



ENTERPRISE PRODUCTS PARTNERS L.P.  
ENTERPRISE PRODUCTS GP, LLC  
(General Partner)

ENTERPRISE PRODUCTS OPERATING LLC

October 4, 2011

Return Receipt Requested  
7010 1870 0001 2945 2920

Mr. Cordell TeCube  
Jicarilla Apache Nation  
Environmental Protection Office  
P.O. Box 507  
Dulce, New Mexico 87528

**Re: Enterprise Field Services, LLC - Limited Site Investigation  
2C-29 Pipeline Release  
Section 19, Township 25 North, Range 4 West  
Jicarilla Apache Nation, Rio Arriba County, New Mexico**

Dear Mr. TeCube:

Enterprise Field Services, LLC (Enterprise) is submitting four (4) copies total of the enclosed *Limited Site Investigation*, dated September 14, 2011. The report details site investigation activities performed to further evaluate the effectiveness of remediation activities completed at the Site.

Please contact me at (713) 381-6629 if you have questions regarding the information in the report.

Sincerely,

Rodney M. Sartor, REM  
Manager, Remediation

/dep  
Enclosure

cc: w/Enclosure:  
Hobson Sandoval  
Jicarilla Environmental Protection Office  
P.O. Box 507  
Dulce, NM 87528

Dixon Sandoval  
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P.O. Box 167  
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Street, Apt. No., or PO Box No.	Mr. Cordell TeCuba Jicarilla Apache Nation Environmental Protection Office P. O. Box 507
City, State, ZIP+4	Dulce, New Mexico 87528
PS Form 3800, August 2006	
See Reverse for Instructions	



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LIMITED SITE INVESTIGATION

Property:

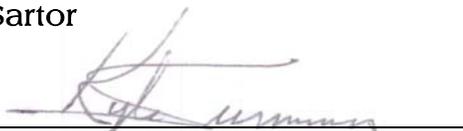
2C-29 Pipeline Release  
Section 19, T25N, R4W  
Jicarilla Apache Nation, Rio Arriba County, New Mexico

September 14, 2011  
SWG Project No. 0411012

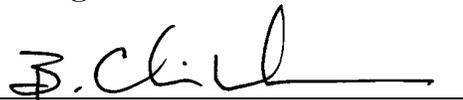
Prepared for:

Enterprise Field Services, LLC  
1100 Louisiana Street  
Houston, Texas 77002-5227  
Attn: Mr. Rodney Sartor

Prepared by:



Kyle Summers, CPG  
Manager, Four Corners Office



B. Chris Mitchell, P.G.  
Senior Technical Review

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**LIMITED SITE INVESTIGATION**

**2C-29 Pipeline Release  
Sec 19, T25N, R4W  
Jicarilla Apache Nation, Rio Arriba County, New Mexico**

**SWG Project No. 0411012**

**1.0 EXECUTIVE SUMMARY**

Southwest Geoscience (SWG) has completed a Limited Site Investigation (LSI) at the 2C-29 Pipeline Release Site located in the NW ¼ NW ¼ of Section 19, Township 25 North, Range 4 West, in the Jicarilla Apache Nation, Rio Arriba County, New Mexico, referred to hereinafter as the "Site" or "subject Site". The site is surrounded by canyon rangeland and oil/gas gathering facilities, and is crossed by two (2) natural gas pipelines operated by Enterprise Field Services LLC (Enterprise).

The objective of the LSI was to further evaluate the presence, magnitude, and extent of petroleum hydrocarbons in on-site soil and groundwater, if encountered, as a result of the release from the 2C-29 pipeline.

Specific details regarding the investigation are further explained in the following sections and should be read to fully comprehend the extent of the investigation and results. In addition, findings and recommendations are included in this executive summary for your convenience; however, the remaining text of the report and associated appendices should also be reviewed for a complete understanding of the LSI report.

The release occurred on September 27<sup>th</sup>, 2010, and the line was immediately shut in until repairs could be performed. On September 28<sup>th</sup>, 2010, Industrial Mechanical, Inc. (IMI) mobilized to the site to provide excavation services, while Souder Miller & Associates (SMA), in coordination with Enterprise, performed oversight of corrective actions. Excavation activities were concluded on September 30<sup>th</sup>, 2010. The final surface expression of the remediated area measured approximately 63 feet in length, and varied from 7 feet to 14 feet in width. The reported excavation depth varied from 1.2 feet below grade surface (bgs) at the southern end of the excavation to 19.5 feet bgs near the point of release. An estimated 216 cubic yards of impacted soil was transported to TNT land farm for remediation/disposal. The excavation was backfilled with borrow material from Jicarilla well #11, as directed by the Jicarilla Apache Nation.

Ten (10) soil borings (SB-1 through SB-10) were advanced in the vicinity of the release Site during the completion of investigation activities. Groundwater was not encountered during the completion of site investigation activities.

SWG did not observe dwellings, schools, hospitals, day care centers, nursing homes, businesses, parks, recreational areas, surface water bodies, wildlife sanctuaries and/or wetlands areas located within 1,000 feet of the Site. However, the Site is located adjacent to an unnamed drainage that would convey surface water to Lapis Canyon during significant precipitation events.

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- The soil samples collected from soil boring SB-1 through SB-10 did not exhibit TPH GRO/DRO and/or BTEX concentrations above the laboratory PQLs, which were below the OCD's *Remediation Action Levels*

**Based on the results of the LSI, no further investigation or corrective action appears warranted at this time.**

## 2.0 INTRODUCTION

### 2.1 Site Description & Background

The Site is located in the NW ¼ NW ¼ of Section 19, Township 25 North, Range 4 West, in the Jicarilla Apache Nation, New Mexico. The site is surrounded by canyon rangeland and oil/gas gathering facilities, and is crossed by two (2) natural gas pipelines operated by Enterprise.

The release occurred on September 27<sup>th</sup>, 2010, and the line was immediately shut in until repairs could be performed. On September 28<sup>th</sup>, 2010, Industrial Mechanical, Inc. (IMI) mobilized to the site to provide excavation services, while Souder Miller & Associates (SMA), in coordination with Enterprise, performed oversight of corrective actions. Excavation activities were concluded on September 30<sup>th</sup>, 2010. The final surface expression of the remediated area measured approximately 63 feet in length, and varied from 7 feet to 14 feet in width. The reported excavation depth varied from 1.2 feet bgs at the southern end of the excavation to 19.5 feet bgs near the point of release. An estimated 216 cubic yards of impacted soil was transported to TNT land farm for remediation/disposal.

SMA collected three (3) composite confirmation soil samples from the excavated area on September 29<sup>th</sup> and 30<sup>th</sup>, 2010. Based on the laboratory analytical results, the composite confirmation soil samples collected from the excavation sidewalls and floor did not exhibit benzene and/or total BTEX concentrations above the OCD *Remediation Action Levels*. However, the laboratory analysis of two (2) of the composite confirmation samples collected from the excavation exhibited TPH GRO/DRO concentrations which exceed the OCD *Remediation Action Level*. The excavation, with a reported maximum total depth of 19.5 feet bgs, was backfilled with unaffected material from Jicarilla well #11 at the direction of the Jicarilla Apache Nation.

A topographic map is included as Figure 1, a 2005 aerial photograph of the Site vicinity is included as Figure 2, and a site plan is included as Figure 3 of Appendix A.

### 2.2 Site Investigation Objective

The objective of the LSI was to further evaluate the presence, magnitude and extent of petroleum hydrocarbons in on-site soil and groundwater, if encountered, as a result of the release from the 2C-29 pipeline.

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### 2.3 Standard of Care & Limitations

The findings and recommendations contained in this report represent SWG's professional opinions based upon information derived from on-site activities and other services performed under this scope of work and were arrived at in accordance with currently acceptable professional standards. The findings were based upon analytical results provided by an independent laboratory. Evaluations of the geologic/hydrogeologic conditions at the site for the purpose of this investigation are made from a limited number of available data points (i.e. soil borings and ground water samples) and site wide subsurface conditions may vary from these data points. 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 report is based upon a specific scope of work requested by Enterprise Field Services, LLC. The agreement between SWG and Enterprise Field Services LLC outlines the scope of work, and only those tasks specifically authorized by that agreement or outlined in this report were performed. This report has been prepared for the intended use of Enterprise Field Services, LLC, 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 Field Services, LLC and SWG.

### 3.0 SITE INVESTIGATION

#### 3.1 Soil Borings

SWG's field investigation activities were conducted on July 25<sup>th</sup> and 26<sup>th</sup>, 2011 by Mr. Kyle Summers, a SWG environmental professional. As part of the approved scope of work, ten (10) soil borings were advanced in the vicinity of the former pipeline release. Each soil boring was advanced utilizing a direct push Geoprobe<sup>®</sup> drilling rig. Soil borings SB-1, SB-5, and SB-10 were advanced topographically upgradient of the former excavation; Soil borings SB-2 and SB-3 appear to have penetrated the northern edge of the former excavation; Soil borings SB-4, SB-6, SB-7, and SB-8 were advanced topographically downgradient of the former excavation; Soil boring SB-9 was advanced topographically cross-gradient of the former excavation.

Figure 3 is a site plan that depicts the approximate location of the soil borings in relation to pertinent land features (Appendix A).

Soil samples were collected continuously utilizing four-foot core barrel samplers and acetate liners to the termination depth of each soil boring. Soil samples were observed to document soil lithology, color, moisture content, and visual and olfactory evidence of petroleum hydrocarbons. Upon retrieval of each core barrel from the borehole, each soil sample was immediately divided into portions designated for field screening or laboratory analysis. Field headspace analysis was conducted by placing the portion of the soil sample designated for field screening into a plastic ziplock bag. The plastic bag was sealed and then allowed to volatilize. The air above the sample, the headspace, was then evaluated using a photoionization detector (PID) capable of detecting volatile organic compounds

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(VOCs). The PID was calibrated utilizing an isobutylene standard prior to use in the field.

During the completion of each soil boring, an on-site geoscientist documented the lithology encountered and constructed a continuous profile of the soil column from the surface to the boring terminus. Undisturbed soil samples from each boring location were visually inspected and logged in the field. The lithology encountered during the advancement of soil boring SB-1 included moderate yellowish-brown silty sand and sand from the surface to the terminus of the boring at approximately 18 feet bgs. The lithologies encountered during the advancement of soil borings SB-2 through SB-10 were generally similar to the lithology encountered while advancing soil boring SB-1. Apparent backfill material was encountered during the advancement of soil borings SB-2 and SB-3, exhibiting slightly coarser and more graded material in a portion of the lithologic column that would have encompassed a portion of the former excavation. Sandstone was encountered at the terminus of SB-9 and SB-10. Detailed lithologic descriptions are presented on soil boring logs included in Appendix B.

Petroleum hydrocarbon odors and/or elevated PID readings were not detected in the soil samples collected from the soil borings. Field screening results are presented on soil boring logs included in Appendix B.

Groundwater was not encountered during the completion of site investigation activities. Therefore, the soil borings were not converted to temporary sampling wells.

## **3.2 Investigation Sampling Program**

### **3.2.1 Soil Sampling Program**

SWG's soil sampling program involved submitting one (1) soil sample from each soil boring for laboratory analysis. Soil samples were collected from the zone exhibiting the highest PID reading, from a change in lithology, or from the bottom of the boring, based on the field professional's judgment. Soil sample intervals are presented with the soil sample analytical results (Table 1) in Appendix C and are provided on the boring logs included in Appendix D.

### **3.2.2 Groundwater Sampling Program**

Groundwater was not encountered during the completion of site investigation activities.

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## 4.0 LABORATORY ANALYTICAL PROGRAM

### 4.1 Laboratory Analytical Methods

The soil samples collected from the borings were analyzed for TPH GRO/DRO utilizing EPA SW-846 method #8015B and BTEX using EPA SW-846 method #8021B.

Laboratory results are summarized in the tables included in Appendix C. The executed chain-of-custody form and laboratory data sheets are provided in Appendix D.

### 4.2 Quality Assurance/Quality Control (QA/QC)

Reusable sampling equipment was cleaned using an Alconox® wash and potable water rinse prior to the beginning of the project and before the collection of each sample.

Soil samples were collected and placed in laboratory prepared glassware, sealed with custody tape and placed on ice in a cooler, which was secured with a custody seal. The sample coolers and completed chain-of-custody forms were relinquished to Hall Environmental Analysis Laboratory (Hall) in Albuquerque, New Mexico for standard turnaround.

Hall performed the analyses of samples under an adequate and documented quality assurance program to meet the project and data quality objectives. The laboratory's quality assurance program is generally consistent the quality standards outlined in the National Environmental Laboratory Accreditation Program, as amended. In addition, the data generated by Hall meets the intralaboratory performance standards for the selected analytical method and the performance standards are sufficient to meet the bias, precision, sensitivity, representativeness, comparability, and completeness, as specified in the project data quality objectives.

## 5.0 SITE CHARACTERIZATION

### 5.1 Geology & Hydrogeology

According to the New Mexico Bureau of Geology and Mineral Resource (Geologic Map of New Mexico 2003), the Site overlies the Eocene age San Jose geologic formation. The San Jose geologic formation contains a mixture of clastic sedimentary rocks varying from siltstone to conglomerate, dominated by rocks containing sand-sized particles. The lithology encountered at the Site during the advancement of soil borings consisted of silty sand deposits derived from erosion of the parent San Jose formation which comprises the surrounding hilltops and mesas. Based on the available soil boring samples, these alluvia generally consist of brown to tan silty sands and silty clays from the ground surface to at least 20 feet bgs.

During the completion of each soil boring, an on-Site geoscientist documented the lithology encountered and constructed a continuous profile of the soil column from the surface to the boring terminus. Undisturbed soil samples from each boring

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location were visually inspected and logged in the field. The lithology encountered during the advancement of soil boring SB-1 included moderate yellowish-brown silty sand and sand from the surface to the terminus of the boring at approximately 18 feet bgs. The lithologies encountered during the advancement of soil borings SB-2 through SB-10 were generally similar to the lithology encountered while advancing soil boring SB-1. Sandstone was encountered at the terminus of SB-9 and SB-10. More detailed lithologic descriptions are presented on soil boring logs included in Appendix B.

The major aquifer underlying the Site vicinity is listed as the Colorado Plateaus Aquifer, which is made up of four smaller aquifers, the Uinta-Animas, the Mesa Verde, the Dakota-Glen, and the Coconino-De Chelly. The Uinta-Animas is the shallowest of these aquifers, and is present in the San Juan Basin. The general composition of the aquifers is moderately to well-consolidated sedimentary rocks of an age ranging from Permian to Tertiary. Each aquifer is separated from the others by an impermeable confining unit. Two of the confining units are completely impermeable and cover the entire area of the aquifers. The other two confining units are less extensive and are thinner. These units allow water to flow between the principal aquifers. There are countless streams, rivers, and lakes that overlay the Colorado Plateaus Aquifers. The surface water bodies in this region provide a place for the aquifers to discharge. Some of the high altitude rivers and lakes may also provide recharge.

The initial groundwater-bearing unit (GWBU) at the Site was not encountered during the investigation activities. Groundwater flow direction of the initial shallow, unconfined GWBU is presumed to be towards the west and/or southwest across the Site.

## 5.2 Site Ranking

The Site is under the jurisdiction of the Jicarilla Apache Nation Environmental Protection Office (JANEPO). In the absence of published JANEPO regulatory guidance, SWG referenced the New Mexico Energy, Minerals, and Natural Resources Department (EMNRD), Oil Conservation Division's (OCD) *Guidelines for Remediation of Leaks, Spills and Releases* to determine the appropriate "ranking" for the Site. The ranking criteria and associated scoring are provided in the table below:

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Ranking Criteria			Ranking Score
Depth to Groundwater	<50 feet	20	20
	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	
<b>Total Ranking Score</b>			<b>20</b>

Based on SWG's evaluation of the scoring criteria, the Site would have a Total Ranking Score of **20**. This ranking is based on the following:

- The depth to the initial groundwater-bearing zone is assumed to be <50 feet at the Site.

During the completion of a 1,000-foot receptor survey, SWG inspected the Site vicinity for dwellings, schools, hospitals, day care centers, nursing homes, businesses, parks and/or recreational areas, located within 1,000 feet of the Site. In addition, SWG evaluated the presence of sensitive ecological receptors such as surface water bodies, wildlife sanctuaries and/or wetlands areas located within 1,000 feet of the Site. SWG did not observe the aforementioned sensitive receptors during the survey. However, the Site is located adjacent to an unnamed drainage that would convey surface water to Lapis Canyon during significant precipitation events.

## 6.0 DATA EVALUATION

The Site is under the jurisdiction of the JANEPO. Due the absence of published JANEPO regulatory guidance, SWG utilized the available New Mexico EMNRD OCD guidance and rules. To address activities related to crude oil/condensate related releases, the New Mexico EMNRD OCD utilizes the *Guidelines for Remediation of Leaks, Spills and Releases* as guidance, in addition to the EMNRD/OCD rules, specifically New Mexico Administrative Code (NMAC) 19.15.30 Remediation. These guidance documents establish investigation and abatement action requirements for sites subject to reporting and/or corrective action.

Based on SWG's review of Site characteristics (specifically: depth to groundwater, wellhead protection area and distance to surface water) an associated ranking score of 20 was determined for the Site. Consequently, the OCD's *Remediation Action Levels* for soils on sites having a total ranking score greater than 19 is 10 milligrams per kilogram (mg/Kg) for benzene, 50 mg/Kg for total BTEX and 100 mg/Kg for TPH GRO/DRO.

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## 6.1 Soil Samples

SWG compared the TPH GRO/DRO and BTEX concentrations or practical quantitation limits (PQLs) associated with the soil samples collected from soil borings SB-1 through SB-10 to the OCD *Remediation Action Levels* for Sites having a total ranking score greater than 19.

The soil samples collected from soil boring SB-1 through SB-10 did not exhibit TPH GRO/DRO and/or BTEX concentrations above the laboratory PQLs, which were below the OCD's *Remediation Action Levels*.

The results of the soil sample analyses are summarized in Table 1 included in Appendix C.

## 6.2 Groundwater Samples

Groundwater was not encountered during the completion of site investigation activities.

## 7.0 FINDINGS AND RECOMMENDATIONS

SWG has completed a LSI at the 2C-29 Pipeline Release Site located in the NW  $\frac{1}{4}$  NW  $\frac{1}{4}$  of Section 19, Township 25 North, Range 4 West, in the Jicarilla Apache Nation, Rio Arriba County, New Mexico. The site is surrounded by canyon rangeland and oil/gas gathering facilities, and is crossed by two (2) natural gas pipelines operated by Enterprise.

Ten (10) soil borings (SB-1 through SB-10) were advanced in the vicinity of the release Site during the completion of investigation activities. Groundwater was not encountered during the completion of site investigation activities.

SWG did not observe dwellings, schools, hospitals, day care centers, nursing homes, businesses, parks, recreational areas, surface water bodies, wildlife sanctuaries and/or wetlands areas located within 1,000 feet of the Site. However, the Site is located adjacent to an unnamed drainage that would convey surface water to Lapis Canyon during significant precipitation events.

- The soil samples collected from soil boring SB-1 through SB-10 did not exhibit TPH GRO/DRO and/or BTEX concentrations above the laboratory PQLs, which were below the OCD's *Remediation Action Levels*

During the completion of the ten (10) soil borings, SWG was unable to identify the petroleum hydrocarbon impact in soil associated with the composite soil samples (Excavation South Area & Excavation North Area) collected by SMA subsequent to the completion of corrective actions. The absence of the previously identified impact is likely attributable to either:

- 1.) The discrete locations utilized to compile the composite were limited to isolated areas, which would not be statistically significant with respect to potential exposure or the Site overall; or,

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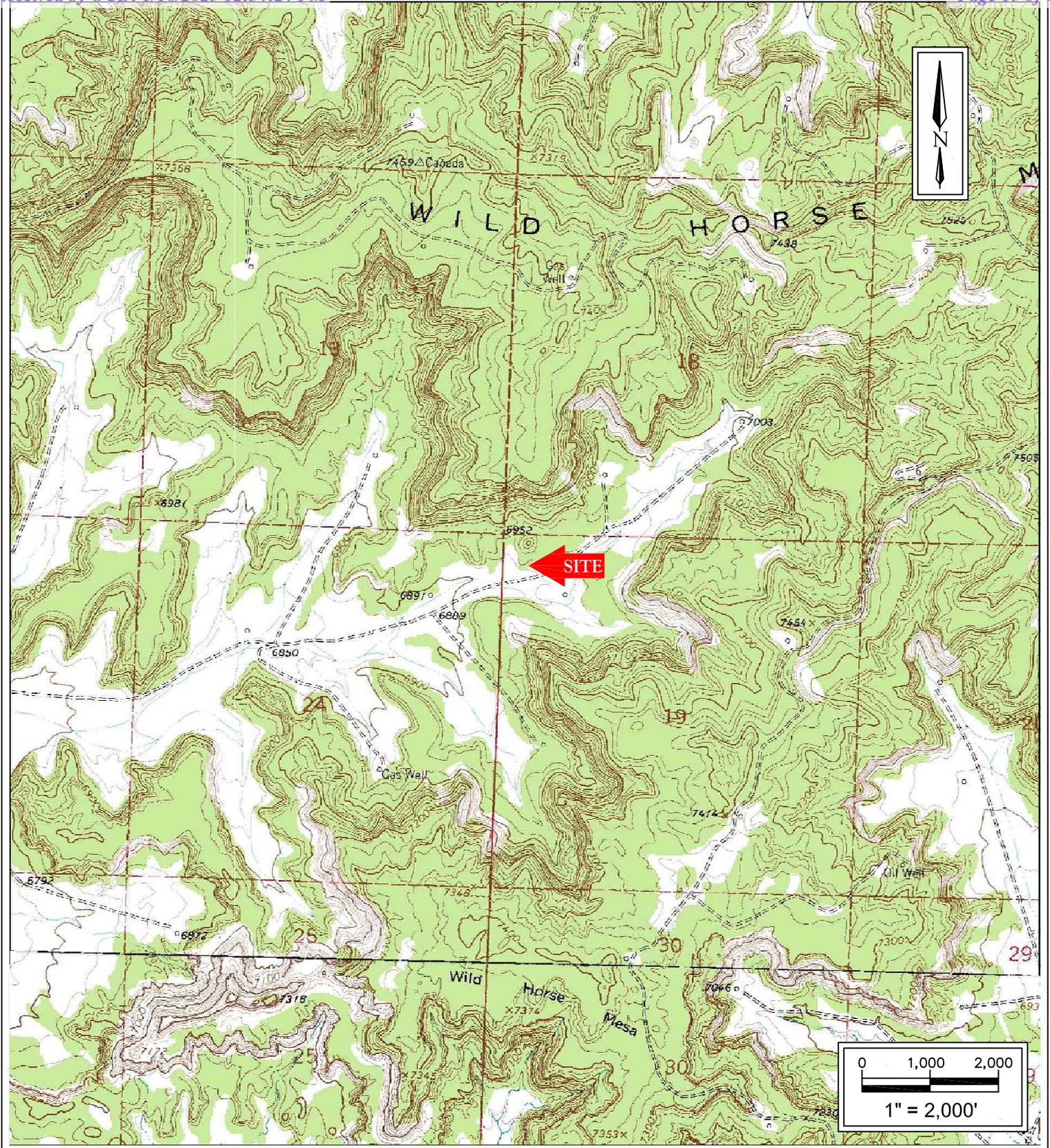
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2.) The identified petroleum hydrocarbon concentrations have naturally attenuated since the completion of corrective action activities.

Based on the historical data, absence of stressed vegetation, and results of the LSI, significant impact does not appear to be present in the area. No further investigation or corrective action appears warranted at this time.

APPENDIX A

Figures



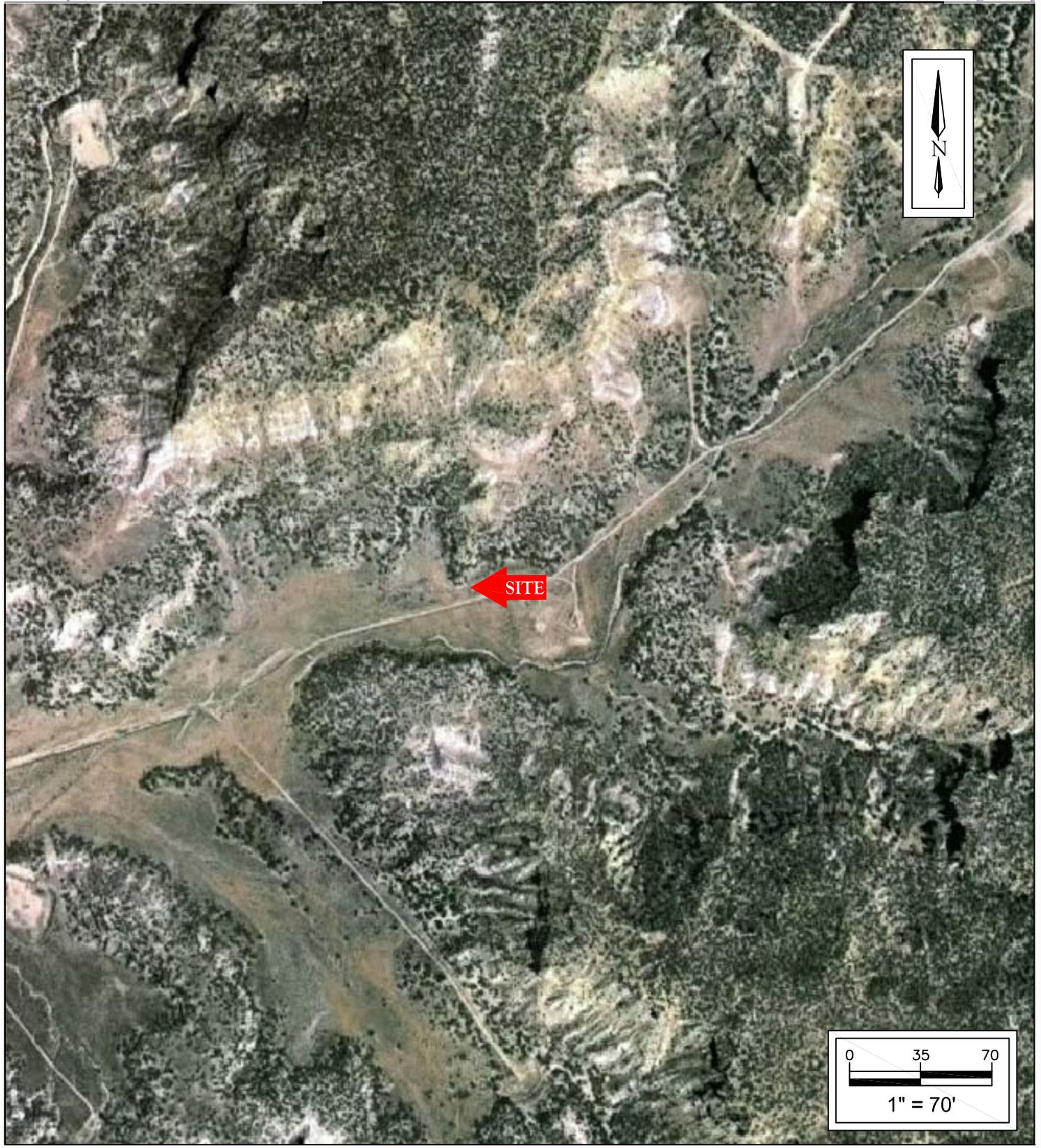
Enterprise Field Services LLC  
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 NW ¼ NW ¼ S19 T25N R4W  
 Rio Arriba County, New Mexico  
 N36.390504; W107.300968

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FIGURE 1  
 TOPOGRAPHIC MAP  
 LAPIS POINT & OTERO STORE,  
 NM QUADRANGLES  
 1963

CONTOUR INTERVAL = 20 FT

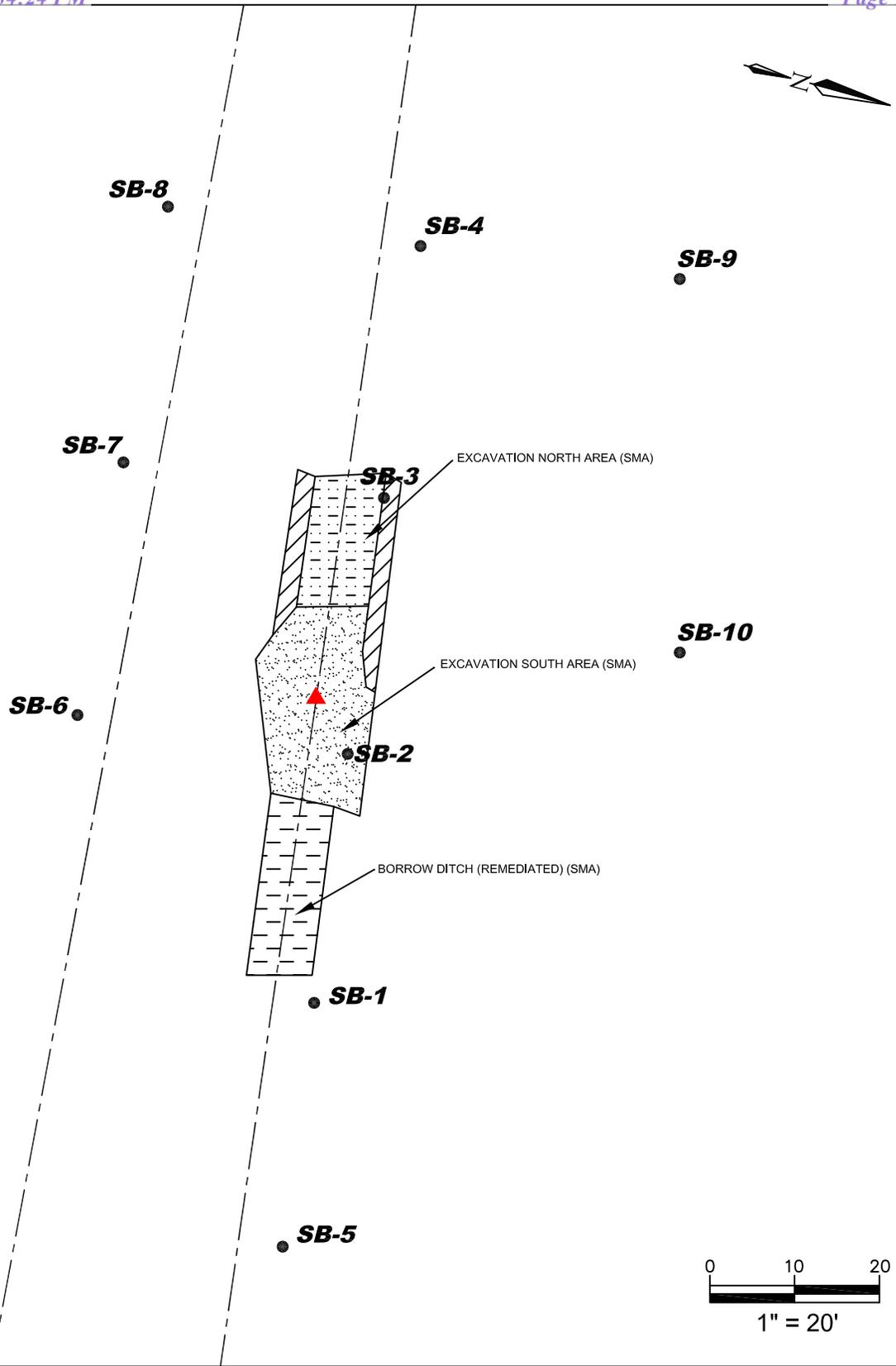


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FIGURE 2  
SITE VICINITY  
MAP



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 N36.390504; W107.300968

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FIGURE 3  
 SOIL BORING  
 MAP



APPENDIX B

Soil Boring Logs





















APPENDIX C

Tables

**TABLE 1  
2C-29 PIPELINE RELEASE  
SOIL ANALYTICAL SUMMARY**

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)
New Mexico Entergy, Mineral & Natural Resources Department, Oil Conservation Division, Remediation Action Level			10	NE	NE	NE	50	100	
SMA Confirmation Samples									
Borrow Ditch	9.29.10	composite	<0.05	<0.05	<0.05	<0.1	ND	<5.0	43
Excavation South Area	9.23.10	composite	<0.05	0.17	0.16	2.8	3.13	<b>69</b>	<b>2,400</b>
Excavation North Area	9.23.10	composite	<0.05	0.053	<0.05	0.85	0.903	<b>35</b>	<b>2,300</b>
Soil Borings									
SB-1	7/25/2011	25 to 26	<0.049	<0.049	<0.049	<0.098	<0.245	<4.9	<9.9
SB-2	7/26/2011	24 to 25	<0.047	<0.047	<0.047	<0.093	<0.234	<4.7	<9.6
SB-3	7/26/2011	24 to 25	<0.048	<0.048	<0.048	<0.096	<0.24	<4.8	<10.0
SB-4	7/26/2011	24 to 25	<0.048	<0.048	<0.048	<0.096	<0.24	<4.8	<10.0
SB-5	7/26/2011	24 to 25	<0.048	<0.048	<0.048	<0.097	<0.24	<4.8	<10.0
SB-6	7/26/2011	24 to 25	<0.049	<0.049	<0.049	<0.099	<0.246	<4.9	<9.9
SB-7	7/26/2011	24 to 25	<0.050	<0.050	<0.050	<0.099	<0.245	<5.0	<10.0
SB-8	7/26/2011	24 to 25	<0.048	<0.048	<0.048	<0.096	<0.24	<0.48	<9.9
SB-9	7/26/2011	24 to 25	<0.049	<0.049	<0.049	<0.097	<0.246	<4.9	<9.9
SB-10	7/26/2011	24 to 25	<0.046	<0.046	<0.046	<0.093	<0.231	<4.6	<10.0

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

ND = Not Detected Above Laboratory Quantitation Limits

NE = Not Established



APPENDIX D

Laboratory Data Reports & Chain of Custody  
Documentation

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COVER LETTER

Thursday, August 04, 2011

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

TEL: (214) 350-5469

FAX (214) 350-2914

RE: 2C-29

Order No.: 1107B14

Dear Kyle Summers:

Hall Environmental Analysis Laboratory, Inc. received 10 sample(s) on 7/29/2011 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](http://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,

A handwritten signature in black ink, appearing to read "Andy Freeman", is written over a horizontal line.

Andy Freeman, Laboratory Manager

NM Lab # NM9425 NM0901

AZ license # AZ0682



4901 Hawkins NE ■ Suite D ■ Albuquerque, NM 87109  
505.345.3975 ■ Fax 505.345.4107

**Hall Environmental Analysis Laboratory, Inc.**

Date: 04-Aug-11  
Analytical Report

<b>CLIENT:</b> Southwest Geoscience	<b>Client Sample ID:</b> SB-1
<b>Lab Order:</b> 1107B14	<b>Collection Date:</b> 7/25/2011 11:05:00 AM
<b>Project:</b> 2C-29	<b>Date Received:</b> 7/29/2011
<b>Lab ID:</b> 1107B14-01	<b>Matrix:</b> SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015B: DIESEL RANGE ORGANICS</b>						Analyst: JB
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	7/30/2011 6:36:18 PM
Surr: DNOP	77.2	73.4-123		%REC	1	7/30/2011 6:36:18 PM
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/2/2011 12:51:50 AM
Surr: BFB	93.0	75.2-136		%REC	1	8/2/2011 12:51:50 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: RAA
Benzene	ND	0.049		mg/Kg	1	8/2/2011 12:51:50 AM
Toluene	ND	0.049		mg/Kg	1	8/2/2011 12:51:50 AM
Ethylbenzene	ND	0.049		mg/Kg	1	8/2/2011 12:51:50 AM
Xylenes, Total	ND	0.098		mg/Kg	1	8/2/2011 12:51:50 AM
Surr: 4-Bromofluorobenzene	103	92-130		%REC	1	8/2/2011 12:51:50 AM

**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: 04-Aug-11

Analytical Report

<b>CLIENT:</b> Southwest Geoscience	<b>Client Sample ID:</b> SB-2
<b>Lab Order:</b> 1107B14	<b>Collection Date:</b> 7/26/2011 9:20:00 AM
<b>Project:</b> 2C-29	<b>Date Received:</b> 7/29/2011
<b>Lab ID:</b> 1107B14-02	<b>Matrix:</b> SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
						Analyst: JB
<b>EPA METHOD 8015B: DIESEL RANGE ORGANICS</b>						
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	8/1/2011 4:47:09 PM
Surr: DNOP	137	73.4-123	S	%REC	1	8/1/2011 4:47:09 PM
						Analyst: RAA
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	8/2/2011 1:20:35 AM
Surr: BFB	92.8	75.2-136		%REC	1	8/2/2011 1:20:35 AM
						Analyst: RAA
<b>EPA METHOD 8021B: VOLATILES</b>						
Benzene	ND	0.047		mg/Kg	1	8/2/2011 1:20:35 AM
Toluene	ND	0.047		mg/Kg	1	8/2/2011 1:20:35 AM
Ethylbenzene	ND	0.047		mg/Kg	1	8/2/2011 1:20:35 AM
Xylenes, Total	ND	0.093		mg/Kg	1	8/2/2011 1:20:35 AM
Surr: 4-Bromofluorobenzene	101	92-130		%REC	1	8/2/2011 1:20:35 AM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Estimated value
- J Analyte detected below quantitation limits
- NC Non-Chlorinated
- PQL Practical Quantitation Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

**Hall Environmental Analysis Laboratory, Inc.**

Date: 04-Aug-11

Analytical Report

<b>CLIENT:</b> Southwest Geoscience	<b>Client Sample ID:</b> SB-3
<b>Lab Order:</b> 1107B14	<b>Collection Date:</b> 7/26/2011 9:45:00 AM
<b>Project:</b> 2C-29	<b>Date Received:</b> 7/29/2011
<b>Lab ID:</b> 1107B14-03	<b>Matrix:</b> SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015B: DIESEL RANGE ORGANICS</b>						Analyst: JB
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	8/1/2011 5:21:28 PM
Surr: DNOP	101	73.4-123		%REC	1	8/1/2011 5:21:28 PM
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/2/2011 5:12:53 PM
Surr: BFB	95.6	75.2-136		%REC	1	8/2/2011 5:12:53 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: RAA
Benzene	ND	0.048		mg/Kg	1	8/2/2011 5:12:53 PM
Toluene	ND	0.048		mg/Kg	1	8/2/2011 5:12:53 PM
Ethylbenzene	ND	0.048		mg/Kg	1	8/2/2011 5:12:53 PM
Xylenes, Total	ND	0.096		mg/Kg	1	8/2/2011 5:12:53 PM
Surr: 4-Bromofluorobenzene	104	92-130		%REC	1	8/2/2011 5:12:53 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: 04-Aug-11

Analytical Report

<b>CLIENT:</b> Southwest Geoscience	<b>Client Sample ID:</b> SB-4
<b>Lab Order:</b> 1107B14	<b>Collection Date:</b> 7/26/2011 10:15:00 AM
<b>Project:</b> 2C-29	<b>Date Received:</b> 7/29/2011
<b>Lab ID:</b> 1107B14-04	<b>Matrix:</b> SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
						Analyst: JB
<b>EPA METHOD 8015B: DIESEL RANGE ORGANICS</b>						
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	7/30/2011 10:01:46 PM
Surr: DNOP	74.8	73.4-123		%REC	1	7/30/2011 10:01:46 PM
						Analyst: RAA
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/2/2011 5:41:41 PM
Surr: BFB	94.9	75.2-136		%REC	1	8/2/2011 5:41:41 PM
						Analyst: RAA
<b>EPA METHOD 8021B: VOLATILES</b>						
Benzene	ND	0.048		mg/Kg	1	8/2/2011 5:41:41 PM
Toluene	ND	0.048		mg/Kg	1	8/2/2011 5:41:41 PM
Ethylbenzene	ND	0.048		mg/Kg	1	8/2/2011 5:41:41 PM
Xylenes, Total	ND	0.096		mg/Kg	1	8/2/2011 5:41:41 PM
Surr: 4-Bromofluorobenzene	103	92-130		%REC	1	8/2/2011 5:41:41 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    |

Date: 04-Aug-11

**Hall Environmental Analysis Laboratory, Inc.**

Analytical Report

<b>CLIENT:</b> Southwest Geoscience	<b>Client Sample ID:</b> SB-5
<b>Lab Order:</b> 1107B14	<b>Collection Date:</b> 7/26/2011 11:00:00 AM
<b>Project:</b> 2C-29	<b>Date Received:</b> 7/29/2011
<b>Lab ID:</b> 1107B14-05	<b>Matrix:</b> SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
						Analyst: <b>JB</b>
<b>EPA METHOD 8015B: DIESEL RANGE ORGANICS</b>						
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	8/1/2011 5:55:49 PM
Surr: DNOP	92.6	73.4-123		%REC	1	8/1/2011 5:55:49 PM
						Analyst: <b>RAA</b>
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/2/2011 10:59:11 PM
Surr: BFB	93.6	75.2-136		%REC	1	8/2/2011 10:59:11 PM
						Analyst: <b>RAA</b>
<b>EPA METHOD 8021B: VOLATILES</b>						
Benzene	ND	0.048		mg/Kg	1	8/2/2011 10:59:11 PM
Toluene	ND	0.048		mg/Kg	1	8/2/2011 10:59:11 PM
Ethylbenzene	ND	0.048		mg/Kg	1	8/2/2011 10:59:11 PM
Xylenes, Total	ND	0.097		mg/Kg	1	8/2/2011 10:59:11 PM
Surr: 4-Bromofluorobenzene	102	92-130		%REC	1	8/2/2011 10:59:11 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Estimated value
- J Analyte detected below quantitation limits
- NC Non-Chlorinated
- PQL Practical Quantitation Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

**Hall Environmental Analysis Laboratory, Inc.**

Date: 04-Aug-11

Analytical Report

**CLIENT:** Southwest Geoscience  
**Lab Order:** 1107B14  
**Project:** 2C-29  
**Lab ID:** 1107B14-06

**Client Sample ID:** SB-6  
**Collection Date:** 7/26/2011 11:40:00 AM  
**Date Received:** 7/29/2011  
**Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
						Analyst: JB
<b>EPA METHOD 8015B: DIESEL RANGE ORGANICS</b>						
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	8/1/2011 6:30:10 PM
Surr: DNOP	90.6	73.4-123		%REC	1	8/1/2011 6:30:10 PM
						Analyst: RAA
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/2/2011 11:28:01 PM
Surr: BFB	93.0	75.2-136		%REC	1	8/2/2011 11:28:01 PM
						Analyst: RAA
<b>EPA METHOD 8021B: VOLATILES</b>						
Benzene	ND	0.049		mg/Kg	1	8/2/2011 11:28:01 PM
Toluene	ND	0.049		mg/Kg	1	8/2/2011 11:28:01 PM
Ethylbenzene	ND	0.049		mg/Kg	1	8/2/2011 11:28:01 PM
Xylenes, Total	ND	0.099		mg/Kg	1	8/2/2011 11:28:01 PM
Surr: 4-Bromofluorobenzene	103	92-130		%REC	1	8/2/2011 11:28:01 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Estimated value
- J Analyte detected below quantitation limits
- NC Non-Chlorinated
- PQL Practical Quantitation Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

Date: 04-Aug-11

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

CLIENT: Southwest Geoscience  
 Lab Order: 1107B14  
 Project: 2C-29  
 Lab ID: 1107B14-07

Client Sample ID: SB-7  
 Collection Date: 7/26/2011 12:10:00 PM  
 Date Received: 7/29/2011  
 Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
						Analyst: JB
<b>EPA METHOD 8015B: DIESEL RANGE ORGANICS</b>						
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	8/1/2011 7:04:30 PM
Surr: DNOP	113	73.4-123		%REC	1	8/1/2011 7:04:30 PM
						Analyst: RAA
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	8/2/2011 11:56:50 PM
Surr: BFB	92.8	75.2-136		%REC	1	8/2/2011 11:56:50 PM
						Analyst: RAA
<b>EPA METHOD 8021B: VOLATILES</b>						
Benzene	ND	0.050		mg/Kg	1	8/2/2011 11:56:50 PM
Toluene	ND	0.050		mg/Kg	1	8/2/2011 11:56:50 PM
Ethylbenzene	ND	0.050		mg/Kg	1	8/2/2011 11:56:50 PM
Xylenes, Total	ND	0.099		mg/Kg	1	8/2/2011 11:56:50 PM
Surr: 4-Bromofluorobenzene	102	92-130		%REC	1	8/2/2011 11:56:50 PM

Qualifiers:

- \* Value exceeds Maximum Contaminant Level
- E Estimated value
- J Analyte detected below quantitation limits
- NC Non-Chlorinated
- PQL Practical Quantitation Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

**Hall Environmental Analysis Laboratory, Inc.**

Date: 04-Aug-11

Analytical Report

**CLIENT:** Southwest Geoscience  
**Lab Order:** 1107B14  
**Project:** 2C-29  
**Lab ID:** 1107B14-08

**Client Sample ID:** SB-8  
**Collection Date:** 7/26/2011 12:35:00 PM  
**Date Received:** 7/29/2011  
**Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
						Analyst: JB
<b>EPA METHOD 8015B: DIESEL RANGE ORGANICS</b>						
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	8/1/2011 8:13:11 PM
Surr: DNOP	94.0	73.4-123		%REC	1	8/1/2011 8:13:11 PM
						Analyst: RAA
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/3/2011 12:25:36 AM
Surr: BFB	93.0	75.2-136		%REC	1	8/3/2011 12:25:36 AM
						Analyst: RAA
<b>EPA METHOD 8021B: VOLATILES</b>						
Benzene	ND	0.048		mg/Kg	1	8/3/2011 12:25:36 AM
Toluene	ND	0.048		mg/Kg	1	8/3/2011 12:25:36 AM
Ethylbenzene	ND	0.048		mg/Kg	1	8/3/2011 12:25:36 AM
Xylenes, Total	ND	0.096		mg/Kg	1	8/3/2011 12:25:36 AM
Surr: 4-Bromofluorobenzene	101	92-130		%REC	1	8/3/2011 12:25:36 AM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Estimated value
- J Analyte detected below quantitation limits
- NC Non-Chlorinated
- PQL Practical Quantitation Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

# Hall Environmental Analysis Laboratory, Inc.

Date: 04-Aug-11

Analytical Report

<b>CLIENT:</b> Southwest Geoscience	<b>Client Sample ID:</b> SB-9
<b>Lab Order:</b> 1107B14	<b>Collection Date:</b> 7/26/2011 1:00:00 PM
<b>Project:</b> 2C-29	<b>Date Received:</b> 7/29/2011
<b>Lab ID:</b> 1107B14-09	<b>Matrix:</b> SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015B: DIESEL RANGE ORGANICS</b>						Analyst: JB
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	7/31/2011 12:52:07 AM
Surr: DNOP	74.8	73.4-123		%REC	1	7/31/2011 12:52:07 AM
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/3/2011 12:54:25 AM
Surr: BFB	93.1	75.2-136		%REC	1	8/3/2011 12:54:25 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: RAA
Benzene	ND	0.049		mg/Kg	1	8/3/2011 12:54:25 AM
Toluene	ND	0.049		mg/Kg	1	8/3/2011 12:54:25 AM
Ethylbenzene	ND	0.049		mg/Kg	1	8/3/2011 12:54:25 AM
Xylenes, Total	ND	0.097		mg/Kg	1	8/3/2011 12:54:25 AM
Surr: 4-Bromofluorobenzene	102	92-130		%REC	1	8/3/2011 12:54:25 AM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Estimated value
- J Analyte detected below quantitation limits
- NC Non-Chlorinated
- PQL Practical Quantitation Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

**Hall Environmental Analysis Laboratory, Inc.**

Date: 04-Aug-11

Analytical Report

**CLIENT:** Southwest Geoscience  
**Lab Order:** 1107B14  
**Project:** 2C-29  
**Lab ID:** 1107B14-10

**Client Sample ID:** SB-10  
**Collection Date:** 7/26/2011 1:30:00 PM  
**Date Received:** 7/29/2011  
**Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015B: DIESEL RANGE ORGANICS</b>						Analyst: JB
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	7/31/2011 1:26:12 AM
Surr: DNOP	78.7	73.4-123		%REC	1	7/31/2011 1:26:12 AM
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	8/3/2011 1:23:12 AM
Surr: BFB	94.0	75.2-136		%REC	1	8/3/2011 1:23:12 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: RAA
Benzene	ND	0.046		mg/Kg	1	8/3/2011 1:23:12 AM
Toluene	ND	0.046		mg/Kg	1	8/3/2011 1:23:12 AM
Ethylbenzene	ND	0.046		mg/Kg	1	8/3/2011 1:23:12 AM
Xylenes, Total	ND	0.093		mg/Kg	1	8/3/2011 1:23:12 AM
Surr: 4-Bromofluorobenzene	101	92-130		%REC	1	8/3/2011 1:23:12 AM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Estimated value
- J Analyte detected below quantitation limits
- NC Non-Chlorinated
- PQL Practical Quantitation Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

**Client:** Southwest Geoscience  
**Project:** 2C-29

**Work Order:** 1107B14

Analyte	Result	Units	PQL	SPK Va	SPK ref	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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**Method:** EPA Method 8015B: Diesel Range Organics

<b>Sample ID:</b> 1107B14-01AMSD		<i>MSD</i>									
Diesel Range Organics (DRO)	56.89	mg/Kg	9.9	49.36	5.494	104	61.9	125	12.6	22.3	
<b>Sample ID:</b> MB-27827		<i>MBLK</i>									
Diesel Range Organics (DRO)	ND	mg/Kg	10								
<b>Sample ID:</b> LCS-27827		<i>LCS</i>									
Diesel Range Organics (DRO)	55.20	mg/Kg	10	50	0	110	66.7	119			
<b>Sample ID:</b> LCSD-27827		<i>LCSD</i>									
Diesel Range Organics (DRO)	56.14	mg/Kg	10	50	0	112	66.7	119	1.67	18.9	
<b>Sample ID:</b> 1107B14-01AMS		<i>MS</i>									
Diesel Range Organics (DRO)	64.53	mg/Kg	10	51.92	5.494	114	61.9	125			

**Method:** EPA Method 8015B: Gasoline Range

<b>Sample ID:</b> 1107B14-01A MSD		<i>MSD</i>									
Gasoline Range Organics (GRO)	26.91	mg/Kg	4.8	24.13	0	112	57.7	165	0.248	15.5	
<b>Sample ID:</b> MB-27826		<i>MBLK</i>									
Gasoline Range Organics (GRO)	ND	mg/Kg	5.0								
<b>Sample ID:</b> LCS-27826		<i>LCS</i>									
Gasoline Range Organics (GRO)	30.16	mg/Kg	5.0	25	0	121	88.8	124			
<b>Sample ID:</b> 1107B14-01A MS		<i>MS</i>									
Gasoline Range Organics (GRO)	26.98	mg/Kg	4.8	23.83	0	113	57.7	165			

**Method:** EPA Method 8021B: Volatiles

<b>Sample ID:</b> 1107B14-02A MSD		<i>MSD</i>									
Benzene	0.9203	mg/Kg	0.049	0.977	0	94.2	67.2	113	10.7	14.3	
Toluene	0.9879	mg/Kg	0.049	0.977	0	101	62.1	116	5.06	15.9	
Ethylbenzene	1.017	mg/Kg	0.049	0.977	0	104	67.9	127	2.44	14.4	
Xylenes, Total	3.113	mg/Kg	0.098	2.93	0	106	60.6	134	1.94	12.6	
<b>Sample ID:</b> MB-27826		<i>MBLK</i>									
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								
<b>Sample ID:</b> LCS-27826		<i>LCS</i>									
Benzene	0.9052	mg/Kg	0.050	1	0	90.5	83.3	107			
Toluene	0.9875	mg/Kg	0.050	1	0	98.7	74.3	115			
Ethylbenzene	1.021	mg/Kg	0.050	1	0	102	80.9	122			
Xylenes, Total	3.104	mg/Kg	0.10	3	0	103	85.2	123			
<b>Sample ID:</b> 1107B14-02A MS		<i>MS</i>									
Benzene	0.8266	mg/Kg	0.048	0.951	0	87.0	67.2	113			
Toluene	0.9392	mg/Kg	0.048	0.951	0	98.8	62.1	116			
Ethylbenzene	0.9928	mg/Kg	0.048	0.951	0	104	67.9	127			
Xylenes, Total	3.053	mg/Kg	0.095	2.852	0	107	60.6	134			

**Qualifiers:**

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

# Hall Environmental Analysis Laboratory, Inc.

## Sample Receipt Checklist

Client Name **SOUTHWEST GEOSCIENCE**

Date Received:

7/29/2011

Work Order Number **1107B14**

Received by: **LNM**

Checklist completed by:

*[Handwritten Signature]*  
Signature \_\_\_\_\_ Date **7/29/11**

Sample ID labels checked by:

Initials *[Handwritten Initials]*

Matrix:

Carrier name: Greyhound

- 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? **4.4°** <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

<h1 style="margin: 0;">Southwest GEO SCIENCE</h1> <p style="margin: 0; font-size: small;">Environmental &amp; Hydrogeologic Consultants</p>		Laboratory: <u>Hall</u> Address: <u>Albuquerque</u> Contact: <u>Andy Freeman</u> Phone: <u>505 345 3975</u> PO/SO #: _____		ANALYSIS REQUESTED <u>TAH GAD/DPD BDIS</u> <u>BTX BDIS</u>		Lab use only Due Date: _____ Temp. of coolers when received (C°): <u>4.4</u> 1   2   3   4   5 Page <u>1</u> of <u>1</u>			
Office Location: <u>Artes</u> Project Manager: <u>H. Summers</u> Sampler's Name: <u>Ryle Summers</u>		Project Name: <u>2C-29</u> No. Type of Containers: _____		Sampler's Signature: <u>[Signature]</u>		Lab Sample ID (Lab Use Only): _____			
Matrix	Date	Time	Identifying Marks of Sample(s)	Deposited	Deposited	VOA	A/G 1 L.	250 ml P/O	
S	7/25/11	1105	SB-1	26	25	25	25	25	
	7/26/11	0930	SB-2	25	25	25	25	25	
		0945	SB-3	25	25	25	25	25	
		1015	SB-4	25	25	25	25	25	
		1100	SB-5	25	25	25	25	25	
		1140	SB-6	25	25	25	25	25	
		1210	SB-7	25	25	25	25	25	
		1235	SB-8	25	25	25	25	25	
		1300	SB-9	25	25	25	25	25	
		1330	SB-10	25	25	25	25	25	
Turn around time	<input checked="" type="checkbox"/> Normal <input type="checkbox"/> 25% Rush <input type="checkbox"/> 50% Rush <input type="checkbox"/> 100% Rush								
Relinquished by (Signature)	<u>[Signature]</u>	Date: <u>7/27/11</u>	Time: <u>1754</u>	Received by (Signature)	<u>[Signature]</u>	Date: <u>7/27/11</u>	Time: <u>1754</u>	NOTES:	
Relinquished by (Signature)	<u>[Signature]</u>	Date: <u>7/28/11</u>	Time: <u>1645</u>	Received by (Signature)	<u>[Signature]</u>	Date: <u>7/29/11</u>	Time: <u>800</u>		
Relinquished by (Signature)	<u>[Signature]</u>	Date: _____	Time: _____	Received by (Signature)	_____	Date: _____	Time: _____		
Relinquished by (Signature)	_____	Date: _____	Time: _____	Received by (Signature)	_____	Date: _____	Time: _____		
Matrix Container	WW - Wastewater VOA - 40 ml vial	W - Water A/G - Amber / Or Glass 1 Liter	S - Soil SD - Solid	L - Liquid 250 ml - Glass wide mouth	A - Air Bag	C - Charcoal tube	SL - sludge	O - Oil	



APPENDIX E

Remediation Technologies Information

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# VeruSOLVE™

## MATERIAL SAFETY DATA SHEET

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### Section 1: PRODUCT AND COMPANY IDENTIFICATION

---

**Manufacturer:** VeruTEK Technologies, Inc.  
**Address:** 65 West Dudley Town Road, Suite 100, Bloomfield, CT 06002  
**Phone Number:** (860) 242-9800

**Product Name:** VeruSOLVE™  
**Issue Date:** January 2010

---

### Section 2: HAZARDS IDENTIFICATION

---

#### Emergency Overview

**Appearance/Odor:** Clear liquid with mild citrus odor.

**Stability:** Product is stable under normal conditions, but is very sensitive to contamination. Decomposition yields oxygen gas that supports combustion of organic matter and can cause over pressure if confined.

**Slippery when spilled.**

**Potential Health Effects:** See Section 11 for more information.

**Likely Routes of Exposure:** Eye contact, skin contact, inhalation.

**Eye:** Causes moderate to severe irritation.

**Skin:** May cause slight redness. Prolonged or repeated exposure may cause drying of the skin.

**Inhalation:** May cause nose, throat, and respiratory tract irritation, coughing, headache.

**Ingestion:** Not likely to be toxic, but may cause vomiting, headache, or other medical problems.

**Medical Conditions Aggravated By Exposure:** May irritate the skin of people with pre-existing skin conditions.

This product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC, or NTP.

---

### Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

---

	Percent	TLV	Carcinogenic (OSHA,TP,IARC)
Hydrogen Peroxide	< 4		No
VeruSOL® 3	1 – 5		No
Water	91-95		No

---

### Section 4: FIRST AID MEASURES

---

**Eye Contact:**

Flush with water for at least 15 minutes. If irritation persists, seek medical attention.

**Skin Contact:**

Wash affected area with copious amounts of soap and water for at least 15 minutes. Remove contaminated clothing. If irritation develops, seek medical attention.

**Inhalation:**

Move to fresh air immediately. If breathing is difficult or discomfort persists, seek medical attention.

**Ingestion:**

Seek medical attention.

---

### Section 5: FIRE FIGHTING MEASURES

---



**Material Safety Data Sheet**

VeruSOLVE™

**Flash Point (Method):** N/A**Explosion Limits:** Upper: N/A

Lower: N/A

**Suitable Extinguishing Media:**

Flood area with water. Product is not combustible but during decomposition will produce oxygen gas which may intensify a fire.

**Protection of Firefighters:**

Vapors may be irritating to eyes, skin and respiratory tract. Firefighters should wear self-contained breathing apparatus (SCBA) and full fire-fighting turnout gear.

---

**Section 6: ACCIDENTAL RELEASE MEASURES**

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**Methods for Accidental Release:**

Combustible materials exposed to product should be immediately submerged or rinsed with water to ensure that all hydrogen peroxide is removed. Residual peroxide that may be left after evaporation may cause certain materials to ignite and result in a fire.

Dike spill area and cap leaking containers as necessary to prevent further spreading of spilled material. Absorb small spills with suitable material and put into approved containers.

Larger spills should be contained by blocking nearby sewers, drains, or bodies of water. Dilute with large amounts of water and hold in a dike for disposal or until all hydrogen peroxide has decomposed.

**Waste Disposal:**

Manage in accordance with applicable local, State, and Federal solid/hazardous waste regulations. Material is not a listed waste.

**Other Information:** Follow local, State and Federal release reporting requirements

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**Section 7: HANDLING AND STORAGE**

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**Handling**

Wear chemical splash goggles and full face shield, impervious clothing, gloves, and shoes. Avoid cotton, wool, and leather. Avoid excessive heat and contamination. Contamination may cause decomposition and generation of oxygen gas which could result in high pressures and possible container rupture. Never return unused material to the original container. Empty drums should be triple rinsed with water before discarding. Utensils used for handling should be made of glass, stainless steel, aluminum, or plastic. Do not allow this material to come in contact with eyes. Avoid prolonged contact with skin. Use in well ventilated areas. Do not breathe vapors. Thoroughly wash hands with soap and water after handling this material.

**Storage**

Store containers in well-ventilated area, out of direct sun-light, and away from combustibles. Keep away from incompatible materials and heat, sparks, and flame. Open container slowly to release pressure caused by temperature variations. Product may be packaged in phenolic-lined, steel containers, or fluorinated plastic containers. Storage temperature should not exceed 110°F (43°C) for extended periods of time. Keep container closed when not in use.

---

**Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

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**Exposure Guidelines**

VeruSOLVE™                      N/E                      (N/E – Not Established)

**Engineering Controls:**

Provide ventilation to minimize the release of vapors and mist into the work environment. Spills should be minimized or confined to prevent release from work area. Remove contaminated clothing immediately and wash before reuse. Keep away from sparks and flames.

**Eye/Face Protection:**

Wear chemical splash-type safety glasses or goggles. Use full face mask if severe splashing is expected during use.

**Skin Protection:**

Wear chemically resistant clothing, gloves and boots as recommended by the manufacturer.



## Material Safety Data Sheet

### VeruSOLVE™

**Respiratory Protection:**

If required, use NIOSH approved respiratory protection

**Protective Clothing:**

Wear impervious clothing as recommended by the manufacturer. (avoid cotton, leather, and wool). Completely submerge any clothing that becomes contaminated with the product in water, before drying. Residual peroxide left to dry on a material such as fabrics, paper, leather, wool, cotton, wood, or other combustible material may cause ignition and result in a fire.

**General Hygiene Considerations:**

As with any chemical, wash hands thoroughly after handling. Have eyewash facilities immediately available.

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### Section 9: PHYSICAL AND CHEMICAL PROPERTIES

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<b>Color:</b>	Clear	<b>Odor:</b>	Citrus odor.
<b>Physical State:</b>	Liquid	<b>Boiling Point:</b>	212°F (100°C)
<b>Specific Gravity:</b>	1.0 @ 77°F (25°C)	<b>Vapor Pressure:</b>	N/A
<b>Flash Point:</b>	>120 °F	<b>Solubility in Water:</b>	Soluble.
<b>Volatile Organic Compound (VOC) Content:</b> 1-5% by volume.			

Note: These specifications represent a typical sample of this product, but actual values may vary. Certificates of Analysis and Specification Sheets are available upon request.

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### Section 10: STABILITY AND REACTIVITY

---

**Stability:** Contamination may cause decomposition and production of oxygen gas.

**Conditions to Avoid:** Keep away from heat, sparks, flames, and contamination.

**Incompatible Materials:** Strong reducing agents, iron and other heavy metals, galvanized iron, copper alloys and caustics

**Hazardous Decomposition Products:** Possible hazardous decomposition products formed under fire conditions – Nature of products is unknown.

**Possibility of Hazardous Reactions:** Possible under extreme conditions or in presence of incompatible material.

---

### Section 11: TOXICOLOGICAL INFORMATION

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**Acute Effects**

May cause irritation to eyes, nose, and throat.

**Chronic Effects**

N/A

---

### Section 12: ECOLOGICAL INFORMATION

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**Ecotoxicity:** N/A

**Persistence/Degradability:** This product is subject to reduction or oxidation process and decomposes in to water and oxygen.

**Bioaccumulation/Accumulation:** N/A

**Mobility in Environment:** N/A

---

### Section 13: DISPOSAL CONSIDERATIONS

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**Disposal:**



**Material Safety Data Sheet**

VeruSOLVE™

Dispose of in accordance with applicable local, State, and Federal regulations. Material is not a listed hazardous waste.

**Section 14: TRANSPORT INFORMATION****US DOT Shipping Classification**

Hazard Class: Not regulated  
 Identification No.: Not applicable  
 Packing Group: Not applicable  
 Label/Placard: Not applicable

**TDG Status:**

Not regulated

**IMO Status:**

Not regulated

**IATA Status:**

Not regulated

**Section 15: REGULATORY INFORMATION****Global Inventories**

The components of this product are included in the following inventories:

USA (TSCA)  
 Canada (DSL)  
 Australia (AICS)  
 Korea (KECL)  
 Philippines (PICCS)

**Proposition 65: California Safe Drinking Water and Toxic Enforcement Act of 1986**

This product is not known to contain any chemicals currently listed as carcinogens or reproductive toxins under California Proposition 65 at levels which would be subject to the proposition.

**Section 16: OTHER INFORMATION****NFPA 704: National Fire Protection Association**

Health – 0 (minimal hazard)      Fire – 0 (minimal hazard)      Reactivity – 0 (minimal hazard)

**Legend**

OSHA – United States Occupational Health and Safety Administration  
 IARC – International Agency for Research on Cancer  
 NTP – National Toxicology Program  
 NIOSH – National Institute for Occupational Safety and Health  
 EPA – United States Environmental Protection Agency

**Caution:** The user should conduct his/her own experiments and establish proper procedures and control before attempting use on critical parts.

The information contained herein is based on current knowledge and experience: no responsibility is accepted that the information is sufficient or correct in all cases. Users should consider these data only as a supplement to other information obtained by the user. No warranty is expressed or implied regarding the accuracy of this data, the results to be obtained from the use thereof, or that any such use will not infringe any patent. Users should make independent determinations of suitability and completeness of information from all sources to assure proper use and disposal of these materials, the safety and health of employees and customers, and the protection of the environment. This information is furnished upon the condition the person receiving it shall determine the suitability for the particular purpose. This MSDS is to be used as a guideline for safe work practices and emergency response.



# VeruSOLVE-HP™

## What is VeruSOLVE-HP™?

VeruTEK® Technology's green chemistry platform provides innovative solutions to today's most challenging environmental cleanups. VeruSOLVE-HP™ is a stabilized surfactant/oxidant combination effective for surgical destruction of DNAPLs and source term wastes like MGP waste, creosote, hydrocarbons and chlorinated solvents. Clients apply VeruSOLVE-HP™ in-situ via injection, or ex-situ as a direct spray application.

## Why is VeruSOLVE-HP™ better than current methods?

- VeruSOLVE-HP™ safely destroys organic contamination in place such as beneath buildings and structures.
- S-ISCO® is a less expensive process overall and is a far more complete remedy.
- Previous applications of VeruSOLVE-HP™ have demonstrated successful destruction of fuel oil and gasoline constituents to achieve closure of sites in a short duration (less than two weeks).
- Injected in close proximity to homes and high traffic areas safely and without disruption to occupancy.
- VeruSOLVE-HP™ can be used for source removal, enhanced product recovery and as an aerobic biostimulant (for plume control).
- The carbon footprint of S-ISCO® remediation with VeruSOLVE-HP™ is less than 10 percent than that of traditional remedies such as excavation/landfilling.

## VeruSOLVE-HP™ application is easy.

- VeruSOLVE-HP™ is shipped ready to inject into the subsurface through geoprobe points, permanent injection wells, or monitoring wells.
- VeruSOLVE-HP™ can be delivered in 55-gallon drums, 1000 L totes, or by tanker truck.
- Ex-situ application can treat stockpiled contaminated soil at rates of 400-800 tons per day.

## VeruSOLVE-HP™ is the preferred solution for Engineers, Injection Contractors, and the following Industries:

Real Estate	Industrial	Homeowners	Lawyers
Utilities	Pharmaceutical	State and Federal Government	Insurance Companies
Manufacturing	Municipal	Banks	

**VeruSOLVE-HP™ is available for direct purchase. VeruTEK® provides multiple levels of support, based on site specific needs from training to full scale implementation.**

Applicators can choose from the following:

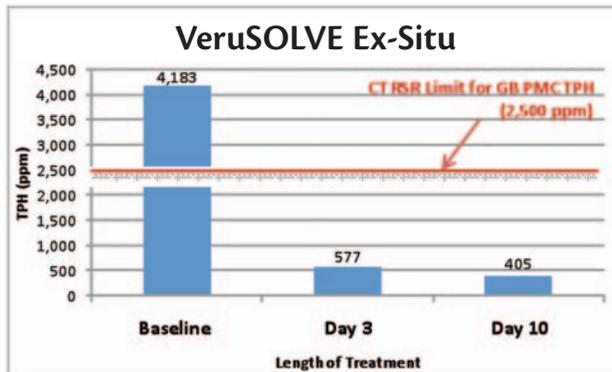
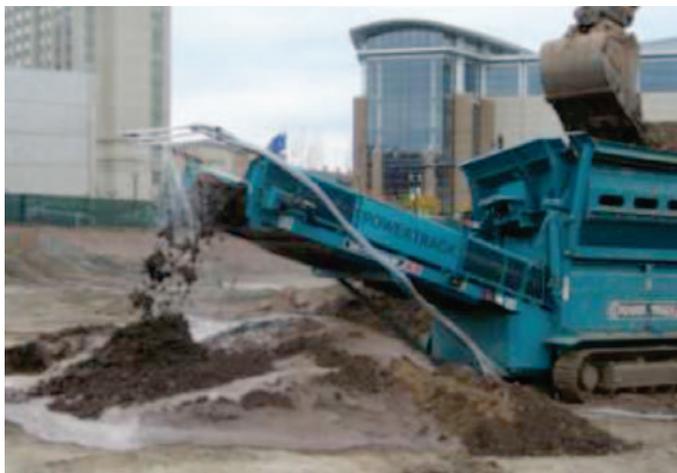
- *VeruSOLVE-HP™ direct purchase*
- *VeruSOLVE-HP™ with technical support*
- *VeruSOLVE-HP™ with ServicePAK™ – full project implementation*

For more information, contact us at: (860) 242-9800 x317  
[www.verutek.com](http://www.verutek.com)



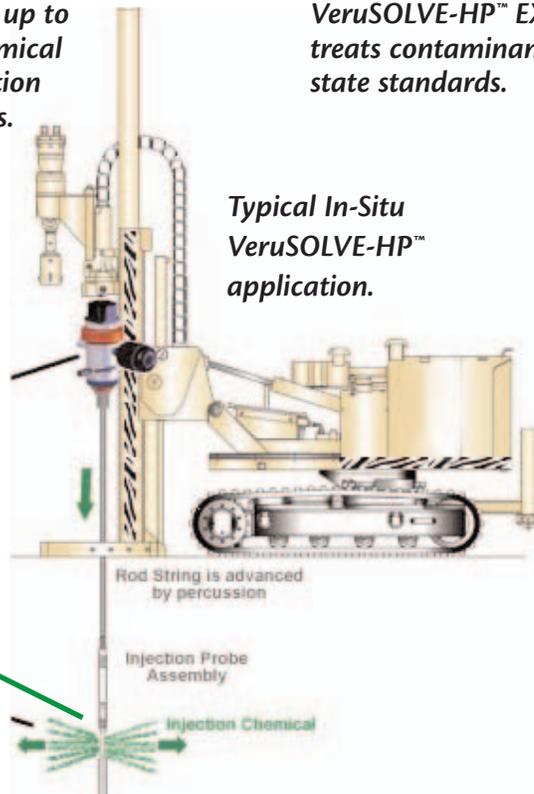
**VeruTEK**  
TECHNOLOGIES

# VeruSOLVE-HP™



*EX-Situ VeruSOLVE-HP™ can treat up to 400-800 ton per day. More economical and sustainable option to excavation and alternate remedial techniques. On average 25-50% less than dig and haul.*

*VeruSOLVE-HP™ EX-Situ application successfully treats contaminant concentrations to below state standards.*



Typical Site Setup

VeruSOLVE-HP™ is applicable to all size sites and available for direct purchase.

VeruTEK® provides multiple levels of support, based on site specific needs from training to full scale implementation.

Complete the Project Survey available on our website to determine the appropriate level of support.

**Call or visit our website for more information.**  
**(860) 242-9800 x317**  
**www.verutek.com**



**VeruTEK**  
 TECHNOLOGIES

# VeruSOLVE-HP™

## Application Guidelines

### Cleaning up the Environment for the Benefit of Clients and their communities

“Work for something because it is good, not just because it stands a chance of success”  
- Vaclav Havel



VeruTEK Technologies, Inc.  
65 West Dudley Town Road  
Bloomfield, CT 06002  
Phone (860) 242-9800  
Fax (860) 242-9899  
www.verutek.com



Green Technologies for the Environment

### What is VeruSOLVE-HP™?

VeruTEK's® green chemistry platform provides innovative solutions to today's most challenging environmental cleanups. VeruSOLVE-HP™ is a stabilized surfactant/oxidant combination effective for surgical destruction of DNAPLs and source term wastes like MGP, creosote, and hydrocarbons. Clients apply VeruSOLVE-HP in-situ via injection, or ex-situ as a direct spray application.

### Step 1: How to Order VeruSOLVE-HP™

VeruSOLVE-HP™, is typically delivered *Ready-to-Inject*, in bulk volume tankers, totes, or drums. VeruSOLVE is safe to handle and use, and not subject to regulatory reporting or DOT transportation restrictions or labeling. First step is to obtain a site survey form from VeruTEK – [info@verutek.com](mailto:info@verutek.com) or [www.verutek.com](http://www.verutek.com) – Complete one form for each site and return to VeruTEK. This will enable you to obtain the quantity and cost of VeruSOLVE-HP™ required for treatment at your site; custom to the type of waste, treatment area, and lithology.

### Step 2: Select Your Applicator

Clients apply VeruSOLVE-HP in-situ through injection, or ex-situ as a direct spray-on application. Work with internal resources, or if applicable, identify qualified external applicators, to determine if in-situ or ex-situ application will be best suited for your site. Most any company experienced with Geoprobe® in-situ investigation and injection implementor, or remediation contractor, can successfully apply VeruSOLVE. VeruTEK has worked with numerous qualified and

**VeruSOLVE-HP is available for direct purchase. VeruTEK provides multiple levels of support based on site specific needs from training to full scale implementation.**

Applicators can choose from the following:

- VeruSOLVE-HP™ *direct purchase*
- VeruSOLVE-HP™ *with technical support*
- VeruSOLVE-HP™ *with ServicePAK™ full project implementation*

experienced companies across most states, and may be able to identify an applicator or consultant.

### Step 3: How to Apply VeruSOLVE-HP™

#### Application equipment

For in-situ remediation of free phase, dissolved or DNAPL wastes, VeruSOLVE-HP™ is injected into the treatment zone through Geoprobe® rods or installed injection points using a chemically compatible pump. Both methods require an injection well head to monitor pressure and purge air from the injection line.

To treat ex-situ, a series of spray bars are assembled at the end of a power grader or pug mill. VeruSOLVE-HP is directly sprayed onto the loose contaminated material upon exit. Treated materials are piled in a controlled fashion and contaminant destruction occurs over one to several days depending on contaminant concentrations and desired cleanup levels. As with injection, a chemically compatible pump, hose, fittings and spray bars are necessary. When pumping or applying VeruSOLVE-HP™ with non-VeruTEK equipment, cross-check the wetted materials of your pumping equipment to ensure compatibility:

<b>Compatible Materials</b>	Viton, HDPE, SS, PVC, Nylon, and Polycarbonate
<b>Incompatible Materials</b>	Steel, cast iron, other metal alloys



Typical well head assemblies for delivery of VeruSOLVE-HP™

# Optimizing Your In-situ application

## How many injection points do I need?

Typically, it is recommended for small treatment areas to space out injection points approximately 10-15 feet apart equally throughout the treatment area.

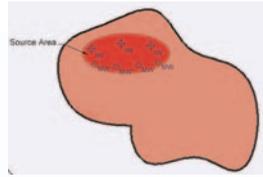
For larger areas, it is best to start in a known source area and monitor the initial injection of VeruSOLVE-HP™ to verify site specific in-situ transport properties. This will aid in determining the optimal injection point spacing, and injection operating parameters.

## How do I construct the injection wells? Can I use existing wells?

Injection wells are generally constructed of the same material as a standard monitoring well. Injections can also be performed through existing monitoring wells or through direct push Geoprobe rods.

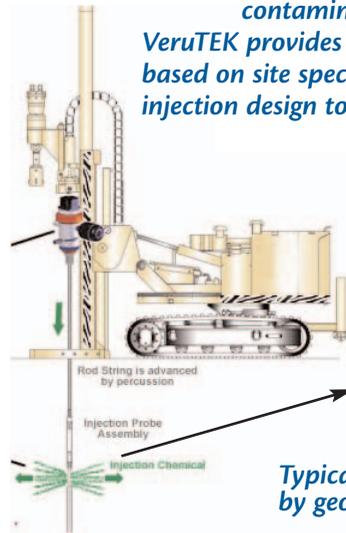
## How many injection treatments?

Since VeruSOLVE-HP can successfully destroy DNAPL and free phase wastes, typically no repeat treatments are required for adequately characterized sites. Detailed monitoring of the injections is important to optimize the radius of influence of treatment laterally and at depth, as well as the progress of contaminant destruction. In many cases, areas of the site may have less waste than anticipated, or contaminant destruction occurs more rapidly - allowing injection points to be turned off ahead of schedule.



VeruSOLVE-HP is available for direct purchase. Quantities are based on client provided information including area of concern and contaminant concentrations.

VeruTEK provides multiple levels of support, based on site specific needs from training and injection design to full scale implementation.



Typical In-Situ application by geoprobe

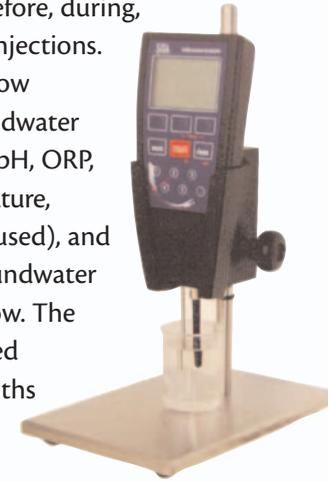


Typical Site set up.

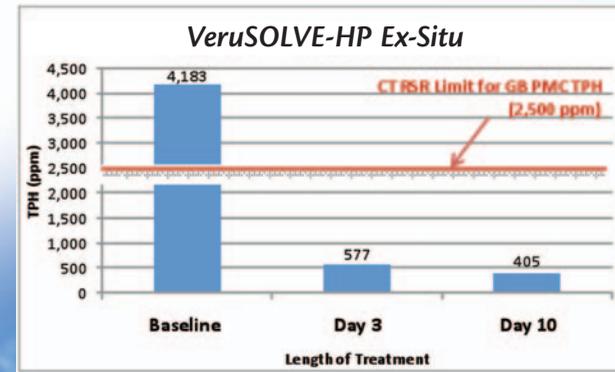


## Monitoring?

Monitoring is conducted before, during, and after VeruSOLVE-HP™ injections. Using laboratory and low flow sampling equipment, groundwater quality parameters such as pH, ORP, conductivity, head, temperature, persulfate concentration (if used), and IFT are measured from groundwater and the injection system flow. The monitoring is also conducted periodically for several months following injections.



Typical Monitoring Equipment IFT Meter



VeruSOLVE-HP™ EX-Situ application successfully treats contaminant concentrations to below state standards.

For more information please call: (860) 242-9800

# Optimizing your Ex-situ application

Ex-situ can be an extremely quick and economical solution for on-site treatment, and is often used to treat fuel spills and hydrocarbons in soils. The key is to increase contact of the contaminant with VeruSOLVE-HP™, and this can reliably be done by minimizing the soil particle size (increasing exposed surface area) in a pug mill or power grader. Tumbler bars or screens may also be added to aid in mixing as the wetted soil leaves the equipment.



EX-Situ VeruSOLVE-HP can treat up to 400-800 ton a day. More economical and sustainable option to excavation and alternate remedial techniques. On average 25-50% less than dig and haul.



**Smith, David**

---

**From:** cltecube [cltecube@yahoo.com]  
**Sent:** Tuesday, February 14, 2012 9:50 AM  
**To:** Smith, David  
**Subject:** monitoring wells

Mr. Smith,

As a follow up to last weeks meeting between Enterprise Products and the Environmental Protection Office approves your request to pull the monitoring wells for the following locations:

March 2, 2009 2C-27 Pipeline Release

September 27, 2010 2C-29 Pipeline Release

Thank you and have a nice day.

Cordell TeCube - Director  
Environmental Protection Office  
Jicarilla Apache Nation

**From:** [Schade, Kendall](#)  
**To:** ["Buchanan, Michael, EMNRD"](#)  
**Subject:** RE: [EXTERNAL] P02120 2C-29 PL 9-27-10 Release  
**Date:** Thursday, January 16, 2025 9:59:00 AM

---

Thank you Michael!

---

**From:** Buchanan, Michael, EMNRD <Michael.Buchanan@emnrd.nm.gov>  
**Sent:** Thursday, January 16, 2025 9:53 AM  
**To:** Schade, Kendall <KSchade@eprod.com>  
**Cc:** Phipps, Valerie <VPhipps@eprod.com>; Jacobson, Tucker <WTJACOBSON@eprod.com>  
**Subject:** RE: [EXTERNAL] P02120 2C-29 PL 9-27-10 Release

[Use caution with links/attachments]

Okay, please go ahead and submit it as a C-141 and we will accept any documentation for the record and "close-out" the incident. As it is affiliated with Tribal Land, we only accept it for record.

Thank you,

---

**From:** Schade, Kendall <[KSchade@eprod.com](mailto:KSchade@eprod.com)>  
**Sent:** Thursday, January 16, 2025 8:41 AM  
**To:** Buchanan, Michael, EMNRD <[Michael.Buchanan@emnrd.nm.gov](mailto:Michael.Buchanan@emnrd.nm.gov)>  
**Cc:** Phipps, Valerie <[VPhipps@eprod.com](mailto:VPhipps@eprod.com)>; Jacobson, Tucker <[WTJACOBSON@eprod.com](mailto:WTJACOBSON@eprod.com)>  
**Subject:** RE: [EXTERNAL] P02120 2C-29 PL 9-27-10 Release

Good morning,

2C-29 did not have wells installed. Sandstone (refusal) was encountered around 25', but water was not encountered.

---

**From:** Buchanan, Michael, EMNRD <[Michael.Buchanan@emnrd.nm.gov](mailto:Michael.Buchanan@emnrd.nm.gov)>  
**Sent:** Thursday, January 16, 2025 9:35 AM  
**To:** Schade, Kendall <[KSchade@eprod.com](mailto:KSchade@eprod.com)>  
**Cc:** Phipps, Valerie <[VPhipps@eprod.com](mailto:VPhipps@eprod.com)>; Jacobson, Tucker <[WTJACOBSON@eprod.com](mailto:WTJACOBSON@eprod.com)>  
**Subject:** RE: [EXTERNAL] P02120 2C-29 PL 9-27-10 Release

[Use caution with links/attachments]

Good morning, Kendall

Did this site have a groundwater investigation conducted without impact to groundwater confirmed? Or was there groundwater impact confirmed at the site?

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**From:** Schade, Kendall <[KSchade@eprod.com](mailto:KSchade@eprod.com)>  
**Sent:** Thursday, January 16, 2025 8:21 AM

**To:** Buchanan, Michael, EMNRD <[Michael.Buchanan@emnrd.nm.gov](mailto:Michael.Buchanan@emnrd.nm.gov)>  
**Cc:** Phipps, Valerie <[VPhipps@eprod.com](mailto:VPhipps@eprod.com)>; Jacobson, Tucker <[WTJACOBSON@eprod.com](mailto:WTJACOBSON@eprod.com)>  
**Subject:** [EXTERNAL] P02120 2C-29 PL 9-27-10 Release

CAUTION: This email originated outside of our organization. Exercise caution prior to clicking on links or opening attachments.

Hello Michael,

Thank you again for helping us understand the process of uploading reports to the OCD portal.

I have another question. Attached is the OCD page for our 2C-29 release (2010), incident number NJK1206638622. Jicarilla had approved closure for this site in 2012 but it has not been closed by the OCD since a C-141 form was never submitted. We are unable to locate the original C-141 form. Are we able to submit a C-141 form to the portal based on our LSI report in lieu of the original in order to close out this project? If not, what are the recommended next steps to get this closed on the OCD portal?

Thank you,

**Kendall Schade** | Contractor - Remediation  
1100 Louisiana St., Houston, TX 77002-5227  
719.330.3663 cell | [kschade@eprod.com](mailto:kschade@eprod.com)

My office days are Tues - Thurs. Please call me on my cell on days I'm not in the office.

---

This message (including any attachments) is confidential and intended for a specific individual and purpose. If you are not the intended recipient, please notify the sender immediately and delete this message.

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**State of New Mexico**  
**Energy, Minerals and Natural Resources**  
**Oil Conservation Division**  
**1220 S. St Francis Dr.**  
**Santa Fe, NM 87505**

QUESTIONS

Action 421461

**QUESTIONS**

Operator: Enterprise Field Services, LLC PO Box 4324 Houston, TX 77210	OGRID: 241602
	Action Number: 421461
	Action Type: [C-141] Initial C-141 (C-141-v-Initial)

**QUESTIONS**

<b>Prerequisites</b>	
Incident ID (n#)	nJK1206638622
Incident Name	NJK1206638622 2C-29 PIPELINE RELEASE @ 0
Incident Type	Oil Release
Incident Status	Initial C-141 Received

<b>Location of Release Source</b>	
<i>Please answer all the questions in this group.</i>	
Site Name	2C-29 Pipeline Release
Date Release Discovered	09/27/2010
Surface Owner	Jicarilla

<b>Incident Details</b>	
<i>Please answer all the questions in this group.</i>	
Incident Type	Natural Gas Release
Did this release result in a fire or is the result of a fire	No
Did this release result in any injuries	No
Has this release reached or does it have a reasonable probability of reaching a watercourse	No
Has this release endangered or does it have a reasonable probability of endangering public health	No
Has this release substantially damaged or will it substantially damage property or the environment	No
Is this release of a volume that is or may with reasonable probability be detrimental to fresh water	No

<b>Nature and Volume of Release</b>	
<i>Material(s) released, please answer all that apply below. Any calculations or specific justifications for the volumes provided should be attached to the follow-up C-141 submission.</i>	
Crude Oil Released (bbls) Details	Not answered.
Produced Water Released (bbls) Details	Not answered.
Is the concentration of chloride in the produced water >10,000 mg/l	Not answered.
Condensate Released (bbls) Details	Cause: Corrosion   Pipeline (Any)   Condensate   Released: 20 BBL   Recovered: 20 BBL   Lost: 0 BBL.
Natural Gas Vented (Mcf) Details	Not answered.
Natural Gas Flared (Mcf) Details	Not answered.
Other Released Details	Not answered.
Are there additional details for the questions above (i.e. any answer containing Other, Specify, Unknown, and/or Fire, or any negative lost amounts)	Not answered.

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QUESTIONS, Page 2

Action 421461

**QUESTIONS (continued)**

Operator: Enterprise Field Services, LLC PO Box 4324 Houston, TX 77210	OGRID: 241602
	Action Number: 421461
	Action Type: [C-141] Initial C-141 (C-141-v-Initial)

**QUESTIONS**

<b>Nature and Volume of Release (continued)</b>	
Is this a gas only submission (i.e. only significant Mcf values reported)	<b>No, according to supplied volumes this does not appear to be a "gas only" report.</b>
Was this a major release as defined by Subsection A of 19.15.29.7 NMAC	<b>No</b>
Reasons why this would be considered a submission for a notification of a major release	<i>Unavailable.</i>
<i>With the implementation of the 19.15.27 NMAC (05/25/2021), venting and/or flaring of natural gas (i.e. gas only) are to be submitted on the C-129 form.</i>	

**Initial Response**

*The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury.*

The source of the release has been stopped	<b>True</b>
The impacted area has been secured to protect human health and the environment	<b>True</b>
Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices	<b>True</b>
All free liquids and recoverable materials have been removed and managed appropriately	<b>True</b>
If all the actions described above have not been undertaken, explain why	<i>Not answered.</i>

*Per Paragraph (4) of Subsection B of 19.15.29.8 NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please prepare and attach a narrative of actions to date in the follow-up C-141 submission. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see Subparagraph (a) of Paragraph (5) of Subsection A of 19.15.29.11 NMAC), please prepare and attach all information needed for closure evaluation in the follow-up C-141 submission.*

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

I hereby agree and sign off to the above statement	Name: William Jacobson Title: Environmental Supervisor Email: wtjacobson@eprod.com Date: 01/16/2025
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QUESTIONS, Page 3

Action 421461

**QUESTIONS (continued)**

Operator: Enterprise Field Services, LLC PO Box 4324 Houston, TX 77210	OGRID: 241602
	Action Number: 421461
	Action Type: [C-141] Initial C-141 (C-141-v-Initial)

**QUESTIONS**

<b>Site Characterization</b>	
<i>Please answer all the questions in this group (only required when seeking remediation plan approval and beyond). This information must be provided to the appropriate district office no later than 90 days after the release discovery date.</i>	
What is the shallowest depth to groundwater beneath the area affected by the release in feet below ground surface (ft bgs)	Between 26 and 50 (ft.)
What method was used to determine the depth to ground water	Attached Document
Did this release impact groundwater or surface water	No
<b>What is the minimum distance, between the closest lateral extents of the release and the following surface areas:</b>	
A continuously flowing watercourse or any other significant watercourse	Not answered.
Any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)	Not answered.
An occupied permanent residence, school, hospital, institution, or church	Not answered.
A spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes	Not answered.
Any other fresh water well or spring	Not answered.
Incorporated municipal boundaries or a defined municipal fresh water well field	Not answered.
A wetland	Not answered.
A subsurface mine	Not answered.
An (non-karst) unstable area	Not answered.
Categorize the risk of this well / site being in a karst geology	Not answered.
A 100-year floodplain	Not answered.
Did the release impact areas not on an exploration, development, production, or storage site	Not answered.

<b>Remediation Plan</b>	
<i>Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.</i>	
Requesting a remediation plan approval with this submission	No
<i>The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.</i>	

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CONDITIONS

Action 421461

**CONDITIONS**

Operator: Enterprise Field Services, LLC PO Box 4324 Houston, TX 77210	OGRID: 241602
	Action Number: 421461
	Action Type: [C-141] Initial C-141 (C-141-v-Initial)

**CONDITIONS**

Created By	Condition	Condition Date
scwells	Incident occurred on tribal land. Accepted for record.	1/21/2025