoring</i>	
<i>M3 – EPA Industrial Stormwater Sampling Guidance</i>	
<i>M4 – Annual Report Example</i>	

Overview of SWPPP Development and Availability

Introduction

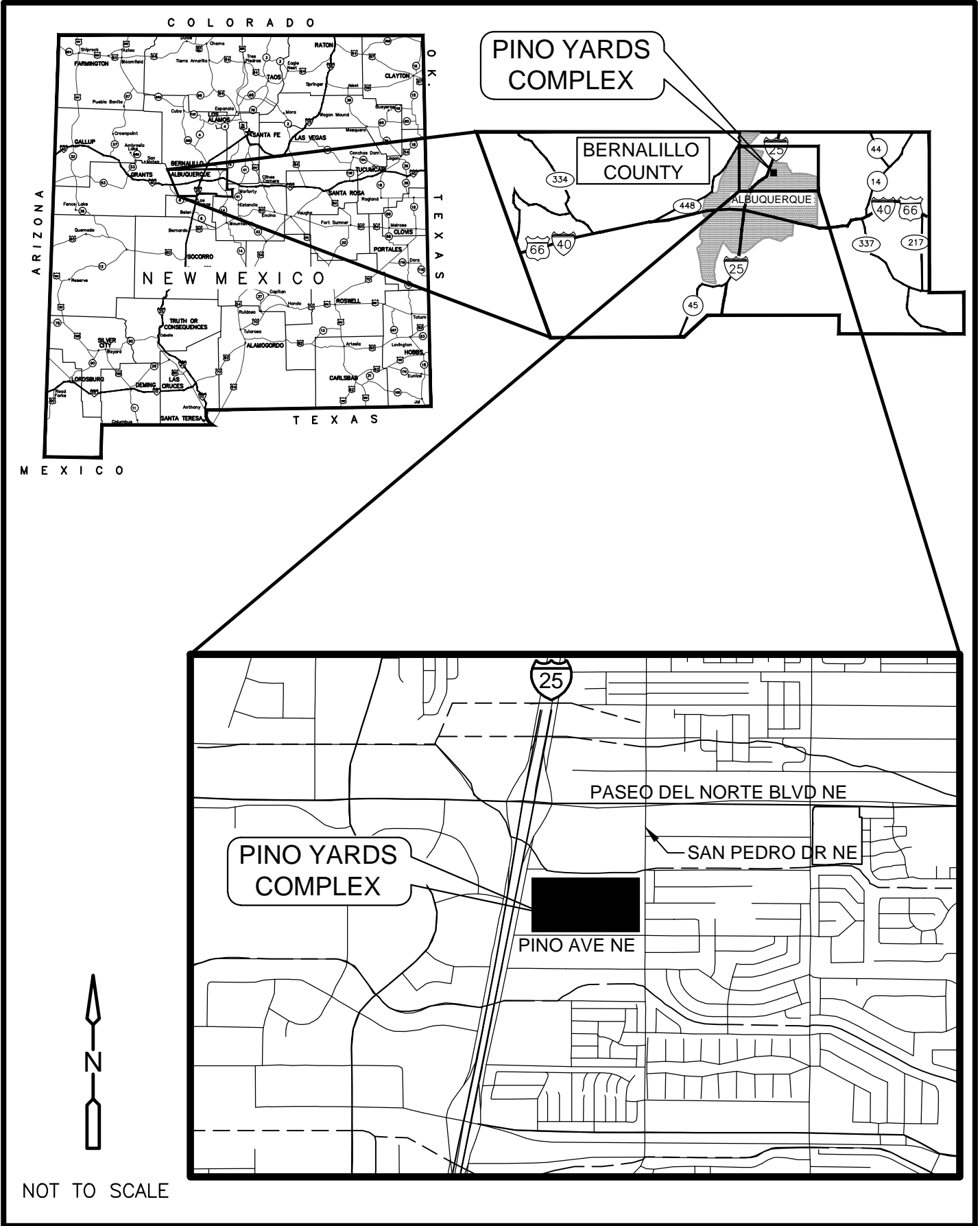
The Solid Waste Management Department (SWMD) of the City of Albuquerque (City) owns and operates the Clean City Division located within the Pino Yards Complex (CCPY). The Pino Yards Complex (Pino Yards) is located at 5501 Pino St NE in Albuquerque, NM (**Figure 1**). Pino Yards is comprised of multiple municipal operations and includes administrative offices, storage and staging yards, warehouses, maintenance facilities, and the City's primary fleet fueling center. Pino Yards is owned by the City and seven of the entities operating out of the facility are Departments within the City. The eighth entity operating out of Pino Yards is the Albuquerque Bernalillo County Water Utility Authority (ABCWUA). Entities within the Pino Yards Complex include:

1. Solid Waste Management Department, Clean City Division
2. Department of Finance and Administration, Fleet Management Division
3. Parks and Recreation Department, Park Management Division
4. Department of Municipal Development, Street Maintenance Division
5. Department of Municipal Development, Traffic Engineering Division
6. Department of Finance and Administration, Purchasing Division (Warehouse and Surplus Auction)
7. ABCWUA
8. Department of Municipal Development, Park Construction Division

Regulatory Framework

This SWPPP was developed to meet the needs of both the City's joint Municipal Separate Storm Sewer (MS4) Permit (March 1, 2012) and the EPA's Multi-Sector General Permit (*MSGP 2015*) for Storm Water Discharges Associated with Industrial Activity (effective June 4, 2015). The City's MS4 Permit requires pollution prevention and good housekeeping practices be implemented within the City's municipal operations (Part I.C.5.c). The *MSGP 2015* requires certain industries, based on activities performed, to maintain coverage under the permit. The operations of this facility are considered industrial activities that have the potential to impact storm water quality. Therefore, this SWPPP is required by the *MSGP 2015* and its purpose is to describe the SWMD's program for complying with all of the requirements in the *MSGP 2015*. This SWPPP is available at the City's SWMD office located at 5501 Pino St NE, Bldg. D and on the SWMD website at <http://www.cabq.gov/SWPPP>. This SWPPP is also available at the City's Engineering/Storm Water Design office.

This Page Intentionally Left Blank



XREFs: [] Images: []
Last saved by: MESQUITARS Time: 10/6/2016 10:48:02 AM
pw:\DACPWAPP2\PW_PL110668\113173\03 Reports and Studies\09 CADD Figures and Graphics\Pino Yards\PINO-Figure 1.dwg



This Page Intentionally Left Blank

Section 1: Facility Description and Contact Information

1.1 Facility Information

Clean City Division Information

Name of Facility: Solid Waste Management Department, Clean City Division

Street: 5501 Pino St NE, Bldg. D

City: Albuquerque State: NM ZIP Code: 87109

County or Similar Subdivision: Bernalillo

Permit Tracking Number: _____ (if covered under a previous permit)

Latitude/Longitude (Use **one** of three possible formats, and specify method)

Latitude:

Longitude:

1. 35°10'10.78"N (degrees, minutes, seconds)

1. 106°34'48.36"W (degrees, minutes, seconds)

2. __° __' __" N (degrees, minutes, decimal)

2. __° __' __" W (degrees, minutes, decimal)

3. ____° N (decimal)

3. ____° W (decimal)

Method for determining latitude/longitude (check one):

USGS topographic map (specify scale: _____)

EPA Web site

GPS

Other (please specify): Google Earth Professional

Is the facility located in Indian Country? Yes No

If yes, name of Reservation, or if not part of a Reservation, indicate "not applicable." Not applicable

Is this facility considered a Federal Facility? Yes No

Estimated area of industrial activity at site exposed to storm water: 1.9 (acres)

Clean City Division Discharge Information

Does this facility discharge storm water into an MS4? Yes No

If yes, name of MS4 operator: Albuquerque Metropolitan Arroyo Flood Control Authority (AMAFCA)

Name(s) of water(s) that receive storm water from your facility: City of Albuquerque South Domingo Baca Channel, City of Albuquerque Domingo Baca Channel, AMAFCA North Diversion Channel and the Rio Grande

Are any of your discharges directly into any segment of an "impaired" water? Yes No

If Yes, identify name of the impaired water (and segment, if applicable): Rio Grande-Albuquerque [Isleta Pueblo and Alameda Bridge]

Identify the pollutant(s) causing the impairment: E-Coli, PCBs, Dissolved Oxygen, and Temperature

For pollutants identified, which do you have reason to believe will be present in your discharge?

Organics contributing to reduced dissolved oxygen.

For pollutants identified, which have a completed TMDL? E-Coli

Do you discharge into a receiving water designated as a Tier 2 (or Tier 2.5) water? Yes No

Are any of your storm water discharges subject to effluent guidelines? Yes No

If Yes, which guidelines apply? _____

Primary SIC Code or 2-letter Activity Code: 4212

Identify your applicable sector and subsector: Sector P – Land Transportation and Warehousing,
Subsector P1 – Motor Freight Transportation and Warehouse

1.2 Contact Information/Responsible Parties

Facility Operator(s):

Name: City of Albuquerque Solid Waste Management Department

Address: 4600 Edith Boulevard NE

City, State, Zip Code: Albuquerque, NM 87107

Telephone Number: (505)761-8105

Email address: jsoladay@cabq.gov

Facility Owner(s):

Name: City of Albuquerque Solid Waste Management Department

Address: 4600 Edith Boulevard NE

Telephone Number: (505)761-8105

Email address: jsoladay@cabq.gov

SWPPP Contact:

Name: Jake Daugherty, Environmental Compliance Coordinator

Telephone Number: (505) 761-8324

Email address: ddaugherty@cabq.gov

24-Hour Contact (Non-Emergency):

Name: Billy Gallegos, Superintendent

Telephone Number: (505) 259-4651

**TO REPORT A SPILL PLEASE CALL:
24-HOUR EMERGENCY CONTACT**

Name: Billy Gallegos, Superintendent

Telephone Number: (505) 259-4651

1.3 Storm Water Pollution Prevention Team (PPT)

The storm water pollution prevention team (PPT) is comprised of representatives from the City's SWMD. The responsibility of the PPT is to oversee development of the SWPPP and for implementing and maintaining control measures and taking corrective actions when required. A list of PPT members and contact information is provided in **Appendix A**. A summary of PPT members' responsibilities follows.

- Clean City Superintendent (PPT Leader) – Responsibilities include overseeing environmental compliance of the facility, ensure implementation of the SWPPP and Best Management Practices, etc.
- SWMD Environmental Compliance Coordinator – Responsibilities include SWPPP development and management, EPA annual reporting, NOI submission, spill reporting, and evaluation of spill data to identify preventative measures, etc.

- Clean City Supervisor – Responsibilities include assisting the PPT Leader, performing facility inspections, storm water monitoring, annual training, and spill response and reporting, etc.
- PPT Members – Responsibilities include implementation of the SWPPP, quarterly inspections, spill response and reporting, and annual training, etc.

Each PPT member is provided an electronic copy of the SWPPP and *MSGP 2015*. It is the responsibility of the PPT member to maintain their copy of the SWPPP and ensure its completeness and availability and to fully implement the procedures and best management practices (BMPs).

Appendix A shall be updated periodically to reflect changes in personnel.

The *MSGP 2015* is included as **Appendix C** of this SWPPP.

1.4 Activities at the Facility

CCPY has three lots that are used to store vehicles and equipment used by CCPY to collect and haul recyclables and graffiti removal, median maintenance, weed abatement, litter collection, and refuse collection (large item pick up and Nob Hill and Old Town street containers). The site activities include vehicle and equipment storage, herbicide storage, warehousing, administration, and waste handling and disposal. Minor maintenance is performed on vehicles and maintenance of small equipment such as hand tools, weed trimmers, etc. in the maintenance shop on-site. Graffiti removal chemicals, paint, sprayers, and tools are stored near the administration building.

1.5 General Location Map

The general location of Pino Yards is presented on **Figure 1** of **Appendix D**. The layout of Pino Yards and location of CCPY is shown on **Figure 1b** of **Appendix D** along with the direction of storm water flow, outfall locations, and illustration of the various City Division areas located within Pino Yards.

1.6 Site Maps

As required in Section 5.1.2 of the *MSGP 2015*, the following figures include the items listed below. All figures are located in **Appendix D**.

- Site Plan Figure
 - Boundary of the property and size in acres
 - Location and extent of significant structures and impervious surfaces (evident on aerial photograph)
- Drainage Plan Figure
 - Directions of storm water flow
 - Locations of all existing structural storm water control measures
 - Locations of all storm water conveyances including ditches, pipes, and swales
 - Locations of all storm water monitoring points

- Locations of storm water drainage points, with a unique identification code for each drainage point
- Municipal separate storm sewer systems (MS4), where your storm water discharges them
- Activity Plan Figure
 - Locations of potential pollutant sources identified under MSGP 2015, Part 5.2.3.2
 - Locations of the following activities where such activities are exposed to precipitation:
 - Vehicle and equipment maintenance and/or cleaning areas
 - Loading/unloading areas
 - Locations used for the treatment, storage, or disposal of wastes
 - Liquid storage tanks
 - Transfer areas for substances in bulk
 - Machinery
- Non-Storm Water Discharges and Recent Spills Figure

If identified, the following items shall be located, as appropriate:

 - Locations and descriptions of all non-storm water discharges identified under MSGP 2015, Part 2.1.2.10
 - Locations where significant spills or leaks identified under MSGP 2015, Part 5.2.3.3 have occurred
- Not Applicable
 - Processing and storage areas
 - Immediate access roads and rail lines used or traveled by carriers of raw materials, manufactured products, waste material, or by-products used or created by the facility
 - Locations of all receiving waters in the immediate vicinity of CCPY
 - Locations and sources of run-on to your site from adjacent property that contains significant quantities of pollutants

Section 2: Potential Pollutant Sources

2.1 Industrial Activity and Associated Pollutants

Table 2-1A describes the industrial activities performed at the facility and the potential pollutants associated with them.

Table 2-1A
Industrial Activities Performed and Associated Potential Pollutants

Industrial Activity	Associated Potential Pollutant
Building and Ground Maintenance	Mixed dry herbicide, pesticide, ice melt
Painting/Stripping	Paint, graffiti removal chemicals
Vehicle and Equipment Maintenance	Oils, hydraulic fluids, coolant, antifreeze, lubricants, batteries
Vehicle and Equipment Storage	Oils, hydraulic fluids
Equipment Cleaning and Degreasing	Degreasing fluid, oil, washwater, soaps, detergents
Vehicle and Equipment Fueling	Unleaded, diesel
Outdoor Handling of Materials	Degreasing fluid, used oil, fuels, antifreeze
Outdoor Material Storage	Kerosene, fuels, metal rust, fire extinguishers, paints
Waste Handling and Disposal	Solid waste, paints, used oils

Each item listed above has been handled or stored at the CCPY within the three years prior to the submission of this SWPPP.

2.2 Spills and Leaks

Table 2-1B summarizes locations within the facility where spills have the potential to occur and which outfall the spill would have potential to affect. Locations are identified on **Figure 2a, 2b, and 2c/Appendix D**. Outfalls are illustrated on **Figure 1/Appendix D**.

Table 2-1B
Areas of Site Where Potential Spills/Leaks Could Occur

Location	Outfalls
Building D (Lot 1)	Detention Pond (PY3)
Maintenance Shop and Parking Lot (Lot 2)	Detention Pond (PY3)
Parking Lot (Lot 3)	Detention Pond (PY3)

Table 2-1C displays locations within the facility where spills/leaks have occurred in the past three years and which outfall was potentially affected by the release. Outfalls are located on **Figure 1/Appendix D**.

Table 2-1C
Description of Spills/Leaks (Past 3 Years)

Date	Location	Outfalls
No Spills or Leaks Reported in the Last 3 Years		

Reporting Process: All operators will report spills greater than 5 gallons to the Superintendent. The following information must be reported:

- Date and time
- Responsible party
- Fluid type and quantity
- Spill location and surface (concrete, asphalt, soil)
- Brief description of activity causing spill

The Superintendent will follow up and notify operator if any additional local, state, or federal reporting is required.

2.3 Non-Storm Water Discharges Documentation

Non-storm water discharges occur when any fluid other than precipitation flows into the storm drainage system. Common sources of non-storm water at municipal facilities include landscape water or air conditioner condensate. Staff should be aware of which non-storm water discharges are allowable (**Table 2-8**). All other discharges into the storm drainage system are not allowed. When non-allowable non-storm water discharges are observed, the discharge type, approximate volume, and corrective action taken should be documented and placed in **Appendix E**.

A preliminary evaluation of non-storm water discharges at Pino Yards storm water outfalls was performed by CDM Smith and is described in the following sections.

A. Date of evaluation:

Preliminary evaluations were conducted on November 22, 2013 and December 6, 2013. In 2016, an evaluation was completed on March 22, 2016.

B. Description of the evaluation criteria used:

Each storm water outfall is visually assessed, photographed, and documented. A summary report of the evaluation is included in **Appendix E**. Allowable non-storm water discharges permissible under this SWPPP include those listed from the *MSGP 2015* and from the City's MS4 Permit. They are summarized in **Table 2-8**.

**Table 2-8
 Allowable Non-Storm Water Discharges**

MSGP 2015 (Part 1.1.3 Allowable Non-Storm Water Discharges)	MS4 Permit (Part 1.A.3 Authorized Non-Storm Water Discharges)
Discharges from emergency/unplanned fire-fighting activities;	Discharges or flows from fire fighting activities (does not include discharges from fire fighting training activities)
Fire hydrant flushings;	
Potable water, including water line flushings;	Potable water sources, including routine line flushing
Uncontaminated condensate from air conditioners, coolers/chillers, and other compressors and from the outside storage of refrigerated gases or liquids;	Air conditioning or compressor condensate;
Irrigation drainage;	--
Landscape watering provided all pesticides, herbicides, and fertilizer have been applied in accordance with the approved labeling;	Lawn, landscape, and other irrigation waters provided all pesticides, herbicides, and fertilizers have been applied in accordance with approved manufacturing labeling and any applicable permits for discharges associated with pesticides, herbicide and fertilizer application;
Pavement wash waters where no detergents or hazardous cleaning products are used and the wash waters do not come into contact with oil and grease deposits, sources of pollutants associated with industrial activities or any other toxic or hazardous materials, unless residues are first cleaned up using dry-clean-up methods and you have implemented appropriate control measures to minimize discharges of mobilized solids and other pollutants;	Street wash waters that do not contain detergents and where no un-remediated spills or leaks of toxic or hazardous materials have occurred;
Routine external building washdown/power wash water that does not use detergents or hazardous cleaning products;	--
Uncontaminated ground water or spring water;	Diverted stream flows; Rising groundwaters; Uncontaminated groundwater infiltration; Uncontaminated pumped groundwater; Springs
Foundation or footing drains where flows are not contaminated with process materials; and	Foundation and footing drains;
Incidental windblown mist from cooling towers that collects on rooftops or adjacent portions of your facility, but not intentional discharges from the cooling tower (e.g., "piped" cooling tower blowdown or drains).	--
--	Water from crawl space pumps;
--	Individual residential car washing;
--	Flows from riparian habitats and wetlands;
--	Dechlorinated swimming pool discharges;
--	Other similar occasional incidental non-storm water discharges (e.g. non-commercial or charity car washes, etc.)

C. List of the outfalls or onsite drainage points that were directly observed during the evaluation:

Outfalls PY1, PY2 and PY3 were observed during the preliminary and March 2016 evaluations.

D. Different types of non-storm water discharge(s) and source locations:

No non-storm water discharges were observed during the preliminary and March 2016 evaluations.

E. Action(s) taken, such as a list of control measures used to eliminate unauthorized discharge(s), if any were identified. For example, a floor drain was sealed, a sink drain was re-routed to sanitary, or an NPDES permit application was submitted for an unauthorized cooling water discharge:

No actions were taken as a result of the preliminary and March 2016 evaluations.

2.4 Salt Storage

Salt and/or sand used for road deicing are not stored or used at the CCPY.

2.5 Sampling Data Summary

Storm water outfalls PY1, PY2, and PY3 will be visually assessed during quarterly storm water monitoring events to evaluate storm water quality leaving the property. Each assessment will take place within 30 minutes of a storm event, to ensure that samples taken from the outfalls represent storm water from the first flush. Sampling of the initial run-off produces the highest percentage of water and concentrations of chemical contaminants from roadways, parking lots, and outdoor storage areas. For the detention pond, the inspector will drop a bailer into the pond near the oil water separator to collect a sample. Additionally, a bailer will be dropped into the manholes of PY1 and PY2 drainage lines to collect a sample. The inspector will observe the sample and outfall for the presence of litter, sheen, foam, suspended solids, settled solids, turbidity, and odors. These observations will be recorded on a Quarterly Visual Monitoring of Storm Water Outfall Discharges form for proper documentation. A blank copy of the monitoring form is included in **Appendix M**. Completed quarterly monitoring event forms for the Pino Yards outfalls will be used to develop an annual storm water monitoring report for submittal to the City of Albuquerque Engineering/Storm Water Design Section and to the EPA. Finally, if storm water pollution is observed, the source of the potential contaminants will be investigated and action will be taken to remediate future pollutant discharges.

Section 3: Storm Water Control Measures

Storm water controls at the facility are instituted in the form of Best Management Practices (BMPs) designed to address activities that are potential sources of storm water pollution. Each BMP outlines measures designed to reduce the potential for storm water pollution. There are currently seven BMPs implemented at CCPY in addition to specific source control BMPs. The BMPs are listed below and presented in their entirety in **Appendix F**.

BMP 1 – Facility-Wide Best Management Practices

BMP 2 –Vehicle and Equipment Maintenance

BMP 3 –Vehicle and Equipment Cleaning

BMP 4 –Vehicle and Equipment Storage

BMP 5 – Outdoor Handling, Storage, and Disposal of Waste and Materials

BMP 6 – Fuel Storage and Delivery

BMP 7 – Building and Grounds Maintenance

The Clean City Division will follow their existing BMPs (SC-1 through SC-18). This set of BMPs is also presented in **Appendix F**.

The SWPPP is a “living” document that will be updated to reflect specific operations not otherwise outlined in this document. In addition, this SWPPP will be updated and revised whenever there is a change in design, construction, operation, or maintenance at the site that may impact the potential for pollutants to be discharged to storm water run-off. If the SWPPP is found to be ineffective in controlling the discharge of pollutants, the SWPPP will be revised to correct the identified deficiencies.

3.1 Good Housekeeping

Good housekeeping is an ongoing effort at CCPY. Clean City Division operates their own dumpsters which range in size. All dumpsters within Pino Yards are dumped twice per week and recycling is picked up once per week. PPT members are required to inspect trash receptacles for the presence of potential storm water pollutants (solid waste, hazardous fluids, leachate, etc.) associated with good housekeeping during the quarterly routine facility inspections discussed in Section 5. All used maintenance fluids are properly stored and disposed. Contracted disposal of the used fluids is documented with waste manifests that are maintained for a minimum of three years.

Spills and leaks that occur throughout CCPY are immediately acted upon. Spill cleanup materials are stored at designated areas at each lot. Used spill cleanup materials are disposed properly. Employees are trained in the proper clean-up and disposal of spill clean-up materials and other contaminated soils.

Equipment and material storage areas are kept orderly and are inspected on a regular basis. No fluids are stored within outdoor material storage areas unless appropriate containment and signage is provided.

Periodic flushing of the storm drains ensures that the pipes have the appropriate storm water carrying capacity and decreases the likelihood of sediment buildup at the outfalls. The detention pond and storm drain inlets are regularly inspected and cleared of litter and debris. CCPY is responsible for conducting routine litter maintenance and parking lot sweeping regularly to mitigate build-up around the storm water control structures.

SWMD and the City conduct annual training for CCPY which provides an overview of good housekeeping practices that should be implemented.

3.2 Minimize Exposure

All maintenance activities at CCPY are conducted indoors when practical. Where possible outdoor material is stored under cover or in sheds. Fueling activities are conducted in a designated fueling area. The drainage from the fueling area flows directly into a sanitary sewer line and is passed through an oil/water separator before incorporated into the main sewer line. Where possible, tenants store used fluids under cover to prevent contact with precipitation. All outdoor storage of fuel and oil should be kept on secondary containment. PPT members are required to inspect their facilities on a quarterly basis to ensure exposure to pollutants is minimal.

3.3 Maintenance

Routine preventative maintenance of trucks, dispensing equipment, vehicles, and other machinery according to good engineering practices should be performed to prevent spills and leaks from occurring. During quarterly routine facility inspections, PPT members inspect all pieces of equipment and machinery to ensure they are clean and in good repair. Equipment exceeding light preventative maintenance will be sent to the Edith Yards Maintenance Facility.

3.4 Spill Prevention and Response

As stated in the BMP 1, CCPY is required to implement a facility specific Spill Response Plan (SRP). Spill response procedures vary according to the types and quantities of materials used and stored on site. An SRP is posted in all areas where spills and/or leaks are likely to occur. At CCPY, SRPs are posted at the:

- CCPY's Building D (Lot 1)
- Maintenance Shop (Lot 2)
- Vehicle and Equipment Storage (Lot 3)

Spill response procedures and current information can be found on the SRPs. A copy of the SRP is located in **Appendix B**. Spill prevention and response procedures are assessed on a quarterly basis for any facility and personnel changes that might affect the efficiency in responding to a spill or release.

- Develop training on the procedures for expeditiously stopping, containing, and cleaning up leaks, spills, and other releases. As appropriate, execute such procedures as soon as possible;
- Notify appropriate facility personnel when a leak, spill, or other release occurs.

Spill cleanup materials must be stocked and labeled at all times. Spent cleanup materials are disposed of immediately and properly. All tanks, drums, buckets, and other storage containers are properly labeled and, if stored outdoors or indoors directly adjacent to a doorway, shall be secondarily contained.

Secondary containment for all fluids is required. Specific areas where secondary containment is required include:

- Graffiti removal storage area,
- Maintenance fluid storage drums, and
- Mobile herbicide/pesticide storage tanks

3.5 Erosion and Sediment Controls

All surfaces at CCPY are paved with asphalt or concrete. There are no storm water management structures to control erosion and sediment.

3.6 Management of Runoff

All of the storm water run-off from CCPY drains directly into the detention pond (PY3). Ultimately, this water drains into the South Domingo Baca Channel before eventually discharging to the North Diversion Channel and finally to the Rio Grande. Storm water management structures are shown on the Site, Drainage, and Activities Plan (**Figure 2a, 2b, and 2c** of **Appendix D**).

3.7 Salt Storage Piles or Piles Containing Salt

There are no salt storage piles at CCPY.

3.8 MSGP Sector-Specific Non-Numeric Effluent Limits

The CCPY is not subject to Effluent Limitations.

3.9 Employee Training

The SWPPP PPT Leader is responsible for providing training to the CCPY employees regarding the components and goals of this SWPPP. The SWMD and other employees who work in areas where industrial materials or activities are exposed to storm water, or who are responsible for implementing activities to meet the conditions of the *MSGP 2015* are expected to participate in annual SWPPP training.

Training will be provided to CCPY employees by qualified trainers at least annually, with additional training made available as required by new hires. Elements that are included in the training sessions include the following:

- Purpose, need, and requirement for storm water pollution prevention;
- Examples of unallowable non-storm water discharges;
- Availability, layout, and contents of the SWPPP;
- Description and applicability of the BMPs;

- Good housekeeping and preventative maintenance requirements;
- Material management practices;
- Spill response procedures;
- Spill reporting requirements;
- Used oil and spent solvent management;
- Fueling procedures;
- Proper painting procedures;
- Used battery management;
- Documentation requirements; and
- Notice of Intent (NOI) submission (when applicable).

All training events are documented including the date of training, identification of the trainer and attendees, and subjects covered. Training records for Pino Yards' and SWMD's train-the-trainer session shall be included in **Appendix G** of this SWPPP.

Reporting Process: Following each training session, SWMD will distribute training certificates by email to all staff and PPT members that attend training and submit a training assessment.

3.10 Non-Storm Water Discharges

Non-storm water discharges were evaluated as described in Section 2.3 Non-Storm Water Discharges Documentation. No non-storm water discharges were identified during the March 2016 evaluation. If any future non-storm water discharges are observed at the facility, details of the discharge must be logged on the form in **Appendix E** and shown on the Site Plan (**Figure 2a, 2b, and 2c of Appendix D**).

3.11 Waste, Garbage and Floatable Debris

Street Maintenance sweeps the Pino Yards grounds on a weekly basis. Fencing installed around the detention pond area and the grates over storm drain inlets minimize solid waste and floatables reaching the Domingo Baca Channel and blowing off site. Solid waste and recyclable materials are temporarily stored in dumpsters at CCPY. Good housekeeping helps reduce the potential for waste, garbage, and floatable debris from becoming potential storm water pollutants.

3.12 Dust Generation and Vehicle Tracking of Industrial Materials

All driving surfaces at Pino Yards and CCPY are paved; therefore, there is little opportunity for dust generation or tracking of industrial materials. Any construction projects disturbing more than 1 acre conducted on Pino Yards property will be covered under a separate construction SWPPP.

Section 4: Schedules and Procedures

4.1 Schedules and Procedures Pertaining to Control Measures

Schedules and procedures pertaining to control measures are discussed in Section 3 Storm water Control Measures. Detailed procedures are provided in the form of BMPs included in **Appendix F**.

4.2 Schedules and Procedures Pertaining to Inspections

During normal facility operating hours, inspections of areas of the facility covered by the requirements in this permit are conducted, including, but not limited to, the following:

- Areas where industrial materials or activities are exposed to storm water;
- Areas identified in the SWPPP and those that are potential pollutant sources (see Part 5.2.3 *MSGP 2015*);
- Additional Inspection requirements (see Part 8.P.5);
- Areas where spills and leaks have occurred in the past three years;
- Discharge points; and
- Control measures used to comply with the effluent limits contained in this permit.

During the inspection an inspector will examine or look out for the following:

- Industrial materials, residue or trash that may have or could come into contact with storm water;
- Leaks or spills from industrial equipment and other containers;
- Offsite tracking of industrial or waste materials, or sediment where vehicles enter or exit the site;
- Tracking or blowing of raw, final or waste materials from areas of no exposure to exposed areas;
- Control measures needing replacement, maintenance or repair.

During an inspection occurring during a storm water event or discharge, control measures implemented to comply with effluent limits must be observed to ensure they are functioning correctly. Discharge points must also be observed during this inspection. If such discharge locations are inaccessible, nearby downstream locations must be inspected.

Further procedures for routine facility inspections are provided in **Section 5.1** herein.

Schedule

Routine facility inspections will be conducted at least **once per annual quarter** during the entire permit term, or in some instances more frequently (e.g., monthly). At least once each calendar year, the inspection will be conducted during a period when storm water discharge is occurring.

Persons Responsible for Inspections

Routine facility inspections will be conducted by qualified personnel. The inspections should be conducted by a PPT member or an appropriately trained staff member. A full list of CCPY's PPT members is included in **Appendix A**. Inspectors must consider the results of visual and analytical monitoring (if any) for the past year when planning and conducting inspections.

4.3 Schedules and Procedures Pertaining to Monitoring

4.3.1 Quarterly Visual Storm Water Assessment

Once per annual quarter during the entire permit term, a designee will conduct **quarterly visual storm water assessments** at the designated storm water drainage point, PY01. During quarters without a rainfall event resulting in discharge, the monitoring event will be rescheduled to occur during the predominately rainy season (July – September). During adverse weather conditions which may prevent collection of a sample (i.e. local flooding, high winds, electrical storms, or other dangerous situations), the monitoring event will be substituted with the next storm event. Refer to **Section 5.2** herein for a description of procedures for quarterly visual storm water assessments.

4.3.2 State- or Tribal-Specific Monitoring

None required.

4.3.3 Benchmark Monitoring

Sector P has no benchmark monitoring requirements in the MSGP.

4.3.4 Impaired Waters Monitoring

Impaired waters monitoring is required upon written notice from the EPA as described in section *6.2.4 Impaired Waters Monitoring Schedule* of the *MSGP 2015*. The CCPY facility will implement impaired waters monitoring if notified by the EPA.

4.3.5 Substantially Identical Outfall Exception

There are no substantially identical outfalls at the CCPY.

4.4 Schedules and Procedures Pertaining to Corrective Action

Conditions that may require corrective action include those that have an immediate threat to storm water quality, including, but not limited to:

1. Spill or leak
2. Unallowed, non-storm water discharge
3. Discharge of washwater
4. Damaged control measure
5. Storm water contact with industrial materials
6. Pollutants entering the drainage system

7. Evidence of pollution during storm water visual assessment

When an inspection, monitoring event, or other site observation reveals a condition that may result in storm water pollution, the following corrective action schedule must be implemented:

1. Immediate Actions – Within 24 Hours

- a. Minimize or prevent the discharge of pollutants until a permanent solution is implemented.
- b. Cleanup any contaminated surfaces so that material will not discharge in subsequent storm events.
- c. Document the conditions observed. Documentation should include:
 - 1) Condition triggering the corrective action
 - a) For spills include material, volume, reason causing the release
 - 2) Date/time
 - 3) Location
 - 4) Description of immediate actions taken
 - a) For spills include response actions, date/time cleanup completed, notifications made, and staff involved.
 - 5) Signature of an individual with signatory authority.

2. Subsequent Actions – Within 14 Days

- a. Install or modify a control measure to prevent continued or reoccurring discharge.
- b. Notify the Environmental Compliance Coordinator in writing of what actions were taken (ddaugherty@cabq.gov).
- c. Place written documentation in the corrective action section of the operating SWPPP (**Appendix L**). Documentation should include:
 - 1) Description of corrective actions taken with beginning and end dates.
 - 2) If applicable, document why it is not feasible to have corrective action installation within 14 days and the schedule for completing the controls and making them operational.

4.5 Schedules and Procedures Pertaining to Annual Reporting

The *MSGP 2015* requires an annual report be submitted through the NPDES eReporting Tool (NeT) by January 30th of each year of permit coverage containing information generated from the past calendar year.

Appendix M includes an example annual report form. This report form is included in this SWPPP for reference only; the actual annual report must be submitted through EPA's NeT system which is accessed through the EPA's central Data Exchange website at <https://cdx.epa.gov/>.

Annual reports shall include a summary of the previous year's routine facility inspections, visual quarterly storm water monitoring and any other required storm water monitoring, corrective action and documentation.

Section 5: Inspections

Two types of inspections are conducted annually at CCPY. Each is discussed in additional detail in the following sections.

- Routine Facility Inspections
- Quarterly Visual Storm Water Assessment

All completed inspection forms and associated reports will be attached to this SWPPP in the Report Section (**Appendix M**).

5.1 Routine Facility Inspections

- The inspection date and time;
- The names of the person(s) and signature(s) of the inspector(s):
 - A list of CCPY PPT members is included in **Appendix A**.
- Weather information;
- All observations relating to the implementation of control measures at the facility, including:
 - A description of any discharges occurring at the time of the inspection;
 - Any previously unidentified discharges from and/or pollutants at the site;
 - Any evidence of, or potential for, pollutants entering the drainage system;
 - Observations regarding the physical condition of and around all drainage points, including any flow dissipation devices, and evidence of pollutants in discharges and/or the receiving water;
 - Any control measures needing maintenance, repairs, or replacement;
- Any additional control measures needed to comply with the permit requirements;
- Any incidents of noncompliance; and
- A signed and certified statement.

Specific areas of the facility to be inspected, include:

- Fuel storage and dispensing areas;
- Maintenance area;
- Maintenance fluid storage area;
- Vehicle or equipment washing area;
- Vehicle or equipment storage areas;
- Waste handling and disposal areas;

- Outdoor materials handling and storage areas; and
- Areas where spills and leaks have occurred in the past three years

5.2 Quarterly Visual Storm Water Assessments

- The names of the person(s) and signature(s) of the inspector(s)
- The schedules to be used for conducting inspections:
 - Each outfall will be inspected during a storm water runoff event once per annual quarter for the entire permit term.

EXCEPTIONS: *For climates with irregular storm water runoff, facilities located in an area where limited rainfall occurs during many parts of the year (e.g., arid or semi-arid climate), samples for the quarterly visual assessments may be distributed during seasons when precipitation runoff occurs.*

- Specific areas of the facility to be inspected, including schedules for specific outfalls:
 - Outfalls PY1, PY2, and PY3 will be inspected during each quarterly visual storm water assessment.
- The visual assessment must be made:
 - Of a sample in a clean, colorless glass or plastic container, and examined in a well-lit area;
 - 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. In the case of snowmelt, samples must be taken during a period with a measurable discharge from your site; and
 - For storm events, on discharges that occur at least 72 hours (three days) from the previous discharge. The 72-hour (three-day) storm interval does not apply if you document that less than a 72-hour (three-day) interval is representative for local storm events during the sampling period.

You must visually inspect or observe the sample for the following water quality characteristics:

- Color
- Odor
- Clarity (diminished)
- Floating solids
- Settled solids
- Suspended solids
- Foam

- Oil sheen
- Other obvious indicators of storm water pollution

Whenever the visual assessment shows evidence of storm water pollution, initiate the corrective action procedures found in Section 4.

Documentation:

Document the results of the visual assessments and maintain this documentation (**Appendix M**). The visual assessment findings must be included in the annual report per *MSGP 2015* Part 7.5. The documentation of the visual assessment must include, but not be limited to:

- Sample location(s);
- Sample collection date and time, and visual assessment date and time for each sample;
- Personnel collecting the sample and performing visual assessment, and their signatures;
- Nature of the discharge (i.e., runoff or snowmelt);
- Results of observations of the storm water discharge;
- Probable sources of any observed storm water contamination; and
- If applicable, why it was not possible to take samples within the first 30 minutes.

Whenever the visual assessment shows evidence of storm water pollution, initiate the corrective action procedures found in Section 4.

This Page Intentionally Left Blank.

Section 6: Documentation to Support Eligibility Considerations under Other Federal Laws

6.1 Documentation Regarding Endangered Species

In accordance with the requirements of *MSGP 2015*, an eligibility screening was performed with regards to endangered species. The eligibility screening followed the procedures outlined in Appendix E of the *MSGP 2015*. **Appendix H** of this SWPPP contains a memorandum describing the eligibility screening process and findings. CCPY was found to be eligible for coverage under the MSGP with respect to endangered species under Criterion C.

6.2 Documentation Regarding Historic Properties

In accordance with the requirements of *MSGP 2015*, an eligibility screening was performed with regards to historic properties. The eligibility screening followed the procedures outlined in Appendix F of the *MSGP 2015*. **Appendix I** of this SWPPP contains a memorandum describing the eligibility screening process and findings. CCPY was found to be eligible for coverage under the MSGP with respect to historic properties under Criterion A.

6.3 Documentation Regarding NEPA Review (if applicable)

CCPY is not subject to any New Source Performance Standards (NSPS) as described in Section 1.1.2.5 of *MSGP 2015*; therefore, NEPA process review is not required.

This Page Intentionally Left Blank

Section 7: SWPPP Certification

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 contained therein. 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.

Name	<u>John W. Souda</u>	Title	<u>Director</u>
Signature	<u>[Handwritten Signature]</u>	Date	<u>1/30/2017</u>

This Page Intentionally Left Blank

This Page Intentionally Left Blank

SWPPP Appendices

Attach the following documentation to the SWPPP:

Appendix A Pollution Prevention Team Members

Appendix B Spill Response Plan

Appendix C Multi-Sector General Permit 2015

Appendix D Figures

Figure 1 Pino Yards General Location Map

Figure 1b Pino Yards Site Map

Figure 2a Clean City Division at PY Lot 1 Site, Drainage, and Activities Plan

Figure 2b Clean City Division at PY Lot 2 Site, Drainage, and Activities Plan

Figure 2c Clean City Division at PY Lot 3 Site, Drainage, and Activities Plan

Appendix E Evaluation of Non-Storm Water Discharges

Appendix F Best Management Practices and CCPY Source Control BMPs

Appendix G Training Records

Appendix H Endangered and Threatened Species Screening Memorandum

Appendix I Historic Properties Preservation Screening Memorandum

Appendix J Copy of the Notice of Intent and Acknowledgement Letter

Appendix K Documentation of Maintenance to Control Measures

Appendix L Documentation of Corrective Action Taken

Appendix M Reports

M1 – Quarterly Routine Facility Inspections

M2 – Quarterly Visual Storm Water Assessment

M3 – EPA Industrial Stormwater Sampling Guidance

M4 – Annual Report Example

This Page Intentionally Left Blank

**APPENDIX A
POLLUTION PREVENTION TEAM MEMBERS**

This Page Intentionally Left Blank

Appendix A
Clean City Division at Pino Yards
Pollution Prevention Team Members

Facility Name	Contact	Responsibility	Address	Phone	City	State	Zip	E-mail
Clean City Division at Pino Yards	Billy Gallegos, Clean City Superintendent	PPT Leader (Primary Contact)	5501 Pino St NE, Bldg. D	(505) 259-4651	Albuquerque	NM	87109	bagallegos@cabq.gov
Clean City Division at Pino Yards	Jake Daugherty, Environmental Compliance Coordinator	PPT Leader (Secondary Contact)	5501 Pino St NE, Bldg. D	(505) 761-8324	Albuquerque	NM	87109	marksandoval@cabq.gov
Clean City Division at Pino Yards	Mark Sandoval, Clean City Supervisor	PPT Member (Third Contact)	5501 Pino St NE, Bldg. D	(505) 857-8623	Albuquerque	NM	87109	marksandoval@cabq.gov

**APPENDIX B
SPILL RESPONSE PLANS**

This Page Intentionally Left Blank

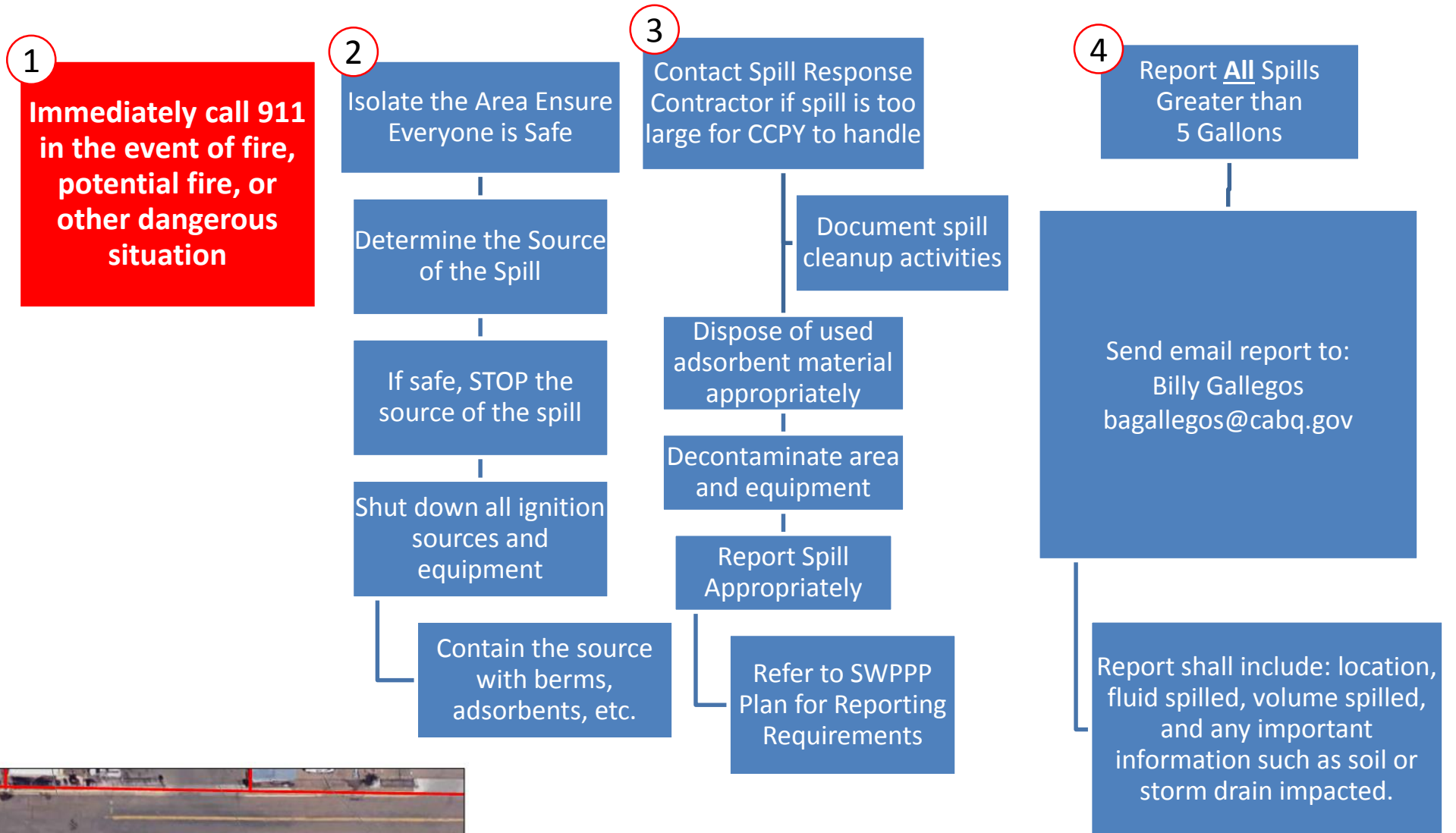


City of Albuquerque Solid Waste Management Department

Spill Response Plan

for Clean City Division at Pino Yards

Primary Facility Emergency Contact	Billy Gallegos	(505) 259-4651
Secondary Emergency Contact	Mark Sandoval	(505) 857-8623
Fire/Ambulance/Police	Emergency Non-Emergency	911 (505) 259-4651
Hospital	Lovelace	(505)-727-7800



LEGEND

SK	SPILL KIT		VEHICLE AND EQUIPMENT STORAGE
	STORM DRAIN		VEHICLE AND EQUIPMENT MAINTENANCE
	SPILL (5 GALLONS)		SANITARY SEWER AND MANHOLE
	APPROXIMATE DIRECTION OF STORMWATER FLOW		STORM DRAIN AND MANHOLE
	STORM DRAIN TRENCH DRAIN		CONCRETE GUTTER
	FACILITY BOUNDARY		WATTLES
	OIL-WATER SEPARATOR (OWS)		2 FT CONTOURS

MATERIAL HANDLING

- ① FUEL/OILS
- ② DEGREASING
- ③ SALT STORAGE
- ④ PAINTING/STRIPPING
- ⑤ HERBICIDE/PESTICIDE STORAGE
- ⑥ WASTE HANDLING/DISPOSAL
- ⑦ METALS STORAGE

STORMWATER POLLUTION PREVENTION & SPILL RESPONSE PLAN

5501 Pino Rd NE Storm Water Drainage Pond

Federal and State Phase II storm water regulations require municipal facilities to implement an operation and maintenance program that includes an employee training component and has the ultimate goal of preventing or reducing pollutant runoff from municipal operations. Preventing spills of materials and wastes is a significant component of complying with these regulations. However, even with the best prevention efforts, spills may still occur. When they do, it is up to facility personnel to respond quickly and effectively to clean up the spilled material or notify someone who can. This Spill Response Plan is designed as a template for municipal facilities to develop site specific individual Spill Response and Prevention Plans. The plan should be kept in a central location that is easily accessible for employees.

INSTRUCTIONS :

Each facility can use this template by filling in the blanks and completing the attached:

- _ Spills that require Special Cleanup,
- _ Materials Inventory,
- _ Maximum Cleanup Amounts,
- _ Facility Map,
- _ Spill Kit Inventory and labeling, and the
- _ Employee Training Log.

Once completed, this Plan becomes the facility's individual Plan and must be properly implemented and maintained. The finished Plan should be reviewed and updated at least annually.

Plan Implementation Date: ___ 1-1-2013 _____

Revision Date(s): _____

CLEAN-UP PROCEDURES Spilled chemicals should be effectively and quickly contained and cleaned up. Employees should clean up spills themselves (*only if properly trained and protected*) Employees who are not trained shall contact the properly trained employee.

Facility's Responsible Person(s) in charge of spill response planning, implementation and Maintenance of this Plan:

Name:	Phone:	Department:
David Urioste	505-768-5310	DMD

The Maximum Cleanup Amounts that properly trained employee can cleanup are listed on page 8. In the event of spills greater than these amounts, contact the appropriate responders listed in the Emergency Contact Numbers listed above.

The following general guidelines should be followed for evacuation, spill control, notification of proper authorities, and general emergency procedures in the event of a chemical incident in which there is potential for a significant release of hazardous materials.

1. Evacuation Persons in the immediate vicinity of a spill should *immediately evacuate* the premises (except for employees with training in spill response in circumstances described below). If the spill is of "medium" or "large" size, or if the spill seems hazardous, immediately notify emergency response personnel.
2. Spill Control Techniques Once a spill has occurred, the employee needs to decide whether the spill is small enough to
3. Handle without outside assistance. Only employees with training in spill response should attempt to contain or clean up a spill.
4. NOTE: If you are cleaning up a spill yourself, make sure you are aware of the hazards associated with the materials spilled, have adequate ventilation, and proper personal protective equipment. Treat all residual chemical and cleanup materials as hazardous waste.
5. Spill control equipment should be located wherever significant quantities of hazardous materials are received or stored. MSDSs, absorbents, over-pack containers, container patch kits, spill dams, shovels, floor dry, acid/base neutralizers, and "caution-keep out" signs are common spill response items.
6. 3. Spill Response and Cleanup Chemical spills are divided into three categories: Small, Medium and Large. Response and cleanup procedures vary depending on the size of the spill.
7. Small Spills: Any spill where the major dimension is less than 18 inches in diameter. Small spills are generally handled by internal personnel and usually do not require an emergency response by police or fire department HAZMAT teams.
 - Quickly control the spill by stopping or securing the spill source. This could be as simple as up righting a container and using floor-dry or absorbent pads to soak up spilled material. Wear gloves and protective clothing, if necessary.
 - Put spill material and absorbents in secure containers if any are available.
 - Consult with the Facility Responsible Person and the MSDS for spill and waste disposal procedures.
 - In some instances, the area of the spill should not be washed with water. Use Dry Cleanup Methods and never wash spills down the drain, onto a storm drain or onto the driveway or parking lot.
 - Both the spilled material and the absorbent may be considered hazardous waste and must be disposed of in compliance with state and federal environmental regulations.

Medium Spills: Spills where the major dimension exceeds 18 inches, but is less than 6 feet. Outside emergency response personnel (police and fire department HAZMAT teams) should usually be called for medium spills. Common sense, however, will dictate when it is necessary to call them.

- Immediately try to help contain the spill at its source by simple measures only. This means quickly up righting a container, or putting a lid on a container, if possible. Do not use absorbents unless they are immediately available. Once you have made a quick attempt to contain the spill, or once you have quickly determined you cannot take any brief containment measures, leave the area and alert Emergency Responders at 911. Closing doors behind you while leaving helps contain fumes from spills. Give police accurate information as to the location, chemical, and estimated amount of the spill.
- Evaluate the area outside the spill. Engines and electrical equipment near the spill area must be turned off. This eliminates various sources of ignition in the area. Advise Emergency Responders on how to turn off engines or electrical sources. Do not go back into the spill area once you have left. Help emergency responders by trying to determine how to shut off heating, air conditioning equipment, or air circulating equipment, if necessary.
- If emergency responders evacuate the spill area, follow their instructions in leaving the area.
- After emergency responders have contained the spill, be prepared to assist them with any other information that may be necessary, such as MSDSs and questions about the facility. Emergency responders or trained personnel with proper personal protective equipment will then clean up the spill residue. Do not re-enter the area until the responder in charge gives the all clear. Be prepared to assist these persons from outside the spill area with MSDSs, absorbents, and containers.
- Reports must be filed with proper authorities. It is the responsibility of the spiller to inform both his/her supervisor and the emergency responders as to what caused the spill. The response for large spills is similar to the procedures for medium spills, except that the exposure danger is greater.

Large Spills: Any spill involving flammable liquid where the major dimension exceeds 6 feet in diameter; and any "running" spill, where the source of the spill has not been contained or flow has not been stopped.

- Leave the area and notify Emergency Responders (911). Give the operator the spill location, chemical spilled and approximate amount.
- From a safe area, attempt to get MSDS information for the spilled chemical for the emergency responders to use. Also, be prepared to advise responders as to any ignition sources, engines, electrical power, or air conditioning/ventilation systems that may need to be shut off. Advise responders of any absorbents, containers, or spill control equipment that may be available. This may need to be done from a remote area, because an evacuation that would place the spiller far from the scene may be needed. Use radio or phone to assist from a distance, if necessary.
- Only emergency response personnel, in accordance with their own established procedures, should handle spills greater than 6 feet in any dimension or that are continuous. Remember, once the emergency responders or HAZMAT team is on the job cleaning up spills or putting out fires, the area is under their control and no one may reenter the area until the responder in charge gives the all clear.
- Provide information for reports to supervisors and responders, just as in medium spills.

REPORTING SPILLS:

All chemical spills, regardless of size, should be reported as soon as possible to the Facility Responsible Person. The Responsible Person will determine whether the spill has the potential to affect the environment outside of the facility and must be reported to:

- 911 or the National Response Center at 800-424-8802
- **For emergencies, call 505-827-9329 twenty-four hours a day.**
- For non-emergencies, call 866-428-6535 (voice mail, twenty-four hours a day).
- For non-emergencies, and to reach an on-duty NMED staff member during normal business hours, call 505-476-6000.

Examples of spills that could affect the outside environment include spills that are accompanied by fire or explosion and spills that could reach nearby water bodies.

Accidental releases of certain toxic substances must be reported to the New Mexico Office of Emergency Management: and the Boulder County Disaster Preparedness Team, as required by the Emergency Planning and Community Right-to-Know Act. The Responsible Person will also make this determination.

SPILLS (MATERIALS) THAT REQUIRE SPECIAL CLEANUP

Describe any materials used your facility that in require special materials and procedures for cleanup procedures beyond those listed above. Provide details regarding hazards associated with these.

Material Hazards :

Fuel

Oil

Paint

Transmission Fluid

Fertilizer

Cleaning products

MATERIAL INVENTORY

Date: _____

Revision Date(s): _____

CLEAN-UP PROCEDURES:

Spilled chemicals should be effectively and quickly contained and cleaned up by properly trained staff. Employees should clean up spills themselves (*only if properly trained and protected*). Employees who are not trained should contact the Facility's Responsible Person(s).

List all materials or wastes that may require clean up. List the average and maximum amounts on site and their storage locations. (*Example materials are listed for convenience only*). *Ignore any that*

MAXIMUM CLEANUP AMOUNTS

Identify the maximum volume of spill that may be cleaned up by facility employees or contractors base on material (use 1 qt. or 1 lb. unless other information is available.). Also identify how wastes from a spill of any material will be disposed (for example, absorbed and placed in dumpster) and the name and address of the offsite facility to which clean-up wastes will be sent for hazardous waste disposal, if applicable:

Material Maximum Volume to be cleaned Disposal Method

30 Gallons

Call Contracted Hazardous waste Disposal Company

Attach a map or sketch of the facility showing (a) the locations of each spill response kit, (b) the locations where the materials identified on page 6 are normally stored or used, and (c) the location of each storm drain inlet or drainage ditch.

SPILL KIT INVENTORY

List the spill response equipment that will be maintained in each locker (refer to MSDSs to determine

- Diesel Fuel
- Fertilizers
- Gasoline
- Herbicides
- Magnesium Chloride
- Motor Oil
- Hydraulic Oil
- Paints/Stains
- Pesticides
- Solvents
- Used Oil
- Other

LOCKER NUMBER OR LOCATION	ABSORBENTS (bags of loose absorbents, pigs, rolls of sheets, containers of neutralizing agents)	OTHER SUPPLIES (warning tape, labels, markers, MSDSs, etc.)
Located in : All Buildings		

Recommended clean-up methods and supplies):

LABEL SPILL KITS

- Label each spill kit prominently with the words "SPILL KIT" or "ABSORBENTS" etc.
- Label or stencil the necessary emergency telephone number(s) or pager number(s) of persons to be contacted in case of a spill or leak that is beyond the training and equipment available on or near each spill locker:
- Facility Responsible Person/Phone Number: __Jeffrey Herrmann____./ (505_) _228_ -1827__
- Spill Response Contractor (if any)/Phone Number: _____--"/()_ -__
- State 24-Hour Emergency Spill Reporting Hot-Line: 1 (877) 518-5608
- Stencil the following warning *PROMINENTLY* on each spill locker:

"WARNING: NEVER HOSE DOWN A SPILL! CLEAN IT UP PROMPTLY AND DISPOSE OF THE WASTE PROPERLY."

EMPLOYEE TRAINING LOG

Identify the spill response training provided to each employee or contractor who is charged with responsibility for spill response:

EMPLOYEE OR INSTRUCTOR'S NAME:

DATE OF TRAINING:

Jeffrey Herrmann

January 15, 2012

CONTRACTOR NAME :

Superior Storm water Solutions

**APPENDIX C
MULTI-SECTOR GENERAL PERMIT 2015**

This Page Intentionally Left Blank

APPENDIX D
FIGURES

Figure 1 Pino Yards General Location Map

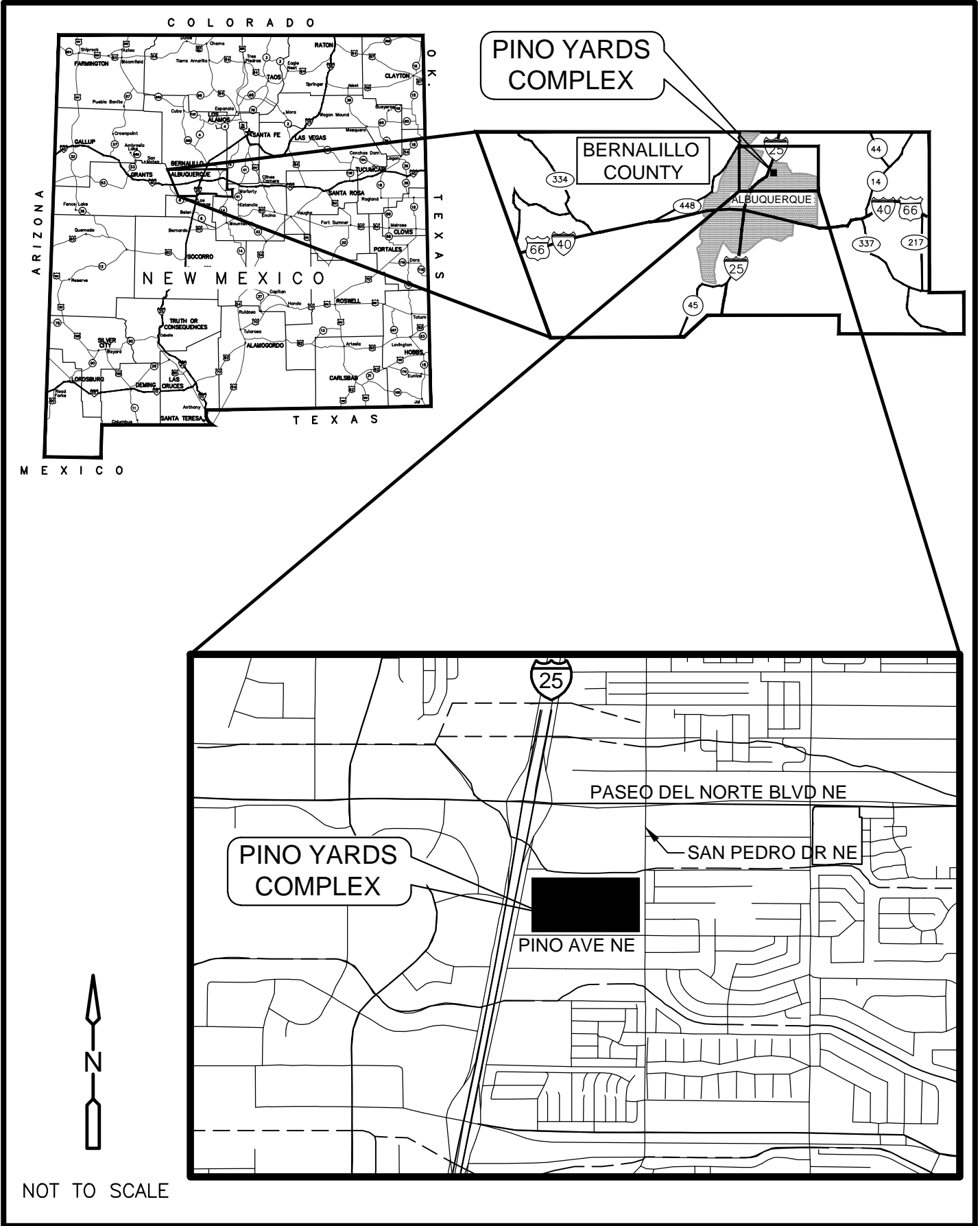
Figure 1b Pino Yards Site Map

Figure 2a Clean City Division at PY Lot 1 Site, Drainage, and Activities Plan

Figure 2b Clean City Division at PY Lot 2 Site, Drainage, and Activities Plan

Figure 2c Clean City Division at PY Lot 3 Site, Drainage, and Activities Plan

This Page Intentionally Left Blank



XREFs: [] Images: []
Last saved by: MESQUITARS Time: 10/6/2016 10:48:02 AM
pw:\DACPWAPP2\PW_PL110668\113173\03 Reports and Studies\09 CADD Figures and Graphics\Pino Yards\PINO-Figure 1.dwg



City of Albuquerque
Stormwater Pollution Prevention Plan
Pino Yards Complex
Clean City Division

Figure No. 1
General Location Map
OCTOBER 2016

XREFs: [PINO YARD, PINO STORM PIPES, PINO STORM MH, PINO CONTOURS, ABQ_Sewer_Pino, ABQ_Sewer_Nodes_Pino] Images: [PINO YARDS]
 Last saved by: MESQUITARS Time: 10/7/2016 4:41:42 PM
 pw:\IDACPWAPP2\PW_PL11066811317303 Reports and Studies\09 CADD Figures and Graphics\Pino Yards\PINO-Fig_1B.dwg
 © 2016 CDM SMITH ALL RIGHTS RESERVED. REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.

LEGEND

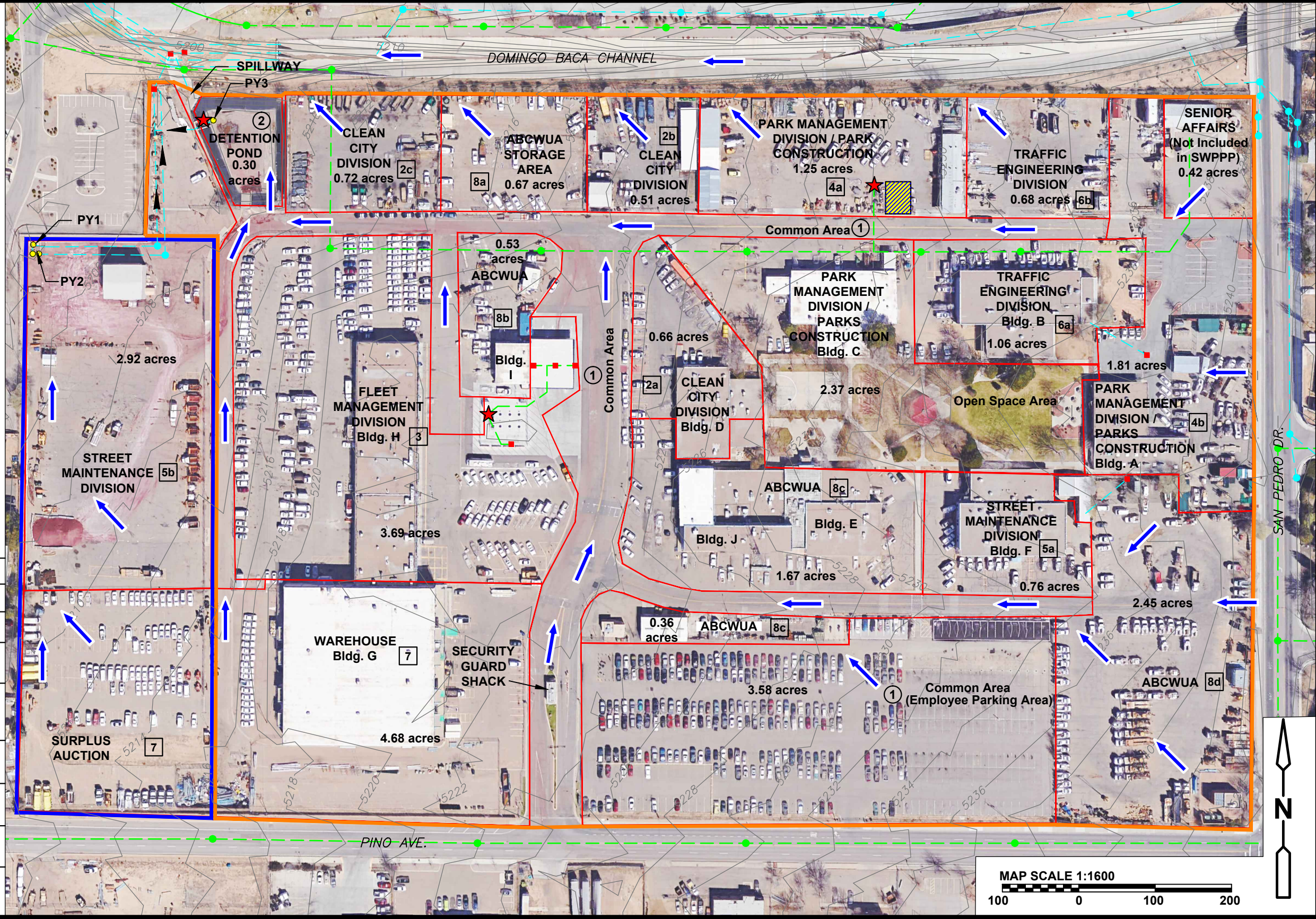
- ★ OIL-WATER SEPARATOR
- WASH PAD
- GRATED DROP INLET
- - - SANITARY SEWER AND MANHOLE
- - - STORM DRAIN AND MANHOLE
- SURFACE WATER FLOW DIRECTION
- PP1 & PP2 DRAINAGE AREA
- DETENTION POND DRAINAGE AREA
- 5206 2 FT CONTOURS
- OUTFALL/MONITORING POINT & ID #

NOTES:

- ① STREET MAINTENANCE WILL MAINTAIN ALL COMMON AREAS.
- ② STORM DRAIN MAINTENANCE WILL MAINTAIN THE DETENTION POND.

FACILITY EXPANDED VIEWS

FACILITY	FIGURES
CLEAN CITY DIVISION	2a, 2b and 2c
FLEET MANAGEMENT DIVISION	3
PARK MANAGEMENT DIVISION / PARKS CONSTRUCTION	4a, 4b
STREET MAINTENANCE DIVISION	5a, 5b
TRAFFIC ENGINEERING DIVISION	6
WAREHOUSE & SURPLUS AUCTION	7
ABCWUA	8a, 8b, 8c, 8d



City of Albuquerque
 Stormwater Pollution Prevention Plan
 Pino Yards Complex
 Clean City Division

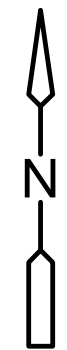
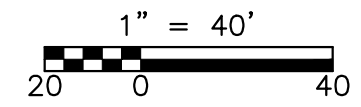
Figure No. 1b
 Pino Yard Site Map
 OCTOBER 2016

XREFs: [PINO YARD, PINO STORM PIPES, PINO STORM MH, PINO CONTOURS, ABQ_Sewer_Pino, ABQ_Sewer_Nodes_Pino] Images: [PINO YARDS]
 Last saved by: MESQUITARS Time: 10/6/2016 10:33:55 AM
 pw:\DACPWAPP2\PW_PL1\0668\113173\03 Reports and Studies\09 CADD Figures and Graphics\Pino Yards\PINO-Figure 2a.dwg



NOTES:

1. STORMWATER APPEARS TO DISCHARGE FROM THE SITE ON THE WEST SIDE OF THE PROPERTY. STORMWATER IS THEN CONVEYED VIA GUTTER TO THE PINO YARDS STORMWATER DETENTION BASIN.
2. APPROXIMATE FACILITY PROPERTY AREA: FOR LOT 1: 0.65 ACRES



LEGEND

	SPILL KIT		VEHICLE AND EQUIPMENT STORAGE
	STORM DRAIN		SANITARY SEWER AND MANHOLE
	SPILL (5 GALLONS)		STORM DRAIN AND MANHOLE
	APPROXIMATE DIRECTION OF STORMWATER FLOW		2 FT CONTOURS
	STORM DRAIN TRENCH DRAIN		
	FACILITY BOUNDARY		
	OIL-WATER SEPARATOR (OWS)		

MATERIAL HANDLING

- ① FUEL/OILS
- ② DEGREASING
- ③ SALT STORAGE
- ④ PAINTING/STRIPPING
- ⑤ HERBICIDE/PESTICIDE STORAGE
- ⑥ WASTE HANDLING/DISPOSAL
- ⑦ METALS STORAGE

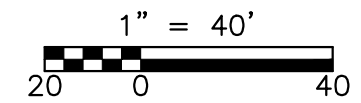


XREFs: [PINO YARD, PINO STORM PIPES, PINO STORM MH, PINO CONTOURS, ABQ_Sewer_Pino, ABQ_Sewer_Nodes_Pino] Images: [PINO YARDS]
 Last saved by: MESQUITARS Time: 10/6/2016 8:44:04 AM
 pw:\IDACPWAPP2\PW_PL1\0668\113173\03 Reports and Studies\09 CADD Figures and Graphics\Pino Yards\PINO-Figure 2b.dwg



NOTES:

1. STORMWATER APPEARS TO DISCHARGE FROM THE SITE ON THE WEST SIDE OF THE PROPERTY. STORMWATER IS THEN CONVEYED VIA SHEET FLOW TO THE PINO YARDS STORMWATER DETENTION BASIN.
2. APPROXIMATE FACILITY PROPERTY AREA FOR LOT 2: 0.51 ACRES



LEGEND

	SPILL KIT		VEHICLE AND EQUIPMENT STORAGE
	STORM DRAIN		VEHICLE AND EQUIPMENT MAINTENANCE
	SPILL (5 GALLONS)		SANITARY SEWER AND MANHOLE
	APPROXIMATE DIRECTION OF STORMWATER FLOW		STORM DRAIN AND MANHOLE
	STORM DRAIN TRENCH DRAIN		2 FT CONTOURS
	FACILITY BOUNDARY		
	OIL-WATER SEPARATOR (OWS)		

MATERIAL HANDLING

- ① FUEL/OILS
- ② DEGREASING
- ③ SALT STORAGE
- ④ PAINTING/STRIPPING
- ⑤ HERBICIDE/PESTICIDE STORAGE
- ⑥ WASTE HANDLING/DISPOSAL
- ⑦ METALS STORAGE

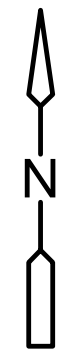
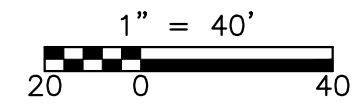


XREFs: [PINO YARD, PINO STORM PIPES, PINO STORM MH, PINO CONTOURS, ABQ_Sewer_Pino, ABQ_Sewer_Nodes_Pino] Images: [PINO YARDS]
 Last saved by: MESQUITARS Time: 10/7/2016 4:46:23 PM
 pw:\IDACPWAPP2\PW_PL1\0668\113173\03 Reports and Studies\09 CADD Figures and Graphics\Pino Yards\PINO-Figure 2c.dwg



NOTES:

1. STORMWATER APPEARS TO DISCHARGE FROM THE SITE ON THE WEST SIDE OF THE PROPERTY. STORMWATER IS THEN CONVEYED VIA SHEET FLOW TO THE PINO YARDS STORMWATER DETENTION BASIN.
2. APPROXIMATE FACILITY PROPERTY AREA FOR LOT 3: 0.72 ACRES



LEGEND

SK	SPILL KIT		VEHICLE AND EQUIPMENT STORAGE
	STORM DRAIN		VEHICLE AND EQUIPMENT MAINTENANCE
	SPILL (5 GALLONS)		SANITARY SEWER AND MANHOLE
	APPROXIMATE DIRECTION OF STORMWATER FLOW		STORM DRAIN AND MANHOLE
	STORM DRAIN TRENCH DRAIN		CONCRETE GUTTER
	FACILITY BOUNDARY		WATTLES
	OIL-WATER SEPARATOR (OWS)		2 FT CONTOURS

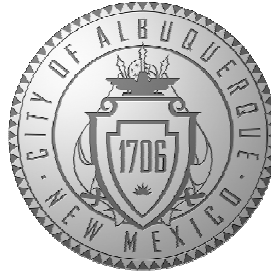
MATERIAL HANDLING

- ① FUEL/OILS
- ② DEGREASING
- ③ SALT STORAGE
- ④ PAINTING/STRIPPING
- ⑤ HERBICIDE/PESTICIDE STORAGE
- ⑥ WASTE HANDLING/DISPOSAL
- ⑦ METALS STORAGE



**APPENDIX E
EVALUATION OF NON-STORM WATER DISCHARGES**

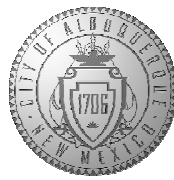
This Page Intentionally Left Blank



City of Albuquerque Solid Waste Management Department Clean City Division at Pino Yards Inspection Photograph Log

Inspection performed on March 22, 2016 at 10:00 AM.

Inspector: R. Larson; A. Reed; J. Daugherty; S. Eaton



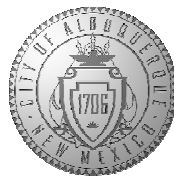
SWPPP – Photo Log



IMG_272: Lot 2 – Vehicle and equipment storage



IMG_274: Outfall PY3



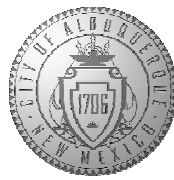
SWPPP – Photo Log



IMG_257: Lot 1 – Graffiti removal storage



IMG_258: Lot 2 – Equipment storage area



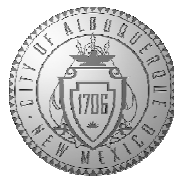
SWPPP – Photo Log



IMG_261: Lot 2 – Portable non-potable water storage



IMG_263: Lot 2 – Maintenance fluid storage



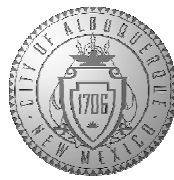
SWPPP – Photo Log



IMG_265: Lot 2 – Parts cleaner



IMG_266: Lot 2 – Herbicide/pesticide storage



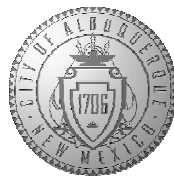
SWPPP – Photo Log



IMG_267: Lot 2 – Flammable liquid storage



IMG_268: Lot 2 – Outdoor tire storage



SWPPP – Photo Log



IMG_270: Lot 3 – Vehicle and equipment storage



IMG_271: Lot 3 – Vehicle and equipment storage

**APPENDIX F
BEST MANAGEMENT PRACTICES
AND CCPY SOURCE CONTROL BMPs**

This Page Intentionally Left Blank

Table F-1 Department Specific BMPs

Facilities	BMPs ASSIGNED	1 - Facility-Wide Best Management Practices	2- Vehicle and Equipment Maintenance	3 - Vehicle and Equipment Cleaning	4 - Vehicle and Equipment Storage	5- Outdoor Handling, Storage and Disposal of Waste Materials	6- Fuel Storage and Delivery	7- Building and Grounds Maintenance	8 – Structural Stormwater Controls
Clean City Division		X	X	X	X	X	X	X	
Fleet Management Division		X	X	X	X	X	X	X	
Park Management Division		X	X	X	X	X	X	X	
Street Maintenance Division		X		X	X	X		X	
Traffic Engineering Division		X		X	X	X		X	
Warehouse and Surplus Auction		X			X			X	
ABCWUA		X	X		X	X		X	
Facility and Energy Management Division									X

City of Albuquerque Stormwater Management Section

Stormwater Pollution Prevention Plan

Best Management Practices

for the

Pino Yards Complex



Contents:

- BMP 1 – Facility-Wide Best Management Practices
- BMP 2 – Vehicle and Equipment Maintenance
- BMP 3 – Vehicle and Equipment Cleaning
- BMP 4 – Vehicle and Equipment Storage
- BMP 5 – Outdoor Handling, Storage, and Disposal of Waste and Materials
- BMP 6 – Fuel Storage and Delivery
- BMP 7 – Building and Grounds Maintenance
- BMP 8 – Structural Storm Water Controls

Prepared by:



6000 Uptown Blvd. NE, Suite 200
Albuquerque, NM 87110



BMP 1.0

Facility-Wide Best Management Practices

► PURPOSE:

Prevent or reduce the discharge of pollutants to storm water from all industrial operations with potential to impact storm water.

► APPROACH TO EXISTING FACILITY ACTIVITIES:

GOOD HOUSEKEEPING

1.01 General

- Maintain exposed areas in a clean and orderly manner.
- Take necessary steps to prevent pollutants from contacting storm water.

1.02 Clean Exterior Equipment Surfaces

- Keep exterior surfaces of vehicles, equipment, and containers clean by eliminating excessive amounts of external oil and grease buildup.
- Use water-based cleaning agents or non-chlorinated solvents to clean equipment, and collect and properly dispose of cleaning fluids.
- Use drum-top absorbent pads to contain small leaks.

1.03 Recycle, Reduce, and Reuse

- Identify opportunities to recycle, reclaim, and/or reuse materials to reduce the volume of materials brought in to the facility and reduce the volume of waste.
- Materials that may be recycled or reused include used oil, grease, antifreeze, brake fluid, solvents, hydraulic fluid, batteries, transmission fluid, washwater, and waste fuel.

1.04 Product Substitution

- Use biodegradable products and substitute materials with less hazardous properties where feasible.

1.05 Limit Material Inventory

- Limit inventory of materials stored on-site to reduce the magnitude of potential spills and waste generation.

MINIMIZE EXPOSURE OF POLLUTANTS TO STORM WATER

1.06 Storm-Resistant Shelters

- Where practicable, industrial materials and activities should be protected by a storm-resistant shelter to prevent exposure.

PREVENTATIVE MAINTENANCE

1.07 Maintain As-built Drawings

- Maintain as-built prints for all projects.

► TARGETED ACTIVITIES:

- Activities not covered by other BMPs.

► TARGETED POLLUTANTS:

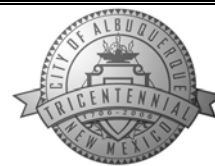
- Fuels, Oils, Grease
- Potable water system flushing fluids
- Solvents
- Soaps, Detergents
- Battery Acid
- Paint

► KEY APPROACHES:

- Keep outside areas maintained
- Store materials and equipment inside to the extent practical
- Conduct preventative maintenance
- Conduct regular inspections
- Train employees in storm water pollution prevention techniques
- Document storm water pollution prevention activities
- Maintain and post Spill Response Plans

BMP 1.0

Facility-Wide Best Management Practices



1.08 Design for Pollution Prevention

- Work with design and construction project managers to incorporate storm water management features into project design.
- Evaluate existing facilities for opportunities to improve functionality and efficiency, and decrease the potential for storm water pollution.
- Features may include:
 - Appropriate surface grading
 - Containment and/or cover
 - Storm water quality structures (e.g., oil/water separators, dead-end sumps, first flush diversion basins)
 - Use of concrete paving rather than asphalt
 - Fluid recycling systems
 - Waste repositories
 - Other control measures to eliminate potential material exposure to storm water

SPILL PREVENTION AND RESPONSE

1.09 Spill Response Plans

- Post the plan in a visible location within each work area where spills are likely to occur.
- Develop and implement a Spill Prevention Control and Countermeasure (SPCC) Plan, if required under guidelines set forth in 40 CFR, Section 112.3.

1.10 Maintain Spill Response Equipment and Supplies

- Maintain adequate supplies of spill response equipment and materials in accessible locations near areas where spills may be likely to occur, including on appropriate vehicles (maintenance vehicles) that may be likely to respond to or be involved in an incident.

1.11 Spill Containment and Response

- Immediately clean up all spills and leaks.
- Report all spills in accordance with facility specific spill response plan.
- Use drip pans to contain leaks and absorbent booms, mats, or other devices to contain liquid materials (washwater, fuel, etc.) and prevent them from entering the storm drain system.

1.12 Procedures for Cleaning Up Spills and Leaks

- Use absorbent materials and spill control equipment for temporary and immediate control of spills and leaks of liquid materials.
- Absorbent materials can be used in conjunction with curbing to provide cleanup of small spills within a containment area.
- Collect and remove absorbent materials from area soon after use and dispose of in an appropriate manner.
- Do not hose down the area unless the storm drain is blocked and drainage is collected and disposed of through a permitted connection to the sanitary sewer.

BMP 1.0

Facility-Wide Best Management Practices



- Hazardous waste spill response must be consistent with 40 CFR 264 and 265(RCRA).

1.13 Disposal of Collected Fluids

- Properly dispose of any collected fluids (e.g., spill fluids, or fluids collected in fuel tanks, fueling hydrant sumps, oil/water separators, etc.) according to applicable regulations.
- Vacuum equipment/trucks are recommended for collection. Always dispose of materials in an approved manner; use an approved treatment facility through a permitted connection.
- Never discharge materials to a catch basin or storm drain.

1.14 Minimizing Exposure

- Where practicable, industrial materials and activities will be protected by a storm resistant shelter to prevent exposure to rain or runoff.

ROUTINE FACILITY INSPECTIONS

1.15 Activity Inspections

- Perform frequent activity inspections to identify and eliminate non-storm water discharges.
- Stagger inspection times to cover all work periods.

1.16 Storm Drain Inlet Inspections

- Perform quarterly visual inspections of discharge points into the storm drain system.
- Identify any non-storm water discharges, sediment, debris, or other potential contaminants that may be entering the storm drain system.

1.17 Inspections for Facility Upgrades

- Perform inspections during design review and project construction phases to ensure drainage, wastewater, and water supply connections are correct (no cross connections or illicit hookups).

1.18 Illicit Connections Inspections

- Perform construction phase, post-construction, and existing facility inspections to identify improper physical connections to the storm drain system from sanitary sewers, floor drains, industrial process discharge lines, and wash racks.

EMPLOYEE/CONTRACTOR TRAINING

1.19 General Employee Training

Provide the appropriate level of employee training in the following areas:

- Land transportation and warehousing environmental policies and procedures,
- Spill response and prevention,
- Storm water pollution prevention education,
- Right-to-know awareness training, and
- Hazardous materials management.

BMP 1.0

Facility-Wide Best Management Practices



1.20 Storm Water Training

- Provide annual storm water management training as required in the MSGP-2008, Part 2.1.2.9.
- Incorporate required elements in training program and maintain a log of employee attendance.

1.21 Contractor Education

- Provide construction and operational contractors and haulers with copies of pertinent BMPs.
- Require contractor/hauler adherence to BMP specifications.
- Provide contractors and subcontractors with copies of relevant BMPs during specification and bidding phases.

1.22 SPCC Training

- Provide adequate implementation training for facilities with a Spill Prevention Control and Countermeasure (SPCC) Plan, if required, developed under guidelines set forth in 40 CFR 112.3.

MANAGEMENT OF STORM WATER RUNOFF

1.23 Outdoor Water Supplies

- Limit availability of outdoor water supplies.
- Post signs at outdoor water sources identifying appropriate uses and discouraging uses that would introduce pollutants to the storm drain system/receiving waters.

RECORDKEEPING AND REPORTING

1.24 Comply with Record Keeping and Reporting Requirements of the MSGP

- The record keeping and reporting requirements contained in the MSGP should be followed.



BMP 2.0

Vehicle and Equipment Maintenance

► PURPOSE:

Prevent or reduce the discharge of pollutants to storm water from vehicle and equipment maintenance and repair, including vehicle and equipment painting/stripping and floor washdowns. Prevent or reduce the discharge of pollutants to storm drains by inspecting activities and discharge points that may increase the potential for discharge.

► APPROACH TO EXISTING FACILITY ACTIVITIES:

GOOD HOUSEKEEPING

2.01 Parts Cleaning and Degreasing

- Contain the use of solvents and other cleaning compounds to designated interior areas to promote safe handling and to minimize exposure to storm water.
- Use designated washing, steam cleaning, and degreasing areas to clean equipment. Equipment cleaning shall be conducted in accordance with BMP 3.0.

2.02 Contain Drips, Leaks, and Spills

- Use drip pans when performing outdoor maintenance or use with vehicles or equipment awaiting repair.
- Use adsorbent materials at potential problem areas. Adequately collect and remove adsorbent material from the area after use and dispose of in an appropriate manner.

2.03 Maintain Working Areas

- Do not hose down work areas or use concrete cleaning products unless the storm drain inlets are blocked and washwater is collected and properly disposed of through a permitted sewer connection.
- As an alternative to floor/pavement washing, use mops, dry sweeping compound, or contract professional cleaning services. Confirm the use of appropriate practices by contract cleaning services.
- Store mechanical parts and equipment that may yield even small amounts of contaminants (e.g. oil or grease) indoors or under cover and away from storm drains.

2.04 Disposal of Maintenance Fluids

- Recycle or properly dispose of the following: greases, oils, antifreeze, brake fluid, cleaning solutions, hydraulic fluid, batteries, transmission fluid, and filters.
- Drain and properly dispose of all fluids and remove batteries from salvage vehicles and equipment. Fluid disposal shall occur regularly and properly in accordance with BMP 5.0.

► TARGETED ACTIVITIES:

- Vehicle Maintenance
- Equipment Maintenance

► TARGETED POLLUTANTS:

- Fuels, Oils, Grease
- Solvents
- Soaps, Detergents
- Battery Acid
- Paint

► KEY APPROACHES:

- Conduct maintenance indoors, or in covered area
- Prevent washwater discharges to the storm drain
- Clean catch basins regularly
- Collect and properly dispose of all fluids
- Conduct Preventative Maintenance

BMP 2.0

Vehicle and Equipment Maintenance



MINIMIZE EXPOSURE OF POLLUTANT TO STORM WATER

2.05 Perform Maintenance Activities Indoors

Where practicable, perform vehicle and equipment maintenance activities indoors to prevent exposure of pollutants to storm water.

SPILL PREVENTION AND RESPONSE

2.06 Preventing Pollutant Exposure When Performing Maintenance Activities

- Move activities and associated materials and waste indoors or provide appropriate controls in maintenance areas, such as cover, berms, sumps, oil/water separators or retention basins to protect storm drains.
- Perform activities away from storm drains or cover storm drains.

ROUTINE FACILITY INSPECTIONS

2.07 Maintenance Area Inspections

- Perform regular inspections of equipment containing greases, oils, fuel, hydraulic fluid, antifreeze etc.
- Keep the equipment in good working order. Replace worn equipment before leaks develop.
- Notify appropriate personnel if it is noticed that vehicles or equipment require maintenance.
- Perform regular inspections of parts washers, hydraulic lifts, or other maintenance support components.

NOTE: See BMP 1.0 for generally applicable measures related to Preventative Maintenance, Training, Runoff Management, and Record Keeping and Reporting.

► APPROACH TO FUTURE FACILITIES AND UPGRADES:

DESIGN OF NEW FACILITIES AND EXISTING FACILITY UPGRADES

- Provide covered maintenance areas when designing new facilities or upgrading existing facilities.
- Utilize indoor areas, lean-to, or portable covers.
- Locate outdoor maintenance areas so minimal quantities of runoff cross the site.
- Include appropriate storm water quality structures (oil/water separators, sumps, first flush diversion basins, etc.) in the design of outdoor maintenance areas.



BMP 3.0

Vehicle and Equipment Cleaning

► PURPOSE:

Prevent or reduce the discharge of pollutants to storm water from vehicle and equipment washing and equipment degreasing.

► APPROACH TO EXISTING FACILITY ACTIVITIES:

GOOD HOUSEKEEPING

3.01 Washing Vehicles and Equipment

- Use off-site commercial washing or "dry" washing and surface preparation techniques when possible.
- Remove all materials (i.e., drippings and residue) using vacuum methods and dispose of properly.
- Use biodegradable phosphate-free detergents.
- Follow an approved wash plan or use designated wash areas that are covered and/or bermed to prevent contamination of storm water by contact with wastes.

PREVENTATIVE MAINTENANCE

3.02 Outdoor Wash Area Requirements

- Outdoor washing operations should have the following design characteristics:
 - Covered and paved and bermed with Portland cement concrete.
 - Sloped to facilitate washwater collection.
 - Water is collected or discharged to the sanitary sewer.
 - Discharge piping serving uncovered wash areas should have a positive shut-off control valve.
 - Wash areas should be clearly identified with signage.
 - Equipped with an oil/water separator designed to operate under storm water runoff conditions.

ROUTINE FACILITY INSPECTIONS

3.03 Wash Area Inspections

- Inspect wash areas for cracks or breaches to berms or concrete surfaces and repair.

► TARGETED ACTIVITIES:

- Vehicle Washing
- Equipment Washing
- Equipment Degreasing

► TARGETED POLLUTANTS:

- Fuels, Oil, Grease
- Solvents
- Vehicle Fluids
- Soaps, Detergents

► KEY APPROACHES:

- Use designated area
- Use dry washing techniques
- Recycle washwater or discharge appropriately
- Cover catch basins
- Provide training



BMP 3.0

Vehicle and Equipment Cleaning

MANAGEMENT OF STORM WATER RUNOFF

3.04 Use Designated Wash Areas

- Use designated areas for washing, steam cleaning, and degreasing.

NOTE: See BMP 1.0 for generally applicable measures related to Preventative Maintenance, Training, Runoff Management, and Record Keeping and Reporting.

► APPROACH TO FUTURE FACILITIES AND UPGRADES:

DESIGN OF NEW FACILITIES AND EXISTING FACILITY UPGRADES

- Consider off-site commercial washing where feasible. Using appropriate offsite facilities will decrease the waste generated on-site.
- Consider incorporating a washwater recycling system into the project design.
- Outdoor washing operations should have the following design characteristics:
 - Paved with Portland cement concrete.
 - Bermed and/or covered (if feasible) to prevent contact with storm water.
 - Sloped to facilitate washwater collection.
 - Washwater should be collected in a dead-end sump for removal or discharged to the sanitary sewer through a permitted connection.
 - Discharge piping serving uncovered wash areas should have a positive shut-off control valve that allows switching between the storm drain and the sanitary sewer.
 - Clearly designated.
 - Equipped with an oil/water separator designed to operate under storm water runoff conditions (treat storm water).

BMP 4.0

Vehicle and Equipment Storage



► PURPOSE:

Prevent or reduce the discharge of pollutants to storm water from outdoor storage areas (i.e., fuels, chemicals, bagged material on pallets, soils or asphalt material bulk storage, etc.).

► APPROACH TO EXISTING FACILITY ACTIVITIES:

GOOD HOUSEKEEPING

4.01 Vehicles and Equipment Storage

- Use drip pans or specially-designed absorbent pads to contain releases.
- Repair leaks in an expeditious manner.
- Store vehicles and equipment in an area established to contain any incidental leaks and under cover, if possible.
- For long term storage (>30 days), remove fluids and salvage batteries (which often drip oil and other fluids).
- Clean oil, grease or chemical residue off exterior surfaces prior to long term storage.
- Store vehicles and equipment away from curbs, gutters and storm drains.

4.02 Temporary Parking of Tanker Trucks and Materials Transport Vehicles

- Designate areas for parking tanker trucks and material transport vehicles where spills and leaks can be contained and cleaned.
- Use covered loading and unloading areas for transfer of potential pollutants (especially liquid materials), such as building overhangs, to reduce exposure of materials, vehicles, and equipment to storm water.

► TARGETED ACTIVITIES:

- Fuel, Chemical, Equipment Storage

► TARGETED POLLUTANTS:

- Fuel, Oils, Grease
- Solvents
- Hydraulic Fluid
- Soaps, Detergents

► KEY APPROACHES:

- Store materials indoors or under cover
- Store drums, containers on pallets
- Provide berming or secondary containment
- Drain fluids before storage
- Perform and document periodic inspections
- Designate storage areas away from storm drains

BMP 4.0

Vehicle and Equipment Storage



► APPROACH TO FUTURE FACILITIES AND UPGRADES:

DESIGN OF NEW FACILITIES AND EXISTING FACILITY UPGRADES

- Require the use of appropriate water quality control structures for fuel and chemical storage areas such as detention/retention basins and sumps.
- Develop appropriate minimum performance standards for these water quality control structures and implement a reporting program to monitor the performance and maintenance of these structures.
- Chemical, fuel, and oil dispensing areas should be covered, if possible.
- Develop standard guidelines for the management of storm water which collects in secondary containment areas.

NOTE: See BMP 1.0 for generally applicable measures related to Preventative Maintenance, Training, Runoff Management, and Record Keeping and Reporting.

BMP 5.0

Outdoor Handling, Storage, and Disposal of Waste and Materials



► PURPOSE:

Prevent or reduce the discharge of pollutants to storm water from loading and unloading of material. Prevent or reduce the discharge of pollutants to storm water from waste handling and disposal by tracking waste generation, storage, and disposal; reducing waste generation and disposal through source reduction, re-use, and recycling; and preventing run-on and runoff from waste management areas, including garbage collection areas.

► APPROACH TO EXISTING FACILITY ACTIVITIES:

GOOD HOUSEKEEPING

5.01 Material and Waste Handling

- Transfer, use, and store liquid materials only in paved areas.
- Designate central storage locations where materials are contained (i.e., curbing, secondary containment, etc.) and covered to prevent contact with storm water runoff and to reduce the risks of accidental spills.
- Segregate wastes to improve handling and promote recycling.

5.02 Dispensing Liquids

- Dispensing materials from upright drums equipped with hand pumps is preferred.
- Avoid dispensing from drums positioned horizontally in cradles.
- Always use secondary containment and self-closing spigots if dispensing from horizontally positioned drums.

5.03 Signage for Storage Locations

- Post signs at all storage locations in clearly visible locations noting the materials stored, emergency contacts, and spill cleanup procedures.

5.04 Containers and Container Labeling

- Store all materials sealed in their original containers or containers approved for that use.
- Clearly label all containers with contents to prevent co-mingling of materials, storage of incompatibles, and improper handling, and to promote proper material handling and storage.

► TARGETED ACTIVITIES:

- Fuel Storage
- Chemical Storage
- Equipment Storage
- Garbage Collection
- Painting and Stripping

► TARGETED POLLUTANTS:

- Fuels, Oils, Grease
- Solvents
- Soaps, Detergents
- Pesticides
- Battery Acid

► KEY APPROACHES:

- Conduct loading and unloading under cover
- Store materials indoors or under cover
- Store empty drums, containers, tires on pallets
- Transfer materials in paved areas, away from storm drain inlets
- Contain and absorb leaks/spills that occur during material transfer
- Provide berming or secondary containment
- Perform and document periodic inspections
- Check loading equipment regularly for leaks

BMP 5.0

Outdoor Handling, Storage, and Disposal of Waste and Materials



- Utilize required labeling procedures for storage of all hazardous wastes.
- Identify and properly dispose of all unlabeled and unknown materials.

5.05 Used Battery Management

- Recycle used batteries no later than 30 days after removal to promote recycling of materials and reduction of waste.
- Store batteries on spill containment and under cover.

5.06 Used Oil Containers and Filters

- Drain and crush oil filters and containers before recycling or disposal.
- Store crushed waste in a leak-proof container.
- Contain drained items in sealed plastic bags prior to disposal.

5.07 Eliminate Bone yards

- Eliminate waste collection piles (bone yards), which tend to conceal and lead to mismanaged waste and materials.

5.08 Waste and Unusable Material Disposal

- Regularly inspect storage and work areas for unusable materials and waste that can be disposed.
- Schedule waste pickup as frequently as needed to minimize storage time and avoid overloaded containers.
- Ensure that all materials are properly characterized and disposed.

5.09 Garbage Collection (Dumpster) Area Maintenance

- Provide shelter and secondary containment for dumpsters, if possible.
- Use covered dumpsters and keep them closed and locked.
- Use only dumpsters with plugged drain holes to prevent discharge of leachate or fluids.
- Do not dispose of liquid wastes such as oils or hazardous materials into dumpsters and completely drain liquid waste containers prior to disposal of containers.
- Perform dumpster cleaning in designated areas that are bermed to contain washwater for subsequent disposal or discharge to the sanitary sewer.

5.10 Procedures for Servicing Potable Water Systems

- Perform water truck flushing operations only in designated areas.
- Collect all discharge from water truck flushing containing Purine, chlorine bleach, or other chemicals and properly discharge to a permitted sanitary sewer connections or recycle the water.
- Do not perform flushing near or discharge to storm drains.

BMP 5.0

Outdoor Handling, Storage, and Disposal of Waste and Materials



PREVENTATIVE MAINTENANCE

5.11 Outdoor Storage Area Requirements

- Outdoor storage areas should be covered, if possible.
- When selecting storage sites, avoid excessive slope, locations near storm drain inlets, and locations near public access areas.

SPILL PREVENTION AND RESPONSE

5.12 Preventing Pollutant Exposure During Material Transfer

- Position vehicles used for material transfer such that activities are protected from rainfall and that possible spills can be contained.
- Provide hand pumps, containment devices, and other transfer devices to facilitate material transfer.

5.13 Preventing Pollutant Exposure for Material or Waste Storage

- Move materials and waste indoors or store away from drains.
- All material stored outside, no matter how temporary, should be placed on secondary containment and under cover, if possible.
- Materials not stored under cover should be covered and exposed exterior surfaces should be clean.

ROUTINE FACILITY INSPECTIONS

5.14 Material/Waste Transfer Area Inspections

- Inspect loading/unloading areas and material use areas for repair and patching.

5.15 Material and Waste Storage Area Inspection (Containers and Tanks)

- Periodically inspect storage areas (containers and tanks):
 - Check containers for external corrosion and structural failure.
 - Check for spills and overfills due to operator failure.
 - Check for failure of piping system (pipes, pumps, flanges, couplings, hoses, and valves).
 - Check for leaks or spills during pumping of liquids or gases.
 - Visually inspect new tanks or containers for loose fittings, poor welds, and improper or poorly fitted gaskets.
 - Inspect tank foundations and storage area coatings.

BMP 5.0

Outdoor Handling, Storage, and Disposal of Waste and Materials



EMPLOYEE / CONTRACTOR TRAINING

5.16 Waste Management Training

- Train employees on the proper disposal procedures for operations-derived wastes.

MANAGEMENT OF STORM WATER RUNOFF

5.17 Protect Storage Areas from Run-On and Runoff

- Protect all significant materials from rainfall, run-on, runoff, and wind dispersal.
- Options include:
 - Store material indoors or in a fully enclosed area.
 - Permanently cover an outdoor storage area with a roof, overhang, or awning.
 - Use temporary covering of polyethylene, polypropylene, or hypalon.
 - Use control measures such as berms and secondary containment.
 - Reduce the amount of material stored outdoors.

RECORD KEEPING AND REPORTING

5.18 Track Waste Generation

Characterize waste streams and maintain accurate information on waste streams using:

- Manifests,
- Bills of lading,
- Biennial reports,
- Permits,
- Environmental audits,
- NPDES discharge monitoring reports,
- SARA Title III reports,
- Emission reports,
- Data on chemical spills,
- Inventory reports,
- Emissions data, and
- Material Safety Data Sheets (MSDS).



BMP 6.0

Fuel Storage and Delivery

► PURPOSE:

Prevent fuel spills and leaks, and reduce their impacts to storm water. Prevent or reduce the discharge of pollutants to storm water during fueling operations and fuel storage.

► APPROACH TO EXISTING FACILITY ACTIVITIES:

GOOD HOUSEKEEPING

6.01 Vehicle Fueling Station Signage

- Fuel pumps intended for vehicular use must be posted with prominent signs stating "No Topping Off" to prevent overflow.

PREVENTATIVE MAINTENANCE

6.02 Install Fuel Tank Monitoring and Release Prevention Systems

- Provide appropriate monitoring for tanks containing fuel (i.e., level indicators and gauges, overfill protection with alarms, interstitial leak detection for double-walled tanks, and routine inspection/lockout for drainage valves for containment areas).
- Fuel dispensing equipment should be equipped with "breakaway" hose connections that will provide emergency shut-down of flow should the fueling connection be broken through movement.
- Automatic shut-off mechanisms should be in place on fuel tankers. These valves should remain in the closed position unless manually opened during fueling.

SPILL PREVENTION AND RESPONSE

6.03 Preventing Pollutant Exposure When Fueling

- Cover nearby storm drains and outlets to surface drains with spill control mats or block off with absorbent booms to prevent accidental release of pollutants in the event of a spill.
- Avoid mobile fueling of equipment.
- Fuel equipment in designated areas, covered if possible.
- Maintain spill kits on fueling tankers.

► TARGETED ACTIVITIES:

- Vehicle and Equipment Fueling
- Fuel Storage

► TARGETED POLLUTANTS:

- Fuel

► KEY APPROACHES:

- Provide cover and berming or secondary containment for fueling areas
- Use absorbent materials and/or vacuum equipment for spills
- Perform and document periodic inspections
- Install proper equipment for fuel dispensing and tank monitoring to prevent spills, leaks, and overflows
- Post "No Topping Off" signs

BMP 6.0

Fuel Storage and Delivery



ROUTINE FACILITY INSPECTIONS

6.04 Fuel Storage and Handling Inspections

- Regularly inspect fueling areas and storage tanks. (Underground fuel storage tanks should be tested as required by federal and state laws.)

6.05 Fuel Spill Response Training

- Train employees performing fueling activities on the appropriate response procedures for fuel spills.

NOTE: See BMP 1.0 for generally applicable measures related to Preventative Maintenance, Training, Runoff Management, and Record Keeping and Reporting.

► APPROACH TO FUTURE FACILITIES AND UPGRADES:

DESIGN OF NEW FACILITIES AND EXISTING FACILITY UPGRADES

- Design fueling areas to prevent the run-on of storm water and the runoff of spills by employing the following approaches:
 - Cover the fueling area, if possible.
 - Use a perimeter drain or slope the fueling area to a dead-end sump or oil/water separator.
 - Pave the fueling area with concrete rather than asphalt.
- If storm water runoff from fueling areas is not collected, install an appropriately-sized oil/water separator. Regulatory agency approvals are required.
- Install and maintain vapor recovery systems where required and/or appropriate.
- New facilities shall be designed with leak detection, spill containment, and overflow protection in accordance with all federal regulations.
- Design facilities to include secondary containment where required and/or appropriate.



BMP 7.0

Building and Grounds Maintenance

► PURPOSE:

Prevent or reduce the discharge of pollutants to storm water from building and grounds maintenance by washing and cleaning up with as little water as possible, preventing and cleaning up spills immediately, keeping debris from entering storm drains, and maintaining the storm water collection system.

► APPROACH TO EXISTING FACILITY ACTIVITIES:

GOOD HOUSEKEEPING

7.1 Disposal of Landscaping and Grounds Maintenance Waste

- Properly dispose of landscape waste, washwater, sweepings, and sediments.

7.2 Fire Fighting Foam Deluge System Testing Procedures

- Perform fire fighting foam testing operations only in designated areas deemed appropriate for such activities. Properly dispose of, or recycle, foam discharge.

7.3 Cleaning Interior Floors and Exterior Ground Surfaces

- Maintain clean, dry floors and exterior surfaces by methods other than hosing and washing (i.e., using brooms, shovels, vacuum cleaners, etc.).
- Do not hose down work areas to the storm drainage system or use concrete cleaning products unless the storm drain inlet is blocked and wash water is collected and properly disposed of through a permitted sewer connection.
- Use seals or door skirts to prevent material exposure to rainfall.

PREVENTATIVE MAINTENANCE

7.4 Grounds/Landscaping Design Considerations

- Consider the following design characteristics for grounds/landscaping design:
 - Incorporate areas of landscape into project design. (Landscape areas are pervious and will result in less runoff discharge from a site.)
 - Incorporate design considerations such as leaving or planting native vegetation to reduce irrigation, fertilizer, and pesticide needs.
 - Select landscaping plants that require little maintenance and/or pest control.
 - Incorporate storm water detention/retention to reduce peak runoff flows and for water quality control.

7.5 Maintain Storm Water Control Devices and Outfalls

- Maintenance includes the following:
 - Regularly inspect and patch or repair storm water control devices (i.e., berms, etc.) to keep them in working order.

► TARGETED ACTIVITIES:

- Building Maintenance
- Grounds Maintenance

► TARGETED POLLUTANTS:

- Fuels, Oils, Grease
- Pesticides, Herbicides, Fertilizers
- Sediment
- Landscape Waste

► KEY APPROACHES:

- Keep paved surfaces cleaned and swept using dry method
- Use nature/low maintenance landscaping
- Install and maintain oil/water separators
- Maintain Structural BMPs
- Clean catch basins regularly
- Manage use of pesticides, herbicides, fertilizers

BMP 7.0

Building and Grounds Maintenance



- Place devices such as hay bales or filter fabric over storm drain culverts or at other areas to capture debris generated during construction and other activities.

7.6 Maintain Catch Basins

- Regularly clean any catch basins which receive runoff from a maintenance area, especially after larger storms.
- Install and maintain catch basin filter inserts that assist in the removal of oil and grease, sediments and floatables.

7.7 Fire Deluge System Design Considerations

- Design deluge (foam) testing system with the following characteristics:
- Located away from storm drain inlets, drainage facilities or water bodies. Discharge foam waste to a sanitary sewer (industrial wastewater permitting may be required). Foam waste shall not be discharged to storm drains or water bodies.
- Paved with concrete or asphalt, or stabilized with an aggregate base.
- Bermed to contain foam and to prevent run-on.
- Configure discharge area with a sump to allow collection and disposal of foam.

7.8 Install Oil/Water Separators

- Either collect storm water in areas exposed to pollutants or install an appropriately-sized oil/water separator (regulatory agency approval maybe required).
- Oil/water separators are typically used in areas where the concentrations of petroleum hydrocarbons, floatables, or sediment maybe abnormally high and source control techniques are not very effective.
- There are two types of oil/water separators:
 - American Petroleum Institute (API) separator and
 - Coalescing plate separator (CPS).
- Design, sizing, and placement of oil/water separators is dependent on several factors including: tributary area, type of activity, pollutant type and concentration, and water temperature. Separators should be selected, sized and designed by a qualified engineer.

7.9 Maintain Sumps and Oil/Water Separators

- Regularly clean and maintain sump and oil/water separators. Characterize and properly dispose of cleaning waste.
- Replace oil absorbent pads as needed and always prior to the rainy season(s).
- Keep effluent shutoff valve closed during cleaning operations. Follow maintenance schedule and procedures for these activities.

7.10 Label Storm Drains

- Label storm drain inlets that they are to receive no wastes.

7.11 Minimize Pesticide, Herbicide, and Fertilizer Use

- Minimize use of pesticides, herbicides, and fertilizers. Use according to directions. Utilize integrated pest management.



BMP 7.0

Building and Grounds Maintenance

ROUTINE FACILITY INSPECTIONS

7.12 Sump and oil/water separator inspection

- Regularly inspect sumps and oil/water separators to identify when preventative maintenance is needed.

7.13 Inspect fire fighting foam deluge system

- Regularly inspect, clean, and maintain fire fighting foam testing facility and collection sumps.

MANAGEMENT OF STORM WATER RUNOFF

7.14 Erosion control

- Provide landscaped areas where erosion is becoming a problem.

NOTE: See BMP 1.0 for measures generally applicable to Exposure Minimization, Spill Prevention and Response, Training, and Record keeping and Reporting.

► APPROACH TO FUTURE FACILITIES AND UPGRADES:

DESIGN OF NEW FACILITIES AND EXISTING FACILITY UPGRADES

- Incorporate areas of landscape into project design. Landscape areas are pervious and will result in less runoff discharge from a site.
- Incorporate design considerations such as leaving or planting native vegetation to reduce irrigation, fertilizer, and pesticide needs.
- Select landscaping plants which require little maintenance and/or pest control.
- Incorporate storm water detention/retention to reduce peak runoff flows and for water quality control.



BMP 8.0

Structural Storm Water Controls

► PURPOSE:

Select, implement, and maintain structural storm water controls to manage the volume and/or quality of storm water leaving the property. Storm water volume controls should be installed to manage storm water volume by delaying, diverting, or reducing the amount of storm water runoff from the site. Storm water quality controls should be installed to prevent pollutants from contacting storm water or remove pollutants from storm water.

► EXISTING STORM WATER CONTROLS:

PREVENTATIVE MAINTENANCE

8.01 Routine Maintenance

- Perform regular cleaning of storm water control structures to ensure they are free and clear of debris and garbage.
- Remove accumulated sediment from control structures to prevent clogging of inlets and outlets. Accumulated sediment should be disposed of properly as pollutants are often attached to sediment particles.
- Clean storm drain covers and grates to remove accumulated debris. Check drain covers/grates for structural integrity.
- Replace adsorbent material within storm drain inserts, straw rolls, adsorbent booms, or other disposable media on a regular frequency to prevent accumulated storm water pollutants from being released.
- Maintain vegetation within drainage swales, ponds, and other structures.

ROUTINE FACILITY INSPECTIONS

8.02 Inspections

- Perform inspections of storm water control structures on a quarterly basis at minimum and after precipitation events.
- Inspections should cover:
 - Overall condition of the structure
 - Accumulation of sediment, vegetation, debris, and garbage at structure inlets, outlets, and within drainage ways
 - Integrity of the structure including damaged concrete or riprap
 - Evaluate erosion at and surrounding the control structure

SPILL PREVENTION AND RESPONSE

8.03 Protect Structural Controls from Spills

- Develop spill response plans to protect storm drains, storm water conveyance structures, and other structural controls from coming into

► TARGETED ACTIVITIES:

- All activities

► TARGETED POLLUTANTS:

- Sediment
- Nutrients
- Trash
- Metals
- Bacteria
- Oil and Grease
- Organics
- Oxygen Demanding

► KEY APPROACHES:

- Perform routine maintenance and inspections of structural storm water controls
- Install new storm water controls to protect storm water quality from existing or new activities



BMP 8.0

Structural Storm Water Controls

contact with storm water pollutants.

- Provide secondary containment, curbing, berms, or other physical means of separating chemicals and other potential storm water pollutants from storm water drainage and collection devices.

► SELECTION OF NEW STORM WATER CONTROLS:

STORM WATER VOLUME CONTROLS

8.04 Storm Water Volume Controls

- Determine volume of site storm water runoff or runoff using the appropriate hydraulic analysis. Review potential storm water controls to ascertain whether the hydraulic conveyance threshold has been exceeded based on the quantitative results of the hydraulic analysis.
- Perform site assessment for the potential to incorporate low impact development strategies that will be effective in retaining storm water on site. Preference should be given to controls which retain storm water runoff and reduce the volume of storm water discharge to the downstream system.
- Select and evaluate the appropriate infiltration, harvest and use, or bioretention storm water controls:
 - Infiltration storm water controls: Infiltration trench, infiltration basin, bioretention basin with no underdrain, drywell, permeable pavement, and underground infiltration.
 - Harvest and use storm water controls: Cisterns and underground detention
 - Biotreatment storm water controls: Bioretention with underdrain, vegetated swale, vegetated filter strip, dry extended detention basin, wet detention basin, constructed wetland, and proprietary biotreatment.
- If possible use a treatment train of storm water controls to reduce uncertainty of effectiveness. Treatment train refers to the application of a series of storm water controls to improve effectiveness of the system.
- Install and locate storm water controls on site where most effective treatment is achieved.

STORM WATER QUALITY CONTROLS

- Select and evaluate the appropriate storm water control or combination of controls (treatment train) to improve storm water quality.
- Conduct a qualitative evaluation of site activities and potential pollutants generated on-site. In addition identify any pollutants causing impairment to receiving bodies of water that site storm water discharges to. Select storm water controls to minimize and reduce identified pollutants.
- Review removal efficiency of selected storm water control at one of the following URLs.
 - <http://www.bmpdatabase.org/>
 - <http://cfpub1.epa.gov/npdes/stormwater/menuofbmps/>
- Install and locate storm water controls on site where most effective treatment is achieved.

SWMD Albuquerque Beautiful **SOURCE CONTROL BMPs**

This section provides a description of specific source control Best Management Practices (BMPs) for activities related to SWMD / CCD / W&L SECTION OPERATIONS. Clean City Division fixed facilities conducts activities that have the potential to generate pollutants. The source control BMPs in this section addresses these activities (see Table 1-1).

In addition, Clean City Division conducts various field programs where activities may occur and create pollutants.

BMPs for these field programs and associated activities are listed in Table 1-2.

TABLE 1-1

CLEAN CITY PINO YARD FIXED FACILITY BMPs

Non- Storm water Management	
SC 1	Non- Storm water Discharges
SC 2	Spill Prevention, Control and Cleanup
Vehicle and Equipment Management	
SC 3	Vehicle and Equipment Fueling
SC 4	Vehicle and Equipment Cleaning
SC 5	Vehicle and Equipment Repair
Material and Waste Management	
SC 6	Outdoor Loading and Unloading
SC 7	Outdoor Container Storage
SC 8	Outdoor Equipment Maintenance
SC 9	Outdoor Storage of Raw Materials
SC 10	Waste Handling and Disposal
Building and Grounds Maintenance	
SC 11	Building and Grounds Maintenance
SC 12	Parking / Storage Area Maintenance
General Storm water Management	
SC 13	Good Housekeeping Practices
SC 14	Safer Alternative Products

TABLE 1-2

CLEAN CITY FIELD PROGRAM BMPs

SC 15	Graffiti Removal
SC 16	Roadway Landscape Maintenance Specified Major Arterials and Interstate Highway Litter
SC 17	Sidewalk Sweeping & Cleaning at specified Interstate Highway Underpass Sidewalks
SC 18	Waste Handling and Disposal of Refuse and Recyclable Materials collections

SC-1 Non- Storm water Discharges

Description

Non-storm water discharges are those flows that do not consist entirely of storm water. For municipalities non-storm water discharges present themselves in two situations. One is from fixed facilities owned and/or operated by the municipality. The other situation is non-storm water discharges that are discovered during the normal operation of a field program. Some non-storm water discharges do not include pollutants and may be discharged to the storm drain. These include uncontaminated groundwater and natural springs. There are also some non-storm water discharges that typically do not contain pollutants and may be discharged to the storm drain with conditions. These include car washing, and surface cleaning. However, there are certain non-storm water discharges that pose environmental concern. These discharges may originate from illegal dumping or from internal floor drains, appliances, industrial processes, sinks, and toilets that are connected to the nearby storm drainage system. These discharges (which may include: process waste waters, cooling waters, wash waters and sanitary wastewater) can carry substances (such as paint, oil, fuel and other automotive fluids, chemicals and other pollutants) into storm drains. The ultimate goal is to effectively eliminate non-storm water discharges to the storm water drainage system through implementation of measures to detect, correct, and enforce against illicit connections and illegal discharges.

Approach

The Clean City Pino Yard facility will address non-storm water discharges from its fixed facilities by assessing the types of non-storm water discharges and implementing BMPs for the discharges determined to pose environmental concern. For field programs the field staff will be trained to know what to look for regarding non-storm water discharges and the procedures to follow in investigating the detected discharges.

Fixed Facility

General Protocols

- Post “No Illegal Dumping” signs to discourage illegal dumping in Solid Waste containers with a phone number for reporting dumping and disposal. Signs should also indicate fines and penalties for illegal dumping. Prevent illegal disposal of pollutants and warn against ignorant or intentional dumping of pollutants into the storm drainage.
- Clean up spills on paved surfaces with as little water as possible. Use a rag for small spills, a damp mop for general cleanup, and absorbent material for larger spills. Never hose down or bury dry material spills. Sweep up the material and dispose of properly.
- Remove the adsorbent materials promptly and dispose of properly.
- For larger spills, a private spill cleanup company or Hazmat team may be necessary.

Oil Recycling

- SWMD contracts collection and hauling of used oil to a private licensed used oil hauler/recycler.
- Comply with all applicable state and federal regulations regarding storage, handling, and transport of petroleum products.
- Provide adequate and acceptable spill tray containers, and maximum amounts accepted.
- See fact sheet SC-2 Spill Prevention, Control, and Clean Up.

SC-1 Non- Storm water Discharges

Field Program

General

- Develop clear protocols and lines of communication for effectively prohibiting non-storm water discharges.
- Report prohibited non-storm water discharges observed during the course of normal daily activities so they can be investigated, contained and cleaned up or eliminated.
- Clean City provides affordable pickup service for residential and commercial large items and metal collections and drop off recyclable sites to discourage illegal dumping.
- Clean City provides weed and litter eradication and disposal for major arterials and interstate highway right of ways within the city limits to minimize floatable pollutants from entering the storm drain system.
- Clean City collaborates with the Zoning Enforcement Division of the Planning Department report, inspect and clean properties that are in violation of the city weed and litter ordinance and reporting municipal code violations that include sections prohibiting the discharge of soil, debris, refuse, illegal dumping, hazardous wastes, in an effort to prevent these and other pollutants from entering the storm drain system.

Training

- Train technical staff to address or identify and report illegal dumping incidents to 311 hotline.
- Train technical staff to reduce human errors that lead to accidental releases or spills.
- Train technical staff to use tools and knowledge to immediately begin cleaning up a spill if one should occur.
- Train and familiarize employees with the Spill Prevention Control and Response Plan.
- Train employees to identify non-storm water discharges and report them to the appropriate departments.
- Train Clean City employees in proper and consistent methods for right of way litter and other waste disposal.

Spill Response and Prevention

- See SC-2 Spill Prevention Control and Clean Up
- Have spill cleanup materials readily available and in a known location.
- Cleanup spills immediately and use dry methods if possible.
- Properly dispose of spill cleanup material.

Other Considerations

To discourage and control illegal dumping the City of Albuquerque should consider implementing a strict municipal code and ordinance pertaining to illegal dumping that carries a significant financial penalty and a public information program that includes: general and focused outreach pertaining to illegal dumping, school education programs, and encourage citizen participation in illegal dumping prevention. The lack of understanding regarding the negative impact of illegal dumping and the lack of applicable laws or the inadequacy of existing laws contribute to the problem. Municipal codes should include sections prohibiting the discharge of soil, debris, refuse, hazardous wastes, and other pollutants into the storm drain system. The Solid Waste Department has established reasonable cost of fees for dumping at a proper waste disposal facility and the routine and affordable pickup service for trash and recyclables in city communities should encourage people to comply with the law and discourage illegal dumping.

SC-1 Non- Storm water Discharges

References and Resources

California Storm water BMP Handbook Municipal

www.cabmphandbooks.com

<http://www.stormwatercenter.net/>

California's Nonpoint Source Program Plan <http://www.co.clark.wa.us/pubworks/bmpman.pdf>

King County Storm water Pollution Control Manual - <http://dnr.metrokc.gov/wlr/dss/spcm.htm>

Orange County Storm water Program,

http://www.ocwatersheds.com/stormwater/swp_introduction.asp

San Diego Storm water Co-permittees Jurisdictional Urban Runoff Management Program

SC-2 Spill Prevention, Control & Cleanup

Description

Spills and leaks, if not properly controlled, can adversely impact the storm drain system and receiving waters. Due to the type of work or the materials involved, many activities that occur either at a municipal facility or as a part of municipal field programs have the potential for accidental spills and leaks. Proper spill response planning and preparation can enable municipal employees to effectively respond to problems when they occur and minimize the discharge of pollutants to the environment.

Approach

An effective spill response and control plan should include:

- Spill/leak prevention measures
- Spill response procedures
- Spill cleanup procedures
- Reporting and Training

A well thought out and implemented plan can prevent pollutants from entering the storm drainage system and can be used as a tool for training personnel to prevent and control future spills as well.

Pollution Prevention

Develop and implement a Spill Prevention Control and Response Plan. The plan should include:

- A description of the facility, the address, activities and materials involved
- Identification of key spill response personnel
- Identification of the potential spill areas or operations prone to spills/leaks
- Identification of which areas should be or are bermed to contain spills/leaks
- Facility map identifying the key locations of areas, activities, materials, structural BMPs, etc.
- Material handling procedures
- Spill response procedures including:
 - Assessment of the site and potential impact
 - Containment of the material
 - Notification of the proper personnel and evacuation procedures
 - Clean up of the site
 - Disposal of the waste material and
 - Proper record keeping
 - Product substitution –use water based paints instead of oil based paints
- Recycle, reclaim, or reuse materials whenever possible. This will reduce the amount of materials that are brought into the facility or into the field.

General Protocols

Spill/Leak Prevention Measures

- Pesticides are stored indoors in CCD warehouse, under cover, and away from storm drains.
- Properly label all containers so that the contents are easily identifiable.
- Berm storage areas so that if a spill or leak occurs, the material is contained.
- Outside storage areas are covered with a permanent structure or with a seasonal one such as a tarp so that rain can not come into contact with the materials.
- Check containers (and any containment trays) often for leaks and spills. Replace containers that are leaking, corroded, or otherwise deteriorating with containers in good condition. Collect all spilled liquids and properly dispose of them.
- Store, contain and transfer liquid materials in such a manner that if the container is ruptured or the contents spilled, they will not discharge, flow or be washed into the storm drainage system, surface waters, or groundwater.

SC-2 Spill Prevention, Control & Cleanup

Spill/Leak Prevention Measures (cont.)

- During the filling and unloading of containers. Any collected liquids or soiled absorbent materials should be reused/recycled or properly disposed of.
- Sweep and clean parking areas monthly, do not use water to hose down the area unless all of the water will be collected and disposed of properly.

Training

- Educate employees about spill prevention, spill response and cleanup on a routine basis.
- Well-trained employees can reduce human errors that lead to accidental releases or spills:
 - The employees should have the tools and knowledge to immediately begin cleaning up a spill if one should occur.
 - Employees should be familiar with the Spill Prevention and Plan
- Training of staff should focus on recognizing and reporting potential or current spills/leaks and who they should contact.

Spill Response and Prevention

- Identify key spill response personnel and train employees on who they are.
- Store and maintain appropriate spill cleanup materials in a clearly marked location near storage areas; and train employees to ensure familiarity with the site's spill control plan and/or proper spill cleanup procedures.
- Locate spill cleanup materials, such as absorbents, where they will be readily accessible (e.g. near storage and maintenance areas, on field trucks). Follow the Spill Prevention and Control Plan.
- If a spill occurs, notify the key spill response personnel immediately. If the material is unknown or hazardous, the local fire department may also need to be contacted.
- If safe to do so, attempt to contain the material and block the nearby storm drains so that the area impacted is minimized. If the material is unknown or hazardous wait for properly trained personnel to contain the materials.
- Perform an assessment of the area where the spill occurred and the downstream area that it could impact. Relay this information to the key spill response and clean up personnel.

Spill Cleanup Procedures

- Small non-hazardous spills
 - Use a rag, damp cloth or absorbent materials for general clean up of liquids
 - Use brooms or shovels for the general clean up of dry materials
 - If water is used, it must be collected and properly disposed of. The wash water can not be allowed to enter the storm drain.
 - Dispose of any waste materials properly
 - Clean or dispose of any equipment used to clean up the spill properly
- Large non-hazardous spills
 - Use absorbent materials for general clean up of liquids
 - Use brooms, shovels or street sweepers for the general clean up of dry materials
 - If water is used, it must be collected and properly disposed of. The wash water can not be allowed to enter the storm drain.
 - Dispose of any waste materials properly
 - Clean or dispose of any equipment used to clean up the spill properly

SC-2 Spill Prevention, Control & Cleanup

Reporting

- Report any spills immediately to immediate supervisor and to the identified spill response personnel. Report spills in accordance with applicable reporting laws. Spills that pose an immediate threat to human health or the environment may also need to be reported within 24 hours to the Regional Water Quality Control Board.
- Federal regulations require that any oil spill into a water body be reported to the National Response Center (NRC) at 800-424-8802 (24 hour)
- After the spill has been contained and cleaned up, a detailed report about the incident should be generated and kept on file (see the section on Reporting below). The incident may also be used in briefing staff about proper procedures.

Maintenance

- This BMP has no major administrative or staffing requirements. However, extra time is needed to properly handle and dispose of spills, which results in increased labor costs

Reporting

Record keeping and internal reporting should improve the efficiency of our response and containment of a spill and will minimize incident recurrence. The information will help the CCD staff correctly respond with appropriate containment and cleanup activities, and comply with legal requirements. Incident records should describe the quality and quantity of non-storm water discharges to the storm drain. These records should contain the following information:

- Date and time of the incident
- Weather conditions
- Duration of the spill/leak/discharge
- Cause of the spill/leak/discharge
- Response procedures implemented
- Persons notified
- Environmental problems associated with the spill/leak/discharge

Reporting

Separate record keeping systems and copies should be established to document housekeeping and preventive maintenance inspections, and training activities. All housekeeping and preventive maintenance inspections should be documented. Inspection documentation should contain the following information:

- The date and time the inspection was performed
- Name of the inspector
- Items inspected
- Problems noted
- Corrective action required
- Date corrective action was taken
- Record results: field notes, timed and dated photographs, videotapes, and drawings, or maps etc.

References and Resources

California Storm water BMP Handbook Municipal
www.cabmphandbooks.com

King County Storm water Pollution Control Manual - <http://dnr.metrokc.gov/wlr/dss/spcm.htm>

Orange County Storm water Program

http://www.ocwatersheds.com/stormwater/swp_introduction.asp

San Diego Storm water Co-permittees Jurisdictional Urban Runoff Management Program (URMP)

<http://www.projectcleanwater.org/pdf/Model%20Program%20Municipal%20Facilities.pdf>

SC-3 Vehicle and Equipment Fueling

Description

Spills and leaks that occur during vehicle and equipment fueling can contribute hydrocarbons, oil and grease, as well as heavy metals to storm water runoff. Implementing the following management practices can help prevent fuel spills and leaks.

Approach

Reduce potential for pollutant discharge through source control pollution prevention and BMP implementation. Successful implementation depends on effective training of employees on applicable BMPs and general pollution prevention strategies and objectives.

Pollution Prevention

- Use Solid Waste Management fueling stations whenever possible. SWMD is better equipped to handle fuel and spills properly.
- Educate employees about pollution prevention measures and goals
- Focus pollution prevention activities on containment of spill and leaks.

General Protocols

- "Spot clean" leaks and drips routinely. Leaks are not cleaned up until the absorbent is picked up and disposed of properly.
- Report leaking vehicles to fleet maintenance.
- Ensure the following safeguards are in place:
 - Overflow protection devices on tank systems to warn the operator to automatically shutdown transfer pumps when the tank reaches full capacity.
 - Clearly tagging or labeling all valves to reduce human error.

Fuel Dispensing Areas

- Maintain clean fuel-dispensing areas using dry cleanup methods such as sweeping for removal of litter and debris, or use of rags and absorbents for leaks and spills. Do not wash down areas with water.

Outdoor Waste Receptacle Area

- Spot clean leaks and drips routinely to prevent runoff of spillage.
- Minimize the possibility of storm water pollution from outside waste receptacles by using the following:
 - Locate waste receptacle in an area to prevent run-on of storm water
 - Install a low containment berm around the waste receptacle area
 - Containment areas must be properly maintained and collected water disposed of properly (e.g., to sanitary sewer).
 - Post "no littering" signs.

Training

- Train all employees upon hiring and annually thereafter on proper methods for handling and disposing of waste.
- Make sure that all employees understand storm water discharge prohibitions, wastewater discharge requirements, and these best management practices.
- Train employees on proper fueling and cleanup procedures.
- Use a training log or similar method to document training.
- Ensure that employees are familiar with the site's spill control plan and/or proper spill cleanup procedures.

SC-3 Vehicle and Equipment Fueling

Spill Response and Prevention

- Keep your Spill Prevention Control and Countermeasure (SPCC) Plan up-to-date.
- Place stockpiles of spill cleanup materials where they are readily accessible.
- Use adsorbent materials on small spills and general cleaning rather than hosing down the area.
- Remove the adsorbent materials promptly and dispose properly.
- Report spills promptly.
- Keep ample supplies of spill cleanup materials onsite.
- Inspect fueling areas, storage tanks, catch basin inserts, containment areas, and drip pans on a regular schedule.

References and Resources

California Storm water BMP Handbook Municipal

www.cabmphandbooks.com

Best Management Practice Guide for Retail Gasoline Outlets, California Storm water Quality Task Force. 1997.

King County Storm water Pollution Control Manual –

<http://www.dnr.metrokc.gov/wlr/dss/spcm.htm>

Orange County Storm water Program

http://www.ocwatersheds.com/StormWater/swp_introduction.asp

San Diego Storm water Co-permittees Jurisdictional Urban Runoff Management Program

SC-4 Vehicle and Equipment Cleaning

Description

Wash water from vehicle and equipment cleaning activities performed outdoors or in areas where wash water flows onto the ground can contribute toxic hydrocarbons and other organic compounds, oils and greases, nutrients, phosphates, heavy metals, and suspended solids to storm water runoff. Use of the procedures outlined below can prevent or reduce the discharge of pollutants to storm water during vehicle and equipment cleaning.

Approach

Reduce potential for pollutant discharge through source control pollution prevention and BMP implementation. Successful implementation depends on effective training of employees on applicable BMPs and general pollution prevention strategies and objectives

Pollution Prevention

- If possible, use properly maintained SWMD washing and steam cleaning area whenever possible. It is better equipped to handle and properly dispose of the wash waters.
- Good housekeeping practices can minimize the risk of contamination from wash water discharges.

General Protocols

- Clearly mark a wash area for small power tools.
- Post signs stating that only limited small power tools washing is allowed in wash area and that discharges to the storm drain are prohibited.
- Utilize a low containment berm (sand bags) around the small power tools washing area
- Provide a trash container in wash area.
- Map on-site storm drain locations to avoid discharges to the storm drain system.

Vehicle and Equipment Cleaning

Employees are to utilize the SWMD vehicles and equipment washing facility inside the building at the Edith facility. This will help to control the targeted constituents by directing them to the sanitary sewer.

If washing must occur on-site and outdoor:

- Use designated paved wash areas.
- Oil changes and other engine maintenance cannot be conducted in the designated washing area. Perform these activities in a place designated for such activities.
- Use hoses with nozzles that automatically turn off when left unattended.
- Discharge equipment wash water to the sanitary sewer, regardless of the washing method used.
- Discharge wash water to sanitary sewer only after contacting the local sewer authority to find out if pretreatment is required.

Training

- Train employees on proper cleaning and wash water disposal procedures and conduct “refresher” courses on a regular basis.
- Train staff on proper maintenance measures for the wash area.
- Train employees on proper spill containment and cleanup. The employee should have the tools and knowledge to immediately begin cleaning up a spill if one should occur.

SC-4 Vehicle and Equipment Cleaning

Spill Response and Prevention

- Refer to SC-2, Spill Prevention, Control and Cleanup.
- Keep your Spill Prevention Control and Counter Measure (SPCC) Plan up-to-date, and implement accordingly.
- Have spill cleanup materials readily available and in a known location.
- Clean up spills immediately and use dry methods if possible.
- Properly dispose of spill cleanup material.

Maintenance

- Berm repair and patching as needed.
- Sweep washing areas frequently to remove solid debris.

References and Resources

<http://www.stormwatercenter.net/>

King County - <ftp://dnr.metrokc.gov/wlr/dss/spcm/Chapter%203.PDF>

Orange County Storm water Program

http://www.ocwatersheds.com/StormWater/swp_introduction.asp

San Diego Storm water Co-permittees Jurisdictional Urban Runoff Management Program (URMP)

<http://www.projectcleanwater.org/pdf/Model%20Program%20Municipal%20Facilities.pdf>

SC-5 Vehicle and Equipment Repair

Description

Vehicle or equipment maintenance and repair is potentially a significant source of storm water pollution, due to the use of materials and wastes created that are harmful to humans and the environment. Engine repair and service (e.g. parts cleaning), replacement of fluids (e.g. oil change), and outdoor equipment storage and parking (dripping engines) can impact water quality if storm water runoff from areas with these activities occurring on them becomes polluted by a variety of contaminants. Implementation of the following activities will prevent or reduce the discharge of pollutants to storm water from vehicle and equipment maintenance and repair activities.

Approach

Pollution Prevention

- Keep accurate maintenance logs to evaluate materials use.
- Switch to non-toxic chemicals for maintenance when possible.
- Choose cleaning agents that can be recycled.
- Minimize use of solvents. Clean parts without using solvents whenever possible.
- Keep an accurate, up-to-date inventory of materials.
- Recycle used motor oil, diesel oil, and other vehicle fluids and parts whenever possible.

General Protocols

- Move maintenance and repair activities indoors whenever feasible.
- Store idle equipment containing fluids under cover.
- Use a small shop maintenance area to prevent storm water pollution. Minimize contact of storm water with outside operations through berming.
- Avoid hosing down your work areas. If work areas are washed, collect and direct wash water to sanitary sewer.
- Post signs at sinks to remind employees, not to pour hazardous wastes down drains.
- Do not pour materials down drains or hose down work areas; use dry sweeping.
- Store and cover idle equipment (riding mowers) to limit exposure to the rain.

Material and Waste Handling

- Store materials and wastes under cover whenever possible.
- Designate a special area to drain and replace motor oil, coolant, and other fluids. This area should not have any connections to the storm drain or the sanitary sewer and should allow for easy clean up of drips and spills.
- Do not dispose of used or leftover cleaning solutions, solvents, and automotive fluids and oil in the sanitary sewer.
- Dispose of all waste materials according to applicable laws and regulations.
- Collect leaking or dripping fluids in drip pans or containers. Fluids are easier to recycle if kept separate.
- Promptly transfer used fluids to the proper waste or recycling drums and store in an appropriately designed area that can contain spills. Don't leave drip pans or other open containers lying around.
- Do not dispose of oil filters in trash cans or dumpsters, which may leak oil and contaminate storm water. Place the oil filter in a funnel over a waste oil recycling drum to drain excess oil before disposal. Most municipalities prohibit or discourage disposal of these items in solid waste facilities. Oil filters can also be recycled. Ask oil supplier or recycler about recycling oil filters.
- Store cracked and/or dead batteries in a non-leaking covered secondary container and deliver to Solid Waste facilities for proper disposal.

SC-5 Vehicle and Equipment Repair

Maintenance and Repair Activities

- Provide a designated area for vehicle maintenance.
- Keep equipment clean; don't allow excessive build-up of oil and grease.
- If temporary work is being conducted outside: Use a tarp, ground cloth, or drip pans beneath the vehicle or equipment to capture all spills and drips. The collected drips and spills must be disposed, reused, or recycled properly.
- If possible, perform all vehicle fluid removal or changing inside or under cover to prevent the run-on of storm water and the runoff of spills:
 - Keep a drip pan under the vehicle while you unclip hoses, unscrew filters, or remove other parts. Use a drip pan under any vehicle that might leak while you work on it to keep splatters or drips off the shop floor.
 - Promptly transfer used fluids to the proper waste or recycling drums. Don't leave drip pans or other open containers lying around.
 - Keep drip pans or containers under vehicles or equipment that might drip during repairs.
 - Do not change motor oil or perform equipment maintenance in non-appropriate areas.
- Monitor parked vehicles closely for leaks and place pans under any leaks to collect the fluids for proper disposal or recycling.

Parts Cleaning

- Clean vehicle parts without using liquid cleaners wherever possible to reduce waste.
- Do all liquid cleaning at a centralized station so the solvents and residues stay in one area.

Inspection

Regularly inspect vehicles and equipment for leaks, and repair immediately and apply controls accordingly.

Training

- Train employees in the proper handling and disposal of engine fluids and waste materials.
- Ensure that employees are familiar with the site's spill control plan and/or proper spill cleanup procedures (You can use reusable cloth rags to clean up small drips and spills instead of disposables; these can be washed by a permitted industrial laundry. (Do not clean them at home or at a coin-operated laundry business). The employee should have the tools and knowledge to immediately begin cleaning up a spill if one should occur.
- Use a training log or similar method to document training.

Spill Response and Prevention

- Refer to SC-2 Spill Prevention, Control & Cleanup for more information.
- Keep Spill Prevention Control and Countermeasure (SPCC) Plan up-to-date, and implement accordingly.
- Place adequate stockpiles of spill cleanup materials where they are readily accessible. Clean leaks, drips, and other spills with as little water as possible. Use rags for small spills, a damp mop for general cleanup, and dry absorbent material for larger spills. Use the following three-step method for cleaning floors:
 - Clean spills with rags or other absorbent materials
 - Sweep floor using dry absorbent material
 - Mop the floor. Mop water may be discharged to the sanitary sewer via a toilet or sink.
- Remove absorbent materials used for cleaning small spills promptly and properly.
- Do not saturate rags or absorbent material to eliminate need for disposal of spilled material as hazardous waste.

SC-5 Vehicle and Equipment Repair

Other Considerations

- Space and time limitations may preclude all work being conducted indoors.
- It may not be possible to contain and clean up spills from vehicles/equipment brought onsite after working hours.
- Clean City facility can be limited by a lack of providers of recycled materials.

Maintenance

- Sweep the maintenance area weekly, if it is paved, to collect loose particles, and wipe up spills with rags and other absorbent material immediately, do not hose down the area to a storm drain.

Recycling

- Separating wastes allows for easier recycling and may reduce treatment costs. Keep hazardous and non-hazardous wastes separate, do not mix used oil and solvents, and keep chlorinated solvents (e.g., 1, 1, 1-trichloroethane) separate from non-chlorinated solvents (e.g., kerosene and mineral spirits).
- Many products made of recycled (i.e., refined or purified) materials are available. Engine oil, transmission fluid, antifreeze, and hydraulic fluid are available in recycled form. Buying recycled products supports the market for recycled materials.
- Recycling is always preferable to disposal of unwanted materials.
- Separate wastes for easier recycling. Keep hazardous and non-hazardous wastes separate, do not mix used oil and solvents, and keep chlorinated solvents separate from non-chlorinated solvents.
- Label and track the recycling of waste material (e.g. used oil, spent solvents, batteries)
- Purchase recycled products to support the market for recycled materials.

Safer Alternatives

- If possible, eliminate or reduce the amount of hazardous materials and waste by substituting non-hazardous or less hazardous material:
 - Use non-caustic detergents instead of caustic cleaning for parts cleaning.
 - Use detergent-based or water-based cleaning systems in place of organic solvent degreasers.
 - Wash water may require treatment before it can be discharged to the sewer.
 - Replace chlorinated organic solvents with non-chlorinated solvents. Non-chlorinated solvents like kerosene or mineral spirits are less toxic and less expensive to dispose of properly. Check list of active ingredients to see whether it contains chlorinated solvents.
 - Choose cleaning agents that can be recycled.
 - Refer to SC-14 Safer Alternative Products fact sheet for more information.

References and Resources

DTSC Doc. No. 619a Switching to Water Based Cleaners

DTSC Doc. No. 621 <http://www.stormwatercenter.net/>

King County - <ftp://dnr.metrokc.gov/wlr/dss/spcm/Chapter%203.PDF>

Model Urban Runoff Program: A How-To-Guide for Developing Urban Runoff Programs for Small Municipalities.

Orange County Storm water Program

http://www.ocwatersheds.com/StormWater/swp_introduction.asp

San Diego Storm water Co-permittees Jurisdictional Urban Runoff Management Program (URMP) -

<http://www.projectcleanwater.org/pdf/Model%20Program%20Municipal%20Facilities.pdf>

SC-6 Outdoor Loading/Unloading

Description

The loading/unloading of materials usually takes place outside on docks; therefore, materials spilled, leaked, or lost during loading/unloading may collect on paved surfaces and have the potential to be carried away by storm water runoff or when the area is cleaned. Additionally, rainfall may wash pollutants from machinery used to unload or move materials. Loading and unloading of material may include package products, barrels, and bulk products. Implementation of the following protocols will prevent or reduce the discharge of pollutants to storm water from outdoor loading/unloading of materials.

Approach

Pollution Prevention

- Keep accurate maintenance logs to evaluate materials removed and improvements made.
- Park tank trucks or delivery vehicles in designated areas so that spills or leaks can be contained.
- Limit exposure of materials with the potential to contaminate storm water.
- Prevent storm water run-on.
- Regularly check equipment for leaks.

General Protocols

Loading and Unloading – General Guidelines

- Do not conduct loading and unloading during wet weather, whenever possible.
- If feasible, load and unload all materials and equipment in covered areas such as building overhangs at loading docks.
- Load/unload only at designated loading areas.
- Use drip pans underneath hose and pipe connections and other leak-prone spots during liquid transfer operations, and when making and breaking connections. Several drip pans should be stored in a covered location near the liquid transfer area so that they are always available, yet protected from precipitation when not in use. Drip pans must be cleaned periodically, and drip collected materials must be disposed of properly.

Inspection

- Check loading and unloading equipment regularly for leaks, including valves, pumps, flanges and connections.
- Look for dust or fumes during loading or unloading operations.

Training

- Train employees (e.g. fork lift operators) and contractors on proper spill containment and cleanup.
- Employees trained in spill containment and cleanup should be present during the loading/unloading.
- Train employees in proper handling techniques during liquid transfers to avoid spills.
- Make sure forklift operators are properly trained on loading and unloading procedures.

Spill Response and Prevention

- Refer to SC-2, Spill Prevention, Control & Cleanup
- Keep your spill prevention Control and countermeasure (SPCC) Plan up-to-date, and implement accordingly.
- Have spill cleanup materials readily available and in a known location.
- Cleanup spills immediately and use dry methods if possible.
- Properly dispose of spill cleanup material.

SC-6 Outdoor Loading/Unloading

Other Consideration

- Space, material characteristics and/or time limitations may preclude all transfers from being performed indoors or under cover.

Maintenance

- Conduct regular inspections and make repairs as necessary.
- The frequency of repairs will depend on the age of the facility.
- Check loading and unloading equipment regularly for leaks.
- Regular broom dry-sweeping of area.
- Conduct clean-up of loading and unloading area on a routine basis.

Special Circumstances for Indoor Loading/Unloading of Materials

- As appropriate loading or unloading of liquids should occur indoors so that any spills that are not completely retained can be discharged to the sanitary sewer, treatment plant, or treated in a manner consistent with local sewer authorities and permit requirements.

References and Resources

<http://www.stormwatercenter.net/>

King County - <ftp://dnr.metrokc.gov/wlr/dss/spcm/Chapter%203.PDF>

Orange County Storm water Program

http://www.ocwatersheds.com/StormWater/swp_introduction.asp

San Diego Storm water Co-permittees Jurisdictional Urban Runoff Management Program (URMP) -

<http://www.projectcleanwater.org/pdf/Model%20Program%20Municipal%20Facilities.pdf>

SC-7 Outdoor Container Storage

Description

Accidental releases of materials from above ground liquid storage tanks, drums, and dumpsters present the potential for contaminating storm waters with many different pollutants. Tanks may store many potential storm water runoff pollutants, such as gasoline, diesel fuel, solvents etc. Materials spilled, leaked, or lost from storage tanks may accumulate on paved surfaces and be carried away by rainfall runoff. These source controls apply to containers located outside of a building used to temporarily store liquid materials and include installing safeguards against accidental releases, installing secondary containment, conducting regular inspections, and training employees in standard operating procedures and spill cleanup techniques.

Approach

Pollution Prevention

- Educate employees about pollution prevention measures and goals.
- Keep an accurate, up-to-date inventory of the materials delivered and stored on-site. Re-evaluate inventory needs and consider purchasing alternative products.
- Properly dispose of outdated products.
- Try to keep chemicals in their original containers, and keep them well labeled.

General Protocols

- Develop an operations plan that describes procedures for loading and/or unloading.
- Refer to SC-6 Outdoor Loading/Unloading for more detailed BMP information pertaining to loading and unloading of liquids.
- Protect materials from rainfall, run-on, runoff, and wind dispersal:
 - Cover the storage area with a roof.
 - Minimize storm water run-on by enclosing the area or building a beam around it.
 - Use a “doghouse” structure for storage of liquid containers.
 - Use covered dumpsters for waste product containers.
- Employ safeguards against accidental releases:
 - Provide overflow protection devices to warn operator or automatic shut down transfer pumps.
 - Provide protection guards (bollards) around tanks and piping to prevent vehicle or forklift damage, and provide clear tagging or labeling, and restricting access to valves to reduce human error.
- Beam or surround tank or container with secondary containment system using dikes, liners, vaults, or double walled tanks.
- Contact the appropriate regulatory agency regarding environmental compliance for facilities with “spill ponds” designed to intercept, treat, and/or divert spills.
- Have registered and specifically trained professional engineers can identify and correct potential problems such as loose fittings, poor welding, and improper or poorly fitted gaskets for newly installed tank systems.

Storage Areas

- Provide storage tank piping located below product level with a shut-off valve at the tank; ideally this valve should be an automatic shear valve with the shut-off located inside the tank.
- Provide barriers such as posts or guard rails, where tanks are exposed, to prevent collision damage with vehicles.
- Provide secure storage to prevent vandalism.
- Place tight-fitting lids on all containers.
- Enclose or cover the containers where they are stored.
- Raise the containers off the ground by use of pallet or similar method, with provisions for spill control and secondary containment.

SC-7 Outdoor Container Storage

Storage Areas (cont)

- Contain the material in such a manner that if the container leaks or spills, the contents will not discharge, flow, or be washed into the storm drainage system, surface waters or groundwater.
- Place drip pans or absorbent materials beneath all mounted container taps, and at all potential drip and spill locations during filling and unloading of containers.
- Drip pans must be cleaned periodically, and all collected liquids and soiled absorbent materials must be reused/recycled or properly disposed.
- Ensure that any drums be identified as a potential pollution source, have secondary containment, such as a berm or dike.
- Rainfall collected in secondary containment system must not contain pollutants for discharge to storm drain system.

Container Management

- Keep containers in good condition without corrosion or leaky seams.
- Place containers in a lean-to structure or otherwise covered to keep rainfall from reaching the drums.
- Replace containers if they are deteriorating to the point where leakage is occurring. Keep all containers undercover to prevent the entry of storm water.
- Employees should be made aware of the importance of keeping the containers free from leaks. Keep waste container drums in an area such as a service bay.
- Drums stored outside must be stored in a lean-to type structure, shed or walk-in container.

Storage of Hazardous Materials

- Storage of reactive, ignitable, or flammable liquids must comply with the fire and hazardous waste codes.
- Place containers in a designated area that is paved, free of cracks and gaps, in order to contain leaks and spills. The area should also be covered.
- Surround stored hazardous materials and waste with a dike to contain spilled material.

Inspection

- Provide regular inspections:
 - Storage areas regularly for leaks or spills.
 - Conduct routine inspections and check for external corrosion of material containers.
 - Also check for structural failure, spills and overfills due to operator error.
 - Replace containers that are leaking, corroded, or otherwise deteriorating with ones in good condition. If the liquid chemicals are corrosive, containers made of compatible materials must be used instead of metal drums.
 - Label new or secondary containers with the product name and hazards.

Training

- Train employees (e.g. fork lift operators) and contractors in proper spill containment and clean up.
- The employee should have the tools and knowledge to immediately begin cleaning up a spill if one should occur.
- Train employees in proper storage measures.
- Use a training log or similar method to document training.

SC-7 Outdoor Container Storage

Spill Response and Prevention

- Keep your Spill Prevention Control and Countermeasure (SPCC) Plan up-to-date, and implement accordingly.
- Have an emergency plan, equipment and trained personnel ready at all times to deal immediately with major spills.
- Collect all spilled liquids and properly dispose of them.
- Employees trained in emergency spill cleanup procedures should be present when dangerous waste, liquid chemicals, or other wastes are delivered.
- Operator errors can be prevented by using engineering safe guards and thus reducing accidental releases of pollutant.
- Store and maintain appropriate spill cleanup materials in a location known to all near the storage area.

Other Considerations

- Storage sheds often must meet building and fire code requirements.
- The local fire district must be consulted for limitations on clearance of roof covers over containers used to store flammable materials.
- All specific standards set by federal and state laws concerning the storage of oil and hazardous materials must be met.
- Storage of reactive, ignitable, or flammable liquids should comply with the Uniform Fire Code and the National Electric Code.
- Storage of oil and hazardous materials must meet specific federal and state standards including:
 - Spill Prevention Control and Countermeasure Plan (SPCC) Plan
 - Secondary containment
 - Integrity and leak detection monitoring
 - Emergency preparedness plans

Maintenance

- Conduct weekly inspection.
- Sweep and clean the storage area regularly if it is paved, do not hose down the area to a storm drain.

Supplemental Information

- The most common causes of unintentional releases are:
 - Installation problems
 - External corrosion and structural failure
 - Spills and overfills due to operator error
 - Leaks during pumping of liquids

Dikes

One of the best protective measures against contamination of storm water is diking. Containment dikes are berm or retaining walls that are designed to hold spills. Diking is an effective pollution prevention measure for above ground storage tanks and unloading areas. The dike surrounds the area of concern and holds the spill, keeping spill materials separated from the storm water side of the dike area. Diking can be used in any industrial or municipal facility, but it is most commonly used for controlling large spills or releases from liquid storage areas and liquid transfer areas.

- Diked areas should be capable of holding an amount equal to the volume of the fluid container.
- Diked construction material should be strong enough to safely hold spilled materials.

SC-7 Outdoor Container Storage

Dikes (cont)

- Dike materials can consist of earth, concrete, synthetic materials, metal, or other impervious materials.
- Dikes should be inspected during or after significant storms or spills to check for washouts or overflows.
- Regular checks of containment dikes to insure the dikes are capable of holding spills should be conducted.
- Inability of a structure to retain storm water, dike erosion, soggy areas, or changes in vegetation indicates problems with dike structures. Damaged areas should be patched and stabilized immediately.
- Accumulated storm water in the containment area should be analyzed for pollutants before it is released to surface waters. If pollutants are found or if storm water quality is not determined, then methods other than discharging to surface waters should be employed (e.g., discharge to sanitary sewer if allowed).
- Earthen dikes may require special maintenance of vegetation such as mulching and irrigation.

Curbing

Curbing is a barrier that surrounds an area of concern. Curbing is similar to containment diking in the way that it prevents spills and leaks from being released into the environment. The curbing is usually small scaled and does not contain large spills like diking. Curbing is common at many facilities in small areas where handling and transfer liquid materials occur. Curbing can redirect storm water away from the storage area. It is useful in areas where liquid materials are transferred from one container to another. Asphalt is a common material used for curbing; however, curbing materials include earth, concrete, synthetic materials, metal, or other impenetrable materials.

- Spilled materials should be removed immediately from curbed areas to allow space for future spills.
- Curbs should have manually-controlled pump systems rather than common drainage systems for collection of spilled materials.
- The curbed area should be inspected regularly to clear clogging debris.
- Maintenance should also be conducted frequently to prevent overflow of any spilled materials as curbed areas are designed only for smaller spills.
- Curbing has the following advantages:
 - Excellent run-on control
 - Ease of installment
 - Provides option to recycle materials spilled in curb areas, and common industry practice.

Examples

The “doghouse” design has been used to store small liquid containers. The roof and flooring design prevent contact with direct rain or runoff. The doghouse has two solid structural walls and two canvas covered walls. The flooring is wire mesh about secondary containment. The unit has been used successfully at Lockheed Missile and Space Company in Sunnyvale.

References and Resources

British Columbia Lake Stewardship Society. Best Management Practices to Protect Water Quality from Non-Point Source Pollution. March 2000

<http://www.nalms.org/bclss/storage.html>

King County Storm water Pollution Control Manual –

<http://dnr.metrokc.gov/wlr/dss/spcm.htm>

San Diego Storm water Co-permittees Jurisdictional Urban Runoff Management Program

(URMP) -

<http://www.projectcleanwater.org/pdf/Model%20Program%20Municipal%20Facilities.pdf>

SC-8 Outdoor Equipment Maintenance

Description

Outside process equipment operations and maintenance can contaminate storm water runoff. Activities, such as grinding, painting, coating, sanding, degreasing or parts cleaning, solid waste disposal, can lead to contamination of storm water runoff. Source controls for outdoor process equipment operations and maintenance include reducing the amount of waste created, enclosing or covering all or some of the equipment, installing secondary containment, and training employees.

Approach

Pollution Prevention

- Perform the activity during dry periods.
- Use non-toxic chemicals for maintenance and minimize or eliminate the use of solvents.

Protocols

- Cover the work area with a permanent roof.
- Minimize contact of storm water with outside process equipment operations through berming and drainage routing (run-on prevention). If allowed, connect process equipment area to public sewer.
- Dry clean the work area regularly.

Training

- Train employees to perform the activity during dry periods only and to use less or non-toxic materials.
- Train employee and contractors in proper techniques for spill containment and cleanup.
- The employee should have the tools and knowledge to immediately begin cleaning up a spill if one should occur.

Spill Response and Prevention

- Refer to SC-2, Spill Prevention, Control & Cleanup
- Keep your spill prevention control and countermeasure (SPCC) plan up-date, and implement accordingly.
- Have spill cleanup materials readily available and in a known location.
- Cleanup spills immediately and use dry methods if possible.
- Properly dispose of spill cleanup material.

Other Considerations

- Space limitations may preclude enclosing some equipment.
- Storage sheds often must meet building and fire code requirements.

Maintenance

- Conduct routine preventive maintenance, including checking equipment for leaks.
- Clean the storm drain system regularly.

References and Resources

Clark County Storm water Pollution Control Manual

<http://www.co.clark.wa.us/pubworks/bmpman.pdf>

King County Storm water Pollution Control Manual <http://dnr.metrokc.gov/wlr/dss/spcm.htm>

Santa Clara Valley Urban Runoff Pollution Prevention Program <http://www.scvurppp.org>

The Storm water Managers Resource Center <http://www.stormwatercenter.net/>

SC-9 Outdoor Storage of Raw Materials

Description

To prevent or reduce the discharge of pollutants to storm water from material delivery and storage, pollution prevention and source control measures, such as minimizing the storage of hazardous materials on-site, enclosing or covering materials, storing materials in a designated area, installing secondary containment, conducting regular inspections, preventing storm water run-on and runoff, and training employees and subcontractors must be implemented.

Approach

Pollution Prevention

- Employee education is paramount for successful BMP implementation.
- Minimize inventory of raw materials.
- Keep an accurate, up-to-date inventory of the materials delivered and stored on-site.
- Try to keep chemicals in their original containers, and keep them well labeled.

General Protocols

- Store all materials inside whenever possible. If this is not feasible, then all outside storage areas should be covered with a roof, and bermed, or enclosed to prevent storm water contact. At the very minimum, a temporary waterproof covering made of polyethylene; polypropylene or hypalon should be used over all materials stored outside.
- Keep liquids in a designated area on a paved surface within a secondary containment.
- Keep outdoor storage containers in good condition.
- Keep storage areas clean and dry.
- Secure drums stored in an area where unauthorized persons may gain access to prevent accidental spillage, pilferage, or any unauthorized use.

Raw Material Containment

- Do not store chemicals, drums, or bagged materials directly on the ground. Place these items in secondary containers if applicable.

Inspection

- Conduct regular inspections of storage areas so that leaks and spills are detected as soon as possible.
- Conduct routine inspections and check for external corrosion of material containers. Also check for structural failure, spills and overfills due to operator error.

Training

- Employees should be well trained in proper material storage.
- Train employees in proper techniques for spill containment and cleanup.

Spill Response and Prevention

- Refer to SC-2, Spill Prevention, Control & Cleanup.
- Keep your Spill Prevention Control and countermeasure (SPCC) plan up-to-date, and implement accordingly.
- Have spill cleanup materials readily available and in a known location.
- Cleanup spills immediately and use dry methods if possible.

SC-9 Outdoor Storage of Raw Materials

Spill Response and Prevention (cont...d)

- Properly dispose of spill cleanup material.
- Have employees trained in spill containment and cleanup present during loading/unloading of dangerous waste, liquid chemicals and other potentially hazardous materials.

Other Considerations

- Storage sheds often must meet building and fire code requirements. Storage of reactive, ignitable, or flammable liquids must comply with the Uniform Fire Code and the National Electric Code.
- Space limitations may preclude storing some materials indoors.
- The local fire district must be consulted for limitations on clearance of roof covers over containers used to store flammable materials.

Maintenance

- Accurate and up-to-date inventories should be kept of all stored materials.
- Berms and curbs may require periodic repair and patching.
- Parking lots or other surfaces near bulk materials storage areas should be swept periodically to remove debris blown or washed from storage area.
- Sweep paved storage areas regularly for collection and disposal of loose solid materials, do not hose down the area to a storm drain or conveyance ditch.
- Keep outdoor storage areas in good condition (e.g. repair roofs, floors, etc. to limit releases to runoff).

Examples

- The “doghouse” design has been used to store small liquid containers. The roof and flooring design prevents contact with direct rain or runoff. The doghouse has two solid structural walls and two canvas covered walls. The flooring is wire mesh about secondary containment. The unit has been used successively at Lockheed Missile and Space Company in Sunnyvale.

References and Resources

- King County Storm water Pollution Control Manual - <http://dnr.metrokc.gov/wlr/dss/spcm.htm>
- Model Urban Runoff Program: A How-To-Guide for Developing Urban Runoff Programs for Small Municipalities. Prepared by City of Monterey, City of Santa Cruz, California Coastal Commission, Monterey Bay National Marine Sanctuary, Association of Monterey Bay Area Governments, Woodward-Clyde, Central Coast Regional Water Quality Control Board. July 1998 (Revised February 2002 by the California Coastal Commission).
- Orange County Storm water Program
- http://www.ocwatersheds.com/StormWater/swp_introduction.asp
- San Diego Storm water Co-permittees Jurisdictional Urban Runoff Management Program(URMP)
- <http://www.projectcleanwater.org/pdf/Model%20Program%20Municipal%20Facilities.pdf>

SC-10 Facility Waste Handling & Disposal

Description

The discharge of pollutants to storm water from waste handling and disposal can be prevented and reduced by tracking waste generation, storage, and disposal; reducing waste generation and disposal through source reduction, re-use, and recycling; and preventing run-on and runoff.

Approach

Pollution Prevention

- Reduction in the amount of waste generated can be accomplished using the following source controls such as:
 - Production planning and sequencing
 - Process or equipment modification
 - Raw material substitution or elimination
 - Loss prevention and housekeeping
 - Waste segregation and separation
 - Close loop recycling
 - Establish a material tracking system to increase awareness about material usage. This may reduce spills and minimize contamination, thus reducing the amount of waste produced.
 - Recycle materials whenever possible.

General Protocols

Cover storage containers with leak proof lids or some other means. If waste is not in containers, cover all waste piles (plastic tarps are acceptable coverage) and prevent storm water run-on and runoff with a berm. The waste containers or piles must be covered except when in use.

- Use drip pans or absorbent materials whenever grease containers are emptied by vacuum trucks or other means. Grease cannot be left on the ground. Collected grease must be properly disposed of as garbage.
- Check storage containers weekly for leaks and to ensure that lids are on tightly. Replace any that are leaking, corroded, or otherwise deteriorating.
- Sweep and clean the storage area regularly. If it is paved, do not hose down the area to a storm drain.
- Dispose of rinse and wash water from cleaning waste containers into a sanitary sewer if allowed by the local sewer authority. Do not discharge wash water to the street or storm drain.
- Transfer waste from damaged containers into safe containers.
- Take special care when loading or unloading wastes to minimize losses. Loading systems can be used to minimize spills and fugitive emission losses such as dust or mist. Vacuum transfer systems can minimize waste loss.

Controlling Litter

- Post “No Littering” signs and enforce anti-litter laws.
- Provide a sufficient number of litter receptacles for the facility.
- Clean out and cover litter receptacles frequently to prevent spillage.

Waste Collection

- Keep waste collection areas clean.
- Inspect solid waste containers for structural damage or leaks regularly. Repair or replace damaged containers as necessary.
- Secure solid waste containers; containers must be closed tightly when not in use.
- Place waste containers under cover if possible.

- Do not fill waste containers with washout water or any other liquid.

SC-10 Waste Handling & Disposal

Waste Collection (cont)

- Ensure that only appropriate solid wastes are added to the solid waste container. Certain wastes such as hazardous wastes, appliances, fluorescent lamps, pesticides, etc. may not be disposed of in solid waste containers.
- Do not mix wastes; this can cause chemical reactions, make recycling impossible, and complicate disposal.

Good Housekeeping

- Use the entire product before disposing of the container.
- Keep the waste management area clean at all times by sweeping and cleaning up spills immediately.
- Use dry methods when possible (e.g. sweeping, use of absorbents)

Chemical/Hazardous Wastes

- Select designated hazardous waste collection areas on-site.
- Store hazardous materials and wastes in covered containers protected from vandalism, and in compliance with fire and hazardous waste codes.
- Place hazardous waste containers in secondary containment.
- Make sure that hazardous waste is collected, removed, and disposed of only at authorized disposal areas.

Run-on/Runoff Prevention

- Prevent storm water run-on from entering the waste management area by enclosing the area or building a berm around the area if feasible.
- Cover the area with a permanent roof if feasible.
- Cover dumpsters to prevent rain from washing waste out of holes or cracks in the bottom of the dumpster.

Inspection

- Inspect and replace faulty pumps or hoses regularly to minimize the potential of releases and spills.
- Check waste management areas for leaking containers or spills.
- Repair leaking equipment including valves, lines, seals, or pumps promptly.

Training

- Train staff pollution prevention measures and proper disposal methods.
- Train employees proper spill containment and cleanup. The employee should have the tools and knowledge to immediately begin cleaning up a spill if one should occur.
- Train employees in proper hazardous waste management.

Spill Response and Prevention

- Refer to SC-2, Spill Prevention, Control & Cleanup.
- Keep your Spill Prevention Control and countermeasure (SPCC) plan up-to-date, and implement accordingly.
- Have spill cleanup materials readily available and in a known location.
- Cleanup spills immediately and use dry methods if possible.
- Properly dispose of spill cleanup material.

SC-10 Facility Waste Handling & Disposal

Other Considerations

Hazardous waste cannot be re-used or recycled; it must be disposed of by a licensed hazardous waste hauler.

Maintenance

- None except for maintaining equipment for material tracking program.

References and Resources

King County Storm water Pollution Control Manual - <http://dnr.metrokc.gov/wlr/dss/spcm.htm>

Orange County Storm water Program

http://www.ocwatersheds.com/StormWater/swp_introduction.asp

Pollution from Surface Cleaning Folder. 1996. Bay Area Storm water Management Agencies

Associations (BASMAA). On-line: <http://www.basmaa.org>

SC-11 Building & Grounds Maintenance

Description

Utilizing the following protocols will prevent or reduce the discharge of pollutants to storm water from building and grounds maintenance activities by washing and cleaning up with as little water as possible, following good landscape management practices, preventing and cleaning up spills immediately, keeping debris from entering the storm drains, and maintaining the storm water collection system.

Approach

Pollution Prevention

- Switch to non-toxic chemicals for maintenance when possible.
- Choose cleaning agents that can be recycled.
- Encourage proper lawn management and landscaping, including use of native vegetation.
- Encourage use of Integrated Pest Management techniques for pest control.
- Encourage proper onsite recycling of yard trimmings.
- Recycle residual paints, solvents, lumber, and other material as much as possible.

General Protocols

Pressure Washing of Buildings, Rooftops, and Other Large Objects

- If soaps or detergents are not used, and the surrounding area is paved, wash water runoff does not have to be collected but may be screened if practical. Pressure washers may use filter fabric or some other type of screen on the ground and/or in the catch basin to trap the particles in wash water runoff.

Landscaping Activities

- Do not apply any chemicals (insecticide, herbicide, or fertilizer) directly to surface waters, unless the application is approved and permitted by the state.
- Dispose of grass clippings, leaves, sticks, or other collected vegetation as garbage. Do not dispose of collected vegetation into waterways or storm drainage systems.

Building Repair, Remodeling, and Construction

- Do not dump any toxic substance or liquid waste on the pavement, the ground, or toward a storm drain.
- Use ground or drop cloths underneath outdoor painting, scraping, and sandblasting work, and properly dispose of collected material daily.
- Use a ground cloth or oversized tub for activities such as paint mixing and tool cleaning.
- Clean paint brushes and tools covered with water-based paints in sinks connected to sanitary sewers or in portable containers that can be dumped into a sanitary sewer drain. Brushes and tools covered with non-water-based paints, finishes, or other materials must be cleaned in a manner that enables collection of used solvents (e.g., paint thinner, turpentine, etc.) for recycling or proper disposal.
- Store toxic material under cover with secondary containment during precipitation events and when not in use. A cover would include tarps or other temporary cover material.

Pesticide Management

- Follow all federal, state, and local laws and regulations governing the use, storage, and disposal of fertilizers and pesticides and training of applicators and pest control advisors.
- Follow manufacturers' recommendations and label directions. Pesticides must never be applied if precipitation is occurring or predicted. Do not apply insecticides within 100 feet of surface waters such as lakes, ponds, wetlands, and streams.
- Use less toxic pesticides that will do the job, whenever possible. Avoid use of copper-based pesticides if possible.

SC-11 Building & Grounds Maintenance

Pesticide Management (cont.)

- Do not use pesticides if rain is expected.
- Do not mix or prepare pesticides for application near storm drains.
- Use the minimum amount needed for the job.
- Calibrate distributors to avoid excessive application.
- Employ techniques to minimize off-target application (e.g. spray drift) of pesticides, including consideration of alternative application techniques.
- Apply pesticides only when wind speeds are low.
- Dispose of empty pesticide containers according to the instructions on the container label.
- Use up the pesticides. Rinse containers, and use rinse water as product. Dispose of unused pesticide as hazardous waste.
- Implement storage requirements for pesticide products with guidance from the local fire department and County Agricultural Commissioner. Provide secondary containment for pesticides if required.

Training

- Educate and train employees on use of pesticides and in pesticide application techniques to prevent pollution.
- Train employees and contractors in proper techniques for spill containment and cleanup.
- Be sure the frequency of training takes into account the complexity of the operations and the nature of the staff.

Spill Response and Prevention

- Refer to SC-2, Spill Prevention, Control & Cleanup
- Keep your Spill Prevention Control and countermeasure (SPCC) plan up-to-date, and implement accordingly.
- Have spill cleanup materials readily available and in a known location.
- Cleanup spills immediately and use dry methods if possible.
- Properly dispose of spill cleanup material.

Other Considerations

- Alternative pest/weed controls may not be available, suitable, or effective in many cases

Maintenance

- Sweep paved areas regularly to collect loose particles, and wipe up spills with rags and other absorbent material immediately; do not hose down the area to a storm drain.

References and Resources

California's Nonpoint Source Program Plan <http://www.swrcb.ca.gov/nps/index.html>
King County - <ftp://dnr.metrokc.gov/wlr/dss/spcm/Chapter%203.PDF>
Orange County Storm water Program
http://www.ocwatersheds.com/StormWater/swp_introduction.asp
Mobile Cleaners Pilot Program: Final Report. 1997. Bay Area Storm water Management Agencies Association (BASSMA) <http://www.basmaa.org/>
Pollution from Surface Cleaning Folder. 1996. Bay Area Storm water Management Agencies Association (BASMAA) <http://www.basmaa.org/>
San Diego Storm water Co-permittees Jurisdictional Urban Runoff Management Program (URMP) - <http://www.projectcleanwater.org/pdf/Model%20Program%20Municipal%20Facilities.pdf>

SC-12 Parking/Storage Area Maintenance

Description

The following protocols are intended to prevent or reduce the discharge of pollutants from parking/storage areas and include using good housekeeping practices, following appropriate cleaning BMPs, and training employees.

Approach

Pollution Prevention

- Keep accurate maintenance logs to evaluate BMP implementation.

General Protocols

- Keep the parking and storage areas clean and orderly. Remove debris in a timely fashion.
- Sweep parking areas on a routine basis.

Controlling Litter

- Post “No Littering” signs and enforce anti-litter laws.
- Provide an adequate number of litter receptacles.
- Clean out and cover litter receptacles frequently to prevent spillage.
- Provide trash receptacles in parking lots to discourage litter.
- Routinely sweep, shovel and dispose of litter in the trash.

Surface cleaning

- Use dry cleaning methods (e.g. sweeping or vacuuming) to prevent the discharge of pollutants into the storm water conveyance system.
- Establish frequency of public parking lot sweeping based on usage and field observations of waste accumulation.
- Sweep all parking lots at least once before the onset of the wet season.
- Dispose of parking lot sweeping debris and dirt at a landfill.

When cleaning heavy oily deposits:

- Use absorbent materials on oily spots prior to sweeping or washing.
- Dispose of used absorbents appropriately.
- Use only as much water as necessary for dust control, to avoid runoff.

Inspection

- Have designated personnel conduct inspections of the parking facilities and storm water conveyance systems associated with them on a regular basis.
- Inspect cleaning equipment/sweepers for leaks on a regular basis.

Training

- Provide regular training to field employees regarding cleaning of paved areas and proper operation of equipment.
- Train employees in proper techniques for spill containment and cleanup.

Spill Response and Prevention

- Refer to SC-2, Spill Prevention, Control & Cleanup.
- Keep your Spill Prevention Control and countermeasure (SPCC) plan up-to-date, and
- Implement accordingly.
- Have spill cleanup materials readily available and in a known location.
- Cleanup spills immediately and use dry methods if possible.
- Properly dispose of spill cleanup material.

SC-12 Parking/Storage Area Maintenance

Maintenance

- Sweep parking lot to minimize cleaning with water.
- Clean parking facilities on a regular basis to prevent accumulated wastes and pollutants from being discharged into conveyance systems during rainy conditions.
- Clean any debris from these covered manholes and drains for proper disposal.
- Use only as much water as necessary for dust control, to avoid runoff.

References and Resources

<http://www.stormwatercenter.net/>

California's Nonpoint Source Program Plan <http://www.swrcb.ca.gov/nps/index.html>

Model Urban Runoff Program: A How-To Guide for Developing Urban Runoff Programs for Small Municipalities. Prepared by City of Monterey, City of Santa Cruz, California Coastal Commission, Monterey Bay National Marine Sanctuary, Association of Monterey Bay Area Governments, Woodward-Clyde, Central Coast Regional Water Quality control Board. July 1998 (Revised February 2002 by the California Coastal Commission).

Orange County Storm water Program

http://www.ocwatersheds.com/StormWater/swp_introduction.asp

Oregon Association of Clean Water Agencies. Oregon Municipal Storm water Toolbox for Maintenance Practices. June 1998.

Pollution from Surface Cleaning Folder. 1996. Bay Area Storm water Management Agencies Association (BASMAA) <http://www.basma.org>

San Diego Storm water Co-permittees Jurisdictional Urban Runoff Management Program (URMP)

<http://www.projectcleanwater.org/pdf/Model%20Program%20Municipal%20Facilities.pdf>

SC-13 Housekeeping Practices

Description

Promote efficient and safe housekeeping practices (storage, use, and cleanup) when handling potentially harmful materials such as fertilizers, pesticides, cleaning solutions, paint products, automotive products, and swimming pool chemicals. Related information is provided in BMP fact sheets SC-2 Spill Prevention, Control & Cleanup and SC-10 Waste Handling & Disposal.

Approach

Pollution Prevention

- Purchase only the amount of material that will be needed for foreseeable use. In most cases this will result in cost savings in both purchasing and disposal. See SC-14 Safer Alternative Products for additional information.
- Be aware of new products that may do the same job with less environmental risk and for less or the equivalent cost. Total cost must be used here; this includes purchase price, transportation costs, storage costs, use related costs, clean up costs and disposal costs.

General Protocols

- Keep work sites clean and orderly. Remove debris in a timely fashion. Sweep the area.
- Dispose of wash water, sweepings, and sediments, properly.
- Recycle or dispose of fluids properly.
- Establish a daily checklist of office, yard and plant areas to confirm cleanliness and adherence to proper storage and security. Specific employees should be assigned specific inspection responsibilities and given the authority to remedy any problems found.
- Post waste disposal charts in appropriate locations detailing for each waste its hazardous nature (poison, corrosive, flammable), prohibitions on its disposal (dumpster, drain, sewer) and the recommended disposal method (recycle, sewer, burn, storage, landfill).
- Summarize the chosen BMPs applicable to your operation and post them in appropriate conspicuous places.
- Require a signed checklist from every user of any hazardous material detailing amount taken, amount used, amount returned and disposal of spent material.
- Do a before audit of your site to establish baseline conditions and regular subsequent audits to note any changes and whether conditions are improving or deteriorating.
- Keep records of water, air and solid waste quantities and quality tests and their disposition.
- Maintain a mass balance of incoming, outgoing and on hand materials so you know when there are unknown losses that need to be tracked down and accounted for.
- Use and reward employee suggestions related to BMPs, hazards, pollution reduction, work place safety, cost reduction, alternative materials and procedures, recycling and disposal.
- Have, and review regularly, a contingency plan for spills, leaks, weather extremes etc. Make sure all employees know about it and what their role is so that it comes into force automatically.

SC-13 Housekeeping Practices

Training

- Train all employees, management, office, yard, manufacturing, field and clerical in BMPs and pollution prevention and make them accountable.
- Train municipal employees who handle potentially harmful materials in good housekeeping practices.
- Train personnel who use pesticides in the proper use of the pesticides. Pesticide regulations certify pesticide applicators and retain licensed pesticide applicator to oversee herbicide applications and conduct onsite inspections.
- Train employees in proper techniques for spill containment and cleanup. The employee should have the tools and knowledge to immediately begin cleaning up a spill if one should occur.

Spill Response and Prevention

- Refer to SC-2, Spill Prevention, Control & Cleanup.
- Keep your Spill Prevention Control and Countermeasure (SPCC) plan up-to-date, and implement accordingly.
- Have spill cleanup materials readily available and in a known location.
- Cleanup spills immediately and use dry methods if possible.
- Properly dispose of spill cleanup material.

Other Considerations

- There are no major limitations to this best management practice.
- There are no regulatory requirements to this BMP. Existing regulations already require municipalities to properly store, use, and dispose of hazardous materials
- Ongoing maintenance required to keep a clean site. Level of effort is a function of site size and type of activities.

References and Resources

British Columbia Lake Stewardship Society. Best Management Practices to Protect Water Quality from Non-Point Source Pollution. March 2000.

<http://www.nalms.org/bclss/bmphome.html#bmp>

King County Storm water Pollution Control Manual - <http://dnr.metrokc.gov/wlr/dss/spcm.htm>

Model Urban Runoff Program: A How-To Guide for Developing Urban Runoff Programs for Small Municipalities, Prepared by City of Monterey, City of Santa Cruz, California Coastal Commission, Monterey Bay National Marine Sanctuary, Association of Monterey Bay Area Governments, Woodward-Clyde, Central Coast Regional Water Quality Control Board. July, 1998, Revised by California Coastal Commission, February 2002.

Orange County Storm water Program

http://www.ocwatersheds.com/stormwater/swp_introduction.asp

San Mateo STOPPP - (<http://stoppp.tripod.com/bmp.html>)

SC-14 Safer Alternative Products

Descriptions

Promote the use of less harmful products. Alternatives exist for most product classes including pesticides, cleaning solutions, janitorial chemicals, automotive and paint products, and consumables (batteries, fluorescent lamps).

Approach

Develop a comprehensive program based on:

- The "Precautionary Principle," which is an alternative to the "Risk Assessment" model that says it's acceptable to use a potentially harmful product until physical evidence of its harmful effects are established and deemed too costly from an environmental or public health perspective. For instance, a risk assessment approach might say it's acceptable to use a pesticide until there is direct proof of an environmental impact. The Precautionary Principle approach is used to evaluate whether a given product is safe, whether it is really necessary, and whether alternative products would perform just as well.
- Environmentally Preferable Purchasing Program to minimize the purchase of products containing hazardous ingredients used in the facility's custodial services, fleet maintenance, and facility maintenance in favor of using alternate products that pose less risk to employees and to the environment.
- Integrated Pest Management (IPM) or Less-Toxic Pesticide Program, which uses a pest management approach that minimizes the use of toxic chemicals and gets rid of pests by methods that pose a lower risk to employees, the public, and the environment.
- Energy Efficiency Program including no-cost and low-cost energy conservation and efficiency actions that can reduce both energy consumption and electricity bills, along with long-term energy efficiency investments. Consider the following mechanisms for developing and implementing a comprehensive program:
 - Policies
 - Procedures
 - Standard operating procedures (SOPs)
 - Purchasing guidelines and procedures
 - Bid packages (services and supplies)
 - Materials
 - Preferred or approved product and supplier lists
 - Product and supplier evaluation criteria
 - Training sessions and manuals
 - Fact sheets for employees

Training

- Employees who handle potentially harmful materials in the use of safer alternatives.
- Purchasing less hazardous materials and products that contain little or no harmful substances or TMDL pollutants.
- Employees can be educated about safer alternatives

Regulations

This BMP has no regulatory requirements. Existing regulations already encourage facilities to reduce the use of hazardous materials through incentives such as reduced:

- Specialized equipment storage and handling requirements,
- Storm water runoff sampling requirements,
- Training and licensing requirements, and
- Record keeping and reporting requirements.

SC-14 Safer Alternative Products

Equipment

- There are no major equipment requirements to this BMP.

Limitations

- Alternative products may not be available, suitable, or effective in every case.

References and Resources

Note: Many of these references provide alternative products for materials that typically are used inside and disposed to the sanitary sewer as well as alternatives to products that usually end up in the storm drain.

General Sustainable Practices and Pollution Prevention Including Pollutant-Specific Information

California Department of Toxic Substances Control (www.dtsc.ca.gov)

California Integrated Waste Management Board (www.ciwmb.ca.gov)

City of Santa Monica (www.santa-monica.org/environment)

City of Palo Alto (www.city.palo-alto.ca.us/cleanbay)

SC-61 Safer Alternative Products 4 of 4 California Storm water BMP Handbook January 2003 Municipal

www.cabmphandbooks.com

City and County of San Francisco, Department of the Environment (www.ci.sf.ca.us/sfenvironment)

Earth 911 (www.earth911.org/master.asp) Environmental Finance Center Region IX

(www.greenstart.org/efc9)

Flex Your Power (www.flexyourpower.ca.gov) GreenBiz.com (www.greenbiz.com) Green Business Program

(www.abag.org/bayarea/enviro/gbus/gb.html) Pacific Industrial and Business Association (www.piba.org)

Sacramento Clean Water Business Partners (www.sacstormwater.org) USEPA BMP fact sheet – Alternative products (http://cfpub.epa.gov/npdes/stormwater/menuofbmps/poll_2.cfm)

USEPA Region IX Pollution Prevention Program (www.epa.gov/region09/p2)

Western Regional Pollution Prevention Network (www.westp2net.org)

Metals (mercury, copper)

National Electrical Manufacturers Association - Environment, Health and Safety

(www.nema.org)

Sustainable Conservation (www.suscon.org)

Auto Recycling Project

Brake Pad Partnership

Pesticides and Chemical Fertilizers

Bio-Integral Resource Center (www.birc.org)

California Department of Pesticide Regulation (www.cdpr.ca.gov)

University of California Statewide IPM Program (www.ipm.ucdavis.edu/default.html)

SC-15 GRAFFITI REMOVAL

Description

Graffiti eradication from structures, roadways and highways are potential sources of pollutants in storm water discharges, and operation and maintenance (O&M) practices, if not conducted properly, can contribute to the problem. Storm water pollution from roadway or structural graffiti eradication should be addressed on a site-specific basis. Use of the procedures outlined below, that address graffiti eradication on structures roadways and the interstate highway system within the city limits, will reduce pollutants in storm water.

Approach

Pollution Prevention

- Use the least toxic materials available (e.g. water based paints, gels or sprays for graffiti removal)
- Recycle paint and other materials whenever possible.

General Protocols

Graffiti Removal

- Maintain an inventory of sidewalk areas within the city limits to be cleaned.
- Maintain a consistent schedule for sidewalk cleaning applications
- Maintain monthly records of graffiti sites and sidewalks cleaned, and their locations.
- Avoid wet cleaning or flushing of street, and utilize dry methods where possible.
- Consider increasing cleaning frequency based on factors such as traffic volume, land use, field observations of graffiti or sediment accumulation.
- Consider the cleaning frequency for streets with high pollutant loadings, especially in high traffic areas.-
- Consider the cleaning frequency for streets in special problem areas such as special events.
- Maintain cleaning and spraying equipment in good working condition and purchase replacement equipment as needed. Old equipment should be replaced with new technologically
- Operate cleaning and spraying equipment at manufacturer requested optimal speed levels to increase effectiveness.
- Regularly inspect vehicles and equipment for leaks, and repair immediately.
- Develop paint handling procedures for proper use, storage, and disposal of paints.
- Transport paint and materials to and from job sites in containers with secure lids and tied down to the transport vehicle.
- Do not transfer or load paint near storm drain inlets or watercourses.
- Provide drop cloths and drip pans in paint mixing areas.
- Properly maintain application equipment.
- Use water based paints whenever possible. If using water based paints, clean the application equipment at an appropriate location that is connected to the sanitary sewer.
- Properly store leftover paints if they are to be kept for the next job, or dispose of properly
- Schedule graffiti removal activities for dry weather.
- Protect nearby storm drain inlets prior to removing graffiti from walls, signs, sidewalks, or other structures needing graffiti abatement. Clean up afterwards by sweeping or vacuuming thoroughly, and/or by using absorbent and properly disposing of the absorbent.
- When graffiti is removed by painting over, implement the procedures under Painting and Paint Removal above.
- Direct runoff from high pressure washing (with no cleaning agents) into a landscaped or dirt area. If such an area is not available, filter runoff through an appropriate filtering device (e.g. filter fabric) to keep sand, particles, and debris out of storm drains.

SC-15 GRAFFITI REMOVAL

Graffiti Removal (cont.)

- If a graffiti abatement method generates wash water containing a cleaning compound (such as high pressure washing with a cleaning compound), plug nearby storm drains and vacuum/pump wash water to the sanitary sewer.
- Consider using a waterless and non-toxic chemical cleaning method for graffiti removal (e.g. gels or spray compounds).
- Test and inspect spray equipment prior to starting to paint. Tighten all hoses and connections and do not overfill paint container.
- Plug nearby storm drain inlets prior to starting painting where there is significant risk of a spill reaching storm drains. Remove plugs when job is completed.
- Perform work on a maintenance traveler or platform, or use suspended netting or tarps to capture paint, rust, paint removing agents, or other materials, to prevent discharge of materials to surface waters if the bridge crosses a watercourse.
- Capture all clean-up water and dispose of properly.
- Recycle paint when possible (e.g. paint may be used for graffiti removal activities). Dispose of unused paint at an appropriate household hazardous waste facility.
- Thoroughly clean up the job site when the repair work is completed.
- When cleaning guardrails or fences follow the appropriate surface cleaning methods (depending on the type of surface)

Equipment cleaning maintenance and storage

- Inspect equipment daily and repair any leaks. Place drip pans or absorbent materials under heavy equipment when not in use.
- Perform major equipment repairs at the maintenance yard, when practical.
- If refueling or repairing vehicles and equipment must be done onsite, use a location away from storm drain inlets and watercourses.
- Clean equipment including high pressure washer sprayers, airless paint sprayers and supply lines, and at the end of each day. Clean in designated vehicle wash area that is connected to the sanitary sewer.

Non-Storm water Discharges

- Field crews should be aware of non-storm water discharges as part of their ongoing graffiti eradication efforts.
- Refer to SC-1 Non-Storm water Discharges
- Identify location, time and estimated quantity of discharges.
- Notify appropriate personnel.

Training

- Train employees regarding proper graffiti applications methods and techniques.
- Instruct employees to ensure that measures to reduce the storm water impacts of their ongoing graffiti eradication efforts are being followed.
- Use a training log or similar method to document training.
- Train employees on proper spill containment and clean up, and in identifying non-storm water discharges.

SC-15 GRAFFITI REMOVAL

Spill Response and Prevention

- Refer to SC-2, Spill Prevention, Control & Cleanup.
- Keep your Spill Prevention Control and countermeasure (SPCC) plan up-to-date, and implement accordingly.
- Have spill cleanup materials readily available and in a known location.
- Cleanup spills immediately and use dry methods if possible.
- Properly dispose of spill cleanup material.

References and Resources

2003 California Storm water BMP Handbook 1 of 9 Municipal www.cabmphandbooks.com
Model Urban Runoff Program: A How-To Guide for Developing Urban Runoff Programs for Small Municipalities. Prepared by City of Monterey, City of Santa Cruz, California Coastal Commission, Monterey Bay National Marine Sanctuary, Association of Monterey Bay Area Governments, Woodward-Clyde, Central Coast Regional Water Quality Control Board. July. 1998.

Orange County Storm water Program

http://www.ocwatersheds.com/stormwater/swp_introduction.asp

Oregon Association of Clean Water Agencies. Oregon Municipal Storm water Toolbox for Maintenance Practices. June 1998.

Santa Clara Valley Urban Runoff Pollution Prevention Program. 1997 Urban Runoff Management Plan. September 1997, updated October 2000.

Santa Clara Valley Urban Runoff Pollution Prevention Program. 2001. Fresh Concrete and Mortar Application Best Management Practices for the Construction Industry. June.

Santa Clara Valley Urban Runoff Pollution Prevention Program. 2001. Roadwork and Paving Best Management Practices for the Construction Industry. June.

United States Environmental Protection Agency (USEPA). 2002. Pollution Prevention/Good Housekeeping for Municipal Operations Roadway and Bridge Maintenance. On-line http://www.epa.gov/npdes/menuofbmps/poll_13.htm

SC-16 Roadway Landscape Maintenance

Description

Major arterial undeveloped medians and right of way activities includes weed and litter removal, other vegetation and herbicide application. Vegetation control typically involves a combination of chemical (herbicide) application and mechanical methods (mowing and trimming) All of these maintenance practices have the potential to contribute pollutants to the storm drain system. The major objectives of this BMP are to minimize the discharge of herbicides to the storm drain system and receiving waters; prevent the disposal of landscape waste into the storm drain system by collecting and properly disposing of clippings and cuttings, and educating employees and the public.

Approach

Pollution Prevention

- Implement an integrated pest management (IPM) program. IPM is a sustainable approach to managing pests by combining biological, cultural, physical, and chemical tools.
- Conduct appropriate maintenance (i.e. properly timed, weeding, pest control, and pruning) to help preserve the landscapes water efficiency.
- Consider grass cycling (grass cycling is the natural recycling of grass by leaving the clippings on the grassed area when mowing. Grass clippings decompose quickly and release valuable nutrients back into the grassed areas).

General Protocols

Mowing, Trimming, and Weeding

- Whenever possible use mechanical methods of vegetation removal (e.g. mowing with tractor type or push mowers, hand cutting with gas or electric powered weed trimmers) rather than applying herbicides. Use hand weeding where practical.
- Avoid loosening the soil when conducting mechanical or manual weed control, this could lead to erosion.
- Performing mowing at optimal times. Mowing should not be performed if significant rain events are predicted.
- Mulching can be used to prevent weeds where turf is absent Mulching mowers may be recommended for flat areas.
- Collect, pruning waste, tree trimmings, and weeds and dispose of at a landfill.
- Place temporarily stockpiled material away from watercourses and storm drain inlets to prevent material releases to storm drains.
- Maintain an inventory of undeveloped medians and right of ways on major arterials within the city limits to be cleaned.
- Maintain a consistent herbicide application and weed and litter removal schedules when feasible.
- Maintain monthly records of sites cleaned, miles of weed and litter cleaned and locations of herbicide application, number of transient and illegal dump sites cleaned.
- Avoid wet cleaning or flushing of street, and utilize dry methods where possible.
- Consider increasing cleaning frequency based on factors such as traffic volume, land use, field observations of sediment and trash accumulation, proximity to water courses, etc.

For example:

- Increase the cleaning frequency for streets with high pollutant loadings, especially in high traffic areas.-
- Increase the cleaning frequency just before the wet season to remove sediments accumulated during the summer.

SC-16 Roadway Landscape Maintenance

Mowing, Trimming, and Weeding (cont.)

- Increase the cleaning frequency for streets in special problem areas such as special events, and high litter. Maintain mowing and spraying equipment in good working condition and purchase replacement equipment as needed. Old equipment should be replaced with new technologically
- Operate mowing and spraying equipment at manufacturer requested optimal speed levels to increase effectiveness.
- Regularly inspect vehicles and equipment for leaks, and repair immediately.
- Coordinate activities with the Street Department and schedule vacuum or regenerative air sweepers in the high sediment and trash areas
- Dispose of collected weed and litter materials and debris properly.
- Do not pile weed and litter debris and material along side or near a storm drain inlet. Keep debris piles to a minimum during the wet season or make sure debris piles are collected and removed in a timely manner

Pesticide Management

Utilize a comprehensive management system that incorporates integrated pest management (IPM) techniques. There are many methods and types of IPM, including the following:

- Follow all federal, state, and local laws and regulations governing the use, storage, and disposal of pesticides and training of applicators and pest control advisors.
- Use pesticides only if there is an actual pest problem (not on a regular preventative schedule).
- Do not use pesticides if rain is expected. Apply pesticides only when wind speeds are low (less than 5 mph).
- Do not mix or prepare pesticides for application near storm drains.
- Prepare the minimum amount of pesticide needed for the job and use the lowest rate that will effectively control the pest.
- Employ techniques to minimize off-target application (e.g. spray drift) of pesticides, including consideration of alternative application techniques.
- Calibrate pesticide application equipment to avoid excessive application.
- Purchase only the amount of pesticide that you can reasonably use in a given time period (month or year depending on the product).
- Triple rinse containers, and use rinse water as product. Dispose of unused pesticide as hazardous waste.
- Dispose of empty pesticide containers according to the instructions on the container label.

Inspection

- Inspect pesticide equipment and transportation vehicles daily.

Waste Management

- Dispose of collected vegetation at a permitted landfill. Do not dispose of collected vegetation into waterways or storm drainage systems.
- Place temporarily stockpiled material away from watercourses, and storm drain inlets.
- berm or cover stockpiles to prevent material releases to the storm drain system.
- Avoid landscape wastes in and around storm drain inlets by bagging or by manually picking up the material.

SC-16 Roadway Landscape Maintenance

Training

- Educate and train employees on use of pesticides and in pesticide application techniques to prevent pollution. Pesticide application must be under the supervision of a New Mexico Department of Agriculture licensed pesticide applicator.
- Train/encourage municipal maintenance crews to use appropriate methods and techniques SOP's and IPM techniques for managing public green areas.
- Annually train employees within departments responsible for pesticide application and weed and litter removal on the appropriate portions of the agency's IPM Policy, SOPs, and BMPs, and the latest IPM techniques.
- Employees who are not authorized and trained to apply pesticides should be periodically (at least annually) informed that they cannot use over-the-counter pesticides in or around the workplace.
- Use a training log or similar method to document training.

Spill Response and Prevention

- Refer to SC-2, Spill Prevention, Control & Cleanup
- Have spill cleanup materials readily available and in a known location
- Cleanup spills immediately and use dry methods if possible.
- Properly dispose of spill cleanup material.

Other Considerations

- The Federal Pesticide, Fungicide, and Rodenticide Act (FIFRA) and New Mexico State Laws & Regulations,
- Pesticides and Pest Control Operations place strict controls over pesticide application and handling and specify training, annual refresher, and testing requirements. The regulations generally cover: a list of approved pesticides and selected uses, updated regularly; general application information; equipment use and maintenance procedures; and record keeping.
- The New Mexico Department of Agriculture coordinates and maintains the licensing and certification programs. All public agency employees who apply pesticides and herbicides in "agricultural use" areas such as parks, golf courses, rights-of-way and recreation areas should be properly certified in accordance with state regulations.
- All employees who handle pesticides should be familiar with the most recent material safety data sheet (MSDS) files.
- Skillful design of cleaning routes is required for program to be productive.
- Arrangements must be made for disposal of collected wastes.

Requirements

Additional training of municipal employees will be required to address IPM techniques and BMPs. IPM methods will likely increase labor cost for pest control which may be offset by lower chemical costs.

Maintenance

Not applicable

SC-16 Roadway Landscape Maintenance

References and Resources

California Storm water BMP Handbook January 2003 Municipal www.cabmphandbooks.com

King County Storm water Pollution Control Manual. Best Management Practices for Businesses.

1995. King County Surface Water Management. July. On-line:

<http://dnr.metrokc.gov/wlr/dss/spcm.htm>

Los Angeles County Storm water Quality Model Programs. Public Agency Activities

http://ladpw.org/wmd/npdes/model_links.cfm

Model Urban Runoff Program: A How-To Guide for Developing Urban Runoff Programs for Small Municipalities. Prepared by City of Monterey, City of Santa Cruz, California Coastal Commission, Monterey Bay National Marine Sanctuary, Association of Monterey Bay Area Governments, Woodward-Clyde, Central Coast Regional Water Quality Control Board. July. 1998.

Orange County Storm water Program

http://www.ocwatersheds.com/StormWater/swp_introduction.asp

Santa Clara Valley Urban Runoff Pollution Prevention Program. 1997 Urban Runoff Management Plan. September 1997, updated October 2000.

United States Environmental Protection Agency (USEPA). 2002. Pollution Prevention/Good

Housekeeping for Municipal Operations Landscaping and Lawn Care. Office of Water. Office of Wastewater Management. On-line: http://www.epa.gov/npdes/menuofbmps/poll_8.htm

SC-17 Sidewalk Cleaning

Description

Pollutants on sidewalks are typically due to littering and vehicle use. This fact sheet describes good housekeeping practices that can be incorporated into the Clean City Division's existing sidewalk cleaning program and schedule at specified underpass areas.

Approach

Pollution Prevention

- Use dry cleaning methods whenever practical for surface cleaning activities.
- Use M30 Integrated Sweeper-Scrubber with ec-H2O technology that electrically converts water into an innovative cleaning solution that cleans effectively, uses less water, recovers the water and reduces environmental impact compared to the use of cleaning chemicals.
- Use the least toxic materials available (e.g. water based paints, gels or sprays for graffiti removal).

General Protocols

Surface Cleaning

- Regularly broom (dry) sweep sidewalk areas to minimize cleaning with water. Dispose of the swept material collected properly and keep accurate records of the areas cleaned and the frequency of areas scheduled for cleaning.
- Dry cleanup first (sweep, collect, and dispose of debris and trash) when cleaning sidewalks then wash without soap.
- Block the storm drain or contain runoff when cleaning with water. Discharge wash water to landscaping whenever possible.
- Block the storm drain or contain runoff when washing parking areas, driveways or drive-thrust.
- Use absorbents to pick up oil; then dry sweep. Clean without soap.

Graffiti Removal

- Avoid graffiti abatement activities during rain events.
- Implement the procedures under Painting and Paint Removal in SC-15, Graffiti Removal
- Direct runoff from high pressure washing (with no cleaning agents) into a dirt or landscaped area after treating with an appropriate filtering device.
- Plug nearby storm drain inlets and or direct wash water to the sanitary sewer if authorized to do so.

Training

- Provide regular training to field employees regarding surface cleaning and proper operation of equipment.
- Train employee in proper techniques for spill containment and cleanup.
- Use a training log or similar method to document training.

Spill Response and Prevention

- Refer to SC-2, Spill Prevention, Control & Cleanup.
- Have spill cleanup materials readily available and in a known location.
- Cleanup spills immediately and use dry methods if possible.
- Properly dispose of spill cleanup material.

Other Considerations

- Limitations related to sweeping activities at large parking facilities may include current
- Sweeper technology to remove oil and grease.
- Surface cleaning activities that require discharges to the local sewerage agency will require
- Coordination with the agency.
- Sweeping of these areas should be incorporated into street sweeping programs to reduce costs

SC-17 Sidewalk Cleaning

Maintenance

Not applicable

Supplemental Information

Community education, such as informing residents about their options for recycling and waste disposal, as well as the consequences of littering, can instill a sense of citizen responsibility and potentially reduce the amount of maintenance required by the municipality.

References and Resources

January 2003 California Storm water BMP Handbook 1 of 5 Municipal www.cabmphandbooks.com

Bay Area Storm water Management Agencies Association (BASMAA). 1996. Pollution From Surface Cleaning Folder <http://www.basmaa.org>

Model Urban Runoff Program: A How-To Guide for Developing Urban Runoff Programs for Small Municipalities. Prepared by City of Monterey, City of Santa Cruz, California Coastal Commission, Monterey Bay National Marine Sanctuary, Association of Monterey Bay Area Governments, Woodward-Clyde, Central Coast Regional Water Quality Control Board. July.1998.

Oregon Association of Clean Water Agencies. Oregon Municipal Storm water Toolbox for Maintenance Practices. June 1998. Orange County Storm water Program

http://www.ocwatersheds.com/stormwater/swp_introduction.asp

Santa Clara Valley Urban Runoff Pollution Prevention Program. 1997 Urban Runoff Management Plan. September 1997, updated October 2000.

Santa Clara Valley Urban Runoff Pollution Prevention Program. Maintenance Best Management Practices for the Construction Industry. Brochures: Landscaping, Gardening, and Pool; Roadwork and Paving; and Fresh Concrete and Mortar Application. June 2001.

San Diego Storm water Co-permittees Jurisdictional Urban Runoff Management Plan. 2001.

Municipal Activities Model Program Guidance. November.

SC-18 Waste Handling and Disposal

Description

It is important to control litter to eliminate trash and other materials in storm water runoff. Waste reduction is a major component of waste management and should be encouraged through training and public outreach. Management of waste once it is collected may involve reuse, recycling, or proper disposal.

Approach

Pollution Prevention

- Reuse products when possible.
- Encourage recycling programs with recycling bins, used oil collection, etc.

Suggested Protocols

Solid Waste Collection

- Implement procedures, where applicable, to collect, transport, and dispose of solid waste at appropriate disposal facilities in accordance with applicable federal, state, and local laws and regulations.
- Include properly designed trash storage areas. If feasible provide cover over trash storage areas.
- Regularly inspect solid waste containers for structural damage. Repair or replace damaged containers as necessary.
- Secure solid waste containers; containers must be closed tightly when not in use.
- Do not fill waste containers with washout water or any other liquid.
- Ensure that only appropriate solid wastes are added to the solid waste container. Certain wastes such as hazardous wastes, appliances, fluorescent lamps, pesticides, etc. may not be disposed of in solid waste containers (see chemical/ hazardous waste collection section below).
- Do not mix wastes; this can cause chemical reactions, make recycling impossible, and complicate disposal.
- Refer to sc-10 Waste Handling and Disposal for more information regarding solid waste facilities.

Waste Reduction and Recycling

- Recycle wastes whenever possible. Many types of waste can be recycled; recycling options for each waste type is limited. Materials that cannot be reused or recycled should either be incinerated or disposed of at a properly permitted landfill.
- Recycling is always preferable to disposal of unwanted materials.
- Recycling bins for glass, metal, newspaper, plastic bottles and other recyclable household solid wastes should be provided at public facilities and/or for residential curbside collection.

Controlling Litter

- Post “No Littering” signs and enforce anti-litter laws.
- Litter receptacles may be placed in busy, high pedestrian traffic areas of the community, at recreational facilities, and at community events by the appropriate department.
- Clean out and cover litter receptacles in our area of responsibility frequently to prevent spillage.

Illegal Dumping

- “No Dumping” signs may be posted with a phone number for reporting dumping and disposal. Signs
- Should also indicate fines and penalties for illegal dumping.
- Law enforcement and routine patrol efforts of hot spots might also discourage future dumping.

SC-18 Waste Handling and Disposal

Maintenance

- Staff requirements for maintaining good housekeeping BMPs at waste handling sites is minimal.

Waste Reduction

An approach to reduce storm water pollution from waste handling and disposal is to assess activities and reduce waste generation. The assessment should attempt to find situations where waste can be eliminated or reduced and environmental damage can be minimized.

References and Resources

January 2003 California Storm water BMP Handbook 1 of 4 Municipal www.cabmphandbooks.com

Best Management Practices Program for Pollution Prevention, City and County of San

Francisco, Uribe & Associates, Oakland, California, 1990.

Harvard University. 2002. Solid Waste Container Best Management Practices – Fact Sheet On-Line Resources – Environmental Health and Safety.

Model Urban Runoff Program: A How-To-Guide for Developing Urban Runoff Programs for Small Municipalities. Prepared by City of Monterey, City of Santa Cruz, California Coastal Commission, Monterey Bay National Marine Sanctuary, Association of Monterey Bay Area Governments, Woodward-Clyde, Central Coast Regional Water Quality Control Board. July 1998. (Revised February 2002 by the California Coastal Commission).

Orange County Storm water Program

http://www.ocwatersheds.com/StormWater/swp_introduction.asp.

Santa Clara Valley Urban Runoff Pollution Prevention Program. 1997 Urban Runoff Management Plan. September 1997, updated October 2000.

CLEAN CITY DIVISION
PINO YARDS COMPLEX – BLDG D, LOTS 1-3

SWPPP ASSIGNED AREAS OF RESPONSIBILITIES

1/30/17

STAFF	RESPONSIBILITIES
BILLY GALLEGOS Superintendent	Team Leader Responsibilities: Oversee Environmental Compliance of Facility, ensure implementation of plan, and ensure Best Management Practices are being implemented.
MARK SANDOVAL Supervisor	Team Member No. 1 –Responsibilities: Oversight of Clean City Fixed Facility and Field Activities BMP’s. Assist Team Leader as needed with environmental and regulatory questions or issues. Notify Team Leader of any new projects or changes that will require the SWPPP document to be updated. Provide the required employee SWPPP training. Ensure monthly comprehensive site compliance evaluations are being performed, documented and filed. Communicate with other team members as to required operational changes or ensure revision to the SWPPPs are made. Research SC-14 .
BRUCE GONZALES Shop + Vehicle Maintenance Supervisor	Team Member No. 2 –Responsibilities: Ensure SWPPP SC-2, SC-5, SC-8 and SC-12 protocols are followed. Immediately clean and document any observed spills, leaks, un-permitted or unusual discharges within the Clean City parking lots. Ensure visual inspections are performed daily of the above mentioned Source Control BMP’S . Alert Team Members No. 1, No. 3 and No. 4 of any observed spills, leaks, un-permitted or unusual discharges within the parking lots, detention pond and fuel stations. Provide support documentation to Team Member No. 1.
MARK SANDOVAL TOMAS CAVALIER Graffiti Supervisors	Team Member No. 3,4 - Responsibilities: Ensure SWPPP SC-1, SC-2, SC-6, SC-15 and SC-17 protocols are followed. Oversight of Operation of facility. Ensure visual inspections are performed daily of the above mentioned Source Control BMP’S . Assist Team Member No. 1. Provides necessary management support and resources for implementation of Best Management Practices. Notify Team Leader of any new projects or changes that will require the SWPPP document to be updated.
BRUCE GONZALES	Team Member No. 5 –Responsibilities: Ensure SWPPP SC-2, SC-3, SC-4 and SC-13 protocols are followed. Assist Team Leader with environmental compliance of facility Ensure visual inspections are performed daily of the above mentioned Source Control BMP’S . Communicate with other team members as to required operational changes or ensure revision to the SWPPPs are made.
ALBERT JARAMILLO ADRIAN ARMIJO Weekend + Large Items / Supervisor	Team Member No. 6 –Responsibilities: Ensure SWPPP SC-7, SC-9, SC-10, SC-12 and SC-18 protocols are followed. Assist Team Leader with environmental compliance of facility, ensure implementation of plan, and ensure Best Management Practices are being implemented. Ensure Hwy container in good condition and it is scheduled to be dumped weekly. Schedule parking lots to be sanded and swept the last Wednesday of each month. Complete Non-Stormwater Discharge Assessment on weather days on weekends and provide supporting documentation to Team Member No. 1. Communicate with other team members as to required operational changes or ensure revision to the SWPPPs are made.
ABRAM SANCHEZ ANGELO GALLEGOS MIKE FARIAS Ground Crew Field Supervisors	Team Member No. 7,8 –Responsibilities: Ensure SWPPP SC-2, SC-11 and SC-16 protocols are followed. Have spill absorbent readily available and immediately clean and document any observed spills, leaks, un-permitted or unusual discharges caused by ground crews on SWPPP form APPENDIX B and properly dispose of clean up materials. Perform daily litter sweeps of Clean City facility and all CCD parking lots. Provide supporting documentation to Team Member No. 1.

SWPPP SITE INSPECTIONS

The SWPPP requires a schedule for comprehensive site inspection to include but not be limited to, the areas and equipment identified in the preventive maintenance program and good housekeeping procedures. The inspection shall also include a review of the routine preventive maintenance reports, good housekeeping inspections reports, and any other paperwork associated with the SWPPP. The comprehensive site inspection shall be conducted by the Certified Storm Water Operator quarterly or semi annually, depending on specific permit language. A report of the comprehensive site inspection results shall be prepared and **retained for three years**. The report shall identify any incidents of non-compliance with the SWPPP. If there are no reportable incidents of non-compliance, the report shall contain a certification that the facility is in compliance with this permit. The Comprehensive Site Inspection Form is in **APPENDIX H –SWPPP INSPECTION FORMS**.

SWPPP SOURCE CONTROL ASSIGNMENTS

SOURCE CONTROL	DESCRIPTION	ASSIGNED SUPERVISOR
SC-1	Non-Storm Water Discharges	Mark Sandoval / Albert Jaramillo / Dan Humbles
SC-2	Spill Prevention and Clean-up	<u>ALL</u> SUPERVISORS
SC-3	Vehicle and Equipment Fueling	Bruce Gonzales
SC-4	Vehicle and Equipment Cleaning	Bruce Gonzales
SC-5	Vehicle and Equipment Repair	Bruce Gonzales
SC-6	Outdoor Loading and Unloading	Mark Sandoval / Albert Jaramillo
SC-7	Outdoor Container Storage	Albert Jaramillo
SC-8	Outdoor Equipment Maintenance	Abram Sanchez
SC-9	Outdoor Storage of Raw Materials	Mike Farias
SC-10	Facility Waste Handling and Disposal	Mark Sandoval
SC-11	Building and Grounds Maintenance	Angelo Gallegos / Abram Sanchez
SC-12	Parking and Storage Area Maintenance	Albert Jaramillo / Bruce Gonzales
SC-13	Housekeeping Practices	Tomas Cavalier
SC-14	Safer Alternative Products	Dan Humbles
SC-15	Graffiti Removal	Mark Sandoval / Tomas Cavalier
SC-16	Roadway Landscape Maintenance	Angelo Gallegos / Mike Farias
SC-17	Sidewalk Cleaning	Mark Sandoval / Albert Jaramillo
SC-18	Field Waste Handling and Disposal	Mark Sandoval

*****See SWPPP Plan for a detailed description & a better understanding of each Source Control.**



SWPPP INSPECTION & FREQUENCY SCHEDULE



INSPECTION TYPE	FREQUENCY	ASSIGNMENT
SWPPP RECORDS	MONTHLY: SCHEDULE PARKING LOT SWEEPING LAST WEDNESDAY OF MONTH	BILLY GALLEGOS MARK SANDOVAL
MAINTENANCE SHOP AREA CLEAN MAINTENANCE SHOP + LOT 2 FREQUENTLY	DAILY	BRUCE GONZALES
FACILITY LITTER CONTROL CLEAN CITY ADMIN. FACILITIES + LOTS 1,2, AND 3	DAILY	ANGELO GALLEGOS ABRAM SANCHEZ
PESTICIDE EQUIPMENT	DAILY	DAN HUMBLER ANGELO GALLEGOS MIKE FARIAS
LOT 3 – BLUE FLEET INSPECTIONS	WEEKLY	ALBERT JARAMILLO
GRAFFITI AREA	DAILY	MARK SANDOVAL TOMAS CAVALIER
RAIN EVENT	EACH EVENT	MIKE FARIAS MARK SANDOVAL
GOOD HOUSEKEEPING & BMP ASSESSMENTS	MONTHLY FIRST WEEK OF EACH MONTH	MARK SANDOVAL BRUCE GONZALES
COMPREHENSIVE SITE INSPECTION	JANUARY & JULY	MARK SANDOVAL DAN HUMBLER BILLY GALLEGOS

*****Documents / records of all inspections & incidents shall be kept in Clean City SWPPP files.**

**APPENDIX G
TRAINING RECORDS**

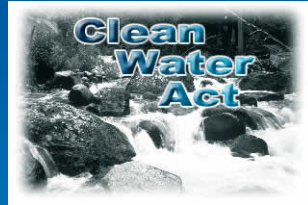
This Page Intentionally Left Blank

	
<p>STORM WATER POLLUTION PREVENTION TRAINING City of Albuquerque</p>	
	<p><u>City of Albuquerque</u> Kevin Daggett, P.E. Kathy Verhage, P.E.</p> <p><u>CDM Smith</u> Kelly Collins, C.P.G. Sarah Tuite, P.E.</p> <p>August 2013</p>

<h2>Training Overview</h2>	
<ul style="list-style-type: none">• Permit overview (why are we implanting the program)• Importance of preventing storm water pollution• Discuss City of Albuquerque’s responsibilities• Discuss your responsibilities• Provide an overview of SWPPPs and BMPs• Assess effectiveness of storm water training 	
	

Regulatory Driver

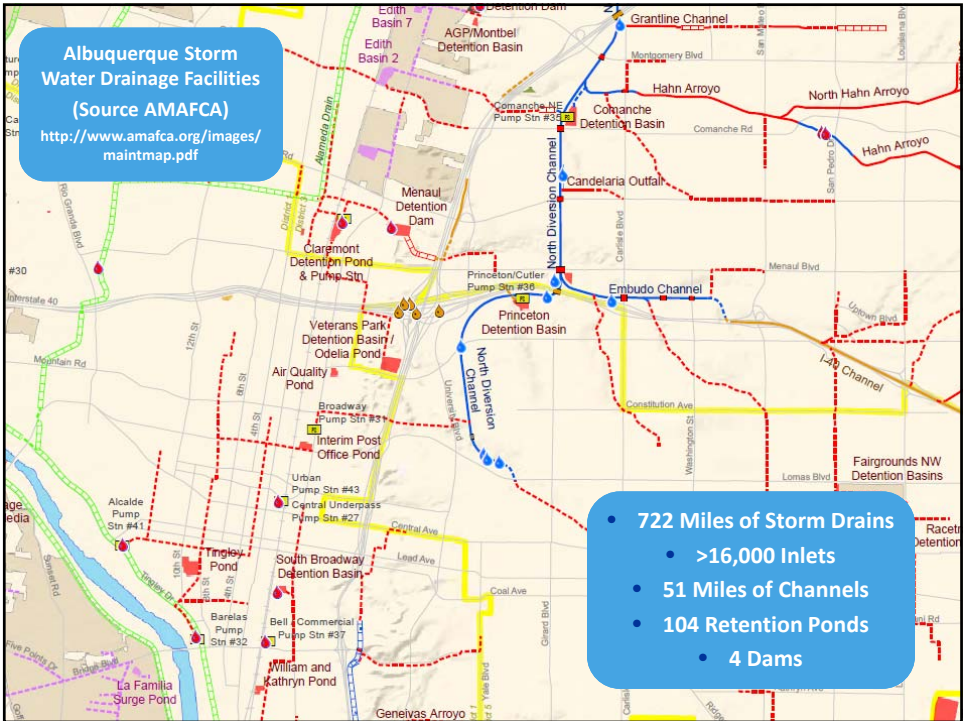
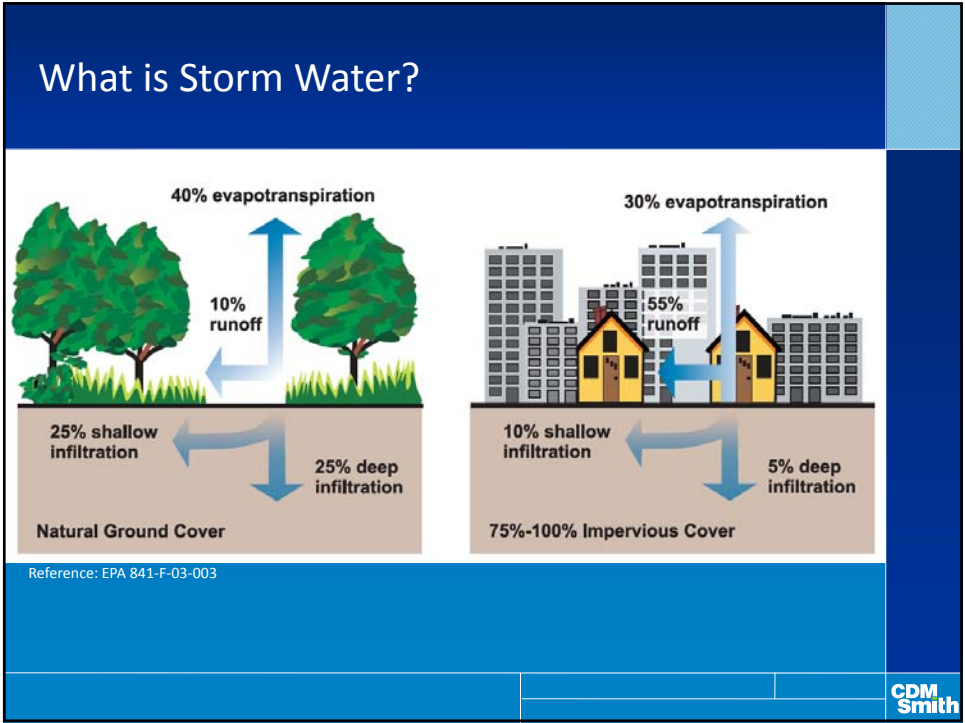
- Clean Water Act (CWA) of 1972
- EPA National Pollutant Discharge Elimination System (NPDES) for discharges into the Municipal Separate Storm Sewer System (MS4)
- 2012 Phase 1 MS4 Permit issued jointly to:
 - City of Albuquerque
 - AMAFCA
 - NMDOT
 - UNM



Joint MS4 Permit

- Defines permit area and permittees
- Requires Storm Water Management Program (SWMP)
- Authorizes discharges including non-storm water discharges
- Defines reporting and monitoring requirements
- New permit included deadlines for completing storm water program components:
 - Performed audits of City-owned and operated facilities and of many industrial and high-risk facilities
 - Conducting training for all City Departments





Why is Storm Water Quality Important?

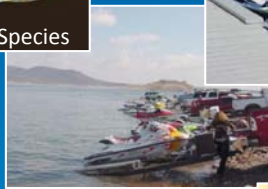
- Untreated storm water is discharged directly into the Rio Grande



Wildlife



Endangered Species



Recreation



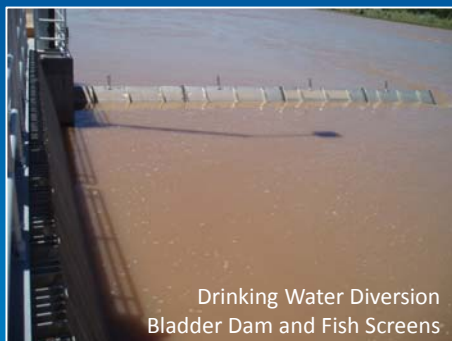
River Ecosystem



Resource

CDM
Smith

Rio Grande is Now a Source of Drinking Water



Drinking Water Diversion
Bladder Dam and Fish Screens



Fish Bypass

CDM
Smith

Storm Water Pollution Sources

Oils and Fuels

Garbage and Debris

Herbicides and Pesticides

Landscaping and Pet Waste

Chemicals

Wash Waters

Birds

Common Municipal Pollution Sources

Garbage and Debris

Mop Water

Kitchen Oils and Grease

Herbicides and Pesticides

Oil Staining

Paint / Building Materials

Ice Melt / Salt

CABQ Responsibilities – 6 Minimum Measures

1. Public Outreach
www.keeptheriogrand.org
2. Public Education
Water Festivals, River Exchange
3. Good housekeeping
City Facility storm water audits, training
4. Construction Storm Water
Construction site inspection, SWPPP
5. Post-Construction Storm Water
Plan review
6. Illicit Discharge Detection and Elimination
Dry weather screening



CDM
Smith

CABQ Responsibilities – Additional Requirements

- Storm Water Ordinance
- Industrial and High Risk Facilities
 - Completed initial identification and inspection
- Floatables Monitoring
- Water Quality Monitoring
 - River and 5 discharge points
- Endangered species protection



CDM
Smith

CABQ Storm Water Management Section Responsibilities

- Meet all requirements of the MS4 Permit including reporting
- Coordinate efforts with other permittees
- Act as a resource for all City Departments
- Provide adequate training to City Departments
- Review and track SWPPP implementation
- Low Impact Development
- Develop and provide training to developers/contractors
- Inspections of construction sites, city facilities, industrial/high risk facilities



CDM
Smith

CABQ Storm Water Management Section: Training Provided

- **Aug 2010:** Elements of a SWPPP
- **Sept 2010:** Creating drainage maps, inspection and maintenance programs, controlling floatables
- **Sept 2010:** Eliminating pollutants from parking lots, storage yards, etc. Physical and operational changes to reduce pollutants
- **October 2010:** Standardizing collection and disposal of toxins. Employee training for handling these materials.
- **October 2010:** Pesticides, herbicides, and fertilizers
- **November 2010:** Employee training, BMP monitoring and tracking
- **December 2010:** Department SWPPP presentations

CDM
Smith

Your Responsibilities (ALL FACILITIES)

- Identify a Storm Water Quality Coordinator
 - Conduct staff training sessions and submit records to Storm Water Management Section
 - Promptly notify Storm Water Management Section of changes in facility, operations or contact information
- Implement good housekeeping and best management practices
- Develop and Implement a Storm Water Pollution Prevention Plan (SWPPP) if required. A SWPPP is recommended for all sites but is only required for certain facilities (Sector P, Transportation and Warehousing).
 - Perform the required inspections at an appropriate frequency
 - Manage required documentation (add inspection forms, training records, any BMP modifications to the SWPPP)
 - Facilitate Site Inspections conducted by CABQ or other entities

CDM
Smith

Your Responsibilities (Sector P)

- SECTOR P, Land Transportation Facilities, with the following facilities or operations:
 - Vehicle Maintenance Shops (including vehicle rehabilitation, mechanical repairs, painting, fueling, or lubrication)
 - Petroleum Bulk Stations or Terminals
 - Passenger Transportation Facilities
 - Equipment Cleaning Operations
 - Storage of vehicles and equipment waiting for maintenance or repair
 - Storage of related materials and waste materials (oil, fuel, batteries, tires, oil filters)

This includes, but isn't limited to facilities at Pino Yards, Transit, Solid Waste, and the Zoo.

CDM
Smith

Your Responsibilities (Additional for Sector P)

- Prepare an Electronic Notice of Intent (eNOI) and file an eNOI application for a Multi-Sector General Permit (MSGP) with EPA
- Perform quarterly inspections
- Conduct annual training sessions
- Submit copies of the following to Storm Water Management Section
 - SWPPP
 - eNOI Application or No Exposure Certification Form
 - Quarterly Inspection Form
 - Annual Training Records
 - Any updates or changes in your operations

CDM
Smith

Your Responsibilities (Additional for Sector P)

- File for No Exposure Certification, in lieu of eNOI if you have no storm water exposure at your facility and qualify as a Sector P facility
 - No outdoor activities
 - No outdoor storage
 - No planned outdoor activities
- Submit copy of No Exposure Certification form to Storm Water Management Section
- When “No Exposure Certification” criteria are met, a SWPPP is suggested but not required. Additionally, inspections are not required although strongly recommended.

NOTE: Must refile for MSGP permit via eNOI or renew No Exposure Certification application every 5 years.

CDM
Smith

SWPPPs and BMPs

What is a SWPPP?

- A **Storm Water Pollution Prevention Plan** or SWPPP is a plan to minimize water quality impacts of runoff to receiving waters
- Evaluates potential pollution sources and establishes appropriate controls

What are BMPs?

- **Best Management Practices** outline controls to minimize storm water pollution from specific sources
- The SWPPP specifies the BMPs that will be implemented at the site



CDM
Smith

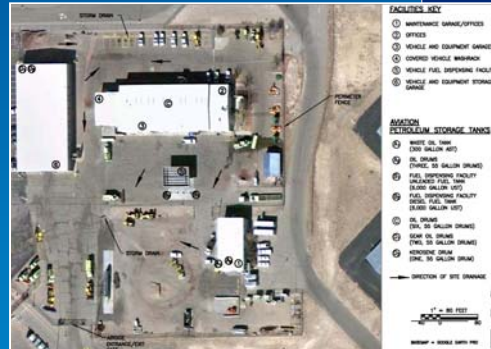
Storm Water Pollution Prevention Plans (SWPPP)

- Facility Inventory
- Facility Assessment
- Training records
- Inspection, incident, and maintenance records
- Best Management Practices
 - BMP monitoring and tracking documentation
 - BMP implementation and maintenance documentation
- Spill response plans
 - Spill response procedures
 - MSDS

CDM
Smith

Storm Water Pollution Prevention Plans (SWPPP)

- Facility Map
 - Location of storm drain inlets
 - Surface drainage patterns
 - Ponds, other drainage features, etc.
 - Location of chemical or potentially polluting materials storage
 - Include container description and volume
 - Location of spill cleanup materials



CDM
Smith

Storm Water Pollution Prevention Plans (SWPPP)

- Inventory
 - Inventory of potential pollutants
 - Sediment
 - Nutrients (nitrogen and phosphorous from fertilizers)
 - Bacteria (A listed impairment in the Rio Grande)
 - Oil and Grease (vehicles and equipment, restaurants, parking lots)
 - Metals (lead, zinc, cadmium, copper, nickel, chromium)
 - Organics (solvents, cleaners, sealants, paints)
 - Pesticides and herbicides
 - Gross Pollutants (trash, floatables, debris)
 - Oxygen Demanding Substances (food products, waste products, vegetative debris; A listed impairment in the Rio Grande)

CDM
Smith

Storm Water Pollution Prevention Plans (SWPPP)

Inventory of activities that may contribute to storm water pollution:

- Vehicle/Equipment maintenance, repair, cleaning, storage, fueling and fuel storage
- Material loading/unloading and handling/storage
- Street/Sidewalk/parking lot drainage, repair, maintenance, and cleaning
- Graffiti removal
- Litter collection, control, disposal
- Solid waste collection and recycling
- Landscape, building, fountain maintenance and drainage



CDM Smith

Storm Water Pollution Prevention Plans (SWPPP)

- **Assessment**
 - What activities are you performing that have potential to cause storm water pollution?
 - Evaluate which best management practices could reduce storm water pollutant potential at your facility



CDM Smith

Best Management Practices

- City-Wide Best Management Practices
 - Spill Prevention, Control, and Countermeasures
 - Training
 - Implement strict housekeeping practices; Increased trash collection and improved trash storage
- Outdoor Equipment Storage
 - Wash equipment in approved wash areas only (drain to sanitary sewer)
- Outdoor Loading and Unloading
 - Move activities indoors or away from storm water drainage ways
- Outdoor Handling, Storage, and Disposal of Waste Materials
 - Secondary containment for chemical, oil, fuel storage
- Landscape Maintenance
 - Install low impact features such as ponds, pervious surfaces, and vegetation

CDM
Smith

Best Management Practices 1.0 General City-Wide

- Targeted Activities
 - All activities not covered by other BMPs
- Targeted Pollutants
 - Organics
 - Metals
 - Sediment
 - Anything foreign to storm water



CDM
Smith

Best Management Practices 1.0 General City-Wide

- Key Approaches
 - Keep outside areas maintained
 - Store materials and equipment inside to the extent practical
 - Conduct preventative maintenance
 - Train employees/contractors in storm water pollution prevention techniques; maintain documentation
 - Conduct regular inspections
 - Document storm water pollution prevention activities
 - Maintain and post Spill Response Plans; spill kits available
 - Maintain MSDSs on site



MSDS Sheets in a labeled notebook.

Best Management Practices 1.0 General City-Wide

- Storm Water Management Section Training
 - Today's session
 - Training materials provided for use in your Department
- Department Specific Supervisor and Staff Training
 - Annual training of ALL STAFF that handle potential storm water pollutants or perform outdoor activities
 - May use training materials provided by the Storm Water Management Section or develop your own
 - Maintain training records for **3 years**
 - Agenda
 - Sign-in sheets
 - Training assessment

Best Management Practices 1.0 General Facility-Wide

- Training Topics
 - What is the SWPPP and where is it?
 - Activities covered by the SWPPP
 - Spill/leak awareness
 - Spill response procedures
 - Hazardous material storage, containment, and disposal
 - Best Management Practices
 - Conducting facility inspections
 - Non-allowable discharges (i.e. wash waters)



Straw roll installed to protect a storm drain.

Best Management Practices 1.0 General Facility-Wide

- Allowable Non-Storm Water Discharges
 - Potable water
 - Lawn, landscape, irrigation water
 - Foundation and footing drains
 - Air conditioner condensate
 - Dechlorinated swimming pool discharges
 - Street washing waters (no soaps)
 - Fire fighting discharges



Irrigation water is an allowable non-storm water discharge.

Spills Happen...Be Prepared for Cleanup



CDM
Smith

Spills Happen...It's Expensive



- Spills are expensive to clean up!
 - Costly Clean-Up Materials
 - Labor
 - Disposal Fees
 - Hidden Administrative Costs

CDM
Smith

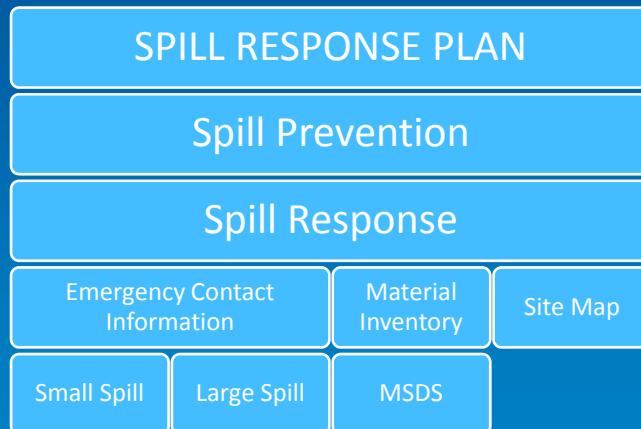
Spills Happen...Contractors/Subcontractors



Spill caused by a contractor.

- Contractors / Subcontractors cause spills too!
 - Do they have appropriate clean up materials?
 - Are they trained?
 - If not, who responds for them?

Spill Response Plans



Best Management Practices BMP 2.0 Vehicle/Equipment Maintenance

- Targeted Activities
 - Vehicle maintenance
 - Equipment maintenance
- Targeted Pollutants
 - Fuel
 - Oil, Grease, Lubricants
 - Solvents, Soaps, Detergents
 - Battery Acid
 - Antifreeze
 - Paint



Outdoor containers should be cleaned on a regular basis.



Secondary containment shall be provided to protect from leaks/drips.

CDM
Smith

Best Management Practices BMP 2.0 Vehicle/Equipment Maintenance

- Key Approaches
 - Conduct maintenance indoors or in a covered area
 - Conduct preventative maintenance
 - Store maintenance fluids, tires, batteries, etc. appropriately
 - Use drip pans with leaky equipment
 - Drain fluids if prolonged storage is anticipated (>30 days)
 - Collect and properly dispose of all fluids



Flammable materials should be stored in well labeled flammables cabinets.



Used adsorbent should be swept and properly disposed immediately.

CDM
Smith

Best Management Practices BMP 3.0 Vehicle/ Equipment Cleaning

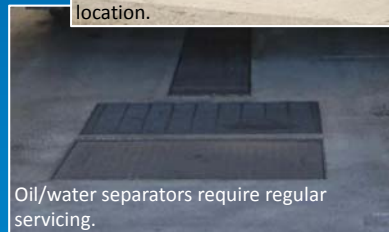
- Targeted Activities
 - Vehicle washing
 - Equipment washing
 - Equipment/parts degreasing
- Targeted Pollutants
 - Fuels
 - Oil, Grease, Lubricants
 - Solvents, Soaps, Detergents
 - Other vehicle fluids



CDM
Smith

Best Management Practices BMP 3.0 Vehicle/ Equipment Cleaning

- Key Approaches
 - Use approved wash facilities draining to sanitary sewer
 - Recycle washwater or discharge appropriately
 - Maintain oil/water separators
 - Use dry washing/wiping techniques
 - Provide training
 - Dispose of soiled rags/towels appropriately



CDM
Smith

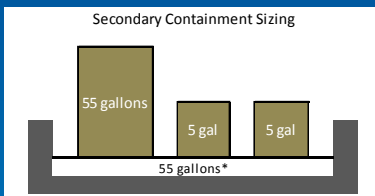
Best Management Practices BMP 4.0 Vehicle/Equipment Storage

- Targeted Activities
 - Vehicle, equipment, chemical, and tire storage
- Targeted Pollutants
 - Fuels, Oils, Grease, Lubricants
 - Solvents and Soaps
 - Sidewalk/street deicers
 - Herbicides, Pesticides, Fertilizers
 - Debris
 - Tire residue and battery acid



Best Management Practices BMP 4.0 Vehicle/Equipment Storage

- Key Approaches
 - Store materials indoors or under cover
 - Store drums, containers on pallets
 - Provide berms or secondary containment
 - Drain fluids before storage
 - Perform and document periodic inspections
 - Designate storage areas away from storm drains



*Must have capacity for largest container sitting on top.
**Must have additional 10% capacity if stored outdoors.



Best Management Practices BMP 4.0 Vehicle/Equipment Storage

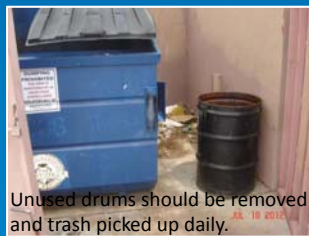
- Signage
 - Label all fluids and maintain appropriate signage
 - Label material storage areas including cabinets and lockers
 - Label Spill Kit/Cleanup Materials
 - Label MSDS Book so it is easily identified



source: www.safetyemporium.com

Best Management Practices BMP 5.0 Outdoor Handling, Storage, and Disposal of Waste and Materials

- | | | |
|--|---|---|
| <ul style="list-style-type: none"> • Targeted Activities <ul style="list-style-type: none"> – Disposal of spent maintenance fluids – Garbage/recyclables collection – Grease collection | <ul style="list-style-type: none"> • Targeted Pollutants <ul style="list-style-type: none"> – Solid waste – Fuels, Oils, Grease | <ul style="list-style-type: none"> – Solvents – Soaps, Detergents – Pesticides – Battery acid |
|--|---|---|



Typical grease collection unit.

Best Management Practices BMP 5.0 Outdoor Handling, Storage, and Disposal of Waste and Materials

- Key Approaches
 - Conduct loading and unloading under cover
 - Store materials indoors or under cover
 - Store empty drums, containers, tires on pallets
 - Transfer materials in paved areas, away from storm drain inlets
 - Contain and absorb leaks/spills that occur during material transfer
 - Provide berms or secondary containment
 - Perform and document periodic inspections
 - Check loading equipment regularly for leaks



Dumpsters should always have plugs in place.

CDM
Smith

Best Management Practices BMP 6.0 Fuel Storage and Delivery

- Targeted Activities
 - Aircraft, vehicle, and equipment fueling
 - Fuel Storage
- Targeted Pollutants
 - Petroleum hydrocarbons



Drain mats should be available to block storm drains.



CDM
Smith

Best Management Practices BMP 6.0 Fuel Storage and Delivery

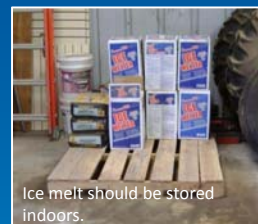
- Key Approaches
 - Following established procedures
 - Fueling by trained staff
 - Use absorbents or vacuum equipment for spills
 - Keep drain covers on hand during fueling activities



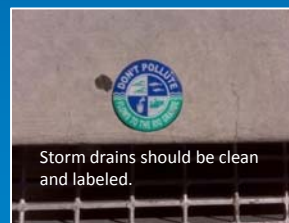
Fuels should be stored in flammables cabinets.

Best Management Practices BMP 7.0 Building and Grounds Maintenance

- Targeted Activities
 - Building and grounds maintenance
 - Building/Pavement wash down
 - Parking area maintenance
 - Graffiti removal
 - Sidewalk, plaza sweeping
- Targeted Pollutants
 - Pesticides, herbicides, fertilizers, sediment, landscape waste, oil and grease, urea/salt for pavement anti-icing



Ice melt should be stored indoors.



Storm drains should be clean and labeled.

Best Management Practices BMP 7.0 Building and Grounds Maintenance

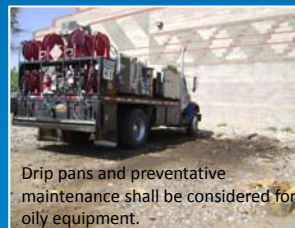
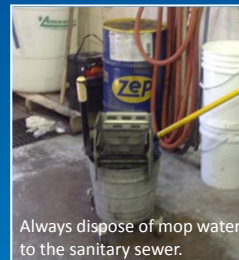
- Key Approaches
 - Pesticides, herbicides, and fertilizers
 - Limit use, pull weeds instead
 - Follow manufacturer's instructions
 - Landscaping
 - Contain and dispose of all wastes
 - Keep paved surfaces cleaned and swept
 - Eliminate pavement wash down
 - Salt
 - Keep salt storage areas appropriately covered
 - Sweep up undissolved salt



CDM
Smith

Best Management Practices BMP 7.0 Building and Grounds Maintenance

- Key Approaches
 - Buildings
 - Eliminate building wash down
 - Dispose of mop water/scrubber water into sanitary sewer
 - Service oil/water separators regularly
 - Parking Lots
 - Implement impervious parking areas or vegetative swales where practical
 - Clean parking lots (using dry methods) and storage areas regularly
 - Provide sufficient litter receptacles
 - Clean storm drain inlets regularly



CDM
Smith

Best Management Practices BMP 8.0 Storm Water Treatment Control

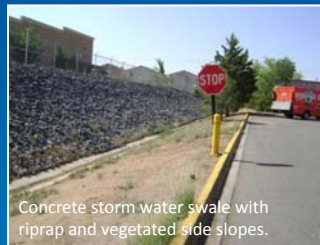
- Targeted Activities
 - Construction and maintenance of storm water treatment and control structures
 - Detention/retention ponds
 - Storm drain inlets
 - Infiltration trench
 - Swales, ditches, buffer strips
- Targeted Pollutants
 - Sediment
 - Nutrients, Organics
 - Trash, Debris
 - Bacteria
 - Oils and grease



Storm water detention pond at Pino Yards.

Best Management Practices BMP 8.0 Storm Water Treatment Control

- Key Approaches
 - Inspect storm water inlets, swales, ponds regularly and after large storm events
 - Limit grass height, manage weeds
 - Remove trash, debris, sediment regularly
 - Minimize erosion with ground cover, rip rap, or concrete
 - Irrigation may be required to maintain ground cover
 - Minimize fertilizer/herbicide use
 - Unclog underdrain, outlets



Concrete storm water swale with riprap and vegetated side slopes.



Detention pond with raised outlet.

Best Management Practices BMP 8.0 Storm Water Treatment Control

- Key Approaches
 - Low Impact Development in New Construction
 - Bioretention (swales, vegetated strips, open space, etc.)
- Reduce paved surfaces
- Permeable Pavement
- Storm water cisterns for storm water reuse
- Curb cuts and drainage into vegetated areas



CDM
Smith

Best Management Practices BMP 9.0 Animal Waste

- Targeted Activities
 - Prevent animal waste from contacting storm water
 - Consumes oxygen in receiving water
 - Releases ammonia
 - Introduces E-Coli and other bacteria/pathogens
 - Increase of nutrients
- Targeted Pollutants
 - Nutrients
 - Organics
 - Bacteria

Fun Fact:
Just one ounce of dog feces contains 23 million microorganisms of bacteria. More than twice that of human waste.

Source: City of Lakeland, TN Website

CDM
Smith

Best Management Practices BMP 9.0 Animal Waste

- Key Approaches
 - Sweep and clean animal handling areas regularly
 - Properly dispose of animal waste, uneaten food, and other potential pollutants
 - Wash animals in areas draining to the sanitary sewer
 - House animals in paved, covered areas if possible (use mulch if not paved)



Collection of animal bedding and waste.



Collection of pet stall wash water for disposal to sanitary sewer.

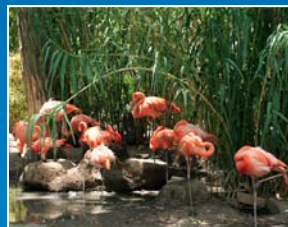
CDM
Smith

Best Management Practices BMP 9.0 Animal Waste

- Key Approaches
 - Dispose of animal housing wash water to the sanitary sewer
 - Use rags, damp mops, adsorbents to clean spills
 - Dispose of spill cleanup materials properly



One of many CABQ dog parks.



Flamingos at the CABQ BioPark.

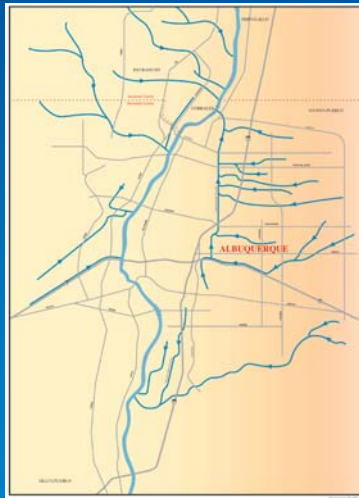
CDM
Smith

Summary (Sector P)

- Assign a SWPPP Coordinator
- Develop and implement a SWPPP and BMPs
- File for eNOI or No Exposure Certification
- Develop and post a Spill Response Plan with emergency contacts
- Have spill response materials on hand
- Provide training on the SWPPP for employees
- Complete site inspections (quarterly)
- Maintain required documentation (SWPPP, eNOI, training records, inspection forms) and submit copies to the Storm Water Management Section

Summary (Facilities other than Sector P and those with No Exposure)

- Assign a Storm Water Quality Coordinator
- Develop and implement BMPs appropriate for the facility
- Provide training on storm water pollution prevention practices for employees and submit annual training records to Storm Water Management Section
- SWPPP preparation and annual inspections suggested but not required
- Develop and post a Spill Response Plan with emergency contacts
- Have spill response materials on hand



SWPPP Contact Information

- **City of Albuquerque Storm Drainage Design**
 - Kevin Daggett, P.E., Manager
 - (505) 768-2778; KDaggett@cabq.gov
 - Kathy Verhage, P.E., Senior Engineer
 - (505) 768-3654; KVerhage@cabq.gov
- **CDM Smith**
 - Kelly Collins, C.P.G., CHMM
 - (505) 243-3200, CollinsKA@cdmsmith.com
 - Sarah Tuite, P.E.
 - (505) 243-3200; TuiteSC@cdmsmith.com

CDM
Smith

Training Assessment

You have approximately 5 minutes to complete the 10 question training assessment.

The assessment was developed to gain an understanding of the effectiveness of the training program.

The training assessment is the last page of your training handout.

CDM
Smith

Question 1

_____ results when rain or snow melt accumulates on the ground surface faster than it can infiltrate, coalescing in drainage features (ditches, drains, or arroyos) and flowing to a receiving water without treatment.

- a) Flooding
- b) Infiltration
- c) Storm water
- d) All of the above

Answer
c) Storm water

Question 2

Sources of storm water pollution include:

- a) Used oil
- b) Wash water
- c) Herbicides
- d) All of the above

Answer
d) All of the above

Question 3

The following component is not required to be included in your facility SWPPP:

- a) Inventory of potential storm water pollutants
- b) Facility drainage map
- c) MSDS sheets
- d) Employee training records
- e) Best Management Practices

Answer
c) MSDS Sheets

Question 4

At a minimum, storm water inspections should be conducted at your facility _____.

- a) Monthly
- b) Quarterly
- c) Bi-Annually
- d) During every rain event
- e) All of the above

Answer
b) Quarterly

Question 5

Best Management Practices are developed for the following purposes:

- a) To meet the requirement of the MS4 permit
- b) To assist in minimizing storm water pollution by implementing both physical and non-physical controls
- c) Prevent storm water from reaching navigable waters
- d) Encourage each department to perform training
- e) All of the above

Answer
e) All of the above

CDM
Smith

Question 6

Under the MS4 Permit, the City is required to ensure good housekeeping at City facilities by:

- a) Employee training
- b) Routine inspections
- c) Development and implementation of a SWPPP
- d) All of the above

Answer
d) All of the above

CDM
Smith

Question 7

The best storage of an outdoor 55-gallon oil drum includes:

- a) Cover and secondary containment
- b) Cover only
- c) Secondary containment only
- d) Cover and wood pallet

Answer

a) Cover and secondary containment

CDM
Smith

Question 8

You should dispose washwater from vehicle washing, equipment washing, and mop water into:

- a) Sanitary sewer drain
- b) Oil/water separator with sewer connection
- c) Allow to dry on paved surface
- d) Storm drain
- e) a or b

Answer

e) a or b

CDM
Smith

Question 9

At your facility, the following documentation should be available for review:

- a) SWPPP/BMPs
- b) Training records
- c) Spill Response Plan
- d) All of the above

Answer

d) All of the above

CDM
Smith

Question 10

Spill response plans should be posted:

- a) Where fuel is stored and used
- b) In the main office near a telephone
- c) In all areas where hazardous materials are used or stored
- d) In the break room

Answer

c) In all areas where hazardous materials are used
or stored

CDM
Smith

Questions?

**To receive credit for attending
today's session, please turn in
your completed assessment on
your way out.**

Thank you!

**CDM
Smith**

**City of Albuquerque Storm Water Management Section
Storm Water Training Assessment
August 2013**

Please completely fill in the circle of the best answer.

Question 1: _____ results when rain or snow melt accumulates on the ground surface faster than it can infiltrate, coalescing in drainage features (ditches, drains, or arroyos) and flowing to a receiving water without treatment.

- a) Flooding
- b) Infiltration
- c) Storm water
- d) All of the above

Question 2: Sources of storm water pollution include:

- a) Used oil
- b) Wash water
- c) Herbicides
- d) All of the above

Question 3: The following component is not required to be included in your facility SWPPP:

- a) Inventory of potential storm water pollutants
- b) Facility drainage map
- c) MSDS sheets
- d) Employee training records
- e) Best Management Practices

Question 4: At a minimum, storm water inspections should be conducted at your facility _____.

- a) Monthly
- b) Quarterly
- c) Bi-Annually
- d) During every rain event

Question 5: Best Management Practices are developed for the following purposes:

- a) To meet the requirement of the MS4 permit
- b) To assist in minimizing storm water pollution by implementing both physical and non-physical controls
- c) Prevent storm water from reaching navigable waters
- d) Encourage each department to perform training

Name (please print) _____ ANSWER KEY _____ Department _____
Date _____

Question 6: Under the MS4 Permit, the City is required to ensure good housekeeping at City facilities by:

- a) Employee training
- b) Routine inspections
- c) Development and implementation of a SWPPP
- d) All of the above

Question 7: The best storage of an outdoor 55-gallon oil drum includes:

- a) Cover and secondary containment
- b) Cover only
- c) Secondary containment only
- d) Cover and wood pallet

Question 8: You should dispose washwater from vehicle washing, equipment washing, and mop water into:

- a) Sanitary sewer drain
- b) Oil/water separator with sewer connection
- c) Allow to dry on paved surface
- d) Storm drain
- e) a or b

Question 9: At your facility, the following documentation should be available for review:

- a) SWPPP
- b) BMPs
- c) Spill Response Plan
- d) All of the above

Question 10: Spill response plans should be posted:

- a) Where fuel is stored and used
- b) In the main office near a telephone
- c) In all areas where hazardous materials are used or stored
- d) In the break room

Name (please print) _____ Department _____
Date _____

**City of Albuquerque Storm Water Management Section
Storm Water Training Assessment
August 2013**

Please completely fill in the circle of the best answer.

Question 1: _____ results when rain or snow melt accumulates on the ground surface faster than it can infiltrate, coalescing in drainage features (ditches, drains, or arroyos) and flowing to a receiving water without treatment.

- a) Flooding
- b) Infiltration
- c) Storm water
- d) All of the above

Question 2: Sources of storm water pollution include:

- a) Used oil
- b) Wash water
- c) Herbicides
- d) All of the above

Question 3: The following component is not required to be included in your facility SWPPP:

- a) Inventory of potential storm water pollutants
- b) Facility drainage map
- c) MSDS sheets
- d) Employee training records
- e) Best Management Practices

Question 4: At a minimum, storm water inspections should be conducted at your facility _____.

- a) Monthly
- b) Quarterly
- c) Bi-Annually
- d) During every rain event

Question 5: Best Management Practices are developed for the following purposes:

- a) To meet the requirement of the MS4 permit
- b) To assist in minimizing storm water pollution by implementing both physical and non-physical controls
- c) Prevent storm water from reaching navigable waters
- d) Encourage each department to perform training

Name (please print) _____ Department _____
Date _____

Question 6: Under the MS4 Permit, the City is required to ensure good housekeeping at City facilities by:

- a) Employee training
- b) Routine inspections
- c) Development and implementation of a SWPPP
- d) All of the above

Question 7: The best storage of an outdoor 55-gallon oil drum includes:

- a) Cover and secondary containment
- b) Cover only
- c) Secondary containment only
- d) Cover and wood pallet

Question 8: You should dispose washwater from vehicle washing, equipment washing, and mop water into:

- a) Sanitary sewer drain
- b) Oil/water separator with sewer connection
- c) Allow to dry on paved surface
- d) Storm drain
- e) a or b

Question 9: At your facility, the following documentation should be available for review:

- a) SWPPP
- b) BMPs
- c) Spill Response Plan
- d) All of the above

Question 10: Spill response plans should be posted:

- a) Where fuel is stored and used
- b) In the main office near a telephone
- c) In all areas where hazardous materials are used or stored
- d) In the break room

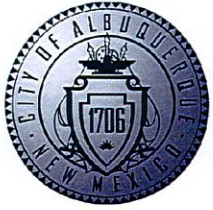


Attendees List
 City of Albuquerque Storm Water Management Section
 Storm Water Pollution Prevention Annual Training
 August 13, 2013 8:30 AM

Focus: Fueling and
 Maintenance Activities

Name	Department / Position	Phone Number	E-mail Address
ALBERT HERREN	FIRE / Lieutenant FIRE PREVENTION	764-6307	AHERREN@CABA.GOV
MARK DEAR	SWMD / ENVIRONMENTAL	228-2918	mdean@cabq.gov
Alvin Esquivel	DFAS Fuel Attendant	857-8078	
Amy n TAFORA	DFAS FUEL	857 768-5322	
Anthony Burrota	DFAS 6th St. Shop	259-4165	aburrota@cabq.gov
Martin Raimondi	DFAS / ^{Asst} Fleet Mgr	857-8013	mrainondi@cabq.gov
MARK Ponsford	WRAFFI	857-8623	mark@wrappi.com
Sentil Kanbar	DMD - Eng / Storm	768-3645	SKanbar@cabq.gov
MARTIN PACHECO	DMD - STREETS	857-8298	martinpacheco@cabq.gov
PAN KARAS	CDM SMITH	243-3200	KARASPA@CDMSMITH.COM

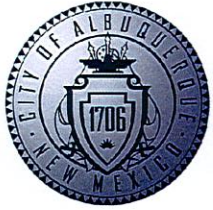
COM



Attendees List
 City of Albuquerque Storm Water Management Section
 Storm Water Pollution Prevention Annual Training
 August 13, 2013 8:30 AM

Focus: Fueling and
 Maintenance Activities

Name	Department / Position	Phone Number	E-mail Address
RONNY R. CHAVEZ	SWMD/CCD - SUPERVISOR	c: 506-8743 +: 857-8057	RRCHAVEZ@CABQ.GOV
Marco Holloway	SWMD/CCD - Superintendent	c: 366-3118 o: 857-8063	mholloway@cabq.gov
Carl Corona	DFA / Warehouse		CCORONA@CABQ.GOV
David Harper	DFA / Warehouse	225-0007 857-8675	dharper@cabq.gov
Gilbert Tryllo	cls ABP	366-4259	gtryllo@cabq.gov
David Urioste	DMD / FEMD	205-5354	durioste@cabq.gov
Leroy Baca	DMD / FEMD	228-0000	lbaca@cabq.gov
Angela Stewart	DMD / Traffic	857-8008	ASTEWART@CABQ.GOV.
JOHN KOLESSAR	DMD / Traffic	250-2587 (E)	jkolessar@cabq.gov
Randy Rodarte	DFA / Fleet	903-9385 610-7201	RmRodarte@CABQ.GOV



Attendees List
 City of Albuquerque Storm Water Management Section
 Storm Water Pollution Prevention Annual Training
 August 13, 2013 8:30 AM

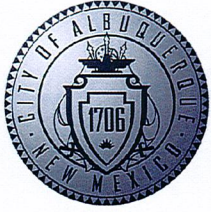
Focus: Fueling and
 Maintenance Activities

Name	Department / Position	Phone Number	E-mail Address
Sarah Tuite	CDM SMITH	243 3200	tuitesc@cdmsmith.com
Kelly Collins	CDM Smith	243-3200	Collinska@cdmsmith.com
Billy Galleg	ENV. Health / Division manager	768-2658	bagallegos@cabq.gov
PAUL SMITH	ENV. HEALTH / DIVISION MANAGER	452-5301	pfsmith@cabq.gov



Attendees List
 City of Albuquerque Storm Water Management Section
 Storm Water Pollution Prevention Annual Training
 August 14, 2013 1:00 PM

Name	Department / Position	Phone Number	E-mail Address
Dan Gates	EHD-AGD	768 1963	dgates@cabq.gov
Jay Rodecap	FEMD	768 2819	jrodecap@cabq.gov
SHABIH RIZVI	ABQ RIDE COA	724-3134	srizvi@cabq.gov
Nick Cordoue	COA transit	263-7924	NickCordoue@cabq.gov
Jane Eisenberg	COA 940	768-2654	jeisenberg@cabq.gov
JUSTIN WOLFE	PRD		juwolve@cabq.gov
Richard Lofstrom	PRD-PRD	857-8662	RLOFSTROM@CABQ.GOV
Joel Craig	AWD	768-1942	jcraig@cabq.gov
JEFF HERRMANN	DMD-FEMD	228-1827	JHERRMANN@CABQ.GOV
DAVE ZOLADZ	PAES SUPER -SWMD	768-8161	DZOLADZ@CABQ.GOV



Attendees List
City of Albuquerque Storm Water Management Section
Storm Water Pollution Prevention Annual Training
August 14, 2013 1:00 PM

Name	Department / Position	Phone Number	E-mail Address
Martin Vargas	SWMD - Superintendent	977-0090	mvargas@cabq.gov
Glen Dennis	EHD / VPMI Manager	764-1105	gdennis@cabq.gov
Sarah Tuite	CDM Smith	243-3200	tuitesc@cdmsmith.com



Attendees List
 City of Albuquerque Storm Water Management Section
 Storm Water Pollution Prevention Annual Training
 October 16, 2013 8:30 AM

Name	Department / Position	Phone Number	E-mail Address
Henry Rodarte	P&R / Assistant Supervisor	256-2090	hrodarte@cabq.gov
LOISEL SOTELO	PR ASSISTENTSUP	573 8756	
REX SADDORS	P&R / SUPERVISOR	205 6550	
ALBERT "AI" RODRIGUEZ	PARKS & REC.	857-8646	rrrodriguez@cabq.gov
Kathy Verheij	DWLD STAFF	768 3604	kverheij@cabq.gov
Lewis Casey	Risk Management/Safety	331-2022 cell	lcasey@cabq.gov
Michael Sanchez	Risk Mgmt./Safety	768-4553	mpsanchez@cabq.gov
Vince Sena	Parks Rec / Irrigation spe.	340-1546	
Sarah Tuite	CDM Smith	243-3200	tuitesc@cdmsmith.com
Gloria Chavez	Park Mgmt.	264-2321	gloria.chavez@cabq.gov



Attendees List
City of Albuquerque Storm Water Management Section
Storm Water Pollution Prevention Annual Training
October 16, 2013 8:30 AM

Name	Department / Position	Phone Number	E-mail Address
David Salas	P&R Golf - Supt.	768-5365	desalas@cabq.gov

**APPENDIX H
ENDANGERED AND THREATENED SPECIES
SCREENING MEMORANDUM**

This Page Intentionally Left Blank



Memorandum

*To: Jake Daugherty, Environmental Compliance Coordinator
City of Albuquerque Solid Waste Management Department*

From: Rochelle Larson, P.E.

Date: June 30, 2016

Subject: Solid Waste Management Dept. (SWMD) here in the City of Albuquerque (COA) Clean City Division at Pino Yards Documentation of Eligibility with respect to Endangered Species for Coverage under the Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activities (MSGP 2015)

This eligibility determination was completed in support of the COA SWMD Notices of Intent (NOIs) for coverage of the Clean City Division at Pino Yards (Clean City PY) under the Multi-Sector General Permit (MSGP 2015) for Stormwater Discharges Associated with Industrial Activity. As part of the Stormwater Pollution Prevention Plan (SWPPP) development for the Clean City PY, a review of threatened and endangered species was performed. The purpose of this review was to verify if there are any species that have been placed on the U.S. Fish and Wildlife Service's (FWS) threatened or endangered species list for the Action Area.

Using the methodology outlined in Appendix E of MSGP 2015, the Clean City PY has been determined eligible for coverage under Criterion C related to endangered species protection. The endangered species data collected and the assessment of the potential effects of Clean City PY discharges are described in this memorandum. The information is formatted in accordance with the requirements of MSGP 2015, Appendix E.

It is important that the Environmental Compliance Coordinator be up to date on the threatened and endangered species in the event that an issue regarding special status species at the Clean City PY occurs. This information should also be conveyed to Clean City PY staff.

Step One: Determine if Eligibility Requirements of Criterion B, D, or E Can Be Met

None of the eligibility requirements of Criteria B, D, or E apply to the Clean City PY operations. The Clean City PY activities are not covered under the eligibility certification of another operator for the project area (Criterion B requirement). Also, it has not been necessary for the Clean City PY to conduct an Endangered Species Act (ESA) Section 7 consultation (a Criterion D requirement). Lastly, activities at the Clean City PY are not part of a Habitat Conservation Plan under Section 10 of the ESA (a Criterion E requirement).

Step Two: Determine the Extent of Your Action Area

The Action Area, as defined in the MSGP 2015, includes “*all areas to be affected directly or indirectly by the federal action and not merely the immediate area involved in the action, including areas beyond the footprint of the facility that are likely to be affected by stormwater discharges, discharge-related activities, and allowable non-stormwater discharges.*” As such, Appendix E

directs the evaluator to consider areas beyond the footprint of the facility including downstream areas that may be impacted by discharges of pollutants.

Using Appendix E directions, the Action Area was delineated using the subwatershed that contains the facility property, arroyos and channels that receive and convey stormwater discharges from the facility property and the Rio Grande as the ultimate receiving water. The tributaries and receiving waters considered are listed below:

- Arroyo de Domingo Baca, unnamed channels, arroyos and finally the Rio Grande

Geographic Information System (GIS) mapping system was utilized to create the Action Area. The first step was to create the facility's parcel shapefile from KMZ files. The next step was to determine which subwatershed was associated with the facility. The hydrography geodatabase (geodatabase) for the Albuquerque New Mexico area was downloaded from the United States Geological Survey (USGS) National Map Viewer website based on the facility's shapefile (<http://viewer.nationalmap.gov>). The subwatershed was selected based on the location of the Clean City PY parcel within the geodatabase. GIS was then used to create shapefiles of the Action Area at the 12-digit hydrologic unit code (HUC) subwatershed level. This subwatershed shapefile was used to perform Step 3. The Action Area was based on HUC12 subwatershed 130202030305, Arroyo de Domingo. The Action Area is shown on the figure included in the Criterion C Eligibility Form as Attachment 1.

Step Three: Determine if Listed Threatened or Endangered Species and Critical Habitat are Present in the Action Area.

The U.S. Fish & Wildlife Service (FWS) maintains an online mapping tool *Information, Planning and Consultation System* (IPaC) (<http://ecos.fws.gov/ipac/>), used to create area specific listings of endangered species. Imported GIS generated shapefile from Step 2 was used in IPaC to create the site specific special status species list. An Official Species List Request was performed and an Official Species List (List) was generated for the Action Area. The generated List of threatened or endangered species and critical habitat from the IPaC website is presented in Attachment 2.

Based on the List, there are a total of 6 federally-listed species, and 1 proposed and 2 final designated critical habitats (yellow cells), listed on **Table 1**, were determined to potentially occur in the Action Area.

Table 1 Threatened or Endangered Species listed for Action Areas

Common Name	Scientific Name	Species Group	Critical Habitat	Listing Status
Jemez Mountains salamander	(<i>Plethodon neomexicanus</i>)	Amphibians	Final Designated	E
Mexican Spotted owl	<i>Strix occidentalis lucida</i>	birds	Final designated	T
New Mexico meadow jumping mouse	<i>Zapus hudsonius luteus</i>	mammals	Proposed	E
Rio Grande silvery minnow	<i>Hybognathus amarus</i>	fishes	Final designated	E
Southwestern Willow flycatcher	<i>Empidonax traillii extimus</i>	birds	Final designated	E
Yellow-Billed Cuckoo	<i>Coccyzus americanus</i>	birds	Proposed	T

C – Candidate, E – Endangered, T – Threatened

Jemez Mountains salamander- Information provided through links from the FWS website indicates that the Jemez Mountains salamander lives underground in forest or meadow areas containing spaces provided by rocks with fractures or loose rocky soils; rotted tree root channels; or burrows of rodents or large invertebrates. These environmental conditions are substantially different than those present at the facility. Additionally, direct impacts to the species or its habitat are also unlikely as the designated critical habitat is not within the project area.

Mexican Spotted owl - Information provided through links from the FWS website indicates that the Mexican Spotted owl is not listed as being located within the geographic area of the Clean City PY parcel. Direct impacts to the species or its habitat are also unlikely because habitat for the identified endangered species critical habitat is a significant distance from of the immediate area of the Clean City PY parcel.

New Mexico meadow jumping mouse - Information provided on the FWS website indicates that the endangered New Mexico meadow jumping mouse resides in moist, streamside, dense riparian/wetland vegetation. These environmental conditions are substantially different than those present at the facility. Additionally, no designated critical habitat has been established for this species.

Rio Grande silvery minnow - Information provided through links from the FWS website indicates that the Rio Grande silvery minnow the Rio Grande silvery minnow are known or likely to be present, at least seasonally, in the Rio Grande. However, it is not listed as being located within the geographic area of the Clean City PY parcel. Additionally, direct impacts to the species or its critical habitat are also unlikely because the habitat is over 3 miles from the Clean City PY parcel.

Southwestern Willow flycatcher - Information provided through links from the FWS website indicates that the Southwestern Willow flycatcher is not listed as being located within the geographic area of the Clean City PY parcel. Direct impacts to the species or its habitat are also unlikely because habitat for the identified endangered species critical habitat is a significant distance from of the immediate area of the Clean City PY parcel.

Yellow-Billed Cuckoo - Information provided on the FWS website indicates that the candidate Yellow-Billed Cuckoo is found in areas of forest, woodland, and scrub during non-breeding months. These environmental conditions are substantially different than those present at these facility. While there is a proposed critical habitat for this species, there was no critical habitat identified within the facility's parcel.

Step Four: Determine If Your Industrial Facility's Discharges Or Discharge-Related Activities Are Likely To Adversely Affect Listed Threatened Or Endangered Species Or Designated Critical Habitat And Any Measures That Must Be Implemented To Avoid Adverse Effects

Step 4 was performed based on the list of endangered species and their potential or known habitat generated in Step 3. As such, an assessment of the Clean City PY discharges and discharge related activities that could adversely affect the listed species and critical habitat was performed. The assessment included the completion of the Criterion C Eligibility Form utilizing

Mr. Jake Daugherty
June 30, 2016
Page 4

current information and instructions. This section provides the information that was utilized to complete the Criterion C Eligibility Form.

Clean City PY parcel

Industrial activity occurs within approximately the approximate 1.9 acres of the facility's parcel. The facility's industrial operations occur within less than a percent of the drainage area of the 28 plus square mile Arroyo de Domingo Baca subwatershed. The Clean City PY property discharges storm water into the South Domingo Baca Channel. The South Domingo Baca Channel is a concrete lined channel that flows into the concrete lined Domingo Baca Channel and then converges into the North Diversion Channel (also concrete lined). This channel collects the storm water from twelve watersheds that cover the Northeast quadrant of Albuquerque. When storm water flows from the property and reaches the North Diversion Channel, they are diluted by the significantly greater flow in the channel before discharge to the Rio Grande.

Appendix E of the MSGP indicates "*where a stormwater discharge constitutes a minute portion of the total volume of the receiving water, adverse hydrological effects are less likely.*" Adverse effects to receiving waters such as temperature, salinity, pH, or dissolved oxygen in the Rio Grande are considered remote.

Direct impacts to habitat are also unlikely because habitat for the identified endangered species is not present within or near the active facility's industrial area. Material storage, construction or maintenance of stormwater control measures at the facility will not impact habitat. Stormwater discharges from the parcels could contribute minimally to potential impacts to habitat in the event of an extreme precipitation event.

Attachments:

Criterion C Eligibility Form (including Attachment 1 and 2)

cc: file

Criterion C Eligibility Form

Instructions:

In order to be eligible for coverage under criterion C, you must complete the following form and you must submit it to EPA following the instructions in Section VII a **minimum of 30 days prior to filing your NOI for permit coverage**. After you submit your form, you may be contacted by EPA with additional measures (e.g., additional stormwater controls or modifications to your discharge-related activities) that you must implement in order to ensure your eligibility under criterion C.

If after completing this worksheet you cannot make a determination that your discharges and discharge-related activities are not likely to adversely affect listed threatened or endangered species or designated critical habitat, you must submit this completed worksheet to EPA, and you may not file your NOI for permit coverage until you receive a determination from EPA that your discharges and/or discharge-related activities are not likely to adversely affect listed species and critical habitat.

Note: Much of the information needed for this form can be obtained from your draft SWPPP which will be needed when you file your NOI.

SECTION I. OPERATOR, FACILITY, AND SITE LOCATION INFORMATION.

1) Operator Information

a) **Operator Name:** City of Albuquerque Solid Waste Management Department

b) **Point of Contact**

First Name: Jake **Last Name:** Daugherty

Phone Number: 505-761-8324

E-mail: ddaugherty@cabq.gov

2) Facility Information

a) **Facility Name:** Clean City Division at Pino Yards

b) **Check which of the following applies:**

I am seeking coverage under the MSGP as a new discharger or as a new source

I am seeking coverage under the MSGP as an existing discharger and my facility has modifications to its discharge characteristics (e.g., changes in discharge flow or area drained, different pollutants) and/or discharge-related activities (e.g., stormwater controls)

Indicate the number of years the facility has been in operation: _____ years

Provide your NPDES ID (i.e., permit tracking number) from your previous MSGP coverage: _____

I am seeking coverage under the MSGP as an existing discharger and there are no modifications to my facility.

Indicate the number of year the facility has been in operation: 20 years

Provide your NPDES ID (i.e., permit tracking number) from your previous MSGP coverage: _____

c) Facility Address:

Address 1: 5501 Pino Ave NE, Bldg. D

Address 2: _____

City: Albuquerque State: NM Zip Code: 87109

d) Identify the primary industrial sector to be covered under the 2015 MSGP:

SIC Code 4212 or Primary Activity Code _____

Sector P and Subsector P1

e) Identify the sectors of any co-located activities to be covered under the 201r MSGP:

Sector _____ Subsector _____

Sector _____ Subsector _____

Sector _____ Subsector _____

Sector _____ Subsector _____

Sector _____ Subsector _____

Sector _____ Subsector _____

f) Estimated area of industrial activity exposed to stormwater: 1.9 acres

g) Provide a general description of the industrial activities that are taking place at this facility:

The site activities include vehicle and equipment storage, herbicide storage, warehousing, administration, and waste handling and disposal. Minor maintenance is performed on vehicles and maintenance of small equipment such as hand tools, weed trimmers, etc. in the maintenance shop on-site. Graffiti removal chemicals, paint, sprayers, and tools are stored near the administration building.

3) Receiving Waters Information

List all the stormwater outfalls from your facility.				For each outfall, provide the following receiving water information:	
Outfall ID	Design Capacity (if known)	Latitude (decimal degrees)	Longitude (decimal degrees)	Name of the receiving water that receives stormwater from the outfall and/or from the MS4 that the outfall discharges to	Type of Waterbody (e.g., lake, pond, river/stream/creek, estuarine/marine water)
PY1		<u>35.1706</u>	<u>106.5830</u>	Rio Grande	River
PY2		<u>35.1707</u>	<u>106.5830</u>	Rio Grande	River
PY3		<u>35.1711</u>	<u>106.5822</u>	Rio Grande	River
		-----	-----		
		-----	-----		

SECTION II. ACTION AREA

Ensure that your action area is described in [Attachment 1](#), as required in [Step 2](#).

SECTION III. LISTED SPECIES AND CRITICAL HABITAT LIST

Ensure that the listed species and critical habitat list is included in [Attachment 2](#), as required in [Step 3](#).

Review your species list in Attachment 2, choose one of the following three statements, and follow the corresponding instructions:

The species list includes only terrestrial species and/or their designated critical habitat. No aquatic or aquatic-dependent species or their critical habitat are present in the action area. **You may skip to [Section IV](#) of this form. You are not required to fill out [Section V](#).**

The species list includes only aquatic and/or aquatic-dependent species and/or their designated critical habitat. No terrestrial species or their critical habitat are present in the action area. **You may skip to [Section V](#) of this form and are not required to fill out [Section IV](#).**

The species list includes both terrestrial and aquatic or aquatic-dependent species and/or their designated critical habitat. **You must fill out both [Sections IV](#) and [V](#) of this form.**

Note: For the purposes of this permit, "terrestrial species" would not include animal or plant species that 1) spends any portion of its life cycle in a waterbody or wetland, or 2) if an animal, depends on prey or habitat that occurs in a waterbody or wetland. For example, shorebirds, wading birds, amphibians, and certain reptiles would not be considered terrestrial species under this definition. Please also be aware that some terrestrial animals (e.g., certain insects, amphibians) may have an aquatic egg or larval/juvenile phase.

SECTION IV. EVALUATION OF DISCHARGE-RELATED ACTIVITIES EFFECTS

Note: You are only required to fill out this section if your facility's action area contains terrestrial species and/or their designated critical habitat. If your action area only contains aquatic and/or aquatic-dependent species and/or their designated critical habitat, you can skip directly to [Section V](#).

Most of the potential effects related to coverage under the MSGP are assumed to occur to aquatic and/or aquatic-dependent species. However, in some cases, potential effects to terrestrial species and/or their critical habitat should be considered as well from any discharge-related activities that occur during coverage under the MSGP. Examples of discharge-related activities that could have potential effects on listed terrestrial species or their critical habitat include the storage of materials and land disturbances associated with stormwater management-related activities (e.g., the installation or placement of stormwater control measures).

A. Select the applicable statement(s) below and follow the corresponding instructions:

There are no discharge-related activities that are planned to occur during my coverage under the MSGP. You can conclude that your discharge-related activities will have no likely adverse effects, and:

- If there are any aquatic or aquatic-dependent species and/or their critical habitat in your action area, you must skip to [Section V](#), *Evaluation of Discharge Effects*, below.
- If there are no aquatic or aquatic-dependent species you may skip to [Section VI](#) and verify that your activities will have no likely adverse effects. You must submit this form to EPA as specified in [Section VII](#) of this form. You may select criterion C on your NOI form and may submit your NOI for permit coverage 30 days after you have submitted this *Criterion C Eligibility Form*. You must also provide a description of the basis for the criterion you selected on your NOI form, **including the species and critical habitat list(s) in your action area**, as well as any other documentation supporting your eligibility. You must also include this completed *Criterion C Eligibility Form* in your SWPPP.

There are discharge-related activities planned as part of the proposal. Describe your discharge-related activities in the following box and continue to (b) below.

Describe discharge-related activities:

B. In order to ensure any discharge-related activities will have no likely adverse effects on listed species and/or their designated critical habitat, you must certify that all the following are true:

- Discharge-related activities will occur:
- on previously cleared/developed areas of the site where maintenance and operation of the facility are currently occurring or where existing conditions of the area(s) in which the discharge-related activities will occur precludes its use by listed species (e.g., work on existing impervious surfaces, work occurring inside buildings, area is not used by species), and
 - if discharge-related activities will include the establishment of structures (including, but not limited to, infiltration ponds and other controls) or any related disturbances, these structures and/or disturbances will be sited in areas that will not result in isolation or degradation of nesting, breeding, or foraging habitat or other habitat functions for listed animal species (or their designated critical habitat), and will avoid the destruction of native vegetation (including listed plant species).

If vegetation removal (e.g., brush clearing) or other similar activities will occur, no terrestrial listed species that use these areas for habitat would be expected to be present during vegetation removal.

If all the above are true, you can conclude that your discharge-related activities will have no likely adverse effects, and:

- If there are any aquatic or aquatic-dependent species and/or critical habitat in your action area, you must skip to Section V, Evaluation of Discharge Effects, below.
- If there are no aquatic or aquatic-dependent species you may skip to Section VI and verify that your activities will have no likely adverse effects. You must submit this form to EPA as specified in Section VII of this form. You may select criterion C on your NOI and may submit your NOI for permit coverage 30 days after you have submitted this completed form. You must also provide a description of the basis for the criterion you selected on your NOI form, **including the species and critical habitat list(s)**, and any other documentation supporting your eligibility. You must also include this completed *Criterion C Eligibility Form* in your SWPPP.
- **If any of the above are not true**, you cannot conclude that your discharge-related activities will have no likely adverse effects. You must complete the rest of this form (if applicable), and must submit the form to EPA for assistance in determining your eligibility for coverage.

SECTION V. EVALUATION OF DISCHARGE EFFECTS

Note: You are only required to fill out this section if your facility's action area includes aquatic and/or aquatic-dependent species and/or their critical habitat.

In this section, you will evaluate the likelihood of adverse effects from your facility's discharges. The scope of effects to consider will vary with each facility and species/critical habitat characteristics. The following are examples of discharge effects you should consider:

- *Hydrological Effects.* Stormwater discharges may adversely affect receiving waters from pollutant parameters such as turbidity, temperature, salinity, or pH. These effects will vary with the amount of stormwater discharged and the volume and condition of the receiving water. Where a stormwater discharge constitutes a minute portion of the total volume of the receiving water, adverse hydrological effects are less likely.
- *Toxicity of Pollutants.* Pollutants in stormwater may have toxic effects on listed species and may adversely affect critical habitat. Exceedances of benchmarks, effluent limitation guidelines, or state or tribal water quality requirements may be indicative of potential adverse effects on listed species or critical habitat. However, some listed species may be adversely affected at pollutant concentrations below benchmarks, effluent limitation guidelines, and state or tribal water quality standards. In addition, stormwater pollutants identified in Part 5.2.3.2 of your SWPPP, but not monitored as benchmarks or effluent limitation guidelines, may also adversely affect listed species and critical habitat.

As these effects are difficult to analyze for listed species, their prey, habitat, and designated critical habitat, this form helps you to analyze your discharges and make a determination of whether your discharges will have likely adverse effects and whether there are any additional controls you can implement to ensure no likely adverse effects.

A. Evaluation of Pollutants and Controls to Avoid Adverse Effects. In this section, you must document all of your pollutant sources and pollutants expected to be discharged in stormwater. You must also document the controls you will implement to avoid adverse effects on listed aquatic and aquatic-dependent species. You must include specific details about the expected effectiveness of the controls in avoiding adverse effects to the listed aquatic and aquatic-dependent species. Attach additional pages if needed.

Potential Pollutant Source	Potential Pollutants	Controls to Avoid Adverse Effects on Listed Aquatic and Aquatic-Dependent Species. Include information supporting why the control(s) will ensure no adverse effects, including any data you have about the effectiveness of the control(s) in reducing pollutant concentrations. You may also attach photos of your controls to this form.
e.g., vehicle and equipment fueling	e.g., <ul style="list-style-type: none"> • Oil & grease • Diesel • Gasoline • TSS • Antifreeze 	e.g., <ul style="list-style-type: none"> • Fueling operators (including the transfer of fuel from tank trucks) will be conducted on an impervious or contained pad or under cover • Drip pans will be used where leaks or spills of fuel can occur and where making and breaking hose connections • Spill kit will be kept on-site in close proximity to potential spill areas • Any spills will be cleaned-up immediately using dry clean up methods • Stormwater runoff will be diverted around fueling areas using diversion dikes and curbing

Potential Pollutant Source	Potential Pollutants	Controls to Avoid Adverse Effects on Listed Aquatic and Aquatic-Dependent Species.
Building and Ground Maintenance	Mixed dry herbicide, pesticide, ice melt	Secondary containment is utilized and covered areas are provided for storage. Pallets are used for temporary storage of dry herbicide, pesticide, etc. (to minimize contact with stormwater).
Painting/Stripping	Paint, graffiti removal chemicals	Secondary containment is utilized. Spill kits are stocked and stored where spills are likely to occur.
Vehicle and Equipment Maintenance	Oils, hydraulic fluids, coolant, antifreeze, lubricants, batteries	Regularly scheduled equipment maintenance is performed on paved surfaces or indoors with spill kits stored nearby.
Vehicle and Equipment Storage	Oils, hydraulic fluids	Storage of vehicle and equipment is on paved surfaces and/or away from storm drains. Vehicles and equipment are regularly inspected for leaks.
Equipment Cleaning and Degreasing	Degreasing fluid, oil, washwater, soaps, detergents	Equipment cleaning and degreasing is carried out in designated areas with spill kits stored nearby. Washwater is contained on site with stormwater control structures in place.

Potential Pollutant Source	Potential Pollutants	Controls to Avoid Adverse Effects on Listed Aquatic and Aquatic-Dependent Species.
Vehicle and Equipment Fueling	Unleaded gasoline, diesel	Mobile fueling is carried out on paved surfaces with spill mats and spill kits stored nearby.
Outdoor Handling of Materials	Degreasing fluid, used oil, fuels, antifreeze	Outdoor handling of materials containing fluid are carried out on paved surfaces. Spill kits are stocked and stored where spills are likely to occur.
Outdoor Material Storage	Kerosene, fuels, metal rust, fire extinguishers, paints	Secondary containment is utilized. Spill kits are stocked and stored where spills are likely to occur.
Waste Handling and Disposal	Solid waste, paints, used oils	Solid waste, paints, and used oils are transferred on paved surfaces and properly disposed of. Once full, open top containers are covered with netting and hauled to the landfill.

Check if you are not able to make a preliminary determination that any of your pollutants will be controlled to a level necessary to avoid adverse effects on aquatic and/or aquatic-dependent listed species and their designated critical habitat. You must check in [Section VI](#) that you are unable to make a determination of no likely adverse effects, and must complete the rest of the form. You must submit your completed form to EPA for assistance in determining your eligibility for coverage.

B. Analysis of Effects Based on Past Monitoring Data. Select which of the following applies to your facility:

I have no previous monitoring data for my facility because there are no applicable monitoring requirements for my facility's sector(s).

I have no previous monitoring data for my facility because I am a new discharger or a new source, but I am subject to monitoring under the 2015 MSGP. You must provide information to support a conclusion that your facility's discharges are not expected to result in benchmark or numeric effluent limit exceedances that will adversely affect listed species or their critical habitat:

My facility has not had any exceedances under the 2008 MSGP of any required benchmark(s) or numeric effluent limits.

My facility has had exceedances of one or more benchmark(s) or numeric effluent limits under the 2008 MSGP, but I have addressed them during my coverage under the 2008 MSGP, or in my evaluation of controls to avoid adverse effects in (A) above. Describe all actions (including specific controls) that you will implement to ensure that the pollutants in your discharge(s) will not result in likely adverse effects from future exceedances.

Check if your facility has had exceedances of one or more benchmarks or numeric effluent limits under the 2008 MSGP and you have not been able to address them to avoid adverse effects from future exceedances, or if you are a new discharger or a new source but you are not sure if you can avoid adverse effects from possible exceedances. You must check in [Section VI](#) that you are unable to make a determination of no likely adverse effects. You must submit your completed form to EPA for assistance in determining your eligibility for coverage. You may not file your NOI for permit coverage until you are able to make a determination that your discharges will avoid adverse effects on listed species and designated critical habitat.

SECTION VI VERIFICATION OF PRELIMINARY EFFECTS DETERMINATION

Based on Steps I – V of this form, you must verify your preliminary determination of effects on listed species and designated critical habitat from your discharges and/or discharge-related activities :

Following the applicable Steps in I – V above, I have made a preliminary determination that my discharges and/or discharge-related activities are not likely to adversely affect listed species and designated critical habitats.

Following the applicable Steps in I – V above, I am **not** able to make a preliminary determination that my discharges and/or discharge-related activities are not likely to adversely affect listed species and designated critical habitats.

Certification Information

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.

Attachment 1

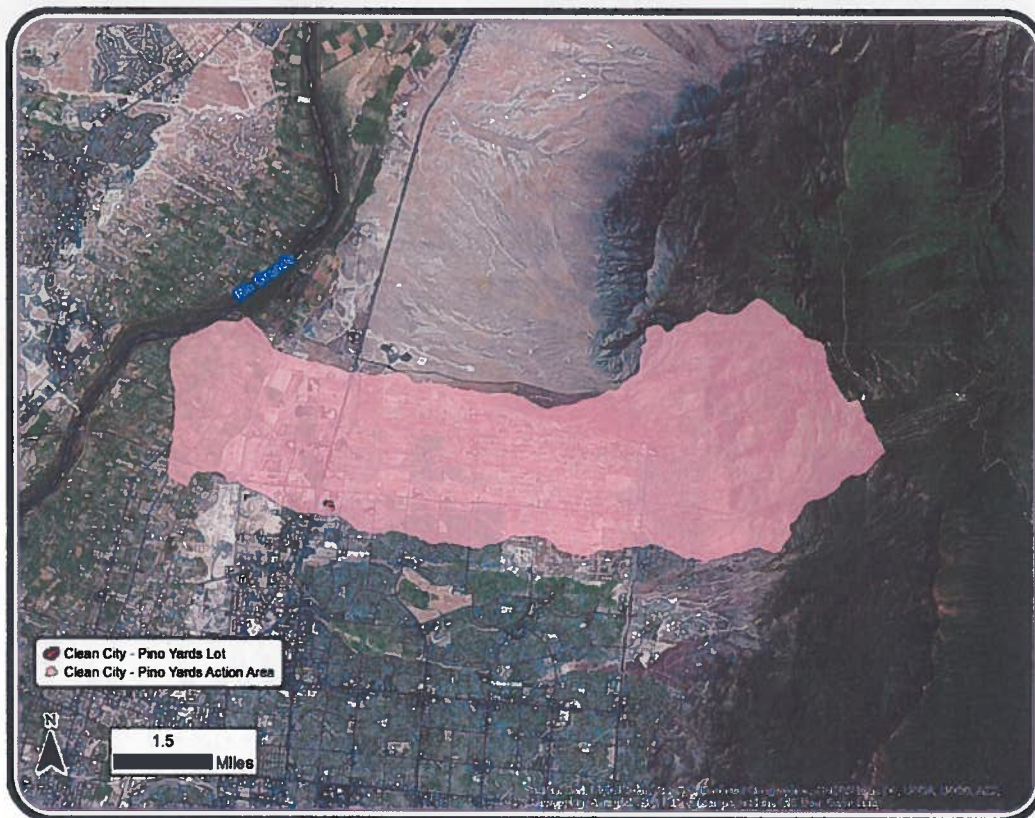
Include a map **and a written description** of the action area of your facility, as required in [Step 2](#). You may choose to include the map that is generated from the FWS' on-line mapping tool IPaC (the Information, Planning, and Consultation System) located at <http://ecos.fws.gov/ipac/>.

The written description of your action area that accompanies your action area map must explain your rationale for the extent of the action area drawn on your map. For example, your action area written description may look something like this:

The action area for the (name of your facility)'s stormwater discharges extends downstream from the outfall(s) in (name of receiving waterbody) (# of meters/feet/kilometers/miles). The downstream limit of the action area reflects the approximate distance at which the discharge waters and any pollutants would be expected to cause potential adverse effects to listed species and/or critical habitat because (insert rationale). The action area does/does not extend to the (name of receiving waterbody)'s confluence with (name of confluence waterbody) because (insert rationale).

Note that you action area written description will be highly site-specific, depending on the expected effects of your facility's discharges and discharge-related activities, receiving waterbody characteristics, etc.

The Action Area was delineated using the subwatershed [12-digit hydrologic unit code (HUC)] that contains the facility properties, arroyos and channels (South Domingo Baca Channel) that receive and convey stormwater discharges from the property to the Rio Grande (ultimate receiving water). As such the Action Area was based on the Arroyo de Domingo (HUC 130202030305) subwatershed.



Attachment 2

List or attach the listed species and critical habitat in your action area on this sheet, as required in Step 3. You must include a list for applicable listed NMFS and FWS species and critical habitat. If there are listed species and/or critical habitat for only one Service, you must include a statement confirming there are no listed species and/or critical habitat for the other Service. For FWS species, include the full printout from your IPaC query. *Note: If your Official Species List from the USFWS indicated no species or critical habitat were present in your action area, include the full consultation tracking code at the top of your Official Species List in your NOI submittal in the question "Provide a brief summary of the basis for the criterion selected in Appendix E." If an Official Species List was not available on IPaC, list the contact date and name of the Service staff with whom you corresponded to identify the existence of any USFWS species or critical habitat present in your action area.*

See attached listed species and critical habitat generated utilizing the FWS IPaC query tool.



United States Department of the Interior



FISH AND WILDLIFE SERVICE
New Mexico Ecological Services Field Office
2105 OSUNA ROAD NE
ALBUQUERQUE, NM 87113
PHONE: (505)346-2525 FAX: (505)346-2542
URL: www.fws.gov/southwest/es/NewMexico/;
www.fws.gov/southwest/es/ES_Lists_Main2.html

Consultation Code: 02ENNM00-2016-SLI-0529
Event Code: 02ENNM00-2016-E-00556
Project Name: Clean City- Pino Yards SWPPP

May 11, 2016

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

Thank you for your recent request for information on federally listed species and important wildlife habitats that may occur in your project area. The U.S. Fish and Wildlife Service (Service) has responsibility for certain species of New Mexico wildlife under the Endangered Species Act (ESA) of 1973 as amended (16 USC 1531 et seq.), the Migratory Bird Treaty Act (MBTA) as amended (16 USC 701-715), and the Bald and Golden Eagle Protection Act (BGEPA) as amended (16 USC 668-668c). We are providing the following guidance to assist you in determining which federally imperiled species may or may not occur within your project area and to recommend some conservation measures that can be included in your project design.

FEDERALLY-LISTED SPECIES AND DESIGNATED CRITICAL HABITAT

Attached is a list of endangered, threatened, and proposed species that may occur in your project area. Your project area may not necessarily include all or any of these species. Under the ESA, it is the responsibility of the Federal action agency or its designated representative to determine if a proposed action "may affect" endangered, threatened, or proposed species, or designated critical habitat, and if so, to consult with the Service further. Similarly, it is the responsibility of the Federal action agency or project proponent, not the Service, to make "no effect" determinations. If you determine that your proposed action will have "no effect" on threatened or endangered species or their respective critical habitat, you do not need to seek concurrence with the Service. Nevertheless, it is a violation of Federal law to harm or harass any federally-listed threatened or endangered fish or wildlife species without the appropriate permit.

If you determine that your proposed action may affect federally-listed species, consultation with the Service will be necessary. Through the consultation process, we will analyze information

contained in a biological assessment that you provide. If your proposed action is associated with Federal funding or permitting, consultation will occur with the Federal agency under section 7(a)(2) of the ESA. Otherwise, an incidental take permit pursuant to section 10(a)(1)(B) of the ESA (also known as a habitat conservation plan) is necessary to harm or harass federally listed threatened or endangered fish or wildlife species. In either case, there is no mechanism for authorizing incidental take "after-the-fact." For more information regarding formal consultation and HCPs, please see the Service's Consultation Handbook and Habitat Conservation Plans at www.fws.gov/endangered/esa-library/index.html#consultations.

The scope of federally listed species compliance not only includes direct effects, but also any interrelated or interdependent project activities (e.g., equipment staging areas, offsite borrow material areas, or utility relocations) and any indirect or cumulative effects that may occur in the action area. The action area includes all areas to be affected, not merely the immediate area involved in the action. Large projects may have effects outside the immediate area to species not listed here that should be addressed. If your action area has suitable habitat for any of the attached species, we recommend that species-specific surveys be conducted during the flowering season for plants and at the appropriate time for wildlife to evaluate any possible project-related impacts.

Candidate Species and Other Sensitive Species

A list of candidate and other sensitive species in your area is also attached. Candidate species and other sensitive species are species that have no legal protection under the ESA, although we recommend that candidate and other sensitive species be included in your surveys and considered for planning purposes. The Service monitors the status of these species. If significant declines occur, these species could potentially be listed. Therefore, actions that may contribute to their decline should be avoided.

Lists of sensitive species including State-listed endangered and threatened species are compiled by New Mexico state agencies. These lists, along with species information, can be found at the following websites:

Biota Information System of New Mexico (BISON-M): www.bison-m.org

New Mexico State Forestry. The New Mexico Endangered Plant Program: www.emnrd.state.nm.us/SFD/ForestMgt/Endangered.html

New Mexico Rare Plant Technical Council, New Mexico Rare Plants: nmrareplants.unm.edu

Natural Heritage New Mexico, online species database: nhnm.unm.edu

WETLANDS AND FLOODPLAINS

Under Executive Orders 11988 and 11990, Federal agencies are required to minimize the destruction, loss, or degradation of wetlands and floodplains, and preserve and enhance their natural and beneficial values. These habitats should be conserved through avoidance, or mitigated to ensure that there would be no net loss of wetlands function and value.

We encourage you to use the National Wetland Inventory (NWI) maps in conjunction with ground-truthing to identify wetlands occurring in your project area. The Service's NWI program website, www.fws.gov/wetlands/Data/Mapper.html integrates digital map data with other resource information. We also recommend you contact the U.S. Army Corps of Engineers for permitting requirements under section 404 of the Clean Water Act if your proposed action could impact floodplains or wetlands.

MIGRATORY BIRDS

The MBTA prohibits the taking of migratory birds, nests, and eggs, except as permitted by the Service's Migratory Bird Office. To minimize the likelihood of adverse impacts to migratory birds, we recommend construction activities occur outside the general bird nesting season from March through August, or that areas proposed for construction during the nesting season be surveyed, and when occupied, avoided until the young have fledged.

We recommend review of Birds of Conservation Concern at website www.fws.gov/migratorybirds/CurrentBirdIssues/Management/BCC.html to fully evaluate the effects to the birds at your site. This list identifies birds that are potentially threatened by disturbance and construction.

BALD AND GOLDEN EAGLES

The bald eagle (*Haliaeetus leucocephalus*) was delisted under the ESA on August 9, 2007. Both the bald eagle and golden eagle (*Aquila chrysaetos*) are still protected under the MBTA and BGEPA. The BGEPA affords both eagles protection in addition to that provided by the MBTA, in particular, by making it unlawful to "disturb" eagles. Under the BGEPA, the Service may issue limited permits to incidentally "take" eagles (e.g., injury, interfering with normal breeding, feeding, or sheltering behavior nest abandonment). For information on bald and golden eagle management guidelines, we recommend you review information provided at www.fws.gov/midwest/eagle/guidelines/bgepa.html.

On our web site www.fws.gov/southwest/es/NewMexico/SBC_intro.cfm, we have included conservation measures that can minimize impacts to federally listed and other sensitive species. These include measures for communication towers, power line safety for raptors, road and highway improvements, spring developments and livestock watering facilities, wastewater facilities, and trenching operations.

We also suggest you contact the New Mexico Department of Game and Fish, and the New Mexico Energy, Minerals, and Natural Resources Department, Forestry Division for information regarding State fish, wildlife, and plants.

Thank you for your concern for endangered and threatened species and New Mexico's wildlife habitats. We appreciate your efforts to identify and avoid impacts to listed and sensitive species in your project area. For further consultation on your proposed activity, please call 505-346-2525 or email nmesfo@fws.gov and reference your Service Consultation Tracking Number.

Attachment



United States Department of Interior
Fish and Wildlife Service

Project name: Clean City- Pino Yards SWPPP

Official Species List

Provided by:

New Mexico Ecological Services Field Office

2105 OSUNA ROAD NE

ALBUQUERQUE, NM 87113

(505) 346-2525

<http://www.fws.gov/southwest/es/NewMexico/>

http://www.fws.gov/southwest/es/ES_Lists_Main2.html

Consultation Code: 02ENNM00-2016-SLI-0529

Event Code: 02ENNM00-2016-E-00556

Project Type: WATER QUALITY MODIFICATION

Project Name: Clean City- Pino Yards SWPPP

Project Description: Clean City- Pino Yards SWPPP eligibility determination related to endangered species.

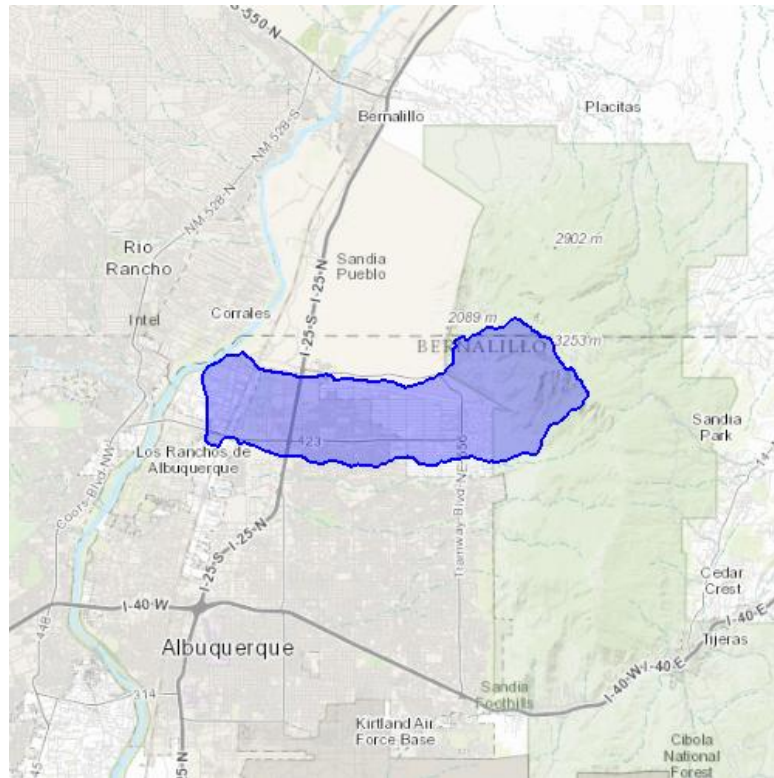
Please Note: The FWS office may have modified the Project Name and/or Project Description, so it may be different from what was submitted in your previous request. If the Consultation Code matches, the FWS considers this to be the same project. Contact the office in the 'Provided by' section of your previous Official Species list if you have any questions or concerns.



United States Department of Interior
Fish and Wildlife Service

Project name: Clean City- Pino Yards SWPPP

Project Location Map:



Project Coordinates: The coordinates are too numerous to display here.

Project Counties: Bernalillo, NM | Sandoval, NM



United States Department of Interior
Fish and Wildlife Service

Project name: Clean City- Pino Yards SWPPP

Endangered Species Act Species List

There are a total of 6 threatened or endangered species on your species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Critical habitats listed under the **Has Critical Habitat** column may or may not lie within your project area. See the **Critical habitats within your project area** section further below for critical habitat that lies within your project. Please contact the designated FWS office if you have questions.

Amphibians	Status	Has Critical Habitat	Condition(s)
Jemez Mountains salamander (<i>Plethodon neomexicanus</i>)	Endangered	Final designated	
Birds			
Mexican Spotted owl (<i>Strix occidentalis lucida</i>) Population: Entire	Threatened	Final designated	
Southwestern Willow flycatcher (<i>Empidonax traillii extimus</i>) Population: Entire	Endangered	Final designated	
Yellow-Billed Cuckoo (<i>Coccyzus americanus</i>) Population: Western U.S. DPS	Threatened	Proposed	
Fishes			
Rio Grande silvery minnow (<i>Hybognathus amarus</i>) Population: Entire, except where listed as an experimental population	Endangered	Final designated	
Mammals			



United States Department of Interior
Fish and Wildlife Service

Project name: Clean City- Pino Yards SWPPP

New Mexico meadow jumping mouse (<i>Zapus hudsonius luteus</i>)	Endangered	Proposed	
--	------------	----------	--



United States Department of Interior
Fish and Wildlife Service

Project name: Clean City- Pino Yards SWPPP

Critical habitats that lie within your project area

The following critical habitats lie fully or partially within your project area.

Birds	Critical Habitat Type
Mexican Spotted owl (<i>Strix occidentalis lucida</i>) Population: Entire	Final designated
Yellow-Billed Cuckoo (<i>Coccyzus americanus</i>) Population: Western U.S. DPS	Proposed
Fishes	
Rio Grande silvery minnow (<i>Hybognathus amarus</i>) Population: Entire, except where listed as an experimental population	Final designated

**APPENDIX I
HISTORIC PROPERTIES PRESERVATION
SCREENING MEMORANDUM**

This Page Intentionally Left Blank



Memorandum

*To: Jake Daugherty, Environmental Compliance Coordinator
City of Albuquerque Solid Waste Management Department*

From: Rochelle Larson, P.E.

Date: June 30, 2016

*Subject: Solid Waste Management Dept. (SWMD) here in the City of Albuquerque (COA)
Cerro Colorado Landfill Documentation of Eligibility with respect to Endangered
Species for Coverage under the Multi-Sector General Permit for Stormwater
Discharges Associated with Industrial Activities (MSGP 2015)*

This eligibility determination was completed in support of the COA SWMD Notices of Intent (NOIs) for coverage of the Cerro Colorado Landfill (Landfill) under the Multi-Sector General Permit (MSGP 2015) for Stormwater Discharges Associated with Industrial Activity. As part of the Stormwater Pollution Prevention Plan (SWPPP) development for the Landfill, a review of threatened and endangered species was performed. The purpose of this review was to verify if there are any species that have been placed on the U.S. Fish and Wildlife Service's (FWS) threatened or endangered species list for the Action Area.

Using the methodology outlined in Appendix E of MSGP 2015, the Landfill has been determined eligible for coverage under Criterion C related to endangered species protection. The endangered species data collected and the assessment of the potential effects of Landfill discharges are described in this memorandum. The information is formatted in accordance with the requirements of MSGP 2015, Appendix E.

It is important that the Environmental Compliance Coordinator be up to date on the threatened and endangered species in the event that an issue regarding special status species at the Landfill occurs. This information should also be conveyed to Landfill staff.

Step One: Determine if Eligibility Requirements of Criterion B, D, or E Can Be Met

None of the eligibility requirements of Criteria B, D, or E apply to the Landfill's operations. The Landfill's activities are not covered under the eligibility certification of another operator for the project area (Criterion B requirement). Also, it has not been necessary for the Landfill to conduct an Endangered Species Act (ESA) Section 7 consultation (a Criterion D requirement). Lastly, activities at the Landfill are not part of a Habitat Conservation Plan under Section 10 of the ESA (a Criterion E requirement).

Step Two: Determine the Extent of Your Action Area

The Action Area, as defined in the MSGP 2015, includes "*all areas to be affected directly or indirectly by the federal action and not merely the immediate area involved in the action, including areas beyond the footprint of the facility that are likely to be affected by stormwater discharges, discharge-related activities, and allowable non-stormwater discharges.*" As such, Appendix E

directs the evaluator to consider areas beyond the footprint of the facility including downstream areas that may be impacted by discharges of pollutants.

Using Appendix E directions, the Action Area was delineated using the subwatershed that contains the facility property, arroyos and channels that receive and convey stormwater discharges from the facility property and the Rio Grande as the ultimate receiving water. The tributaries and receiving waters considered are listed below:

- Unnamed arroyos, Rio Puerco, and finally the Rio Grande

Geographic Information System (GIS) mapping system was utilized to create the Action Area. The first step was to create the facility's parcel shapefile from KMZ files. The next step was to determine which subwatershed was associated with the facility. The hydrography geodatabase (geodatabase) for the Albuquerque New Mexico area was downloaded from the United States Geological Survey (USGS) National Map Viewer website based on the facility's shapefile (<http://viewer.nationalmap.gov>). The subwatershed was selected based on the location of the Landfill parcel within the geodatabase. GIS was then used to create shapefiles of the Action Area at the 12-digit hydrologic unit code (HUC) subwatershed level. This subwatershed shapefile was used to perform Step 3. The Action Area was based on HUC12 subwatershed 130202040706, Canada del Ojo-Rio Puerco. The Action Area is shown on the figure included in the Criterion C Eligibility Form as Attachment 1.

Step Three: Determine if Listed Threatened or Endangered Species and Critical Habitat are Present in the Action Area.

The U.S. Fish & Wildlife Service (FWS) maintains an online mapping tool *Information, Planning and Consultation System* (IPaC) (<http://ecos.fws.gov/ipac/>), used to create area specific listings of endangered species. Imported GIS generated shapefile from Step 2 was used in IPaC to create the site specific special status species list. An Official Species List Request was performed and an Official Species List (List) was generated for the Action Area. The generated List of threatened or endangered species and critical habitat from the IPaC website is presented in Attachment 2.

Based on the List, there are a total of 5 federally-listed species, listed on **Table 1**, and no critical habitats determined to potentially occur in the Action Area.

Table 1 Threatened or Endangered Species listed for Action Areas

Common Name	Scientific Name	Species Group	Critical Habitat	Listing Status
Mexican Spotted owl	<i>Strix occidentalis lucida</i>	birds	Final designated	T
New Mexico meadow jumping mouse	<i>Zapus hudsonius luteus</i>	mammals	Proposed	E
Rio Grande silvery minnow	<i>Hybognathus amarus</i>	fishes	Final designated	E
Southwestern Willow flycatcher	<i>Empidonax traillii extimus</i>	birds	Final designated	E
Yellow-Billed Cuckoo	<i>Coccyzus americanus</i>	birds	Proposed	T

C – Candidate, E – Endangered, T – Threatened

Mr. Jake Daugherty
June 30, 2016
Page 3

Mexican Spotted owl - Information provided through links from the FWS website indicates that the Mexican Spotted owl is not listed as being located within the geographic area of the Landfill parcel. Direct impacts to the species or its habitat are also unlikely because habitat for the identified endangered species critical habitat is a significant distance from of the immediate area of the Landfill parcel.

New Mexico meadow jumping mouse - Information provided on the FWS website indicates that the endangered New Mexico meadow jumping mouse resides in moist, streamside, dense riparian/wetland vegetation. These environmental conditions are substantially different than those present at the facility. Additionally, no designated critical habitat has been established for this species.

Rio Grande silvery minnow - Information provided through links from the FWS website indicates that the Rio Grande silvery minnow the Rio Grande silvery minnow are known or likely to be present, at least seasonally, in the Rio Grande. However, it is not listed as being located within the geographic area of the Landfill parcel. Additionally, direct impacts to the species or its critical habitat are also unlikely because the habitat is over 48 riverine miles from the Landfill parcel.

Southwestern Willow flycatcher - Information provided through links from the FWS website indicates that the Southwestern Willow flycatcher is not listed as being located within the geographic area of the Landfill parcel. Direct impacts to the species or its habitat are also unlikely because habitat for the identified endangered species critical habitat is a significant distance from of the immediate area of the Landfill parcel.

Yellow-Billed Cuckoo - Information provided on the FWS website indicates that the candidate Yellow-Billed Cuckoo is found in areas of forest, woodland, and scrub during non-breeding months. These environmental conditions are substantially different than those present at these facility. While there is a proposed critical habitat for this species, there was no critical habitat identified within the facility's parcel.

Step Four: Determine If Your Industrial Facility's Discharges Or Discharge-Related Activities Are Likely To Adversely Affect Listed Threatened Or Endangered Species Or Designated Critical Habitat And Any Measures That Must Be Implemented To Avoid Adverse Effects

Step 4 was performed based on the list of endangered species and their potential or known habitat generated in Step 3. As such, an assessment of the Landfill discharges and discharge related activities that could adversely affect the listed species and critical habitat was performed. The assessment included the completion of the Criterion C Eligibility Form utilizing current information and instructions. This section provides the information that was utilized to complete the Criterion C Eligibility Form.

Landfill parcel

Industrial activity occurs within the approximate 900.0 acres of the facility's parcel. The facility's industrial operations occur within approximately 3.3 percent of the drainage area of the 42 plus square mile Canada del Ojo-Rio Puerco subwatershed. Currently the stormwater

Mr. Jake Daugherty
June 30, 2016
Page 4

flows from the parcel on the east (Outfalls CC01, and CC02) and is carried to the Rio Puerco. The stormwater flows from the Landfill are diluted by the significantly greater flow in the Rio Puerco, channels and arroyos as it flows through prior to discharge into the Rio Grande. Appendix E of the MSGP indicates "*where a stormwater discharge constitutes a minute portion of the total volume of the receiving water, adverse hydrological effects are less likely.*" Adverse effects to receiving waters such as temperature, salinity, pH, or dissolved oxygen in the Rio Grande are considered remote.

Direct impacts to habitat are also unlikely because habitat for the identified endangered species is not present within or near the active facility's industrial area. Material storage, construction or maintenance of stormwater control measures at the facility will not impact habitat. Stormwater discharges from the parcels could contribute minimally to potential impacts to habitat in the event of an extreme precipitation event.

Attachments:

Criterion C Eligibility Form (including Attachment 1 and 2)

cc: file

**APPENDIX J
COPY OF THE NOTICE OF INTENT
AND ACKNOWLEDGEMENT LETTER**

This Page Intentionally Left Blank

From: Tuite, Sarah
Sent: Friday, October 07, 2016 4:04 PM
To: Reed, Amy N.
Subject: FW: EPA Multi-Sector General Permit (MSGP) Notice of Intent (NOI) Awaits Certification - Clean City Division at Pino Yards

Sarah C. Tuite, PE | CDM Smith | 505.243.3200 | tuitesc@cdmsmith.com

From: Tuite, Sarah
Sent: Tuesday, October 04, 2016 8:52 AM
To: Larson, Rochelle L. <LarsonRL@cdmsmith.com>; Larson, Gregory S. <larsongs@cdmsmith.com>
Subject: FW: EPA Multi-Sector General Permit (MSGP) Notice of Intent (NOI) Awaits Certification - Clean City Division at Pino Yards

FYI –

Sarah C. Tuite, PE | CDM Smith | 505.243.3200 | tuitesc@cdmsmith.com

From: NeT@epa.gov [<mailto:NeT@epa.gov>]
Sent: Tuesday, October 04, 2016 6:07 AM
To: isoladay@cabq.gov
Cc: Tuite, Sarah <TuiteSC@cdmsmith.com>
Subject: EPA Multi-Sector General Permit (MSGP) Notice of Intent (NOI) Awaits Certification - Clean City Division at Pino Yards

2016-10-04

A Notice of Intent (NOI) requesting coverage under EPA's Multi-Sector General Permit (MSGP) for stormwater discharges from Clean City Division at Pino Yards, 5501 Pino Ave NE, Bldg. D ALbuquerque NM 87109, has been prepared by Sarah Tuite (tuitesc@cdm.com) with you listed as the Certifier. This NOI will not be submitted to the EPA for review until it is certified by you. Please log in to the NPDES Electronic Reporting Tool (NeT) to review and take action on this form. NeT can be accessed from: https://cdx.epa.gov/epa_home.asp.

Once logged in, select "Task List" to access the form, and you will see the task listed for your certification. Review the NOI form and identify your "Operator Name" in question A.1. After you have completed your review, scroll down to the Certification Information section, read the Certification Statement, and use the Form Action field to either Approve or Reject the submission.

To certify the NOI, select "Approve" from the Form Action drop-down menu, and click the Submit Now button.

If you choose not to certify the NOI, select "Reject" from the Form Action drop-down menu, enter a Reason for Rejection, and click the Submit Now button. This action will place the rejected form back into the Preparer's task list in NeT, and generate an email notifying the Preparer that the form has been rejected, your reason for rejection, and instructions to resubmit as needed.

Once your form has been certified, it will undergo a 30-day review period. Coverage under the MSGP will begin at the conclusion of this waiting period, unless you are notified by EPA that your coverage has been delayed or denied. You will receive an email informing you once your coverage under the MSGP is active with a copy of the certified NOI attached. For guidance about this process, please visit: <http://www2.epa.gov/national-pollutant-discharge-elimination-system-npdes/stormwater-discharges-industrial-activities#ereporting>. For more information about the MSGP, including a copy of the permit, please visit: <https://www.epa.gov/npdes/stormwater-discharges-industrial-activities#msgp>.

If you have questions about this email or about NeT, please call the EPA NOI Processing Center at 1-866-352-7755 (toll free) or send an email to noi@avanticorporation.com. If you have questions regarding the MSGP, please contact EPA at paola@avanticorporation.com, jahan.nasim@epa.gov, julie@avanticorporation.com, emily@avanticorporation.com, farris.erika@epa.gov.

Do not respond to this email address, as this mailbox is not monitored.



2015 NPDES Multi-Sector General Permit For Stormwater Discharges Associated With Industrial Activity (MSGP) Forms

United States Environmental Protection Agency
1200 Pennsylvania Ave, NW Washington, DC 20460

Note: This is a "smart form"; as you fill out the form, additional questions will appear that you will need to answer.

Permit Information

1. What action would you like to take? *

File a New Notice of Intent Form

Submission of this Notice of Intent (NOI) constitutes notice that the operator identified in the Facility Operator Information section of this form requests authorization to discharge pursuant to the NPDES Stormwater Multi-Sector General Permit (MSGP) permit number identified in the Permit Information section of this form. Submission of this NOI also constitutes notice that the operator identified in the Facility Operator Information section of this form meets the eligibility conditions of Part 1.1 of the MSGP for the facility identified in the Facility Information section of this form. To obtain authorization, you must submit a complete and accurate NOI form. Discharges are not authorized if your NOI is incomplete or inaccurate or if you were never eligible for permit coverage.

Operator Name (Organization Name) *

CABQ Solid Waste

Operator Name as Noted by the NOI Preparer

City of Albuquerque Solid Waste Management Department

2. Select the state/territory where your facility is located *

NM

3. Is your facility located on Indian Country lands? *

Yes No

4. Are you requesting coverage as a "federal operator" as defined in Appendix A? *

Yes No

5. Are you a new discharger or a new source as defined in Appendix A? *

Yes No

6. Do you directly discharge to any of the waters of the U.S. that are designated by the state or tribal authority under its antidegradation policy as a Tier 3 water (Outstanding National Resource Water) (See Appendix L)? Your project will be considered to discharge to a Tier 3 water if the first water of the US to which you discharge is identified by a state, tribe, or EPA as a Tier 3 water. For discharges that enter a storm sewer system prior to discharge, the first water of the US to which you discharge is the waterbody that receives the stormwater discharge from the storm sewer system. *

Yes No

7. Does your facility directly discharge to a Federal CERCLA site listed in Appendix P? For the purposes of this permit, a permittee discharges to a Federal CERCLA site if the discharge flows directly into the site through its own conveyance, or through a conveyance owned by others, such as a municipal separate storm sewer system. *

Yes No

8. Has the Stormwater Pollution Prevention Plan (SWPPP) been prepared in advance of filing this NOI, as required? *

Yes No

9. By indicating "Yes", I confirm that I understand that the MSGP only authorizes the allowable stormwater discharges in Part 1.1.2 and the allowable non-stormwater discharges listed in Part 1.1.3. Any discharges not expressly authorized in this permit cannot become authorized or shielded from liability under CWA section 402(k) by disclosure to EPA, state, or local authorities after issuance of this permit via any means, including the Notice of Intent (NOI) to be covered by the permit, the Stormwater Pollution Prevention Plan (SWPPP), during an inspection, etc. If any discharges requiring NPDES permit coverage other than the allowable stormwater and non-stormwater discharges listed in Parts 1.1.2 and 1.1.3 will be discharged, they must be covered under another NPDES permit. *

Yes No

10. Master Permit Number

NMR050000

A: Facility Operator Information

1. Operator Name (Organization Name) *

CABQ Solid Waste

2. Street *

4600 Edith Boulevard NE

3. Supplemental Address

4. City *

Albuquerque

5. State/Province *

NM

6. ZIP Code *

87107

7. Facility County or Similar Govt. Subdivision *

Bernalillo

8. Phone (10-digits, No dashes) *

5057618324

9. Extension

10. E-Mail *

ddaugherty@cabq.gov

Operator point of contact information

11. First Name *

Jake

12. Middle Initial

13. Last Name *

Daugherty

14. Professional Title *

Environmental Compliance Coordinator

B: Facility Information

1. Facility Name *

Clean City Division at Pino Yards

2. Street/Location *

5501 Pino Ave NE, Bldg. D

3. Supplemental Address

4. City *

ALbuquerque

5. State *

NM

6. ZIP Code *

87109

7. Facility County or Similar Govt. Subdivision *

Bernalillo

Latitude/Longitude for the facility:

8. Latitude (Decimal Degrees) *

+ 35.1697

9. Longitude (Decimal Degrees) *

- 106.5801

10. Latitude/Longitude Data Source *

Other

11. Horizontal Reference Datum

WGS84

12. What is the ownership type of the facility? *

Municipality

13. Estimated area of industrial activity at your facility exposed to stormwater (to the nearest quarter acre) *

1.9

Identify the applicable sector and subsector of your primary industrial activity (See Appendix D) that best represents the products produced or services rendered for which your facility is primarily engaged, as defined in the MSGP, and the 4-digit Standard Industrial Classification (SIC) code or 2-letter Activity Code:

15. Sector * <input type="text" value="SECTOR P: LAND TRANSPORTATION AND WAREHOUSING"/>	16. Primary SIC Code * <input type="text" value="4212: Local Trucking, Without Storage"/>
--	--

17. Subsector

Check to add an additional Sector and Subsector.

22. Is your facility presently inactive and unstaffed? *

Yes No

C: Discharge Information

Outfalls

4. List all of the stormwater outfalls from your facility. Each outfall must be identified by a unique 3-digit ID (e.g., 001, 002) or a 4-digit ID. Also provide the latitude and longitude in decimal degrees for each outfall.

A. Outfall ID *		B. Latitude (Decimal Degrees) *		C. Longitude (Decimal Degrees) *
<input type="text" value="PY1"/>	<input type="text" value="+"/>	<input type="text" value="35.1706"/>	<input type="text" value="-"/>	<input type="text" value="106.5830"/>

(This button will prepopulate the receiving water information associated with your outfall on your form. You may edit the information that is returned if you believe it is incorrect)

If for any reason the Lookup Receiving Water Information button does not prepopulate your form with receiving waters information, you must manually enter the information on your form.

Outfall Section

1. Provide the name of the first water of the U.S that receives stormwater directly from the outfall and/or from the MS4 that the outfall discharges to. (You may edit the name of the water of the U.S. that was returned if incorrect.) *

2. Is the receiving water listed as impaired on the 303(d) list and in need of a TMDL? *

Yes No

4. List the pollutants that are causing the impairment:

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *
<input type="text" value="PATHOGENS"/>	<input type="text" value="E. coli"/>

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *
<input type="text" value="TEMPERATURE"/>	<input type="text" value="Temperature, water deg. centigrade"/>

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *

ORGANIC ENRICHMENT/OXYGEN DEPLETION

Pollutant *

Oxygen, dissolved percent saturation

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *

POLYCHLORINATED BIPHENYLS (PCBS)

Pollutant *

Polychlorinated biphenyls [PCBs]

3. Has a TMDL been completed for this receiving waterbody? *

Yes No

TMDL Name *

TMDL for the Middle Rio Grande Watershed

TMDL ID

38850

Pollutant Name *

E. Coli

Outfalls

4. List all of the stormwater outfalls from your facility. Each outfall must be identified by a unique 3-digit ID (e.g., 001, 002) or a 4-digit ID. Also provide the latitude and longitude in decimal degrees for each outfall.

A. Outfall ID *

PY2

+

B. Latitude (Decimal Degrees) *

35.1707

-

C. Longitude (Decimal Degrees) *

106.5830

(This button will prepopulate the receiving water information associated with your outfall on your form. You may edit the information that is returned if you believe it is incorrect)

D. Substantially Identical to Any Outfalls Listed Above? *

Yes No

If for any reason the Lookup Receiving Water Information button does not prepopulate your form with receiving waters information, you must manually enter the information on your form.

Outfall Section

1. Provide the name of the first water of the U.S that receives stormwater directly from the outfall and/or from the MS4 that the outfall discharges to. (You may edit the name of the water of the U.S. that was returned if incorrect.) *

South Domingo Baca, that leads to the Rio Grande

2. Is the receiving water listed as impaired on the 303(d) list and in need of a TMDL? *

Yes No

4. List the pollutants that are causing the impairment:

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *		
ORGANIC ENRICHMENT/OXYGEN DEPLETION	Oxygen, dissolved percent saturation		
Please select the cause group and pollutant for which the waterbody is impaired:			
Cause Group *	Pollutant *		
PATHOGENS	E. coli		
Please select the cause group and pollutant for which the waterbody is impaired:			
Cause Group *	Pollutant *		
POLYCHLORINATED BIPHENYLS (PCBS)	Polychlorinated biphenyls [PCBs]		
Please select the cause group and pollutant for which the waterbody is impaired:			
Cause Group *	Pollutant *		
TEMPERATURE	Temperature, water deg. centigrade		
3. Has a TMDL been completed for this receiving waterbody? *			
<input checked="" type="radio"/> Yes <input type="radio"/> No			
TMDL Name *	TMDL ID	Pollutant Name *	
TMDL for the Middle Rio Grande Watershed	38850	E.Coli	
Outfalls			
4. List all of the stormwater outfalls from your facility. Each outfall must be identified by a unique 3-digit ID (e.g., 001, 002) or a 4-digit ID. Also provide the latitude and longitude in decimal degrees for each outfall.			
A. Outfall ID *	B. Latitude (Decimal Degrees) *	C. Longitude (Decimal Degrees) *	
PY3	+ 35.1711	- 106.582	
(This button will prepopulate the receiving water information associated with your outfall on your form. You may edit the information that is returned if you believe it is incorrect)			
D. Substantially Identical to Any Outfalls Listed Above? *			
<input type="radio"/> Yes <input checked="" type="radio"/> No			
If for any reason the Lookup Receiving Water Information button does not prepopulate your form with receiving waters information, you must manually enter the information on your form.			
Outfall Section			
1. Provide the name of the first water of the U.S that receives stormwater directly from the outfall and/or from the MS4 that the outfall discharges to. (You may edit the name of the water of the U.S. that was returned if incorrect.) *			
South Domingo Baca, that leads to the Rio Grande			

2. Is the receiving water listed as impaired on the 303(d) list and in need of a TMDL? *

Yes No

4. List the pollutants that are causing the impairment:

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *

ORGANIC ENRICHMENT/OXYGEN DEPLETION

Pollutant *

Oxygen, dissolved percent saturation

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *

PATHOGENS

Pollutant *

E. coli

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *

POLYCHLORINATED BIPHENYLS (PCBS)

Pollutant *

Polychlorinated biphenyls [PCBs]

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *

TEMPERATURE

Pollutant *

Temperature, water deg. centigrade

3. Has a TMDL been completed for this receiving waterbody? *

Yes No

TMDL Name *

TMDL for the Middle Rio Grande Watershed

TMDL ID

38850

Pollutant Name *

E. Coli

Provide the following information about your outfall latitude longitude.

5. Latitude/Longitude Data Source *

Other

6. Horizontal Reference Datum

WGS84

7. Does your facility discharge into a Municipal Separate Storm Sewer System (MS4)? *

Yes No

7a. Provide the name of the MS4 Operator *

Albuquerque Metropolitan Arroyo Flood Control Auth

8. Do you discharge to any of the waters of the U.S. that are designated by the state or tribal authority under its antidegradation policy as a Tier 2 (or Tier 2.5) water (water quality exceeds levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water) (See Appendix L)? *

Yes No

D: Stormwater Pollution Prevention Plan (SWPPP) Information

SWPPP Contact Information

1. First Name *

Jake

2. Middle Initial

3. Last Name *

Daugherty

4. Professional Title *

Environmental Compliance Coordinator

5. Phone (10-digits, No dashes) *

5057618324

6. Extension

7. E-Mail *

ddaugherty@cabq.gov

8. Your current SWPPP or certain information from your SWPPP must be made available through one of the following two options. Select one of the options and provide the required information. *

Note: You are not required to post any confidential business information (CBI) or restricted information (as defined in Appendix A) (such information may be redacted), but you must clearly identify those portions of the SWPPP that are being withheld from public access.

Option 1: Maintain a Current Copy of your SWPPP on an Internet page (Universal Resource Locator or URL).

Provide the web address URL *

www.cabq.gov/swppp

Option 2: Provide the following information from your SWPPP.

E: Endangered Species Protection

1. Using the instructions in Appendix E of the MSGP, under which endangered species criterion listed in Part 1.1.4.5 are you eligible for coverage under this permit? *

Criterion C – Discharges and discharge-related activities are not likely to adversely affect listed species and critical habitat

2. Provide a brief summary of the basis for the criterion selected in Appendix E (e.g., communication with U.S. Fish and Wildlife Service or National Marine Fisheries Service to determine no species in action area; implementation of controls approved by EPA and the Services). *

The site was not eligible for Criteria B, D, or E. The listed threatened and endangered species and critical habitats in the action area were determined. Direct impacts to habitat are unlikely because habitat for the identified endangered species is not present. Activities at the facility will not impact habitat. Adverse effects to receiving water are considered remote.

a. What federally-listed species or federally-designated critical habitat are located in your "action area." *

Mexican Spotted owl, Southwestern Willow flycatcher, Yellow-Billed Cuckoo, Rio Grande silvery minnow, New Mexico meadow jumping mouse, Jemez Mountains salamander

b. Using the Criterion C Eligibility Form, check which of the following is applicable to your facility and answer any corresponding questions. *

I submitted my completed Criterion C Eligibility Form to EPA at least 30 days prior to submitting this NOI and agree to implement any controls that were determined by EPA to be necessary to ensure that my discharges and/or discharge-related activities will have no likely adverse effects on listed species and critical habitat.

I submitted my completed Criterion C Eligibility Form to EPA at least 30 days prior to submitting this NOI and have not been notified of any additional controls necessary to ensure no likely adverse affects on listed species and critical habitat.

Date your Criterion C Eligibility Form was sent to EPA (in DD/MM/YYYY format) *

06 Jul 2016

* Note: After you submit your NOI and before your NOI is authorized, EPA may notify you if any additional controls are necessary to ensure your discharges have no likely adverse affects on listed species and critical habitat.

F: Historic Preservation

1. If your facility is not located in Indian country lands, is your facility located on a property of religious or cultural significance to an Indian tribe? *

Yes No

2. Using the instructions in Appendix F of the MSGP, under which historic properties preservation criterion listed in Part 1.1.4.7 are you eligible for coverage under this permit? *

Criterion A - No subsurface stormwater controls

Certification Information

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 gather and evaluate 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. 40 CFR 122.22 (d)

Certifier E-Mail *

jsoladay@cabq.gov

Form Action *

Approve

**APPENDIX K
DOCUMENTATION OF MAINTENANCE
TO CONTROL MEASURES**

This Page Intentionally Left Blank

**APPENDIX L
DOCUMENTATION OF CORRECTIVE ACTION TAKEN**

This Page Intentionally Left Blank

APPENDIX M
REPORTS

- M1 – Quarterly Routine Facility Inspections*
- M2 – Quarterly Visual Storm Water Assessment*
- M3 – EPA Industrial Storm Water Sampling Guidance*
- M4 – Annual Report Example*

This Page Intentionally Left Blank

M1 – QUARTERLY ROUTINE FACILITY INSPECTIONS

This Page Intentionally Left Blank

**CITY OF ALBUQUERQUE
QUARTERLY SWPPP INSPECTION FORM**

FACILITY INFORMATION			
FACILITY NAME:			
FACILITY INSPECTOR:	EMAIL:	PHONE:	
FACILITY INSPECTOR:	EMAIL:	PHONE:	
INSPECTION DATE:		INSPECTION TIME:	
QUARTER: <input type="checkbox"/> Jan-Mar <input type="checkbox"/> Apr-Jun <input type="checkbox"/> Jul-Sept <input type="checkbox"/> Oct-Dec		WEATHER CONDITIONS:	
DOCUMENTATION (BMPs 1, 3, 5, 6, 7)		BMP	Comments
Facility Inspections and Maintenance Documentation			
Comply w/ record keeping & reporting req'ts of MSGP	1.24	<input type="checkbox"/> YES <input type="checkbox"/> NO	
Retain waste generation and disposal documentation	5.21	<input type="checkbox"/> YES <input type="checkbox"/> NO	
Activities inspected for non-storm water discharges	1.16	<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> DOC	
Training			
Annual employee training conducted (1.19)	1.19	<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> DOC	
Representative(s) attended annual CABQ storm water training (1.21)	1.2	<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> DOC	
Storm water training for employees (1.20)	1.2	<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> DOC	
Contractor SWPPP Education (1.21)	1.21	<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> DOC	
Waste management training (5.19)	5.19	<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> DOC	
Fuel spill response training (6.06)	6.06	<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> DOC	
Other Documentation			
If you have an SPCC plan, is the plan up to date?	1.09	<input type="checkbox"/> YES <input type="checkbox"/> NO	
GENERAL (BMP 1)			Comments
Exposed areas clean and orderly	1.01 1.02	<input type="checkbox"/> YES <input type="checkbox"/> NO	
Oil, grease, solvents, batteries, etc. recycled	1.03	<input type="checkbox"/> YES <input type="checkbox"/> NO	
Biodegradable or less hazardous products used where possible	1.04	<input type="checkbox"/> YES <input type="checkbox"/> NO	
Material inventory limited	1.05	<input type="checkbox"/> YES <input type="checkbox"/> NO	
Signs posted near outdoor hose bibs listing use restrictions	1.23	<input type="checkbox"/> YES <input type="checkbox"/> NO	
If not, is the building with the hose bib City-owned?		<input type="checkbox"/> YES <input type="checkbox"/> NO	
COVER AND SECONDARY CONTAINMENT (BMPs 1, 2, 4, 5)			Comments
Industrial and Maintenance Activities			
Maintenance performed indoors or under storm resistant cover	1.06 2.05	<input type="checkbox"/> YES <input type="checkbox"/> NO	
Parts cleaning & degreasing performed indoors or under cover	2.01	<input type="checkbox"/> YES <input type="checkbox"/> NO	
Exposure to run-on & run-off minimized	1.14	<input type="checkbox"/> YES <input type="checkbox"/> NO	
Performed away from storm drains or drains covered	2.06	<input type="checkbox"/> YES <input type="checkbox"/> NO	
Designated areas for temp. tanker/materials truck parking	4.02	<input type="checkbox"/> YES <input type="checkbox"/> NO	
Loading/unloading under cover and in contained area	5.12	<input type="checkbox"/> YES <input type="checkbox"/> NO	

**CITY OF ALBUQUERQUE
QUARTERLY SWPPP INSPECTION FORM**

COVER AND SECONDARY CONTAINMENT (BMPs 1, 2, 4, 5)			Comments
<i>Waste and Material Storage Areas</i>			
Haz materials indoors and away from exit doors or under storm-resistant cover	1.06, 5.01 5.13	<input type="checkbox"/> YES <input type="checkbox"/> NO	
Secondary containment provided and adequately sized	5.01	<input type="checkbox"/> YES <input type="checkbox"/> NO	
Stored and handled in paved areas	5.01	<input type="checkbox"/> YES <input type="checkbox"/> NO	
Clearly labeled and stored containers	5.04	<input type="checkbox"/> YES <input type="checkbox"/> NO	
Exposure to run-on & run-off minimized	5.17	<input type="checkbox"/> YES <input type="checkbox"/> NO	
Liquids dispensed from upright drums w/ hand pump	5.02, 5.14	<input type="checkbox"/> YES <input type="checkbox"/> NO	
SDS available	5.18	<input type="checkbox"/> YES <input type="checkbox"/> NO	
SPILLS (BMPs 1, 5)			Comments
Spill Response Plan posted and revised annually	1.09	<input type="checkbox"/> YES <input type="checkbox"/> NO	
Spill kits located where spills are probable to occur	1.10	<input type="checkbox"/> YES <input type="checkbox"/> NO	
Spill kits stocked with appropriate materials	1.10	<input type="checkbox"/> YES <input type="checkbox"/> NO	
Spill(s) or staining observed	1.11	<input type="checkbox"/> YES <input type="checkbox"/> NO	
Drip pans/spill mats/booms used	1.12	<input type="checkbox"/> YES <input type="checkbox"/> NO	
Collected spill materials properly disposed	1.13	<input type="checkbox"/> YES <input type="checkbox"/> NO	
Material storage area signs posted listing materials stored	5.03	<input type="checkbox"/> YES <input type="checkbox"/> NO	
SOLID WASTE (BMP 5)			Comments
		<input type="checkbox"/> YES <input type="checkbox"/> NO	
Used batteries properly stored or recycled in 30 days	5.05	<input type="checkbox"/> YES <input type="checkbox"/> NO	
Used oil containers and filters properly recycled	5.06	<input type="checkbox"/> YES <input type="checkbox"/> NO	
Bone yards eliminated	5.07	<input type="checkbox"/> YES <input type="checkbox"/> NO	
Waste and unusable material disposed of properly	5.08	<input type="checkbox"/> YES <input type="checkbox"/> NO	
Garbage collection area properly maintained	5.09	<input type="checkbox"/> YES <input type="checkbox"/> NO	
Dumpster drains equipped with plugs	5.09	<input type="checkbox"/> YES <input type="checkbox"/> NO	
Dumpster lids closed	5.09	<input type="checkbox"/> YES <input type="checkbox"/> NO	
FUEL STORAGE AND DELIVERY (BMP 6)			Comments
		<input type="checkbox"/> YES <input type="checkbox"/> NO	
Vehicle fueling station fitted with "no topping off" signs	6.01	<input type="checkbox"/> YES <input type="checkbox"/> NO	
Fueling tanks fitted with monitoring and alarm equipment	6.02	<input type="checkbox"/> YES <input type="checkbox"/> NO	
Fueling tanks fitted with breakaway hose connections	6.02	<input type="checkbox"/> YES <input type="checkbox"/> NO	
Accidental releases blocked from reaching storm drains	6.03	<input type="checkbox"/> YES <input type="checkbox"/> NO	
Equipment fueled in designated areas	6.03	<input type="checkbox"/> YES <input type="checkbox"/> NO	
Spill kits maintained on mobile refuelers	6.03	<input type="checkbox"/> YES <input type="checkbox"/> NO	

**CITY OF ALBUQUERQUE
QUARTERLY SWPPP INSPECTION FORM**

BUILDING & GROUNDS MAINTENANCE (BMP 7)				Comments		
Building Maintenance		<input type="checkbox"/> Yes	<input type="checkbox"/> No			
Grounds maintenance waste disposed of properly	7.1	<input type="checkbox"/> Yes	<input type="checkbox"/> No			
Interior floor cleaning water properly disposed	7.3	<input type="checkbox"/> Yes	<input type="checkbox"/> No			
Fire fighting foam deluge system tested and maintained, if applicable	7.2	<input type="checkbox"/> Yes	<input type="checkbox"/> No			
Landscape Maintenance		<input type="checkbox"/> Yes	<input type="checkbox"/> No			
Landscaping waste properly disposed	7.1	<input type="checkbox"/> Yes	<input type="checkbox"/> No			
Exterior ground surfaces cleaned properly	7.3	<input type="checkbox"/> Yes	<input type="checkbox"/> No			
Grounds/landscaping design considerations	7.4	<input type="checkbox"/> Yes	<input type="checkbox"/> No			
Storm drains labeled	7.10	<input type="checkbox"/> Yes	<input type="checkbox"/> No			
Use of pesticide, herbicide and fertilizer minimized	7.11	<input type="checkbox"/> Yes	<input type="checkbox"/> No			
Landscaping provided for erosion control	7.14	<input type="checkbox"/> Yes	<input type="checkbox"/> No			
CONSTRUCTION / RENOVATION (BMPs 1, 7)				Comments		
As-built drawings maintained (1.8)	1.07	<input type="checkbox"/> Yes	<input type="checkbox"/> No			
Designed for pollution prevention (1.9)	1.08	<input type="checkbox"/> Yes	<input type="checkbox"/> No			
Construction plans reviewed for illicit connections (1.18)	1.18	<input type="checkbox"/> Yes	<input type="checkbox"/> No			
Storm water controls used during construction (7.5)	7.5	<input type="checkbox"/> Yes	<input type="checkbox"/> No			
VEHICLE AND EQUIPMENT CLEANING (BMP 3)						
Wash the following? (3.1)		Dry-Wash	WET-WASH		Other / Comment	
			Inside	Outside in Permitted Area		
Vehicles	<input type="checkbox"/> Yes <input type="checkbox"/> No					
Equipment	<input type="checkbox"/> Yes <input type="checkbox"/> No					
VEHICLE AND EQUIPMENT STORAGE (BMP 4)						
Store the following? (4.1)		Inside	OUTSIDE			Other / Comment
			Under Cover	Away from Drains	Sized 2nd Containment	
Vehicles	<input type="checkbox"/> Yes <input type="checkbox"/> No					
Equipment	<input type="checkbox"/> Yes <input type="checkbox"/> No					
INSPECTOR SIGNATURE						
<p>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designated to assure that qualified personnel properly gathered and evaluated the information contained therein. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information contained 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.</p>						
Name:						
Signature:						

M2 – QUARTERLY VISUAL STORM WATER ASSESSMENT

This Page Intentionally Left Blank

City of Albuquerque Solid Waste Management Department
Clean City Division at Pino Yards

Quarterly Visual Monitoring of
 Storm Water Outfall Discharges
Q1 Q2 Q3 Q4

Date: _____ **Weather:** _____
Time: _____ **Storm Precip:** _____
Inspector: _____ **Last 72 hour Precip:** _____
Photo Name: _____

Outfall ID:	PY1	PY2	PY3
Flow Observed:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Description of Monitoring Site:			
Flow Estimate (include units and method of estimation):			
Other Observations:			
Color (describe):			
Turbidity:	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Suspended Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Probable sources of observed stormwater contamination, if any:			

Additional Comments: _____



M3 – EPA INDUSTRIAL STORMWATER SAMPLING GUIDANCE

This Page Intentionally Left Blank



EPA 832-B-09-003



Industrial Stormwater Monitoring and Sampling Guide

March 2009

Final Draft



Acknowledgements

All photos are courtesy of Tetra Tech, Inc. Sampling illustrations in Section 2 are courtesy of Washington Department of Ecology's guide on *How To Do Stormwater Sampling: A guide for industrial facilities* (available at <http://www.ecy.wa.gov/pubs/0210071.pdf>)

Final Draft Prepublication Copy

A formatted version of this guide will be available in April, 2009.

Industrial Stormwater Monitoring and Sampling Guide

1. Introduction to Stormwater Monitoring and Sampling	1
2. Preparation for Monitoring	3
2.1 Determine Where Stormwater Is Discharged From Your Property	4
2.2 Determine Where You Will Collect Samples	5
2.3 Determine Which Types of Monitoring Requirements Apply At Each Outfall	12
2.4 Determine if Your Facility is Subject to Impaired Waters Monitoring Requirements	17
2.5 What Type of Storm Events Qualify for Monitoring	20
2.6 Select the Monitoring Team	21
2.7 Select a Laboratory to Analyze the Samples	22
2.8 Document Monitoring Procedures in Your SWPPP	23
3. Conduct Monitoring	24
3.1 What to Have In Place Prior to Collecting Stormwater Samples	24
3.2 Collect Stormwater Samples	27
3.3 Record Information for Each Monitoring Event	29
3.4 Quality Assurance Considerations	30
3.5 Conducting Visual Assessments of Stormwater Discharges	33
4. Evaluate Monitoring Results	34
4.1 Evaluating Quarterly Visual Assessment Results	34
4.2 Evaluating Benchmark Monitoring Results	35
4.3 Effluent Limitation Guideline Monitoring Results	37
4.4 Specific Pollutants and Control Measure Options	38
5. Record-Keeping and Reporting	40
5.1 Reporting Monitoring Data	40
6. Train Personnel	42
7. References	42
Appendix A – 2008 MSGP Industrial Stormwater Monitoring Form	43
Appendix B – 2008 MSGP Visual Monitoring Form	44
Appendix C – 2008 MSGP Industrial Stormwater Collection Form	45

Industrial Stormwater Monitoring and Sampling Guide

The Industrial Stormwater Monitoring and Sampling Guide (“guide”) is a how-to primer for industrial facility operators on how to conduct visual and analytical monitoring of stormwater discharges. The target audience is operators of facilities subject to the U.S. Environmental Protection Agency’s (EPA) 2008 Multi-Sector General Permit (2008 MSGP) or a similar State-issued industrial stormwater permit. The information presented will also be useful to anyone interested in industrial stormwater monitoring. The procedures presented in this guide, specifically related to monitoring methodology and quality assurance, will help ensure that stormwater samples yield usable information.

The 2008 MSGP covers specific industrial activities (see Appendix D of the 2008 MSGP, available at www.epa.gov/npdes/msgp) in States, territories, and Indian Country lands where EPA is the National Pollutant Discharge Elimination System (NPDES) permitting authority (i.e., in those States or territories not authorized to issue NPDES permits themselves – see Appendix C of the 2008 MSGP).

This guide does not impose any new legally binding requirements on EPA, States, or the regulated community, and does not confer legal rights or impose legal obligations upon any member of the public. In the event of a conflict between the discussion in this document and any statute, regulation, or permit, this document would not be controlling.

***Monitoring vs. Sampling.* In this guide, “sampling” refers to the actual, physical collection and analysis of stormwater samples. The term “monitoring” refers to both sampling and visual observations of stormwater discharges, including the related preparation and documentation tasks.**

Interested parties are free to raise questions and objections about the substance of this guide and the appropriateness of the application of this guide to a particular situation. EPA and other decision makers retain the discretion to adopt approaches on a case-by-case basis that differ from those described in this guide where appropriate.

1. Introduction to Stormwater Monitoring and Sampling

Most industrial stormwater permits require installation and implementation of control measures to minimize or eliminate pollutants in stormwater runoff from your facility. The control measures you choose for your facility must be documented in your facility-specific Stormwater Pollution Prevention Plan (SWPPP). The results of your stormwater monitoring will help you determine the effectiveness of your control measures, and overall stormwater management program. Evaluation of your stormwater management program will include inspections, visual assessments, and monitoring (i.e., sampling) of specified stormwater discharges. Regular stormwater inspections and visual assessments provide qualitative information on whether there are unaddressed potential pollutant sources at your site, and whether existing control measures are effective or need to be reevaluated. Stormwater sampling provides quantitative (i.e., numeric) data to determine pollutant concentrations in runoff and, in turn, the degree to which your control measures are effectively minimizing contact between stormwater and pollutant sources, and the success of your stormwater control approach in meeting applicable discharge requirements or effluent limits.

The following are the types of industrial stormwater monitoring requirements typically included in industrial general permits:

Industrial Stormwater Monitoring and Sampling Guide

- Visual Assessments of Discharges.** Permittees are required to regularly and frequently (e.g., quarterly under the 2008 MSGP) take a grab sample during a rain event and assess key visual indicators of stormwater pollution – color, odor, clarity, floating solids, settled solids, suspended solids, foam, oil sheen, and other qualitative markers of pollution. The findings of these assessments are used to trigger further facility inspections and corrective actions to modify problems found at the site.
- Indicator or Benchmark Sampling.** Stormwater samples are collected from a site’s discharge points (or outfalls) for laboratory analysis and the results are compared with benchmark pollutant concentrations as an indicator of the performance of stormwater control measures. A benchmark pollutant concentration is a level above which a stormwater discharge could adversely affect receiving water quality (and control measures must be evaluated) and, if below, the facility is not expected to have an impact on receiving water quality. This type of monitoring differs from “compliance monitoring” (see below) in that exceedances of the indicator or benchmark levels are not considered violations, but rather “red flags” that could point to a problem at the site with exposed pollutant sources or control measures that are not working correctly. For instance, the 2008 MSGP includes “benchmarks” that are based to a large degree on EPA’s aquatic life criteria. Where the average of samples taken over four consecutive quarters exceed the applicable benchmark concentration of a particular pollutant, the permittee is required to investigate whether the higher pollutant levels can be attributed to some pollutant source or faulty control measure(s), and to address such problems through corrective action and possibly further monitoring.
- Compliance Sampling.** Where a facility is subject to one of the Federal effluent limitation guidelines (ELGs) addressing limits on stormwater runoff, sampling is required to determine compliance with those limits. Table 1 provides a list of the current applicable effluent limitation guidelines.

Table 1. Applicable Effluent Limitations Guidelines (2008 MSGP Part 2.1.3)	
Regulated Activity	40 CFR Part/Subpart
Discharges resulting from spray down or intentional wetting of logs at wet deck storage areas	Part 429, Subpart I
Runoff from phosphate fertilizer manufacturing facilities that comes into contact with any raw materials, finished product, by-products or waste products (SIC 2874)	Part 418, Subpart A
Runoff from asphalt emulsion facilities	Part 443, Subpart A
Runoff from material storage piles at cement manufacturing facilities	Part 411, Subpart C
Mine dewatering discharges at crushed stone, construction sand and gravel, or industrial sand mining facilities	Part 436, Subparts B, C, or D
Runoff from hazardous waste landfills	Part 445, Subpart A
Runoff from non-hazardous waste landfills	Part 445, Subpart B
Runoff from coal storage piles at steam electric generating facilities	Part 423

These limits are required to be included in all general industrial permits. Typically, permits require corrective action and further sampling when an effluent limitation is exceeded. An exceedance of an applicable effluent limitation guideline constitutes a violation of the permit.

- **Monitoring Requirements for Discharges to Impaired Waters** - General industrial permits may have special monitoring requirements for facilities that discharge pollutants of concern into impaired waters.

For an explanation of these monitoring requirements in the 2008 MSGP see Part 6.2. Part 8 of the 2008 MSGP includes the benchmark and effluent limitation guideline monitoring requirements for each of the industrial sectors affected by such requirements.

2. Preparation for Monitoring

This section describes the information you will need before monitoring. While this guide is meant to be a general primer for anyone interested in industrial stormwater monitoring, Section 2 follows the organization of the 2008 MSGP. Many State general permits are very similar to the 2008 MSGP. It is EPA's hope that this format will be of use to permittees in most states. However, if you are subject to a State industrial general permit, you should compare your permit's monitoring requirements to the requirements reflected in this guide to ensure that you are following all applicable State requirements.

In general, preparation is critical to make sure that industrial stormwater monitoring is conducted properly and in a timely manner. Most of this information should have been collected previously for the purposes of submitting your permit application or Notice of Intent (NOI), and in developing the monitoring procedures section of your stormwater pollution prevention plan (SWPPP). However, this guide reviews some of the steps necessary to develop this information, such as the site map component of the SWPPP, in case facilities have not already done so. If you have already completed any of these steps in this section, you can skip to the next application section or subsection in this guide. For more information on how to develop a SWPPP, refer to EPA's guide *Developing Your Stormwater Pollution Prevention Plan: A Guide for Industrial Operators*, available on EPA's website at www.epa.gov/npdes/stormwater/msgp.

If you have already submitted your NOI, the following documents will serve as good resources for information that you will need prior to monitoring:

- A copy of your NOI or application submitted to EPA or a State, and your assigned permit registration number.
- A copy of the EPA/State response to your NOI/permit application submission if it includes specific details pertaining to your monitoring (e.g., pollutants required to be monitored, frequency of monitoring, benchmark or compliance sampling requirements, etc.).
- A copy of your applicable permit, including the accompanying fact sheet.
- A complete copy of your SWPPP, which must include a detailed site map of your facility with locations of all stormwater monitoring points, and a description of the procedures you or your

stormwater pollution prevention team will follow when conducting monitoring and visual assessments.

2.1 Determine Where Stormwater Is Discharged From Your Property

If you have not already done so, walk the grounds and perimeter of your facility during a storm event to identify where runoff discharges from the site (known as “outfalls”). Outfalls are locations where stormwater exits the facility property, including pipes, ditches, swales, and other structures that transport stormwater. If possible, walk outside the boundary of your facility to identify outfalls that may not be apparent from within your site.



Stormwater discharges to the slot drain and is conveyed offsite through a valved pipe.

You should note where:

- Concentrated stormwater exits your facility (e.g., through a pipe, ditch or similar conveyance). These outlets are usually good sampling points.
- Dispersed runoff (i.e. sheet flow) flows offsite (e.g., through a grassy area or across a parking lot). Note whether concentrated flows commingle with the sheet flow.
- Storm drain inlets or catch basins are located. Try to determine where the storm drains send your runoff (e.g., to your municipal separate storm sewer system [MS4], to a combined sewer system, to the separated sanitary sewer, or directly to a nearby waterbody).

Industrial Stormwater Monitoring and Sampling Guide

- Authorized non-stormwater discharges commingle with stormwater prior to discharge (such commingled discharges may be covered under your permit).
- Areas where stormwater might enter your facility from neighboring facilities and commingle with your stormwater discharges.

Terms to Know:

Combined Sewer System: Combined sewer systems are sewers that are designed to collect rainwater runoff, domestic sewage, and industrial wastewater in the same pipe. Most of the time, combined sewer systems transport all of their wastewater to a sewage treatment plant, where it is treated and then discharged to a water body. During periods of heavy rainfall or snowmelt, however, the wastewater volume in a combined sewer system can exceed the capacity of the sewer system or treatment plant. For this reason, combined sewer systems are designed to overflow occasionally and discharge excess wastewater directly to nearby streams, rivers, or other water bodies.

MS4: A conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains) which are owned and operated by a ... public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes ... that discharges to waters of the United States; designed or used for collecting or conveying stormwater; which is not a combined sewer; and which is not part of a publicly owned treatment works (POTW). [40 CFR 122.26(b)(8)].

Mark these locations on your facility site map, which will be included as part of your SWPPP, and label each outfall location with unique identifiers to differentiate them. For example, you may decide to name the different outfalls according to where the stormwater is being discharged, such as MS4-1, MS4-2, etc. for outfalls discharging to the MS4 or ST-1, ST-2, etc. for outfalls discharging directly to an adjacent stream. Using unique identifiers will help you to coordinate monitoring requirements.

In addition to marking the outfalls on the map, you will need to determine the drainage area for each discharge point. If your facility is large and has significant changes in elevation, a topographic map may be necessary. However, if your facility is small and relatively flat, the best way to define the drainage area for each outfall is an on-the-ground visual assessment, preferably during a rain event. Sketch the basic drainage areas on the map for each outfall. Knowing the drainage area for each outfall is helpful when your sampling indicates problems at that outfall. You can focus your efforts on the industrial materials and activities in that drainage area, instead of the entire site, to identify what may be causing the problem.

2.2 Determine Where You Will Collect Samples

Now that you have determined the different points of discharge from your site, you will need to select the exact locations from which you will be collecting your stormwater samples. Note that Part 5.1.5.2 of the 2008 MSGP requires industrial operators to document in their SWPPPs the location where samples will be collected. Generally, industrial stormwater permits require that you sample stormwater discharges prior to the stormwater leaving your facility, and at a location downstream from all of your industrial materials and activities. The reason behind requiring such a location is so that the sample is

Industrial Stormwater Monitoring and Sampling Guide

representative of your facility's discharge, taking into account the types of pollutants that may be contained in runoff from the property.

Appropriate sample locations include:

- Underground pipes that collect stormwater from drop inlets and convey stormwater to an offsite location (e.g., street, curb or MS4). Be sure you collect only the stormwater discharging from your facility and not the baseflow in the pipes that is being discharged from facilities upstream. Do not enter underground locations to collect samples. Use a pole with a sampling container attached at the end to collect the sample.



- Open ditches, gutters or swales that carry stormwater from your facility to an offsite location. If these conveyances contain runoff from another facility, it is important to note that in your SWPPP;



- Facility driveways and other street access points; and



- Outlets discharging offsite from onsite stormwater detention ponds or other types of structural control measures. It is important to sample at the OUTLET of your structural control measures, as opposed to the INLET of such structures, in order to determine the quality of the water after treatment.



Where to Sample When There Are Multiple Discharge Points

You are required to monitor all outfalls that receive stormwater discharges from your industrial activity. See Part 6.1.1 of the 2008 MSGP. If you have multiple stormwater discharge points at your facility, you need to identify which outfalls are associated with industrial materials and activities, and monitor those outfalls. Understanding the hydrologic connection between your outfalls and the parts of your facility that drain to those points, and the pollutants associated with the industrial activities in these areas, will assist you in designing a monitoring program that is representative of the pollutants being discharged from your site. Developing such an understanding will also help later on when you begin to assess your sampling results and determine where improvements could be made to your stormwater control measures. The site map you prepare (see Part 5.1.2 of the 2008 MSGP) will help you understand the correlation between your areas of potential pollutant sources, the direction of stormwater flow from those areas, and the discharge points.

Note that you are not required to monitor at outfall locations that receive stormwater flow only from unregulated areas of your site (i.e., there are no industrial materials or activities in the drainage area). For instance, a hypothetical facility may have two outfalls, one that receives discharges from an area where industrial materials are handled and stored, and a second outfall that receives discharges from an unregulated parking lot used by employees. In this scenario, the industrial permittee would only collect samples from the first outfall because it discharges stormwater associated with industrial activity. Alternatively, if the site's second outfall (e.g., the outfall receiving runoff from the parking lot) also drains areas of the facility with regulated industrial activities, then this outfall would also need to be sampled. In this situation, sampling for this outfall should be done at a location prior to where the two flows commingle so that you are capturing the industrial portion of the flow. See Part 6.1.2 of the 2008 MSGP.

Where to Sample if Outfalls Are Substantially Identical

If your facility has two or more outfalls whose discharges are “substantially identical,” some industrial stormwater permits, including the 2008 MSGP, allow you to monitor the discharge at just one representative outfall and apply the results to the other substantially identical outfalls. EPA defines “substantially identical” in the 2008 MSGP as follows:

“... two or more outfalls that you believe discharge substantially identical effluents, based on the similarities of the general industrial activities and control measures, exposed materials that may significantly contribute pollutants to stormwater, and runoff coefficients of their drainage areas” See Part 6.1.1 of the 2008 MSGP.

The flexibility provided to permittees to sample at just one location, which is considered representative of all substantially identical outfalls, is an exception to the rule stated above that samples must be taken from all outfalls at a facility. Note that this exception does not apply to compliance monitoring (effluent limitation guideline monitoring), which must be conducted at each outfall to which the effluent guideline applies.

In choosing which of the substantially identical outfalls from which to sample, you should select the outfall that has been observed to have the most consistent flow. To use the substantially identical outfall exception, you must document in your SWPPP how the two or more outfalls are substantially identical, based on the above definition. You will need to document the following information:

- The locations of the outfalls;
- Estimated size of the drainage area (in square feet) for each outfall;
- General industrial activities conducted in the drainage area of each outfall;
- Control measures being implemented in the drainage area of each outfall;
- Why the outfalls are expected to discharge similar stormwater; and
- An estimate of the runoff coefficient of the drainage areas (0.0 no runoff potential to 1.0 all precipitation runs off).

The runoff coefficient is the ratio of excess runoff to the amount of precipitation for a given time over a given area, with a 0 (zero) runoff coefficient meaning no runoff potential and 1.0 (one) meaning a completely impervious surface and all stormwater runs off. The runoff coefficient is related to the amount of impervious surfaces (buildings, pavement, sidewalks, etc.) versus pervious surfaces (grass,

graveled areas, etc.) at the site. The more impervious surface a facility has, the larger the runoff coefficient. Light industrial facilities typically have a runoff coefficient between 0.50 and 0.80 and heavy industrial facilities typically have a runoff coefficient between 0.60 and 0.90.

Here is an example where a facility could take advantage of the “substantially identical outfalls” exception: a metal recycling facility with a large scrap metal pile has three separate outfalls that are each connected by their own drainage ditch to different portions of the same pile, and the runoff that is discharged is managed using the same type of control measure in each drainage area. In this scenario, the facility’s operator can use the “substantially identical outfall” exception because the industrial activities at the site are all the same, the runoff flows through exposed areas that presumably contribute the same type of pollutants, and the drainage area has the same or similar runoff coefficients. Note that the substantially identical outfall exception could not be used if there were in fact differences in any of the required components defined above.

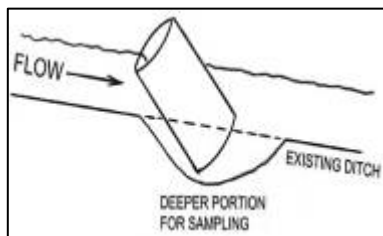
If your permit does allow you to use a substantially identical outfall exception, make sure you carefully review the type of monitoring for which this exception applies. For instance, while the 2008 MSGP allows permittees to use the substantially identical outfall exception for benchmark and visual assessment samples, the permit prohibits use of this exception for compliance monitoring (e.g., for use in showing compliance with numeric effluent limitation guidelines). Therefore, if a facility permitted under the 2008 MSGP is subject to a numeric limit based on an EPA effluent limitation guideline, it would have to monitor all outfalls at the site receiving flows from the applicable industrial activities. See Part 6.2.2.2 of the 2008 MSGP.

Where to collect a sample

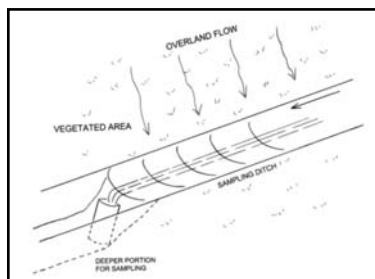
Sampling Sheet Flow

In some areas of your facility it may be difficult to obtain a sample because the runoff drains as sheet flow before it becomes concentrated enough for sampling. If the flow is too shallow to directly fill a collection bottle, you can overcome this by:

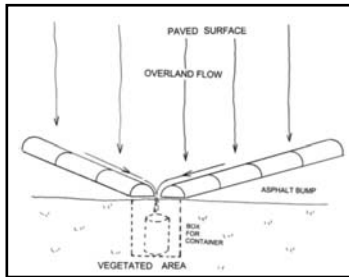
- Concentrating the sheet flow by excavating a small depression in an existing ditch or other location where stormwater runoff flows.



- Installing a trough, gutter or ditch to intercept and concentrate stormwater flow.



- Installing “speed” bumps to convey and concentrate a large area of sheet flow.



Collecting a sheet flow stormwater sample.

You should make these modifications during a period when rain is not forecast so any pollutants generated can be cleaned up before a storm hits. Also, if you dig a ditch or disturb the earth in some way, line the disturbance with concrete or plastic so that you do not contaminate your stormwater samples with sediment or other pollutants.

Sampling from a Pipe

For runoff flowing through a pipe into a ditch or receiving water, you should sample the outflow directly from the pipe. For hard-to-reach pipes, it may be necessary to fasten a collection bottle to a pole (see Sampling from a Manhole in Table 2 below).

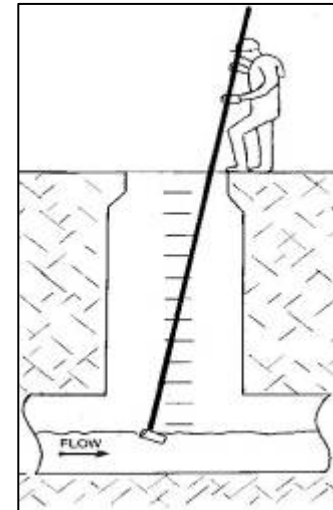
When collecting any type of stormwater sample it is imperative that the sample is collected before the stormwater reaches the receiving water.

Sampling From a Drainage Ditch or Swale

If your stormwater is discharged via a drainage ditch or vegetated swale, take a grab sample from a consistently flowing part of the ditch / swale. If the ditch / swale is too small or shallow, install a barrier device in the channel or deepen a small area so you are able to sample directly into the bottles. Allow sufficient time to pass after disturbing the bottom so that any solids stirred up do not contaminate your sample.

Sampling From a Stormwater Detention / Retention Basin or Other Treatment Device

If it is necessary for you to sample from a detention or retention basin, do so at the outfall of the structure. Collecting samples from stagnant or slowly moving water inside a pond will not yield a representative sample as the pollutants might not be adequately mixed. Stormwater basins may hold stormwater for long periods of time. Collect your sample within 30 minutes from when the pond begins to discharge.



Potential Sampling Issues

Depending on the location of your monitoring points, you may encounter additional challenges beyond deciding which sampling technique to employ at each site. Table 2 identifies some stormwater sampling problems common to industrial facilities and guidance for how EPA suggests you address them if they occur at your site.

Table 2. Solutions to Typical Stormwater Sampling Problems

Problem	Solution
Run-on from Neighboring Properties	Ideally, your stormwater samples will contain only runoff from your site. However, stormwater from a neighboring facility can “run on” and commingle with your own regulated discharge, possibly adding contaminants not found at your facility. You are responsible for any and all pollutants discharged from your site irrespective of the pollutants’ origin and whether the other facility has permit coverage. This responsibility includes run-on discharges from neighboring properties if this discharge commingles with your own regulated discharge. To accommodate stormwater run-on, EPA requires as part of the SWPPP site description that you document the locations and sources of run-on. As part of this documentation, if you collect and analyze samples of the run-on, you will need to report all such findings in your SWPPP.
Stormwater from industrial areas commingles with stormwater discharges from non-industrial areas or areas not regulated under the MSGP before it reaches the surface water body or MS4.	Attempt to sample the industrial stormwater discharge before it mixes with stormwater from non-industrial areas.
Adverse Weather Conditions	High tides and high flow or flood conditions can cause stormwater conveyances to reach maximum capacity, pipes to become clogged or submerged, and other unrepresentative flow situations. High flows could also be dangerous, so you should use your best professional judgment when selecting sampling locations. In some cases you may need to sample at a point before the intended outfall location.
There are numerous stormwater outfalls in one area.	Construct an impound channel or join together flows by building a weir or digging a ditch to collect discharge at a low point for sampling purposes. This artificial collection point should be lined with plastic to prevent infiltration and the introduction of

Problem	Solution
	sediment. Or, alternatively, sample at several locations to represent total site runoff.
The outfall is inaccessible (examples include underwater discharges or unreachable discharges such as a pipe discharging out of a cliff).	Go upstream of the discharge until a sample can be taken (i.e., to the nearest manhole or inspection point). You may need to sample at several locations to best represent runoff from this discharge point if you cannot access an upstream location.
A facility has many sampling locations making it difficult to collect all of the samples during the first 30 minutes of discharge, as required by the 2008 MSGP.	Have a sampling crew ready when storms are forecast so that all outfalls can be sampled during the first 30 minutes. Also, automatic samplers may be used to collect samples within the first 30 minutes, triggered by the amount of rainfall, the depth of flow, flow volume or time.
A stormwater sample location is beneath a manhole.	For accessibility and safety, use a sampling pole to collect samples from a manhole. Before a person can enter a manhole to collect a sample, they must be trained in confined space entry.
Stormwater from more than one industry type is commingled.	You must comply with monitoring requirements for all applicable sectors and SIC codes.

2.3 Determine Which Types of Monitoring Requirements Apply At Each Outfall

The next step in preparing for monitoring at your site is to determine the type of monitoring requirements that correspond to each outfall. The type of monitoring requirements to which you are subject will differ according to your permit. Different monitoring requirements may also apply to individual outfalls on your property based on the type of industrial activity discharging to that point, and even the receiving water to which you are discharging. Using your permit, determine the type of monitoring requirements to which your specific facility is subject, and document in your SWPPP the specific monitoring requirements that applies to each outfall, including the frequency of monitoring and the specific parameters that must be monitored.

Recall that it is not necessary to monitor an outfall if it does not have any industrial activity associated with it (e.g., discharge from an employee parking lot that does not commingle with stormwater runoff from an area of industrial activity) or if the outfall does not drain to a surface water (i.e. the outfall drains to a sanitary sewer or combined sewer system).

The following applies to the types of monitoring required under the 2008 MSGP. If you are not subject to the 2008 MSGP, consult your State permit to determine your monitoring requirements.

- **Visual Assessments** (Part 4.2 of the 2008 MSGP) – All 2008 MSGP permittees are required to collect samples of their stormwater discharge for visual inspection. The following qualitative characteristics must be assessed:
 - color;
 - odor;
 - clarity;
 - floating solids;
 - settled solids;
 - suspended solids;
 - foam;
 - oil sheen; and

- other obvious indicators of stormwater pollution.

Visual assessments must be conducted at all outfalls, although if several outfalls are “substantially identical” then only one visual assessment must be conducted on the set of outfalls. The sampling frequency for visual assessments under the 2008 MSGP is quarterly. The monitoring quarters are: January 1 – March 31, April 1 – June 30, July 1 – September 30, and October 1 – December 31.

- **Benchmark Monitoring** (Part 6.2.1 of the 2008 MSGP) – This type of analytic monitoring applies to certain industrial sectors regulated under the 2008 MSGP. Permittees subject to these requirements must take periodic grab samples of their stormwater discharge to compare the concentrations of key indicator pollutants to their corresponding benchmark concentrations. The benchmark values are based in large part on EPA’s aquatic life water quality criteria and are meant to serve as indicators of how well a facility’s stormwater control efforts are working. If a particular benchmark is exceeded, this indicates to a permittee that there may be a problem at the site, such as a spill, exposed pollutant source, or a faulty control measure, and triggers a required review of the potential problem to determine what corrective actions are necessary. For example, a total suspended solids (TSS) concentration found in a benchmark sample of greater than 100 mg/L, which is the applicable benchmark concentration for TSS, would require a facility to re-evaluate and potentially revise control measures implemented to control dust, soil erosion, or other sources of suspended solids. Note that the exceedance of the benchmark is not a violation (because benchmarks are typically not enforceable limits), but the failure to conduct the follow-up investigation and applicable corrective actions would be a violation of the permit.

Be sure to update your SWPPP and site map whenever you change or add new control measures. Control measure maintenance activities must be documented (preferably in a log), and such records must be kept with your SWPPP and stormwater file.

Determine whether you are subject to any benchmark monitoring requirements based on your particular industrial sector or subsector. The benchmark monitoring requirements differ based on the sector or subsector under which a particular facility falls. Note that not all sectors are subject to this type of monitoring. Appendix D in the 2008 MSGP provides the Standard Industrial Classification (SIC) code and activity codes categorized by sectors and subsectors. Use Appendix D to link your industrial activities with their associated SIC code sectors / subsectors. Your facility will have a primary industrial activity and associated SIC or activity code (which is the major determinant of your permit requirements), and, possibly, additional secondary sectors / subsectors with additional requirements for which you must comply. Next, using Part 8 of the 2008 MSGP, under your particular sector or subsector, determine whether you are subject to any benchmark monitoring requirements, and the corresponding benchmark that applies. Consider the following example: if you operate a gold mine (subsector G2) you are subject in Part 8.G.8.2 to the following benchmark monitoring requirements:

Table 3. Subsector G-2.		
Subsector (Discharges may be subject to requirements for more than one sector/subsector)	Parameter	Benchmark Monitoring Cutoff Concentration
Subsector G2. Iron Ores; Copper Ores; Lead and Zinc Ores; Gold and Silver Ores; Ferroalloy Ores, Except Vanadium; and Miscellaneous Metal Ores (SIC Codes 1011, 1021, 1031, 1041, 1044, 1061, 1081, 1094, 1099) (Note: when analyzing hardness for a suite of metals, it is more cost effective to add analysis of calcium and magnesium, and have hardness calculated than to require hardness analysis separately)	Total Suspended Solids (TSS)	100 mg/L
	Turbidity	50 NTU
	pH	6.0-9.0 s.u.
	Hardness (as CaCO ₃ ; calc. from Ca, Mg) ¹	no benchmark value
	Total Antimony	0.64 mg/L
	Total Arsenic	0.15 mg/ L
	Total Beryllium	0.13 mg/L
	Total Cadmium ¹	Hardness Dependent
	Total Copper ¹	Hardness Dependent
	Total Iron	1.0 mg/L
	Total Lead ¹	Hardness Dependent
	Total Mercury	0.0014 mg/L
	Total Nickel ¹	Hardness Dependent
	Total Selenium	0.005 mg/L
	Total Silver ¹	Hardness Dependent
Total Zinc ¹	Hardness Dependent	

Based on this table, you then know the pollutant parameter for which you must conduct benchmark monitoring, and the corresponding benchmark concentration against which you will compare each individual grab sample. Each sector or subsector subject to benchmark monitoring requirements includes a similar table in Part 8 of the 2008 MSGP.

After you have determined which (if any) benchmark sampling requirements apply, document in your SWPPP which outfalls are subject to such requirements, the frequency of monitoring, and the parameters that must be analyzed. If your facility has multiple outfalls, be aware that there may be different requirements for different outfalls depending on the type of industrial activity conducted in the drainage area of each outfall. You are only required to conduct benchmark monitoring for those outfalls with discharges from the specific sectors / subsectors that are affected by such requirements. Where an outfall includes no discharges from those sectors or subsectors for which benchmark monitoring requirements apply, then no benchmark samples need to be taken at that outfall.

The required benchmark monitoring frequency under the 2008 MSGP is quarterly. The monitoring quarters, beginning with the first quarter on April 1, 2009 are: April 1 – June 30, July 1 – September 30, October 1 – December 31 and January 1 – March 31.

Exceptions for Inactive and Unstaffed Sites (Part 6.2.1.3 of the 2008 MSG) – The requirement for benchmark monitoring does not apply to inactive and unstaffed facilities, providing there are no industrial materials or activities exposed to stormwater. This exception only applies to benchmark monitoring requirements and not to the other types of monitoring described above.

To claim this special exemption, you must note on the next quarterly benchmark monitoring report that your facility is inactive and unstaffed, and you must keep an inactive and unstaffed certification onsite (see Part 4.2.1.3). The requirement for conducting a quarterly visual assessment also does not apply inactive and unstaffed sites, as long as there are no industrial materials or activities exposed to stormwater. If you are invoking the exception for inactive and unstaffed sites, maintain a signed and certified statement onsite with your SWPPP stating that the site is inactive and unstaffed, and that there are no industrial materials or activities exposed to stormwater.

Hardness-Dependent Benchmarks (Appendix J of the 2008 MSGP) – The benchmark values of some metals are dependent on the level of hardness in your receiving waters (see 2008 MSGP, Appendix J). Hardness is a characteristic of water that results from the presence of dissolved salts, especially calcium sulfate or bicarbonate, and is usually reported as carbonate, noncarbonate or calcium + magnesium (Ca + Mg). If you are required to monitor for a hardness-dependent pollutant, you must first determine the hardness of your receiving water before you can establish the corresponding benchmark concentration.

- **Effluent Limitations Monitoring** (Part 6.2.2 of the 2008 MSGP) – Eight of the 2008 MSGP’s 29 industrial sectors are required to monitor to determine if they comply with EPA-defined effluent limitation guidelines. These monitoring requirements are included in Part 8 of the 2008 MSGP. Effluent limitation guidelines are legally enforceable limitations that must not be exceeded in stormwater discharges.

Similar to the benchmark monitoring requirements, samples only need to be taken at those outfalls with discharges from the specific activities that are subject to effluent limitation guidelines; otherwise these requirements do not apply. As stated previously, permittees subject to these monitoring requirements must take samples at all applicable outfalls, and no exceptions are given for substantially identical outfalls. However, if you are required to monitor a pollutant both for benchmark and effluent limitation guideline purposes, you only need to take one sample for both requirements.

When monitoring requirements overlap, e.g., TSS once per year for an effluent limit and once per quarter for benchmark monitoring, you may use a single sample to satisfy both monitoring requirements (i.e., one of your four quarterly benchmark samples would be used for your yearly effluent limit sample).

Table 4 identifies the industrial activities that are subject to effluent limitation guideline monitoring requirements and the associated sampling parameters. Effluent limitation guideline samples must be taken once per year (see Part 8 of the 2008 MSGP for the numerical values of each effluent limit).

Table 4. Required Monitoring for Effluent Limitations Guidelines

Regulated Activity	Where in 2008 MSGP	Sector	Effluent Limit Parameters
Discharges resulting from spray down or intentional wetting of logs at wet deck storage areas	Part 8.A.7	A	debris, pH
Runoff from phosphate fertilizer manufacturing facilities	Part 8.C.4	C	total P, fluoride

Industrial Stormwater Monitoring and Sampling Guide

Regulated Activity	Where in 2008 MSGP	Sector	Effluent Limit Parameters
Runoff from asphalt paving and roofing emulsion facilities	Part 8.D.4	D	total suspended solids (TSS), oil and grease, pH
Runoff from material storage piles at cement manufacturing facilities	Part 8.E.5	E	TSS, pH
Mine dewatering discharges at crushed stone, construction sand and gravel, or industrial sand mining facilities	Part 8.J.9	J	TSS, pH
Runoff from hazardous waste landfills	Part 8.K.6	K	biochemical oxygen demand (BOD ₅), TSS, ammonia, alpha terpineol, benzoic acid, p-cresol, phenol, total recoverable zinc, pH, aniline, naphthalene, pyridine, total recoverable chromium,
Runoff from non-hazardous waste landfills	Part 8.L.10	L	biochemical oxygen demand (BOD ₅), TSS, ammonia, alpha terpineol, benzoic acid, p-cresol, phenol, total recoverable zinc, pH
Discharges from coal storage piles	Part 8.O.8	O	TSS, pH

Determine whether you are subject to any effluent limitation guideline monitoring requirements. Document in your SWPPP which outfalls are subject to such requirements, the frequency of monitoring, and the parameters that must be analyzed.

- Impaired Waters Monitoring** (Part 6.2.4 of the 2008 MSGP) – The 2008 MSGP requires facilities to monitor, at least in the first year of permit coverage (and yearly thereafter depending on the sample results in the first year), for the presence of any pollutant causing an impairment to their receiving water. This requirement is triggered regardless of whether the particular pollutant is used or stored at the industrial site; however the facility may be able to discontinue monitoring after the first year if the pollutant is not present in the sample and is not expected to be present in any discharge. In advance of conducting this monitoring, you should already have a good idea of whether the pollutant will be found in your discharge. When you developed your SWPPP, you conducted a complete inventory of your site to determine what pollutants or pollutant constituents could be discharged in stormwater runoff. See Section 3.1 of EPA’s guide, *Developing Your Stormwater Pollution Prevention Plan: A Guide for Industrial Operators*, particularly the discussion about conducting an “Inventory of Materials and Pollutants”. Using this inventory from your SWPPP, you will be able to determine if any materials stored or used at your facility could contribute to impairment of your receiving water.

The next section of this guide includes specific steps to help you determine if you are subject to impaired waters monitoring requirements. After following those steps, document in your SWPPP which outfalls are subject to impaired waters monitoring requirements, the frequency of sampling, and the parameters that must be monitored.

- State / Tribal Monitoring Requirements** (Part 6.2.3 of the 2008 MSGP) – The 2008 MSGP includes a number of additional monitoring requirements that are unique to individual States

and/or Indian Country lands. These requirements are set out in Part 9 of the permit. These requirements may include additional or more frequent benchmark monitoring requirements, alternative benchmark thresholds, or additional parameters that must be monitored to establish compliance with applicable water quality standards.

Based on the State or Indian Country land in which they are located, each 2008 MSGP permittee must consult the applicable Part 9 section to determine what, if any, additional monitoring requirements apply. If you are subject to such requirements, you must document in your SWPPP which outfalls are subject to these provisions, the frequency of applicable sampling, and the parameters that must be monitored

- **Additional Monitoring Required by EPA** – It is possible EPA may require additional monitoring (see 2008 MSGP Part 6.2.5). You will be notified by the Agency if additional monitoring is required.

2.4 Determine if Your Facility is Subject to Impaired Waters Monitoring Requirements

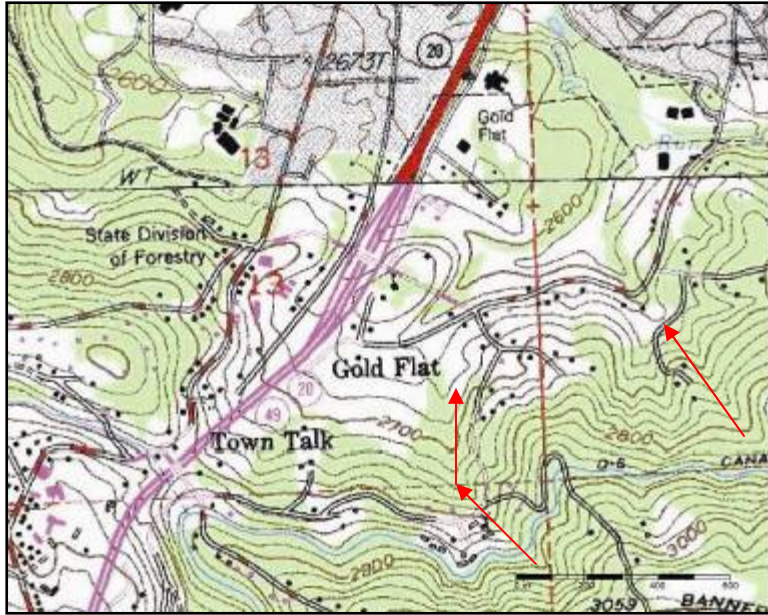
If you are required by your industrial stormwater permit to monitor for pollutants that cause impairment to your receiving water, you must first identify the receiving waters (e.g. ditch, creek, intermittent stream, lake, arroyo, etc.) into which your facility discharges stormwater and mark them on your site map. Note that you will have already identified your receiving waters if you filed an NOI to be covered by the 2008 MSGP.

A. Identify Your Receiving Water(s)

There are several ways to identify your receiving waters. Your receiving water may be a lake, stream, river, ocean, wetland or other waterbody, and may or may not be located adjacent to your facility. Your facility might discharge directly into its receiving water, or indirectly to the receiving water by discharging first through an MS4, ditch, or other conveyance.

Do these monitoring requirements apply to me if I discharge into a dry ditch?
Yes, if the ditch eventually conveys the runoff to a waters of the United States.

If the discharge from your facility does not discharge into an underground storm sewer system, you can use your site map and local topographic maps to pinpoint the closest waterways. Using the contours on the topographic map and your facility's outfall locations, determine the direction stormwater runoff flows from your facility. Once you know the direction of flow, you should be able to identify the receiving waters into which you discharge.



Sample section of a U.S.G.S. quadrangle map, with arrows showing direction of flow.

After identifying where your stormwater enters a waterbody, identify any additional interconnected waters for at least one linear mile downstream from the entrance point of your discharge (in case there are concerns about impacts to these downstream waters).

Resources to help you identify receiving waters:

- EPA's Water Locator Tool (available at www.epa.gov/npdes/stormwater/msgp) allows you to locate nearby receiving waters and impaired waterbodies within a 10 mile radius of your facility.
- EPA's Enviromapper (www.epa.gov/enviro/emef) enables you to find nearby waterbodies by entering your facility's zip code, address, facility name or identification number, EPA Region, watershed, or latitude/longitude data. Additional information on the location of impaired waterbodies can also be obtained.
- Topographic maps, which can be obtained from the U.S. Geological Survey (USGS) at http://topomaps.usgs.gov/ordering_maps.html, or through a retailer.

If your stormwater drains into an MS4, you will likely need to contact the operator of the system (e.g., the local public works department, the highway department, etc.) to identify the first receiving water your stormwater is released to after entering the MS4. Some MS4s have their storm sewer infrastructure maps available online.

Remember, the MS4 into which your facility's stormwater discharges is NOT your receiving water. The first waterbody that the MS4 discharges to after receiving your stormwater is the receiving water for your facility.

B. Determine if Your Receiving Water is Impaired and Whether a TMDL Has Been Completed

Once you have identified your receiving water(s), you will need to find out if the waterbody is impaired, and, if so, whether a total maximum daily load (TMDL) has been approved or established.

- **Water quality impairment status.** You need to determine whether your facility's receiving water is listed by your State as impaired and/or has an approved or established Total Maximum Daily Load (TMDL). EPA's Water Locator Tool (available at www.epa.gov/npdes/stormwater/msggp) will help find impaired waters within a 10 mile radius of your facility. Another place to check is EPA's website on Water Quality Assessment and TMDL information (www.epa.gov/waters/ir) or you can also contact your State water agency (cfpub2.epa.gov/npdes/contacts.cfm?program_id=6&type=STATE).

"Impaired waters" are streams, rivers, and lakes that do not currently meet their applicable designated uses and water quality standards. States, territories, and authorized tribes are required under the Clean Water Act to compile lists of known impaired waters, called 303(d) lists. Stormwater discharges to impaired waters may trigger additional control measures and monitoring requirements. For facilities subject to EPA's 2008 MSGP, see Part 2.2 for a more detailed discussion of water quality-based effluent limitations and conditions for discharging to impaired waters.

If your receiving water is impaired, use EPA's Water Locator Tool or Water Quality Assessment and TMDL website, or a State agency to help you determine:

- For what pollutant(s) is the water impaired? Make a separate list of all pollutants that have caused your waterbody to be impaired.
- Has an approved TMDL been completed for each of the pollutants? Some TMDL documents include information suggesting the type of monitoring that should be conducted to improve the understanding of the impairment or to demonstrate achievement of applicable wasteload allocations (WLAs).

C. Determine What Monitoring Requirements Apply

Having determined the pollutants that cause the impairment, you should now consult your permit to determine the type of monitoring that must be conducted, the frequency of monitoring, and whether any exceptions apply to certain pollutants. As discussed in Section 2.3 above, this must all be documented in your SWPPP so that it is clear which requirements apply to which outfall.

The 2008 MSGP lists several exceptions to and clarifications of the requirement to monitor for each impairment pollutant. In Part 6.2.4.1 of the 2008 MSGP, the permit clarifies that no monitoring is required when a waterbody's biological communities are impaired but no pollutant is specified as causing the impairment, or when a waterbody's impairment is related to hydrologic modification, impaired hydrology, or temperature. The permit also clarifies that monitoring is only required for pollutants for which a standard analytical method exists as defined in 40 CFR Part 136. In addition, certain exceptions exist that enable the permittee to be excused from sampling after the first year if it is found either that:

- The pollutant for which the waterbody is impaired is not detected above natural background levels in the discharge, and it is documented that the pollutant is not expected to be present above natural background discharges; or
- The pollutant for which the waterbody is impaired is not present and not expected to be present in the discharge.

Both the parameters that must be sampled and the frequency of monitoring for impairment pollutants may be subject to State- or Indian Country land-specific requirements. Therefore, each 2008 MSGP permittee must also consult Part 9 of the permit when determining which impaired waters sampling requirements apply.

2.5 What Type of Storm Events Qualify for Monitoring

In addition to understanding which monitoring requirements apply and where, it is also critical to develop an understanding of what type of discharge event you will be sampling. Under the 2008 MSGP, two preconditions must be met before a storm or snowmelt event is considered adequate to be monitored (see Part 6.1.3 of the 2008 MSGP).

- The storm / snowmelt event must create an actual discharge from your site (“measurable storm event”). This storm event will vary based on numerous factors at your site, the most obvious being the actual size and duration of the storm event. However, the amount of impervious surface at your facility will impact this as well. If your facility is covered mostly by grass or another type of vegetation with only a small amount of paved surfaces or roofs, it will take a larger storm to create a discharge from your site than it would at a facility that is entirely paved. Another factor affecting whether and how frequently you have a measurable storm event will be how frequently rain occurs at your facility and the size of the most recent storms. Saturated soil will generate a stormwater discharge more quickly than dry soil; however, VERY dry soil can also become compacted and become nearly impervious to rain, thereby converting precipitation to runoff quickly as well. You will need to pay attention to your facility’s particular characteristics to develop an understanding of what type of rain events or snowmelt results in a discharge.
- At least 72 hours must have elapsed since the previous measurable storm event (unless you are able to document that less than a 72-hour interval is representative for local storm events during the sampling period, or if you are monitoring snowmelt consistent with Part 4.2.1 [quarterly visual assessments] or Part 6.2.1 [benchmark monitoring] of the 2008 MSGP).

In order to properly characterize rain events at your facility, it is a good idea to begin by documenting each event as part of your facility’s routine maintenance activities. You can purchase a simple rain gauge and keep a notebook handy in order to document the dates on which rain occurred and the amount of rain that fell. You should also consider documenting whether or not an actual discharge from your facility occurred for each rain event. Tracking rainfall amounts and discharge information will help you to better predict which storm events will be measureable and result in a discharge.

In order to be prepared to take advantage of storms that will result in a “measurable storm event”:

- Be familiar with local precipitation trends, storm patterns, and seasonal variations.

- Check weather forecasts so you can prepare to sample upcoming precipitation events.
- In addition to your local television news and the Weather Channel, you can get weather information online from <http://www.wrh.noaa.gov> (National Weather Service) and <http://www.weather.com>.

Note: You should try to collect both benchmark samples and visual monitoring samples concurrently so you can compare visual observations with the laboratory results, and reduce your field activities burden.

What To Do If You Are Unable To Sample – EPA acknowledges there may be times you are unable to complete required monitoring. The following are guidelines on how you should deal with such times.

- *Areas with Intermittent Stormwater Runoff* – If your facility experiences limited rainfall for extended periods of the year (i.e., in arid or semi-arid climates), or freezing conditions that often prevent runoff from occurring, then the quarterly monitoring events may be distributed during seasons when discharging does occur. If you are unable to collect four samples in one year because of insufficient runoff, document this fact in your SWPPP and continue quarterly monitoring until you have collected four samples.
- *Snowmelt Sampling* – If you are located where appreciable snow is common, one of your samples must include the capture of snowmelt discharge. If, however, you experience prolonged subfreezing temperatures, you may only be able to acquire a sample once over two quarters. You will then have to complete the monitoring requirements as above.
- *Adverse Weather Conditions* – When adverse weather prevents sampling per your monitoring schedule, you must sample during the next qualifying storm event. Adverse conditions are those that are dangerous or create inaccessibility for personnel, caused by such things as flooding, high winds, electrical storms or situations that otherwise make sampling impractical (e.g., drought or extended frozen conditions).

2.6 Select the Monitoring Team

Identify the members of your facility's pollution prevention team (which you identified in your SWPPP) who will collect samples and conduct visual assessments of discharges. To be considered as a member of the monitoring team, applicable staff must be familiar with the SWPPP, especially the site plan, the layout of the facility, potential pollutant sources, and the monitoring and reporting program. They also need to possess the knowledge and skills to assess conditions and activities that could impact stormwater quality at your facility, and be able to evaluate the effectiveness of control measures.

Ideally, the pollution prevention team consists of at least one individual from each shift so that a team member is always present during normal operating hours.

to

Typically, monitoring staff are based near the site to enable them to be available on short notice to sample storm events.

It is also important that monitoring staff understand and follow all quality assurance quality control (QAQC) techniques and procedures to ensure that the data is good. You should discuss these techniques with your laboratory prior to taking samples and properly train all sampling staff.

2.7 Select a Laboratory to Analyze the Samples

Your stormwater samples will need to be analyzed for the parameters you identified in section 2.3 by a qualified laboratory. Labs must use the approved methodologies found at 40 CFR Part 136 and return a report with chemical concentrations including data quality assurance information.

EPA recommends that you select a laboratory that is a participant in the EPA's Discharge Monitoring Report - Quality Assurance (DMRQA) Program, and, if possible, be approved by the National Environmental Laboratory Accreditation Program (NELAP). NOTE: for ELG compliance monitoring, participation in DMRQA is a minimum requirement.

Things to discuss with the laboratory

- What type and size of bottle will be provided for each test?
- How full do I fill the bottle?
- Are there any safety concerns with materials provided by the lab?
- What is the best way to preserve the samples?
- What kind of labels will be supplied and how should I fill them out?
- Will the lab deliver the supplies or do I need to pick them up?
- What are the maximum holding times for each water quality parameter to be sampled?
- Will the lab provide pH paper? Samples need to be tested for pH within 15 minutes of collection to be valid, typically in the field.
- Will the lab pick up the samples from my facility or do I need to deliver them?
- Can you walk me through filling out the chain-of-custody forms?
- Is the quantitation limit for each parameter less than the benchmark or effluent limitation concentration?*

* The quantitation limit is the minimum concentration of a parameter that the lab can accurately report using a particular method.

- A comprehensive list of NELAP-approved laboratories can be found at www.nelac-institute.org/accred-labs.php
- To ensure your chosen laboratory is eligible and reliable, you may want to request documentation showing they are certified to analyze environmental samples, and evidence they participate in DMRQA or other performance evaluation testing results.

You should ask the laboratory about any additional services and products they offer. Such as:

- pre-labeled bottles and pre-printed chain-of-custody forms;
- training on sample collection, documentation and data interpretation;
- sampling and courier services; and
- complete sampling kits which include bottles, packing materials, bottle labels, coolers and chain-of-custody forms; many laboratories provide free sampling kits.

2.8 Document Monitoring Procedures in Your SWPPP

Ensure your monitoring procedures are correctly documented in your SWPPP (see 2008 MSGP Part 5.1.5.2). The required information includes:

- The monitoring requirements that specifically apply to your facility.
- Information related to the substantially identical outfall exception, if you will use it.
- Your sampling procedures.
- Your procedures for performing quarterly visual assessments of stormwater discharges. This SWPPP element includes the routine facility inspections and comprehensive site inspections required by the 2008 MSGP (see 2008 MSGP Part 4.1 and 4.3, respectively).

Figure 1 is an example of a completed MSGP Industrial Stormwater/Snowmelt Monitoring Summary Form. You should fill out this form (Appendix A) with the sampling locations and monitoring requirements that apply to your facility and include a copy in your SWPPP.

Benchmark Levels and ELGs									
Industry Sector	Pollutant	Benchmark Level	ELG						
			Daily Max	Monthly Average	Instant Min/Max				
D	TSS	100	23	15		Total Suspended Solids (SM 254-05)	pH	Oil and Grease (EPA Method 1664-A)	Iron (EPA Method 200.9)
D	Oil and Grease		15	10					
D	pH				6-9				
E2	Iron	1							
E2	TSS	100	50						
E2	pH				6-9				
Sample Summary									
Outfall Identifier	Industry Sector (SIC)	Basis	Frequency	Timing					
e.g. 001-A	Sector D (SIC 2951)	Benchmark	1/Quarter	1st wk of month	✓	✓	✓		
e.g. 001-A	Sector D (SIC 2951)	ELG	1/year	January	✓				
e.g. 001-B	Subsector E2 (SIC 3271)	Benchmark	1/Quarter	1st wk of month	✓			✓	
e.g. 001-B	Subsector E2 (SIC 3271)	ELG	1/year	January	✓	✓			

Figure 1. Example MSGP Industrial Stormwater/Snowmelt Monitoring Summary Form with monitoring requirements, sampling locations and industry sectors.

3. Conduct Monitoring

This section describes sampling preparation, choosing the right storm event to monitor, how to collect stormwater samples, how to conduct quarterly visual assessments, quality control considerations, and how to report the results.

The information contained in this section is not specific to monitoring for the 2008 MSGP or any particular general industrial permit.

3.1 What to Have In Place Prior to Collecting Stormwater Samples

Preparation is essential, especially if you are in a climate where measurable storm events are infrequent.

- ***In-Office Preparations*** – Your in-office preparations should include the following:
 - Contacting the lab well ahead of time so that you have the sample bottles before a measurable storm event.
 - Paying attention to weather forecasts so that you are tracking patterns that are likely to result in a measurable storm event.
 - Knowing who your monitoring personnel are and how to contact them when a measurable storm event is expected.
 - Having sampling gear assembled and checked for readiness.
 - Preparing sample bottle labels using waterproof ink with the following information (if not already done by the lab):
 - Facility name and address
 - Sample location identifier (e.g., Outfall 001)
 - Name or initials of sampling personnel
 - Parameter and associated analytical method (e.g., TSS, Method # 0160.2; consult with your contract laboratory for analytical method numbers)
 - Sample type (generally will be “grab” samples)
 - Sample preservation notes
 - Date and time after completing sampling event
- Having chain-of-custody forms ready for use.

The chain of custody form is a document that travels with the sample from collection through analysis. Each individual that handles the sample will place their name, date, and time on the chain-of-custody form. The form is used to maintain the integrity of the sample by providing documentation of the control, transfer, and analysis of samples (see Section 3.4 below for a more detailed discussion of chain-of-custody).

- **Sampling Supplies** – Collect the following supplies and keep them ready for quick use:
 - Clean, sterilized sample bottles, sized appropriately for the parameter to be analyzed (many labs provide the appropriate bottles or will tell you what size to get).
Glass must be used for oil and grease samples; plastic containers can be used for other parameters. Use Teflon or aluminum-lined caps.
 - If bottles are new but not pre-cleaned, they must be pre-conditioned before use by filling with water for several days (the duration can be reduced by using a dilute solution of hydrochloric acid).
 - Additional glass or clear plastic bottles suitable for visual assessments.
 - Visual monitoring forms (see example in Appendix B).
 - Clipboard and site-specific monitoring checklist.
 - If needed, a pole (sold at field supply stores) on which to attach sample bottles and attachment clips or strapping tape to secure the bottle to the pole.
 - Safety equipment, including first aid kit.
 - Hand sanitizer solution.
 - Carrying case for sampling equipment or backpack for carrying equipment to remote locations.
 - Powder-free disposable nitrile or latex gloves (sold by medical and laboratory suppliers or may be provided by your contract laboratory). Do *not* use powdered gloves as they may contaminate your samples.
 - Indelible pens / markers that can write on wet surfaces.
 - Foul-weather gear including footwear appropriate for the conditions at your sampling locations (e.g., non-slip boots).
 - Sturdy cooler and ice or ice packs for stowing and preserving your samples en route to the lab (the lab may provide an appropriate container).
 - Field notebook or field forms for your sampling records (waterproof notebooks are available at office supply stores).
 - pH paper and appropriate chemical preservatives for adding to sample bottles (obtain from your laboratory).

**For rinsing sample bottles,
use only distilled water**



Preparing sampling supplies.

- **Optional or as-needed supplies:**
 - Sodium bicarbonate (for safety reasons if using acid preservative additives)
 - A graduated stick to measure water depth for determining safe / wade-able sampling access locations (if a sampling pole will be used, you can modify it with depth markings)
 - Mosquito repellent
 - Flashlight in case of sudden loss of light or darkness under storm conditions
 - Flagging tape for marking access to remote or overgrown locations
 - Camera, used for:
 - Recording evidence of potential pollutants or sampling conditions.
 - Especially useful if different people will do the sampling throughout the permit term.
 - Pictures of sample appearance along with the visual inspection records can help “normalize” visual assessments.
 - Pictures of the sampling location can help you find the same spot for subsequent sampling events.

Develop a stormwater sampling checklist to ensure consistency and continuity across sampling events. Since stormwater sampling is not a regular part of a facility's workload, a checklist of things to have prepared before sampling, sampling activities, and sampling locations will help you remember from quarter to quarter. You can make the checklist by noting the things you did for the first sampling event to remember for future sampling events. Keep the checklist updated as you gain experience with sampling.

3.2 Collect Stormwater Samples

Contact the lab prior to collecting stormwater samples so they know to expect the samples and have adequate staff available to conduct the analyses within the applicable holding times (the lab may offer courier service). Inform them of the pollutant parameters for which your samples will be analyzed.



A stormwater grab sample is collected directly into the sample container.

Follow the protocol below to obtain an accurate grab or manual sample. A grab sample is a single sample "grabbed" by filling up a container, either by hand or attached to a pole. Obtaining accurate data is vital to your ability to assess how your stormwater control measures are performing.

- Wear disposable powder-free gloves for sampling; never touch the inside of the lid or bottle.
- For oil and grease: fill the glass sample bottle directly from the discharge; never collect in a container first and then transfer to the sample bottle because oily residue will collect along the inside of the first collection bottle and make the sample inaccurate.

Remember, oil and grease must be collected directly into the glass sample bottle.

Industrial Stormwater Monitoring and Sampling Guide

- If you have problems accessing the stormwater discharge point (e.g., access is too far or dangerous), use a pole or other appropriate sampling apparatus.
- Sample only stormwater discharging from your facility (i.e., do not sample from puddles, ponds or retention basins).
- Sample from a turbulent section in the central part of the flow; avoid touching the bottom or sides of the stormwater conveyance.
- Fill the sample bottle nearly to the top (meniscus almost at the rim) by holding the opening into the flow of water; do not rinse or overfill the bottles.



Sample bottles labeled with location, date, time, sample collector, analysis, and preservative type.

While stormwater samples are typically grab samples, in some situations the use of an automatic sampler may be appropriate. Automatic samplers are mechanical devices that monitor site conditions and collect a sample when needed. The automatic sampler can be set up well in advance of a storm, or set up as a permanent installation, and the technician can retrieve the sample after the storm when conditions are favorable. Advantages of automatic samplers include low labor costs, convenience, and safety – personnel are not out in the storm trying to collect one or more samples. The major disadvantage is cost; automatic samplers are expensive. Secondly, the automatic sampler cannot collect visual observations, and they cannot be used for collection of certain measurements.

After the samples have been collected:

- Place the samples in a sturdy cooler partially filled with ice. As a general rule, samples should be kept at approximately 39°F (4°C) until the cooler is delivered to the lab.
- Put a completed chain-of-custody form enclosed in a re-sealable plastic bag inside the cooler. If you have several

pH has a 15 minute holding time; therefore, the sample must be analyzed within 15 minutes of collection.

Industrial Stormwater Monitoring and Sampling Guide

coolers complete a separate chain of custody form for each cooler.

- Deliver the samples to the lab (e.g. drive, arrange same-day pick-up by the lab, or use an express / overnight service) as soon as possible, bearing in mind the holding times for each parameter sampled.



Stormwater samples packed for delivery to the lab, note the chain of custody forms attached to the lid.

3.3 Record Information for Each Monitoring Event

For each individual sample collected, you should note the following information:

- The sample / outfall identifier.
- The duration between the storm event you sampled and the end of the previous storm event that resulted in a discharge of stormwater from your site (i.e., a “measurable storm event”).
- The date and duration of the storm event sampled.
- Rainfall measurement or estimate (in inches).
- Estimate of the total volume of the discharge sampled from the outfall.

You should record this information on a Stormwater Collection Form (see appendix C for an example).

3.4 Quality Assurance Considerations

The following actions must be followed explicitly. Quality assurance (QA) helps maintain the accuracy and integrity / legal defensibility of your monitoring results by documenting the stewardship of your samples, by minimizing biases in sampling and lab procedures, and by helping to assess the accuracy and precision of the lab's analyses.

Holding Times and Sample Preservation

Samples that cannot be delivered to the lab on the same day may need to be preserved, often by cooling to 4°C (i.e., in an ice bath) and/or with added chemical preservatives (laboratory-supplied bottles may already include preservatives). If your samples need to be analyzed for more than one parameter you may need to bottle more than one sample at an outfall using different preservatives. In addition, you should be aware of the maximum holding time allowed for a particular parameter before which the sample must be analyzed. Following is a table with typical preservation and holding requirements for benchmark parameters and additional potential pollutants of concern (the latter will not have a numeric value in parentheses). Work with your laboratory service providers to develop a list of containers to optimize “sharing” of containers across different parameters. Not all laboratories provide the same container types for the different parameters. Laboratories frequently provide pre-completed custody records and seals, and will provide pre-labeled sample bottles for ease of use in the field as part of their routine “value-added” services. Pre-completed custody records and labels require only time, date, and samplers’ initials in order to complete this critical documentation. Your laboratory may also have additional sampling, sample handling, or shipping instructions helpful to your sample collection personnel. NOTE: Whenever possible, minimize the amount of lead time sample containers / kits are outside of the laboratory. Extended storage of pre-preserved containers for some analytes may present opportunity for blank contamination, even under ideal storage conditions.

Table 5. Sample Preservation and Hold Times

Parameter (Benchmark Level, mg/l or as specified)	Preservation		Maximum Holding Time	Sample Container
	Cool to 4° C?	Additional		
Aluminum, Total Recoverable (0.75)	N	HNO ₃ (nitric acid) to pH <2	6 months	500 mL HDPE
Ammonia (2.14)	Y	H ₂ SO ₄ (sulfuric acid) to pH <2	28 days	500 mL HDPE
Antimony, Total Recoverable (0.64)	N	HNO ₃ to pH <2	6 months	500 mL HDPE
Arsenic, Total Recoverable (0.15)	N	HNO ₃ to pH <2	6 months	500 mL HDPE
Beryllium, Total Recoverable (0.13)	N	HNO ₃ to pH <2	6 months	500 mL HDPE
Biological Oxygen Demand, BOD ₅ (30)	Y	None	48 hours	1L HDPE or glass
Cadmium, Total Recoverable (0.0005 – 0.0053)*	N	HNO ₃ to pH <2	6 months	500 mL HDPE
Chemical Oxygen Demand, COD (120.0)	Y	H ₂ SO ₄ to pH <2	28 days	100 mL HDPE or glass
Chromium (0.58 – 3.82)*	N	HNO ₃ to pH <2	6 months	500 mL HDPE

Industrial Stormwater Monitoring and Sampling Guide

Parameter (Benchmark Level, mg/l or as specified)	Preservation		Maximum Holding Time	Sample Container
	Cool to 4° C?	Additional		
Copper, Total Recoverable (0.0038 – 0.0332)*	N	HNO ₃ to pH <2	6 months	500 mL HDPE
Cyanide, Total (0.022)	Y	NaOH (sodium hydroxide) to pH >12, refrigerate in dark	14 days; 24 hours if sulfide present	1 L HDPE
Fluoride		None	28 days	100 mL HDPE
Hardness (as CaCO ₃)		HNO ₃ or H ₂ SO ₄ to pH <2 (method dependent)	6 months	100 mL HDPE
Iron, Total Recoverable (1.0)	N	HNO ₃ to pH <2	6 months	500 mL HDPE
Lead, Total Recoverable (0.014 – 0.262)*	N	HNO ₃ to pH <2	6 months	500 mL HDPE
Magnesium, Total Recoverable (0.064)	N	HNO ₃ to pH <2	6 months	500 mL HDPE
Mercury, Total Recoverable (0.0014)	N	HNO ₃ to pH <2	28 days	500 mL HDPE
Nickel, Total Recoverable (0.15 – 1.02)*	N	HNO ₃ to pH <2	6 months	500 mL HDPE
Nitrate + Nitrite Nitrogen (0.68)	Y	H ₂ SO ₄ to pH <2	28 days	200 mL HDPE
Oil and Grease	Y	HCl or H ₂ SO ₄ to pH <2	28 days	1L Boston round glass
pH (6.0 – 9.0 s.u.)	N	None	15 min (Field test)	50 mL
Phenols, Total Recoverable	Y	H ₂ SO ₄ to pH <2	28 days	500 mL HDPE
Phosphorous, Total (2.0)	Y	H ₂ SO ₄ to pH <2	28 days	500 mL HDPE
Radium, Total Recoverable		HNO ₃ to pH <2	6 months	1L HDPE
Radium, dissolved		Field-filtered HNO ₃ to pH <2; if not field filtered - none	Field filtered, preserved 6months; if not field filtered, filter on receipt, preserve to pH <2 6 months	1L HDPE
Selenium, Total Recoverable (0.005)	N	HNO ₃ to pH <2	6 months	500 mL HDPE
Silver, Total Recoverable (0.0007 – 0.0183)*	N	HNO ₃ to pH <2	6 months	500 mL HDPE
Total Suspended Solids, TSS (100)	Y	None	7 days	200 mL HDPE
Turbidity (50 NTU)	Y	store in the dark	48 hrs	100 mL HDPE
Uranium		HNO ₃ to pH <2	6 months	500mL HDPE
Zinc, Total Recoverable (0.04 – 0.26)*	N	HNO ₃ to pH <2	6 months	500 mL HDPE
Landfill Parameters				
Alpha Terpineol	Y	NA	7 days to extraction 40 days to analysis	1L Amber glass
Aniline	Y	NA	7 days to extraction 40 days to analysis	1L Amber glass
Benzoic Acid	Y	NA	7 days to extraction 40 days to analysis	1L Amber glass
Napthalene	Y	NA	7 days to extraction	1L Amber glass

Parameter (Benchmark Level, mg/l or as specified)	Preservation		Maximum Holding Time	Sample Container
	Cool to 4° C?	Additional		
			40 days to analysis	
p-Cresol	Y	NA	7 days to extraction 40 days to analysis	1L Amber glass
Pyridine	Y	NA	7 days to extraction 40 days to analysis	1L Amber glass

*These values are hardness dependent.

Field Blanks

Field blanks are distilled or de-ionized water samples prepared when you are collecting stormwater samples. Field blanks are prepared, in the field, after cleaning the sampling equipment but before collection of water quality samples. Blanks are prepared by pouring distilled de-ionized water into each scoop, dipper, etc. used for sample collection and then into sample bottles as if they were actual field samples. The field blanks are processed and analyzed in an identical manner as the stormwater samples. If the lab detects any contamination in the blanks, your sampling results could be considered tainted (either from contamination or errors in sampling or analysis). Collection and analysis of field blanks is not required by the 2008 MSGP; however, field blanks are used for quality control to assess whether contamination was introduced during sampling, and may prove useful in interpretation of results.

Chain of Custody Forms and Procedures

Samples must be traceable from the point of collection until the sampling results are reported. To do this, document who is in possession of the samples using the chain of custody procedures below. One person should be responsible for the care and custody of the samples, and for generating the chain of custody record until the samples are properly transferred or relinquished to the laboratory. Chain of custody tasks include:

- Ensure that the sample labels are properly filled in.
- Complete the chain of custody form with the date, time, parameter and sample locations for each sample, and sign the form.
- During the transfer of custody of the samples, both the persons relinquishing and receiving the cooler (including lab personnel) must record the date and time on the chain of custody form and sign it.
- Record the shipping method, courier name(s), and other pertinent information as remarks on the chain of custody form.
- The original chain of custody form remains with the samples and a copy must be provided to the facility for inclusion in project records.

Chain of custody records are critical to ensure that no tampering occurs between sample collection and analysis. Your analytical service provider may provide training or written instructions to assist in your completion of accurate custody records. This is another key area where many laboratories invite the opportunity to work with their clients as part of their value-added services.

3.5 Conducting Visual Assessments of Stormwater Discharges

All facilities covered by the 2008 MSGP must perform quarterly visual assessments, irrespective of benchmark monitoring.

Visually inspecting stormwater samples from a measurable discharge at your sampling outfalls is an inexpensive way of assessing the performance of your control measures. The sample should be collected and analyzed in a colorless glass or plastic bottle. It is recommended that you take photographs of the discharges at the time of observation in case more than one person is doing the assessments and because photos can be helpful in determining the effectiveness of your control measures and any need to make changes to control measures.

Assess the general appearance, as an indicator of contaminants, of your discharges for these characteristics:

- **Color** – If the discharge has an unusual color, such as reddish, brown, or yellow hue, this may indicate pollutants or suspended sediment.
- **Odor** – If the discharge has a noticeable odor, for instance if it smells like gasoline fumes, rotten eggs, raw sewage, or solvents odor, or has a sour smell, this could be indicative of pollutants in the discharge.
- **Clarity** – If the discharge is not clear, but is instead cloudy or opaque, this could indicate elevated levels of pollutants in the discharge.
- **Floating solids** – If you observe materials floating at or near the top of the bottle, take note of what the materials appear to be.
- **Settled solids** – You should wait about a half hour after collection, then note the type and size of materials that are settled at the bottom of the bottle.
- **Suspended solids** – Particles suspended in the water will affect its clarity, and color and could be attributable to pollutant sources at your facility.
- **Oil sheen** – You should check the surface of the water for a rainbow color or sheen; this would indicate the presence of oil or other hydrocarbons in the discharge.
- **Foam** – You should gently shake the bottle and note whether there is any foam.
- **Other obvious indicators of stormwater pollution.**

To record your visual monitoring results you can use the optional “Quarterly Visual Monitoring Form” in Appendix B (or a comparable one of your own).

4. Evaluate Monitoring Results

The primary purpose of any industrial stormwater monitoring program, consisting of analytic chemical monitoring and visual assessments, is to provide feedback on the performance of your selection and implementation of control measures. Visual evidence of pollution in a stormwater sample, a spike in the concentration of a benchmark pollutant, or the exceedance of a numeric effluent limitation provides an indicator that modifications or additions to the site's control measures need to be considered to improve the effectiveness of your stormwater program.

The following will aid you in interpreting your monitoring results and revising your control measures, if necessary.

4.1 Evaluating Quarterly Visual Assessment Results

For anything but colorless and odorless stormwater in your discharge, you should investigate what area of your site or what specific pollutant sources are contributing to the contamination of your site's runoff. To search for the source of pollutants, you should move upstream from the discharge point. You should scrutinize your exposed industrial materials and activities (material handling equipment, industrial machinery, raw materials, finished product, wastes, or products that are stored, used or created onsite, etc.). Examine where material handling activities occur, such as: storage, loading and unloading, and material transporting. Be aware, the source could be from an ongoing activity or the result of a spill or other infrequent occurrence. In looking at your samples, consider the following:



- When there is a distinct color or odor, are the abnormalities associated with any raw materials, chemicals or other materials used at the site?
- Muddiness or sediment may have been picked up from areas where there is disturbed earth or other unpaved areas lacking adequate control measures.
- Foam or oil sheen may be the result of a leak or spill of materials.
- Cloudiness indicates suspended solids such as dust, ash, powdered chemicals, and ground up materials. Determine whether you use any of these materials and whether they are exposed to stormwater.

Clean up all sources of potential contamination, make changes to your control measures, and update your SWPPP, as necessary.

4.2 Evaluating Benchmark Monitoring Results

The analysis of your benchmark monitoring results can yield valuable information about the characteristics of your runoff and how well your control measures are working. Once you have received your lab results for your benchmark samples, compare these concentrations to the benchmark values that apply to your facility. The 2008 MSGP requires that you conduct four benchmark samples in your first year, and then compare the average value to the applicable benchmark. If the average concentration of your samples exceeds the benchmark, then you are required under the permit to evaluate whether changes to your control measures are necessary. See Parts 6.2.1.2 and 3.2. However, prior to the completion of the four samples, if one or more sample results makes an exceedance of the benchmark mathematically certain, you are required to conduct this evaluation without waiting for the results of the remaining benchmark samples.

Table 6 will help you decide a course of action depending on the results of your benchmark samples.

Table 6. Evaluation of Benchmark Monitoring Results

Does the average of your four quarterly benchmark samples for any pollutant exceed the applicable benchmark concentration? OR <u>If you have not yet completed your four quarterly benchmark samples, does the total value of your samples already make an exceedance of the benchmark mathematically certain (e.g., the sum of the concentration of your samples exceeds four times (4X) the benchmark concentration)?</u>	
YES	NO
<p>You must evaluate whether modifications to the stormwater control measures used at your site are necessary. You will need to consider whether there is a problem in the selection, design, installation, and/or operation of applicable control measures. Follow the evaluation and corrective action process in Parts 3.2, 3.3, and 3.4.</p> <p>An exceedance of a benchmark does not necessarily mean that your control measures are insufficient. Continue reading below for additional items to consider as you proceed.</p>	<p>Sample results below benchmark limits provide an indication that your control measures are working as intended to minimize the discharge of pollutants.</p> <p>Although your samples indicate properly functioning control measures, you should continue to note changes to your site that may affect the quality of stormwater runoff, and to link such changes to your future monitoring results.</p> <p>You are still required to meet all requirements in the permit affecting the implementation and maintenance of your control measures, despite the good results of your benchmark monitoring.</p>

If benchmarks were exceeded:

- Did you sample correctly?
 - Did you start with clean sample collection jars and were the samples preserved and submitted to the lab within the allotted time frame?
 - Did you properly sample the discharge flowing from the site or did you collect the sample from a low spot or stagnant pool?

Industrial Stormwater Monitoring and Sampling Guide

- Was anything atypical going on at the site prior to or during the storm? Atypical activities could include:
 - A leak or spill that was not adequately cleaned up.
 - Construction, painting and paving activities.
 - Having a large amount of material (raw materials, wastes or products) recently delivered or being prepared for shipment.
- Did you observe anything during visual inspections that may have indicated that stormwater runoff would have been exposed to pollutants? If so, are control measures in place to address the pollutant sources?



The more the benchmark was exceeded, the greater your facility's problems may be, necessitating a more robust response. For example, if your results for TSS were over the benchmark value by a relatively small amount (e.g., TSS values of 110 to 150 mg/L, compared to the 100 mg/l benchmark level assigned to TSS), then simply performing additional housekeeping measures (e.g., frequent sweeping) may reduce the values below the benchmark of 100 mg/l by the next storm. However, an exceedance above 150 mg/l may warrant new or supplementary control measures (assuming your control measures are performing as designed) that more effectively reduce the potential for sediment in discharges (e.g., installing storm inlet filters, seeding / stabilizing disturbed areas, implementing dust and debris controlling procedures). TSS values exceeding benchmarks by orders of magnitude indicate a serious problem, and may require structural control measures (e.g., paving, installing berms around piles of loose material, placing operations under cover, placing grassy swales or basins in the discharge flow path to trap sediment).

Until your visual observations and sampling results show that pollutants are not found in your discharges or are present in concentrations below benchmark values, the pollution prevention team should engage in an iterative process in which control measures are selected, implemented, evaluated and modified until determined to be completely effective.

There may be circumstances where benchmark values cannot be reasonably achieved because of local natural background concentrations (see 2008 MSGP Part 6.2.1.2). In such cases, EPA allows for benchmark exceedances. For example, high natural background levels of iron in soils or groundwater could cause exceedances of a benchmark value. This provision exempts facilities from further control measure evaluation and benchmark monitoring when natural background levels are solely responsible for the exceedance of a benchmark value.

To make this determination, natural background pollutant concentrations must be greater than the corresponding benchmark value, and there is *no* net facility contribution of the pollutant (i.e., average concentration detected in runoff from all monitored outfalls over four separate events minus the average natural concentration of the parameter for four separate events does not exceed zero).

For example, if the natural background concentration of TSS from an undisturbed watershed is 200 mg/L, an exemption from further benchmark monitoring / control measure evaluation is available if the average of your four benchmark samples is equal to or lower than 200 mg/L. There are additional requisites for claiming a natural background level exemption, including documentation. Details of these are contained in the 2008 MSGP in Part 6.2.1.2 and the Fact Sheet.

4.3 Effluent Limitation Guideline Monitoring Results

What happens if your facility is subject to numeric effluent limits (for ELG compliance monitoring) and your stormwater sample exceeds the effluent limits for one or more parameters? Within 24 hours of receiving the lab report you must prepare a corrective action report, including:

- Identification of the condition triggering the need for corrective action review;
- Description of the problem identified; and
- Date the problem was identified.

Within 14 days of receiving the lab report, you must document the following information:

- Summary of corrective action(s) taken or to be taken;
- Notice of whether any modifications to your control measures and any related changes to your SWPPP are necessary as a result of this discovery or corrective action;
- Date corrective action initiated; and
- Date corrective action completed or expected to be completed.

You must submit these reports with your annual report and retain a copy onsite with your SWPPP

The 2008 MSGP requires that you conduct follow-up monitoring within 30 calendar days of implementing corrective actions (or during the next qualifying runoff event, should none occur within 30 days, see Part 3 of the 2008 MSGP). Monitoring must be performed for any pollutant(s) that exceeded the effluent limit. If the results from the follow-up monitoring exceed the effluent limit(s), you are required to submit an Exceedance Report to EPA no later than 30 after receipt of your lab results. The exceedance report must include:

- NPDES permit tracking number;
- Facility name, physical address, and location;
- Name of receiving water;
- Monitoring data from this and the preceding monitoring event(s)

- An explanation of the situation; what you have done and intend to do (should your corrective actions not yet be complete) to correct the violation; and
- An appropriate contact name and phone number.

In addition to preparing the Exceedance Report, you must continue to monitor, at least quarterly, until your stormwater discharge is in compliance with the effluent limits or until EPA waives the requirement for additional monitoring.

4.4 Specific Pollutants and Control Measure Options

All facilities need to gear their control measures toward their specific pollutants of concern, as determined by the materials and activities onsite. Below is a brief discussion of some of the most common pollutants and control measure options.

- **Total Suspended Solids (TSS).** Small sediment particles are easily suspended and carried by surface water flows. These particles may be blown onto the site from unpaved areas within or adjacent to your facility as well as being tracked in on the tires of vehicles. Excess particles may be self-generated, particularly in the concrete, asphalt, scrap recycling, automobile salvage, and mining sectors. See the discussion above for control measure options for controlling TSS.



- **Oil and Grease.** Often, oil and grease may be observed as a film, sheen or discoloration on the top of a discharge or receiving water. But such a surface anomaly may not be obvious, in which case detection by a lab would be the only way. This could be a pollutant of concern for any facility, especially if there are exposed vehicles or equipment. Therefore, it is vital that due diligence regarding “reportable quantity” (RQ) spills or leaks be observed. Basically, an RQ for oil is any quantity of oil that causes a film, sheen or discoloration on a receiving water surface (and for which there are separate reporting requirements to regulatory agencies). If detected you must find the source and mitigate it. Start with the vehicle / equipment maintenance and storage areas or where shipping / receiving and the like are done. Above ground storage tanks and waste storage are other likely sources.

Available control measures range from regularly monitoring these areas and applying an absorbent material (choose a bio-based absorbent like Nature’s Broom, not a clay-based material) as soon as an oil leak or spill is observed. Consider coverage of and secondary containment for storage areas where oil or grease are stored, transferred or disposed of. An oil water separator downstream of the area(s) most likely to contain oil or grease could provide enough treatment to reduce oil and grease to acceptable levels in the discharge.

- **pH.** pH values below benchmark range indicate that acidic substances are exposed to stormwater. In this case you need to determine whether any of your industrial processes use acids and if so, where. Does your facility do plating, or are lead-acid batteries used or stored on-site? If acids are being used to clean parts, for example, where are the parts stored after being treated with the acid? Where are waste acids stored and how are they disposed? Which operations could expose acids to stormwater? Coal piles are also a source of acidified runoff.



High pH values indicate that a base or alkaline material (such as lye) is exposed to stormwater. Cement and some cleansers can produce high pH values.

Control measures applicable to controlling pH include housekeeping (sweeping and cleaning areas where materials that affect pH could be exposed to stormwater); overhead coverage and disposal of waste materials in covered receptacles. Low or high pH runoff can be collected and neutralized by adding an appropriate agent to neutralize pH values to the 6.0 – 9.0 range. Alternatively, flow can be directed to come in contact with a neutralizing substance (e.g., acidic coal pile runoff directed to flow through a limestone channel).

- **Chemical Oxygen Demand (COD).** COD is the amount of dissolved oxygen in water consumed by the chemical breakdown of organic and inorganic matter (i.e., COD is not a specific component in the discharge). Therefore, a high COD value indicates elevated quantities of pollutants in runoff, especially carbon. Examples of facilities that handle materials which could cause high COD levels include the wood and paper product industries. Control measures applicable to controlling COD levels are the basic stormwater ones: good housekeeping and covering materials with the potential to allow carbon or other organic materials to be carried by stormwater.
- **Metals.** Metals originate from many sources and consequently a number of industries must monitor for metals, including facilities such as wood preservative and agricultural chemical makers, mines, and foundries. Depending on a facility's activities, metals can be found in a dissolved form and/or adsorbed to particles or sediment. It is because both the dissolved and particulate forms can occur at the same time is why stormwater discharges are analyzed for "total recoverable metals." After identifying those operations that could expose stormwater to metals sources, implement control measures capable of reducing metals concentrations, including good housekeeping (sweeping and disposing of metal wastes in covered containers), covering / shielding operations, and directing run-on away from any critical outdoor areas. Ion exchange techniques can also be employed to remove dissolved metals.

5. Record-Keeping and Reporting

It is important that accurate record-keeping of monitoring activities become a standard operating procedure at your facility. You need to be able to show that monitoring and sampling events not only meet all permit requirements, but are defensible and abide by all QA/QC procedures. It is always preferable to document too much as opposed to too little when dealing with any sort of permit compliance. Create easy to use log books for keeping track of rain events. Be sure that your site map is up to date and easy to understand. Develop simple instruction sheets for recording sampling, visual assessments, or other monitoring activities. The instructions should be kept in logical locations (e.g. in sample kits, in the SWPPP notebook) and updated as needed.

When possible, use standardized forms such as those provided in the appendices of this monitoring guide to record your monitoring activities. This will provide consistency in information reported. Example forms are provided in this guide in Appendix A (2008 MSGP Industrial Stormwater Monitoring Form), Appendix B (2008 MSGP Visual Monitoring Form), and Appendix C (2008 MSGP Industrial Stormwater Collection Form).

If possible, regularly transfer sampling records and sample results into databases or spreadsheets. This will provide back-up records for hard-copy logs or forms as well as providing an easy way to analyze your sampling data.

5.1 Reporting Monitoring Data

Each state industrial stormwater permit has different requirements for how monitoring data should be reported. Facilities subject to EPA's 2008 MSGP must submit to EPA all monitoring data collected no later than 30 days after receiving complete lab results for all monitored outfalls. You must submit even if your facility is reporting "no discharge" or a change in status from "active and staffed" to "inactive and unstaffed."

Facilities must use the online eNOI system (www.epa.gov/npdes/eNOI) to report results. EPA's Electronic Notice of Intent (eNOI) system is an online electronic permit application system that enables stormwater entities to submit NOI forms to EPA. eNOI also allows registered eNOI users to report discharge monitoring data and submit annual reports and other reporting information to EPA.

If you cannot access eNOI, the paper MSGP Discharge Monitoring Report (MDMR) reporting form (available at www.epa.gov/npdes/stormwater/msgp) can be submitted to the appropriate address identified in the 2008 MSGP (Part 7.6.1).

Even if you submit monitoring data via eNOI, the paper MDMR form can help ensure you have the information you need to complete all the required fields. Rather than go line by line through the MDMR, which the instructions do, this Guide will highlight the information needed to fill out the MDMR.

You will need the following information to submit monitoring data via eNOI and complete the MDMR, at a minimum:

1. Permit tracking number
2. The facility SWPPP

Industrial Stormwater Monitoring and Sampling Guide

3. Monitoring records
4. Lab reports
5. Corrective actions

Permit Tracking Number – The permit tracking number is a unique identifier assigned to your facility by EPA. EPA tracks report submittals using the Permit Tracking Number rather than facility name or address. Thus, if you do not include the Permit Tracking Number you may not get credit for submitting the MDMR.

Facility SWPPP – The facility SWPPP includes several pieces of information needed for the MDMR, including:

- The number of stormwater outfalls.
- Which, if any, of the outfalls discharge substantially identical effluents.
- Alternative monitoring periods, if the facility is located in an area of irregular stormwater runoff.

Monitoring Records – Detailed monitoring records will make completing the MDMR easier. As previously discussed, monitoring records must include:

- The date(s) of all monitoring events during the MDMR reporting period.
- Any stormwater outfalls that did not have a discharge during the MDMR reporting period.
- Whether the discharge resulted from rainfall or snowmelt.
- The duration of the storm event.
- The number of inches of rainfall from the monitored storm event(s).
- The number of days since the previous measurable storm event, which may or may not be the previous *monitored* measurable storm event.

Lab Reports – The lab will provide a detailed report with the results of your stormwater analyses and detailed QA/QC data to verify that the results are accurate. For each parameter the lab will typically report one of three results to be reported on the MDMR.

1. The measured concentration to be compared against the benchmark or effluent limitation guideline.
2. BQL or below quantitation limit means that the parameter is present at some amount greater than zero but less than the quantitation limit but the method used is not precise enough to give an exact concentration. Report BQL and the numeric quantitation limit on the MDMR.
3. ND or not detected means that the parameter was not detected in the sample. Report ND and the detection limit on the MDMR. Note that the ND level is typically three to five times less than the quantitation limit.

Other lab reports you may need include receiving water hardness results if any of your required parameters are hardness dependent, and data on natural background pollutant levels if you are claiming that an exceedance of a benchmark limit is due to natural background conditions.

Corrective Actions – The 2008 MSGP requires you to implement corrective actions if the lab report indicates an exceedance of one or more numeric effluent limits or if the average of four quarterly samples exceeds the applicable benchmark. You must document discovery of effluent limit(s) or

benchmark concentration(s) exceedances within 24 hours of receiving the lab report, including the condition triggering the need for corrective action review; a description of the problem; and the date the problem was identified. Within 14-days of receiving the lab report you must summarize the corrective action that was taken or will be taken, including a description of the corrective action; start and end dates; and whether the SWPPP will be modified. You can submit the corrective action report(s) via eNOI or along with the paper MDMR form.

6. Train Personnel

You must train your stormwater pollution prevention team in the proper procedures for sample collection, visual assessments, tracking and reporting. Trainings should be held regularly to update staff on any permit or SWPPP changes. New employees that become members of the stormwater pollution prevention team should be trained in general stormwater awareness as well as the following monitoring-specific topics:

- How to anticipate a measurable storm event.
- Where to monitor.
- How to collect and document the collection of stormwater samples including the assembling of “field blank” samples.
- How to perform and document visual assessments.
- How to handle and send the samples to the lab.
- How to interpret the results.
- How to keep accurate and complete records and report appropriate information to the permitting authority.

7. References

APHA (American Public Health Association). 1998. *Standard Methods for the Examination of Water and Wastewater, 20th Edition*. American Public Health Association, 20th Edition.

Ecology. 2002. *How To Do Stormwater Sampling: A Guide for Industrial Facilities*. Publication #02-10-071. State of Washington Department of Ecology, Olympia, Washington.

“EPA Administered Permit Programs: The National Pollutant Discharge Elimination System.” *Code of Federal Regulations* Title 40, Pt. 122.

“Guidelines Establishing Test Procedures for the Analysis of Pollutants.” *Code of Federal Regulations* Title 40, Pt. 136.

USEPA (U.S. Environmental Protection Agency). 1992. *NPDES Storm Water Sampling Guidance Document*. EPA 833-8-92-001. U.S. Environmental Protection Agency, Office of Water, Washington D.C.

USEPA (U.S. Environmental Protection Agency). 2008. *NPDES Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity (MSGP)*. U.S. Environmental Protection Agency, Washington D.C.

Appendix A – 2008 MSGP Industrial Stormwater Monitoring Form

MSGP Industrial Stormwater/Snowmelt Monitoring Summary Form

Name of Facility: Address: Permit Tracking Number:						Pollutants to sample (Method)						
Benchmark Levels and ELGs												
Industry Sector	Pollutant	Benchmark Level	ELG									
			Daily Max	Monthly Average	Instant Min/Max							
Sample Summary												
Outfall Identifier	Industry Sector (SIC)	Basis	Frequency	Timing								

Appendix B – 2008 MSGP Visual Monitoring Form

MSGP Quarterly Visual Assessment Form

(Complete a separate form for each outfall you assess)

Name of Facility:		Permit No.:	
Street Address:		City:	State: Zip Code:
Outfall Number:	"Substantially Identical Outfall"? <input type="checkbox"/> No <input type="checkbox"/> Yes (identify substantially identical outfalls): _____		
Quarter/Year:	Substitute Sample?: <input type="checkbox"/> No <input type="checkbox"/> Yes (identify quarter/year when sample was originally scheduled to be collected): _____		
Person(s)/Title(s) collecting sample:			
Person(s)/Title(s) examining sample:			
Date & Time Storm or Snowmelt Began:	Date & Time Sample Collected: _____	Date & Time Sample Examined: _____	
Nature of Discharge: <input type="checkbox"/> Rainfall <input type="checkbox"/> Snowmelt			
Rainfall Amount: _____ inches	Previous Storm Ended > 72 hours Before Start of This Storm? <input type="checkbox"/> Yes <input type="checkbox"/> No* (explain): _____		
Parameter			
Color	<input type="checkbox"/> None <input type="checkbox"/> Other (describe): _____		
Odor	<input type="checkbox"/> None <input type="checkbox"/> Musty <input type="checkbox"/> Sewage <input type="checkbox"/> Sulfur <input type="checkbox"/> Sour <input type="checkbox"/> Petroleum/Gas <input type="checkbox"/> Solvents <input type="checkbox"/> Other (describe): _____		
Clarity	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Cloudy <input type="checkbox"/> Opaque <input type="checkbox"/> Other (describe): _____		
Floating Solids	<input type="checkbox"/> No <input type="checkbox"/> Yes (describe): _____		
Settled Solids**	<input type="checkbox"/> No <input type="checkbox"/> Yes (describe): _____		
Suspended Solids	<input type="checkbox"/> No <input type="checkbox"/> Yes (describe): _____		
Oil Sheen	<input type="checkbox"/> None <input type="checkbox"/> Flecks <input type="checkbox"/> Globs <input type="checkbox"/> Sheen <input type="checkbox"/> Slick <input type="checkbox"/> Other (describe): _____		
Foam (gently shake sample)	<input type="checkbox"/> No <input type="checkbox"/> Yes (describe): _____		
Other Obvious Indicators of Storm Water Pollution	<input type="checkbox"/> No <input type="checkbox"/> Yes (describe): _____		

* The 72-hour interval can be waived when the previous storm did not yield a measurable discharge or if you are able to document (attach applicable documentation) that less than a 72-hour interval is representative of local storm events during the sampling period.

** Observe for settled solids after allowing the sample to sit for approximately one-half hour.

Sampling not performed due to adverse conditions: No Yes (explain): _____

Sampling not performed due to no measurable storm event occurring that resulted in a discharge during the monitoring quarter:

No Yes (explain): _____

Detail any concerns, additional comments, descriptions of pictures taken, and any corrective actions taken below (attach additional sheets as necessary).

Certification by Facility Responsible Official (Refer to MSGP Subpart 11 Appendix B for Signatory Requirements)

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.

A. Name _____

B. Title _____

C. Signature _____

D. Date Signed _____

Appendix C – 2008 MSGP Industrial Stormwater Collection Form

MSGP Industrial Stormwater/Snowmelt Discharge Collection Form

Name of Facility: Address: Person(s)/Title(s) collecting sample: Permit Tracking Number: Outfall Numbers/Sample Locations:			Preservative (Y/N)	Number of Containers	Type of Analyses Required								Sample Collection Information	
					Date & Time Sample Collection Began:									
Discharge Information														
Nature of Discharge (circle one): Rainfall or Snowmelt														
Rainfall Amount (inches):														
Date of Discharge Sampling:														
Date & Time Storm Began:														
Date & Time Storm Ended:														
Date & Time of Previous Measurable Storm Event:														
Shaded area for laboratory use only														
Date	Time	Sample Identification/Outfall										Collection Method	Laboratory Log Number	
Sampled by: (signature)		Date/Time:	Relinquished by: (signature)			Date/Time:	Received by: (signature)			Date/Time:				
Received by: (signature)		Date/Time:	Received by: (signature)			Date/Time:	Received by: (signature)			Date/Time:				

The 72-hour interval can be waived when the previous storm did not yield a measurable discharge or if you are able to document (attach applicable documentation) that less than a 72-hour interval is representative of local storm events during the sampling period.

Detail any concerns, additional comments, descriptions of pictures taken, and any corrective actions below (attach additional sheets as necessary).

Certification by Facility Responsible Official (Refer to MSGP Subpart 11 Appendix B for Signatory Requirements)

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.

A. Name _____

B. Title _____

C. Signature _____

C. Date Signed _____

M4 – ANNUAL REPORT EXAMPLE

This Page Intentionally Left Blank

Appendix I - Annual Report Form

Part 7.1 requires you to use the NPDES eReporting Tool, or "NeT", to prepare and submit your Annual Report. However, if you are given a waiver by the EPA Regional Office to use a paper annual report form, and you elect to use it, you must complete and submit the following form.

This Annual Report Form Template is provided for reference only.

Annual Reports must be submitted by January 30th of each year of permit coverage (beginning in January 2017) through the EPA's NPDES eReporting Tool (NeT). NeT can be accessed through EPA's central Data Exchange (CDX) system at <https://cdx.epa.gov/>.



A. Approval to Use Paper Annual Report Form

1. Have you been granted a waiver from electronic reporting from the EPA Regional Office*? YES NO

If yes, check which waiver you have been granted, the name of the EPA Regional Office staff person who granted the waiver, and the date of approval:

- Waiver granted: The owner/operator's headquarters is physically located in a geographic area (i.e., ZIP code or census tract) that is identified as under-served for broadband Internet access in the most recent report from the Federal Communications Commission.
- The owner/operator has issues regarding available computer access or computer capability.

Name of EPA staff person that granted the waiver:

Date approval obtained: / /

*** Note: You are required to obtain approval from the applicable EPA Regional Office prior to using this paper annual report form. If you have not obtained a waiver, you must file this form electronically using the NPDES eReporting Tool (NeT) at <http://water.epa.gov/polwaste/npdes/stormwater/Stormwater-eNOI-System-for-EPA-MultiSector-General-Permit.cfm>**

B. Permit Information

1. NPDES ID:

C. Facility Information

1. Facility Name:

2. Facility Phone: - - Ext.

3. Facility Mailing Address:

Street:

City: State: ZIP Code: -

County or Similar Government Subdivision:

4. Point of Contact:

First Name, Middle Initial, Last Name:

D. General Findings

1. Provide a summary of your past year's routine facility inspection documentation (see Part 3.1.2 of the permit). In addition, if you are an operator of an airport facility (Sector S) that is subject to the airport effluent limitations guidelines, and are complying with the MSGP Part 8.S.8.1 effluent limitation through the use of non-urea-containing deicers, provide a statement certifying that you do not use pavement deicers containing urea (e.g., "Urea was not used at [name of airport] for pavement deicing in the past year and will also not be used in 2015." (Note: Operators of airport facilities that are complying with Part 8.S.8.1 by meeting the numeric effluent limitation for ammonia do not need to include this statement.)

2. Provide a summary of your past year's quarterly visual assessment documentation (see Part 3.2.2 of the permit).

3. For any four-sample (minimum) average benchmark monitoring exceedance, if after reviewing the selection, design, installation, and implementation of your control measures and considering whether any modifications are necessary to meet the effluent limits in the permit, you determine that no further pollutant reductions are technologically available and economically practicable and achievable in light of best industry practice, provide your rationale for why you believe no further reductions are achievable (see Part 6.2.1.2 of the permit). Enter "NA" if not applicable.

4. Provide a summary of your past year's corrective action documentation (See Part 4.4 of the permit). (Note: If corrective action is not yet completed at the time of submission of this annual report, you must describe the status of any outstanding corrective action(s).) Also describe any incidents of noncompliance in the past year or currently ongoing, or if none, provide a statement that you are in compliance with the permit.

E. Certification Information

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.

First Name, Middle Initial, Last Name:

Title:

Signature: _____ Date: / /

E-mail:

**Annual Report for Stormwater Discharges
Associated with Industrial Activity Under an NPDES General Permit**

Who Must File an Annual Report

Operators must submit an Annual Report to EPA electronically, per Part 7.5, by January 30th for each year of permit coverage containing information generated from the past calendar year.

Completing the Form

To complete this form, type or print, using uppercase letters, in the appropriate areas only. Please place each character between the marks. Abbreviate if necessary to stay within the number of characters allowed for each item. Use only one space for breaks between words, but not for punctuation marks unless they are needed to clarify your response. Please submit original document with signature in ink - do not send a photocopied signature.

Section A. Approval to Use Paper Annual Report Form

You must indicate whether you have been granted a waiver from electronic reporting from the EPA Regional Office. Note that you are not authorized to use this paper form unless the EPA Regional Office has approved its use. Where you have obtained approval to use this form, indicate the waiver that you have been granted, the name of the EPA staff person who granted the waiver, and the date that approval was provided. See <http://water.epa.gov/polwaste/npdes/stormwater/Stormwater-Contacts.cfm> for a list of EPA Regional Office contacts.

Section B. Permit Information

Provide the NPDES ID (i.e., NOI tracking number) assigned to your facility.

Section C. Facility Information

Enter the official or legal name, phone number, and complete street address, including city, state, ZIP code, and county or similar government subdivision, for the facility that is covered by the NPDES ID identified in Section B. If the facility lacks a street address, indicate the general location of the facility (e.g., Intersection of State Highways 61 and 34). Also provide a point of contact name for the facility.

Section D. General Findings

To complete this section you must provide the following information in your annual report:

1. A summary of your past year's routine facility inspection documentation required by Part 3.1.2 of the permit.
2. A summary of your past year's quarterly visual assessment documentation required by Part 3.2.2 of the permit.
3. If, after finding the average of your four monitoring values for any pollutant exceeds the benchmark, you decide no further pollutant reductions are technologically available and economically practicable and achievable in light of best industry practice, your rationale for why you believe no further reductions are achievable.
4. Information copied or summarized from the corrective action documentation required per Part 4.4 (if applicable). If corrective action is not yet completed at the time of submission of this Annual Report, you must describe the status of any outstanding corrective action(s). You must also describe any incidents of noncompliance in the past year or currently ongoing, or if none, provide a statement that you are in compliance with the permit.

Section E. Certification Information

The Annual Report must be signed by a person described below, or by a duly authorized representative of that person.

For a corporation: By a responsible corporate officer. For the purpose of this Section, a responsible corporate officer means:

(i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long-term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

For a partnership or sole proprietorship: By a general partner or the proprietor, respectively; or

For a municipality, state, federal, or other public agency: By either a principal executive officer or ranking elected official. For purposes of this Part, a principal executive officer of a federal agency includes (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrator of EPA). Include the name and title of the person signing the form and the date of signing.

A person is a duly authorized representative only if:

1. The authorization is made in writing by a person described above;
2. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.) and
3. The written authorization is submitted to the Director.

An unsigned or undated Annual Report form be considered incomplete.

Paperwork Reduction Act Notice

Public reporting burden for this form is estimated to average 2.5 hours per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. Send comments regarding the burden estimate, any other aspect of the collection of information, or suggestions for improving this form, including any suggestions which may increase or reduce this burden to: Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number of this form on any correspondence. Do not send the completed Annual Report form to this address.

Instructions for Completing the Annual Report Form

**Annual Report for Stormwater Discharges
Associated with Industrial Activity Under an NPDES General Permit**

Submitting Your Form

If you have been granted a waiver from your Regional Office to submit a paper Annual Report form, you must send your Annual Report form by mail to one of the following addresses:

For Regular U.S. Mail Delivery:

Stormwater Notice Processing Center
Mail Code 4203M, ATTN: 2015 MSGP Reports
U.S. EPA
1200 Pennsylvania Avenue, NW
Washington, DC 20460

For Overnight/Express Mail Delivery:

Stormwater Notice Processing Center
William Jefferson Clinton East Building - Room 7420
ATTN: 2015 MSGP Reports
U.S. EPA
1201 Constitution Avenue, NW
Washington, DC 20004

Visit this website for instructions on how to submit electronically:
<http://water.epa.gov/polwaste/npdes/stormwater/Stormwater-eNOI-System-for-EPAs-MultiSector-General-Permit.cfm>