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505.246.1600

May 21, 2014

Mr. Jim Hamel
CIP Program Manager
City of Albuquerque
Department of Municipal Development
P.O. Box 1293
One Civic Plaza, Room 7057
Albuquerque, New Mexico 87103

Re: Soil Gas Survey Final Report, City of Albuquerque Parking Lot located at 1st Street and Central Avenue, Albuquerque, New Mexico

Dear Mr. Hamel:

INTERA Incorporated (INTERA) and it's subcontractor, Vista GeoScience (Vista) completed a soil gas survey at the City of Albuquerque parking lot located at 1st Street and Central Avenue (Site) located in Albuquerque, New Mexico. The Site location and soil gas sampling locations are shown on Figure 1 (attached). The soil gas survey field work (soil boring advancement and soil gas sampling collection) was completed on March 23, 2014.

Task 1 – Soil Gas Survey

Objective: The objective of the soil gas survey investigation was to determine if volatile organic compounds (VOCs) are present in soil vapor at the Site at distinct depths in the subsurface (4- and 15-feet below ground surface [bgs]). The soil vapor samples were compared to EPA established soil vapor intrusion screening levels (VISLs). Residential VISLs were used in order to compare soil gas sample results to the most conservative VISLs available. Soil vapor samples were collected using sorbent tubes so soil vapor detection limits are low enough to compare EPA to residential VISLs.

INTERA utilized Vista of Golden, Colorado to conduct a soil gas survey at the Site. A copy of Vista GeoScience's Final Report prepared for INTERA, dated April 28, 2014 is included in Attachment A.

Twelve (12) soil gas samples were collected at the Site. Eight soil gas samples were collected at eight locations at an approximate depth of 4-feet bgs. At four of the eight locations soil vapor samples were collected at 15-feet bgs. The soil gas samples were collected using clean, dedicated Teflon-lined polyethylene tubing, and laboratory-provided, dedicated sorbent tubes. The soil gas samples were analyzed by Vista GeoScience for VOCs via EPA Method 8260.

The soil gas at each sampling location was purged using a carbon dioxide/oxygen/methane (CO_2/O_2/CH_4) meter until readings stabilized, and then soil gas was screened using a hand-held

photoionization detector (PID)/flame ionization detector (FID) prior to soil gas sample collection. A metered sampling pump was then used which has a measureable flow rate to estimate purge volume over time. A minimum of three volumes of soil gas was purged and then the parameter stability was used to confirm that atmospheric air is not being drawn in from the surface and diluting the soil gas sample. The soil gas samples were then collected by pumping soil gas into a sorbent tube.

Results: A total of 12 soil gas samples were collected at the Site and analyzed for VOCs. The soil gas results were compared to EPA VISLs (see attached Table 1). Although no soil gas sample concentrations of VOCs were identified above the EPA VISLs, 21 VOCs were identified in moderate to significant quantities including significant concentrations of petroleum hydrocarbon vapors in the gasoline and diesel fuel range at depths of both 4- and 15-feet bgs. Additional soil gas sampling is recommended in the western half of the Site to further define soil gas concentrations. In addition, a Site-specific soil gas survey is recommended to be completed at the Site once a redevelopment option is selected. Please see the attached Vista soil gas survey report included in Attachment A for more information.

Please contact me at (505) 246-1600 ext. 1219 with any questions or if you require additional information regarding the enclosed.

Sincerely,

INTERA Incorporated

Joseph J. Tracy, PG
Principal Geologist

Figure – Figure 1
Table 1 – Soil Gas Survey Results
Attachment A – Vista GeoScience, LLC Final Report

Figure 1

Legend

Soil Gas Sampling Location

Site Boundary

N

100 50 0 100 Feet

Figure 1
Soil Vapor Sampling Locations
City of Albuquerque,
1st and Central Parking Lot
Albuquerque, New Mexico

INTERA Source(s): Aerial image – BERNCO website, dated 2012

FILE: S:\Projects\COA On-Call 2012\1st_and_Central\Graphics\GIS\MapsDocs\Fig01_SVSlocations.mxd Date: 3/17/2014

Table 1

TABLE 1
Detected Constituents in Soil Vapor
First Street and Central Ave.
Albuquerque, Bernalillo County, New Mexico

Sample ID	Concentration (µg/m^3)															
	Acetone	Benzene	2-Butanone (MEK)	n-Butylbenzene	sec-Butylbenzene	Carbon disulfide	Chloroform	1,3-Dichlorobenzene	1,4-Dichlorobenzene	Isopropylbenzene	4-Isopropyltoluene	Methylene chloride	4-Methyl-2-pentanone	n-Propylbenzene	Toluene	Xylene Total
EPA VISL[a] (µg/m^3)	**320,000**	**31**	**52,000**	**NaV**	**NaV**	**7,300**	**11**	**NaV**	**22**	**NaV**	**NaV**	**6,300**	**31,000**	**10,000**	**52,000**	**1,000**
CRWQCB ESL[b] (µg/m^3)	**15,400,000**	**42**	**2,600,000**	**NaV**	**NaV**	**NaV**	**230**	**NaV**	**110**	**NaV**	**NaV**	**2,600**	**210,000**	**NaV**	**156,000**	**52,100**
SV-01C-04	140	- - -	5.8	- - -	- - -	17.2	- - -	*33.0*	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
SV-02C-04	149	- - -	- - -	- - -	- - -	17.2	- - -	*39.4*	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
SV-02C-15	461	9.7	59.6	- - -	*47.4*	20.8	- - -	- - -	- - -	- - -	- - -	5.3	32.3	- - -	80.9	29.7
SV-03C-04	71	- - -	- - -	- - -	- - -	9.2	- - -	*73.4*	- - -	- - -	- - -	7.3	- - -	- - -	- - -	- - -
SV-04C-04	129	- - -	- - -	- - -	- - -	14.2	- - -	*35.3*	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
SV-04C-15	61	- - -	- - -	- - -	- - -	- - -	- - -	*49.2*	6.5	- - -	- - -	- - -	- - -	- - -	- - -	- - -
SV-05C-04	158	- - -	- - -	- - -	- - -	16.0	- - -	- - -	- - -	- - -	*926*	- - -	- - -	24.1	84.2	- - -
SV-06C-04	265	10.6	20.0	- - -	- - -	11.4	- - -	*41.3*	- - -	- - -	- - -	- - -	- - -	- - -	14.0	- - -
SV-06C-15	200	5.7	- - -	- - -	*12.9*	15.8	13.2	*36.1*	- - -	*11.9*	- - -	- - -	- - -	- - -	- - -	- - -
SV-07C-04	15	7.7	- - -	- - -	- - -	- - -	- - -	*57.8*	- - -	- - -	- - -	- - -	5.0	- - -	16.3	- - -
SV-08C-04	198	9.6	- - -	*45.8*	*151*	18.7	- - -	- - -	- - -	*115*	- - -	- - -	- - -	61.4	- - -	- - -
SV-08C-15	21	8.6	- - -	*18.6*	*47.5*	- - -	- - -	- - -	- - -	*34.3*	- - -	- - -	- - -	17.3	- - -	- - -

Notes:

Italics indicates constituent detected and no recommended standard/guidance to address vapor intrusion concerns currently exists.

With the exception of total xylenes, the RL for all reported constituents is 5.0 µg/m3; the RL for total xylenes is 10.0 µg/m3.

a =EPA VISL calculated based on a default residential land use scenario and a total target risk for carcinogens of 1 × E-05 (EPA, 2013a).

b =Tier 1 CRWQCB ESL for soil vapor based on a default residential land use scenario (CRWQCB, 2013).

- - - = constituent not detected above RL.

NaV = not available.

µg/m^3 = micrograms per cubic meter

CRWQCB = California Department of Toxic Substances Control/Regional Water Quality Control Board

EPA = U.S. Environmental Protection Agency

ESL = environmental screening level

VISL = vapor intrusion screening level

RL = reporting limit

Attachment A

Vista GeoScience, LLC Final Report

Vista GeoScience

Your Environmental Support Service Experts

April 28, 2014

Joseph J. Tracy, Principal Geologist
INTERA Incorporated
6000 Uptown Blvd. NE, Suite 220
Albuquerque, NM 87110

Via: E-Mail: jtracy@intera.com

Re: Soil Gas Survey - Final Report
Vista GeoScience Project No. 140168.01; City of Albuquerque Parking Lot Site, 1st Street & Central Ave., Albuquerque, New Mexico

Mr. Tracy:

Attached is the Final Report and results for the Soil Gas Survey conducted on March 23, 2014, at the City of Albuquerque parking lot located at 1st Street and Central Avenue, Albuquerque, New Mexico.

Please feel free to contact if you have any questions regarding the information contained within this report.

We appreciate the opportunity to provide you with these services.

Sincerely,

John V. Fontana, PG
President/CEO

jfontana@VistaGeoScience.com

Soil Gas Survey

Final Report

Site:

City of Albuquerque Parking Lot

1st Street & Central Ave.,
Albuquerque, New Mexico

Prepared for:

Albuquerque, NM

Vista GeoScience Project No. 14068.01
April 28, 2014

130 Capital Drive, Suite C
Golden, Colorado 80401-5654

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Abbreviations

ATD	Automatic Thermal Desorption
BTEX	Benzene, Toluene, Ethylbenzene, Xylenes
CFC	Chlorinated Fluorocarbon
DRO	Diesel Range Organics
EPA	Environmental Protection Agency
FID	Flame Ionization Detector
GC	Gas Chromatograph
GRO	Gasoline Range Organics
MS	Mass Spectrometer (or MSD, Mass Selective Detector)
PID	Photo Ionization Detector
PRT	Post Run Tubing
QC	Quality Control
SOP	Standard Operating Procedure
TVPH	Total Volatile Petroleum Hydrocarbons
VOC	Volatile Organic Compounds

AIR/GAS COMPONENTS

CO_2	Carbon Dioxide
CH_4	Methane
N_2	Nitrogen
O_2	Oxygen

UNITS OF MEASURE

L	Liter
ng	nanogram
µg	microgram
m^3	cubic meter
ng/L	nanogram (of compound) per liter of air
$\mu g/m^3$	microgram (of compound) per cubic meter of air

Executive Summary

A high sensitivity soil gas survey was conducted at the City of Albuquerque parking lot located at 1st Street and Central Avenue in Albuquerque, New Mexico. A total of 12 one liter soil gas samples were collected on sorbent tubes from depths of 4 and 15 feet below the paved ground surfaces on March 23rd, 2014. Field readings included measurement of oxygen, carbon dioxide and methane and total VOCs using a portable PID and FID detector. The sorbent tubes were returned to Vista GeoScience's Golden, Colorado, based laboratory for analysis by EPA Method TO-17 and SW846 8260B for VOCs and estimated TVPH.

Analysis of the sorbent tubes detected 21 target compounds in moderate to significant quantities along with significant TVPH in the gasoline and diesel range. Many classes of compounds were observed including petroleum aromatic hydrocarbons, CFCs, chlorinated solvents, ketones, carbon disulfide and others at trace to low concentrations. A complete summary table of all the target compounds analyzed is included in Appendix A. Isopleth maps of the more significant detections are included in Appendix B. Chromatograms (Appendix D) of several samples displayed clear fuel TVPH patterns that resemble weathered gasoline or the lighter (more volatile) fraction of diesel.

Acetone and carbon disulfide were present in most of the samples in moderate amounts. These compounds are commonly seen in soil gas especially in landfill sites and sites with abundant biodegradation of other organic compounds occurring. However, it should be noted that these compounds are also common industrial solvents. Low hits of some other ketones were also observed in a few samples.

Trace amounts of certain Freon (CFC) compounds were detected including dichlorodifluoromethane and trichlorofluoremethane.

Methylene chloride was detected at trace levels in a few samples. It is commonly a laboratory contaminant, but it should be noted that methylene chloride was not identified in the trip blanks or method blanks.

1,3 dichlorobenzene was seen in most of the samples at low-moderate levels across the site along with trace amounts of associated 1,4 dichlorobenzene.

Other than small amounts of chloroform, no other significant chlorinated solvents were detected above reporting limits.

Project Overview

The investigated site is an asphalt covered parking lot within a commercial area located at northeast corner of the intersection of 1st Street & Central Avenue in downtown Albuquerque, New Mexico. A location map is included in Appendix B along with detailed maps of selected compounds that were detected. The area is currently developed as a paved parking lot with no buildings or structures currently at the site. Railroad tracks bound the east-southeast part of the site. A geo-referenced air photo of the site was obtained from INTERA and used to create a base map of the area and the results of the survey are overlaid on this map. The aerial photography is dated 2012 and may not reflect current building configurations at the site (Appendix B.)

Vista GeoScience (Vista) provided a sampling crew equipped with a Geoprobe Model 7822DT track mounted direct-push drilling rig and specialized tooling to collect soil gas samples from various depths at the site. INTERA staff provided oversight, site access, utility notifications and assisted with development of the sampling locations and procedures.

The survey was designed to help determine the extent of potentially toxic VOC (volatile organic carbon) contamination in the subsurface soils and/or ground water at the property by evaluating soil gas vapor using the a sorbent tube collection method designed to measure concentrations as low as 5 $\mu g/m^3$ in soil gas.

Soil Gas Sorbent Tube / TO-17 Method Overview

Traditional soil gas screening method typically utilize various containers such as Tedlar® bags, disposable syringes, etc., and rely in direct injection onto a GC, or at best, injection of a larger sample into a standard purge and trap unit designed for soil and water analysis. These methods generally have reporting limits well above indoor air screening or action levels. Vista GeoScience has developed a soil gas sampling method based on EPA Methods TO-17 and SW846-8260 using multi-bed sorbent tubes similar to those designed for use in indoor air analysis. These sorbent tubes contain multiple packed layers of adsorbents materials that are designed to adsorb compounds over a wide range of boiling points. The main advantage is that larger volumes of air or soil gas can be pumped through the tube concentrating the analytes resulting in lower detection limits.

The sorbent tubes are thermally activated, batch tested, and sealed with brass swage-lock fittings prior to shipment to the field. The tubes must remained sealed until readied for sampling as the activated adsorbents will readily adsorb trace amounts of VOC's from the ambient air. The tubes are quickly re-sealed after sampling is completed. Unused and unopened sorbent tubes are preserved as trip blanks.

After the samples are collected on the sorbent tubes, they are shipped to the laboratory where they are loaded onto an automatic thermal desorption (ATD) unit that is connected to a conventional GC/MS and configured to run EPA Methods TO-17 and SW846-8260. Method EPA Method TO-17 is the air VOC method equivalent to EPA Method SW846-8260, which is for water and solid wastes. This method is up to 1,000 times more sensitive at detecting compounds of interest than conventional soil gas sampling and analysis methods. Indoor air screening and action levels can be achieved for most compounds that may have previously gone undetected in other soil gas surveys. The VOC compounds are desorbed from the tubes at high temperature and are concentrated onto a "cold trap," then desorbed again onto the GC/MS for separation and analysis of up to 70 target compounds by EPA SW846 method TO-17/8260B. The results are reported in nanograms (ng) and the reporting limit for individual

VOCs is 5 ng for all the compounds in the target list. The lowest calibration point is set at 5 ng which sets the official method reporting limit (RL). However, values detected between 1 and 5 ng are also reported and flagged as estimated if deemed reliable detections on the GC/MS by the analytical chemist. These low estimated values can be useful for mapping the trends or detecting deeper or low concentration contaminant plumes. Detections below 1 ng are rejected and not reported. The volume collected on the tube determines the actual **concentration** reporting limit. For example, in this survey, 1 liter of air/soil gas was collected on each tube, so the reporting limit is 5 ng/L of air, or 5 µg/m^3 of air. Trip blanks, pre-ship blank checks, method blanks, surrogates and spikes are run according to the method specifications and found in the QC section of the laboratory report.

Soil gas samples were collected using Vista GeoScience SOP NFSV101 "Standard Operating Procedure for Active Soil Gas Vapor Sampling Using Direct Push Probe and Post-Run Tubing (PRT) Adapter." After driving the PRT tool with an expendable drive-point to the target sample depth, the probe rod was retracted approximately 6-12" to drop the drive point and expose the formation. (see Figure 1) A Teflon lined tube and threaded adaptor was inserted into the rod and is threaded into the PRT tool at the bottom of the hole. This tubing is then connected to a portable gas meter (Landtech GEM2000) to measure CO_2, O_2 and CH_4 during purging. At least 3 system volumes were removed and purging continued until CO_2 and O_2 readings were stable indicating that air in the system had been removed and all soil gas was entering the sampling system. At that point, the flow is switched over to the sampling apparatus where the soil gas is pulled through the loaded sorbent tube using a vacuum pump. The flow is monitored with a flow meter and kept below 200cc/minute. After 1 liter of soil gas has flowed through the sorbent tube, the flow is shut off and the sorbent

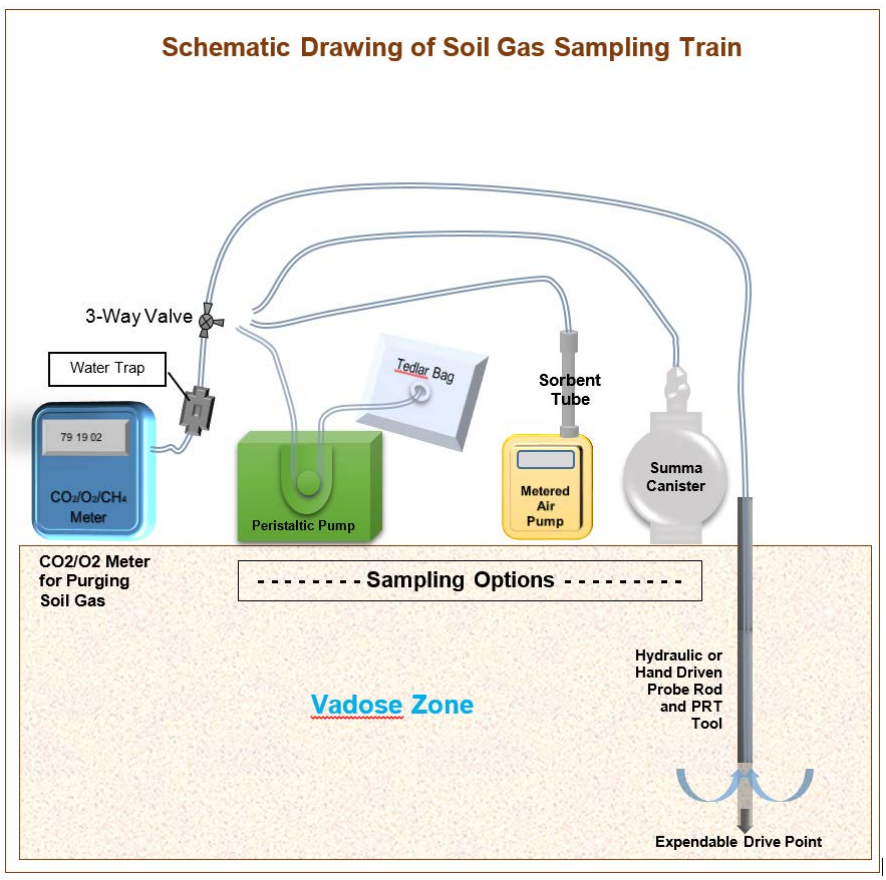


Figure 1. Typical Soil Gas Sampling Train

tube is removed, resealed and is tagged with the sample ID or placed in a labeled bag. All of the meter and flow parameters are recorded on a sampling log form (Appendix E).

A Thermo Foxboro-TVA1000B FID-PID vapor meter was also used to screen the soil gas. The FID (Flame Ionization Detector) responds to all hydrocarbons, including methane. The PID (Photo Ionization Detector) responds selectively to aromatics, and alkene hydrocarbons and solvents and is less sensitive to alkane compounds.

Soil Gas Sample Collection Results

The sampling crew mobilized to the Site on March 23, 2014. Before sampling began, the Landtec GEM200 gas meter was calibrated. At 8 locations soil gas was collected using the PRT system from 4 feet below ground surface. At 4 of these locations on the east side of the property additional soil gas points were driven to 15 feet. Clean unused Teflon lined poly tubing, plastic valves, and silicone connector tubing was used on each sample point. Tooling that is exposed to the soil gas was decontaminated between sampling points.

Field measurements included oxygen as low as 0.1% and carbon dioxide as high as 15.5%. Even in arid environments, oxygen is generally slightly lower and carbon dioxide is slightly elevated in most soil gas as depth increases. However, very low oxygen and high carbon dioxide can be from aerobic biodegradation of hydrocarbons in the subsurface. If conditions become significantly anaerobic, then methane can also be generated. No significant methane was seen in the field readings. PID readings ranged from 3.4 to 156 ppm. FID readings could not be collected due to flame out, mostly from low oxygen content. The FID requires oxygen to burn the hydrocarbons in the flame and therefore many times would not work when oxygen was low in the soil gas. All field measurements are included in the data table included in Appendix A.

SV-04-15 was the only location with no carbon dioxide and also reported low VOC content relative to adjacent samples. Since all of the other samples contained CO_2 is it likely that this sample location had a blockage or leak during sample collection and collected only ambient air diluted soil gas, if any.

All soil borings were abandoned using hydrated granular bentonite and patched with asphalt cold patch.

INTERA provided the sample location coordinates in the form of a shape file to Vista, which were used to plot the results on maps which are found in Appendix B.

Analytical Results

The sorbent tubes were submitted to the laboratory for analysis of the target 70 VOC analytes and estimated Total Volatile Petroleum Hydrocarbons TVPH (GRO and DRO) by EPA Methods TO-17 and SW846 8260B on a Varian Saturn-2000 GC/MS. Sample introduction into the GC/MS is done via a Perkin-Elmer Automated Thermal Desorption (ATD) autosampler. A summary table of all the data is included in Appendix A and includes field instrument results. The complete laboratory report is included in Appendix C and includes the chemist's narrative, all associated QC data reports, and chromatograms are included in Appendix D. The chromatograms include the 8260 standard and a GRO and DRO standard for comparison to the sample runs.

The VOCs are calibrated according to method 8260B. TVPH GRO and DRO are calibrated using a single point calibration at 10000 ng and the results are considered to be estimated values. A reasonable attempt is made to eliminate non-petroleum hydrocarbon peaks from the TVPH estimate calculations.

It should be noted that soil gas favors the more volatile and less soluble compounds. This should be observed when interpreting the results of gasoline and diesel range organics (GRO and DRO). Gasoline and diesel range hydrocarbons overlap. Weathered gasoline will retain the heaver "diesel" range hydrocarbons and in migrated soil gas diesel will appear to look something like weathered gasoline because of the more volatile components being favored in soil gas partitioning.

Trip blanks and method blanks were analyzed and found to be clean and below method detection limits.

Soil Gas Survey Results

Analysis of the sorbent tubes detected numerous target compounds in moderate to significant quantities. The significant detections and statistics are summarized in Appendix A.

Several classes of compounds were detected including petroleum aromatic (BTEX) hydrocarbons (related to fuels) as the most prominent. Some of the chromatograms displayed clear fuel TVPH patterns on the chromatograms that resembled what could be weathered gasoline or the lighter diesel fraction.

Acetone and carbon disulfide were present in most of the samples in moderate amounts. These compounds are commonly seen in soil gas especially in landfill sites and sites with abundant biodegradation of other organic compounds occurring. However, it should be noted that these compounds are also common industrial solvents. Low hits of some other ketones were also seen in a few samples.

Trace amounts of certain Freon (CFC) compounds were detected including dichlorodifluoromethane and trichlorofluoremethane.

Methylene chloride was detected at trace levels in a few samples. The highest detection was 7.3 $\mu g/m^3$ and only two samples were above the official reporting limit of 5.0 $\mu g/m^3$. Methylene chloride is a common laboratory contaminant, but it should be noted that it was not detected in the trip blank or method blank.

1,3 dichlorobenzene was seen in most of the samples at moderate levels across the site along with trace amounts of associated 1,4 dichlorobenzene.

Other than small amounts of chloroform, no other significant chlorinated solvents were detected of significance.

Maps of the significant compounds of interest were generated and are presented in Appendix B showing contaminant vapor distributions at the site. The values are displayed using a contoured isoconcentration (isopleth) format. Isoconcentration contours were computer generated using a kriging algorithm based on logarithmic values to smooth out larger variations. Note that sometimes this method does not honor the actual data points. Zero or non-detect values are converted to 0.01 for the contouring. Missing data points are ignored.

Fuel contaminants appear to be unrelated to the other contaminants present in terms of spatial distribution. There were not enough data points collected in this survey to make other conclusions based on the patterns seen in the data.

Looking at the vertical profile of the contaminant concentrations will sometime help with pointing to a ground water plume source versus a shallower source. Since only three of the deeper points were valid, there is not enough information to determine vertical source areas. More data is needed from this Site in order to define potential source areas and determine contaminated vertical and spatial distribution.

Appendix A: Soil Gas Data Summary Table

NOTES:

- Values are reported in µg/m^3 (ng/L) weight by volume.
- Reporting Limit (RL) for individual compounds is 5 µg/m^3;
- Values between 1 - 5 µg/m^3 are reported as estimated values (J-flagged in lab report).
- A value of 0.0 in the table is considered a Non-Detect (ND).
- RL for TVPH is 500 µg/m^3 (ng/L)

	SUMMARY STATISTICS								
	Mean	Median	Mode	Standard Deviation	Sample Variance	Range	Minimum	Maximum	Sum
SITE INFO	SITE INFO								
Location ID									
X (feet east)									
Y (feet north)									
Depth (ft)									
Field FID (ppm)									
Field PID (ppm)	63	61	#N/A	50.9	2589.4	152.6	3.4	156.0	757.8
Field CH4 (%)	0	0	0	0.1	0.0	0.2	0.0	0.2	0.2
Field CO2 (%)	6	6	6	3.6	12.8	12.7	0.0	12.7	61.2
Field O2 (%)	9	10	#N/A	4.8	22.9	15.4	0.1	15.5	99.9
8260 TARGET COMPOUND	METHOD 8260 RESULTS (ug/m^3) TARGET COMPOUND (sorted by GC elution order)								
Dichlorodifluoromethane	1.9	2.5	0.0	1.3	1.7	3.3	0.0	3.3	21.1
Chloromethane	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vinyl chloride	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Chloroethane	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bromomethane	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Trichlorofluoromethane	0.5	0.0	0.0	0.6	0.4	1.4	0.0	1.4	5.1
1,1-Dichloroethene	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Acetone	157.3	148.7	#N/A	128.0	16390.6	445.9	15.5	461.4	1729.8
Iodomethane	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Carbon disulfide	11.2	14.2	0.0	7.9	61.9	20.8	0.0	20.8	123.4
Methylene chloride	3.7	3.8	0.0	2.1	4.5	7.3	0.0	7.3	40.4
t-Butanol	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Acrylonitrile	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
(trans)-1,2-dichloroethene	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Methyl tert-butyl ether	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1,1-Dichloroethane	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vinyl acetate	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2-Butanone	7.8	0.0	0.0	18.2	330.5	59.6	0.0	59.6	85.7
2,2-Dichloropropane	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
(cis)-1,2-dichloroethene	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bromochloromethane	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Tetrahydrofuran	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Chloroform	1.6	0.0	0.0	4.0	16.4	13.2	0.0	13.2	17.3
1,1,1-Trichloroethane	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1,1-Dichloropropene	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Carbon tetrachloride	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Benzene	6.1	5.7	#N/A	3.4	11.7	10.6	0.0	10.6	66.9
1,2-Dichloroethane	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Trichloroethene	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1,2-Dichloropropane	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dibromomethane	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bromodichloromethane	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2-Chloroethyl vinyl ether	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
(cis)-1,3-dichloropropene	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4-Methyl-2-pentanone	3.4	0.0	0.0	9.7	94.0	32.3	0.0	32.3	37.3

	SUMMARY STATISTICS								
	Mean	Median	Mode	Standard Deviation	Sample Variance	Range	Minimum	Maximum	Sum
Toluene	19.1	3.6	0.0	31.8	1013.8	84.2	0.0	84.2	209.8
(trans)-1,3-dichloropropene	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1,1,2-Trichloroethane	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Tetrachloroethene	0.1	0.0	0.0	0.3	0.1	1.0	0.0	1.0	1.0
1,3-Dichloropropane	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2-Hexanone	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dibromochloromethane	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1,2-Dibromoethane	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Chlorobenzene	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1,1,1,2-tetrachloroethane	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ethylbenzene	2.5	0.0	0.0	5.0	25.1	16.3	0.0	16.3	27.0
m,p-Xylene	2.0	0.0	0.0	4.3	18.1	13.8	0.0	13.8	21.6
o-Xylene	1.8	0.0	0.0	4.7	22.5	15.9	0.0	15.9	19.8
Styrene	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bromoform	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Isopropylbenzene	14.7	0.0	0.0	35.0	1222.5	115.2	0.0	115.2	161.4
1,1,2,2-Tetrachloroethane	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bromobenzene	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1,2,3-Trichloropropane	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
n-Propylbenzene	9.7	0.0	0.0	19.0	362.2	61.4	0.0	61.4	106.7
2-Chlorotoluene	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1,3,5-Trimethylbenzene	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4-Chlorotoluene	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
tert-Butylbenzene	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1,2,4-Trimethylbenzene	0.4	0.0	0.0	0.7	0.5	2.0	0.0	2.0	4.6
sec-Butylbenzene	23.6	0.0	0.0	46.4	2150.4	151.5	0.0	151.5	259.3
1,3-Dichlorobenzene	30.2	36.1	0.0	26.3	690.1	73.4	0.0	73.4	332.4
4-Isopropyltoluene	84.7	0.0	0.0	279.1	77906.7	926.2	0.0	926.2	931.2
1,4-Dichlorobenzene	1.0	0.0	0.0	2.2	4.9	6.5	0.0	6.5	10.5
1,2-Dichlorobenzene	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
n-Butylbenzene	5.9	0.0	0.0	14.4	206.7	45.8	0.0	45.8	64.4
1,2-Dibromo-3-chloropropane	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1,2,4-Trichlorobenzene	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Hexachloro-1,3-Butadiene	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Naphthalene	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1,2,3 -Trichlorobenzene	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GRO Est	27962	3056	0	35380.4	1251772541	104300	0.0	104300.0	307584.9
DRO est	10748	2502	0	13092.3	171407227	36880	0.0	36880.0	118229.0

Individual Compound Reporting Limit = 5
TVPH Reporting Limit = 500
Sample Location Coordinates in New Mexico Central State Plane, NAD83

	SORBENT TUBE RESULTS							
	SV-01C-04	SV-02C-04	SV-02C-15	SV-03C-04	SV-04C-04	SV-04C-15	SV-05C-04	SV-06C-04
SITE INFO	SITE INFO							
Location ID	SV-01C	SV-02C	SV-02C	SV-03C	SV-04C	SV-04C	SV-05C	SV-06C
X (feet east)	1521511	1521582	1521582	1521498	1521571	1521571	1521486	1521560
Y (feet north)	1486441	1486430	1486430	1486372	1486360	1486360	1486310	1486297
Depth (ft)	4	4	15	4	4	15	4	4
Field FID (ppm)	FO	FO	FO	FO	FO	FO	FO	FO
Field PID (ppm)	47	56	19	69	120	3	14	66
Field CH4 (%)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Field CO2 (%)	4.6	1.7	12.7	6.2	7.0	0.0	6.2	4.9
Field O2 (%)	9.2	13.5	1.7	10.1	9.0	15.5	10.6	10.0
8260 TARGET COMPOUND	METHOD 8260 RESULTS (ug/m^3) TARGET COMPOUND (sorted by GC elution order)							
Dichlorodifluoromethane	3.1	2.7	2.3	3.0	2.5	0.0	3.3	2.5
Chloromethane	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vinyl chloride	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Chloroethane	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bromomethane	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Trichlorofluoromethane	0.0	1.4	0.0	1.4	1.1	0.0	1.1	0.0
1,1-Dichloroethene	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Acetone	139.6	148.7	461.4	71.1	129.3	60.8	158.2	265.5
Iodomethane	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Carbon disulfide	17.2	17.2	20.8	9.2	14.2	0.0	16.0	11.4
Methylene chloride	2.7	3.8	5.3	7.3	4.0	4.9	3.6	3.8
t-Butanol	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Acrylonitrile	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
(trans)-1,2-dichloroethene	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Methyl tert-butyl ether	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1,1-Dichloroethane	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vinyl acetate	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2-Butanone	5.8	0.0	59.6	0.0	3.6	0.0	0.0	20.0
2,2-Dichloropropane	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
(cis)-1,2-dichloroethene	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bromochloromethane	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Tetrahydrofuran	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Chloroform	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.1
1,1,1-Trichloroethane	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1,1-Dichloropropene	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Carbon tetrachloride	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Benzene	2.8	4.6	9.7	2.5	3.5	0.0	4.4	10.6
1,2-Dichloroethane	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Trichloroethene	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1,2-Dichloropropane	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dibromomethane	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bromodichloromethane	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2-Chloroethyl vinyl ether	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
(cis)-1,3-dichloropropene	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4-Methyl-2-pentanone	0.0	0.0	32.3	0.0	0.0	0.0	0.0	0.0

	SORBENT TUBE RESULTS							
	SV-01C-04	SV-02C-04	SV-02C-15	SV-03C-04	SV-04C-04	SV-04C-15	SV-05C-04	SV-06C-04
Toluene	4.4	2.4	80.9	3.6	3.6	1.3	84.2	14.0
(trans)-1,3-dichloropropene	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1,1,2-Trichloroethane	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Tetrachloroethene	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
1,3-Dichloropropane	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2-Hexanone	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dibromochloromethane	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1,2-Dibromoethane	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Chlorobenzene	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1,1,1,2-tetrachloroethane	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ethylbenzene	0.0	0.0	6.6	0.0	0.0	0.0	0.0	1.8
m,p-Xylene	0.0	0.0	13.8	0.0	0.0	0.0	0.0	3.0
o-Xylene	0.0	0.0	15.9	0.0	0.0	0.0	0.0	1.6
Styrene	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bromoform	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Isopropylbenzene	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1,1,2,2-Tetrachloroethane	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bromobenzene	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1,2,3-Trichloropropane	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
n-Propylbenzene	0.0	0.0	1.7	0.0	0.0	0.0	24.1	0.0
2-Chlorotoluene	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1,3,5-Trimethylbenzene	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4-Chlorotoluene	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
tert-Butylbenzene	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1,2,4-Trimethylbenzene	0.0	0.0	0.0	1.5	2.0	0.0	0.0	1.1
sec-Butylbenzene	1.0	0.0	47.4	0.0	0.0	0.0	0.0	0.0
1,3-Dichlorobenzene	33.0	39.4	0.0	73.4	35.3	49.2	0.0	41.3
4-Isopropyltoluene	1.3	0.0	0.0	3.8	0.0	0.0	926.2	0.0
1,4-Dichlorobenzene	0.0	0.0	0.0	0.0	4.0	6.5	0.0	0.0
1,2-Dichlorobenzene	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
n-Butylbenzene	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1,2-Dibromo-3-chloropropane	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1,2,4-Trichlorobenzene	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Hexachloro-1,3-Butadiene	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Naphthalene	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1,2,3 -Trichlorobenzene	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GRO Est	0.0	3056.0	35380.0	0.0	0.0	2402.0	42130.0	1765.0
DRO est	0.0	2497.0	29100.0	0.0	0.0	0.0	36880.0	2502.0

Individual Compound Reporting Limit = 5
TVPH Reporting Limit = 500
Sample Location Coordinates in New Mexico Central State Plane, NAD83

	SORBENT TUBE RESULTS							
	SV-06C-15	SV-07C-04	SV-08C-04	SV-08C-15				
SITE INFO	SITE INFO							
Location ID	SV-06C	SV-07C	SV-08C	SV-08C				
X (feet east)	1521560	1521477	1521552	1521552				
Y (feet north)	1486297	1486250	1486239	1486239				
Depth (ft)	15	4	4	15				
Field FID (ppm)	FO	FO	FO	FO				
Field PID (ppm)	74	4	131	156				
Field CH4 (%)	0.0	0.0	0.0	0.2				
Field CO2 (%)	5.8	1.5	6.4	8.8				
Field O2 (%)	9.4	13.7	0.1	6.3				
8260 TARGET COMPOUND	METHOD 8260 RESULTS (ug/m^3) TARGET COMPOUND (sorted by GC elution order)							
Dichlorodifluoromethane	1.9	0.0	2.9	0.0				
Chloromethane	0.0	0.0	0.0	0.0				
Vinyl chloride	0.0	0.0	0.0	0.0				
Chloroethane	0.0	0.0	0.0	0.0				
Bromomethane	0.0	0.0	0.0	0.0				
Trichlorofluoromethane	0.0	0.0	0.0	0.0				
1,1-Dichloroethene	0.0	0.0	0.0	0.0				
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.0	0.0	0.0	0.0				
Acetone	199.8	15.5	198.4	21.3				
Iodomethane	0.0	0.0	0.0	0.0				
Carbon disulfide	15.8	0.0	18.7	0.0				
Methylene chloride	3.7	0.0	4.1	0.0				
t-Butanol	0.0	0.0	0.0	0.0				
Acrylonitrile	0.0	0.0	0.0	0.0				
(trans)-1,2-dichloroethene	0.0	0.0	0.0	0.0				
Methyl tert-butyl ether	0.0	0.0	0.0	0.0				
1,1-Dichloroethane	0.0	0.0	0.0	0.0				
Vinyl acetate	0.0	0.0	0.0	0.0				
2-Butanone	0.0	2.4	0.0	0.0				
2,2-Dichloropropane	0.0	0.0	0.0	0.0				
(cis)-1,2-dichloroethene	0.0	0.0	0.0	0.0				
Bromochloromethane	0.0	0.0	0.0	0.0				
Tetrahydrofuran	0.0	0.0	0.0	0.0				
Chloroform	13.2	0.0	0.0	0.0				
1,1,1-Trichloroethane	0.0	0.0	0.0	0.0				
1,1-Dichloropropene	0.0	0.0	0.0	0.0				
Carbon tetrachloride	0.0	0.0	0.0	0.0				
Benzene	5.7	7.7	9.6	8.6				
1,2-Dichloroethane	0.0	0.0	0.0	0.0				
Trichloroethene	0.0	0.0	0.0	0.0				
1,2-Dichloropropane	0.0	0.0	0.0	0.0				
Dibromomethane	0.0	0.0	0.0	0.0				
Bromodichloromethane	0.0	0.0	0.0	0.0				
2-Chloroethyl vinyl ether	0.0	0.0	0.0	0.0				
(cis)-1,3-dichloropropene	0.0	0.0	0.0	0.0				
4-Methyl-2-pentanone	0.0	5.0	0.0	0.0				

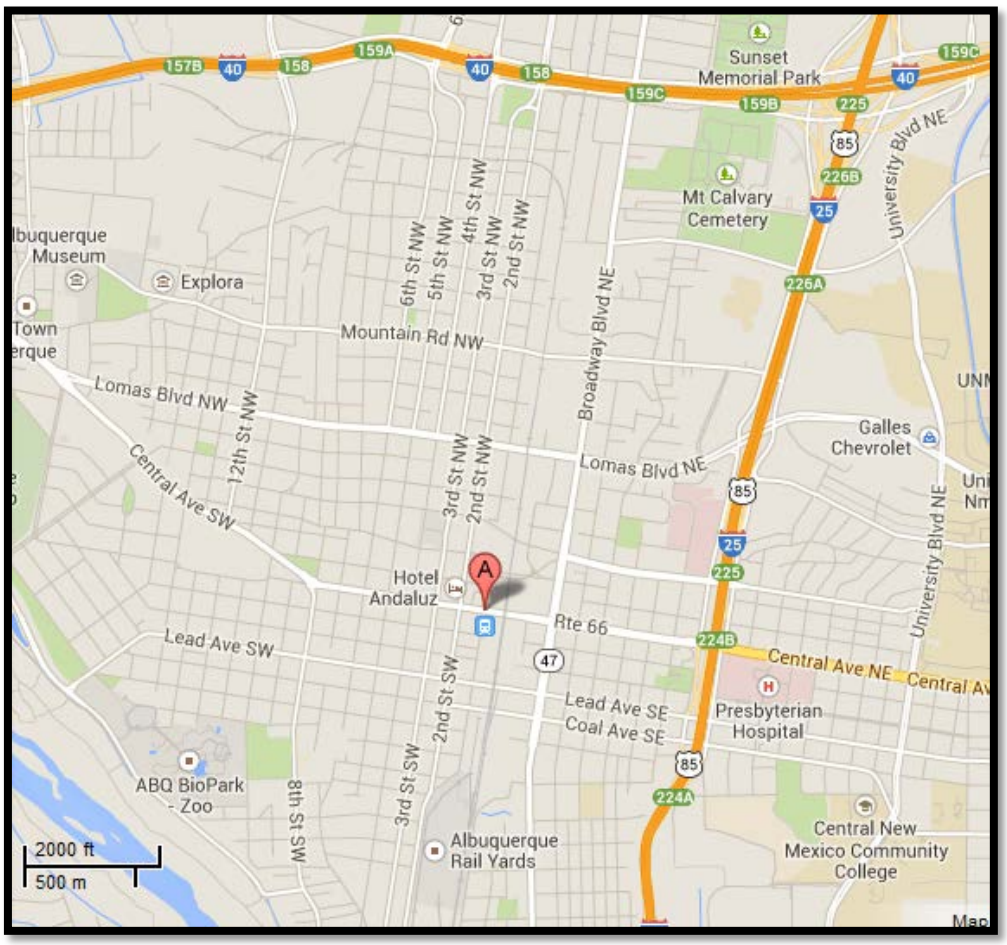
	SORBENT TUBE RESULTS							
	SV-06C-15	SV-07C-04	SV-08C-04	SV-08C-15				
Toluene	3.4	16.3	0.0	0.0				
(trans)-1,3-dichloropropene	0.0	0.0	0.0	0.0				
1,1,2-Trichloroethane	0.0	0.0	0.0	0.0				
Tetrachloroethene	0.0	0.0	0.0	0.0				
1,3-Dichloropropane	0.0	0.0	0.0	0.0				
2-Hexanone	0.0	0.0	0.0	0.0				
Dibromochloromethane	0.0	0.0	0.0	0.0				
1,2-Dibromoethane	0.0	0.0	0.0	0.0				
Chlorobenzene	0.0	0.0	0.0	0.0				
1,1,1,2-tetrachloroethane	0.0	0.0	0.0	0.0				
Ethylbenzene	0.0	2.4	16.3	0.0				
m,p-Xylene	0.0	4.7	0.0	0.0				
o-Xylene	0.0	2.2	0.0	0.0				
Styrene	0.0	0.0	0.0	0.0				
Bromoform	0.0	0.0	0.0	0.0				
Isopropylbenzene	11.9	0.0	115.2	34.3				
1,1,2,2-Tetrachloroethane	0.0	0.0	0.0	0.0				
Bromobenzene	0.0	0.0	0.0	0.0				
1,2,3-Trichloropropane	0.0	0.0	0.0	0.0				
n-Propylbenzene	2.2	0.0	61.4	17.3				
2-Chlorotoluene	0.0	0.0	0.0	0.0				
1,3,5-Trimethylbenzene	0.0	0.0	0.0	0.0				
4-Chlorotoluene	0.0	0.0	0.0	0.0				
tert-Butylbenzene	0.0	0.0	0.0	0.0				
1,2,4-Trimethylbenzene	0.0	0.0	0.0	0.0				
sec-Butylbenzene	12.9	0.0	151.5	47.5				
1,3-Dichlorobenzene	36.1	57.8	0.0	0.0				
4-Isopropyltoluene	1.2	0.0	0.0	0.0				
1,4-Dichlorobenzene	0.0	0.0	0.0	0.0				
1,2-Dichlorobenzene	0.0	0.0	0.0	0.0				
n-Butylbenzene	0.0	0.0	45.8	18.6				
1,2-Dibromo-3-chloropropane	0.0	0.0	0.0	0.0				
1,2,4-Trichlorobenzene	0.0	0.0	0.0	0.0				
Hexachloro-1,3-Butadiene	0.0	0.0	0.0	0.0				
Naphthalene	0.0	0.0	0.0	0.0				
1,2,3 -Trichlorobenzene	0.0	0.0	0.0	0.0				
GRO Est	47220.0	871.9	104300.0	70460.0				
DRO est	19480.0	0.0	13490.0	14280.0				

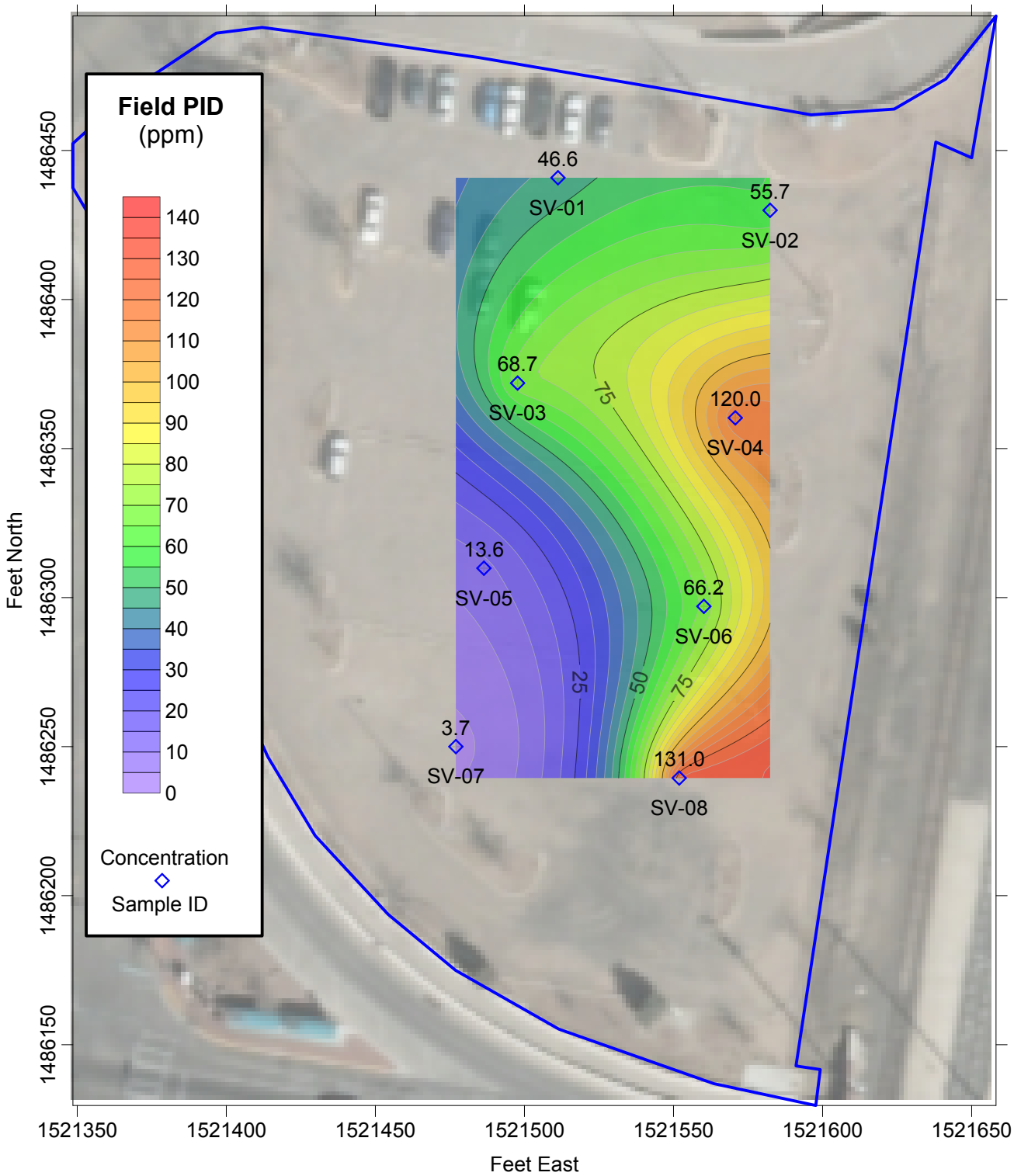
Individual Compound Reporting Limit = 5
TVPH Reporting Limit = 500
Sample Location Coordinates in New Mexico Central State Plane, NAD83

Appendix B: Soil Gas Survey Maps

Site Location

1st Street & Central Ave., Albuquerque, New Mexico





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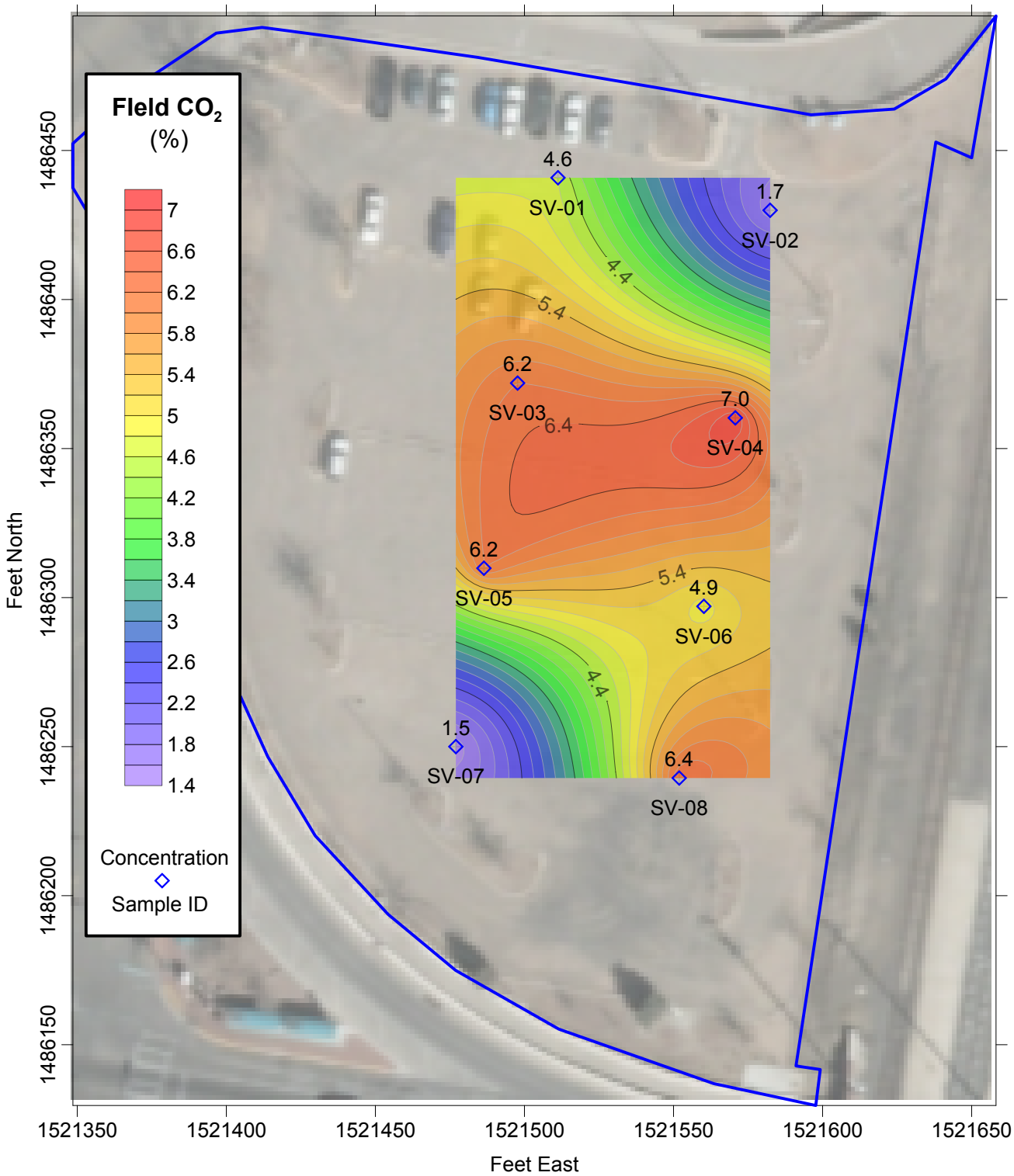
Golden, Colorado 80401
PH: 303-277-1694
FAX: 303-278-0104
www.VistaGeoScience.com

Active Soil Gas Survey
4' Depth Interval

Client: Intera Incorporated
Site: City of Albuquerque
1st St. & Central Ave.,
Albuquerque, New Mexico

Method: Sorption Tubes, EPA TO-17/8260
Samples Collected: 3-23-2014
Drafted: 4-15-2014
Drafted by: JVF
Base Map: 2012 MRCOG Digital Orthophotography
Scale: 1inch = 40 feet
Projection: New Mexico Central State Plane
Datum: NAD 83
Locations: Client Surveyed



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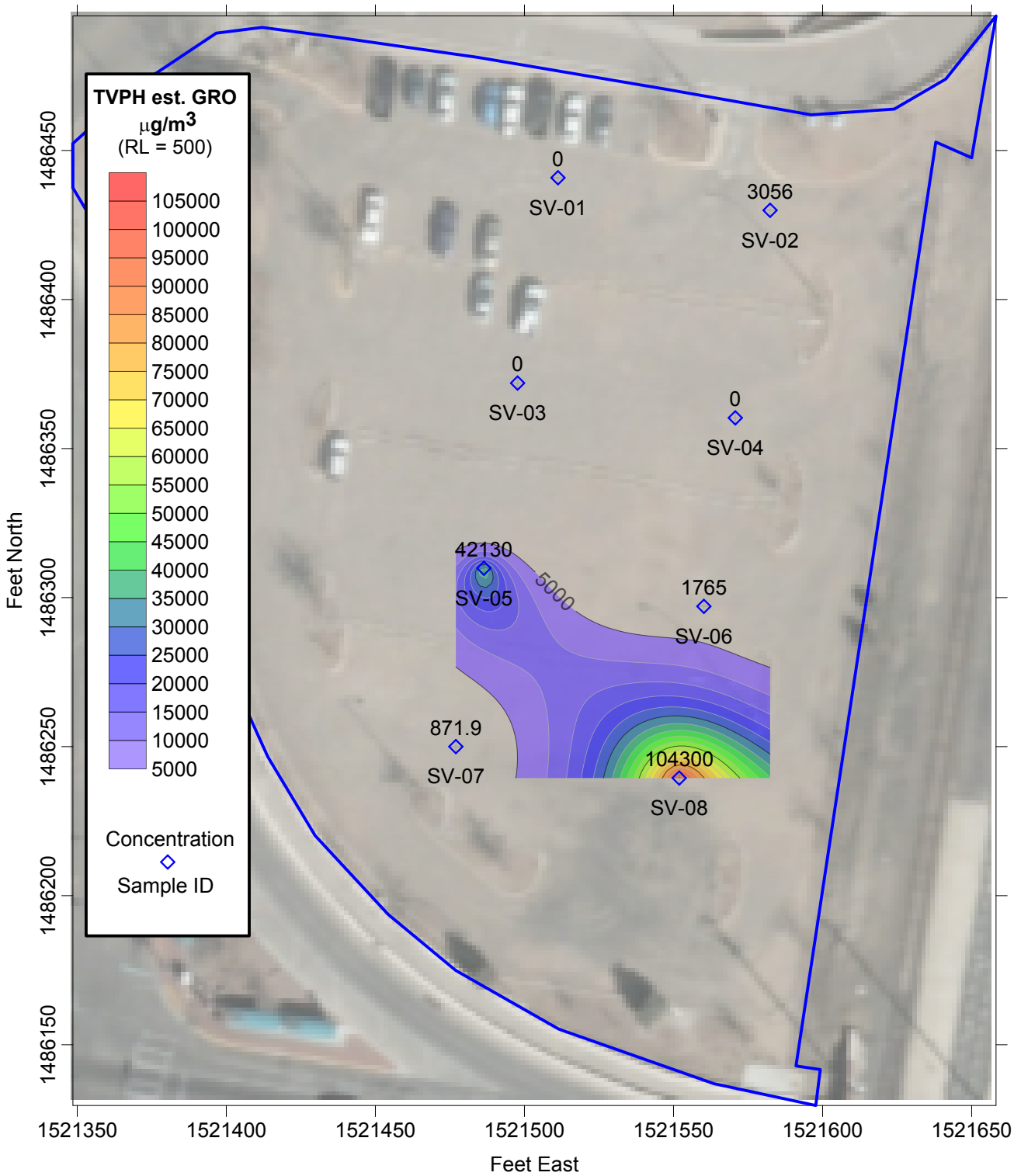

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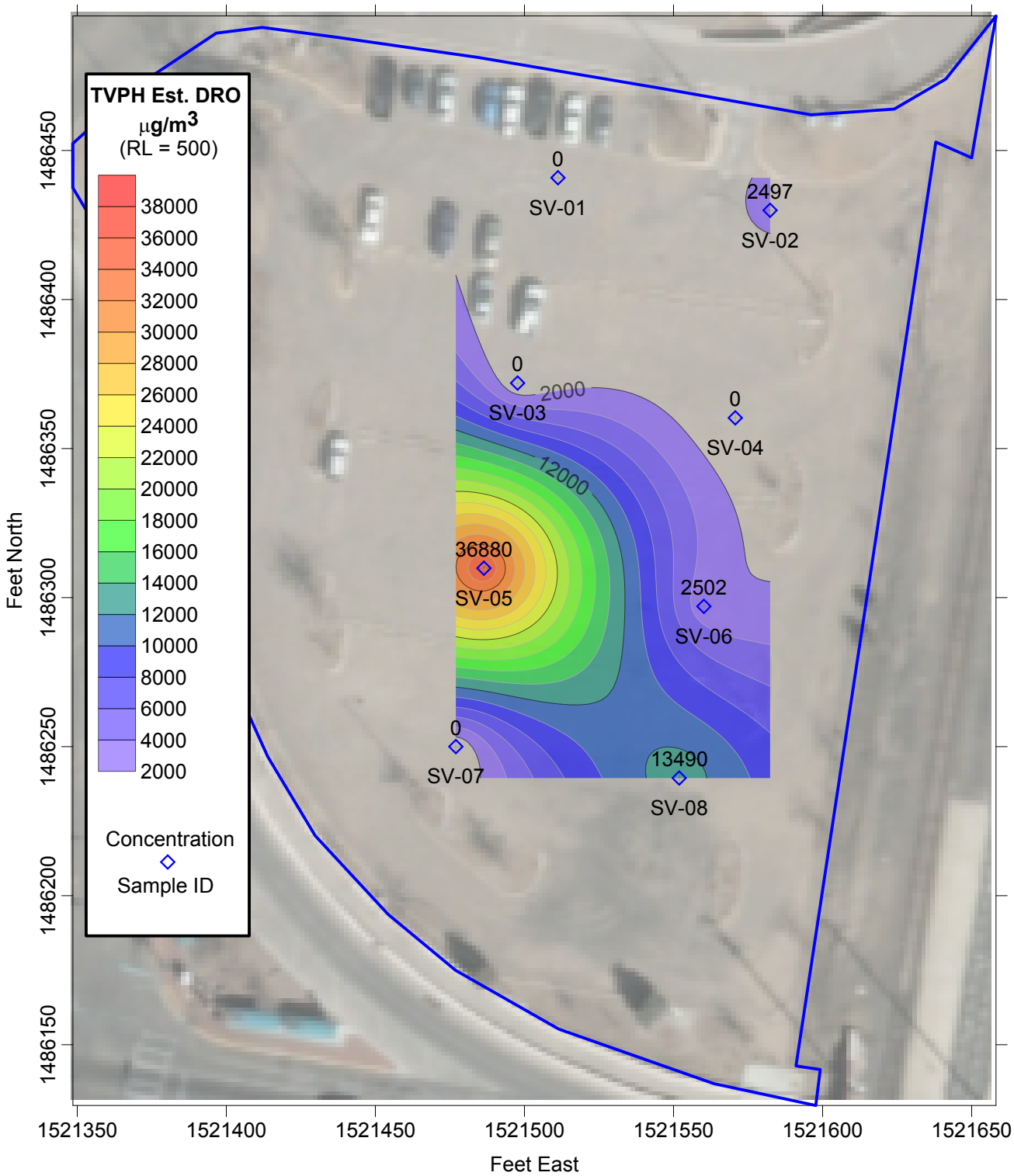

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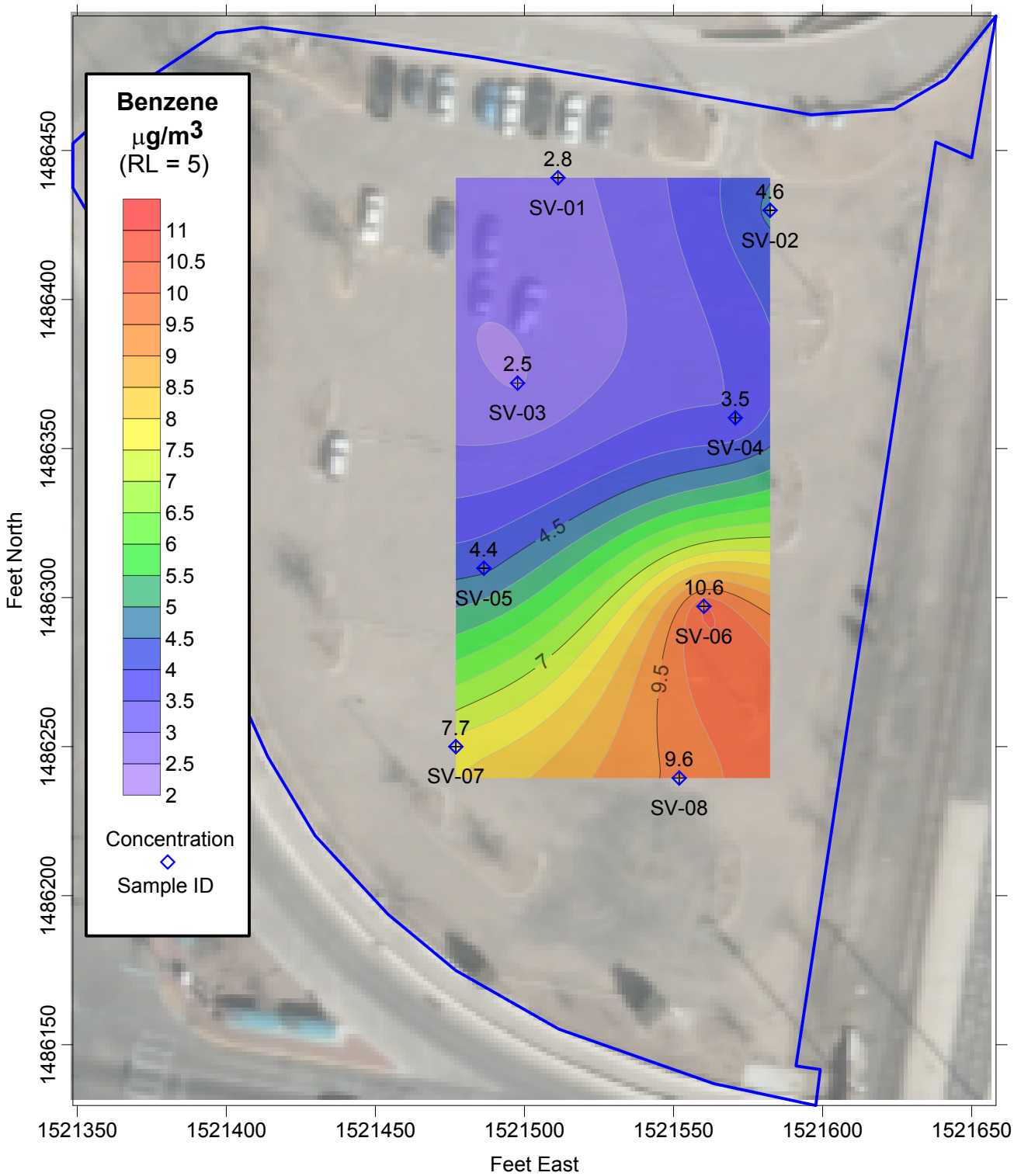

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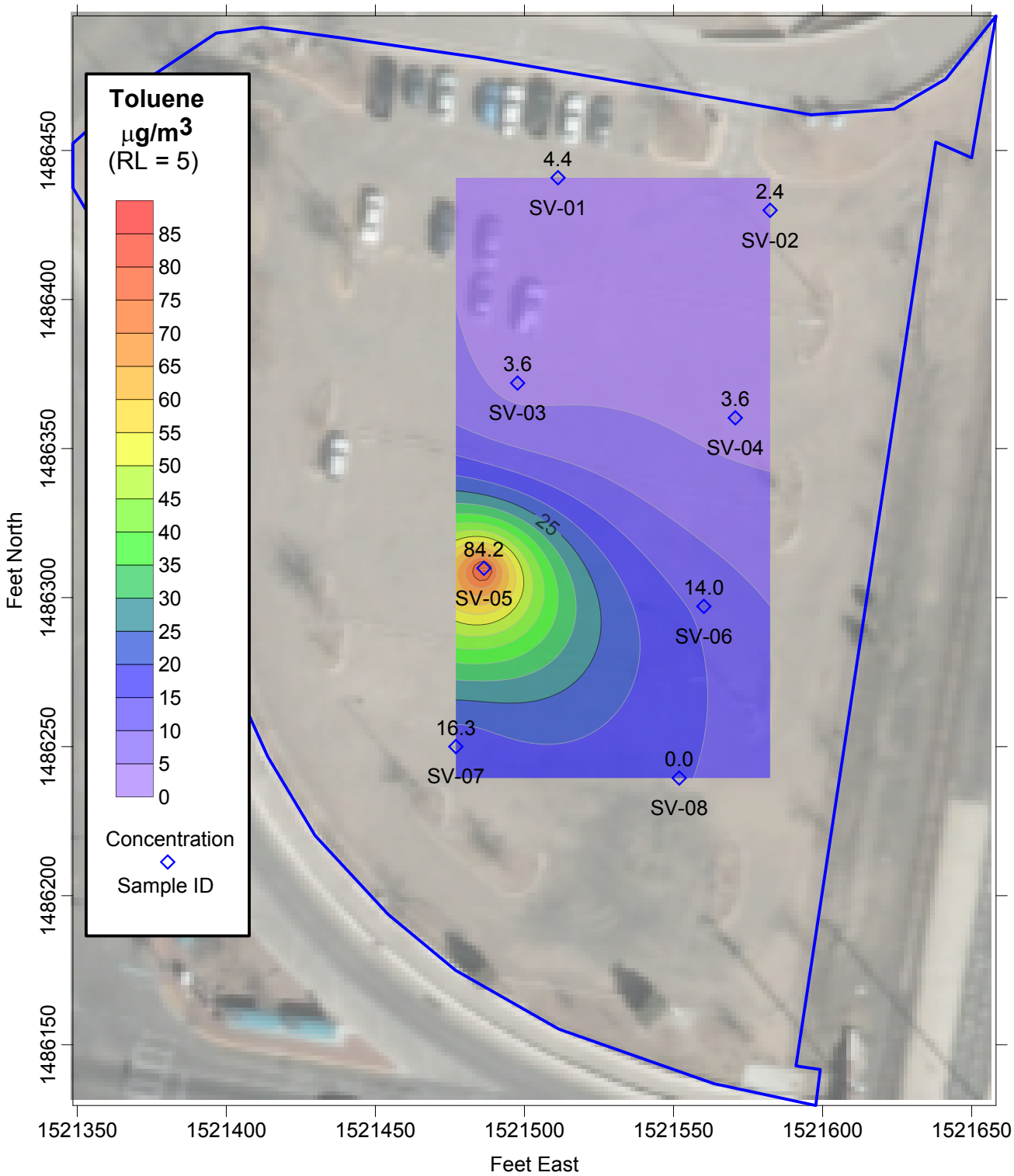

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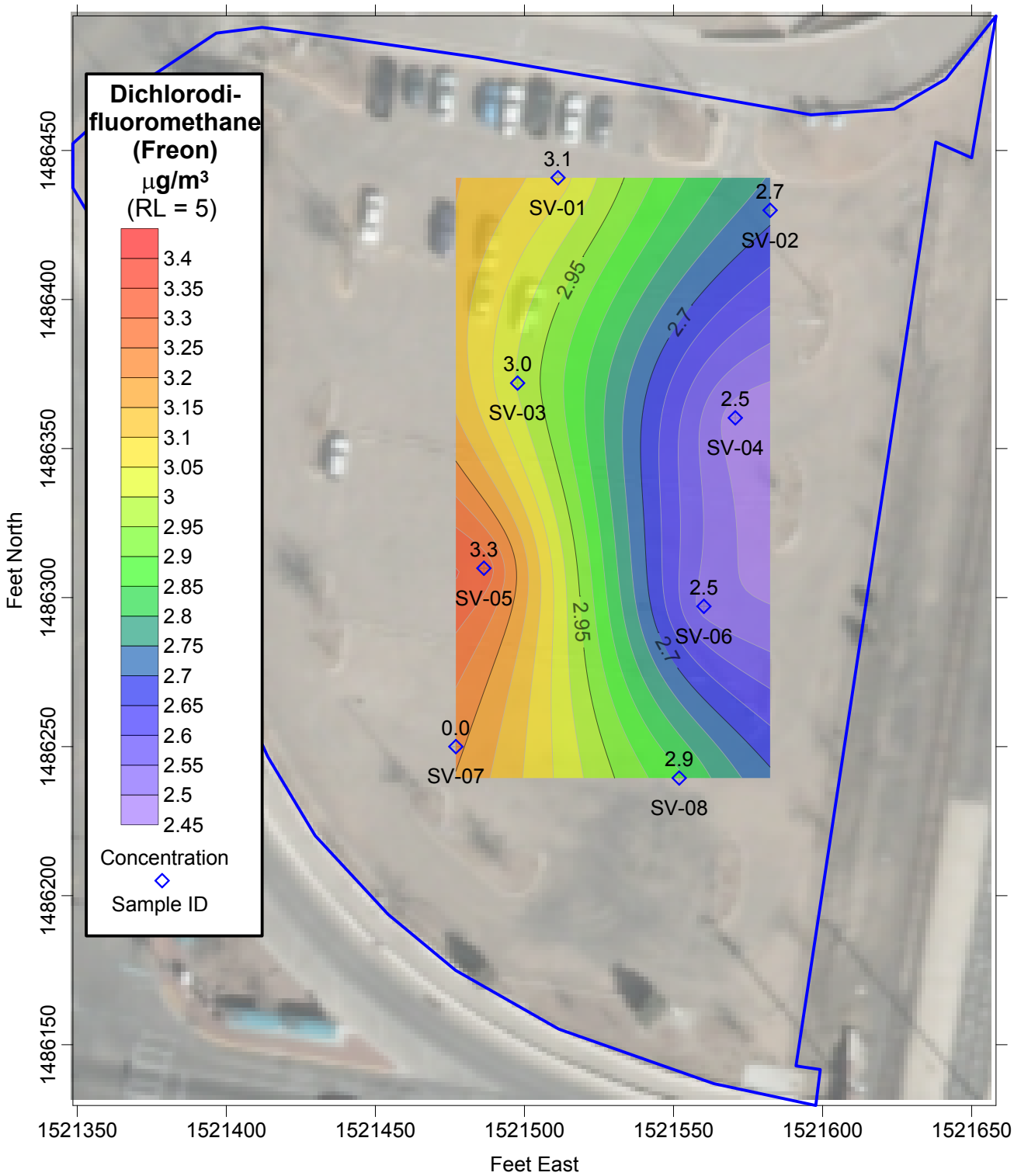

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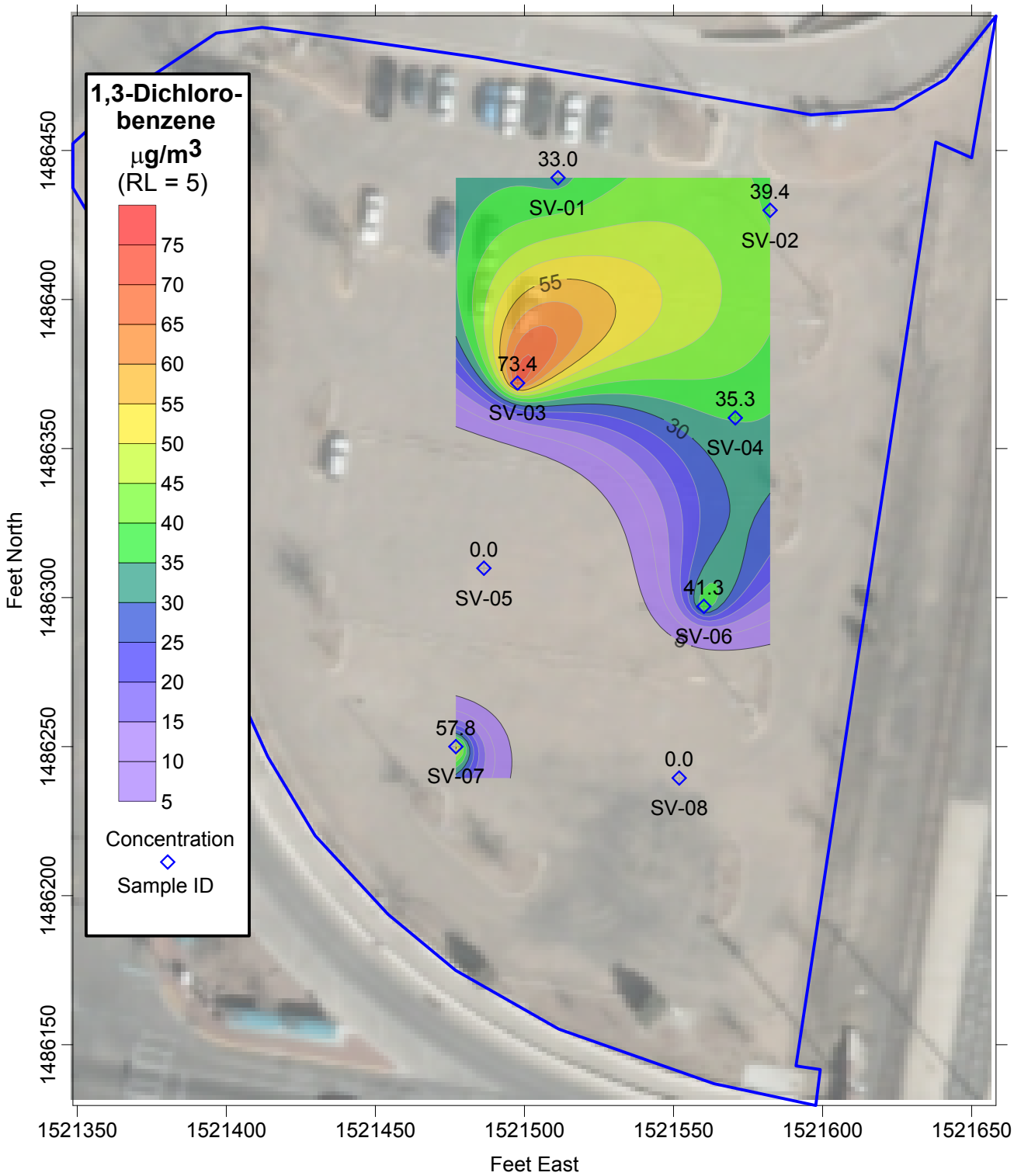

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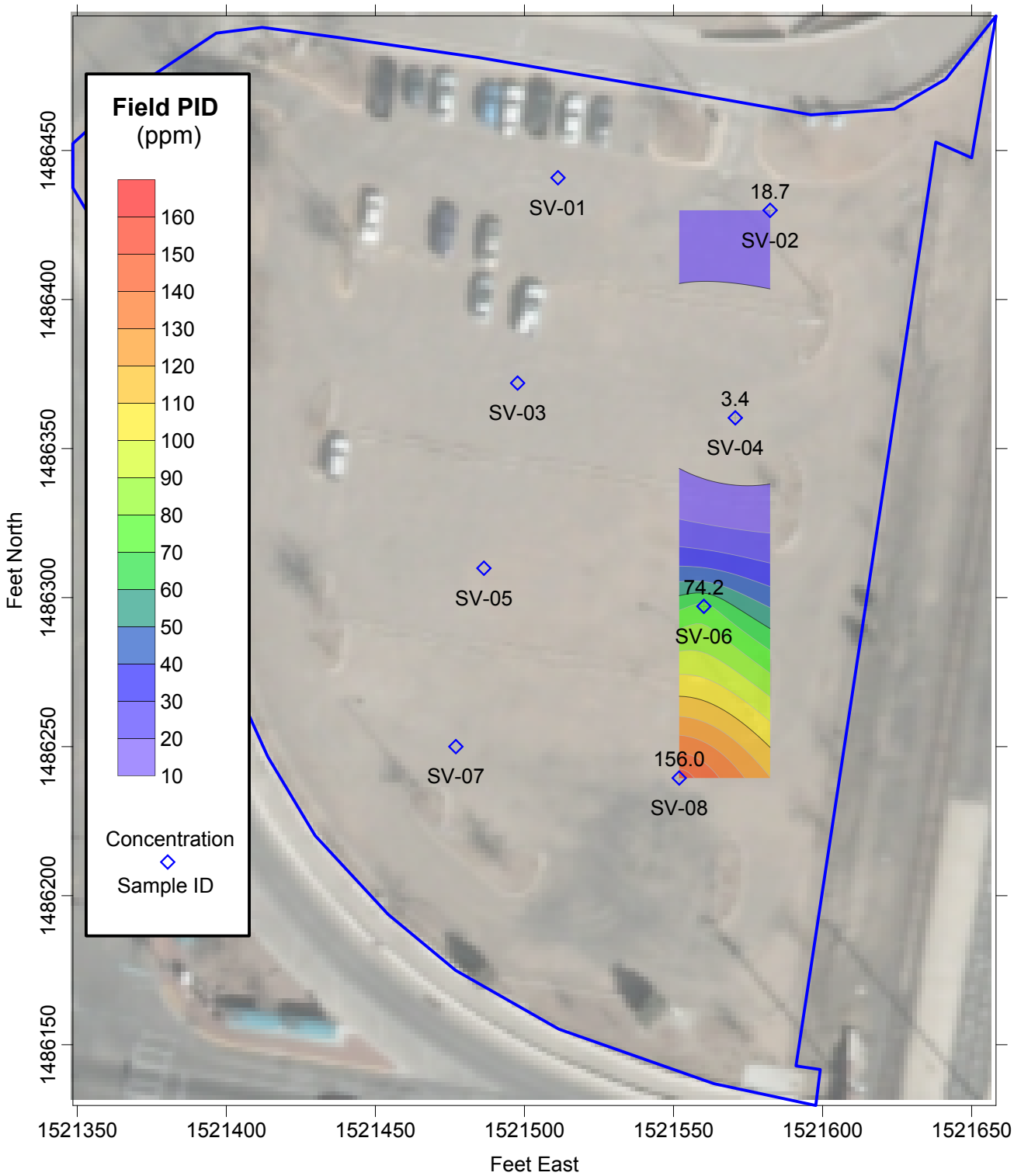

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Active Soil Gas Survey
15' Depth Interval

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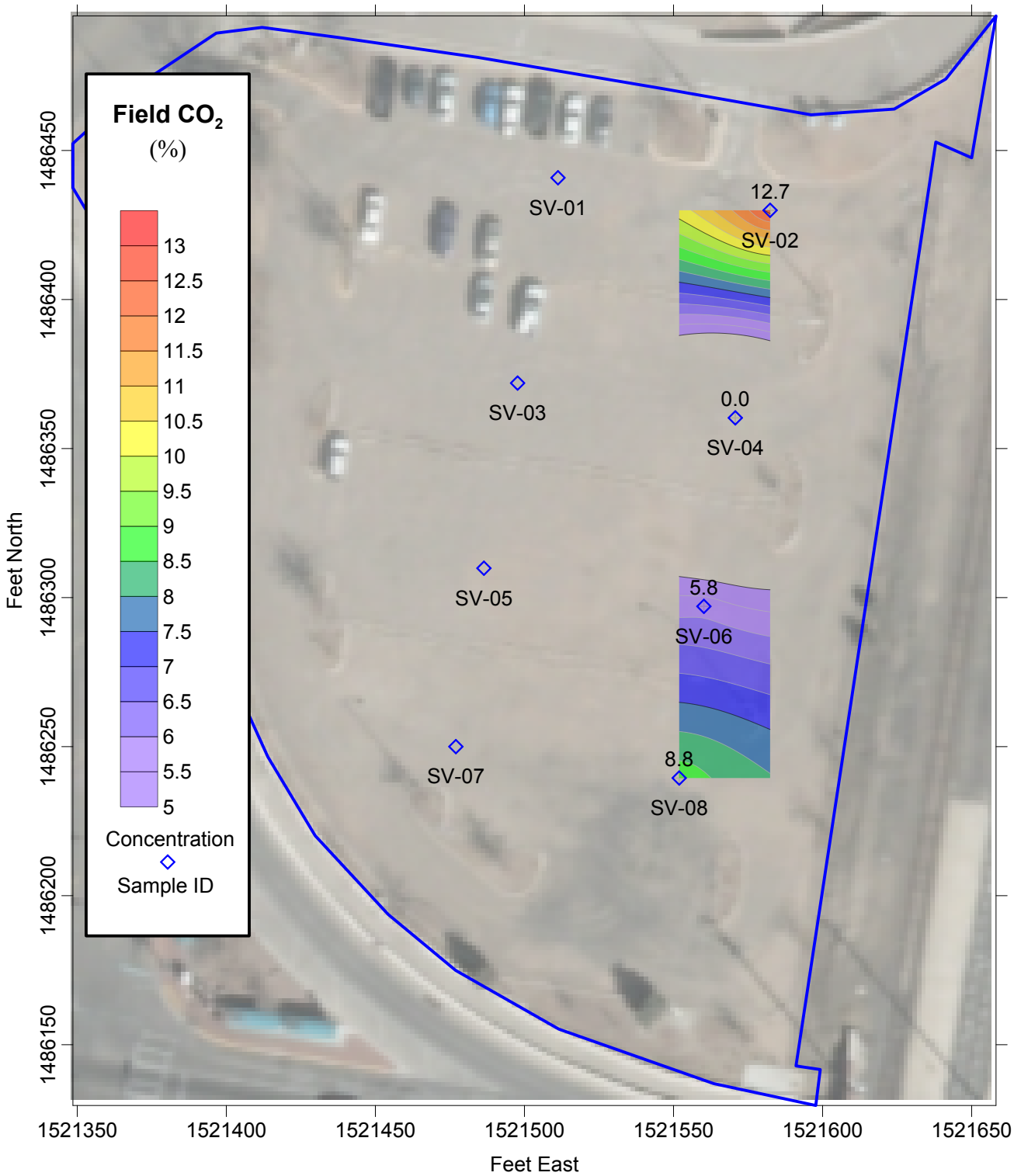

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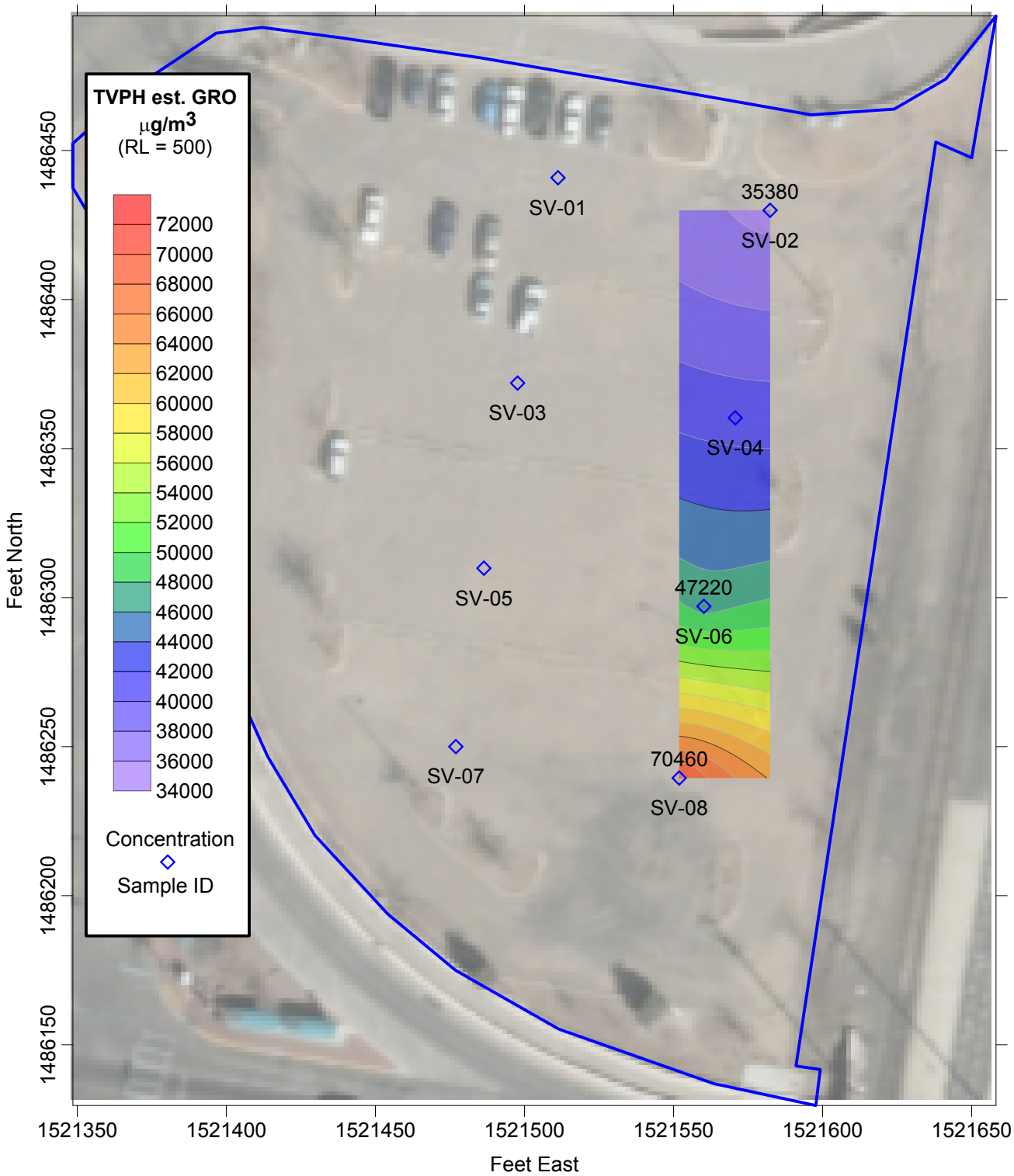

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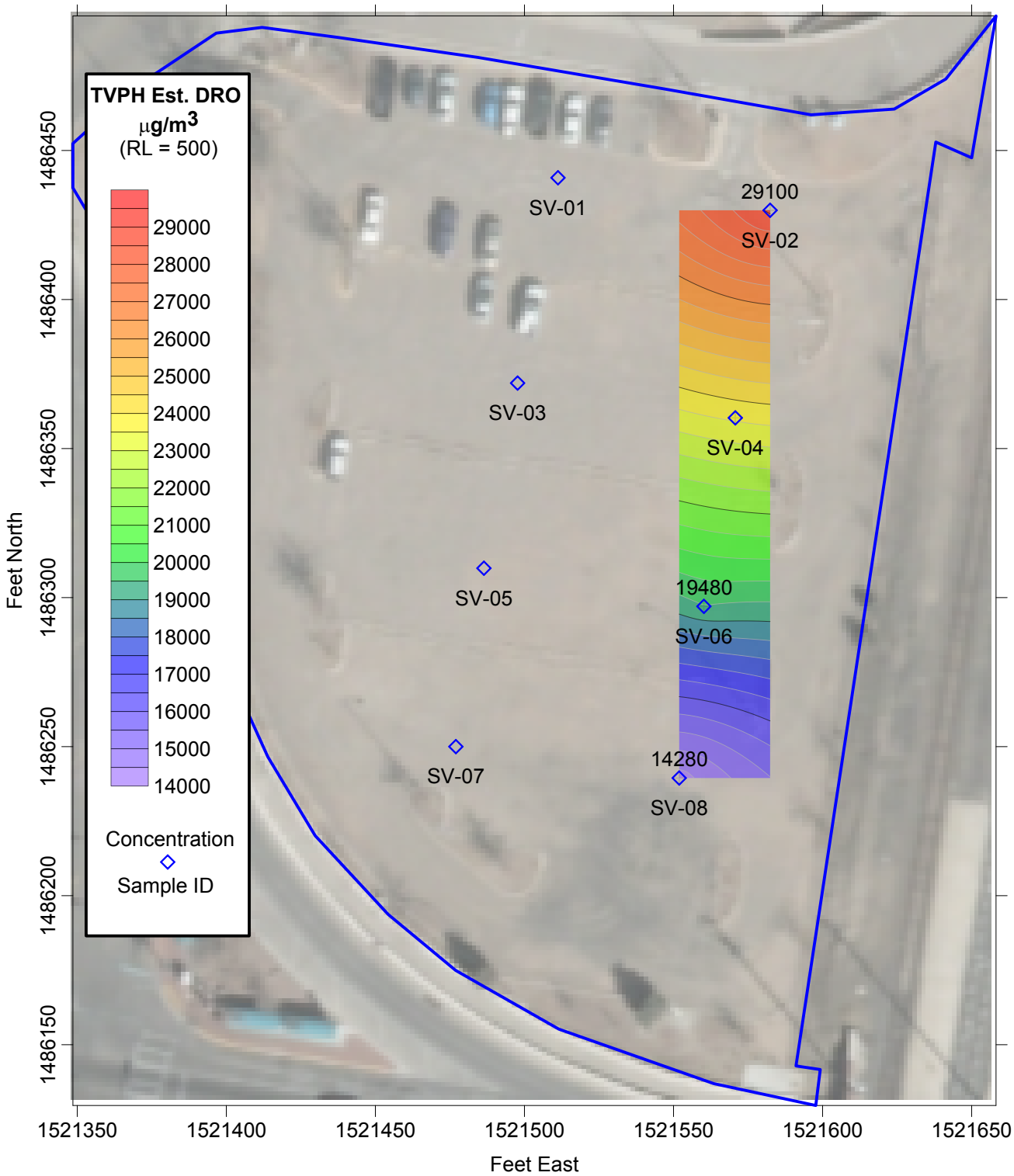

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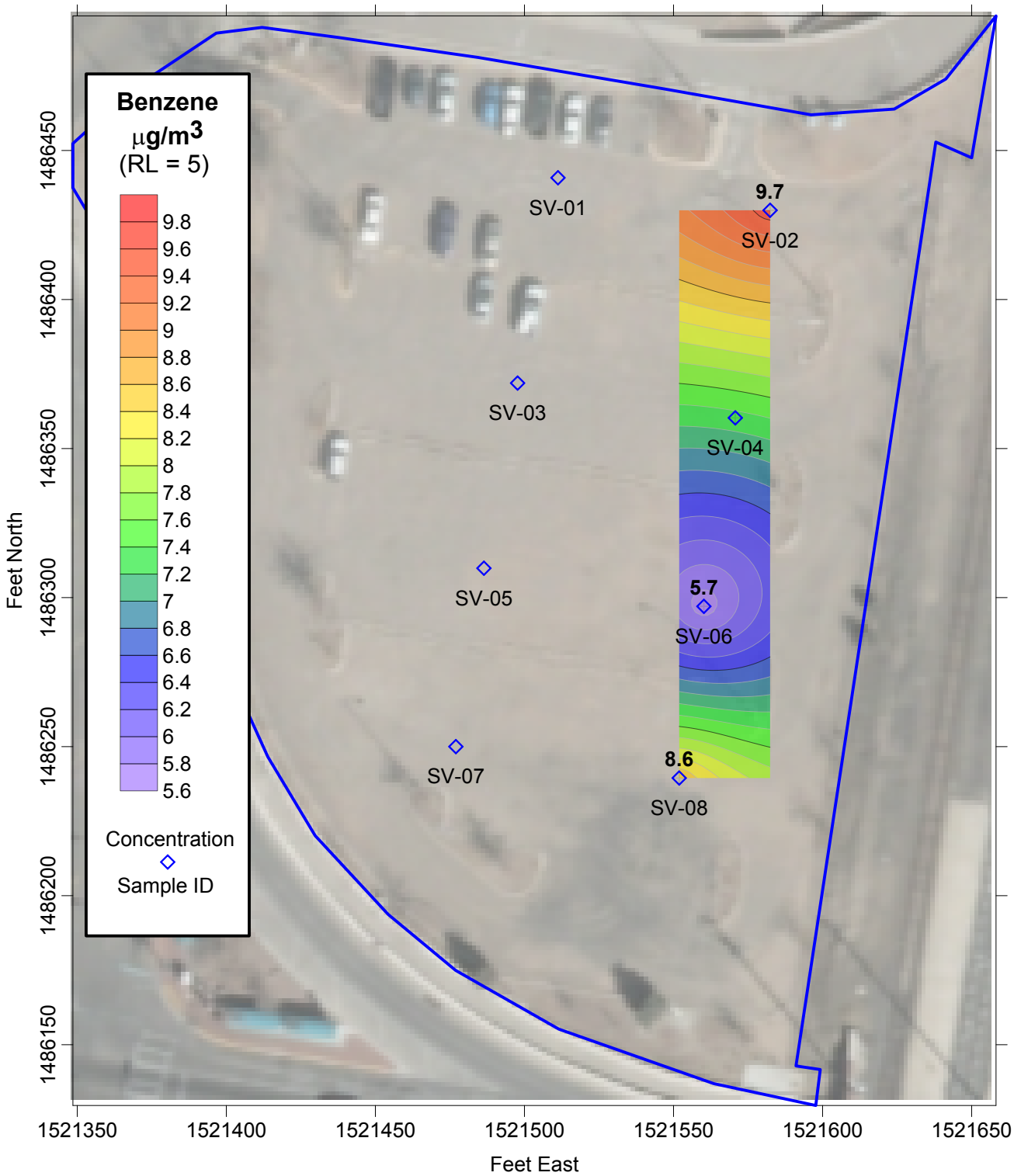

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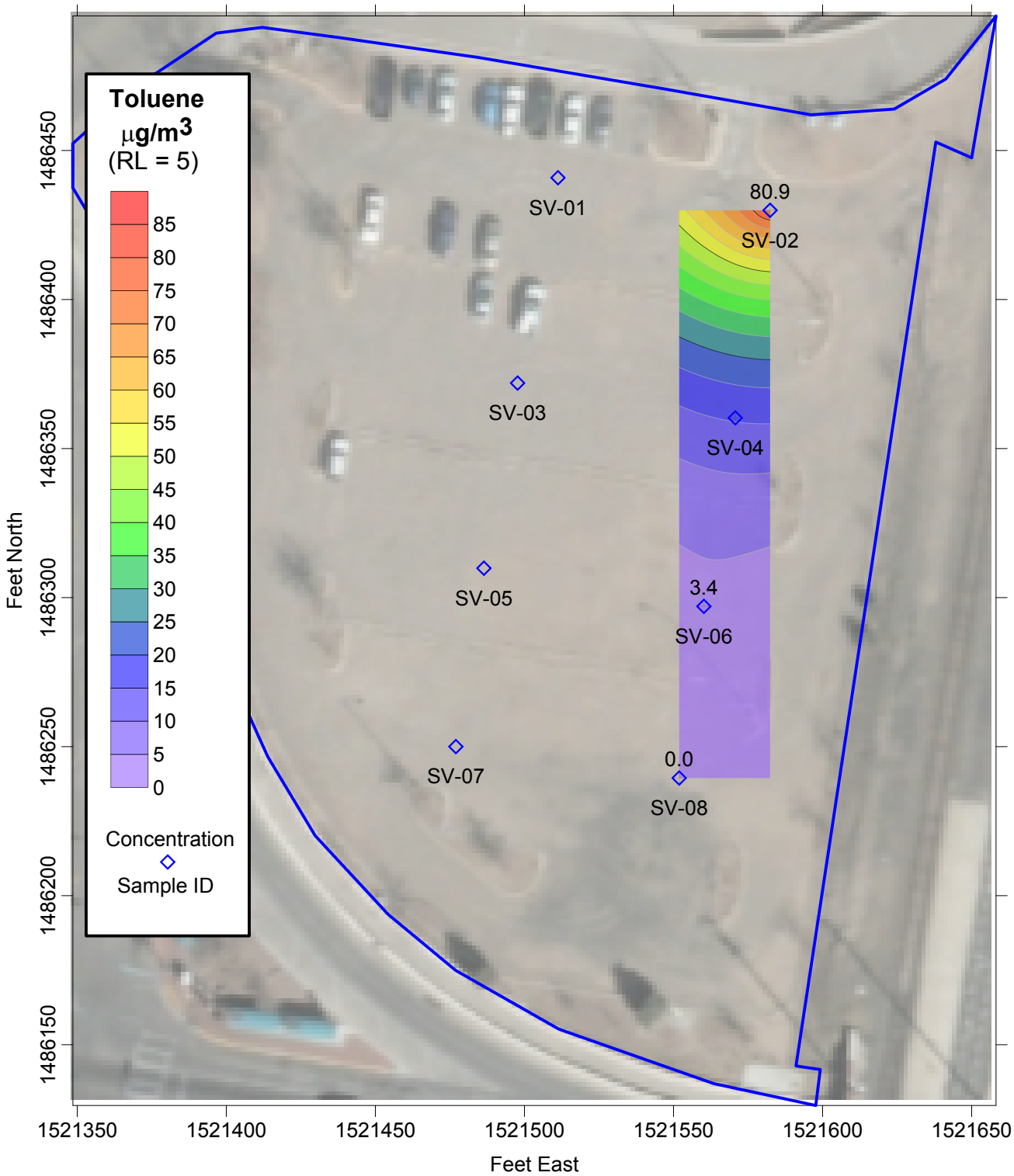

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Appendix C: Laboratory Report

Tuesday, April 15, 2014

Joe Tracy
Intera
6000 Uptown Blvd. NE, Suite 220
Albuquerque, NM 87110

RE: 14068: COALB.M004.OCS8 Task 10

Order No.: 1404001

Dear Joe:

Vista GeoScience received 12 Soil Vapor Samples, collected on Sorbent Tubes on 3/25/2014 for 8260 analysis presented in the following report.

The following report contains data, associated QC and laboratory specifications; exceptions are noted in the Case Narrative.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

Roger Bain
Senior Chemist

130 Capital Drive, Suite C
Golden, Colorado 80401-5654
Web Site: www.VistaGeoScience.com

Vista GeoScience

PH: 303.277.1694
FAX: 303.278.0104
E-Mail: info@VistaGeoScience.com

CLIENT: Intera
Project: 14068: COALB.M004.OCS8 Task 10
Lab Order: 1404001

CASE NARRATIVE

Samples were received on 3/25/14 from Intera and were accompanied by a chain of custody form. The samples and their containers appeared to be in good condition.

Samples were analyzed using the methods outlined in the following references:
Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition and Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, Second Edition, Compendium Method TO-17 (EPA/625/R-96/010b).

Calibration - The laboratory instruments are calibrated using method appropriate standards. On each day project samples are analyzed the instrument calibration is verified using a mid level Continuing Calibration Verification (CCV). Calculations are carried out by the data system to compute the actual concentration of analyte in the original sample.

Method Blanks, Trip Blanks and Instrument Blanks - Blanks are analyzed after each initial calibration, continuing calibration verification, and after samples determined to have high concentrations of analytes to verify system cleanliness. Method blanks are analyzed to verify the cleanliness of procedures requiring sample preparation prior to analysis. Trip blanks are prepared by the laboratory and accompany the samples to verify that there was no contamination during transport.

Batch QC - Prior to analysis, the project samples are associated with a QC batch. This batch is then prepared and analyzed along with QC samples prepared at the same time and using the same reagents and standards. The QC samples associated with a sample batch may include Method Blanks (MB). The results of the batch QC samples are included in the QC section of the report.

Analyst Comments:
The concentrations are based on a total volume of 1.0 liter of sample pumped through each sorbent tube. The GRO and DRO results are estimated from the total ion chromatograph; calculated using a one point calibration of 10000ng solutions of gasoline and diesel. Some of the reported analytes are above linear range and are flagged with an "E". Analytes reported below the lower reporting limit are flagged with a "J". Sample SV-05C-04 has reported GRO and DRO values, but these are attributed to high concentrations of terpenoid type compounds detected in the sample. Sample SV-04C-15 has light compounds contributing to the estimated GRO value. Sample SV-08C-04 did not have detectable Toluene, *m*&*p*-Xylenes, and *o*-Xylene due to high hydrocarbons present in the sample. Sample SV-08C-15 did not have detectable Toluene, Ethyl benzene, *m*&*p*-Xylenes, and *o*-Xylene due to high hydrocarbons present in the sample.

Roger Bain
Senior Chemist

Vista GeoScience

Date: *15-Apr-14*

CLIENT: Intera
Lab Order: 1404001
Project: 14068: COALB.M004.OCS8 Task 10
Lab ID: 1404001-001A **Date Received:** 3/25/2014

Client Sample ID: SV-05C-04
Tag Number: 249481
Collection Date: 3/23/2014
Matrix: SOIL GAS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
VOCS IN SOIL GAS BY ATD/GC/MS		**SW8260B**				Analyst: **RB**
Dichlorodifluoromethane	3.3	5.0	J	ng/L	1	4/3/2014
Chloromethane	ND	5.0		ng/L	1	4/3/2014
Vinyl chloride	ND	5.0		ng/L	1	4/3/2014
Bromomethane	ND	5.0		ng/L	1	4/3/2014
Chloroethane	ND	5.0		ng/L	1	4/3/2014
Trichlorofluoromethane	1.1	5.0	J	ng/L	1	4/3/2014
1,1-Dichloroethene	ND	5.0		ng/L	1	4/3/2014
Freon-113	ND	5.0		ng/L	1	4/3/2014
Acetone	160	5.0		ng/L	1	4/3/2014
Iodomethane	ND	5.0		ng/L	1	4/3/2014
Carbon disulfide	16	5.0		ng/L	1	4/3/2014
Methylene chloride	3.6	5.0	J	ng/L	1	4/3/2014
Acrylonitrile	ND	5.0		ng/L	1	4/3/2014
Methyl tert-butyl ether	ND	5.0		ng/L	1	4/3/2014
trans-1,2-Dichloroethene	ND	5.0		ng/L	1	4/3/2014
1,1-Dichloroethane	ND	5.0		ng/L	1	4/3/2014
Vinyl acetate	ND	5.0		ng/L	1	4/3/2014
2,2-Dichloropropane	ND	5.0		ng/L	1	4/3/2014
2-Butanone	ND	5.0		ng/L	1	4/3/2014
cis-1,2-Dichloroethene	ND	5.0		ng/L	1	4/3/2014
Bromochloromethane	ND	5.0		ng/L	1	4/3/2014
Tetrahydrofuran	ND	5.0		ng/L	1	4/3/2014
Chloroform	ND	5.0		ng/L	1	4/3/2014
1,1,1-Trichloroethane	ND	5.0		ng/L	1	4/3/2014
1,1-Dichloropropene	ND	5.0		ng/L	1	4/3/2014
Carbon tetrachloride	ND	5.0		ng/L	1	4/3/2014
Benzene	4.4	5.0	J	ng/L	1	4/3/2014
1,2-Dichloroethane	ND	5.0		ng/L	1	4/3/2014
Trichloroethene	ND	5.0		ng/L	1	4/3/2014
1,2-Dichloropropane	ND	5.0		ng/L	1	4/3/2014
Dibromomethane	ND	5.0		ng/L	1	4/3/2014
Bromodichloromethane	ND	5.0		ng/L	1	4/3/2014
4-Methyl-2-pentanone	ND	5.0		ng/L	1	4/3/2014
2-Chloroethyl vinyl ether	ND	5.0		ng/L	1	4/3/2014
cis-1,3-Dichloropropene	ND	5.0		ng/L	1	4/3/2014
Toluene	84	5.0		ng/L	1	4/3/2014
trans-1,3-Dichloropropene	ND	5.0		ng/L	1	4/3/2014
1,1,2-Trichloroethane	ND	5.0		ng/L	1	4/3/2014
Tetrachloroethene	1.0	5.0	J	ng/L	1	4/3/2014
1,3-Dichloropropane	ND	5.0		ng/L	1	4/3/2014

Qualifiers:

*	Value exceeds Maximum Contaminant Level
E	Value above quantitation range
J	Analyte detected below quantitation limits
S	Spike Recovery outside accepted recovery limits
B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit

Vista GeoScience

Date: *15-Apr-14*

CLIENT:	Intera	**Client Sample ID:**	SV-05C-04
Lab Order:	1404001	**Tag Number:**	249481
Project:	14068: COALB.M004.OCS8 Task 10	**Collection Date:**	3/23/2014
Lab ID:	1404001-001A **Date Received:** 3/25/2014	**Matrix:**	SOIL GAS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
VOCS IN SOIL GAS BY ATD/GC/MS		**SW8260B**				Analyst: **RB**
2-Hexanone	ND	5.0		ng/L	1	4/3/2014
Dibromochloromethane	ND	5.0		ng/L	1	4/3/2014
1,2-Dibromoethane	ND	5.0		ng/L	1	4/3/2014
Chlorobenzene	ND	5.0		ng/L	1	4/3/2014
1,1,1,2-Tetrachloroethane	ND	5.0		ng/L	1	4/3/2014
Ethylbenzene	ND	5.0		ng/L	1	4/3/2014
m,p-Xylene	ND	10		ng/L	1	4/3/2014
o-Xylene	ND	5.0		ng/L	1	4/3/2014
Styrene	ND	5.0		ng/L	1	4/3/2014
Bromoform	ND	5.0		ng/L	1	4/3/2014
Isopropylbenzene	ND	5.0		ng/L	1	4/3/2014
1,1,2,2-Tetrachloroethane	ND	5.0		ng/L	1	4/3/2014
Bromobenzene	ND	5.0		ng/L	1	4/3/2014
1,2,3-Trichloropropane	ND	5.0		ng/L	1	4/3/2014
n-Propylbenzene	ND	5.0		ng/L	1	4/3/2014
2-Chlorotoluene	ND	5.0		ng/L	1	4/3/2014
1,3,5-Trimethylbenzene	ND	5.0		ng/L	1	4/3/2014
4-Chlorotoluene	ND	5.0		ng/L	1	4/3/2014
tert-Butylbenzene	ND	5.0		ng/L	1	4/3/2014
1,2,4-Trimethylbenzene	ND	5.0		ng/L	1	4/3/2014
sec-Butylbenzene	ND	5.0		ng/L	1	4/3/2014
1,3-Dichlorobenzene	ND	5.0		ng/L	1	4/3/2014
4-Isopropyltoluene	930	5.0	E	ng/L	1	4/3/2014
1,4-Dichlorobenzene	ND	5.0		ng/L	1	4/3/2014
1,2-Dichlorobenzene	ND	5.0		ng/L	1	4/3/2014
n-Butylbenzene	ND	5.0		ng/L	1	4/3/2014
1,2-Dibromo-3-chloropropane	ND	5.0		ng/L	1	4/3/2014
1,2,4-Trichlorobenzene	ND	5.0		ng/L	1	4/3/2014
Hexachlorobutadiene	ND	5.0		ng/L	1	4/3/2014
Naphthalene	ND	5.0		ng/L	1	4/3/2014
1,2,3-Trichlorobenzene	ND	5.0		ng/L	1	4/3/2014
GRO Est.	42000	500		ng/L	1	4/3/2014
DRO Est.	37000	500		ng/L	1	4/3/2014

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Vista GeoScience

Date: *15-Apr-14*

CLIENT: Intera
Lab Order: 1404001
Project: 14068: COALB.M004.OCS8 Task 10
Lab ID: 1404001-002A **Date Received:** 3/25/2014

Client Sample ID: SV-03C-04
Tag Number: 249482
Collection Date: 3/23/2014
Matrix: SOIL GAS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
VOCS IN SOIL GAS BY ATD/GC/MS		**SW8260B**				Analyst: **RB**
Dichlorodifluoromethane	3.0	5.0	J	ng/L	1	4/3/2014
Chloromethane	ND	5.0		ng/L	1	4/3/2014
Vinyl chloride	ND	5.0		ng/L	1	4/3/2014
Bromomethane	ND	5.0		ng/L	1	4/3/2014
Chloroethane	ND	5.0		ng/L	1	4/3/2014
Trichlorofluoromethane	1.4	5.0	J	ng/L	1	4/3/2014
1,1-Dichloroethene	ND	5.0		ng/L	1	4/3/2014
Freon-113	ND	5.0		ng/L	1	4/3/2014
Acetone	71	5.0		ng/L	1	4/3/2014
Iodomethane	ND	5.0		ng/L	1	4/3/2014
Carbon disulfide	9.2	5.0		ng/L	1	4/3/2014
Methylene chloride	7.3	5.0		ng/L	1	4/3/2014
Acrylonitrile	ND	5.0		ng/L	1	4/3/2014
Methyl tert-butyl ether	ND	5.0		ng/L	1	4/3/2014
trans-1,2-Dichloroethene	ND	5.0		ng/L	1	4/3/2014
1,1-Dichloroethane	ND	5.0		ng/L	1	4/3/2014
Vinyl acetate	ND	5.0		ng/L	1	4/3/2014
2,2-Dichloropropane	ND	5.0		ng/L	1	4/3/2014
2-Butanone	ND	5.0		ng/L	1	4/3/2014
cis-1,2-Dichloroethene	ND	5.0		ng/L	1	4/3/2014
Bromochloromethane	ND	5.0		ng/L	1	4/3/2014
Tetrahydrofuran	ND	5.0		ng/L	1	4/3/2014
Chloroform	ND	5.0		ng/L	1	4/3/2014
1,1,1-Trichloroethane	ND	5.0		ng/L	1	4/3/2014
1,1-Dichloropropene	ND	5.0		ng/L	1	4/3/2014
Carbon tetrachloride	ND	5.0		ng/L	1	4/3/2014
Benzene	2.5	5.0	J	ng/L	1	4/3/2014
1,2-Dichloroethane	ND	5.0		ng/L	1	4/3/2014
Trichloroethene	ND	5.0		ng/L	1	4/3/2014
1,2-Dichloropropane	ND	5.0		ng/L	1	4/3/2014
Dibromomethane	ND	5.0		ng/L	1	4/3/2014
Bromodichloromethane	ND	5.0		ng/L	1	4/3/2014
4-Methyl-2-pentanone	ND	5.0		ng/L	1	4/3/2014
2-Chloroethyl vinyl ether	ND	5.0		ng/L	1	4/3/2014
cis-1,3-Dichloropropene	ND	5.0		ng/L	1	4/3/2014
Toluene	3.6	5.0	J	ng/L	1	4/3/2014
trans-1,3-Dichloropropene	ND	5.0		ng/L	1	4/3/2014
1,1,2-Trichloroethane	ND	5.0		ng/L	1	4/3/2014
Tetrachloroethene	ND	5.0		ng/L	1	4/3/2014
1,3-Dichloropropane	ND	5.0		ng/L	1	4/3/2014

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Vista GeoScience

Date: *15-Apr-14*

CLIENT: Intera
Lab Order: 1404001
Project: 14068: COALB.M004.OCS8 Task 10
Lab ID: 1404001-002A **Date Received:** 3/25/2014

Client Sample ID: SV-03C-04
Tag Number: 249482
Collection Date: 3/23/2014
Matrix: SOIL GAS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
VOCS IN SOIL GAS BY ATD/GC/MS		**SW8260B**				Analyst: **RB**
2-Hexanone	ND	5.0		ng/L	1	4/3/2014
Dibromochloromethane	ND	5.0		ng/L	1	4/3/2014
1,2-Dibromoethane	ND	5.0		ng/L	1	4/3/2014
Chlorobenzene	ND	5.0		ng/L	1	4/3/2014
1,1,1,2-Tetrachloroethane	ND	5.0		ng/L	1	4/3/2014
Ethylbenzene	ND	5.0		ng/L	1	4/3/2014
m,p-Xylene	2.3	10	J	ng/L	1	4/3/2014
o-Xylene	1.0	5.0	J	ng/L	1	4/3/2014
Styrene	ND	5.0		ng/L	1	4/3/2014
Bromoform	ND	5.0		ng/L	1	4/3/2014
Isopropylbenzene	ND	5.0		ng/L	1	4/3/2014
1,1,2,2-Tetrachloroethane	ND	5.0		ng/L	1	4/3/2014
Bromobenzene	ND	5.0		ng/L	1	4/3/2014
1,2,3-Trichloropropane	ND	5.0		ng/L	1	4/3/2014
n-Propylbenzene	ND	5.0		ng/L	1	4/3/2014
2-Chlorotoluene	ND	5.0		ng/L	1	4/3/2014
1,3,5-Trimethylbenzene	ND	5.0		ng/L	1	4/3/2014
4-Chlorotoluene	ND	5.0		ng/L	1	4/3/2014
tert-Butylbenzene	ND	5.0		ng/L	1	4/3/2014
1,2,4-Trimethylbenzene	1.5	5.0	J	ng/L	1	4/3/2014
sec-Butylbenzene	ND	5.0		ng/L	1	4/3/2014
1,3-Dichlorobenzene	73	5.0		ng/L	1	4/3/2014
4-Isopropyltoluene	3.8	5.0	J	ng/L	1	4/3/2014
1,4-Dichlorobenzene	ND	5.0		ng/L	1	4/3/2014
1,2-Dichlorobenzene	ND	5.0		ng/L	1	4/3/2014
n-Butylbenzene	ND	5.0		ng/L	1	4/3/2014
1,2-Dibromo-3-chloropropane	ND	5.0		ng/L	1	4/3/2014
1,2,4-Trichlorobenzene	ND	5.0		ng/L	1	4/3/2014
Hexachlorobutadiene	ND	5.0		ng/L	1	4/3/2014
Naphthalene	ND	5.0		ng/L	1	4/3/2014
1,2,3-Trichlorobenzene	ND	5.0		ng/L	1	4/3/2014
GRO Est.	ND	500		ng/L	1	4/3/2014
DRO Est.	ND	500		ng/L	1	4/3/2014

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Vista GeoScience

Date: *15-Apr-14*

CLIENT: Intera
Lab Order: 1404001
Project: 14068: COALB.M004.OCS8 Task 10
Lab ID: 1404001-003A **Date Received:** 3/25/2014

Client Sample ID: SV-01C-04
Tag Number: 249483
Collection Date: 3/23/2014
Matrix: SOIL GAS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
VOCS IN SOIL GAS BY ATD/GC/MS		**SW8260B**				Analyst: **RB**
Dichlorodifluoromethane	3.1	5.0	J	ng/L	1	4/3/2014
Chloromethane	ND	5.0		ng/L	1	4/3/2014
Vinyl chloride	ND	5.0		ng/L	1	4/3/2014
Bromomethane	ND	5.0		ng/L	1	4/3/2014
Chloroethane	ND	5.0		ng/L	1	4/3/2014
Trichlorofluoromethane	ND	5.0		ng/L	1	4/3/2014
1,1-Dichloroethene	ND	5.0		ng/L	1	4/3/2014
Freon-113	ND	5.0		ng/L	1	4/3/2014
Acetone	140	5.0		ng/L	1	4/3/2014
Iodomethane	ND	5.0		ng/L	1	4/3/2014
Carbon disulfide	17	5.0		ng/L	1	4/3/2014
Methylene chloride	2.7	5.0	J	ng/L	1	4/3/2014
Acrylonitrile	ND	5.0		ng/L	1	4/3/2014
Methyl tert-butyl ether	ND	5.0		ng/L	1	4/3/2014
trans-1,2-Dichloroethene	ND	5.0		ng/L	1	4/3/2014
1,1-Dichloroethane	ND	5.0		ng/L	1	4/3/2014
Vinyl acetate	ND	5.0		ng/L	1	4/3/2014
2,2-Dichloropropane	ND	5.0		ng/L	1	4/3/2014
2-Butanone	5.8	5.0		ng/L	1	4/3/2014
cis-1,2-Dichloroethene	ND	5.0		ng/L	1	4/3/2014
Bromochloromethane	ND	5.0		ng/L	1	4/3/2014
Tetrahydrofuran	ND	5.0		ng/L	1	4/3/2014
Chloroform	ND	5.0		ng/L	1	4/3/2014
1,1,1-Trichloroethane	ND	5.0		ng/L	1	4/3/2014
1,1-Dichloropropene	ND	5.0		ng/L	1	4/3/2014
Carbon tetrachloride	ND	5.0		ng/L	1	4/3/2014
Benzene	2.8	5.0	J	ng/L	1	4/3/2014
1,2-Dichloroethane	ND	5.0		ng/L	1	4/3/2014
Trichloroethene	ND	5.0		ng/L	1	4/3/2014
1,2-Dichloropropane	ND	5.0		ng/L	1	4/3/2014
Dibromomethane	ND	5.0		ng/L	1	4/3/2014
Bromodichloromethane	ND	5.0		ng/L	1	4/3/2014
4-Methyl-2-pentanone	ND	5.0		ng/L	1	4/3/2014
2-Chloroethyl vinyl ether	ND	5.0		ng/L	1	4/3/2014
cis-1,3-Dichloropropene	ND	5.0		ng/L	1	4/3/2014
Toluene	4.4	5.0	J	ng/L	1	4/3/2014
trans-1,3-Dichloropropene	ND	5.0		ng/L	1	4/3/2014
1,1,2-Trichloroethane	ND	5.0		ng/L	1	4/3/2014
Tetrachloroethene	ND	5.0		ng/L	1	4/3/2014
1,3-Dichloropropane	ND	5.0		ng/L	1	4/3/2014

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Vista GeoScience

Date: *15-Apr-14*

CLIENT:	Intera	**Client Sample ID:**	SV-01C-04
Lab Order:	1404001	**Tag Number:**	249483
Project:	14068: COALB.M004.OCS8 Task 10	**Collection Date:**	3/23/2014
Lab ID:	1404001-003A **Date Received:** 3/25/2014	**Matrix:**	SOIL GAS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
VOCS IN SOIL GAS BY ATD/GC/MS		**SW8260B**				Analyst: **RB**
2-Hexanone	ND	5.0		ng/L	1	4/3/2014
Dibromochloromethane	ND	5.0		ng/L	1	4/3/2014
1,2-Dibromoethane	ND	5.0		ng/L	1	4/3/2014
Chlorobenzene	ND	5.0		ng/L	1	4/3/2014
1,1,1,2-Tetrachloroethane	ND	5.0		ng/L	1	4/3/2014
Ethylbenzene	ND	5.0		ng/L	1	4/3/2014
m,p-Xylene	ND	10		ng/L	1	4/3/2014
o-Xylene	ND	5.0		ng/L	1	4/3/2014
Styrene	ND	5.0		ng/L	1	4/3/2014
Bromoform	ND	5.0		ng/L	1	4/3/2014
Isopropylbenzene	ND	5.0		ng/L	1	4/3/2014
1,1,2,2-Tetrachloroethane	ND	5.0		ng/L	1	4/3/2014
Bromobenzene	ND	5.0		ng/L	1	4/3/2014
1,2,3-Trichloropropane	ND	5.0		ng/L	1	4/3/2014
n-Propylbenzene	ND	5.0		ng/L	1	4/3/2014
2-Chlorotoluene	ND	5.0		ng/L	1	4/3/2014
1,3,5-Trimethylbenzene	ND	5.0		ng/L	1	4/3/2014
4-Chlorotoluene	ND	5.0		ng/L	1	4/3/2014
tert-Butylbenzene	ND	5.0		ng/L	1	4/3/2014
1,2,4-Trimethylbenzene	ND	5.0		ng/L	1	4/3/2014
sec-Butylbenzene	1.0	5.0	J	ng/L	1	4/3/2014
1,3-Dichlorobenzene	33	5.0		ng/L	1	4/3/2014
4-Isopropyltoluene	1.3	5.0	J	ng/L	1	4/3/2014
1,4-Dichlorobenzene	ND	5.0		ng/L	1	4/3/2014
1,2-Dichlorobenzene	ND	5.0		ng/L	1	4/3/2014
n-Butylbenzene	ND	5.0		ng/L	1	4/3/2014
1,2-Dibromo-3-chloropropane	ND	5.0		ng/L	1	4/3/2014
1,2,4-Trichlorobenzene	ND	5.0		ng/L	1	4/3/2014
Hexachlorobutadiene	ND	5.0		ng/L	1	4/3/2014
Naphthalene	ND	5.0		ng/L	1	4/3/2014
1,2,3-Trichlorobenzene	ND	5.0		ng/L	1	4/3/2014
GRO Est.	ND	500		ng/L	1	4/3/2014
DRO Est.	ND	500		ng/L	1	4/3/2014

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Vista GeoScience

Date: *15-Apr-14*

CLIENT: Intera
Lab Order: 1404001
Project: 14068: COALB.M004.OCS8 Task 10
Lab ID: 1404001-004A **Date Received:** 3/25/2014

Client Sample ID: SV-02C-04
Tag Number: 249484
Collection Date: 3/23/2014
Matrix: SOIL GAS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
VOCS IN SOIL GAS BY ATD/GC/MS		**SW8260B**				Analyst: **RB**
Dichlorodifluoromethane	2.7	5.0	J	ng/L	1	4/3/2014
Chloromethane	ND	5.0		ng/L	1	4/3/2014
Vinyl chloride	ND	5.0		ng/L	1	4/3/2014
Bromomethane	ND	5.0		ng/L	1	4/3/2014
Chloroethane	ND	5.0		ng/L	1	4/3/2014
Trichlorofluoromethane	1.4	5.0	J	ng/L	1	4/3/2014
1,1-Dichloroethene	ND	5.0		ng/L	1	4/3/2014
Freon-113	ND	5.0		ng/L	1	4/3/2014
Acetone	150	5.0		ng/L	1	4/3/2014
Iodomethane	ND	5.0		ng/L	1	4/3/2014
Carbon disulfide	17	5.0		ng/L	1	4/3/2014
Methylene chloride	3.8	5.0	J	ng/L	1	4/3/2014
Acrylonitrile	ND	5.0		ng/L	1	4/3/2014
Methyl tert-butyl ether	ND	5.0		ng/L	1	4/3/2014
trans-1,2-Dichloroethene	ND	5.0		ng/L	1	4/3/2014
1,1-Dichloroethane	ND	5.0		ng/L	1	4/3/2014
Vinyl acetate	ND	5.0		ng/L	1	4/3/2014
2,2-Dichloropropane	ND	5.0		ng/L	1	4/3/2014
2-Butanone	ND	5.0		ng/L	1	4/3/2014
cis-1,2-Dichloroethene	ND	5.0		ng/L	1	4/3/2014
Bromochloromethane	ND	5.0		ng/L	1	4/3/2014
Tetrahydrofuran	ND	5.0		ng/L	1	4/3/2014
Chloroform	ND	5.0		ng/L	1	4/3/2014
1,1,1-Trichloroethane	ND	5.0		ng/L	1	4/3/2014
1,1-Dichloropropene	ND	5.0		ng/L	1	4/3/2014
Carbon tetrachloride	ND	5.0		ng/L	1	4/3/2014
Benzene	4.6	5.0	J	ng/L	1	4/3/2014
1,2-Dichloroethane	ND	5.0		ng/L	1	4/3/2014
Trichloroethene	ND	5.0		ng/L	1	4/3/2014
1,2-Dichloropropane	ND	5.0		ng/L	1	4/3/2014
Dibromomethane	ND	5.0		ng/L	1	4/3/2014
Bromodichloromethane	ND	5.0		ng/L	1	4/3/2014
4-Methyl-2-pentanone	ND	5.0		ng/L	1	4/3/2014
2-Chloroethyl vinyl ether	ND	5.0		ng/L	1	4/3/2014
cis-1,3-Dichloropropene	ND	5.0		ng/L	1	4/3/2014
Toluene	2.4	5.0	J	ng/L	1	4/3/2014
trans-1,3-Dichloropropene	ND	5.0		ng/L	1	4/3/2014
1,1,2-Trichloroethane	ND	5.0		ng/L	1	4/3/2014
Tetrachloroethene	ND	5.0		ng/L	1	4/3/2014
1,3-Dichloropropane	ND	5.0		ng/L	1	4/3/2014

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Vista GeoScience

Date: *15-Apr-14*

CLIENT: Intera
Lab Order: 1404001
Project: 14068: COALB.M004.OCS8 Task 10
Lab ID: 1404001-004A **Date Received:** 3/25/2014

Client Sample ID: SV-02C-04
Tag Number: 249484
Collection Date: 3/23/2014
Matrix: SOIL GAS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
VOCS IN SOIL GAS BY ATD/GC/MS		**SW8260B**				Analyst: **RB**
2-Hexanone	ND	5.0		ng/L	1	4/3/2014
Dibromochloromethane	ND	5.0		ng/L	1	4/3/2014
1,2-Dibromoethane	ND	5.0		ng/L	1	4/3/2014
Chlorobenzene	ND	5.0		ng/L	1	4/3/2014
1,1,1,2-Tetrachloroethane	ND	5.0		ng/L	1	4/3/2014
Ethylbenzene	ND	5.0		ng/L	1	4/3/2014
m,p-Xylene	ND	10		ng/L	1	4/3/2014
o-Xylene	ND	5.0		ng/L	1	4/3/2014
Styrene	ND	5.0		ng/L	1	4/3/2014
Bromoform	ND	5.0		ng/L	1	4/3/2014
Isopropylbenzene	ND	5.0		ng/L	1	4/3/2014
1,1,2,2-Tetrachloroethane	ND	5.0		ng/L	1	4/3/2014
Bromobenzene	ND	5.0		ng/L	1	4/3/2014
1,2,3-Trichloropropane	ND	5.0		ng/L	1	4/3/2014
n-Propylbenzene	ND	5.0		ng/L	1	4/3/2014
2-Chlorotoluene	ND	5.0		ng/L	1	4/3/2014
1,3,5-Trimethylbenzene	ND	5.0		ng/L	1	4/3/2014
4-Chlorotoluene	ND	5.0		ng/L	1	4/3/2014
tert-Butylbenzene	ND	5.0		ng/L	1	4/3/2014
1,2,4-Trimethylbenzene	ND	5.0		ng/L	1	4/3/2014
sec-Butylbenzene	ND	5.0		ng/L	1	4/3/2014
1,3-Dichlorobenzene	39	5.0		ng/L	1	4/3/2014
4-Isopropyltoluene	ND	5.0		ng/L	1	4/3/2014
1,4-Dichlorobenzene	ND	5.0		ng/L	1	4/3/2014
1,2-Dichlorobenzene	ND	5.0		ng/L	1	4/3/2014
n-Butylbenzene	ND	5.0		ng/L	1	4/3/2014
1,2-Dibromo-3-chloropropane	ND	5.0		ng/L	1	4/3/2014
1,2,4-Trichlorobenzene	ND	5.0		ng/L	1	4/3/2014
Hexachlorobutadiene	ND	5.0		ng/L	1	4/3/2014
Naphthalene	ND	5.0		ng/L	1	4/3/2014
1,2,3-Trichlorobenzene	ND	5.0		ng/L	1	4/3/2014
GRO Est.	3100	500		ng/L	1	4/3/2014
DRO Est.	2500	500		ng/L	1	4/3/2014

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Vista GeoScience

Date: *15-Apr-14*

CLIENT:	Intera	**Client Sample ID:**	SV-02C-15
Lab Order:	1404001	**Tag Number:**	249185
Project:	14068: COALB.M004.OCS8 Task 10	**Collection Date:**	3/23/2014
Lab ID:	1404001-005A **Date Received:** 3/25/2014	**Matrix:**	SOIL GAS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
VOCS IN SOIL GAS BY ATD/GC/MS		**SW8260B**				Analyst: **RB**
Dichlorodifluoromethane	2.3	5.0	J	ng/L	1	4/3/2014
Chloromethane	ND	5.0		ng/L	1	4/3/2014
Vinyl chloride	ND	5.0		ng/L	1	4/3/2014
Bromomethane	ND	5.0		ng/L	1	4/3/2014
Chloroethane	ND	5.0		ng/L	1	4/3/2014
Trichlorofluoromethane	ND	5.0		ng/L	1	4/3/2014
1,1-Dichloroethene	ND	5.0		ng/L	1	4/3/2014
Freon-113	ND	5.0		ng/L	1	4/3/2014
Acetone	460	5.0	E	ng/L	1	4/3/2014
Iodomethane	ND	5.0		ng/L	1	4/3/2014
Carbon disulfide	21	5.0		ng/L	1	4/3/2014
Methylene chloride	5.3	5.0		ng/L	1	4/3/2014
Acrylonitrile	ND	5.0		ng/L	1	4/3/2014
Methyl tert-butyl ether	ND	5.0		ng/L	1	4/3/2014
trans-1,2-Dichloroethene	ND	5.0		ng/L	1	4/3/2014
1,1-Dichloroethane	ND	5.0		ng/L	1	4/3/2014
Vinyl acetate	ND	5.0		ng/L	1	4/3/2014
2,2-Dichloropropane	ND	5.0		ng/L	1	4/3/2014
2-Butanone	60	5.0		ng/L	1	4/3/2014
cis-1,2-Dichloroethene	ND	5.0		ng/L	1	4/3/2014
Bromochloromethane	ND	5.0		ng/L	1	4/3/2014
Tetrahydrofuran	ND	5.0		ng/L	1	4/3/2014
Chloroform	ND	5.0		ng/L	1	4/3/2014
1,1,1-Trichloroethane	ND	5.0		ng/L	1	4/3/2014
1,1-Dichloropropene	ND	5.0		ng/L	1	4/3/2014
Carbon tetrachloride	ND	5.0		ng/L	1	4/3/2014
Benzene	9.7	5.0		ng/L	1	4/3/2014
1,2-Dichloroethane	ND	5.0		ng/L	1	4/3/2014
Trichloroethene	ND	5.0		ng/L	1	4/3/2014
1,2-Dichloropropane	ND	5.0		ng/L	1	4/3/2014
Dibromomethane	ND	5.0		ng/L	1	4/3/2014
Bromodichloromethane	ND	5.0		ng/L	1	4/3/2014
4-Methyl-2-pentanone	32	5.0		ng/L	1	4/3/2014
2-Chloroethyl vinyl ether	ND	5.0		ng/L	1	4/3/2014
cis-1,3-Dichloropropene	ND	5.0		ng/L	1	4/3/2014
Toluene	81	5.0		ng/L	1	4/3/2014
trans-1,3-Dichloropropene	ND	5.0		ng/L	1	4/3/2014
1,1,2-Trichloroethane	ND	5.0		ng/L	1	4/3/2014
Tetrachloroethene	ND	5.0		ng/L	1	4/3/2014
1,3-Dichloropropane	ND	5.0		ng/L	1	4/3/2014

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Vista GeoScience

Date: *15-Apr-14*

CLIENT:	Intera	**Client Sample ID:**	SV-02C-15
Lab Order:	1404001	**Tag Number:**	249185
Project:	14068: COALB.M004.OCS8 Task 10	**Collection Date:**	3/23/2014
Lab ID:	1404001-005A **Date Received:** 3/25/2014	**Matrix:**	SOIL GAS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
VOCS IN SOIL GAS BY ATD/GC/MS		**SW8260B**				Analyst: **RB**
2-Hexanone	ND	5.0		ng/L	1	4/3/2014
Dibromochloromethane	ND	5.0		ng/L	1	4/3/2014
1,2-Dibromoethane	ND	5.0		ng/L	1	4/3/2014
Chlorobenzene	ND	5.0		ng/L	1	4/3/2014
1,1,1,2-Tetrachloroethane	ND	5.0		ng/L	1	4/3/2014
Ethylbenzene	6.6	5.0		ng/L	1	4/3/2014
m,p-Xylene	14	10		ng/L	1	4/3/2014
o-Xylene	16	5.0		ng/L	1	4/3/2014
Styrene	ND	5.0		ng/L	1	4/3/2014
Bromoform	ND	5.0		ng/L	1	4/3/2014
Isopropylbenzene	ND	5.0		ng/L	1	4/3/2014
1,1,2,2-Tetrachloroethane	ND	5.0		ng/L	1	4/3/2014
Bromobenzene	ND	5.0		ng/L	1	4/3/2014
1,2,3-Trichloropropane	ND	5.0		ng/L	1	4/3/2014
n-Propylbenzene	1.7	5.0	J	ng/L	1	4/3/2014
2-Chlorotoluene	ND	5.0		ng/L	1	4/3/2014
1,3,5-Trimethylbenzene	ND	5.0		ng/L	1	4/3/2014
4-Chlorotoluene	ND	5.0		ng/L	1	4/3/2014
tert-Butylbenzene	ND	5.0		ng/L	1	4/3/2014
1,2,4-Trimethylbenzene	ND	5.0		ng/L	1	4/3/2014
sec-Butylbenzene	47	5.0		ng/L	1	4/3/2014
1,3-Dichlorobenzene	ND	5.0		ng/L	1	4/3/2014
4-Isopropyltoluene	ND	5.0		ng/L	1	4/3/2014
1,4-Dichlorobenzene	ND	5.0		ng/L	1	4/3/2014
1,2-Dichlorobenzene	ND	5.0		ng/L	1	4/3/2014
n-Butylbenzene	ND	5.0		ng/L	1	4/3/2014
1,2-Dibromo-3-chloropropane	ND	5.0		ng/L	1	4/3/2014
1,2,4-Trichlorobenzene	ND	5.0		ng/L	1	4/3/2014
Hexachlorobutadiene	ND	5.0		ng/L	1	4/3/2014
Naphthalene	ND	5.0		ng/L	1	4/3/2014
1,2,3-Trichlorobenzene	ND	5.0		ng/L	1	4/3/2014
GRO Est.	35000	500		ng/L	1	4/3/2014
DRO Est.	29000	500		ng/L	1	4/3/2014

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Vista GeoScience

Date: *15-Apr-14*

CLIENT: Intera
Lab Order: 1404001
Project: 14068: COALB.M004.OCS8 Task 10
Lab ID: 1404001-006A **Date Received:** 3/25/2014

Client Sample ID: SV-04C-04
Tag Number: 249486
Collection Date: 3/23/2014
Matrix: SOIL GAS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
VOCS IN SOIL GAS BY ATD/GC/MS		**SW8260B**				Analyst: **RB**
Dichlorodifluoromethane	2.5	5.0	J	ng/L	1	4/3/2014
Chloromethane	ND	5.0		ng/L	1	4/3/2014
Vinyl chloride	ND	5.0		ng/L	1	4/3/2014
Bromomethane	ND	5.0		ng/L	1	4/3/2014
Chloroethane	ND	5.0		ng/L	1	4/3/2014
Trichlorofluoromethane	1.1	5.0	J	ng/L	1	4/3/2014
1,1-Dichloroethene	ND	5.0		ng/L	1	4/3/2014
Freon-113	ND	5.0		ng/L	1	4/3/2014
Acetone	130	5.0		ng/L	1	4/3/2014
Iodomethane	ND	5.0		ng/L	1	4/3/2014
Carbon disulfide	14	5.0		ng/L	1	4/3/2014
Methylene chloride	4.0	5.0	J	ng/L	1	4/3/2014
Acrylonitrile	ND	5.0		ng/L	1	4/3/2014
Methyl tert-butyl ether	ND	5.0		ng/L	1	4/3/2014
trans-1,2-Dichloroethene	ND	5.0		ng/L	1	4/3/2014
1,1-Dichloroethane	ND	5.0		ng/L	1	4/3/2014
Vinyl acetate	ND	5.0		ng/L	1	4/3/2014
2,2-Dichloropropane	ND	5.0		ng/L	1	4/3/2014
2-Butanone	ND	5.0		ng/L	1	4/3/2014
cis-1,2-Dichloroethene	ND	5.0		ng/L	1	4/3/2014
Bromochloromethane	ND	5.0		ng/L	1	4/3/2014
Tetrahydrofuran	ND	5.0		ng/L	1	4/3/2014
Chloroform	ND	5.0		ng/L	1	4/3/2014
1,1,1-Trichloroethane	ND	5.0		ng/L	1	4/3/2014
1,1-Dichloropropene	ND	5.0		ng/L	1	4/3/2014
Carbon tetrachloride	ND	5.0		ng/L	1	4/3/2014
Benzene	3.5	5.0	J	ng/L	1	4/3/2014
1,2-Dichloroethane	ND	5.0		ng/L	1	4/3/2014
Trichloroethene	ND	5.0		ng/L	1	4/3/2014
1,2-Dichloropropane	ND	5.0		ng/L	1	4/3/2014
Dibromomethane	ND	5.0		ng/L	1	4/3/2014
Bromodichloromethane	ND	5.0		ng/L	1	4/3/2014
4-Methyl-2-pentanone	ND	5.0		ng/L	1	4/3/2014
2-Chloroethyl vinyl ether	ND	5.0		ng/L	1	4/3/2014
cis-1,3-Dichloropropene	ND	5.0		ng/L	1	4/3/2014
Toluene	3.6	5.0	J	ng/L	1	4/3/2014
trans-1,3-Dichloropropene	ND	5.0		ng/L	1	4/3/2014
1,1,2-Trichloroethane	ND	5.0		ng/L	1	4/3/2014
Tetrachloroethene	ND	5.0		ng/L	1	4/3/2014
1,3-Dichloropropane	ND	5.0		ng/L	1	4/3/2014

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Vista GeoScience

Date: *15-Apr-14*

CLIENT:	Intera	**Client Sample ID:**	SV-04C-04
Lab Order:	1404001	**Tag Number:**	249486
Project:	14068: COALB.M004.OCS8 Task 10	**Collection Date:**	3/23/2014
Lab ID:	1404001-006A **Date Received:** 3/25/2014	**Matrix:**	SOIL GAS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
VOCS IN SOIL GAS BY ATD/GC/MS		**SW8260B**				Analyst: **RB**
2-Hexanone	ND	5.0		ng/L	1	4/3/2014
Dibromochloromethane	ND	5.0		ng/L	1	4/3/2014
1,2-Dibromoethane	ND	5.0		ng/L	1	4/3/2014
Chlorobenzene	ND	5.0		ng/L	1	4/3/2014
1,1,1,2-Tetrachloroethane	ND	5.0		ng/L	1	4/3/2014
Ethylbenzene	ND	5.0		ng/L	1	4/3/2014
m,p-Xylene	ND	10		ng/L	1	4/3/2014
o-Xylene	ND	5.0		ng/L	1	4/3/2014
Styrene	ND	5.0		ng/L	1	4/3/2014
Bromoform	ND	5.0		ng/L	1	4/3/2014
Isopropylbenzene	ND	5.0		ng/L	1	4/3/2014
1,1,2,2-Tetrachloroethane	ND	5.0		ng/L	1	4/3/2014
Bromobenzene	ND	5.0		ng/L	1	4/3/2014
1,2,3-Trichloropropane	ND	5.0		ng/L	1	4/3/2014
n-Propylbenzene	ND	5.0		ng/L	1	4/3/2014
2-Chlorotoluene	ND	5.0		ng/L	1	4/3/2014
1,3,5-Trimethylbenzene	ND	5.0		ng/L	1	4/3/2014
4-Chlorotoluene	ND	5.0		ng/L	1	4/3/2014
tert-Butylbenzene	ND	5.0		ng/L	1	4/3/2014
1,2,4-Trimethylbenzene	2.0	5.0	J	ng/L	1	4/3/2014
sec-Butylbenzene	ND	5.0		ng/L	1	4/3/2014
1,3-Dichlorobenzene	35	5.0		ng/L	1	4/3/2014
4-Isopropyltoluene	ND	5.0		ng/L	1	4/3/2014
1,4-Dichlorobenzene	4.0	5.0	J	ng/L	1	4/3/2014
1,2-Dichlorobenzene	ND	5.0		ng/L	1	4/3/2014
n-Butylbenzene	ND	5.0		ng/L	1	4/3/2014
1,2-Dibromo-3-chloropropane	ND	5.0		ng/L	1	4/3/2014
1,2,4-Trichlorobenzene	ND	5.0		ng/L	1	4/3/2014
Hexachlorobutadiene	ND	5.0		ng/L	1	4/3/2014
Naphthalene	ND	5.0		ng/L	1	4/3/2014
1,2,3-Trichlorobenzene	ND	5.0		ng/L	1	4/3/2014
GRO Est.	ND	500		ng/L	1	4/3/2014
DRO Est.	ND	500		ng/L	1	4/3/2014

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Vista GeoScience

Date: *15-Apr-14*

CLIENT:	Intera	**Client Sample ID:**	SV-04C-15
Lab Order:	1404001	**Tag Number:**	249487
Project:	14068: COALB.M004.OCS8 Task 10	**Collection Date:**	3/23/2014
Lab ID:	1404001-007A **Date Received:** 3/25/2014	**Matrix:**	SOIL GAS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
VOCS IN SOIL GAS BY ATD/GC/MS		**SW8260B**				Analyst: **RB**
Dichlorodifluoromethane	ND	5.0		ng/L	1	4/3/2014
Chloromethane	ND	5.0		ng/L	1	4/3/2014
Vinyl chloride	ND	5.0		ng/L	1	4/3/2014
Bromomethane	ND	5.0		ng/L	1	4/3/2014
Chloroethane	ND	5.0		ng/L	1	4/3/2014
Trichlorofluoromethane	ND	5.0		ng/L	1	4/3/2014
1,1-Dichloroethene	ND	5.0		ng/L	1	4/3/2014
Freon-113	ND	5.0		ng/L	1	4/3/2014
Acetone	61	5.0		ng/L	1	4/3/2014
Iodomethane	ND	5.0		ng/L	1	4/3/2014
Carbon disulfide	ND	5.0		ng/L	1	4/3/2014
Methylene chloride	4.9	5.0	J	ng/L	1	4/3/2014
Acrylonitrile	ND	5.0		ng/L	1	4/3/2014
Methyl tert-butyl ether	ND	5.0		ng/L	1	4/3/2014
trans-1,2-Dichloroethene	ND	5.0		ng/L	1	4/3/2014
1,1-Dichloroethane	ND	5.0		ng/L	1	4/3/2014
Vinyl acetate	ND	5.0		ng/L	1	4/3/2014
2,2-Dichloropropane	ND	5.0		ng/L	1	4/3/2014
2-Butanone	ND	5.0		ng/L	1	4/3/2014
cis-1,2-Dichloroethene	ND	5.0		ng/L	1	4/3/2014
Bromochloromethane	ND	5.0		ng/L	1	4/3/2014
Tetrahydrofuran	ND	5.0		ng/L	1	4/3/2014
Chloroform	ND	5.0		ng/L	1	4/3/2014
1,1,1-Trichloroethane	ND	5.0		ng/L	1	4/3/2014
1,1-Dichloropropene	ND	5.0		ng/L	1	4/3/2014
Carbon tetrachloride	ND	5.0		ng/L	1	4/3/2014
Benzene	ND	5.0		ng/L	1	4/3/2014
1,2-Dichloroethane	ND	5.0		ng/L	1	4/3/2014
Trichloroethene	ND	5.0		ng/L	1	4/3/2014
1,2-Dichloropropane	ND	5.0		ng/L	1	4/3/2014
Dibromomethane	ND	5.0		ng/L	1	4/3/2014
Bromodichloromethane	ND	5.0		ng/L	1	4/3/2014
4-Methyl-2-pentanone	ND	5.0		ng/L	1	4/3/2014
2-Chloroethyl vinyl ether	ND	5.0		ng/L	1	4/3/2014
cis-1,3-Dichloropropene	ND	5.0		ng/L	1	4/3/2014
Toluene	1.3	5.0	J	ng/L	1	4/3/2014
trans-1,3-Dichloropropene	ND	5.0		ng/L	1	4/3/2014
1,1,2-Trichloroethane	ND	5.0		ng/L	1	4/3/2014
Tetrachloroethene	ND	5.0		ng/L	1	4/3/2014
1,3-Dichloropropane	ND	5.0		ng/L	1	4/3/2014

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Vista GeoScience

Date: *15-Apr-14*

CLIENT: Intera
Lab Order: 1404001
Project: 14068: COALB.M004.OCS8 Task 10
Lab ID: 1404001-007A **Date Received:** 3/25/2014

Client Sample ID: SV-04C-15
Tag Number: 249487
Collection Date: 3/23/2014
Matrix: SOIL GAS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
VOCS IN SOIL GAS BY ATD/GC/MS		**SW8260B**				Analyst: **RB**
2-Hexanone	ND	5.0		ng/L	1	4/3/2014
Dibromochloromethane	ND	5.0		ng/L	1	4/3/2014
1,2-Dibromoethane	ND	5.0		ng/L	1	4/3/2014
Chlorobenzene	ND	5.0		ng/L	1	4/3/2014
1,1,1,2-Tetrachloroethane	ND	5.0		ng/L	1	4/3/2014
Ethylbenzene	ND	5.0		ng/L	1	4/3/2014
m,p-Xylene	ND	10		ng/L	1	4/3/2014
o-Xylene	ND	5.0		ng/L	1	4/3/2014
Styrene	ND	5.0		ng/L	1	4/3/2014
Bromoform	ND	5.0		ng/L	1	4/3/2014
Isopropylbenzene	ND	5.0		ng/L	1	4/3/2014
1,1,2,2-Tetrachloroethane	ND	5.0		ng/L	1	4/3/2014
Bromobenzene	ND	5.0		ng/L	1	4/3/2014
1,2,3-Trichloropropane	ND	5.0		ng/L	1	4/3/2014
n-Propylbenzene	ND	5.0		ng/L	1	4/3/2014
2-Chlorotoluene	ND	5.0		ng/L	1	4/3/2014
1,3,5-Trimethylbenzene	ND	5.0		ng/L	1	4/3/2014
4-Chlorotoluene	ND	5.0		ng/L	1	4/3/2014
tert-Butylbenzene	ND	5.0		ng/L	1	4/3/2014
1,2,4-Trimethylbenzene	ND	5.0		ng/L	1	4/3/2014
sec-Butylbenzene	ND	5.0		ng/L	1	4/3/2014
1,3-Dichlorobenzene	49	5.0		ng/L	1	4/3/2014
4-Isopropyltoluene	ND	5.0		ng/L	1	4/3/2014
1,4-Dichlorobenzene	6.5	5.0		ng/L	1	4/3/2014
1,2-Dichlorobenzene	ND	5.0		ng/L	1	4/3/2014
n-Butylbenzene	ND	5.0		ng/L	1	4/3/2014
1,2-Dibromo-3-chloropropane	ND	5.0		ng/L	1	4/3/2014
1,2,4-Trichlorobenzene	ND	5.0		ng/L	1	4/3/2014
Hexachlorobutadiene	ND	5.0		ng/L	1	4/3/2014
Naphthalene	ND	5.0		ng/L	1	4/3/2014
1,2,3-Trichlorobenzene	ND	5.0		ng/L	1	4/3/2014
GRO Est.	2400	500		ng/L	1	4/3/2014
DRO Est.	ND	500		ng/L	1	4/3/2014

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Vista GeoScience

Date: *15-Apr-14*

CLIENT:	Intera	**Client Sample ID:**	SV-06C-15
Lab Order:	1404001	**Tag Number:**	249488
Project:	14068: COALB.M004.OCS8 Task 10	**Collection Date:**	3/23/2014
Lab ID:	1404001-008A **Date Received:** 3/25/2014	**Matrix:**	SOIL GAS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
VOCS IN SOIL GAS BY ATD/GC/MS		**SW8260B**				Analyst: **RB**
Dichlorodifluoromethane	1.9	5.0	J	ng/L	1	4/3/2014
Chloromethane	ND	5.0		ng/L	1	4/3/2014
Vinyl chloride	ND	5.0		ng/L	1	4/3/2014
Bromomethane	ND	5.0		ng/L	1	4/3/2014
Chloroethane	ND	5.0		ng/L	1	4/3/2014
Trichlorofluoromethane	ND	5.0		ng/L	1	4/3/2014
1,1-Dichloroethene	ND	5.0		ng/L	1	4/3/2014
Freon-113	ND	5.0		ng/L	1	4/3/2014
Acetone	200	5.0		ng/L	1	4/3/2014
Iodomethane	ND	5.0		ng/L	1	4/3/2014
Carbon disulfide	16	5.0		ng/L	1	4/3/2014
Methylene chloride	3.7	5.0	J	ng/L	1	4/3/2014
Acrylonitrile	ND	5.0		ng/L	1	4/3/2014
Methyl tert-butyl ether	ND	5.0		ng/L	1	4/3/2014
trans-1,2-Dichloroethene	ND	5.0		ng/L	1	4/3/2014
1,1-Dichloroethane	ND	5.0		ng/L	1	4/3/2014
Vinyl acetate	ND	5.0		ng/L	1	4/3/2014
2,2-Dichloropropane	ND	5.0		ng/L	1	4/3/2014
2-Butanone	ND	5.0		ng/L	1	4/3/2014
cis-1,2-Dichloroethene	ND	5.0		ng/L	1	4/3/2014
Bromochloromethane	ND	5.0		ng/L	1	4/3/2014
Tetrahydrofuran	ND	5.0		ng/L	1	4/3/2014
Chloroform	13	5.0		ng/L	1	4/3/2014
1,1,1-Trichloroethane	ND	5.0		ng/L	1	4/3/2014
1,1-Dichloropropene	ND	5.0		ng/L	1	4/3/2014
Carbon tetrachloride	ND	5.0		ng/L	1	4/3/2014
Benzene	5.7	5.0		ng/L	1	4/3/2014
1,2-Dichloroethane	ND	5.0		ng/L	1	4/3/2014
Trichloroethene	ND	5.0		ng/L	1	4/3/2014
1,2-Dichloropropane	ND	5.0		ng/L	1	4/3/2014
Dibromomethane	ND	5.0		ng/L	1	4/3/2014
Bromodichloromethane	ND	5.0		ng/L	1	4/3/2014
4-Methyl-2-pentanone	ND	5.0		ng/L	1	4/3/2014
2-Chloroethyl vinyl ether	ND	5.0		ng/L	1	4/3/2014
cis-1,3-Dichloropropene	ND	5.0		ng/L	1	4/3/2014
Toluene	3.4	5.0	J	ng/L	1	4/3/2014
trans-1,3-Dichloropropene	ND	5.0		ng/L	1	4/3/2014
1,1,2-Trichloroethane	ND	5.0		ng/L	1	4/3/2014
Tetrachloroethene	ND	5.0		ng/L	1	4/3/2014
1,3-Dichloropropane	ND	5.0		ng/L	1	4/3/2014

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Vista GeoScience

Date: *15-Apr-14*

CLIENT:	Intera	**Client Sample ID:**	SV-06C-15
Lab Order:	1404001	**Tag Number:**	249488
Project:	14068: COALB.M004.OCS8 Task 10	**Collection Date:**	3/23/2014
Lab ID:	1404001-008A **Date Received:** 3/25/2014	**Matrix:**	SOIL GAS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
VOCS IN SOIL GAS BY ATD/GC/MS		**SW8260B**				Analyst: **RB**
2-Hexanone	ND	5.0		ng/L	1	4/3/2014
Dibromochloromethane	ND	5.0		ng/L	1	4/3/2014
1,2-Dibromoethane	ND	5.0		ng/L	1	4/3/2014
Chlorobenzene	ND	5.0		ng/L	1	4/3/2014
1,1,1,2-Tetrachloroethane	ND	5.0		ng/L	1	4/3/2014
Ethylbenzene	ND	5.0		ng/L	1	4/3/2014
m,p-Xylene	ND	10		ng/L	1	4/3/2014
o-Xylene	ND	5.0		ng/L	1	4/3/2014
Styrene	ND	5.0		ng/L	1	4/3/2014
Bromoform	ND	5.0		ng/L	1	4/3/2014
Isopropylbenzene	12	5.0		ng/L	1	4/3/2014
1,1,2,2-Tetrachloroethane	ND	5.0		ng/L	1	4/3/2014
Bromobenzene	ND	5.0		ng/L	1	4/3/2014
1,2,3-Trichloropropane	ND	5.0		ng/L	1	4/3/2014
n-Propylbenzene	2.2	5.0	J	ng/L	1	4/3/2014
2-Chlorotoluene	ND	5.0		ng/L	1	4/3/2014
1,3,5-Trimethylbenzene	ND	5.0		ng/L	1	4/3/2014
4-Chlorotoluene	ND	5.0		ng/L	1	4/3/2014
tert-Butylbenzene	ND	5.0		ng/L	1	4/3/2014
1,2,4-Trimethylbenzene	ND	5.0		ng/L	1	4/3/2014
sec-Butylbenzene	13	5.0		ng/L	1	4/3/2014
1,3-Dichlorobenzene	36	5.0		ng/L	1	4/3/2014
4-Isopropyltoluene	1.2	5.0	J	ng/L	1	4/3/2014
1,4-Dichlorobenzene	ND	5.0		ng/L	1	4/3/2014
1,2-Dichlorobenzene	ND	5.0		ng/L	1	4/3/2014
n-Butylbenzene	ND	5.0		ng/L	1	4/3/2014
1,2-Dibromo-3-chloropropane	ND	5.0		ng/L	1	4/3/2014
1,2,4-Trichlorobenzene	ND	5.0		ng/L	1	4/3/2014
Hexachlorobutadiene	ND	5.0		ng/L	1	4/3/2014
Naphthalene	ND	5.0		ng/L	1	4/3/2014
1,2,3-Trichlorobenzene	ND	5.0		ng/L	1	4/3/2014
GRO Est.	47000	500		ng/L	1	4/3/2014
DRO Est.	19000	500		ng/L	1	4/3/2014

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Vista GeoScience

Date: *15-Apr-14*

CLIENT: Intera
Lab Order: 1404001
Project: 14068: COALB.M004.OCS8 Task 10
Lab ID: 1404001-009A **Date Received:** 3/25/2014

Client Sample ID: SV-06C-04
Tag Number: 249489
Collection Date: 3/23/2014
Matrix: SOIL GAS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
VOCS IN SOIL GAS BY ATD/GC/MS		**SW8260B**				Analyst: **RB**
Dichlorodifluoromethane	2.5	5.0	J	ng/L	1	4/3/2014
Chloromethane	ND	5.0		ng/L	1	4/3/2014
Vinyl chloride	ND	5.0		ng/L	1	4/3/2014
Bromomethane	ND	5.0		ng/L	1	4/3/2014
Chloroethane	ND	5.0		ng/L	1	4/3/2014
Trichlorofluoromethane	ND	5.0		ng/L	1	4/3/2014
1,1-Dichloroethene	ND	5.0		ng/L	1	4/3/2014
Freon-113	ND	5.0		ng/L	1	4/3/2014
Acetone	270	5.0	E	ng/L	1	4/3/2014
Iodomethane	ND	5.0		ng/L	1	4/3/2014
Carbon disulfide	11	5.0		ng/L	1	4/3/2014
Methylene chloride	3.8	5.0	J	ng/L	1	4/3/2014
Acrylonitrile	ND	5.0		ng/L	1	4/3/2014
Methyl tert-butyl ether	ND	5.0		ng/L	1	4/3/2014
trans-1,2-Dichloroethene	ND	5.0		ng/L	1	4/3/2014
1,1-Dichloroethane	ND	5.0		ng/L	1	4/3/2014
Vinyl acetate	ND	5.0		ng/L	1	4/3/2014
2,2-Dichloropropane	ND	5.0		ng/L	1	4/3/2014
2-Butanone	ND	5.0		ng/L	1	4/3/2014
cis-1,2-Dichloroethene	ND	5.0		ng/L	1	4/3/2014
Bromochloromethane	ND	5.0		ng/L	1	4/3/2014
Tetrahydrofuran	ND	5.0		ng/L	1	4/3/2014
Chloroform	4.1	5.0	J	ng/L	1	4/3/2014
1,1,1-Trichloroethane	ND	5.0		ng/L	1	4/3/2014
1,1-Dichloropropene	ND	5.0		ng/L	1	4/3/2014
Carbon tetrachloride	ND	5.0		ng/L	1	4/3/2014
Benzene	11	5.0		ng/L	1	4/3/2014
1,2-Dichloroethane	ND	5.0		ng/L	1	4/3/2014
Trichloroethene	ND	5.0		ng/L	1	4/3/2014
1,2-Dichloropropane	ND	5.0		ng/L	1	4/3/2014
Dibromomethane	ND	5.0		ng/L	1	4/3/2014
Bromodichloromethane	ND	5.0		ng/L	1	4/3/2014
4-Methyl-2-pentanone	ND	5.0		ng/L	1	4/3/2014
2-Chloroethyl vinyl ether	ND	5.0		ng/L	1	4/3/2014
cis-1,3-Dichloropropene	ND	5.0		ng/L	1	4/3/2014
Toluene	14	5.0		ng/L	1	4/3/2014
trans-1,3-Dichloropropene	ND	5.0		ng/L	1	4/3/2014
1,1,2-Trichloroethane	ND	5.0		ng/L	1	4/3/2014
Tetrachloroethene	ND	5.0		ng/L	1	4/3/2014
1,3-Dichloropropane	ND	5.0		ng/L	1	4/3/2014

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Vista GeoScience

Date: *15-Apr-14*

CLIENT: Intera
Client Sample ID: SV-06C-04
Lab Order: 1404001
Tag Number: 249489
Project: 14068: COALB.M004.OCS8 Task 10
Collection Date: 3/23/2014
Lab ID: 1404001-009A **Date Received:** 3/25/2014
Matrix: SOIL GAS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
VOCS IN SOIL GAS BY ATD/GC/MS		**SW8260B**				Analyst: **RB**
2-Hexanone	ND	5.0		ng/L	1	4/3/2014
Dibromochloromethane	ND	5.0		ng/L	1	4/3/2014
1,2-Dibromoethane	ND	5.0		ng/L	1	4/3/2014
Chlorobenzene	ND	5.0		ng/L	1	4/3/2014
1,1,1,2-Tetrachloroethane	ND	5.0		ng/L	1	4/3/2014
Ethylbenzene	1.8	5.0	J	ng/L	1	4/3/2014
m,p-Xylene	3.0	10	J	ng/L	1	4/3/2014
o-Xylene	1.6	5.0	J	ng/L	1	4/3/2014
Styrene	ND	5.0		ng/L	1	4/3/2014
Bromoform	ND	5.0		ng/L	1	4/3/2014
Isopropylbenzene	ND	5.0		ng/L	1	4/3/2014
1,1,2,2-Tetrachloroethane	ND	5.0		ng/L	1	4/3/2014
Bromobenzene	ND	5.0		ng/L	1	4/3/2014
1,2,3-Trichloropropane	ND	5.0		ng/L	1	4/3/2014
n-Propylbenzene	ND	5.0		ng/L	1	4/3/2014
2-Chlorotoluene	ND	5.0		ng/L	1	4/3/2014
1,3,5-Trimethylbenzene	ND	5.0		ng/L	1	4/3/2014
4-Chlorotoluene	ND	5.0		ng/L	1	4/3/2014
tert-Butylbenzene	ND	5.0		ng/L	1	4/3/2014
1,2,4-Trimethylbenzene	1.1	5.0	J	ng/L	1	4/3/2014
sec-Butylbenzene	ND	5.0		ng/L	1	4/3/2014
1,3-Dichlorobenzene	41	5.0		ng/L	1	4/3/2014
4-Isopropyltoluene	ND	5.0		ng/L	1	4/3/2014
1,4-Dichlorobenzene	ND	5.0		ng/L	1	4/3/2014
1,2-Dichlorobenzene	ND	5.0		ng/L	1	4/3/2014
n-Butylbenzene	ND	5.0		ng/L	1	4/3/2014
1,2-Dibromo-3-chloropropane	ND	5.0		ng/L	1	4/3/2014
1,2,4-Trichlorobenzene	ND	5.0		ng/L	1	4/3/2014
Hexachlorobutadiene	ND	5.0		ng/L	1	4/3/2014
Naphthalene	ND	5.0		ng/L	1	4/3/2014
1,2,3-Trichlorobenzene	ND	5.0		ng/L	1	4/3/2014
GRO Est.	1700	500		ng/L	1	4/3/2014
DRO Est.	2500	500		ng/L	1	4/3/2014

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Vista GeoScience

Date: *15-Apr-14*

CLIENT:	Intera	**Client Sample ID:**	SV-08C-04
Lab Order:	1404001	**Tag Number:**	249490
Project:	14068: COALB.M004.OCS8 Task 10	**Collection Date:**	3/23/2014
Lab ID:	1404001-010A **Date Received:** 3/25/2014	**Matrix:**	SOIL GAS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
VOCS IN SOIL GAS BY ATD/GC/MS		**SW8260B**				Analyst: **RB**
Dichlorodifluoromethane	2.9	5.0	J	ng/L	1	4/3/2014
Chloromethane	ND	5.0		ng/L	1	4/3/2014
Vinyl chloride	ND	5.0		ng/L	1	4/3/2014
Bromomethane	ND	5.0		ng/L	1	4/3/2014
Chloroethane	ND	5.0		ng/L	1	4/3/2014
Trichlorofluoromethane	ND	5.0		ng/L	1	4/3/2014
1,1-Dichloroethene	ND	5.0		ng/L	1	4/3/2014
Freon-113	ND	5.0		ng/L	1	4/3/2014
Acetone	200	5.0		ng/L	1	4/3/2014
Iodomethane	ND	5.0		ng/L	1	4/3/2014
Carbon disulfide	19	5.0		ng/L	1	4/3/2014
Methylene chloride	4.1	5.0	J	ng/L	1	4/3/2014
Acrylonitrile	ND	5.0		ng/L	1	4/3/2014
Methyl tert-butyl ether	ND	5.0		ng/L	1	4/3/2014
trans-1,2-Dichloroethene	ND	5.0		ng/L	1	4/3/2014
1,1-Dichloroethane	ND	5.0		ng/L	1	4/3/2014
Vinyl acetate	ND	5.0		ng/L	1	4/3/2014
2,2-Dichloropropane	ND	5.0		ng/L	1	4/3/2014
2-Butanone	ND	5.0		ng/L	1	4/3/2014
cis-1,2-Dichloroethene	ND	5.0		ng/L	1	4/3/2014
Bromochloromethane	ND	5.0		ng/L	1	4/3/2014
Tetrahydrofuran	ND	5.0		ng/L	1	4/3/2014
Chloroform	ND	5.0		ng/L	1	4/3/2014
1,1,1-Trichloroethane	ND	5.0		ng/L	1	4/3/2014
1,1-Dichloropropene	ND	5.0		ng/L	1	4/3/2014
Carbon tetrachloride	ND	5.0		ng/L	1	4/3/2014
Benzene	9.6	5.0		ng/L	1	4/3/2014
1,2-Dichloroethane	ND	5.0		ng/L	1	4/3/2014
Trichloroethene	ND	5.0		ng/L	1	4/3/2014
1,2-Dichloropropane	ND	5.0		ng/L	1	4/3/2014
Dibromomethane	ND	5.0		ng/L	1	4/3/2014
Bromodichloromethane	ND	5.0		ng/L	1	4/3/2014
4-Methyl-2-pentanone	ND	5.0		ng/L	1	4/3/2014
2-Chloroethyl vinyl ether	ND	5.0		ng/L	1	4/3/2014
cis-1,3-Dichloropropene	ND	5.0		ng/L	1	4/3/2014
Toluene	ND	5.0		ng/L	1	4/3/2014
trans-1,3-Dichloropropene	ND	5.0		ng/L	1	4/3/2014
1,1,2-Trichloroethane	ND	5.0		ng/L	1	4/3/2014
Tetrachloroethene	ND	5.0		ng/L	1	4/3/2014
1,3-Dichloropropane	ND	5.0		ng/L	1	4/3/2014

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Vista GeoScience

Date: *15-Apr-14*

CLIENT:	Intera	**Client Sample ID:**	SV-08C-04
Lab Order:	1404001	**Tag Number:**	249490
Project:	14068: COALB.M004.OCS8 Task 10	**Collection Date:**	3/23/2014
Lab ID:	1404001-010A **Date Received:** 3/25/2014	**Matrix:**	SOIL GAS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
VOCS IN SOIL GAS BY ATD/GC/MS		**SW8260B**				Analyst: **RB**
2-Hexanone	ND	5.0		ng/L	1	4/3/2014
Dibromochloromethane	ND	5.0		ng/L	1	4/3/2014
1,2-Dibromoethane	ND	5.0		ng/L	1	4/3/2014
Chlorobenzene	ND	5.0		ng/L	1	4/3/2014
1,1,1,2-Tetrachloroethane	ND	5.0		ng/L	1	4/3/2014
Ethylbenzene	16	5.0		ng/L	1	4/3/2014
m,p-Xylene	ND	10		ng/L	1	4/3/2014
o-Xylene	ND	5.0		ng/L	1	4/3/2014
Styrene	ND	5.0		ng/L	1	4/3/2014
Bromoform	ND	5.0		ng/L	1	4/3/2014
Isopropylbenzene	120	5.0		ng/L	1	4/3/2014
1,1,2,2-Tetrachloroethane	ND	5.0		ng/L	1	4/3/2014
Bromobenzene	ND	5.0		ng/L	1	4/3/2014
1,2,3-Trichloropropane	ND	5.0		ng/L	1	4/3/2014
n-Propylbenzene	61	5.0		ng/L	1	4/3/2014
2-Chlorotoluene	ND	5.0		ng/L	1	4/3/2014
1,3,5-Trimethylbenzene	ND	5.0		ng/L	1	4/3/2014
4-Chlorotoluene	ND	5.0		ng/L	1	4/3/2014
tert-Butylbenzene	ND	5.0		ng/L	1	4/3/2014
1,2,4-Trimethylbenzene	ND	5.0		ng/L	1	4/3/2014
sec-Butylbenzene	150	5.0		ng/L	1	4/3/2014
1,3-Dichlorobenzene	ND	5.0		ng/L	1	4/3/2014
4-Isopropyltoluene	ND	5.0		ng/L	1	4/3/2014
1,4-Dichlorobenzene	ND	5.0		ng/L	1	4/3/2014
1,2-Dichlorobenzene	ND	5.0		ng/L	1	4/3/2014
n-Butylbenzene	46	5.0		ng/L	1	4/3/2014
1,2-Dibromo-3-chloropropane	ND	5.0		ng/L	1	4/3/2014
1,2,4-Trichlorobenzene	ND	5.0		ng/L	1	4/3/2014
Hexachlorobutadiene	ND	5.0		ng/L	1	4/3/2014
Naphthalene	ND	5.0		ng/L	1	4/3/2014
1,2,3-Trichlorobenzene	ND	5.0		ng/L	1	4/3/2014
GRO Est.	100000	500		ng/L	1	4/3/2014
DRO Est.	13000	500		ng/L	1	4/3/2014

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Vista GeoScience

Date: *15-Apr-14*

CLIENT:	Intera	**Client Sample ID:**	SV-08C-15
Lab Order:	1404001	**Tag Number:**	206805
Project:	14068: COALB.M004.OCS8 Task 10	**Collection Date:**	3/23/2014
Lab ID:	1404001-011A **Date Received:** 3/25/2014	**Matrix:**	SOIL GAS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
VOCS IN SOIL GAS BY ATD/GC/MS		**SW8260B**				Analyst: **RB**
Dichlorodifluoromethane	ND	5.0		ng/L	1	4/3/2014
Chloromethane	ND	5.0		ng/L	1	4/3/2014
Vinyl chloride	ND	5.0		ng/L	1	4/3/2014
Bromomethane	ND	5.0		ng/L	1	4/3/2014
Chloroethane	ND	5.0		ng/L	1	4/3/2014
Trichlorofluoromethane	ND	5.0		ng/L	1	4/3/2014
1,1-Dichloroethene	ND	5.0		ng/L	1	4/3/2014
Freon-113	ND	5.0		ng/L	1	4/3/2014
Acetone	21	5.0		ng/L	1	4/3/2014
Iodomethane	ND	5.0		ng/L	1	4/3/2014
Carbon disulfide	ND	5.0		ng/L	1	4/3/2014
Methylene chloride	ND	5.0		ng/L	1	4/3/2014
Acrylonitrile	ND	5.0		ng/L	1	4/3/2014
Methyl tert-butyl ether	ND	5.0		ng/L	1	4/3/2014
trans-1,2-Dichloroethene	ND	5.0		ng/L	1	4/3/2014
1,1-Dichloroethane	ND	5.0		ng/L	1	4/3/2014
Vinyl acetate	ND	5.0		ng/L	1	4/3/2014
2,2-Dichloropropane	ND	5.0		ng/L	1	4/3/2014
2-Butanone	ND	5.0		ng/L	1	4/3/2014
cis-1,2-Dichloroethene	ND	5.0		ng/L	1	4/3/2014
Bromochloromethane	ND	5.0		ng/L	1	4/3/2014
Tetrahydrofuran	ND	5.0		ng/L	1	4/3/2014
Chloroform	ND	5.0		ng/L	1	4/3/2014
1,1,1-Trichloroethane	ND	5.0		ng/L	1	4/3/2014
1,1-Dichloropropene	ND	5.0		ng/L	1	4/3/2014
Carbon tetrachloride	ND	5.0		ng/L	1	4/3/2014
Benzene	8.6	5.0		ng/L	1	4/3/2014
1,2-Dichloroethane	ND	5.0		ng/L	1	4/3/2014
Trichloroethene	ND	5.0		ng/L	1	4/3/2014
1,2-Dichloropropane	ND	5.0		ng/L	1	4/3/2014
Dibromomethane	ND	5.0		ng/L	1	4/3/2014
Bromodichloromethane	ND	5.0		ng/L	1	4/3/2014
4-Methyl-2-pentanone	ND	5.0		ng/L	1	4/3/2014
2-Chloroethyl vinyl ether	ND	5.0		ng/L	1	4/3/2014
cis-1,3-Dichloropropene	ND	5.0		ng/L	1	4/3/2014
Toluene	ND	5.0		ng/L	1	4/3/2014
trans-1,3-Dichloropropene	ND	5.0		ng/L	1	4/3/2014
1,1,2-Trichloroethane	ND	5.0		ng/L	1	4/3/2014
Tetrachloroethene	ND	5.0		ng/L	1	4/3/2014
1,3-Dichloropropane	ND	5.0		ng/L	1	4/3/2014

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Vista GeoScience

Date: *15-Apr-14*

CLIENT: Intera
Lab Order: 1404001
Project: 14068: COALB.M004.OCS8 Task 10
Lab ID: 1404001-011A **Date Received:** 3/25/2014

Client Sample ID: SV-08C-15
Tag Number: 206805
Collection Date: 3/23/2014
Matrix: SOIL GAS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
VOCS IN SOIL GAS BY ATD/GC/MS		**SW8260B**				Analyst: **RB**
2-Hexanone	ND	5.0		ng/L	1	4/3/2014
Dibromochloromethane	ND	5.0		ng/L	1	4/3/2014
1,2-Dibromoethane	ND	5.0		ng/L	1	4/3/2014
Chlorobenzene	ND	5.0		ng/L	1	4/3/2014
1,1,1,2-Tetrachloroethane	ND	5.0		ng/L	1	4/3/2014
Ethylbenzene	ND	5.0		ng/L	1	4/3/2014
m,p-Xylene	ND	10		ng/L	1	4/3/2014
o-Xylene	ND	5.0		ng/L	1	4/3/2014
Styrene	ND	5.0		ng/L	1	4/3/2014
Bromoform	ND	5.0		ng/L	1	4/3/2014
Isopropylbenzene	34	5.0		ng/L	1	4/3/2014
1,1,2,2-Tetrachloroethane	ND	5.0		ng/L	1	4/3/2014
Bromobenzene	ND	5.0		ng/L	1	4/3/2014
1,2,3-Trichloropropane	ND	5.0		ng/L	1	4/3/2014
n-Propylbenzene	17	5.0		ng/L	1	4/3/2014
2-Chlorotoluene	ND	5.0		ng/L	1	4/3/2014
1,3,5-Trimethylbenzene	ND	5.0		ng/L	1	4/3/2014
4-Chlorotoluene	ND	5.0		ng/L	1	4/3/2014
tert-Butylbenzene	ND	5.0		ng/L	1	4/3/2014
1,2,4-Trimethylbenzene	ND	5.0		ng/L	1	4/3/2014
sec-Butylbenzene	48	5.0		ng/L	1	4/3/2014
1,3-Dichlorobenzene	ND	5.0		ng/L	1	4/3/2014
4-Isopropyltoluene	ND	5.0		ng/L	1	4/3/2014
1,4-Dichlorobenzene	ND	5.0		ng/L	1	4/3/2014
1,2-Dichlorobenzene	ND	5.0		ng/L	1	4/3/2014
n-Butylbenzene	19	5.0		ng/L	1	4/3/2014
1,2-Dibromo-3-chloropropane	ND	5.0		ng/L	1	4/3/2014
1,2,4-Trichlorobenzene	ND	5.0		ng/L	1	4/3/2014
Hexachlorobutadiene	ND	5.0		ng/L	1	4/3/2014
Naphthalene	ND	5.0		ng/L	1	4/3/2014
1,2,3-Trichlorobenzene	ND	5.0		ng/L	1	4/3/2014
GRO Est.	70000	500		ng/L	1	4/3/2014
DRO Est.	14000	500		ng/L	1	4/3/2014

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Vista GeoScience

Date: *15-Apr-14*

CLIENT:	Intera	**Client Sample ID:**	SV-07C-04
Lab Order:	1404001	**Tag Number:**	206810
Project:	14068: COALB.M004.OCS8 Task 10	**Collection Date:**	3/23/2014
Lab ID:	1404001-012A **Date Received:** 3/25/2014	**Matrix:**	SOIL GAS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
VOCS IN SOIL GAS BY ATD/GC/MS		**SW8260B**				Analyst: **RB**
Dichlorodifluoromethane	ND	5.0		ng/L	1	4/3/2014
Chloromethane	ND	5.0		ng/L	1	4/3/2014
Vinyl chloride	ND	5.0		ng/L	1	4/3/2014
Bromomethane	ND	5.0		ng/L	1	4/3/2014
Chloroethane	ND	5.0		ng/L	1	4/3/2014
Trichlorofluoromethane	ND	5.0		ng/L	1	4/3/2014
1,1-Dichloroethene	ND	5.0		ng/L	1	4/3/2014
Freon-113	ND	5.0		ng/L	1	4/3/2014
Acetone	15	5.0		ng/L	1	4/3/2014
Iodomethane	ND	5.0		ng/L	1	4/3/2014
Carbon disulfide	ND	5.0		ng/L	1	4/3/2014
Methylene chloride	ND	5.0		ng/L	1	4/3/2014
Acrylonitrile	ND	5.0		ng/L	1	4/3/2014
Methyl tert-butyl ether	ND	5.0		ng/L	1	4/3/2014
trans-1,2-Dichloroethene	ND	5.0		ng/L	1	4/3/2014
1,1-Dichloroethane	ND	5.0		ng/L	1	4/3/2014
Vinyl acetate	ND	5.0		ng/L	1	4/3/2014
2,2-Dichloropropane	ND	5.0		ng/L	1	4/3/2014
2-Butanone	ND	5.0		ng/L	1	4/3/2014
cis-1,2-Dichloroethene	ND	5.0		ng/L	1	4/3/2014
Bromochloromethane	ND	5.0		ng/L	1	4/3/2014
Tetrahydrofuran	ND	5.0		ng/L	1	4/3/2014
Chloroform	ND	5.0		ng/L	1	4/3/2014
1,1,1-Trichloroethane	ND	5.0		ng/L	1	4/3/2014
1,1-Dichloropropene	ND	5.0		ng/L	1	4/3/2014
Carbon tetrachloride	ND	5.0		ng/L	1	4/3/2014
Benzene	7.7	5.0		ng/L	1	4/3/2014
1,2-Dichloroethane	ND	5.0		ng/L	1	4/3/2014
Trichloroethene	ND	5.0		ng/L	1	4/3/2014
1,2-Dichloropropane	ND	5.0		ng/L	1	4/3/2014
Dibromomethane	ND	5.0		ng/L	1	4/3/2014
Bromodichloromethane	ND	5.0		ng/L	1	4/3/2014
4-Methyl-2-pentanone	5.0	5.0		ng/L	1	4/3/2014
2-Chloroethyl vinyl ether	ND	5.0		ng/L	1	4/3/2014
cis-1,3-Dichloropropene	ND	5.0		ng/L	1	4/3/2014
Toluene	16	5.0		ng/L	1	4/3/2014
trans-1,3-Dichloropropene	ND	5.0		ng/L	1	4/3/2014
1,1,2-Trichloroethane	ND	5.0		ng/L	1	4/3/2014
Tetrachloroethene	ND	5.0		ng/L	1	4/3/2014
1,3-Dichloropropane	ND	5.0		ng/L	1	4/3/2014

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Vista GeoScience

Date: *15-Apr-14*

CLIENT:	Intera	**Client Sample ID:**	SV-07C-04
Lab Order:	1404001	**Tag Number:**	206810
Project:	14068: COALB.M004.OCS8 Task 10	**Collection Date:**	3/23/2014
Lab ID:	1404001-012A **Date Received:** 3/25/2014	**Matrix:**	SOIL GAS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
VOCS IN SOIL GAS BY ATD/GC/MS		**SW8260B**				Analyst: **RB**
2-Hexanone	ND	5.0		ng/L	1	4/3/2014
Dibromochloromethane	ND	5.0		ng/L	1	4/3/2014
1,2-Dibromoethane	ND	5.0		ng/L	1	4/3/2014
Chlorobenzene	ND	5.0		ng/L	1	4/3/2014
1,1,1,2-Tetrachloroethane	ND	5.0		ng/L	1	4/3/2014
Ethylbenzene	2.4	5.0	J	ng/L	1	4/3/2014
m,p-Xylene	4.7	10	J	ng/L	1	4/3/2014
o-Xylene	2.2	5.0	J	ng/L	1	4/3/2014
Styrene	ND	5.0		ng/L	1	4/3/2014
Bromoform	ND	5.0		ng/L	1	4/3/2014
Isopropylbenzene	ND	5.0		ng/L	1	4/3/2014
1,1,2,2-Tetrachloroethane	ND	5.0		ng/L	1	4/3/2014
Bromobenzene	ND	5.0		ng/L	1	4/3/2014
1,2,3-Trichloropropane	ND	5.0		ng/L	1	4/3/2014
n-Propylbenzene	ND	5.0		ng/L	1	4/3/2014
2-Chlorotoluene	ND	5.0		ng/L	1	4/3/2014
1,3,5-Trimethylbenzene	ND	5.0		ng/L	1	4/3/2014
4-Chlorotoluene	ND	5.0		ng/L	1	4/3/2014
tert-Butylbenzene	ND	5.0		ng/L	1	4/3/2014
1,2,4-Trimethylbenzene	ND	5.0		ng/L	1	4/3/2014
sec-Butylbenzene	ND	5.0		ng/L	1	4/3/2014
1,3-Dichlorobenzene	58	5.0		ng/L	1	4/3/2014
4-Isopropyltoluene	ND	5.0		ng/L	1	4/3/2014
1,4-Dichlorobenzene	ND	5.0		ng/L	1	4/3/2014
1,2-Dichlorobenzene	ND	5.0		ng/L	1	4/3/2014
n-Butylbenzene	ND	5.0		ng/L	1	4/3/2014
1,2-Dibromo-3-chloropropane	ND	5.0		ng/L	1	4/3/2014
1,2,4-Trichlorobenzene	ND	5.0		ng/L	1	4/3/2014
Hexachlorobutadiene	ND	5.0		ng/L	1	4/3/2014
Naphthalene	ND	5.0		ng/L	1	4/3/2014
1,2,3-Trichlorobenzene	ND	5.0		ng/L	1	4/3/2014
GRO Est.	870	500		ng/L	1	4/3/2014
DRO Est.	ND	500		ng/L	1	4/3/2014

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Vista GeoScience

Date: *15-Apr-14*

CLIENT: Intera
Client Sample ID: Trip Blank
Lab Order: 1404001
Tag Number: 206804
Project: 14068: COALB.M004.OCS8 Task 10
Collection Date:
Lab ID: 1404001-013A **Date Received:** 3/25/2014 **Matrix:** SOIL GAS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
VOCS IN SOIL GAS BY ATD/GC/MS		**SW8260B**				Analyst: **RB**
Dichlorodifluoromethane	ND	5.0		ng/L	1	4/3/2014
Chloromethane	ND	5.0		ng/L	1	4/3/2014
Vinyl chloride	ND	5.0		ng/L	1	4/3/2014
Bromomethane	ND	5.0		ng/L	1	4/3/2014
Chloroethane	ND	5.0		ng/L	1	4/3/2014
Trichlorofluoromethane	ND	5.0		ng/L	1	4/3/2014
1,1-Dichloroethene	ND	5.0		ng/L	1	4/3/2014
Freon-113	ND	5.0		ng/L	1	4/3/2014
Acetone	ND	5.0		ng/L	1	4/3/2014
Iodomethane	ND	5.0		ng/L	1	4/3/2014
Carbon disulfide	ND	5.0		ng/L	1	4/3/2014
Methylene chloride	ND	5.0		ng/L	1	4/3/2014
Acrylonitrile	ND	5.0		ng/L	1	4/3/2014
Methyl tert-butyl ether	ND	5.0		ng/L	1	4/3/2014
trans-1,2-Dichloroethene	ND	5.0		ng/L	1	4/3/2014
1,1-Dichloroethane	ND	5.0		ng/L	1	4/3/2014
Vinyl acetate	ND	5.0		ng/L	1	4/3/2014
2,2-Dichloropropane	ND	5.0		ng/L	1	4/3/2014
2-Butanone	ND	5.0		ng/L	1	4/3/2014
cis-1,2-Dichloroethene	ND	5.0		ng/L	1	4/3/2014
Bromochloromethane	ND	5.0		ng/L	1	4/3/2014
Tetrahydrofuran	ND	5.0		ng/L	1	4/3/2014
Chloroform	ND	5.0		ng/L	1	4/3/2014
1,1,1-Trichloroethane	ND	5.0		ng/L	1	4/3/2014
1,1-Dichloropropene	ND	5.0		ng/L	1	4/3/2014
Carbon tetrachloride	ND	5.0		ng/L	1	4/3/2014
Benzene	ND	5.0		ng/L	1	4/3/2014
1,2-Dichloroethane	ND	5.0		ng/L	1	4/3/2014
Trichloroethene	ND	5.0		ng/L	1	4/3/2014
1,2-Dichloropropane	ND	5.0		ng/L	1	4/3/2014
Dibromomethane	ND	5.0		ng/L	1	4/3/2014
Bromodichloromethane	ND	5.0		ng/L	1	4/3/2014
4-Methyl-2-pentanone	ND	5.0		ng/L	1	4/3/2014
2-Chloroethyl vinyl ether	ND	5.0		ng/L	1	4/3/2014
cis-1,3-Dichloropropene	ND	5.0		ng/L	1	4/3/2014
Toluene	ND	5.0		ng/L	1	4/3/2014
trans-1,3-Dichloropropene	ND	5.0		ng/L	1	4/3/2014
1,1,2-Trichloroethane	ND	5.0		ng/L	1	4/3/2014
Tetrachloroethene	ND	5.0		ng/L	1	4/3/2014
1,3-Dichloropropane	ND	5.0		ng/L	1	4/3/2014

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Vista GeoScience

Date: *15-Apr-14*

CLIENT: Intera
Client Sample ID: Trip Blank
Lab Order: 1404001
Tag Number: 206804
Project: 14068: COALB.M004.OCS8 Task 10
Collection Date:
Lab ID: 1404001-013A **Date Received:** 3/25/2014
Matrix: SOIL GAS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
VOCS IN SOIL GAS BY ATD/GC/MS		**SW8260B**				Analyst: **RB**
2-Hexanone	ND	5.0		ng/L	1	4/3/2014
Dibromochloromethane	ND	5.0		ng/L	1	4/3/2014
1,2-Dibromoethane	ND	5.0		ng/L	1	4/3/2014
Chlorobenzene	ND	5.0		ng/L	1	4/3/2014
1,1,1,2-Tetrachloroethane	ND	5.0		ng/L	1	4/3/2014
Ethylbenzene	ND	5.0		ng/L	1	4/3/2014
m,p-Xylene	ND	10		ng/L	1	4/3/2014
o-Xylene	ND	5.0		ng/L	1	4/3/2014
Styrene	ND	5.0		ng/L	1	4/3/2014
Bromoform	ND	5.0		ng/L	1	4/3/2014
Isopropylbenzene	ND	5.0		ng/L	1	4/3/2014
1,1,2,2-Tetrachloroethane	ND	5.0		ng/L	1	4/3/2014
Bromobenzene	ND	5.0		ng/L	1	4/3/2014
1,2,3-Trichloropropane	ND	5.0		ng/L	1	4/3/2014
n-Propylbenzene	ND	5.0		ng/L	1	4/3/2014
2-Chlorotoluene	ND	5.0		ng/L	1	4/3/2014
1,3,5-Trimethylbenzene	ND	5.0		ng/L	1	4/3/2014
4-Chlorotoluene	ND	5.0		ng/L	1	4/3/2014
tert-Butylbenzene	ND	5.0		ng/L	1	4/3/2014
1,2,4-Trimethylbenzene	ND	5.0		ng/L	1	4/3/2014
sec-Butylbenzene	ND	5.0		ng/L	1	4/3/2014
1,3-Dichlorobenzene	ND	5.0		ng/L	1	4/3/2014
4-Isopropyltoluene	ND	5.0		ng/L	1	4/3/2014
1,4-Dichlorobenzene	ND	5.0		ng/L	1	4/3/2014
1,2-Dichlorobenzene	ND	5.0		ng/L	1	4/3/2014
n-Butylbenzene	ND	5.0		ng/L	1	4/3/2014
1,2-Dibromo-3-chloropropane	ND	5.0		ng/L	1	4/3/2014
1,2,4-Trichlorobenzene	ND	5.0		ng/L	1	4/3/2014
Hexachlorobutadiene	ND	5.0		ng/L	1	4/3/2014
Naphthalene	ND	5.0		ng/L	1	4/3/2014
1,2,3-Trichlorobenzene	ND	5.0		ng/L	1	4/3/2014
GRO Est.	ND	500		ng/L	1	4/3/2014
DRO Est.	ND	500		ng/L	1	4/3/2014

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Vista GeoScience

15-Apr-14

Lab Order: 1404001

Client: Intera

Project: 14068: COALB.M004.OCS8 Task

DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
1404001-001A	SV-05C-04	3/23/2014	Soil Gas	Volatile Organics in Soil Gas			4/3/2014
1404001-002A	SV-03C-04			Volatile Organics in Soil Gas			4/3/2014
1404001-003A	SV-01C-04			Volatile Organics in Soil Gas			4/3/2014
1404001-004A	SV-02C-04			Volatile Organics in Soil Gas			4/3/2014
1404001-005A	SV-02C-15			Volatile Organics in Soil Gas			4/3/2014
1404001-006A	SV-04C-04			Volatile Organics in Soil Gas			4/3/2014
1404001-007A	SV-04C-15			Volatile Organics in Soil Gas			4/3/2014
1404001-008A	SV-06C-15			Volatile Organics in Soil Gas			4/3/2014
1404001-009A	SV-06C-04			Volatile Organics in Soil Gas			4/3/2014
1404001-010A	SV-08C-04			Volatile Organics in Soil Gas			4/3/2014
1404001-011A	SV-08C-15			Volatile Organics in Soil Gas			4/3/2014
1404001-012A	SV-07C-04			Volatile Organics in Soil Gas			4/3/2014
1404001-013A	Trip Blank			Volatile Organics in Soil Gas			4/3/2014

Vista GeoScience

Date: *15-Apr-14*

ANALYTICAL QC SUMMARY REPORT

CLIENT: Intera
Work Order: 1404001
Project: 14068: COALB.M004.OCS8 Task 10

TestCode: 8260_SG

Sample	**MBLK**	SampTyp	**MBLK**	TestCode:	**8260_SG**	Units:	**ng/L**	Prep Date:		RunNo:	**1660**		
Client ID:	**ZZZZZ**	Batch ID:	**R1660**	TestNo:	**SW8260B**			Analysis	**4/3/2014**	SeqNo:	**17589**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorodifluoromethane	ND	5.0									
Chloromethane	ND	5.0									
Vinyl chloride	ND	5.0									
Bromomethane	ND	5.0									
Chloroethane	ND	5.0									
Trichlorofluoromethane	ND	5.0									
1,1-Dichloroethene	ND	5.0									
Freon-113	ND	5.0									
Acetone	ND	5.0									
Iodomethane	ND	5.0									
Carbon disulfide	ND	5.0									
Methylene chloride	ND	5.0									
Acrylonitrile	ND	5.0									
Methyl tert-butyl ether	ND	5.0									
trans-1,2-Dichloroethene	ND	5.0									
1,1-Dichloroethane	ND	5.0									
Vinyl acetate	ND	5.0									
2,2-Dichloropropane	ND	5.0									
2-Butanone	ND	5.0									
cis-1,2-Dichloroethene	ND	5.0									
Bromochloromethane	ND	5.0									
Tetrahydrofuran	ND	5.0									
Chloroform	ND	5.0									
1,1,1-Trichloroethane	ND	5.0									
1,1-Dichloropropene	ND	5.0									
Carbon tetrachloride	ND	5.0									
Benzene	ND	5.0									
1,2-Dichloroethane	ND	5.0									
Trichloroethene	ND	5.0									

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: Intera
Work Order: 1404001
Project: 14068: COALB.M004.OCS8 Task 10

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_SG

Sample	**MBLK**	SampTyp	**MBLK**	TestCode:	**8260_SG**	Units:	**ng/L**	Prep Date:	RunNo: **1660**
Client ID:	**ZZZZZ**	Batch ID:	**R1660**	TestNo:	**SW8260B**			Analysis **4/3/2014**	SeqNo: **17589**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2-Dichloropropane	ND	5.0									
Dibromomethane	ND	5.0									
Bromodichloromethane	ND	5.0									
4-Methyl-2-pentanone	ND	5.0									
2-Chloroethyl vinyl ether	ND	5.0									
cis-1,3-Dichloropropene	ND	5.0									
Toluene	ND	5.0									
trans-1,3-Dichloropropene	ND	5.0									
1,1,2-Trichloroethane	ND	5.0									
Tetrachloroethene	ND	5.0									
1,3-Dichloropropane	ND	5.0									
2-Hexanone	ND	5.0									
Dibromochloromethane	ND	5.0									
1,2-Dibromoethane	ND	5.0									
Chlorobenzene	ND	5.0									
1,1,1,2-Tetrachloroethane	ND	5.0									
Ethylbenzene	ND	5.0									
m,p-Xylene	ND	10									
o-Xylene	ND	5.0									
Styrene	ND	5.0									
Bromoform	ND	5.0									
Isopropylbenzene	ND	5.0									
1,1,2,2-Tetrachloroethane	ND	5.0									
Bromobenzene	ND	5.0									
1,2,3-Trichloropropane	ND	5.0									
n-Propylbenzene	ND	5.0									
2-Chlorotoluene	ND	5.0									
1,3,5-Trimethylbenzene	ND	5.0									
4-Chlorotoluene	ND	5.0									
tert-Butylbenzene	ND	5.0									
1,2,4-Trimethylbenzene	ND	5.0									

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: Intera
Work Order: 1404001
Project: 14068: COALB.M004.OCS8 Task 10

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_SG

Sample	**MBLK**	SampTyp	**MBLK**	TestCode:	**8260_SG**	Units:	**ng/L**	Prep Date:				RunNo:	**1660**
Client ID:	**ZZZZZ**	Batch ID:	**R1660**	TestNo:	**SW8260B**			Analysis	**4/3/2014**			SeqNo:	**17589**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
sec-Butylbenzene	ND	5.0									
1,3-Dichlorobenzene	ND	5.0									
4-Isopropyltoluene	ND	5.0									
1,4-Dichlorobenzene	ND	5.0									
1,2-Dichlorobenzene	ND	5.0									
n-Butylbenzene	ND	5.0									
1,2-Dibromo-3-chloropropane	ND	5.0									
1,2,4-Trichlorobenzene	ND	5.0									
Hexachlorobutadiene	ND	5.0									
Naphthalene	ND	5.0									
1,2,3-Trichlorobenzene	ND	5.0									
GRO Est.	ND	500									
DRO Est.	ND	500									

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

Vista GeoScience

Laboratory Chain of Custody Record

Client: INTERA
Address: 6000 Uptown BLVD NE, Ste 220
Albuquerque, NM 87110
Phone: 505 246 2600 Fax: 505 246 2600
E-Mail: JTRACY@INTERA.COM ☐ Fax ☐ E-Mail Prelim Results

Date: 3/23/14 PAGE 1 OF 1
Client Project Manager: Joe Tracy Client Project #:
Project/Site Name: 1st/central City Lot
Project/Siite Address: 1st/central - SE corner
Lab Project #: 14068. Lab Control #:

SAMPLE INFORMATION

Sampler Name: CLARK SHORT Sampler Signature: [signature]

Please fill out completely. Circle appropriate methods on right.
List special analytes (metals, anions), high concentration samples & special methods in comment section.

*PLEASE SEE BACK OF FORM FOR ABBREVIATIONS, PRESERVATION AND OTHER INFORMATION

☑	CLIENT SAMPLE IDENTIFICATION	CLIENT SITE ID	Depth	Date	Time	Matrix	Container #	Container Size & Type	Preserv Type*	TAT	VOC by 8260	BTEX/MTBE 8260	BTEX&TVH 8021/8015	TVH by 8015	TEPH by 8015	PAH or SVOC - 8270	METALS (list below)	ANIONS (list below)	pH - CONDUCTIVITY	TDS - TSS	TOTAL ALKALINITY	CARBONATE/BICARB	C1-C6 HC	FIXED GASES				
✓	249481	SV-05C-04	4	3/23	0853	Tedx	1	1L	None		X																	
✓	249482	SV-03C-04	4	3/23	0915	↓	↓	↓	↓		↓																	
✓	249483	SV-01C-04	4	3/23	0935																							
✓	249484	SV02C-04	4	3/23	0954																							
✓	249485	SV-02C-15	15	3/23	1011																							
✓	249486	SV-04C04	4	3/23	1033																							
✓	249487	SV-04C-15	15	3/23	1049																							
✓	249488	SV-06C-15	15	3/23	1113																							
✓	249489	SV-06C-04	4	3/23	1133																							
✓	249490	SV-08C-04	4	3/23	1205																							
✓	206805	SV-08C-15	15	3/23	1225																							
✓	206810	SV-07C-04	4	3/23	1247	↓	↓	↓	↓		↓																	

Comments:

1. Relinquished by (print): CLARK SHORT Signature: [signature]	1. Received by (print): Chris Mathews Signature: [signature]	Date 14/06 Time 3/23/14
2. Relinquished by (print): Signature:	2. Received by (print): ROGER BACN Signature: [signature]	Date 3-25-14 3/25/14 Time 1400/1600

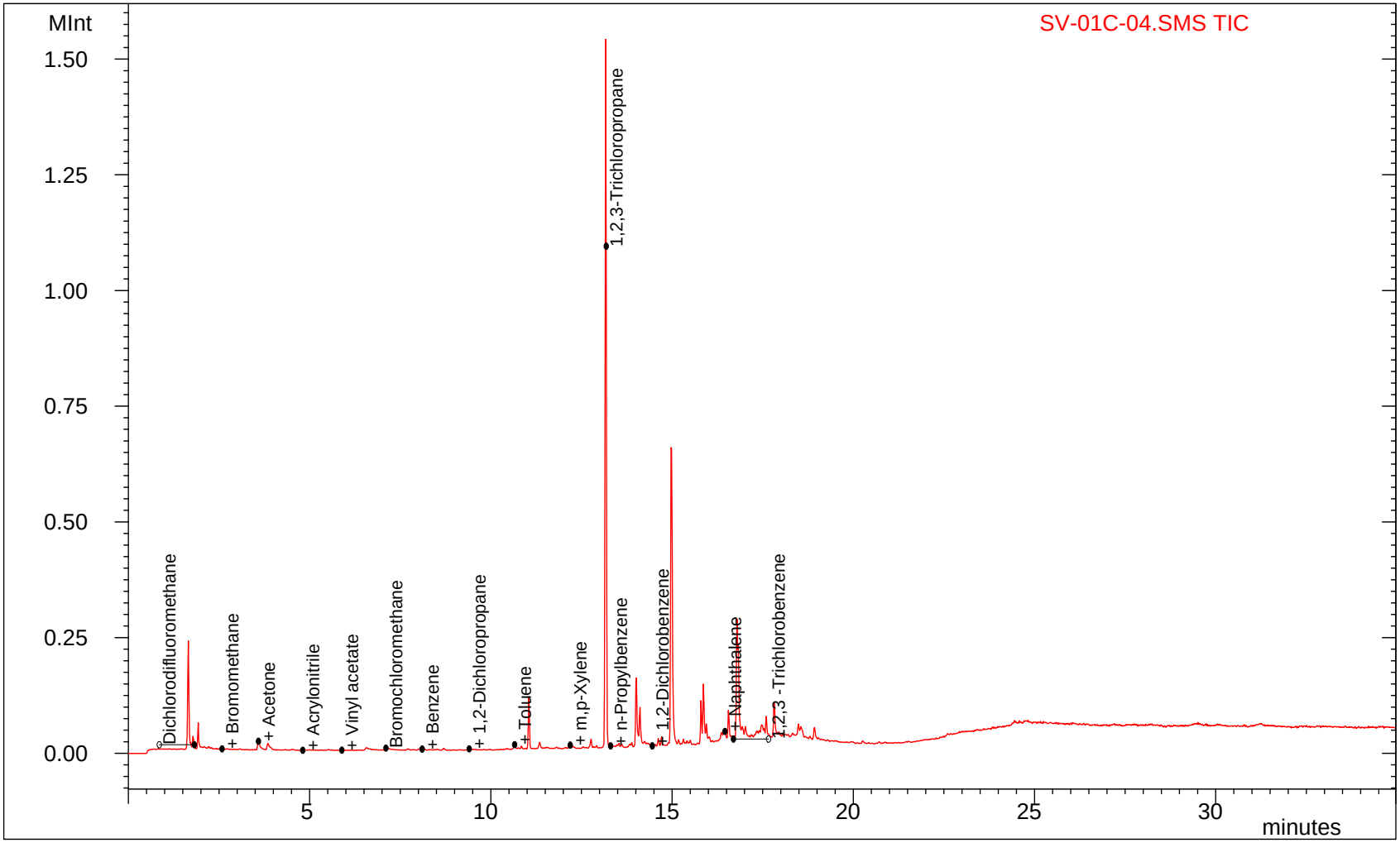
Pink: Client's Field Copy
Yellow: Return with Report
White: File Copy

Appendix D: GC/MS Chromatograms

CHROMATOGRAM REPORT

EPA Method 8260A

Lab File ID:	c:\varianws\data\14d03\SV-01C-04.SMS	Calibration File:	C:\VarianWS\Data\11I06\EX-200ng 8260 std.SMS
Acquisition Date:	4/3/2014 21:14	Cal. Sample Date Range:	3/27/2014 10:37 3/27/2014 11:40
EPA Sample No:	SV-01C-04	Operator:	RB
Lab Sample ID:	SV-01C-04	Dilution:	1

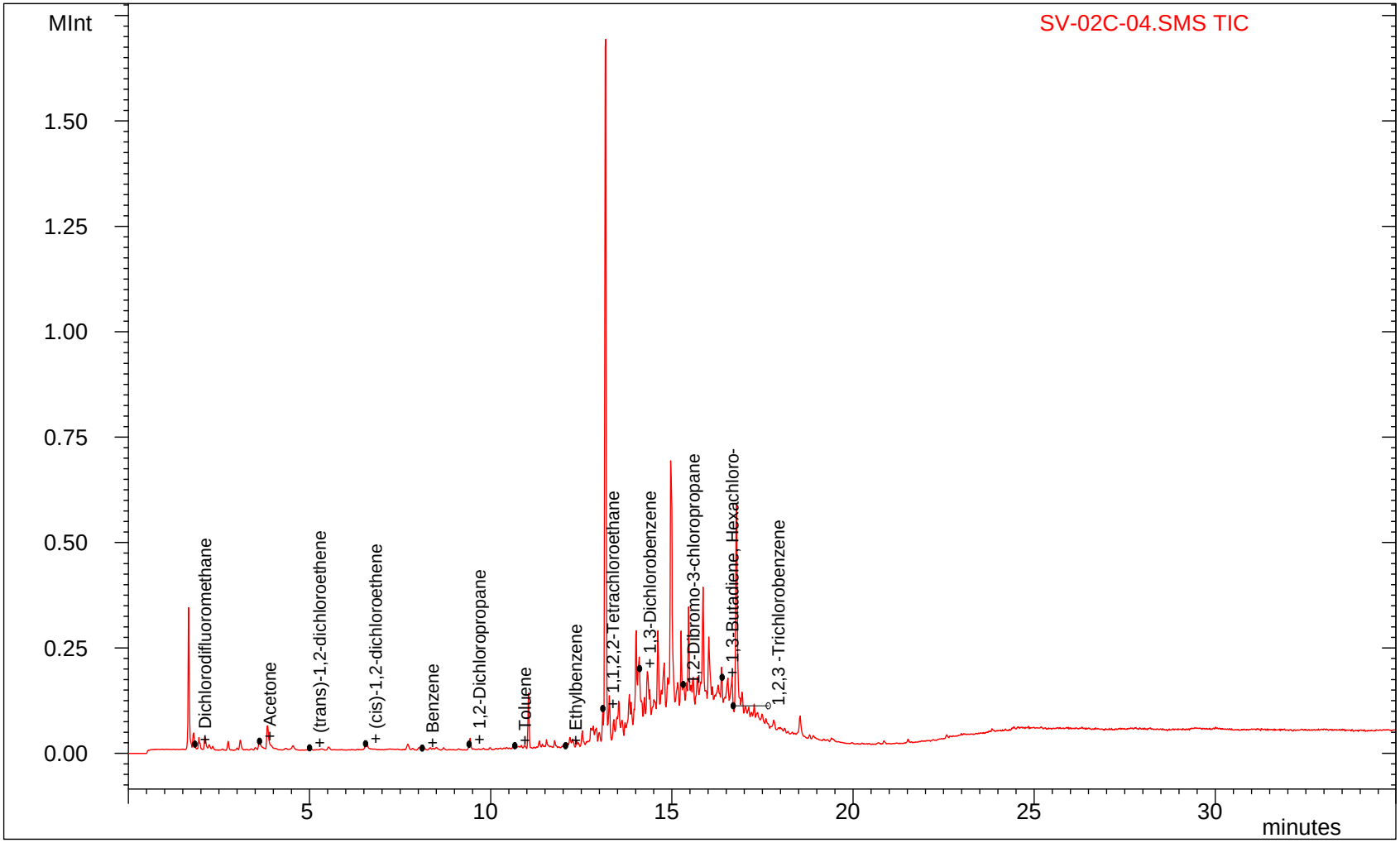


Approved_____ Date_____

CHROMATOGRAM REPORT

EPA Method 8260A

Lab File ID:	c:\varianws\data\14d03\SV-02C-04.SMS	Calibration File:	C:\VarianWS\Data\11I06\EX-200ng 8260 std.SMS
Acquisition Date:	4/3/2014 21:59	Cal. Sample Date Range:	3/27/2014 10:37 3/27/2014 11:40
EPA Sample No:	SV-02C-04	Operator:	RB
Lab Sample ID:	SV-02C-04	Dilution:	1

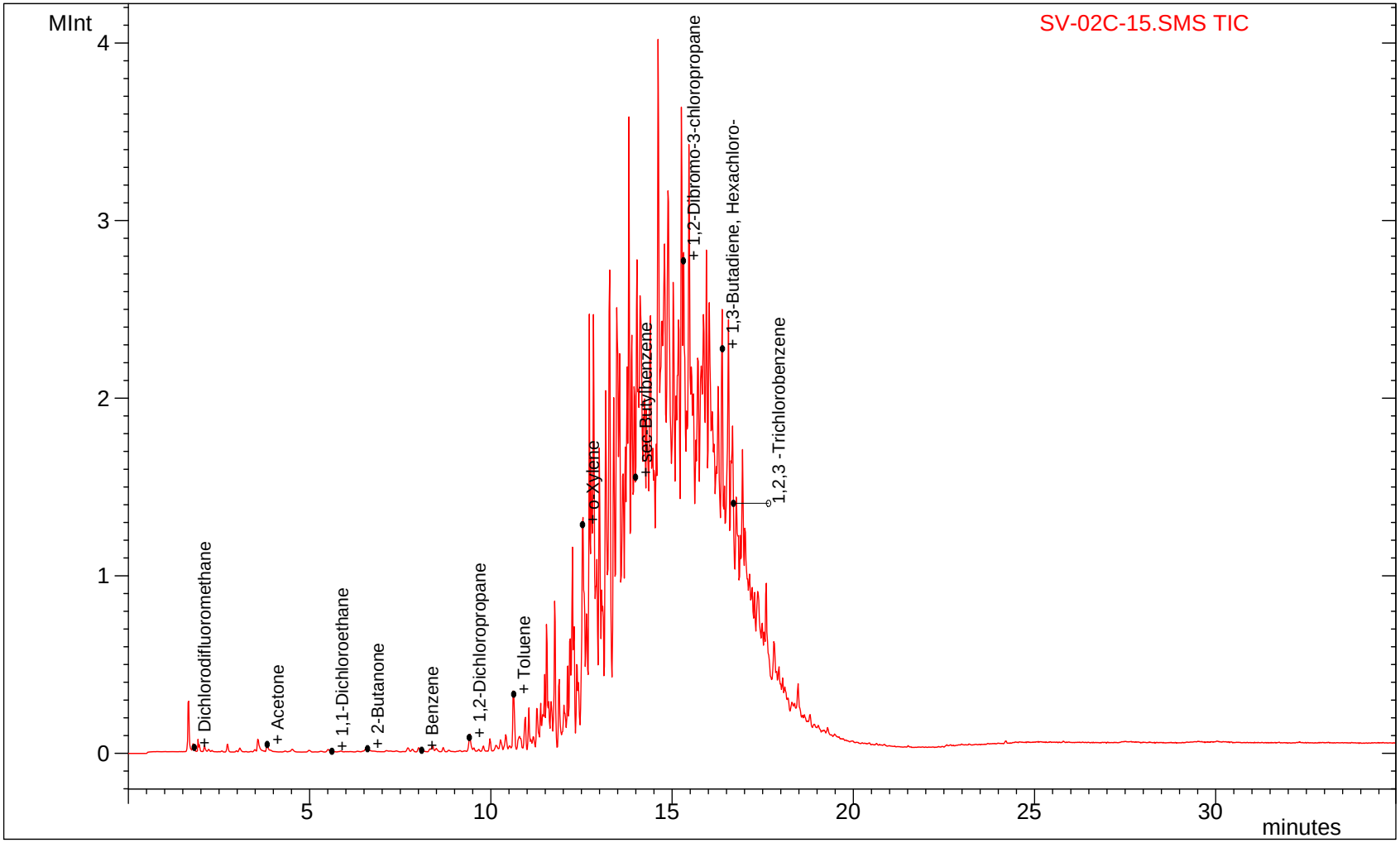


Approved_____ Date_____

CHROMATOGRAM REPORT

EPA Method 8260A

Lab File ID:	c:\varianws\data\14d03\SV-02C-15.SMS	Calibration File:	C:\VarianWS\Data\11I06\EX-200ng 8260 std.SMS
Acquisition Date:	4/3/2014 22:44	Cal. Sample Date Range:	3/27/2014 10:37 3/27/2014 11:40
EPA Sample No:	SV-02C-15	Operator:	RB
Lab Sample ID:	SV-02C-15	Dilution:	1

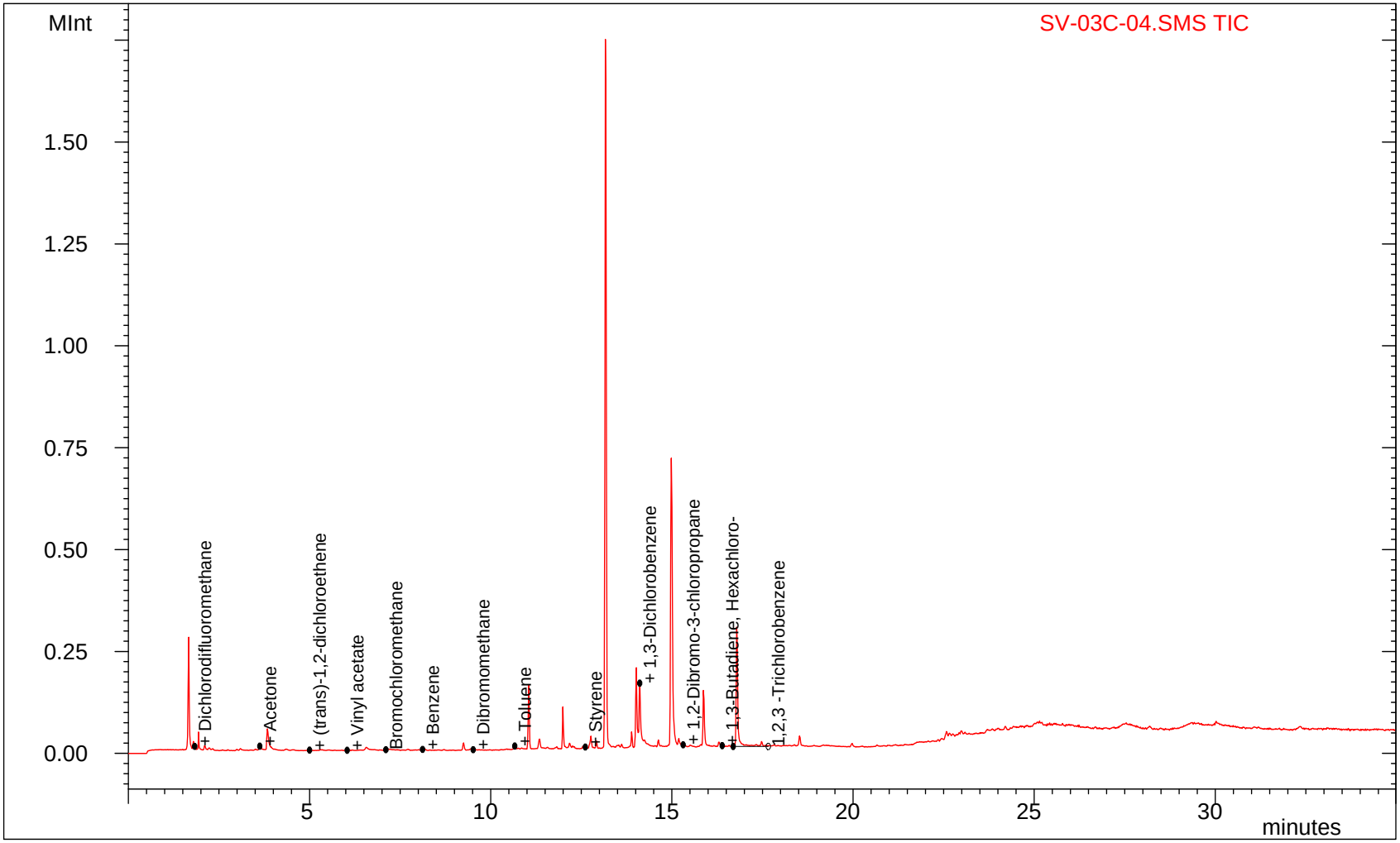


Approved_____ Date_____

CHROMATOGRAM REPORT

EPA Method 8260A

Lab File ID:	c:\varianws\data\14d03\SV-03C-04.SMS	Calibration File:	C:\VarianWS\Data\11I06\EX-200ng 8260 std.SMS
Acquisition Date:	4/3/2014 20:29	Cal. Sample Date Range:	3/27/2014 10:37 3/27/2014 11:40
EPA Sample No:	SV-03C-04	Operator:	RB
Lab Sample ID:	SV-03C-04	Dilution:	1

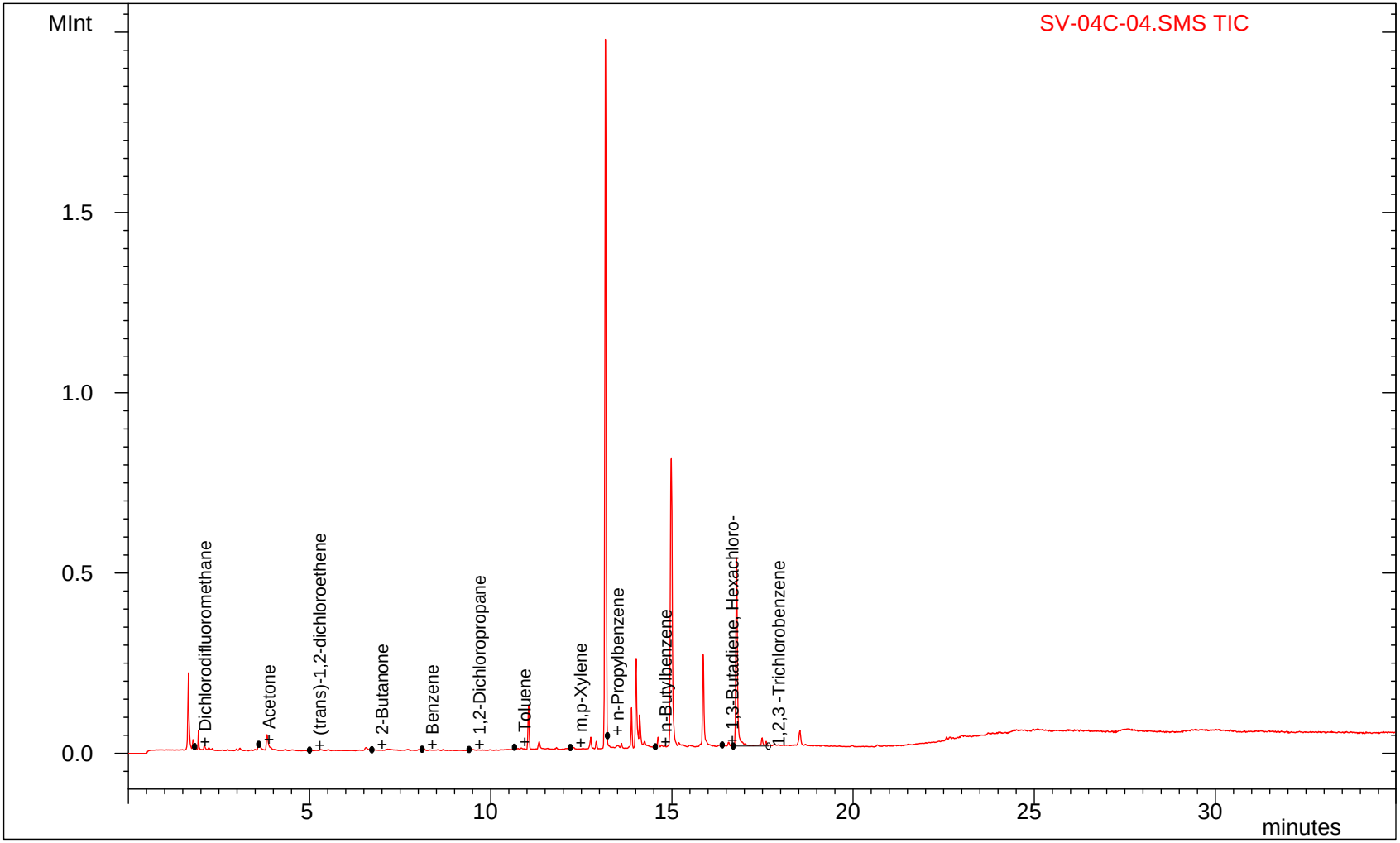


Approved_____ Date_____

CHROMATOGRAM REPORT

EPA Method 8260A

Lab File ID:	c:\varianws\data\14d03\SV-04C-04.SMS	Calibration File:	C:\VarianWS\Data\11I06\EX-200ng 8260 std.SMS
Acquisition Date:	4/3/2014 23:29	Cal. Sample Date Range:	3/27/2014 10:37 3/27/2014 11:40
EPA Sample No:	SV-04C-04	Operator:	RB
Lab Sample ID:	SV-04C-04	Dilution:	1

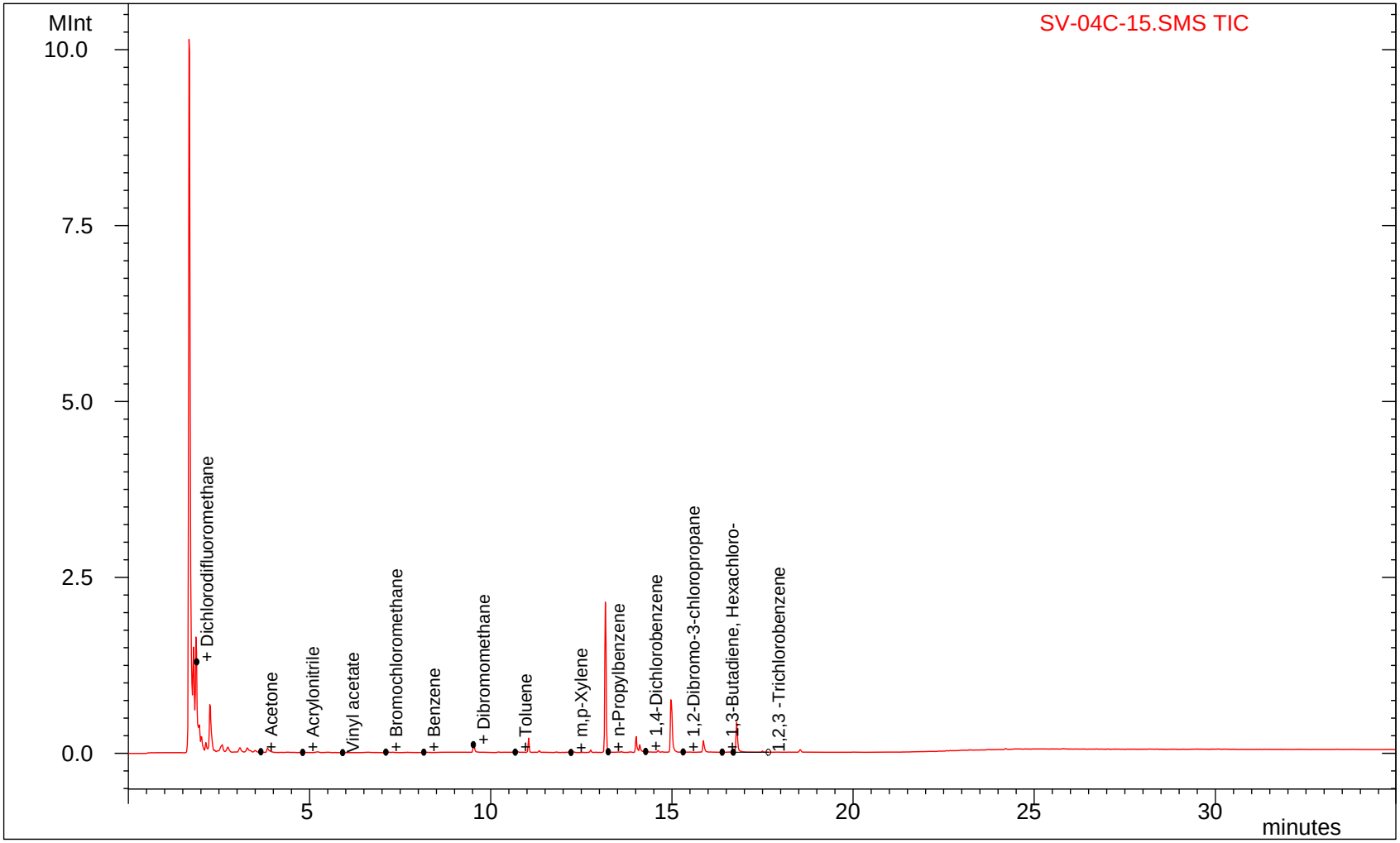


Approved_____ Date_____

CHROMATOGRAM REPORT

EPA Method 8260A

Lab File ID:	c:\varianws\data\14d03\SV-04C-15.SMS	Calibration File:	C:\VarianWS\Data\11I06\EX-200ng 8260 std.SMS
Acquisition Date:	4/4/2014 0:14	Cal. Sample Date Range:	3/27/2014 10:37 3/27/2014 11:40
EPA Sample No:	SV-04C-15	Operator:	RB
Lab Sample ID:	SV-04C-15	Dilution:	1

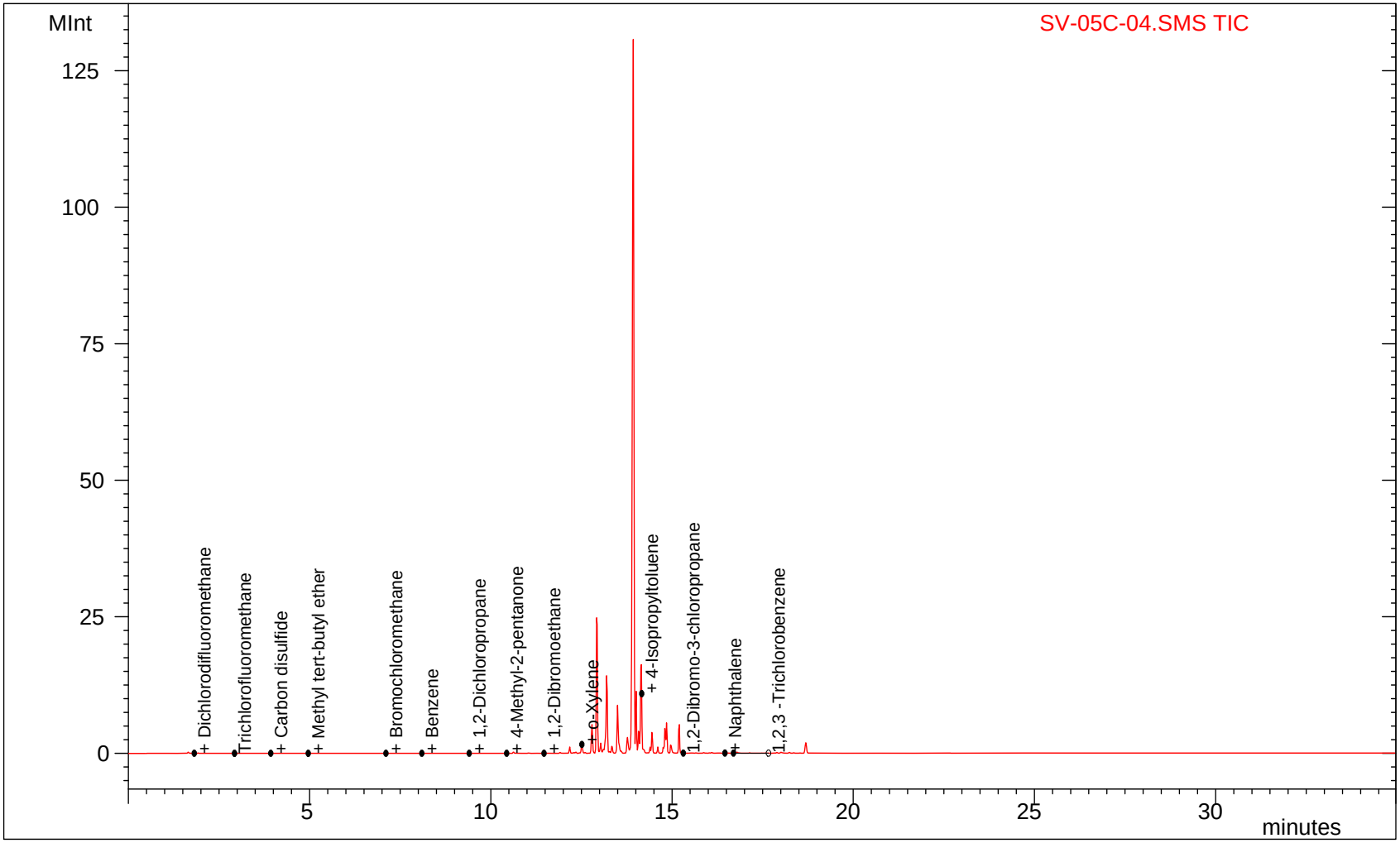


Approved_____ Date_____

CHROMATOGRAM REPORT

EPA Method 8260A

Lab File ID:	c:\varianws\data\14d03\SV-05C-04.SMS	Calibration File:	C:\VarianWS\Data\11I06\EX-200ng 8260 std.SMS
Acquisition Date:	4/3/2014 19:44	Cal. Sample Date Range:	3/27/2014 10:37 3/27/2014 11:40
EPA Sample No:	SV-05C-04	Operator:	RB
Lab Sample ID:	SV-05C-04	Dilution:	1

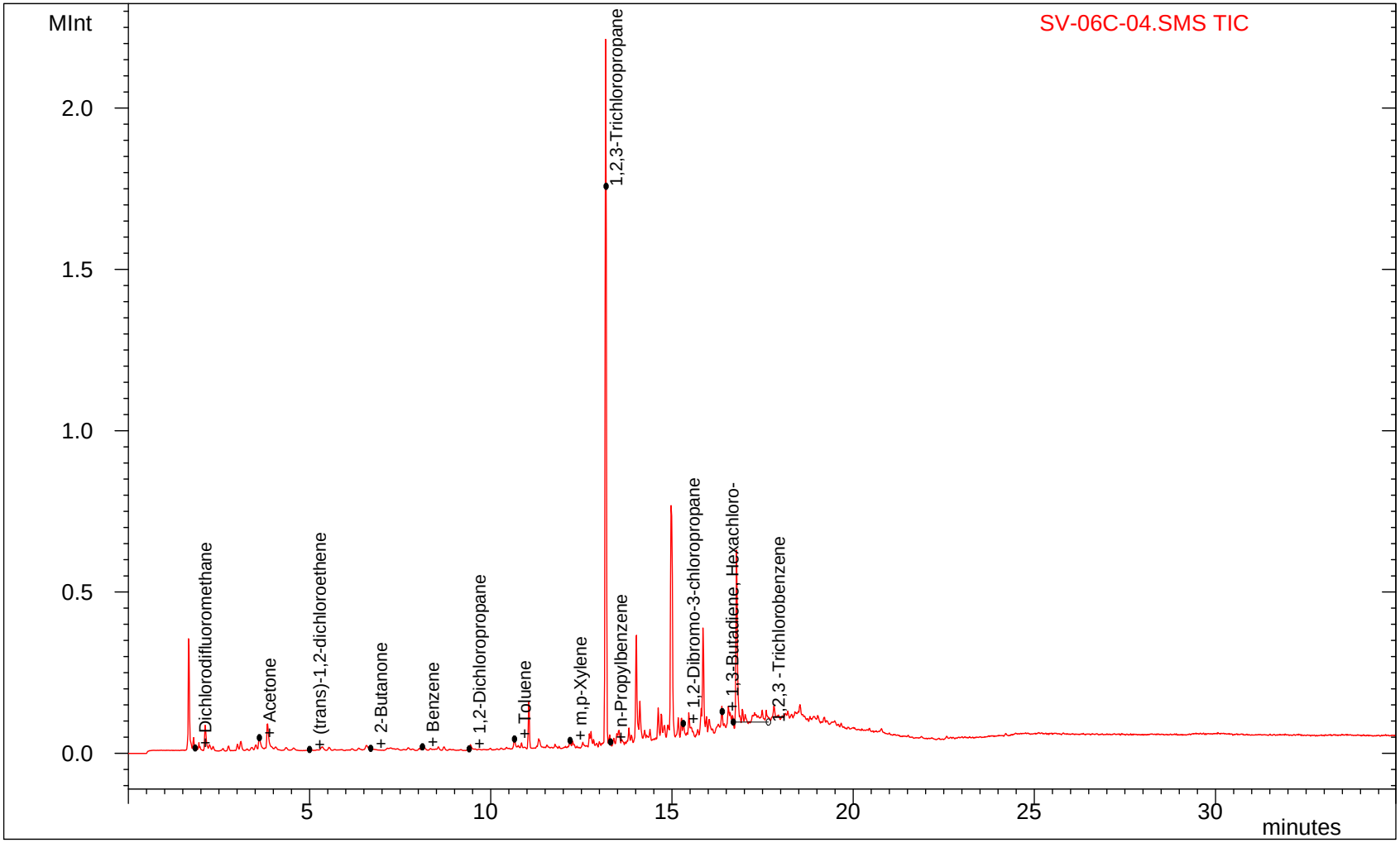


Approved_____ Date_____

CHROMATOGRAM REPORT

EPA Method 8260A

Lab File ID:	c:\varianws\data\14d03\SV-06C-04.SMS	Calibration File:	C:\VarianWS\Data\11I06\EX-200ng 8260 std.SMS
Acquisition Date:	4/4/2014 1:44	Cal. Sample Date Range:	3/27/2014 10:37 3/27/2014 11:40
EPA Sample No:	SV-06C-04	Operator:	RB
Lab Sample ID:	SV-06C-04	Dilution:	1

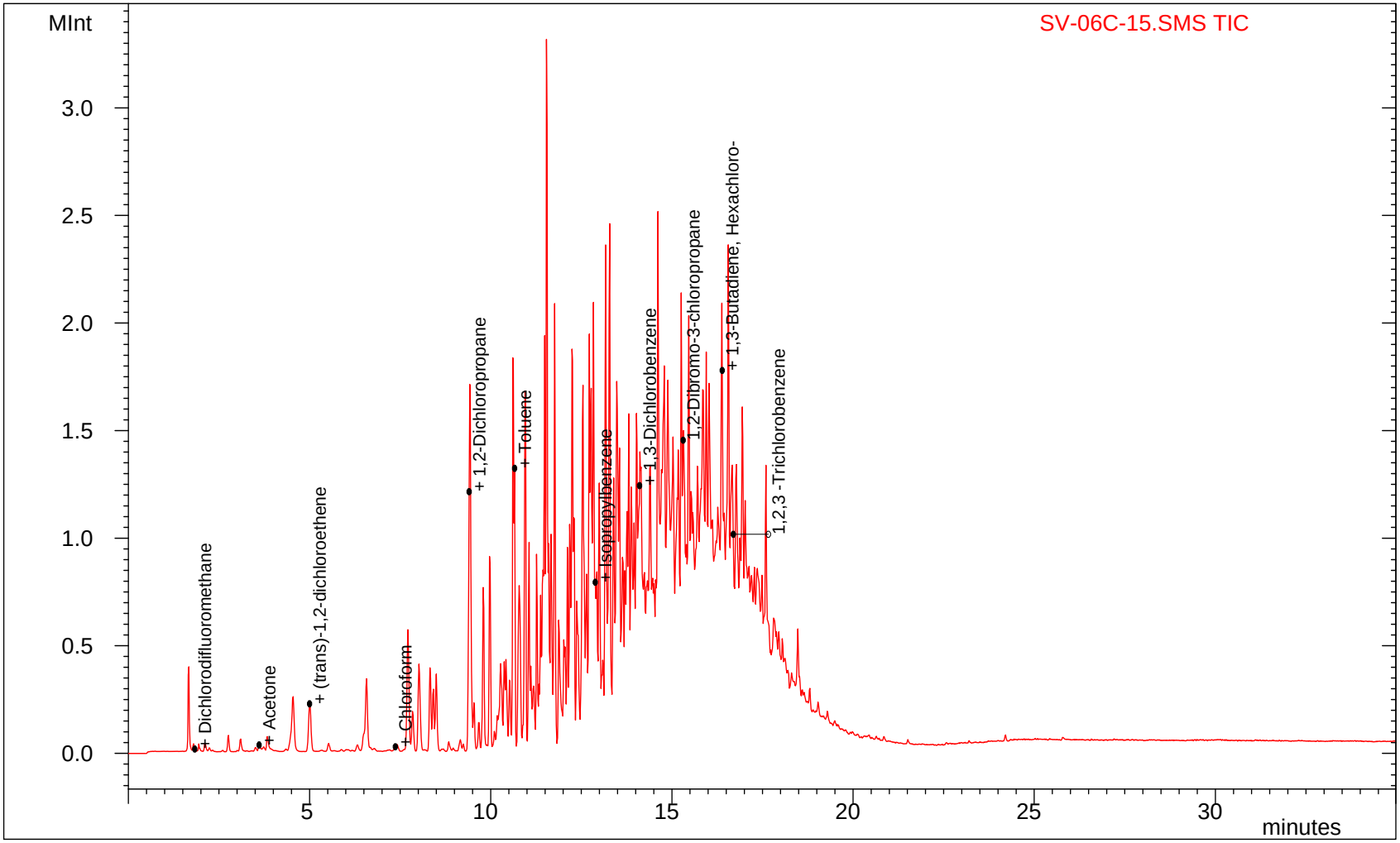


Approved_____ Date_____

CHROMATOGRAM REPORT

EPA Method 8260A

Lab File ID:	c:\varianws\data\14d03\SV-06C-15.SMS	Calibration File:	C:\VarianWS\Data\11I06\EX-200ng 8260 std.SMS
Acquisition Date:	4/4/2014 0:59	Cal. Sample Date Range:	3/27/2014 10:37 3/27/2014 11:40
EPA Sample No:	SV-06C-15	Operator:	RB
Lab Sample ID:	SV-06C-15	Dilution:	1

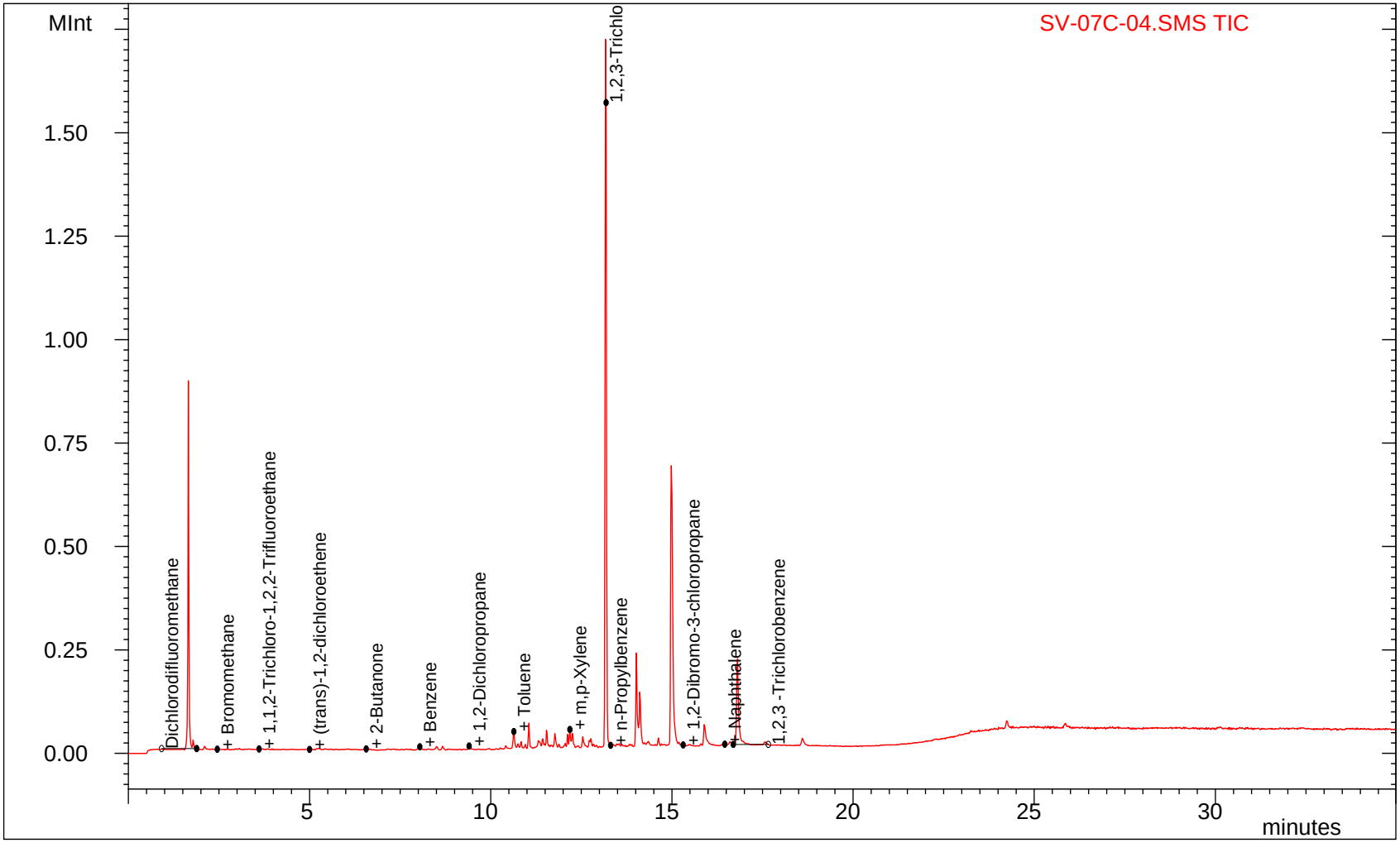


Approved_____ Date_____

CHROMATOGRAM REPORT

EPA Method 8260A

Lab File ID:	c:\varianws\data\14d03\SV-07C-04.SMS	Calibration File:	C:\VarianWS\Data\11I06\EX-200ng 8260 std.SMS
Acquisition Date:	4/4/2014 3:59	Cal. Sample Date Range:	3/27/2014 10:37 3/27/2014 11:40
EPA Sample No:	SV-07C-04	Operator:	RB
Lab Sample ID:	SV-07C-04	Dilution:	1

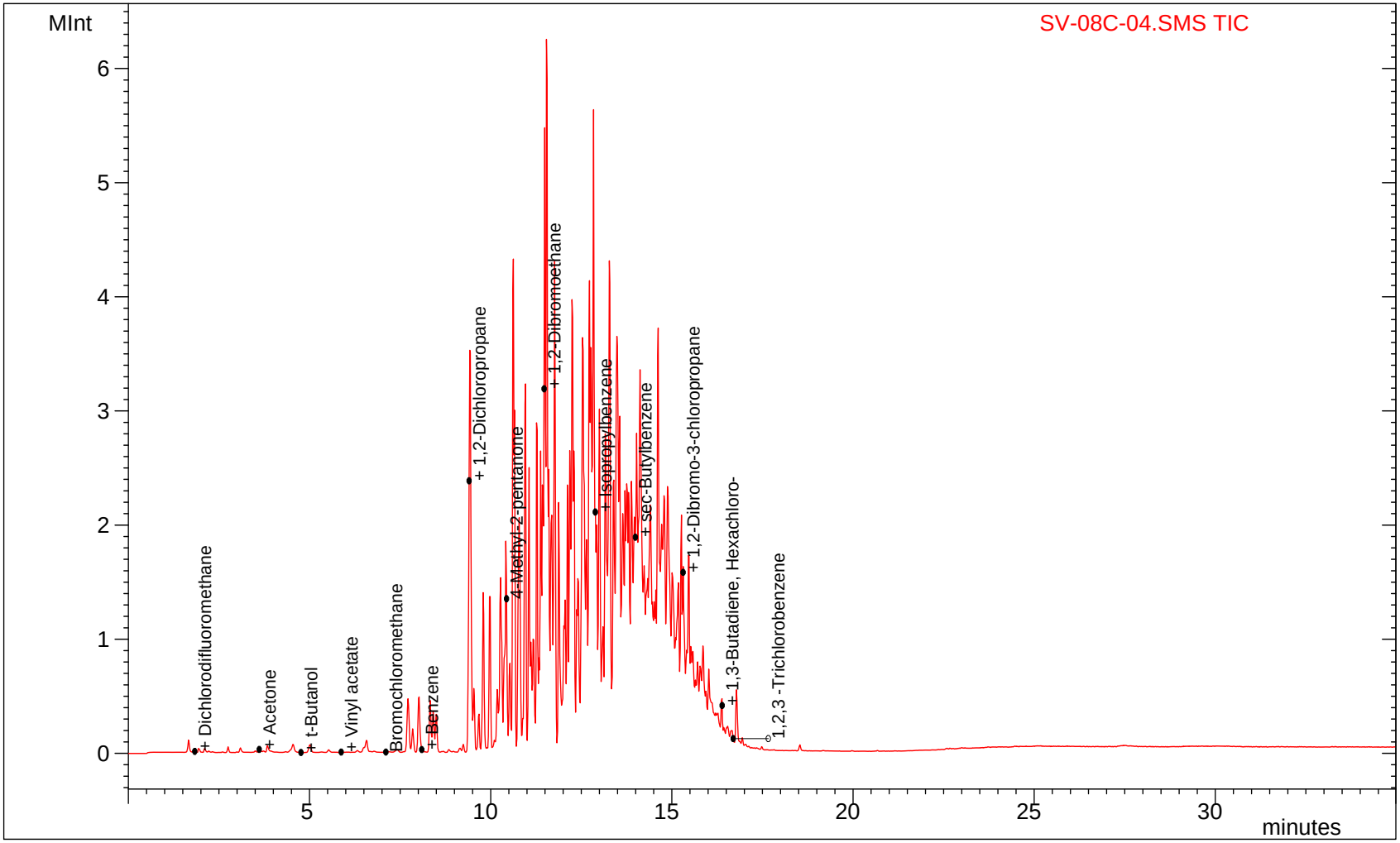


Approved_____ Date_____

CHROMATOGRAM REPORT

EPA Method 8260A

Lab File ID:	c:\varianws\data\14d03\SV-08C-04.SMS	Calibration File:	C:\VarianWS\Data\11I06\EX-200ng 8260 std.SMS
Acquisition Date:	4/4/2014 2:29	Cal. Sample Date Range:	3/27/2014 10:37 3/27/2014 11:40
EPA Sample No:	SV-08C-04	Operator:	RB
Lab Sample ID:	SV-08C-04	Dilution:	1

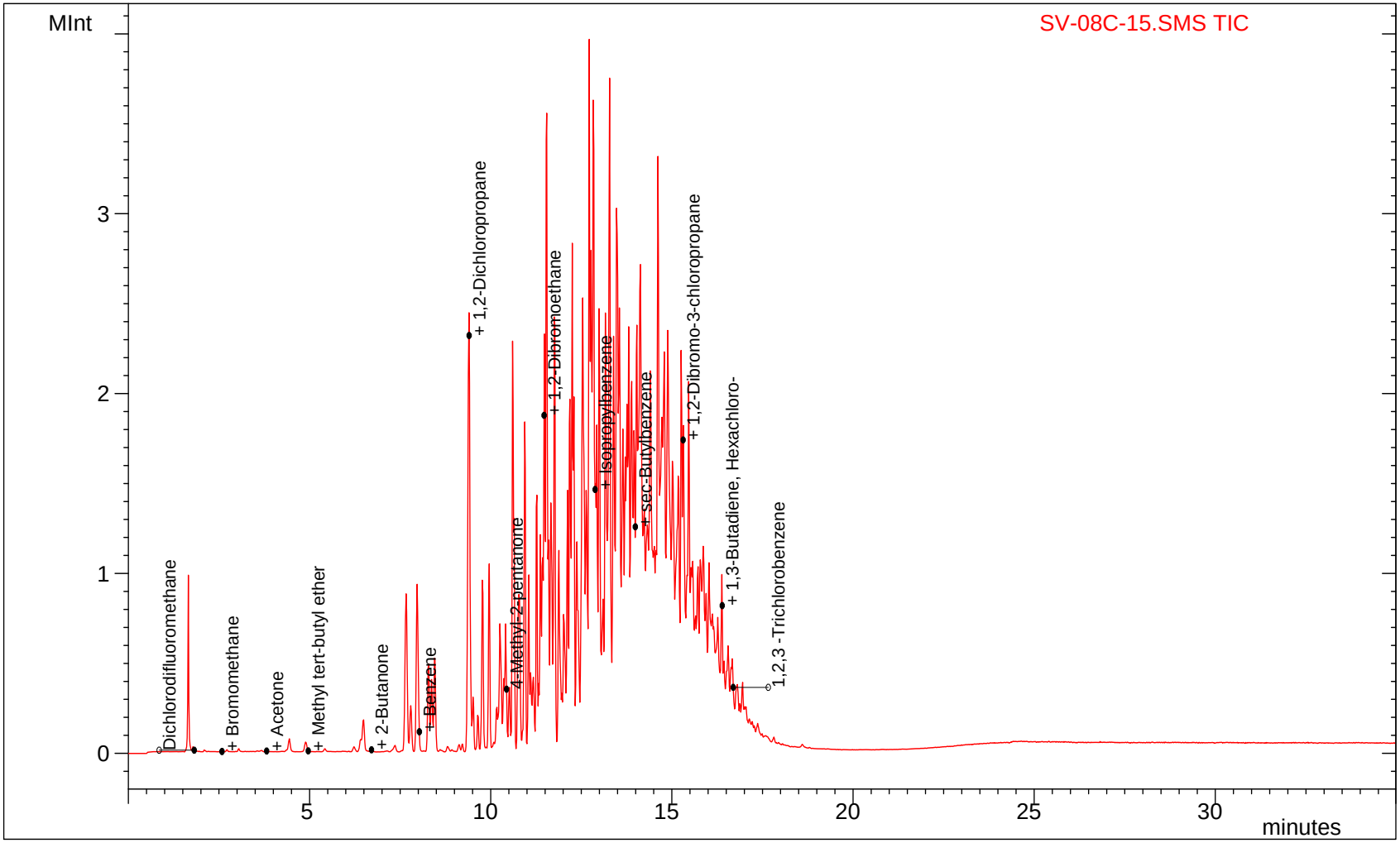


Approved_____ Date_____

CHROMATOGRAM REPORT

EPA Method 8260A

Lab File ID:	c:\varianws\data\14d03\SV-08C-15.SMS	Calibration File:	C:\VarianWS\Data\11I06\EX-200ng 8260 std.SMS
Acquisition Date:	4/4/2014 3:14	Cal. Sample Date Range:	3/27/2014 10:37 3/27/2014 11:40
EPA Sample No:	SV-08C-15	Operator:	RB
Lab Sample ID:	SV-08C-15	Dilution:	1

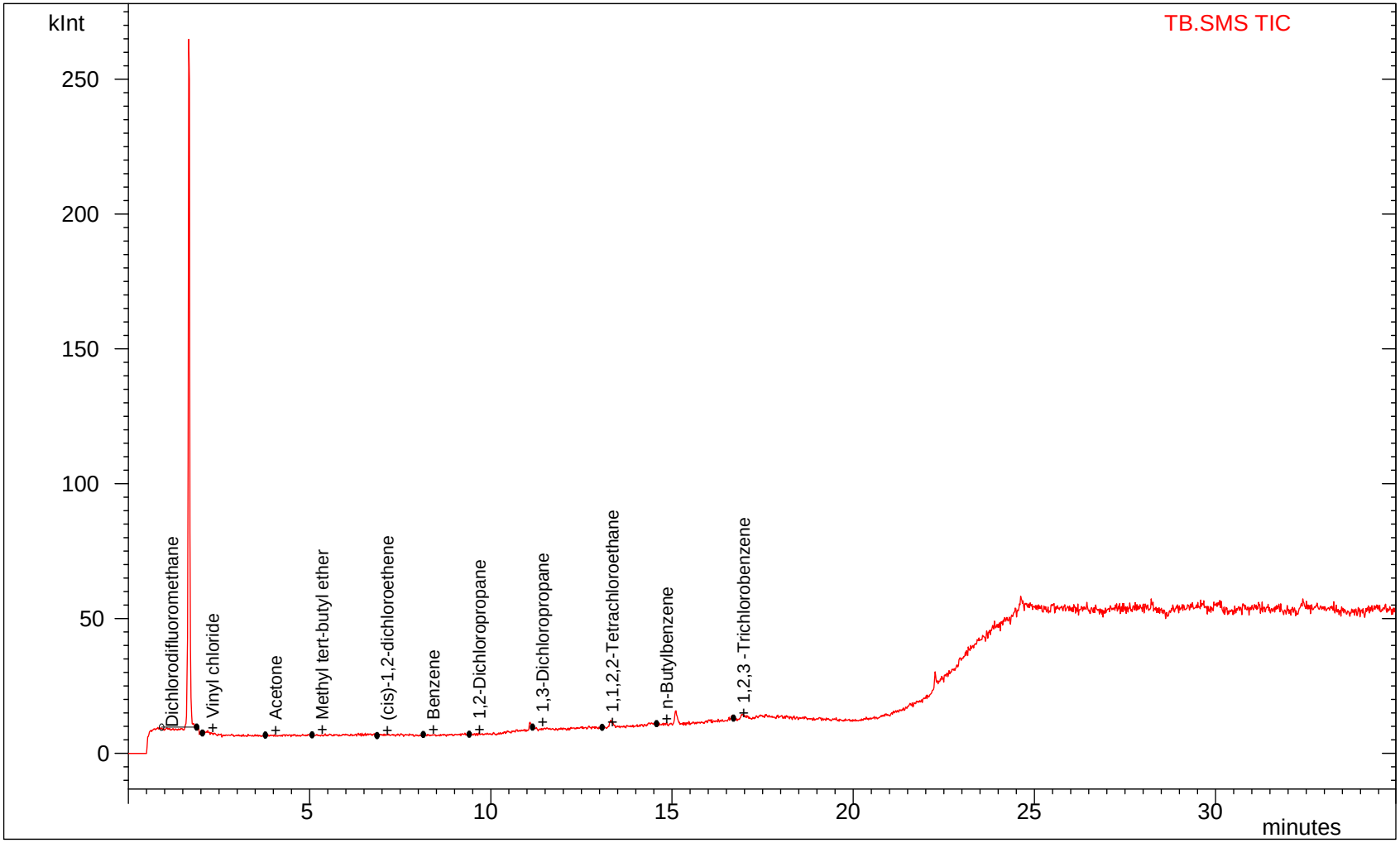


Approved_____ Date_____

CHROMATOGRAM REPORT

EPA Method 8260A

Lab File ID:	c:\varianws\data\14d03\TB.SMS	Calibration File:	C:\VarianWS\Data\11I06\EX-200ng 8260 std.SMS
Acquisition Date:	4/3/2014 18:59	Cal. Sample Date Range:	3/27/2014 10:37 3/27/2014 11:40
EPA Sample No:	TB	Operator:	RB
Lab Sample ID:	TB	Dilution:	1

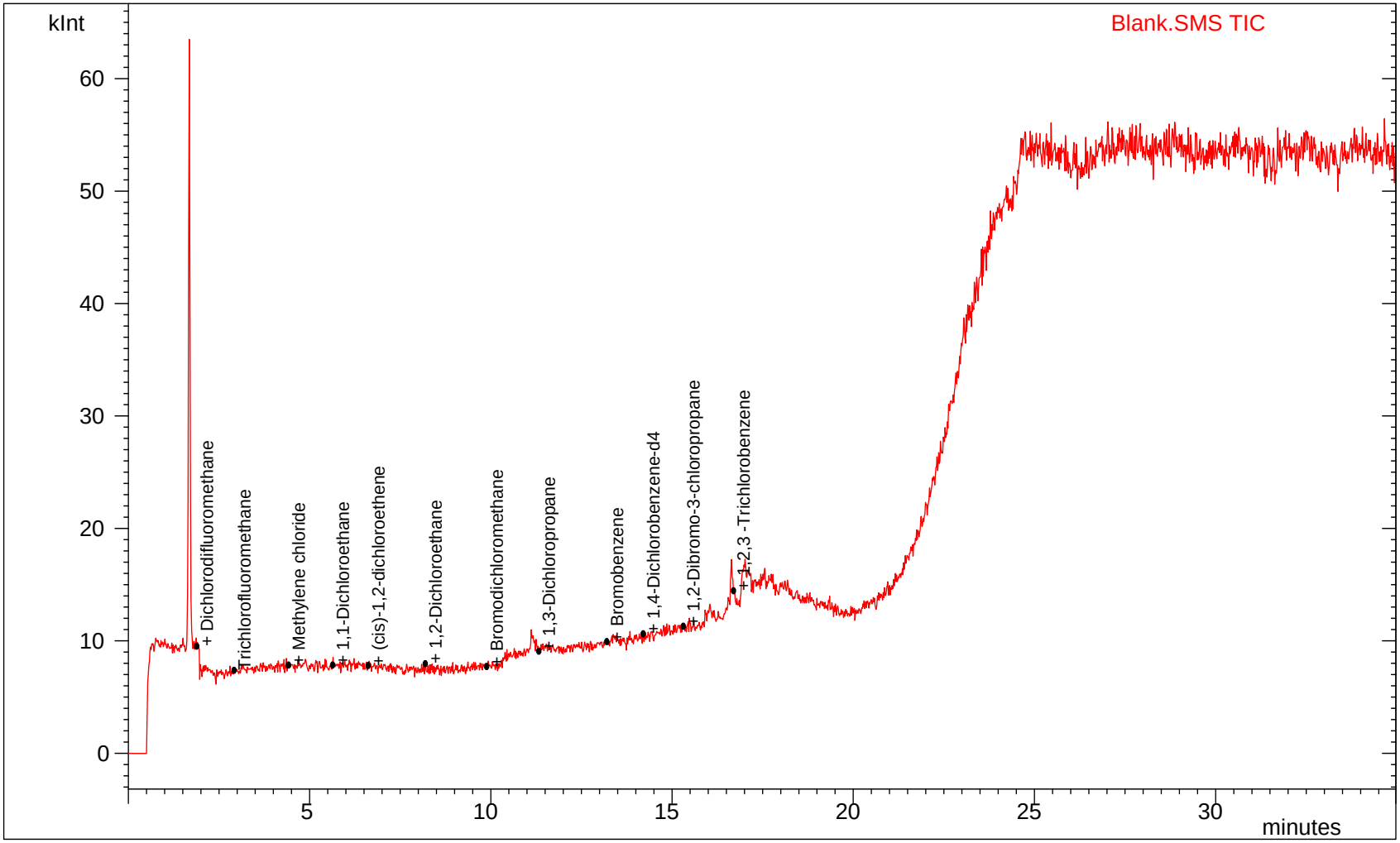


Approved_____ Date_____

CHROMATOGRAM REPORT

EPA Method 8260A

Lab File ID:	c:\varianws\data\14d03\Blank.SMS	Calibration File:	C:\VarianWS\Data\11I06\EX-200ng 8260 std.SMS
Acquisition Date:	4/3/2014 17:29	Cal. Sample Date Range:	3/27/2014 10:37 3/27/2014 11:40
EPA Sample No:	Blank	Operator:	RB
Lab Sample ID:	Blank	Dilution:	1

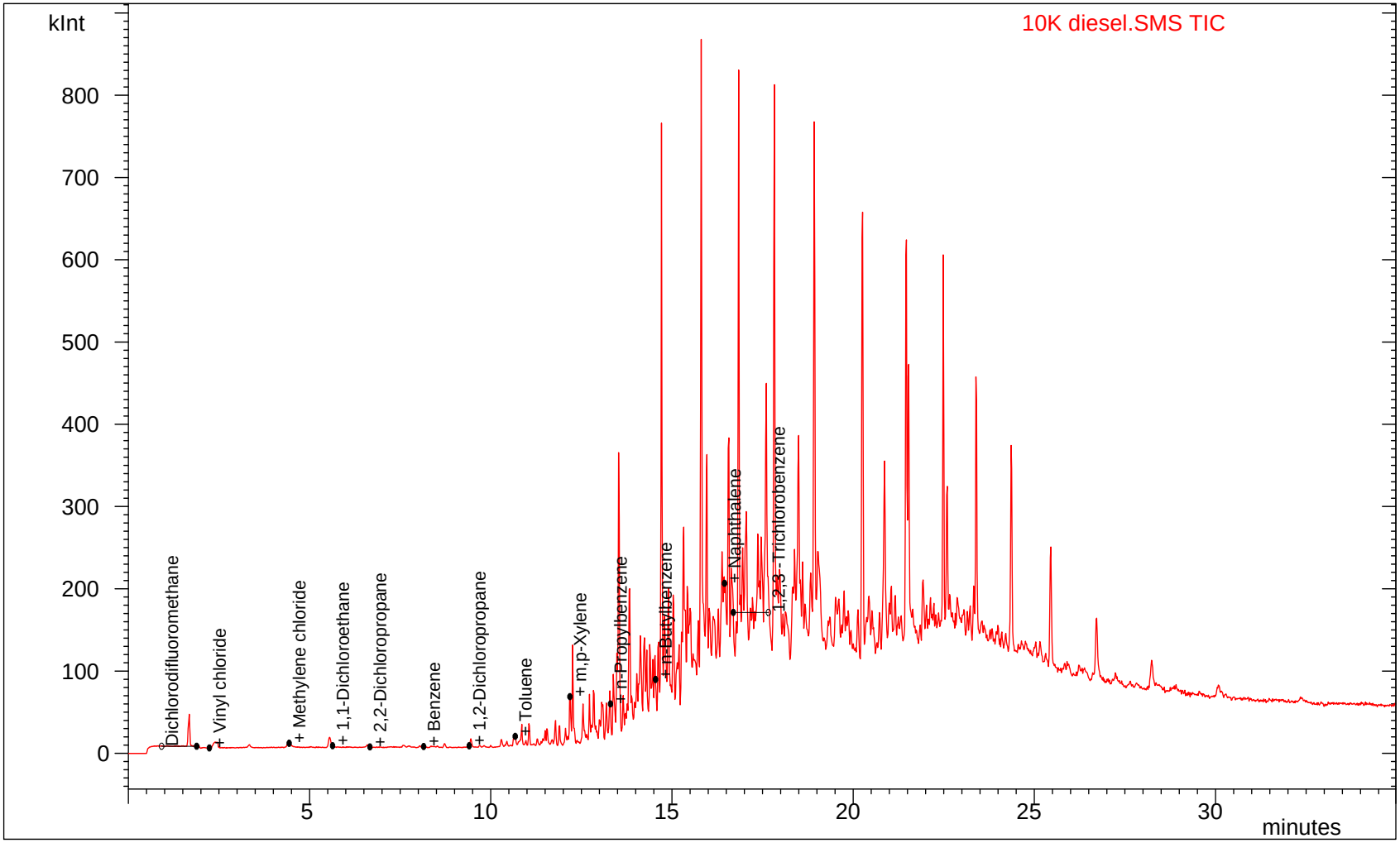


Approved_____ Date_____

CHROMATOGRAM REPORT

EPA Method 8260A

Lab File ID:	c:\varianws\data\14d03\10K diesel.SMS	Calibration File:	C:\VarianWS\Data\11I06\EX-200ng 8260 std.SMS
Acquisition Date:	4/3/2014 16:44	Cal. Sample Date Range:	3/27/2014 10:37 3/27/2014 11:40
EPA Sample No:	10K diesel	Operator:	RB
Lab Sample ID:	10K diesel	Dilution:	1

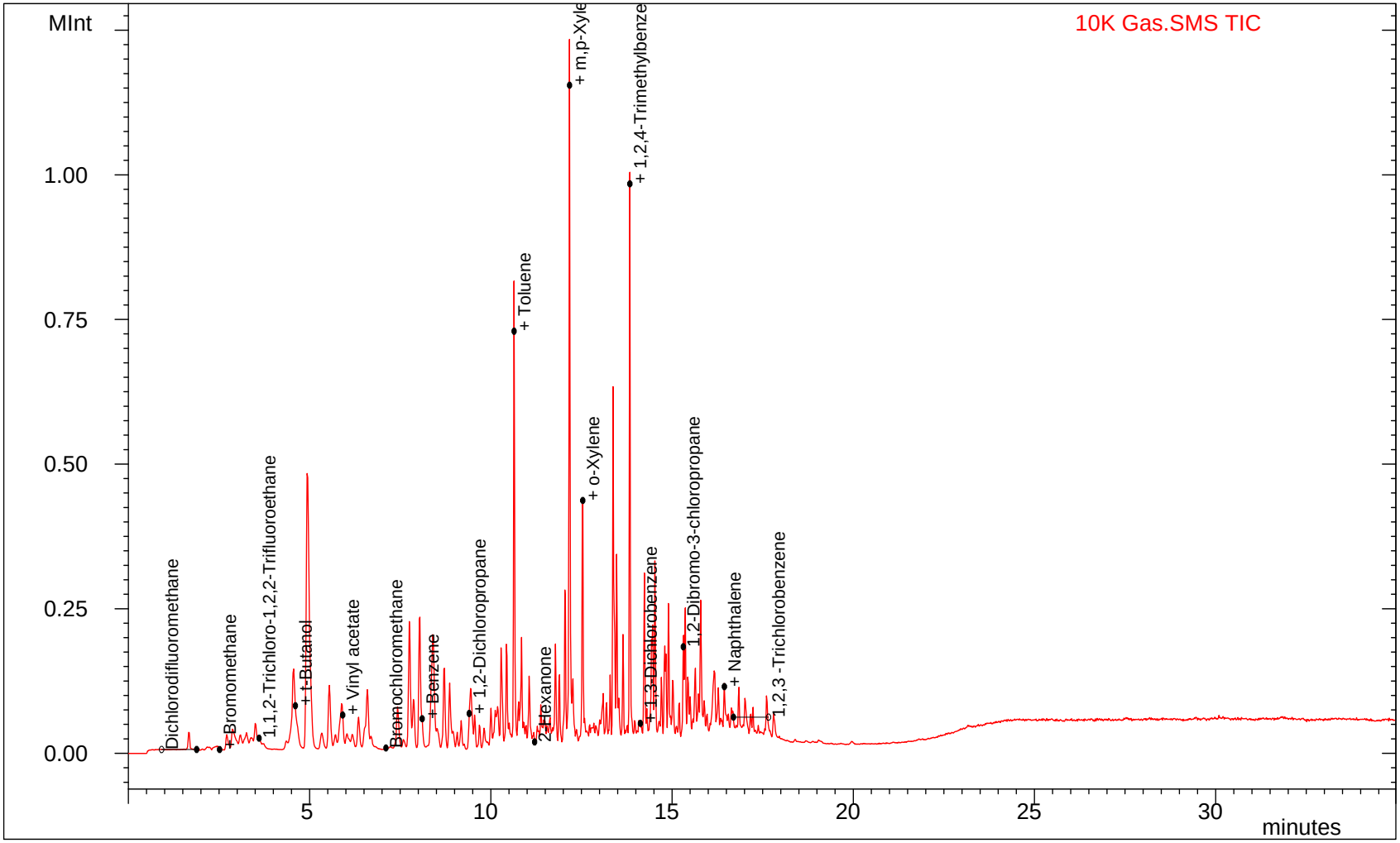


Approved_____ Date_____

CHROMATOGRAM REPORT

EPA Method 8260A

Lab File ID:	c:\varianws\data\14d03\10K Gas.SMS	Calibration File:	C:\VarianWS\Data\11I06\EX-200ng 8260 std.SMS
Acquisition Date:	4/3/2014 15:59	Cal. Sample Date Range:	3/27/2014 10:37 3/27/2014 11:40
EPA Sample No:	10K Gas	Operator:	RB
Lab Sample ID:	10K Gas	Dilution:	1

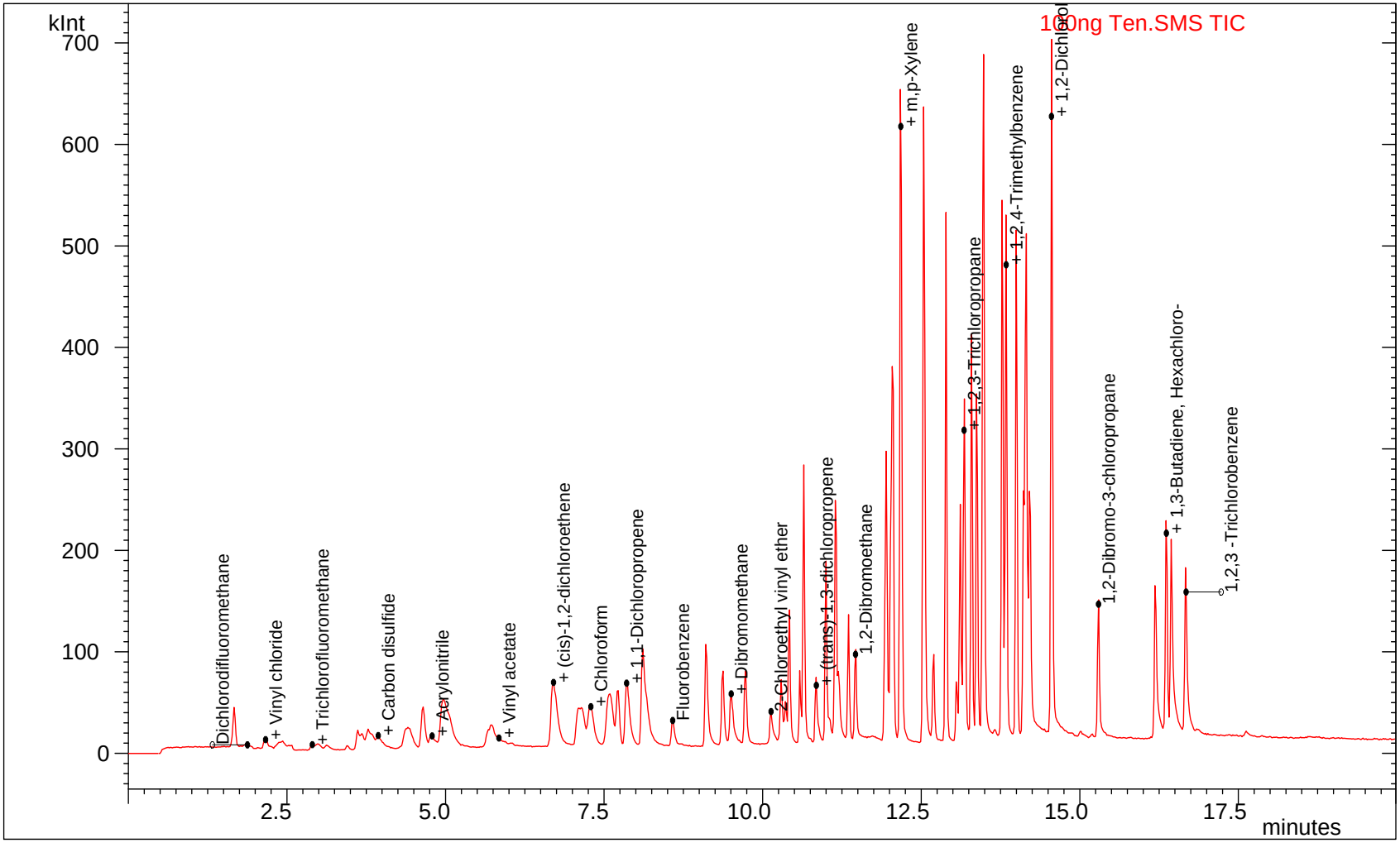


Approved_____ Date_____

CHROMATOGRAM REPORT

EPA Method 8260A

Lab File ID:	c:\varianws\data\14d03\100ng Ten.SMS	Calibration File:	C:\VarianWS\Data\11I06\EX-200ng 8260 std.SMS
Acquisition Date:	4/3/2014 15:03	Cal. Sample Date Range:	3/27/2014 10:37 3/27/2014 11:40
EPA Sample No:	100ng Ten	Operator:	RB
Lab Sample ID:	100ng Ten	Dilution:	1



Approved_____ Date_____

Appendix E: Field Logs

Vista GeoScience
130 Capital Drive, Suite C
Golden, CO 80401-5654
Phone: 303-277-1694
Fax: 303-278-0104

PAGE:	OF
DATE / TIME:	3/23/14
PROJECT:	
JOB NO. :	
REC / SAMP BY:	C. SHORT

SOIL-VAPOR SAMPLING FORM

WELL/LOC. NO. :	WELL TYPE:	☐ Monitor	☐ Extraction	☒ PRT Sys.	☐ Other
SV-01C-04	WELL MATERIAL:	☐ PVC	☐ Poly / Implant	☒ Teflon	☐ Other

WELL OR PRT PURGING & SAMPLING LOG

PURGE VOLUME
Casing/Tubing Inner Diameter:
☐ 1/4-inch ☐ 1/2-inch ☐ 3/4-inch ☐ 1-inch
☒ Other 3/8
Total Length of Tubing/Casing: 5
Number of Well Volumes to be Purged (# Vols): 3 **Well Depth:** 4

PURGING METHOD
☒ Landtec
☐ Peristaltic pump
☐ Other - Type:

PURGE VOLUME CALCULATION: (Tubing Volume/ft x length) **X** (# Purge Volumes) = 161 CC or Liters
(Refer to Tubing / Hole Volume Table)

PURGE TIME
0928 START ____ STOP ____ ELAPSED

PURGE RATE
Initial 0.2 L/pm Final 0.2 L/pm

ACTUAL PURGE VOLUME
____ Liters

FIELD PARAMETER MEASUREMENT

Time 00:00	Minutes	FLOW L/min	Vacuum	PID ppm	FID ppm	CH4 %	CO2 %	O2 %	Bal %		
0928	0	0.2		–	–	0	2.6	10.1	87.1		
0929	1	0.2		–	–	0	4.1	9.4	86.1		
0930	2			–	–	0	4.6	9.2	86.0		
0930	3			34.73	F/O	–	–	–	–		
0932	4			42.6	F/O	–	–	–	–		
0933	5			46.6	F/O	–	–	–	–		

Observations/Note:

SAMPLE COLLECTION

SAMPLE CONTAINER TYPE
☐ Tedlar Bag ☒ Sorption Tubes ☐ Summa Canister ☐ Septum Bottle

SAMPLES Sample Series: ____

Sample/Location ID		Contain ID		Date	Time	Depth	Volume	Q		Comments	
SV-01C	-04	248	483	3/23	0935	4	1L	0.2			
					0940						

Vista GeoScience
130 Capital Drive, Suite C
Golden, CO 80401-5654
Phone: 303-277-1694
Fax: 303-278-0104

PAGE:	OF
DATE / TIME:	3/23/14
PROJECT:	C.tf
JOB NO. :	
REC / SAMP BY:	C. SHORT

SOIL-VAPOR SAMPLING FORM

WELL/LOC. NO. :	WELL TYPE:	☐ Monitor	☐ Extraction	☒ PRT Sys.	☐ Other
SV-03c-04	WELL MATERIAL:	☐ PVC	☐ Poly / Implant	☒ Teflon	☐ Other

WELL OR PRT PURGING & SAMPLING LOG

PURGE VOLUME
Casing/Tubing Inner Diameter:
☐ 1/4-inch ☐ 1/2-inch ☐ 3/4-inch ☐ 1-inch
☒ Other 3/8
Total Length of Tubing/Casing: 5
Number of Well Volumes to be Purged (# Vols): _____ **Well Depth:** 4

PURGING METHOD
☒ Landtec
☐ Peristaltic pump
☐ Other - Type: _____

PURGE VOLUME CALCULATION: (Tubing Volume/ft x length) **X** (# Purge Volumes) = 161 CC or Liters
(Refer to Tubing / Hole Volume Table) 1.3 min

PURGE TIME
0907 START 0915 STOP 8 ELAPSED

PURGE RATE
Initial _____ L/pm Final _____ L/pm

ACTUAL PURGE VOLUME
_____ Liters

FIELD PARAMETER MEASUREMENT

Time	Minutes	FLOW	Vacuum	PID	FID	CH4	CO2	O2	Bal		
00:00		L/min		ppm	ppm	%	%	%	%		
0908	1	0.2		—	—	0	6.1	10.3	83.5		
0909	2	↓		—	—	0	6.2	10.1	83.6		
0910	3			—	—	0	6.2	10.1	83.6		
0912	4			76.8	F/O	—	—	—	—		
0913	5			69.5	F/O	—	—	—	—		
0915	5.5			68.7	F O	—	—	—	—		

Observations/Note:

SAMPLE COLLECTION

SAMPLE CONTAINER TYPE
☐ Tedlar Bag ☒ Sorption Tubes ☐ Summa Canister ☐ Septum Bottle

SAMPLES Sample Series: _____

Sample/Location ID		Contain ID		Date	Time	Depth	Volume	Q		Comments	
~~SV03C~~	~~-04~~	248	482	3/23	0915	4	1L	0.2			
SV-03C	-04										

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SOIL-VAPOR SAMPLING FORM

WELL/LOC. NO. : CHS ~~SV-05-04~~	WELL TYPE:	☐ Monitor	☐ Extraction	☒ PRT Sys.	☐ Other
	WELL MATERIAL:	☐ PVC	☐ Poly / Implant	☒ Teflon	☐ Other

SV-05-04

WELL OR PRT PURGING & SAMPLING LOG

PURGE VOLUME
Casing/Tubing Inner Diameter:
☐ 1/4-inch ☐ 1/2-inch ☐ 3/4-inch ☐ 1-inch
☒ Other 3/8
Total Length of Tubing/Casing: 5
Number of Well Volumes to be Purged (# Vols): 3 **Well Depth:** 4

PURGING METHOD
☒ Landtec
☐ Peristaltic pump
☐ Other - Type:

PURGE VOLUME CALCULATION: (Tubing Volume/ft x length) **X** (# Purge Volumes) = 261 CC or Liters
(Refer to Tubing / Hole Volume Table)

PURGE TIME
0837 START _____ STOP _____ ELAPSED

PURGE RATE
Initial _____ L/pm Final _____ L/pm

ACTUAL PURGE VOLUME
_____ Liters

FIELD PARAMETER MEASUREMENT

Time 00:00	Minutes CHS	FLOW L/min	Vacuum	PID ppm	FID ppm	CH4 %	CO2 %	O2 %	Bal %		
0835	1	0.2		—	—	0	4.7	12.4	83.3		
0839	2			—	—	0	4.9	11.7	83.2		
0840	3			—	—	0	5.6	11.1	85.1		
0842	4			—		0	6.2	10.6	85.1		
0843	5			169	F/O	—	—	—	—		
0844	6			160	F/O	—	—	—	—		
0845	7			152	F/O	—	—	—	—		
0846	8			136	F/O						

Observations/Note:

SAMPLE COLLECTION

SAMPLE CONTAINER TYPE
☐ Tedlar Bag ☒ Sorption Tubes ☐ Summa Canister ☐ Septum Bottle

SAMPLES Sample Series:

Sample/Location ID	Contain ID		Date	Time	Depth	Volume	Q		Comments	
SV-05-04	249	481	3/23	0853	4	1L	0.2			
				0858						

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SOIL-VAPOR SAMPLING FORM

WELL/LOC. NO. : CH3 ~~SV-07-C01~~	WELL TYPE:	☐ Monitor	☐ Extraction	☒ PRT Sys.	☐ Other
	WELL MATERIAL:	☐ PVC	☒ Poly / Implant	☐ Teflon	☐ Other

SV-07C-04

WELL OR PRT PURGING & SAMPLING LOG

PURGE VOLUME
Casing/Tubing Inner Diameter:
☐ 1/4-inch ☐ 1/2-inch ☐ 3/4-inch ☐ 1-inch
☒ Other 3/8
Total Length of Tubing/Casing: 5
Number of Well Volumes to be Purged (# Vols): 3 **Well Depth:** 4

PURGING METHOD
☒ Landtec
☐ Peristaltic pump
☐ Other - Type:

PURGE VOLUME CALCULATION: (Tubing Volume/ft x length) **X** (# Purge Volumes) = 161 CC or Liters
(Refer to Tubing / Hole Volume Table) 1.3min

PURGE TIME
1239 START ____ STOP ____ ELAPSED

PURGE RATE
Initial 0.2 L/pm Final 0.2 L/pm

ACTUAL PURGE VOLUME
____ Liters

FIELD PARAMETER MEASUREMENT

Time	Minutes	FLOW	Vacuum	PID	FID	CH4	CO2	O2	Bal		
00:00		L/min		ppm	ppm	%	%	%	%		
CH3 ~~1239~~ 1241	2	0.2		–	–	0	1.5	13.7	84.7		
1243	4			–	–	0	1.5	13.7	84.7		
1245	6			4.4	F/O	–	–	–	–		
1246				3.7	F/O	–	–	–	–		
1247				3.2	F/O						

Observations/Note:
used sorb tube, purged & reset by Vistalab

SAMPLE COLLECTION

SAMPLE CONTAINER TYPE
☐ Tedlar Bag ☒ Sorption Tubes ☐ Summa Canister ☐ Septum Bottle

SAMPLES Sample Series:

Sample/Location ID	Contain ID		Date	Time	Depth	Volume	Q		Comments	
SV-07C-04	2060	810	3/23	1247	4	1L	0.2			

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SOIL-VAPOR SAMPLING FORM

WELL/LOC. NO. :	WELL TYPE:	☐ Monitor	☐ Extraction	☒ PRT Sys.	☐ Other
SV-02C-04	WELL MATERIAL:	☐ PVC	☐ Poly / Implant	☒ Teflon	☐ Other

WELL OR PRT PURGING & SAMPLING LOG

PURGE VOLUME
Casing/Tubing Inner Diameter:
☐ 1/4-inch ☐ 1/2-inch ☐ 3/4-inch ☐ 1-inch
☒ Other 3/8
Total Length of Tubing/Casing: 5
Number of Well Volumes to be Purged (# Vols): 3 **Well Depth:** 4

PURGING METHOD
☒ Landtec
☐ Peristaltic pump
☐ Other - Type:

PURGE VOLUME CALCULATION: (Tubing Volume/ft x length) **X** (# Purge Volumes) = 161 CC or Liters
(Refer to Tubing / Hole Volume Table) 1.3 min

PURGE TIME
0947 START 0953 STOP _____ ELAPSED

PURGE RATE
Initial _____ L/pm Final _____ L/pm

ACTUAL PURGE VOLUME
_____ Liters

FIELD PARAMETER MEASUREMENT

Time	Minutes	FLOW	Vacuum	PID	FID	CH4	CO2	O2	Bal		
00:00		L/min		ppm	ppm	%	%	%	%		
0947	0	0.2		—	—	0	1.5	12.7	85.7		
0948	1			—	—	0	1.6	13.2	85.1		
0949	2			—	—	0	1.7	13.5	84.6		
0950	3			53.2	F/O	—	—	—	—		
0951	4			57.8	F/O	—	—	—	—		
0952	5			55.7	F/O	—	—	—	—		

Observations/Note:

SAMPLE COLLECTION

SAMPLE CONTAINER TYPE
☐ Tedlar Bag ☐ Sorption Tubes ☐ Summa Canister ☐ Septum Bottle

SAMPLES Sample Series:

Sample/Location ID	Contain ID		Date	Time	Depth	Volume	Q		Comments	
SV-02C-04	249	484	3/23	0954	04	1L	0.2			
				0959						

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SOIL-VAPOR SAMPLING FORM

WELL/LOC. NO. :	WELL TYPE:	☐ Monitor	☐ Extraction	☒ PRT Sys.	☐ Other
SV-02C-15	WELL MATERIAL:	☐ PVC	☐ Poly / Implant	☒ Teflon	☐ Other

WELL OR PRT PURGING & SAMPLING LOG

PURGE VOLUME
Casing/Tubing Inner Diameter:
☐ 1/4-inch ☐ 1/2-inch ☐ 3/4-inch ☐ 1-inch
☒ Other 3/8
Total Length of Tubing/Casing: 16
Number of Well Volumes to be Purged (# Vols): 3

PURGING METHOD
☒ Landtec
☐ Peristaltic pump
☐ Other - Type: _____

Well Depth: 15

PURGE VOLUME CALCULATION: (Tubing Volume/ft x length) **X** (# Purge Volumes) = _____ CC or Liters
(Refer to Tubing / Hole Volume Table)

PURGE TIME
1003 START _____ STOP _____ ELAPSED

PURGE RATE
Initial _____ L/pm Final _____ L/pm

ACTUAL PURGE VOLUME
1040 mLiters
5.2 min

FIELD PARAMETER MEASUREMENT

Time 00:00	Minutes	FLOW L/min	Vacuum	PID ppm	FID ppm	CH4 %	CO2 %	O2 %	Bal %	CHS	
1003	0	0.2		—	—	0	0.1	15.2	~~81.5~~	825	
1004	1	↓		—	—	0	11.9	~~1.9~~ 1.8	86.0		
1005	2			—	—	0	12.5	1.8	85.6		
1006	3			—	—	0	12.7	1.7	85.4		
1007	4			186	F/O	—	—	—	—		
1008	5			190	F/O	—	—	—	—		
1009	6	↓		187	F/O	—	—	—	—		

Observations/Note:

SAMPLE COLLECTION

SAMPLE CONTAINER TYPE
☐ Tedlar Bag ☒ Sorption Tubes ☐ Summa Canister ☐ Septum Bottle

SAMPLES Sample Series: _____

Sample/Location ID		Contain ID		Date	Time	Depth	Volume	Q		Comments	
SV-02C	-15	249	485	3/23	1011	15	1L	0.2			
					1016						

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SOIL-VAPOR SAMPLING FORM

WELL/LOC. NO. :	WELL TYPE:	☐ Monitor	☐ Extraction	☒ PRT Sys.	☐ Other
SV-04C-04	WELL MATERIAL:	☐ PVC	☐ Poly / Implant	☒ Teflon	☐ Other

WELL OR PRT PURGING & SAMPLING LOG

PURGE VOLUME
Casing/Tubing Inner Diameter:
☐ 1/4-inch ☐ 1/2-inch ☐ 3/4-inch ☐ 1-inch
☒ Other 3/8
Total Length of Tubing/Casing: 5'
Number of Well Volumes to be Purged (# Vols): 3 **Well Depth:** 4'

PURGING METHOD
☒ Landtec
☐ Peristaltic pump
☐ Other - Type: _____

PURGE VOLUME CALCULATION: (Tubing Volume/ft x length) **X** (# Purge Volumes) = _____ CC or Liters
(Refer to Tubing / Hole Volume Table)

PURGE TIME _____ START _____ STOP _____ ELAPSED

PURGE RATE Initial _____ L/pm Final _____ L/pm

ACTUAL PURGE VOLUME _____ Liters

FIELD PARAMETER MEASUREMENT

Time	Minutes	FLOW	Vacuum	PID	FID	CH4	CO2	O2	Bal		
00:00		L/min		ppm	ppm	%	%	%	%		
1022				—	—	0	0.2	15.3	84.3		
~~1023~~		CAS				~~0~~	~~0.2~~	~~15.3~~	~~84.4~~	CAS	
1025				—	—	0	6.8	9.1	84.0		
1027				—	—	0	7.0	9.0	83.9		
1029				125	F/O	—	—	—	—		
1031				120	F/O	—	—	—	—		

Observations/Note:

SAMPLE COLLECTION

SAMPLE CONTAINER TYPE
☐ Tedlar Bag ☐ Sorption Tubes ☐ Summa Canister ☐ Septum Bottle

SAMPLES Sample Series: _____

Sample/Location ID	Contain ID		Date	Time	Depth	Volume			Comments	
SV-04C-04	249	486	3/23	1033						

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SOIL-VAPOR SAMPLING FORM

WELL/LOC. NO. :	WELL TYPE:	☐ Monitor	☐ Extraction	☒ PRT Sys.	☐ Other
SV-04C-~~12~~ 15 CHS	WELL MATERIAL:	☐ PVC	☐ Poly / Implant	☒ Teflon	☐ Other

WELL OR PRT PURGING & SAMPLING LOG

PURGE VOLUME
Casing/Tubing Inner Diameter:
☐ 1/4-inch ☐ 1/2-inch ☐ 3/4-inch ☐ 1-inch
☒ Other 3/8
Total Length of Tubing/Casing: 16
Number of Well Volumes to be Purged (# Vols): 3 **Well Depth:** 15

PURGING METHOD
☒ Landtec
☐ Peristaltic pump
☐ Other - Type:

PURGE VOLUME CALCULATION: (Tubing Volume/ft x length) **X** (# Purge Volumes) = _____ CC or Liters
(Refer to Tubing / Hole Volume Table)

PURGE TIME
1042 START _____ STOP _____ ELAPSED

PURGE RATE
Initial _____ L/pm Final _____ L/pm

ACTUAL PURGE VOLUME
_____ Liters

FIELD PARAMETER MEASUREMENT

Time	Minutes	FLOW	Vacuum	PID	FID	CH4	CO2	O2	Bal		
00:00		L/min		ppm	ppm	%	%	%	%		
1042	0	0.2		–	–	0	0.1	15.4	84.4		
1043	1	↓		–	–	0	0	15.5	84.3		
1044	2			–	–	0	0	15.5	84.3		
1045	3			4.39	F/O	–	–	–	–		
1046	4			3.7	F/O	–	–	–	–		
1047	5			3.4	F/O	–	–	–	–		

Observations/Note:

SAMPLE COLLECTION

SAMPLE CONTAINER TYPE
☐ Tedlar Bag ☒ Sorption Tubes ☐ Summa Canister ☐ Septum Bottle

SAMPLES Sample Series: _____

Sample/Location ID		Contain ID		Date	Time	Depth	Volume	Q		Comments	
SV-04C	~~12~~	249	487	3/23	1049	15	1L	0.2			
	15 CHS				1054						

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SOIL-VAPOR SAMPLING FORM

WELL/LOC. NO. :	WELL TYPE:	☐ Monitor	☐ Extraction	☒ PRT Sys.	☐ Other
SV-06C-04	WELL MATERIAL:	☐ PVC	☐ Poly / Implant	☒ Teflon	☐ Other

WELL OR PRT PURGING & SAMPLING LOG

PURGE VOLUME
Casing/Tubing Inner Diameter:
☐ 1/4-inch ☐ 1/2-inch ☐ 3/4-inch ☐ 1-inch
☒ Other 3/8
Total Length of Tubing/Casing: 5
Number of Well Volumes to be Purged (# Vols): 3 **Well Depth:** 4

PURGING METHOD
☒ Landtec
☐ Peristaltic pump
☐ Other - Type:

PURGE VOLUME CALCULATION: (Tubing Volume/ft x length) **X** (# Purge Volumes) = 161 CC or Liters
(Refer to Tubing / Hole Volume Table) 1.3 min

PURGE TIME
1123 START _____ STOP _____ ELAPSED

PURGE RATE
Initial _____ L/pm Final _____ L/pm

ACTUAL PURGE VOLUME
_____ Liters

FIELD PARAMETER MEASUREMENT

Time	Minutes	FLOW	Vacuum	PID	FID	CH4	CO2	O2	Bal		
00:00		L/min		ppm	ppm	%	%	%	%		
1123	0	0.2		—	—	0	4.4	9.6	85.8		
1124	1			—	—	0	4.6	9.8	85.5		
1125	2			—	—	0	4.9	10.0	85.1		
1127	4			48.1	F/O	—	—	—	—		
1128	5			38.7	F/O	—	—	—	—		
1130	7			56.2	F/O	—	—	—	—		
1131	8			56.3	F/O	—	—	—	—		

Observations/Note:
Sample collected 1133-1134, then inverter wire broke - ~~clo~~ crs continued sampling at 1142-1146

SAMPLE COLLECTION

SAMPLE CONTAINER TYPE
☐ Tedlar Bag ☒ Sorption Tubes ☐ Summa Canister ☐ Septum Bottle

SAMPLES Sample Series:

Sample/Location ID		Contain ID		Date	Time	Depth	Volume	Q		Comments	
SV-06	C-04	249489		3/23	1133	4	1L	0.2			
					~~1138~~						
					1146						

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SOIL-VAPOR SAMPLING FORM

WELL/LOC. NO. :	WELL TYPE:	☐ Monitor	☐ Extraction	☒ PRT Sys.	☐ Other
~~SV-06C-12~~ CHS	WELL MATERIAL:	☐ PVC	☐ Poly / Implant	☒ Teflon	☐ Other

SV-06C-~~13~~ 15 CHS

WELL OR PRT PURGING & SAMPLING LOG

PURGE VOLUME
Casing/Tubing Inner Diameter:
☐ 1/4-inch ☐ 1/2-inch ☐ 3/4-inch ☐ 1-inch
☒ Other 3/8
Total Length of Tubing/Casing: 6
Number of Well Volumes to be Purged (# Vols): 3 **Well Depth:** 15

PURGING METHOD
☑ Landtec
☐ Peristaltic pump
☐ Other - Type:

PURGE VOLUME CALCULATION: (Tubing Volume/ft x length) **X** (# Purge Volumes) = 1040 CC or Liters
(Refer to Tubing / Hole Volume Table) 5.2 min

PURGE TIME
1104 START 1112 STOP 8 ELAPSED

PURGE RATE
Initial _____ L/pm Final _____ L/pm

ACTUAL PURGE VOLUME
_____ Liters

FIELD PARAMETER MEASUREMENT

Time	Minutes	FLOW	Vacuum	PID	FID	CH4	CO2	O2	Bal		
00:00		L/min		ppm	ppm	%	%	%	%		
~~1100~~				—		0	0	15.5	84.5	CHS	
1105	1	0.2		—	—	0	5.1	9.9	84.9		
1107	3			—	—	0	5.8	9.4	84.7		
1108	4			60.1	F/O	0	5.8	9.4	84.7		
1109	5			82.5	F/O	—	—	—	—		
1111	7			79.2	F/O	—	—	—	—		

Observations/Note:

SAMPLE COLLECTION

SAMPLE CONTAINER TYPE
☐ Tedlar Bag ☐ Sorption Tubes ☐ Summa Canister ☐ Septum Bottle

SAMPLES Sample Series:_____

Sample/Location ID	Contain ID		Date	Time	Depth	Volume	Q		Comments	
SV-06C-15	249	488	3/23	1113	15	1L	0.2			
				1118						

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SOIL-VAPOR SAMPLING FORM

WELL/LOC. NO. :	WELL TYPE:	☐ Monitor	☐ Extraction	☒ PRT Sys.	☐ Other
SV-08C-04	WELL MATERIAL:	☐ PVC	☒ Poly / Implant	☒ Teflon	☐ Other

WELL OR PRT PURGING & SAMPLING LOG

PURGE VOLUME
Casing/Tubing Inner Diameter:
☐ 1/4-inch ☐ 1/2-inch ☐ 3/4-inch ☐ 1-inch
☒ Other 3/8
Total Length of Tubing/Casing: 5
Number of Well Volumes to be Purged (# Vols): 3

PURGING METHOD
☒ Landtec
☐ Peristaltic pump
☐ Other - Type:_____

Well Depth: 4

PURGE VOLUME CALCULATION: (Tubing Volume/ft x length) **X** (# Purge Volumes) = 161 CC or Liters
(Refer to Tubing / Hole Volume Table) 1.3 min

PURGE TIME
1154 START _____ STOP _____ ELAPSED

PURGE RATE
Initial _____ L/pm Final _____ L/pm

ACTUAL PURGE VOLUME
_____ Liters

FIELD PARAMETER MEASUREMENT

Time	Minutes	FLOW	Vacuum	PID	FID	CH4	CO2	O2	Bal		
00:00		L/min		ppm	ppm	%	%	%	%		
1154	0	0.2		–	–	0	5.6	48.	89.4		
1156	2	0.2		–	–	0	6.4	6.0	87.6		
1157	3			–	–	0	6.4	6.1	87.4		
1159	5			145	F/O	–	–	–	–		
1200	6			136	F/O	–	–	–	–		
1202	8			131	F/O	–	–	–	–		

Observations/Note:

SAMPLE COLLECTION

SAMPLE CONTAINER TYPE
☐ Tedlar Bag ☐ Sorption Tubes ☐ Summa Canister ☐ Septum Bottle

SAMPLES Sample Series:_____

Sample/Location ID		Contain ID		Date	Time	Depth	Volume			Comments	
SV-08C	-04	249	490	3/23	1205						

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SOIL-VAPOR SAMPLING FORM

WELL/LOC. NO. :	WELL TYPE:	☐ Monitor	☐ Extraction	☒ PRT Sys.	☐ Other
~~SV-08C-18~~	WELL MATERIAL:	☐ PVC	☒ Poly / Implant	☐ Teflon	☐ Other

SV-08C-15

WELL OR PRT PURGING & SAMPLING LOG

PURGE VOLUME
Casing/Tubing Inner Diameter:
☐ 1/4-inch ☐ 1/2-inch ☐ 3/4-inch ☐ 1-inch
☒ Other 3/8
Total Length of Tubing/Casing: 16
Number of Well Volumes to be Purged (# Vols): 3 **Well Depth:** 15

PURGING METHOD
☒ Landtec
☐ Peristaltic pump
☐ Other - Type:_____

PURGE VOLUME CALCULATION: (Tubing Volume/ft x length) **X** (# Purge Volumes) = 1040 CC or Liters
(Refer to Tubing / Hole Volume Table) 5.2 min.

PURGE TIME _____ START _____ STOP _____ ELAPSED

PURGE RATE Initial _____ L/pm Final _____ L/pm

ACTUAL PURGE VOLUME _____ Liters

FIELD PARAMETER MEASUREMENT

Time	Minutes	FLOW	Vacuum	PID	FID	CH4	CO2	O2	Bal		
00:00		L/min		ppm	ppm	%	%	%	%		
1217				—	—	0	13.0	1.2	85.2		
1219				—	—	0.3	13.9	0.83	85.2		
1220				—	—	0.2	9.6	6.1	84.0		
1221				—	—	0.2	8.8	6.3	84.6		
1222				161	F/O	—	—	—	—		
1223				165	F/O	—	—	—	—		
1224				156	F/O	—	—	—	—		

Observations/Note:
vista emergency sorb tube - not new, purged by lab.

SAMPLE COLLECTION

SAMPLE CONTAINER TYPE
☐ Tedlar Bag ☒ Sorption Tubes ☐ Summa Canister ☐ Septum Bottle

SAMPLES Sample Series:_____

Sample/Location ID		Contain ID		Date	Time	Depth	Volume	Q		Comments	
SV-08	C-15	206	805	3/23	1225	15	1L	0.2			
					1230						

Landtec GEM 2000 Calibration Log

Date / Time	3/23 0720
Technician	Chris Kudlaus
Project Number	

Ambient Air Readings

CH4	CO2	O2	Balance
0	0.1	19.4	80.5

Pre- Calibration Gas Readings

CH4	CO2	O2
49.5	35.2	0

Active- Calibration Gas Readings

CH4	CO2	O2
NA	NA	NA

Post- Calibration Gas Readings

CH4	CO2	O2

Respan

CH4	CO2	O2

Pre- Cal	Post- Cal	Pre- Cal	Post- Cal
O2(4%)		O2(20.9%)	
5.2	4.0	22	

Calibration Gases Used

1 - CH4(50%)/(15%), CO2 (35%)/(15%), Nitrogen Balance
2 - O2 (4%)
3 - Ambient O2(20.9%)

Comments:

TVA Calibration Log

Date / Time	3/23 / 0800
Technician	Chris Kudlaus
Project Number	

Ambient Air Readings

FID	PID
.03	.86

Pre- Calibration Gas Readings

ISOBUTYLENE 100ppm	CH4 100ppm

Active- Calibration Gas Readings

ISOBUTYLENE 100ppm	CH4 100ppm
278480	1035.1

Post- Calibration Gas Readings

FID	PID
96 99	101

Calibration Gases Used

1 - ISOBUTYLENE(100ppm)
2 - CH4(100ppm)

Comments:

Vista GeoScience