GW-301

Corrective Action Report

Date: 1/4/2012

CORRECTIVE ACTION REPORT

Property:

Manzanares Compressor Station Sump Overflow
Unit G, S17 T29N R9W
San Juan County, New Mexico

January 4, 2012
SWG Project No. 0411019

Prepared for:

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Prepared by:

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CORRECTIVE ACTION REPORT

Manzanares Compressor Station Sump Overflow
Unit G, S17 T29N R9W
San Juan County, New Mexico

SWG Project No. 0411019

1.0 INTRODUCTION

1.1 Site Description & Background

The Manzanares Compressor Station Sump Overflow release site is located within the Enterprise Products Operating LLC (Enterprise) Manzanares Compressor Station right of way (ROW) in Unit G of Section 17, Township 29 North and Range 9 West in San Juan County, New Mexico, referred to hereinafter as the "Site" or "subject Site". The Site is located on public land, managed by the United States Bureau of Land Management, and consists of a natural gas compressor station including four (4) natural gas compressors and associated appurtenances, operated by Enterprise. The Site is surrounded by native vegetation rangeland with oil and gas gathering facilities.

The condensate storage tank containment at the Site contains four (4) condensate tanks, a subgrade sump, and associated piping appurtenances. The containment is constructed of earthen berms and is fitted with an impermeable liner to inhibit environmental impact. Additionally, the floor of the containment area (on top of the liner) was covered with 14 to 18 inches of clay and road base to provide a foundation for strategically placed concrete footers to support the above-grade piping.

On December 12th, 2011, evidence of a release was identified at the Site. After loading a tanker truck at the facility, a contract driver apparently failed to close the valve between the natural gas condensate (condensate) tank and the sump. Subsequently, when liquids entered the tank, the fluids drained directly into the sump, resulting in an eventual overflow. An estimated 350 barrels (bbls) of condensate were released into the lined containment prior to identification of the open valve. The fluids were subsequently recovered and transported to an Enterprise storage facility.

Hydro-excavators were utilized to remove the affected clay and road base material from the floor of the containment, allowing inspection of the underlying liner. The affected materials were transported to the Industrial Ecosystems, Inc. (IEI) landfarm near Aztec, NM for disposal/treatment.

During hydro-excavation activities, a 14 inch tear in the liner was identified near the northeast corner of the containment structure. To address this potential release to the environment, delineation activities were initiated on December 20, 2011.

A topographic map depicting the location of the Site is included as Figure 1, and a Site Vicinity Map is included as Figure 2 in Appendix A.

1.2 Project Objective

The primary objective of the corrective actions was to evaluate the nature of the release and delineate the concentration of constituents of concern (COCs) in the on-Site soils to below the New Mexico Energy, Minerals, and Natural Resources Department (EMNRD), Oil Conservation Division (OCD) *Remediation Action Levels* using the New Mexico EMNRD OCD's *Guidelines for Remediation of Leaks, Spills and Releases* as guidance.

1.3 Standard of Care

Southwest Geoscience's (SWG's) services were performed in accordance with standards customarily provided by a firm rendering the same or similar services in the area during the same time period. SWG makes no warranties, express or implied, as to the services performed hereunder. Additionally, SWG does not warrant the work of third parties supplying information used in the report (e.g. laboratories, regulatory agencies, or other third parties). This scope of services was performed in accordance with the scope of work agreed with the client.

1.4 Additional Limitations

Findings, conclusions and recommendations resulting from these services are based upon information derived from the on-Site activities and other services performed under this scope of work and it should be noted that this information is subject to change over time. Certain indicators of the presence of hazardous substances, petroleum products, or other constituents may have been latent, inaccessible, unobservable, or not present during these services, and SWG cannot represent that the Site contains no hazardous substances, toxic materials, petroleum products, or other latent conditions beyond those identified during this scope of services. Environmental conditions at other areas or portions of the Site may vary from those encountered at actual sample locations. SWG's findings and recommendations are based solely upon data available to SWG at the time of these services.

1.5 Reliance

This report has been prepared for the exclusive use of Enterprise, and any authorization for use or reliance by any other party (except a governmental entity having jurisdiction over the Site) is prohibited without the express written authorization of Enterprise and SWG. Any unauthorized distribution or reuse is at the client's sole risk. Notwithstanding the foregoing, reliance by authorized parties will be subject to the terms, conditions and limitations stated in the proposal, the report, and SWG's Agreement. The limitation of liability defined in the agreement is the aggregate limit of SWG's liability to the client.

2.0 SITE RANKING

In accordance with the New Mexico ENMRD OCD's *Guidelines for Remediation of Leaks, Spills and Releases*, SWG utilized the general Site characteristics obtained during the completion of corrective action activities to determine the appropriate "ranking" for the Site. The ranking criteria and associated scoring are provided in the following table:

Ranking Criteria			Ranking Score
Depth to Groundwater	<50 feet	20	10*
	50 to 99 feet	10	
	>100 feet	0	
Wellhead Protection Area • <1,000 feet from a water source, or; <200 feet from private domestic water source.	Yes	20	0
	No	0	
Distance to Surface Water Body	<200 feet	20	0
	200 to 1,000 feet	10	
	>1,000 feet	0	
Total Ranking Score			10

*Unknown groundwater depth. Estimate based on NM State Engineer Data for nearest wells.

Based on SWG's evaluation of the scoring criteria, the Site would have a Total Ranking Score of 10. This ranking is based on the following:

- Numerous wells are documented within a 1.5 mile radius of the Site. The majority of the wells appear to be near the San Juan River. Based on available New Mexico State Engineer data, the nearest documented wells are greater than ½ mile from the Site in Section 16. Well data for these wells indicate groundwater depths of 87 feet to 100 feet below grade surface (bgs).
- No water sources were identified in the immediate area.
- Manzanares Canyon Arroyo, though generally dry, is located approximately 2,300 feet northeast of the Site.

3.0 RESPONSE ACTIONS

3.1 Containment Content Removal Activities

Containment content removal activities were initiated on December 12th, 2011 by Enterprise at which time the released fluids were recovered and transported to an Enterprise storage facility.

Clay and road base material present on the containment floor were removed by Riley Industrial Services, Inc. (Riley). Riley utilized hydro-excavators to remove the material from the floor of the containment, at which time a 14 inch tear in the liner was identified near the northeast corner of the containment structure.

Clay and road base material removed from the containment structure was transported to the Industrial Ecosystems, Inc. (IEI) landfarm near Aztec, NM for disposal/treatment.

Figure 3 is a Site map that indicates the approximate location of the delineation samples in relation to pertinent Site features (Appendix A). Photographic documentation of the field activities is included in Appendix B.

3.2 Soil Sampling Program

On December 20th and 21st, 2011, Kyle Summers, a SWG environmental professional, met onsite with representatives from Enterprise and the OCD to evaluate the release and perform delineation sampling beneath the liner.

In coordination with the OCD, SWG utilized a hand auger to collect delineation samples from selected locations beneath the containment liner. To determine sample collection depths, SWG screened separate head-space samples of the sub-liner soils with a photoionziation detector (PID) fitted with a 10.6 eV lamp. With OCD concurrence, SWG advanced 2 shallow soil borings beneath the liner. Two samples, CS-1 and CS-2, were collected from directly beneath the liner tear at depths of 1 foot bgs and 1.5 feet bgs, respectively. A third soil sample, CS-3, was collected beneath the liner at a nearby pooling area that appears to be one of the lowest, if not the lowest area within the containment, at a depth of 2 feet bgs.

The highest observed PID readings occurred between 0 feet and 1foot bgs, and overall ranged from 33 parts per million (ppm) to 632 ppm. The lithology encountered during the sampling activities consisted sandy clays to the termination of the hand auger borings at approximately 2 feet bgs.

Figure 3 (Appendix A) depicts the approximate dimensions of the containment area, and the analytical sample locations.

The soil samples selected for laboratory analysis were collected and placed in laboratory prepared glassware, labeled/sealed using the laboratory supplied label, and placed on ice in a cooler, which was secured with a custody seal. The sample cooler and completed chain-of-custody form were relinquished to Hall Environmental Analysis Laboratory in Albuquerque, New Mexico.

4.0 LABORATORY ANALYTICAL METHODS

The soil samples selected for laboratory analysis were analyzed for benzene, toluene, ethylbenzene and xylenes (BTEX) using EPA SW-846 Method #8021B, and total petroleum hydrocarbons (TPH) gasoline range organics (GRO) and diesel range organics (GRO) using EPA SW-846 Method #8015.

Laboratory results and PID readings for soils remaining in place are summarized in Table 1, included in Appendix C. The executed chain-of-custody form and laboratory data sheets are provided in Appendix D.

5.0 DATA EVALUATION

The Site is subject to regulatory oversight by the New Mexico EMNRD OCD. To address activities related to condensate releases, the New Mexico EMNRD OCD utilizes the *Guidelines for Remediation of Leaks, Spills and Releases* as guidance, in addition to the OCD rules, specifically NMAC 19.15.30 *Remediation*. These guidance documents establish investigation and abatement action requirements for sites subject to reporting and/or corrective action.

5.1 Delineation Soil Samples

SWG compared the BTEX and TPH concentrations or practical quantitation limits (PQLs) associated with the three (3) delineation samples collected from beneath the liner to the OCD *Remediation Action Levels* for sites having a total ranking score of 10.

- The laboratory analysis of the delineation soil samples did not indicate benzene concentrations above the OCD *Remediation Action Level* of 10 mg/Kg.
- The laboratory analysis of delineation sample CS-1 indicates a total BTEX concentration of 50.96, which is slightly above the OCD *Remediation Action Level* of 50mg/Kg. Delineation samples CS-2 and CS-3 did not exhibit BTEX concentrations above the OCD *Remediation Action Level.*
- The laboratory analysis of the delineation soil samples did not indicate TPH GRO/DRO concentrations above the OCD *Remediation Action Level* of 1,000 ppm.

Based on laboratory analytical and screening results, the shallow soils (<1.0 feet bgs) in the immediate vicinity of the liner tear exhibit concentrations of total BTEX at or above the OCD *Remediation Action Levels*, while soils below 1 foot bgs are not affected above the OCD *Remediation Action Levels*. Analytical results are provided in Table 1 in Appendix C.

6.0 FINDINGS AND RECOMMENDATIONS

The Manzanares Compressor Station Sump Overflow release site is located within the Enterprise Manzanares Compressor Station ROW in Unit G of Section 17, Township 29 North and Range 9 West in San Juan County, New Mexico. The Site is located on public land, managed by the United States Bureau of Land Management. The Site is surrounded by native vegetation rangeland with oil and gas gathering facilities.

The condensate storage tank containment at the Site contains four (4) condensate tanks, a subgrade sump, and associated piping appurtenances. The containment is constructed of earthen berms and is fitted with an impermeable liner to inhibit environmental impact. Additionally, the floor of the containment area (on top of the liner) was covered with 14 to 18 inches of clay and road base to provide a foundation for strategically placed concrete footers to support the above-grade piping.

On December 12th, 2011, evidence of a release was identified at the Site. After loading a tanker truck at the facility, a contract driver apparently failed to close the valve between the condensate tank and the sump. Subsequently, when liquids entered the tank, the fluids drained directly into the sump, resulting in an eventual overflow. An estimated 350 bbls of condensate were released into the lined containment prior to identification of the open valve. The fluids were subsequently recovered and transported to an Enterprise storage facility, and hydro-excavators were utilized to remove the affected clay and road base material from the floor of the containment. The affected materials were transported to the IEI landfarm near Aztec, NM for disposal/treatment.

During hydro-excavation activities, a 14 inch tear in the liner was identified near the northeast corner of the containment structure. To address this potential release to the environment, delineation activities were initiated on December 20, 2011.

- The primary objective of the corrective actions was to evaluate the nature of the release and delineate the concentration of COCs in the on-Site soils to below the EMNRD OCD's *Remediation Action Levels* using the New Mexico EMNRD OCD's *Guidelines for Remediation of Leaks, Spills and Releases* as guidance.

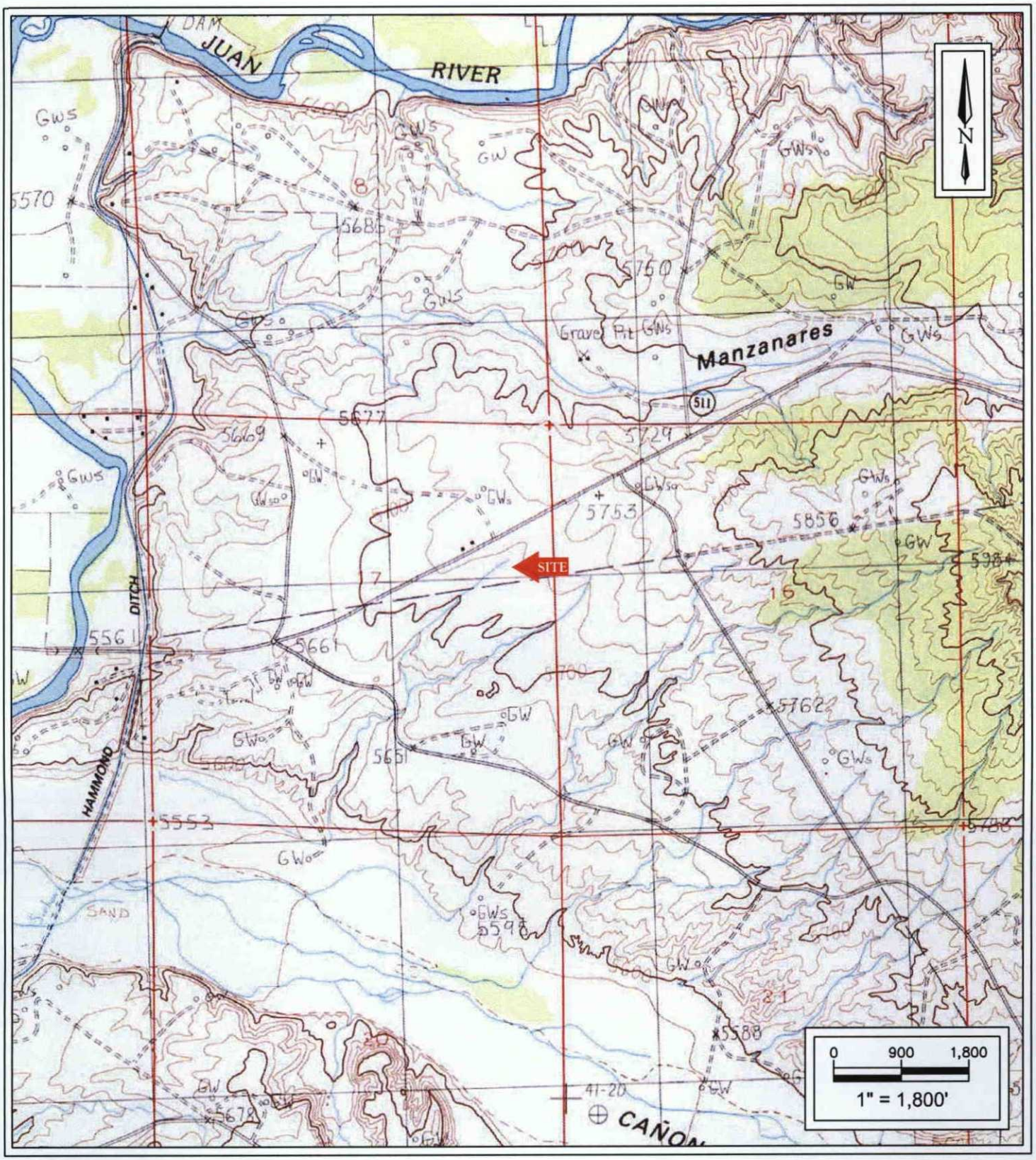
- The laboratory analysis of the delineation soil samples did not indicate benzene or TPH GRO/DRO concentrations above the OCD *Remediation Action Levels*.

- The laboratory analysis of delineation sample CS-1 indicates a total BTEX concentration of 50.96, which is slightly above the OCD *Remediation Action Level* of 50mg/Kg. Delineation samples CS-2 and CS-3 did not exhibit BTEX concentrations above the OCD *Remediation Action Level*.

- Based on the size, shape, and location of the liner tear, it is very possible that it resulted during clay and road base removal activities. Alternatively, if the liner tear was present prior to the sump overflow, the underlying clayey lithology, combined with the weight of overburden from the clay and road base material that were above the liner, appear to have significantly limited any vertical or lateral migration of condensate into the underlying soils.

- Based on analytical and PID screening results, the shallow soils (<1.0 feet bgs) in the immediate vicinity of the liner tear exhibit concentrations of total BTEX at or above the OCD *Remediation Action Levels*, while soils below 1 foot bgs are not affected above the OCD *Remediation Action Levels*.

Based on the laboratory analytical results and PID screening, the limited volume of affected material, and the presence of the containment liner above the shallow impacted soils, no additional investigation or remediation appears warranted at this time.



Enterprise Field Services LLC
Manzaneres Compressor Station
N36° 43' 35.03"; W107° 47' 40.80"
S17 T29N R9W
San Juan County, New Mexico

SWG Project No. 0411019

Southwest GEOSCIENCE

Figure 1
Topographic Map
Blanco, NM Quadrangle
Contour Interval = 20 Feet
1985

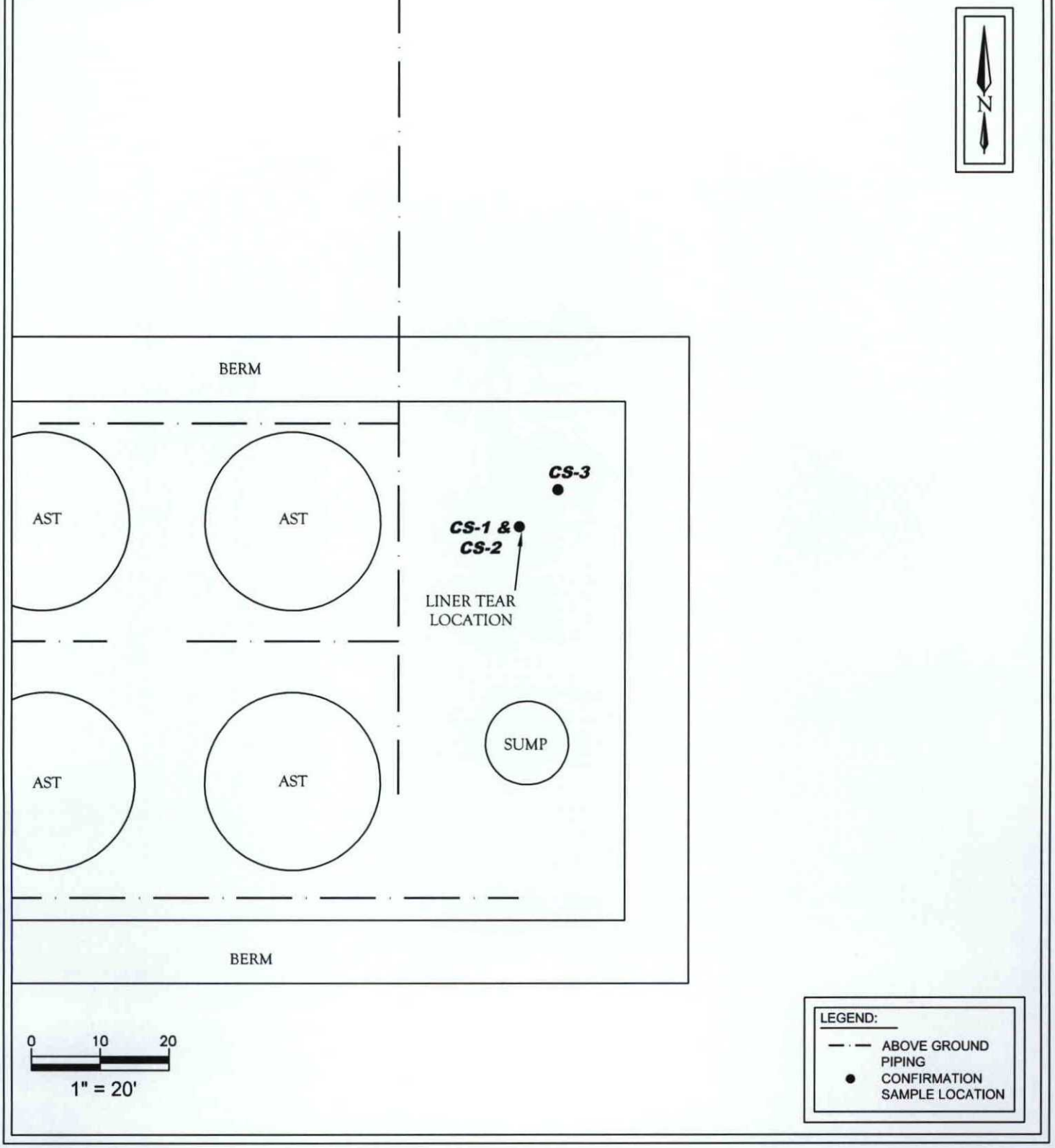
Enterprise Field Services LLC
Manzaneres Compressor Station
N36° 43' 35.03"; W107° 47' 40.80"
S17 T29N R9W
San Juan County, New Mexico

SWG Project No. 0411019

Southwest GEOSCIENCE

Figure 2

Site Vicinity Map



Enterprise Field Services LLC
Manzaneres Compressor Station
N36° 43' 35.03"; W107° 47' 40.80"
S17 T29N R9W
San Juan County, New Mexico

SWG Project No. 0411019

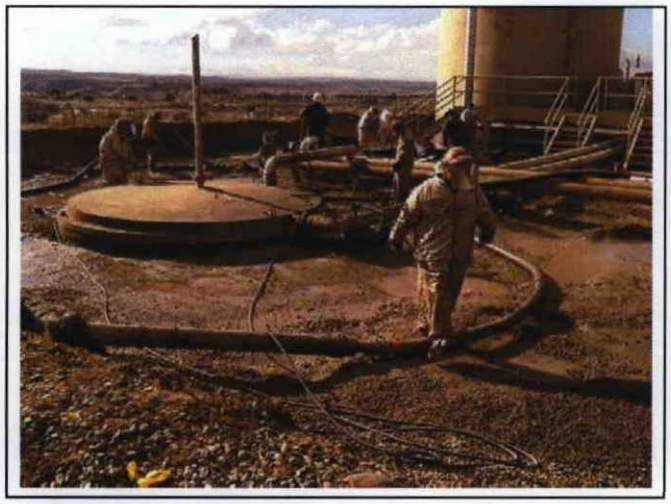
Southwest GEOSCIENCE

Figure 3

Site Map

1.) View of clay and road base removal activities.

2.) View of clay and road base removal activities.



3.) View of clay and road base removal activities. Sump is visible in left of frame.

4.) Discovery of tear north of sump. Rags used to hold up liner during remaining cleaning activities.

5.) View of tear after repair.

6.) View of sample location CS-3 in pooling area. PVC used to keep water out of boring. Water on liner drained to ground from above, after liner was cut for sample access.

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TABLE 1

Manzanares Compressor Station Sump Overflow
SOIL ANALYTICAL and PID RESULTS

Sample I.D.	Date	Sample Depth (feet)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	PID Measurement (ppm)
New Mexico Energy, Minerals & Natural Resources Department, Oil Conservation Division, Remediation Action Level (Site Ranking Score of "10")			10	NE	NE	NE	50	1,000		100
Delineation Samples										
CS-1	12.20.11	0 - 1.0	0.96	14	3.0	33	**50.96**	480	46	**632**
CS-2	12.20.11	1.0 - 1.5	<0.049	<0.049	<0.049	0.11	<0.26	<4.9	<9.8	70
CS-3	12.20.11	1.5 - 2.0	<0.048	<0.048	<0.048	<0.097	<0.25	<4.8	<9.8	33

Note: Concentrations in bold and yellow exceed the applicable OCD Remediation Action Level

NE = Not Established

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

COVER LETTER

Thursday, December 29, 2011

Kyle Summers
Southwest Geoscience
606 S. Rio Grande Unit A
Aztec, NM 87410

TEL: (214) 350-5469
FAX (214) 350-2914

RE: Mauzaneres

Order No.: 1112952

Dear Kyle Summers:

Hall Environmental Analysis Laboratory, Inc. received 3 sample(s) on 12/22/2011 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. Below is a list of our accreditations. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please do not hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Laboratory Manager

NM Lab # NM9425 NM0901
AZ license # AZ0682

Hall Environmental Analysis Laboratory, Inc.

Date: *29-Dec-11*
Analytical Report

CLIENT:	Southwest Geoscience	**Client Sample ID:**	CS-1
Lab Order:	1112952	**Collection Date:**	12/20/2011 1:30:00 PM
Project:	Mauzaneres	**Date Received:**	12/22/2011
Lab ID:	1112952-01	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **JB**
Diesel Range Organics (DRO)	46	10		mg/Kg	1	12/27/2011 2:09:11 PM
Surr: DNOP	83.8	77.4-131		%REC	1	12/27/2011 2:09:11 PM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: **RAA**
Gasoline Range Organics (GRO)	480	25		mg/Kg	5	12/27/2011 5:13:58 PM
Surr: BFB	168	69.7-121	S	%REC	5	12/27/2011 5:13:58 PM
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**
Benzene	0.96	0.25		mg/Kg	5	12/27/2011 5:13:58 PM
Toluene	14	0.25		mg/Kg	5	12/27/2011 5:13:58 PM
Ethylbenzene	3.0	0.25		mg/Kg	5	12/27/2011 5:13:58 PM
Xylenes, Total	33	0.49		mg/Kg	5	12/27/2011 5:13:58 PM
Surr: 4-Bromofluorobenzene	111	80-120		%REC	5	12/27/2011 5:13:58 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
NC	Non-Chlorinated	ND	Not Detected at the Reporting Limit
PQL	Practical Quantitation Limit	S	Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Date: *29-Dec-11*
Analytical Report

CLIENT:	Southwest Geoscience	**Client Sample ID:**	CS-2
Lab Order:	1112952	**Collection Date:**	12/20/2011 1:50:00 PM
Project:	Mauzaneres	**Date Received:**	12/22/2011
Lab ID:	1112952-02	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **JB**
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	12/27/2011 2:44:04 PM
Surr: DNOP	78.4	77.4-131		%REC	1	12/27/2011 2:44:04 PM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: **RAA**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	12/27/2011 6:47:56 PM
Surr: BFB	108	69.7-121		%REC	1	12/27/2011 6:47:56 PM
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**
Benzene	ND	0.049		mg/Kg	1	12/27/2011 6:47:56 PM
Toluene	ND	0.049		mg/Kg	1	12/27/2011 6:47:56 PM
Ethylbenzene	ND	0.049		mg/Kg	1	12/27/2011 6:47:56 PM
Xylenes, Total	0.11	0.098		mg/Kg	1	12/27/2011 6:47:56 PM
Surr: 4-Bromofluorobenzene	95.4	80-120		%REC	1	12/27/2011 6:47:56 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
NC	Non-Chlorinated	ND	Not Detected at the Reporting Limit
PQL	Practical Quantitation Limit	S	Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Date: *29-Dec-11*
Analytical Report

CLIENT:	Southwest Geoscience	**Client Sample ID:**	CS-3
Lab Order:	1112952	**Collection Date:**	12/21/2011 10:00:00 AM
Project:	Mauzaneres	**Date Received:**	12/22/2011
Lab ID:	1112952-03	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **JB**
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	12/27/2011 3:18:11 PM
Surr: DNOP	79.7	77.4-131		%REC	1	12/27/2011 3:18:11 PM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: **RAA**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	12/27/2011 7:18:18 PM
Surr: BFB	102	69.7-121		%REC	1	12/27/2011 7:18:18 PM
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**
Benzene	ND	0.048		mg/Kg	1	12/27/2011 7:18:18 PM
Toluene	ND	0.048		mg/Kg	1	12/27/2011 7:18:18 PM
Ethylbenzene	ND	0.048		mg/Kg	1	12/27/2011 7:18:18 PM
Xylenes, Total	ND	0.097		mg/Kg	1	12/27/2011 7:18:18 PM
Surr: 4-Bromofluorobenzene	92.3	80-120		%REC	1	12/27/2011 7:18:18 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
NC	Non-Chlorinated	ND	Not Detected at the Reporting Limit
PQL	Practical Quantitation Limit	S	Spike recovery outside accepted recovery limits

QA/QC SUMMARY REPORT

Client: Southwest Geoscience
Project: Mauzaneres **Work Order:** 1112952

Analyte	Result	Units	PQL	SPK Va	SPK ref	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8015B: Diesel Range Organics											
Sample ID: MB-29879		*MBLK*				Batch ID:	**29879**	Analysis Date:		12/27/2011 12:25:46 PM	
Diesel Range Organics (DRO)	ND	mg/Kg	10								
Sample ID: LCS-29879		*LCS*				Batch ID:	**29879**	Analysis Date:		12/27/2011 1:00:10 PM	
Diesel Range Organics (DRO)	40.81	mg/Kg	10	50	0	81.6	62.7	139			
Method: EPA Method 8015B: Gasoline Range											
Sample ID: MB-29867		*MBLK*				Batch ID:	**29867**	Analysis Date:		12/27/2011 2:11:28 PM	
Gasoline Range Organics (GRO)	ND	mg/Kg	5.0								
Sample ID: LCS-29867		*LCS*				Batch ID:	**29867**	Analysis Date:		12/27/2011 1:41:20 PM	
Gasoline Range Organics (GRO)	32.03	mg/Kg	5.0	25	0	128	86.4	132			
Method: EPA Method 8021B: Volatiles											
Sample ID: 1112952-01AMSD		*MSD*				Batch ID:	**29867**	Analysis Date:		12/28/2011 12:50:24 AM	
Benzene	1.605	mg/Kg	0.24	0.973	0.9621	66.0	67.2	113	18.8	14.3	SR
Toluene	10.95	mg/Kg	0.24	0.973	14.43	-358	62.1	116	27.6	15.9	SR
Ethylbenzene	3.036	mg/Kg	0.24	0.973	2.954	8.45	67.9	127	26.2	14.4	SR
Xylenes, Total	25.58	mg/Kg	0.49	2.918	32.85	-249	60.6	134	26.7	12.6	SR
Sample ID: MB-29867		*MBLK*				Batch ID:	**29867**	Analysis Date:		12/27/2011 2:11:28 PM	
Benzene	ND	mg/Kg	0.050								
Toluene	ND	mg/Kg	0.050								
Ethylbenzene	ND	mg/Kg	0.050								
Xylenes, Total	ND	mg/Kg	0.10								
Sample ID: LCS-29867		*LCS*				Batch ID:	**29867**	Analysis Date:		12/27/2011 12:40:53 PM	
Benzene	1.009	mg/Kg	0.050	1	0.0045	100	80	120			
Toluene	0.9820	mg/Kg	0.050	1	0.0121	97.0	80	120			
Ethylbenzene	1.039	mg/Kg	0.050	1	0.0075	103	80	120			
Xylenes, Total	3.234	mg/Kg	0.10	3	0	108	80	120			
Sample ID: 1112952-01AMS		*MS*				Batch ID:	**29867**	Analysis Date:		12/28/2011 12:20:04 AM	
Benzene	1.329	mg/Kg	0.25	0.992	0.9621	37.0	67.2	113			S
Toluene	8.294	mg/Kg	0.25	0.992	14.43	-619	62.1	116			S
Ethylbenzene	2.332	mg/Kg	0.25	0.992	2.954	-62.7	67.9	127			S
Xylenes, Total	19.55	mg/Kg	0.50	2.976	32.85	-447	60.6	134			S

Qualifiers:

E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	NC	Non-Chlorinated
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name SOUTHWEST GEOSCIENCE | Date Received: 12/22/2011

Work Order Number 1112952 | Received by: AMG

Checklist completed by: Signature 12/22/11 Date | Sample ID labels checked by: Initials

Matrix: | Carrier name: Courier

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☐	Not Shipped ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	N/A ☑	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Water - VOA vials have zero headspace? No VOA vials submitted ☑		Yes ☐	No ☐	
Water - Preservation labels on bottle and cap match?	Yes ☐	No ☐	N/A ☑	
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	
Container/Temp Blank temperature?	1.0°	*<6° C Acceptable* If given sufficient time to cool.		

Number of preserved bottles checked for pH: _____

<2 >12 unless noted below.

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

CHAIN OF CUSTODY RECORD

Southwest GEOSCIENCE
Environmental & Hydrogeologic Consultants

Office Location: Aztec
Project Manager: K. Summers

Laboratory: Hall
Address:
Contact:
Phone:
PO/SO #:

Sampler's Name: Kyle Summers
Sampler's Signature:

Proj. No.: 0411019
Project Name: Manzanares
No/Type of Containers

ANALYSIS REQUESTED: TPH GRO/DRO 8015, BTEX 8021

Lab use only
Due Date:
Temp. of coolers when received (C°): 1.0 ON ICE
1 | 2 | 3 | 4 | 5
Page 1 of 1

Matrix	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	Start Depth	End Depth	VOA	A/G 1 Lt.	250 ml	P/O	TPH GRO/DRO 8015	BTEX 8021	Lab Sample ID (Lab Use Only)
S	12/20/11	1330		X	CS-1	0	1				1	X	X	1112952 -1
S	12/20/11	1350		X	CS-2	1	1.5				1	X	X	-2
S	12/21/11	1000		X	CS-3	1.5	2				1	X	X	-3

NFS
KS

Turn around time: ☑ Normal ☐ 25% Rush ☐ 50% Rush ☐ 100% Rush

Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
	12/21/11	1202	Christine Walters	12/21/11	1202
Christine Walters	12/22/11	1645		12/22/11	14:45
Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:

NOTES:

Matrix: WW - Wastewater; W - Water; S - Soil; SD - Solid; L - Liquid; A - Air Bag; C - Charcoal tube; SL - sludge; O - Oil
Container: VOA - 40 ml vial; A/G - Amber / Or Glass 1 Liter; 250 ml - Glass wide mouth; P/O - Plastic or other