CLOSURE REPORT

Property:

Contango Resources, LLC.
Karlsbad Corral SWD 2
Eddy, New Mexico
Unit Letter "M", Section 11, Township 25 South, Range 29 East
Latitude 32.138306, Longitude -103.962509

30-01536167, nAPP1728633686

2RP-4437

May 2022

Prepared for:

Contango Resources, LLC.
717 Texas Ave., Suite 290
Houston, Texas 77002

Attn: **Mr. Chet Stuart**

Prepared by:

Thomas Franklin
Environmental Manager

Jack Zimmerman, PG, CPG
Senior Geologist

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1.0 INTRODUCTION

1.1 Site Description & Background

American Safety Services Inc. (ASSI) has prepared this Closure Report for Contango Resources, LLC. (Contango) at the Karlsbad Corral SWD 2 (referred to hereinafter as the "Site" or "subject Site"). This Closure Report is based upon data collected by ASSI on May 12, 2022 and the interpretation of that data.

The Site is located in Unit Letter "J", Section 11, Township 25 South, Range 29 East, Eddy County, New Mexico (GPS 32.14348, -103.95515). Figures 1 and 2 in Appendix A show the Site location.

Remedial action was conducted in accordance with the New Mexico Energy, Minerals, and Natural Resources Department (EMNRD), the New Mexico Oil Conservation Division (NMOCD), and rules under the New Mexico Administrative Code (*NMAC 19.15.29*).

1.2 Project Objective

The objective of the Closure Report is to present documentation of the activities that were performed at this Site to the NMOCD.

1.3 Standard of Care

ASSI's services are performed in accordance with standards provided by a firm rendering the same or similar services in the area during the same time frame. ASSI makes no warranties, expressed or implied, as to the services performed hereunder. Additionally, ASSI does not warranty the work of third parties supplying information used in the report (e.g. laboratories, regulatory agencies, or other third parties). This scope of services will be performed in accordance with the scope of work agreed to by the client.

1.4 Reliance

This report has been prepared for the exclusive use of Contango, 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 Contango and ASSI. Any unauthorized distribution or reuse is at the sole risk of Contango. Notwithstanding the foregoing, reliance by authorized parties will be subject to the terms, conditions and limitations stated in the proposal, the report, and ASSI's Agreement. The limitation of liability defined in the agreement is the aggregate limit of ASSI's liability to the client.

2.0 PROPOSED REMEDIAL ACTION GOALS

In accordance with the NMAC 19.15.29, ASSI utilized the general site characteristics to determine the appropriate "ranking" for the Site.

- The depth to the initial groundwater-bearing zone is greater than one hundred feet at the Site. For details refer to Groundwater in Appendix E,
- The impacted area is more than 1,000 feet (ft) from a water source, and
- Distance to the nearest surface water body is greater than 1,000 ft.

Cleanup goals for soils remaining in place include: 20,000 mg/Kg for Chloride, 1,000 mg/Kg Gasoline Range Organics and Diesel Range Organics (GRO and DRO), 2,500 mg/Kg for Total Petroleum Hydrocarbons (TPH), 10 milligrams per kilogram (mg/Kg) for Benzene, and 50 mg/Kg for Total Benzene, Toluene, Ethylbenzene, and Xylene (BTEX).

Figure 4 shows the location of the Site in Eddy Co, New Mexico and surrounding topography.

3.0 INITIAL RESPONSE & SAMPLING ACTIVITIES

3.1 Initial Response

On May 12, 2022 ASSI personnel performed a site inspection in response to a previously submitted Work Plan for spill number 2RP-4437.

3.2 Soil Sampling Activities

Initial sampling activities were conducted on May 12th by ASSI personnel, using a stainless-steel hand auger to determine the vertical extent of the impact throughout the release footprint. Fifteen (15) samples were collected from eight (8) sample locations at discrete intervals within the release footprint to a depth between one-half (0.5) and one and-one-half (1.5) foot below ground surface (bgs). Table 1 in Appendix B presents analytical results. Figure 3 in Appendix A shows sampling locations inside the release footprint during the May 12th sampling event.

3.3 Soil Sampling Analytical Results

Fifteen (15) samples were collected from eight (8) sample locations on May 12th. Collected samples were delivered by ASSI personnel to Eurofins Xenco Laboratories for analysis on May 16th. The samples were analyzed for Chloride 300.0, TPH 8015M and BTEX 8021B (Table 1). Analytical results were compared to *Table 1 of the NMAC 19.15.29.12* and show all the constituents of concern (COCs) are below the NMOCD guidelines for clean-up goals at all sample locations.

Based upon the data collected during the May 12th sampling event and review of the analytical results, the COCs were both vertically and horizontally delineated.

4.0 LABORATORY ANALYTICAL METHODS

Samples were analyzed for Chloride utilizing EPA method 300, TPH utilizing EPA method SW8015 Mod, and BTEX using EPA method EPA 8021B. Laboratory analysis is provided in Appendix D.

Soil was collected in laboratory prepared glassware, placed on ice, and packed in a cooler. The sample coolers and completed chain-of-custody forms were relinquished to Eurofins Xenco Laboratories in Midland, TX for a normal turn-around time.

Figures 3 and 4 in Appendix A show the approximate position of the sample locations installed within the release footprint and the relation to pertinent land features respectively.

5.0 CLOSURE REQUEST

Based upon the data collected and the Site work completed by ASSI, COCs have been both vertically and horizontally delineated.

Based on the success of the response actions which are affirmed by certified laboratory analytical results, no additional remediation is necessary at this time.

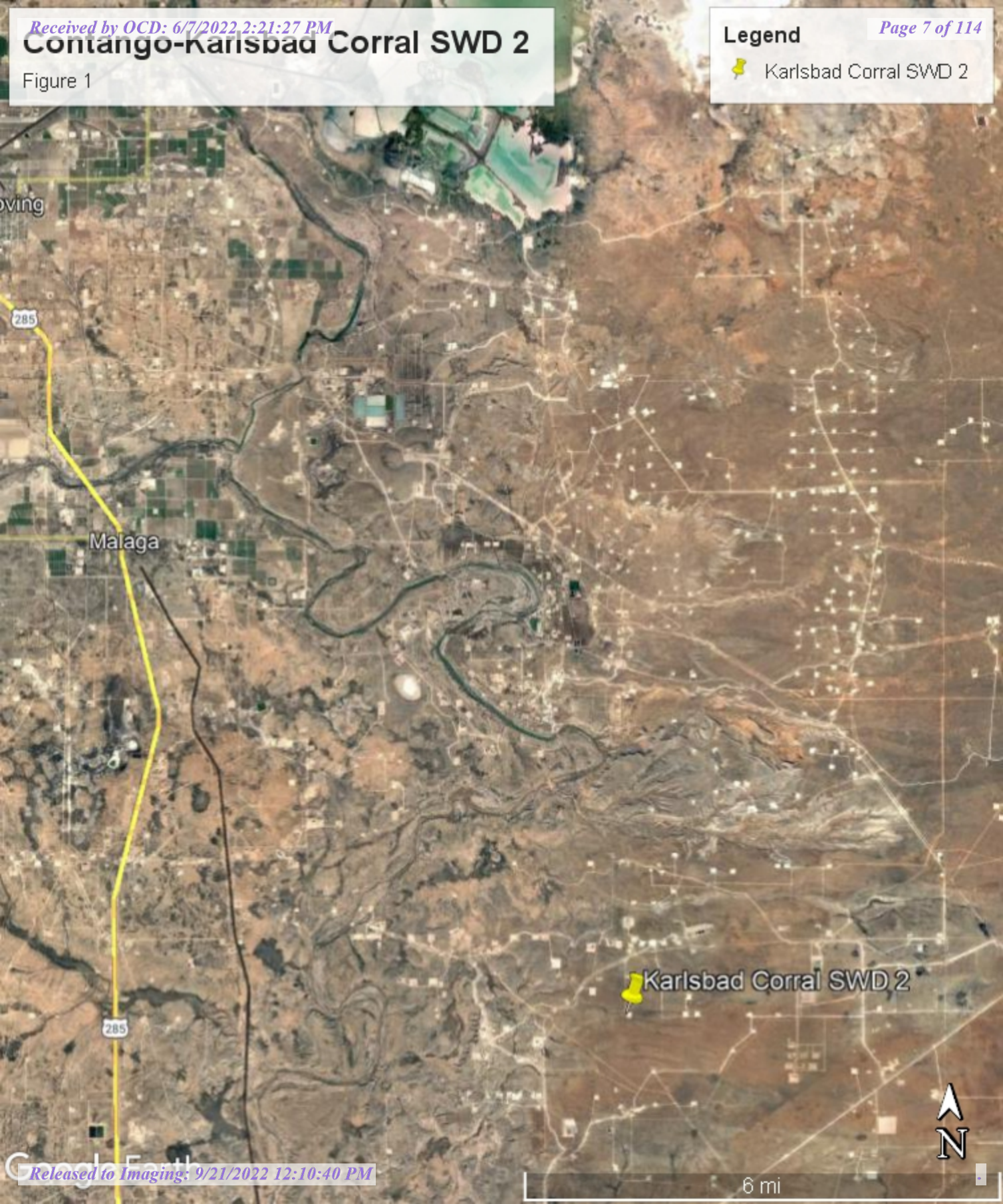
ASSI, on behalf of Contango, respectfully requests closure of the Site.

APPENDIX A

Figures

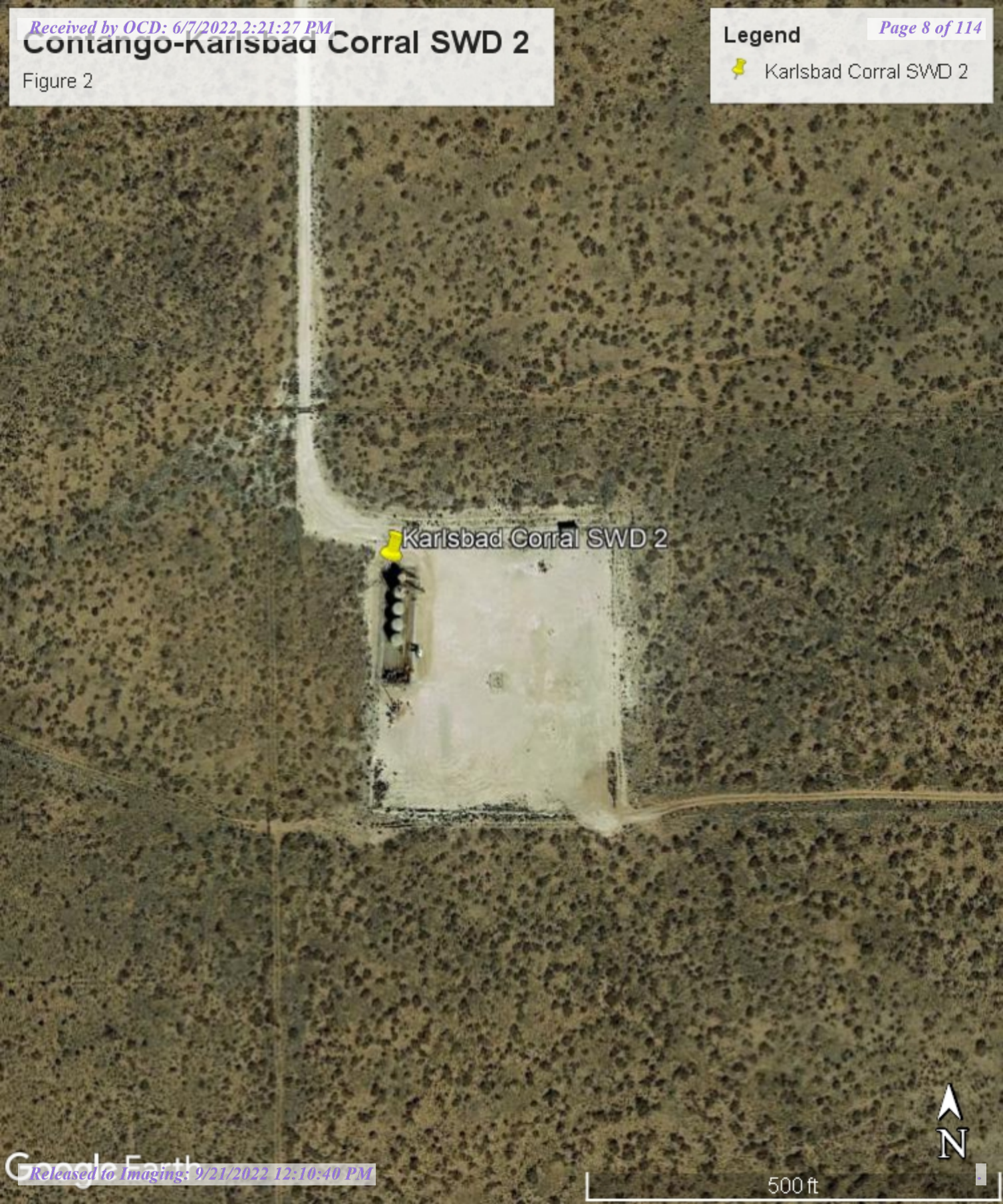
Contango-Karlsbad Corral SWD 2

Figure 1



Contango-Karlsbad Corral SWD 2

Figure 2



Contango-Karlsbad Corral SWD 2

Figure 3

Contango-Karlsbad Corral SWD 2

Topo

Legend

Karlsbad Corral SWD 2

APPENDIX B

Table 1

TABLE 1
Summary of Initial and Confirmation Sampling Analytical Results
Contango Oil & Gas Co.
Karlsbad Corral SWD 2
Eddy County, New Mexico

Sample Location	Sample Date	Sample Depth (feet)	Soil Status	EPA 300	8015M				8021B						
				Chloride (mg/kg)	Gasoline Range Organics (GRO) (mg/kg)	Diesel Range Organics (DRO) (mg/kg)	Oil Range Organics (MRO) (mg/kg)	Total TPH (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	m,p-Xylenes (mg/kg)	o-Xylene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)
NMAC 19.15.29				600	NE		NE	100	10	NE					50
AH 1	5/12/2022	0-0.5'	In-situ	690	<50.0	<50.0	<50.0	<50.0	<0.00199	<0.00199	<0.00199	<0.00398	<0.00199	<0.00398	<0.00398
AH 1	5/12/2022	0.5'-1'	In-situ	124	—	—	—	—	—	—	—	—	—	—	—
AH 1	5/12/2022	1'-1.5'	In-situ	49.2	—	—	—	—	—	—	—	—	—	—	—
AH 2	5/12/2022	0-0.5'	In-situ	312	<49.9	<49.9	<49.9	<49.9	<0.00198	<0.00198	<0.00198	<0.00397	<0.00198	<0.00397	<0.00397
AH 2	5/12/2022	0.5'-1'	In-situ	89.4											
AH 2	5/12/2022	1'-1.5'	In-situ	91.5	—	—	—	—	—	—	—	—	—	—	—
AH 3	5/12/2022	0-0.5'	In-situ	177	<50.0	<50.0	<50.0	<50.0	<0.00200	<0.00200	<0.00200	<0.00401	<0.00200	<0.00401	<0.00401
AH 3	5/12/2022	0.5'-1'	In-situ	52.7	—	—	—	—	—	—	—	—	—	—	—
AH 3	5/12/2022	1'-1.5'	In-situ	66.6	—	—	—	—	—	—	—	—	—	—	—
AH 4	5/12/2022	0-0.5'	In-situ	61.1	<49.9	<49.9	<49.9	<49.9	<0.00202	<0.00202	<0.00202	<0.00403	<0.00202	<0.00403	<0.00403
AH 4	5/12/2022	0.5'-1'	In-situ	102	—	—	—	—	—	—	—	—	—	—	—
AH North	5/12/2022	0-0.5'	In-situ	58.3	<50.0	<50.0	<50.0	<50.0	<0.00200	<0.00200	<0.00200	<0.00399	<0.00200	<0.00399	<0.00399
AH South	5/12/2022	0-0.5'	In-situ	93.8	77	<50.0	<50.0	77	<0.00199	<0.00199	<0.00199	<0.00398	<0.00199	<0.00398	<0.00398
AH East	5/12/2022	0-0.5'	In-situ	34.6	<49.9	<49.9	<49.9	<49.9	<0.00200	<0.00200	<0.00200	<0.00399	<0.00200	<0.00399	<0.00399
AH West	5/12/2022	0-0.5'	In-situ	47.8	<49.9	<49.9	<49.9	<49.9	<0.00199	<0.00199	<0.00199	<0.00398	<0.00199	<0.00398	<0.00398

mg/Kg - milligrams per Kilogram

BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes analyzed by EPA method 8021B

NE - not established

NMAC - New Mexico Administrative Code

— = not determined

In-situ - sample collected in-place

Total TPH reported values are rounded-off to 3-significant figures using the LIMS Odd/Even Rounding Rule which is a laboratory accepted standard

APPENDIX C

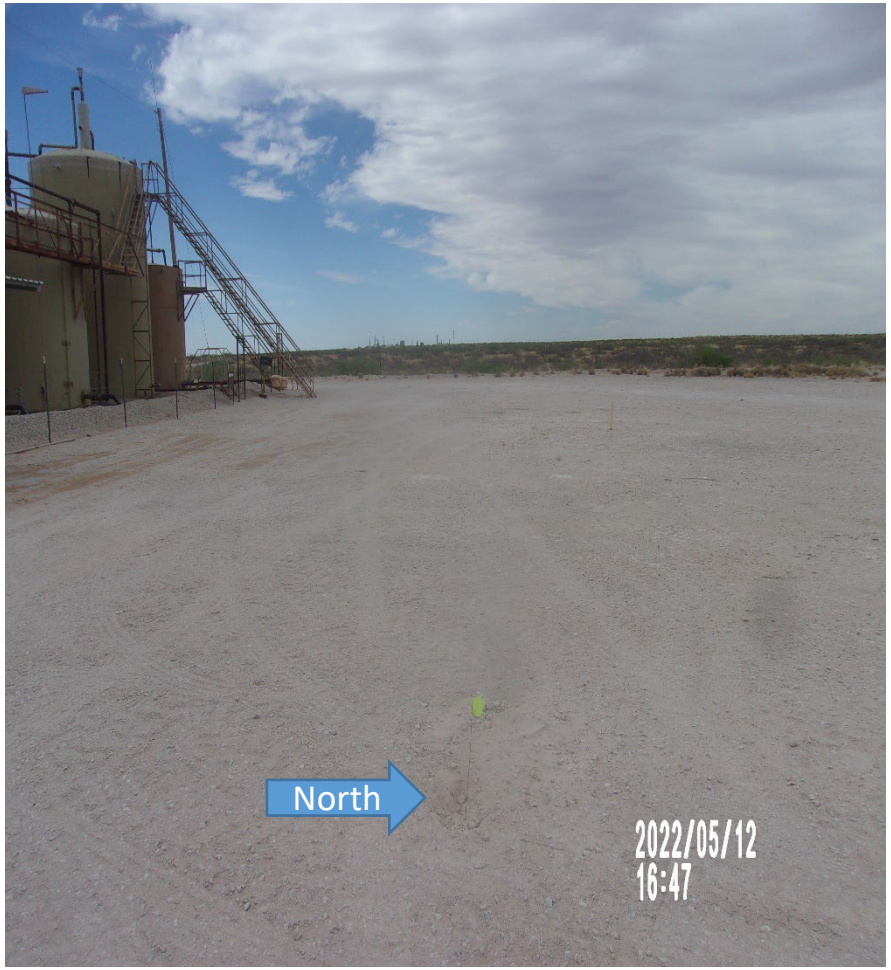
Photo Page

View North – Sample location AH 1 (flagged).
Blue arrow identifies pin flag.

View North – Sample location AH 2 (flagged).
Blue arrow identifies pin flag.

View West – Sample location AH 3 (flagged).
Blue arrow identifies pin flag.

View West – Sample location AH 4 (flagged).
Blue arrow identifies pin flag.



View North – Sample location AH North (flagged). Blue arrow identifies pin flag.

View North – Sample location AH West (flagged). Blue arrow identifies pin flag.

View West – Sample location AH South (flagged). Blue arrow identifies pin flag.

View East – Sample location AH East (flagged). Blue arrow identifies pin flag.

APPENDIX D

Laboratory Analysis

eurofins | Environment Testing America

ANALYTICAL REPORT

Eurofins Midland
1211 W. Florida Ave
Midland, TX 79701
Tel: (432)704-5440

Laboratory Job ID: 880-14809-1
Laboratory Sample Delivery Group: Eddy Co NM
Client Project/Site: Contango - Karlsbad Corral SWD 2

For:
American Safety Services Inc.
8715 Andrews Hwy
Odessa, Texas 79765

Attn: Thomas Franklin

JKRAMER

Authorized for release by:
5/20/2022 11:17:57 AM

Jessica Kramer, Project Manager
(432)704-5440
Jessica.Kramer@et.eurofinsus.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Definitions/Glossary

Client: American Safety Services Inc. Job ID: 880-14809-1
Project/Site: Contango - Karlsbad Corral SWD 2 SDG: Eddy Co NM

Qualifiers

GC VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits
S1+	Surrogate recovery exceeds control limits, high biased.
U	Indicates the analyte was analyzed for but not detected.

GC Semi VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

HPLC/IC

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: American Safety Services Inc. Job ID: 880-14809-1
Project/Site: Contango - Karlsbad Corral SWD 2 SDG: Eddy Co NM

Job ID: 880-14809-1

Laboratory: Eurofins Midland

Narrative

Job Narrative
880-14809-1

Receipt
The samples were received on 5/16/2022 10:10 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.5°C

GC VOA
Method 8021B: The matrix spike duplicate (MSD) recoveries for preparation batch 880-25653 and analytical batch 880-25750 were outside control limits. Non-homogeneity is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-25652 and analytical batch 880-25726 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC Semi VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

HPLC/IC
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Client Sample Results

Client: American Safety Services Inc. Job ID: 880-14809-1
Project/Site: Contango - Karlsbad Corral SWD 2 SDG: Eddy Co NM

Client Sample ID: AH1 Lab Sample ID: 880-14809-1

Date Collected: 05/12/22 14:30 **Matrix: Solid**
Date Received: 05/16/22 10:10
Sample Depth: 0-0.5

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		05/16/22 15:51	05/18/22 09:30	1
Toluene	<0.00199	U	0.00199		mg/Kg		05/16/22 15:51	05/18/22 09:30	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		05/16/22 15:51	05/18/22 09:30	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		05/16/22 15:51	05/18/22 09:30	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		05/16/22 15:51	05/18/22 09:30	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		05/16/22 15:51	05/18/22 09:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*70 - 130*	*05/16/22 15:51*	*05/18/22 09:30*	*1*
1,4-Difluorobenzene (Surr)	*101*		*70 - 130*	*05/16/22 15:51*	*05/18/22 09:30*	*1*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			05/18/22 09:15	1

Method: 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			05/17/22 16:30	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		05/17/22 08:22	05/17/22 11:35	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		05/17/22 08:22	05/17/22 11:35	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		05/17/22 08:22	05/17/22 11:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*100*		*70 - 130*	*05/17/22 08:22*	*05/17/22 11:35*	*1*
o-Terphenyl	*106*		*70 - 130*	*05/17/22 08:22*	*05/17/22 11:35*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**690**		25.0		mg/Kg			05/19/22 20:55	5

Client Sample ID: AH1 Lab Sample ID: 880-14809-2

Date Collected: 05/12/22 14:35 **Matrix: Solid**
Date Received: 05/16/22 10:10
Sample Depth: 0.5-1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**124**		4.95		mg/Kg			05/19/22 21:22	1

Client Sample Results

Client: American Safety Services Inc.
Project/Site: Contango - Karlsbad Corral SWD 2

Job ID: 880-14809-1
SDG: Eddy Co NM

Client Sample ID: AH1

Lab Sample ID: 880-14809-3
Matrix: Solid
Date Collected: 05/12/22 14:40
Date Received: 05/16/22 10:10
Sample Depth: 1-1.5

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	49.2		5.01		mg/Kg			05/19/22 21:31	1

Client Sample ID: AH2

Lab Sample ID: 880-14809-4
Matrix: Solid
Date Collected: 05/12/22 14:45
Date Received: 05/16/22 10:10
Sample Depth: 0-0.5

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198		mg/Kg		05/18/22 10:00	05/18/22 15:16	1
Toluene	<0.00198	U	0.00198		mg/Kg		05/18/22 10:00	05/18/22 15:16	1
Ethylbenzene	<0.00198	U	0.00198		mg/Kg		05/18/22 10:00	05/18/22 15:16	1
m-Xylene & p-Xylene	<0.00397	U	0.00397		mg/Kg		05/18/22 10:00	05/18/22 15:16	1
o-Xylene	<0.00198	U	0.00198		mg/Kg		05/18/22 10:00	05/18/22 15:16	1
Xylenes, Total	<0.00397	U	0.00397		mg/Kg		05/18/22 10:00	05/18/22 15:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*109*		*70 - 130*	*05/18/22 10:00*	*05/18/22 15:16*	*1*
1,4-Difluorobenzene (Surr)	*95*		*70 - 130*	*05/18/22 10:00*	*05/18/22 15:16*	*1*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00397	U	0.00397		mg/Kg			05/18/22 09:15	1

Method: 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			05/17/22 16:30	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		05/17/22 08:22	05/17/22 12:39	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		05/17/22 08:22	05/17/22 12:39	1
OII Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		05/17/22 08:22	05/17/22 12:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*98*		*70 - 130*	*05/17/22 08:22*	*05/17/22 12:39*	*1*
o-Terphenyl	*101*		*70 - 130*	*05/17/22 08:22*	*05/17/22 12:39*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	312		4.98		mg/Kg			05/19/22 21:41	1

Client Sample Results

Client: American Safety Services Inc.
Project/Site: Contango - Karlsbad Corral SWD 2

Job ID: 880-14809-1
SDG: Eddy Co NM

Client Sample ID: AH2

Lab Sample ID: 880-14809-5
Matrix: Solid
Date Collected: 05/12/22 14:50
Date Received: 05/16/22 10:10
Sample Depth: 0.5-1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	89.4		5.05		mg/Kg			05/19/22 21:50	1

Client Sample ID: AH2

Lab Sample ID: 880-14809-6
Matrix: Solid
Date Collected: 05/12/22 14:55
Date Received: 05/16/22 10:10
Sample Depth: 1-1.5

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	91.5		4.99		mg/Kg			05/19/22 22:17	1

Client Sample ID: AH3

Lab Sample ID: 880-14809-7
Matrix: Solid
Date Collected: 05/12/22 15:00
Date Received: 05/16/22 10:10
Sample Depth: 0-0.5

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		05/18/22 10:00	05/18/22 15:36	1
Toluene	<0.00200	U	0.00200		mg/Kg		05/18/22 10:00	05/18/22 15:36	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		05/18/22 10:00	05/18/22 15:36	1
m-Xylene & p-Xylene	<0.00401	U	0.00401		mg/Kg		05/18/22 10:00	05/18/22 15:36	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		05/18/22 10:00	05/18/22 15:36	1
Xylenes, Total	<0.00401	U	0.00401		mg/Kg		05/18/22 10:00	05/18/22 15:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*293*	*S1+*	*70 - 130*	*05/18/22 10:00*	*05/18/22 15:36*	*1*
1,4-Difluorobenzene (Surr)	*248*	*S1+*	*70 - 130*	*05/18/22 10:00*	*05/18/22 15:36*	*1*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00401	U	0.00401		mg/Kg			05/18/22 09:15	1

Method: 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			05/17/22 16:30	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		05/17/22 08:22	05/17/22 13:00	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		05/17/22 08:22	05/17/22 13:00	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		05/17/22 08:22	05/17/22 13:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*99*		*70 - 130*	*05/17/22 08:22*	*05/17/22 13:00*	*1*
o-Terphenyl	*97*		*70 - 130*	*05/17/22 08:22*	*05/17/22 13:00*	*1*

Client Sample Results

Client: American Safety Services Inc. Job ID: 880-14809-1
Project/Site: Contango - Karlsbad Corral SWD 2 SDG: Eddy Co NM

Client Sample ID: AH3 Lab Sample ID: 880-14809-7

Date Collected: 05/12/22 15:00 **Matrix: Solid**
Date Received: 05/16/22 10:10
Sample Depth: 0-0.5

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	177		24.8		mg/Kg			05/19/22 22:27	5

Client Sample ID: AH3 Lab Sample ID: 880-14809-8

Date Collected: 05/12/22 15:05 **Matrix: Solid**
Date Received: 05/16/22 10:10
Sample Depth: 0.5-1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	52.7		5.01		mg/Kg			05/19/22 22:36	1

Client Sample ID: AH3 Lab Sample ID: 880-14809-9

Date Collected: 05/12/22 15:10 **Matrix: Solid**
Date Received: 05/16/22 10:10
Sample Depth: 1-1.5

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	66.6		5.05		mg/Kg			05/19/22 22:45	1

Client Sample ID: AH4 Lab Sample ID: 880-14809-10

Date Collected: 05/12/22 15:15 **Matrix: Solid**
Date Received: 05/16/22 10:10
Sample Depth: 0-0.5

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U F1	0.00202		mg/Kg		05/16/22 15:56	05/17/22 18:45	1
Toluene	<0.00202	U	0.00202		mg/Kg		05/16/22 15:56	05/17/22 18:45	1
Ethylbenzene	<0.00202	U	0.00202		mg/Kg		05/16/22 15:56	05/17/22 18:45	1
m-Xylene & p-Xylene	<0.00403	U	0.00403		mg/Kg		05/16/22 15:56	05/17/22 18:45	1
o-Xylene	<0.00202	U	0.00202		mg/Kg		05/16/22 15:56	05/17/22 18:45	1
Xylenes, Total	<0.00403	U	0.00403		mg/Kg		05/16/22 15:56	05/17/22 18:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*91*		*70 - 130*	*05/16/22 15:56*	*05/17/22 18:45*	*1*
1,4-Difluorobenzene (Surr)	*84*		*70 - 130*	*05/16/22 15:56*	*05/17/22 18:45*	*1*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00403	U	0.00403		mg/Kg			05/18/22 09:15	1

Method: 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			05/17/22 16:30	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		05/17/22 08:22	05/17/22 13:21	1

Client Sample Results

Client: American Safety Services Inc. Job ID: 880-14809-1
Project/Site: Contango - Karlsbad Corral SWD 2 SDG: Eddy Co NM

Client Sample ID: AH4 — Lab Sample ID: 880-14809-10

Date Collected: 05/12/22 15:15
Date Received: 05/16/22 10:10
Sample Depth: 0-0.5
Matrix: Solid

Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		05/17/22 08:22	05/17/22 13:21	1
Oll Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		05/17/22 08:22	05/17/22 13:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*106*		*70 - 130*	*05/17/22 08:22*	*05/17/22 13:21*	*1*
o-Terphenyl	*106*		*70 - 130*	*05/17/22 08:22*	*05/17/22 13:21*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**61.1**		4.99		mg/Kg			05/19/22 22:54	1

Client Sample ID: AH4 — Lab Sample ID: 880-14809-11

Date Collected: 05/12/22 15:20
Date Received: 05/16/22 10:10
Sample Depth: 0.5-1
Matrix: Solid

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**102**		4.97		mg/Kg			05/19/22 23:03	1

Client Sample ID: AH North — Lab Sample ID: 880-14809-12

Date Collected: 05/12/22 15:35
Date Received: 05/16/22 10:10
Sample Depth: 0-0.5
Matrix: Solid

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		05/16/22 15:56	05/17/22 19:10	1
Toluene	<0.00200	U	0.00200		mg/Kg		05/16/22 15:56	05/17/22 19:10	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		05/16/22 15:56	05/17/22 19:10	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		05/16/22 15:56	05/17/22 19:10	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		05/16/22 15:56	05/17/22 19:10	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		05/16/22 15:56	05/17/22 19:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*106*		*70 - 130*	*05/16/22 15:56*	*05/17/22 19:10*	*1*
1,4-Difluorobenzene (Surr)	*94*		*70 - 130*	*05/16/22 15:56*	*05/17/22 19:10*	*1*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399		mg/Kg			05/18/22 09:15	1

Method: 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			05/17/22 16:30	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		05/17/22 08:22	05/17/22 13:43	1

Client Sample Results

Client: American Safety Services Inc. Job ID: 880-14809-1
Project/Site: Contango - Karlsbad Corral SWD 2 SDG: Eddy Co NM

Client Sample ID: AH North
Lab Sample ID: 880-14809-12
Date Collected: 05/12/22 15:35
Matrix: Solid
Date Received: 05/16/22 10:10
Sample Depth: 0-0.5

Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		05/17/22 08:22	05/17/22 13:43	1
Oll Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		05/17/22 08:22	05/17/22 13:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*123*		*70 - 130*	*05/17/22 08:22*	*05/17/22 13:43*	*1*
o-Terphenyl	*130*		*70 - 130*	*05/17/22 08:22*	*05/17/22 13:43*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**58.3**		5.00		mg/Kg			05/19/22 23:31	1

Client Sample ID: AH South
Lab Sample ID: 880-14809-13
Date Collected: 05/12/22 15:40
Matrix: Solid
Date Received: 05/16/22 10:10
Sample Depth: 0-0.5

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		05/16/22 15:56	05/17/22 19:37	1
Toluene	<0.00199	U	0.00199		mg/Kg		05/16/22 15:56	05/17/22 19:37	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		05/16/22 15:56	05/17/22 19:37	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		05/16/22 15:56	05/17/22 19:37	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		05/16/22 15:56	05/17/22 19:37	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		05/16/22 15:56	05/17/22 19:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*109*		*70 - 130*	*05/16/22 15:56*	*05/17/22 19:37*	*1*
1,4-Difluorobenzene (Surr)	*101*		*70 - 130*	*05/16/22 15:56*	*05/17/22 19:37*	*1*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			05/18/22 09:15	1

Method: 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**77.0**		50.0		mg/Kg			05/17/22 16:30	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	**77.0**		50.0		mg/Kg		05/17/22 08:22	05/17/22 14:04	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		05/17/22 08:22	05/17/22 14:04	1
Oll Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		05/17/22 08:22	05/17/22 14:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*112*		*70 - 130*	*05/17/22 08:22*	*05/17/22 14:04*	*1*
o-Terphenyl	*115*		*70 - 130*	*05/17/22 08:22*	*05/17/22 14:04*	*1*

Client Sample Results

Client: American Safety Services Inc. Job ID: 880-14809-1
Project/Site: Contango - Karlsbad Corral SWD 2 SDG: Eddy Co NM

Client Sample ID: AH South
Lab Sample ID: 880-14809-13
Date Collected: 05/12/22 15:40 **Matrix: Solid**
Date Received: 05/16/22 10:10
Sample Depth: 0-0.5

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	93.8		4.98		mg/Kg			05/19/22 23:40	1

Client Sample ID: AH East
Lab Sample ID: 880-14809-14
Date Collected: 05/12/22 15:45 **Matrix: Solid**
Date Received: 05/16/22 10:10
Sample Depth: 0-0.5

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		05/16/22 15:56	05/17/22 20:05	1
Toluene	<0.00200	U	0.00200		mg/Kg		05/16/22 15:56	05/17/22 20:05	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		05/16/22 15:56	05/17/22 20:05	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		05/16/22 15:56	05/17/22 20:05	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		05/16/22 15:56	05/17/22 20:05	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		05/16/22 15:56	05/17/22 20:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*113*		*70 - 130*	*05/16/22 15:56*	*05/17/22 20:05*	*1*
1,4-Difluorobenzene (Surr)	*88*		*70 - 130*	*05/16/22 15:56*	*05/17/22 20:05*	*1*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399		mg/Kg			05/18/22 09:15	1

Method: 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			05/17/22 16:30	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		05/17/22 08:22	05/17/22 14:25	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		05/17/22 08:22	05/17/22 14:25	1
OII Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		05/17/22 08:22	05/17/22 14:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*111*		*70 - 130*	*05/17/22 08:22*	*05/17/22 14:25*	*1*
o-Terphenyl	*112*		*70 - 130*	*05/17/22 08:22*	*05/17/22 14:25*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	34.6		5.00		mg/Kg			05/20/22 00:08	1

Client Sample Results

Client: American Safety Services Inc. Job ID: 880-14809-1
Project/Site: Contango - Karlsbad Corral SWD 2 SDG: Eddy Co NM

Client Sample ID: AH West
Lab Sample ID: 880-14809-15

Date Collected: 05/12/22 15:50
Matrix: Solid
Date Received: 05/16/22 10:10
Sample Depth: 0-0.5

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		05/16/22 15:56	05/17/22 20:31	1
Toluene	<0.00199	U	0.00199		mg/Kg		05/16/22 15:56	05/17/22 20:31	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		05/16/22 15:56	05/17/22 20:31	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		05/16/22 15:56	05/17/22 20:31	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		05/16/22 15:56	05/17/22 20:31	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		05/16/22 15:56	05/17/22 20:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*129*		*70 - 130*	*05/16/22 15:56*	*05/17/22 20:31*	*1*
1,4-Difluorobenzene (Surr)	*103*		*70 - 130*	*05/16/22 15:56*	*05/17/22 20:31*	*1*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			05/18/22 09:15	1

Method: 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			05/17/22 16:30	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		05/17/22 08:22	05/17/22 14:47	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		05/17/22 08:22	05/17/22 14:47	1
OII Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		05/17/22 08:22	05/17/22 14:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*112*		*70 - 130*	*05/17/22 08:22*	*05/17/22 14:47*	*1*
o-Terphenyl	*111*		*70 - 130*	*05/17/22 08:22*	*05/17/22 14:47*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**47.8**		4.99		mg/Kg			05/20/22 00:17	1

Surrogate Summary

Client: American Safety Services Inc. Job ID: 880-14809-1
Project/Site: Contango - Karlsbad Corral SWD 2 SDG: Eddy Co NM

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)
880-14808-A-1-I MS	Matrix Spike	112	103
880-14808-A-1-J MSD	Matrix Spike Duplicate	98	102
880-14809-1	AH1	100	101
880-14809-4	AH2	109	95
880-14809-7	AH3	293 S1+	248 S1+
880-14809-10	AH4	91	84
880-14809-10 MS	AH4	103	88
880-14809-10 MSD	AH4	107	93
880-14809-12	AH North	106	94
880-14809-13	AH South	109	101
880-14809-14	AH East	113	88
880-14809-15	AH West	129	103
890-2313-A-3-E MS	Matrix Spike	106	96
890-2313-A-3-F MSD	Matrix Spike Duplicate	105	96
LCS 880-25652/1-A	Lab Control Sample	102	107
LCS 880-25653/1-A	Lab Control Sample	102	94
LCS 880-25810/1-A	Lab Control Sample	105	97
LCSD 880-25652/2-A	Lab Control Sample Dup	108	102
LCSD 880-25653/2-A	Lab Control Sample Dup	101	95
LCSD 880-25810/2-A	Lab Control Sample Dup	104	97
MB 880-25649/5-A	Method Blank	98	98
MB 880-25652/5-A	Method Blank	102	99
MB 880-25653/5-A	Method Blank	82	93
MB 880-25810/5-A	Method Blank	103	92

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

DFBZ = 1,4-Difluorobenzene (Surr)

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
880-14809-1	AH1	100	106
880-14809-1 MS	AH1	101	92
880-14809-1 MSD	AH1	100	93
880-14809-4	AH2	98	101
880-14809-7	AH3	99	97
880-14809-10	AH4	106	106
880-14809-12	AH North	123	130
880-14809-13	AH South	112	115
880-14809-14	AH East	111	112
880-14809-15	AH West	112	111
LCS 880-25667/2-A	Lab Control Sample	106	104
LCSD 880-25667/3-A	Lab Control Sample Dup	106	105
MB 880-25667/1-A	Method Blank	107	108

Surrogate Legend

1CO = 1-Chlorooctane

Surrogate Summary

Client: American Safety Services Inc.
Project/Site: Contango - Karlsbad Corral SWD 2

Job ID: 880-14809-1
SDG: Eddy Co NM

OTPH = o-Terphenyl

QC Sample Results

Client: American Safety Services Inc.
Project/Site: Contango - Karlsbad Corral SWD 2

Job ID: 880-14809-1
SDG: Eddy Co NM

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-25649/5-A
Matrix: Solid
Analysis Batch: 25726

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 25649

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		05/16/22 15:39	05/17/22 15:27	1
Toluene	<0.00200	U	0.00200		mg/Kg		05/16/22 15:39	05/17/22 15:27	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		05/16/22 15:39	05/17/22 15:27	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		05/16/22 15:39	05/17/22 15:27	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		05/16/22 15:39	05/17/22 15:27	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		05/16/22 15:39	05/17/22 15:27	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*	*05/16/22 15:39*	*05/17/22 15:27*	*1*
1,4-Difluorobenzene (Surr)	*98*		*70 - 130*	*05/16/22 15:39*	*05/17/22 15:27*	*1*

Lab Sample ID: MB 880-25652/5-A
Matrix: Solid
Analysis Batch: 25726

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 25652

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		05/16/22 15:51	05/18/22 02:14	1
Toluene	<0.00200	U	0.00200		mg/Kg		05/16/22 15:51	05/18/22 02:14	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		05/16/22 15:51	05/18/22 02:14	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		05/16/22 15:51	05/18/22 02:14	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		05/16/22 15:51	05/18/22 02:14	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		05/16/22 15:51	05/18/22 02:14	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*	*05/16/22 15:51*	*05/18/22 02:14*	*1*
1,4-Difluorobenzene (Surr)	*99*		*70 - 130*	*05/16/22 15:51*	*05/18/22 02:14*	*1*

Lab Sample ID: LCS 880-25652/1-A
Matrix: Solid
Analysis Batch: 25726

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 25652

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.1111		mg/Kg		111	70 - 130
Toluene	0.100	0.1022		mg/Kg		102	70 - 130
Ethylbenzene	0.100	0.08716		mg/Kg		87	70 - 130
m-Xylene & p-Xylene	0.200	0.1799		mg/Kg		90	70 - 130
o-Xylene	0.100	0.09260		mg/Kg		93	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*
1,4-Difluorobenzene (Surr)	*107*		*70 - 130*

Lab Sample ID: LCSD 880-25652/2-A
Matrix: Solid
Analysis Batch: 25726

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 25652

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.08015		mg/Kg		80	70 - 130	32	35

QC Sample Results

Client: American Safety Services Inc. Job ID: 880-14809-1
Project/Site: Contango - Karlsbad Corral SWD 2 SDG: Eddy Co NM

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: LCSD 880-25652/2-A **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid **Prep Type: Total/NA**
Analysis Batch: 25726 **Prep Batch: 25652**

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Toluene			0.100	0.08304		mg/Kg		83	70 - 130	21	35
Ethylbenzene			0.100	0.07333		mg/Kg		73	70 - 130	17	35
m-Xylene & p-Xylene			0.200	0.1581		mg/Kg		79	70 - 130	13	35
o-Xylene			0.100	0.08067		mg/Kg		81	70 - 130	14	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*108*		*70 - 130*
1,4-Difluorobenzene (Surr)	*102*		*70 - 130*

Lab Sample ID: 880-14808-A-1-I MS **Client Sample ID: Matrix Spike**
Matrix: Solid **Prep Type: Total/NA**
Analysis Batch: 25726 **Prep Batch: 25652**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00202	U F1 F2	0.100	0.09013		mg/Kg		90	70 - 130
Toluene	<0.00202	U F1	0.100	0.09231		mg/Kg		92	70 - 130
Ethylbenzene	<0.00202	U F1	0.100	0.08330		mg/Kg		83	70 - 130
m-Xylene & p-Xylene	<0.00403	U F1	0.200	0.1762		mg/Kg		88	70 - 130
o-Xylene	<0.00202	U F1 F2	0.100	0.08985		mg/Kg		90	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*112*		*70 - 130*
1,4-Difluorobenzene (Surr)	*103*		*70 - 130*

Lab Sample ID: 880-14808-A-1-J MSD **Client Sample ID: Matrix Spike Duplicate**
Matrix: Solid **Prep Type: Total/NA**
Analysis Batch: 25726 **Prep Batch: 25652**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00202	U F1 F2	0.0996	<0.00199	U F1 F2	mg/Kg		1	70 - 130	194	35
Toluene	<0.00202	U F1	0.0996	<0.00199	U F1	mg/Kg		0	70 - 130	NC	35
Ethylbenzene	<0.00202	U F1	0.0996	<0.00199	U F1	mg/Kg		0	70 - 130	NC	35
m-Xylene & p-Xylene	<0.00403	U F1	0.199	<0.00398	U F1	mg/Kg		0	70 - 130	NC	35
o-Xylene	<0.00202	U F1 F2	0.0996	<0.00199	U F1 F2	mg/Kg		0.4	70 - 130	198	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*
1,4-Difluorobenzene (Surr)	*102*		*70 - 130*

Lab Sample ID: MB 880-25653/5-A **Client Sample ID: Method Blank**
Matrix: Solid **Prep Type: Total/NA**
Analysis Batch: 25750 **Prep Batch: 25653**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		05/16/22 15:56	05/17/22 18:16	1
Toluene	<0.00200	U	0.00200		mg/Kg		05/16/22 15:56	05/17/22 18:16	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		05/16/22 15:56	05/17/22 18:16	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		05/16/22 15:56	05/17/22 18:16	1

QC Sample Results

Client: American Safety Services Inc.
Project/Site: Contango - Karlsbad Corral SWD 2

Job ID: 880-14809-1
SDG: Eddy Co NM

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: MB 880-25653/5-A
Matrix: Solid
Analysis Batch: 25750

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 25653

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	<0.00200	U	0.00200		mg/Kg		05/16/22 15:56	05/17/22 18:16	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		05/16/22 15:56	05/17/22 18:16	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*82*		*70 - 130*	*05/16/22 15:56*	*05/17/22 18:16*	*1*
1,4-Difluorobenzene (Surr)	*93*		*70 - 130*	*05/16/22 15:56*	*05/17/22 18:16*	*1*

Lab Sample ID: LCS 880-25653/1-A
Matrix: Solid
Analysis Batch: 25750

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 25653

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.09157		mg/Kg		92	70 - 130
Toluene	0.100	0.09298		mg/Kg		93	70 - 130
Ethylbenzene	0.100	0.09072		mg/Kg		91	70 - 130
m-Xylene & p-Xylene	0.200	0.1805		mg/Kg		90	70 - 130
o-Xylene	0.100	0.09064		mg/Kg		91	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*
1,4-Difluorobenzene (Surr)	*94*		*70 - 130*

Lab Sample ID: LCSD 880-25653/2-A
Matrix: Solid
Analysis Batch: 25750

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 25653

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.1007		mg/Kg		101	70 - 130	9	35
Toluene	0.100	0.1029		mg/Kg		103	70 - 130	10	35
Ethylbenzene	0.100	0.1014		mg/Kg		101	70 - 130	11	35
m-Xylene & p-Xylene	0.200	0.2050		mg/Kg		103	70 - 130	13	35
o-Xylene	0.100	0.1090		mg/Kg		109	70 - 130	18	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*
1,4-Difluorobenzene (Surr)	*95*		*70 - 130*

Lab Sample ID: 880-14809-10 MS
Matrix: Solid
Analysis Batch: 25750

Client Sample ID: AH4
Prep Type: Total/NA
Prep Batch: 25653

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00202	U F1	0.100	0.07949		mg/Kg		79	70 - 130
Toluene	<0.00202	U	0.100	0.08307		mg/Kg		83	70 - 130
Ethylbenzene	<0.00202	U	0.100	0.08620		mg/Kg		86	70 - 130
m-Xylene & p-Xylene	<0.00403	U	0.200	0.1736		mg/Kg		87	70 - 130
o-Xylene	<0.00202	U	0.100	0.08637		mg/Kg		86	70 - 130

QC Sample Results

Client: American Safety Services Inc.
Project/Site: Contango - Karlsbad Corral SWD 2

Job ID: 880-14809-1
SDG: Eddy Co NM

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: 880-14809-10 MS
Matrix: Solid
Analysis Batch: 25750

Client Sample ID: AH4
Prep Type: Total/NA
Prep Batch: 25653

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	103		70 - 130
1,4-Difluorobenzene (Surr)	88		70 - 130

Lab Sample ID: 880-14809-10 MSD
Matrix: Solid
Analysis Batch: 25750

Client Sample ID: AH4
Prep Type: Total/NA
Prep Batch: 25653

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00202	U F1	0.0990	0.06488	F1	mg/Kg		66	70 - 130	20	35
Toluene	<0.00202	U	0.0990	0.07059		mg/Kg		71	70 - 130	16	35
Ethylbenzene	<0.00202	U	0.0990	0.07525		mg/Kg		76	70 - 130	14	35
m-Xylene & p-Xylene	<0.00403	U	0.198	0.1500		mg/Kg		76	70 - 130	15	35
o-Xylene	<0.00202	U	0.0990	0.07580		mg/Kg		77	70 - 130	13	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	107		70 - 130
1,4-Difluorobenzene (Surr)	93		70 - 130

Lab Sample ID: MB 880-25810/5-A
Matrix: Solid
Analysis Batch: 25796

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 25810

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		05/18/22 10:00	05/18/22 12:30	1
Toluene	<0.00200	U	0.00200		mg/Kg		05/18/22 10:00	05/18/22 12:30	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		05/18/22 10:00	05/18/22 12:30	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		05/18/22 10:00	05/18/22 12:30	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		05/18/22 10:00	05/18/22 12:30	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		05/18/22 10:00	05/18/22 12:30	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		70 - 130	05/18/22 10:00	05/18/22 12:30	1
1,4-Difluorobenzene (Surr)	92		70 - 130	05/18/22 10:00	05/18/22 12:30	1

Lab Sample ID: LCS 880-25810/1-A
Matrix: Solid
Analysis Batch: 25796

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 25810

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.09631		mg/Kg		96	70 - 130		
Toluene			0.100	0.1046		mg/Kg		105	70 - 130		
Ethylbenzene			0.100	0.1072		mg/Kg		107	70 - 130		
m-Xylene & p-Xylene			0.200	0.2170		mg/Kg		109	70 - 130		
o-Xylene			0.100	0.1089		mg/Kg		109	70 - 130		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	105		70 - 130

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QC Sample Results

Client: American Safety Services Inc. Job ID: 880-14809-1
Project/Site: Contango - Karlsbad Corral SWD 2 SDG: Eddy Co NM

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: LCS 880-25810/1-A **Client Sample ID: Lab Control Sample**
Matrix: Solid **Prep Type: Total/NA**
Analysis Batch: 25796 **Prep Batch: 25810**

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,4-Difluorobenzene (Surr)	97		70 - 130

Lab Sample ID: LCSD 880-25810/2-A **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid **Prep Type: Total/NA**
Analysis Batch: 25796 **Prep Batch: 25810**

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.09320		mg/Kg		93	70 - 130	3	35
Toluene			0.100	0.1010		mg/Kg		101	70 - 130	3	35
Ethylbenzene			0.100	0.1029		mg/Kg		103	70 - 130	4	35
m-Xylene & p-Xylene			0.200	0.2089		mg/Kg		104	70 - 130	4	35
o-Xylene			0.100	0.1042		mg/Kg		104	70 - 130	4	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	104		70 - 130
1,4-Difluorobenzene (Surr)	97		70 - 130

Lab Sample ID: 890-2313-A-3-E MS **Client Sample ID: Matrix Spike**
Matrix: Solid **Prep Type: Total/NA**
Analysis Batch: 25796 **Prep Batch: 25810**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00200	U	0.0998	0.09186		mg/Kg		92	70 - 130
Toluene	<0.00200	U	0.0998	0.1000		mg/Kg		100	70 - 130
Ethylbenzene	<0.00200	U	0.0998	0.1022		mg/Kg		102	70 - 130
m-Xylene & p-Xylene	<0.00401	U	0.200	0.2077		mg/Kg		104	70 - 130
o-Xylene	<0.00200	U	0.0998	0.1047		mg/Kg		105	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	106		70 - 130
1,4-Difluorobenzene (Surr)	96		70 - 130

Lab Sample ID: 890-2313-A-3-F MSD **Client Sample ID: Matrix Spike Duplicate**
Matrix: Solid **Prep Type: Total/NA**
Analysis Batch: 25796 **Prep Batch: 25810**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00200	U	0.0996	0.08593		mg/Kg		86	70 - 130	7	35
Toluene	<0.00200	U	0.0996	0.09273		mg/Kg		93	70 - 130	8	35
Ethylbenzene	<0.00200	U	0.0996	0.09535		mg/Kg		96	70 - 130	7	35
m-Xylene & p-Xylene	<0.00401	U	0.199	0.1938		mg/Kg		97	70 - 130	7	35
o-Xylene	<0.00200	U	0.0996	0.09663		mg/Kg		97	70 - 130	8	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	105		70 - 130
1,4-Difluorobenzene (Surr)	96		70 - 130

QC Sample Results

Client: American Safety Services Inc.
Project/Site: Contango - Karlsbad Corral SWD 2

Job ID: 880-14809-1
SDG: Eddy Co NM

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 880-25667/1-A
Matrix: Solid
Analysis Batch: 25669

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 25667

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		05/17/22 08:22	05/17/22 10:19	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		05/17/22 08:22	05/17/22 10:19	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		05/17/22 08:22	05/17/22 10:19	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*107*		*70 - 130*	*05/17/22 08:22*	*05/17/22 10:19*	*1*
o-Terphenyl	*108*		*70 - 130*	*05/17/22 08:22*	*05/17/22 10:19*	*1*

Lab Sample ID: LCS 880-25667/2-A
Matrix: Solid
Analysis Batch: 25669

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 25667

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10			1000	893.2		mg/Kg		89	70 - 130		
Diesel Range Organics (Over C10-C28)			1000	997.7		mg/Kg		100	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctane	*106*		*70 - 130*
o-Terphenyl	*104*		*70 - 130*

Lab Sample ID: LCSD 880-25667/3-A
Matrix: Solid
Analysis Batch: 25669

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 25667

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	891.7		mg/Kg		89	70 - 130	0	20
Diesel Range Organics (Over C10-C28)			1000	991.7		mg/Kg		99	70 - 130	1	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1-Chlorooctane	*106*		*70 - 130*
o-Terphenyl	*105*		*70 - 130*

Lab Sample ID: 880-14809-1 MS
Matrix: Solid
Analysis Batch: 25669

Client Sample ID: AH1
Prep Type: Total/NA
Prep Batch: 25667

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	1000	937.1		mg/Kg		90	70 - 130		
Diesel Range Organics (Over C10-C28)	<50.0	U	1000	1000		mg/Kg		100	70 - 130		

QC Sample Results

Client: American Safety Services Inc. Job ID: 880-14809-1
Project/Site: Contango - Karlsbad Corral SWD 2 SDG: Eddy Co NM

Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: 880-14809-1 MS **Client Sample ID: AH1**
Matrix: Solid **Prep Type: Total/NA**
Analysis Batch: 25669 **Prep Batch: 25667**

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1-Chlorooctane	*101*		*70 - 130*
o-Terphenyl	*92*		*70 - 130*

Lab Sample ID: 880-14809-1 MSD **Client Sample ID: AH1**
Matrix: Solid **Prep Type: Total/NA**
Analysis Batch: 25669 **Prep Batch: 25667**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	998	919.8		mg/Kg		88	70 - 130	2	20
Diesel Range Organics (Over C10-C28)	<50.0	U	998	999.6		mg/Kg		100	70 - 130	0	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1-Chlorooctane	*100*		*70 - 130*
o-Terphenyl	*93*		*70 - 130*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-25730/1-A **Client Sample ID: Method Blank**
Matrix: Solid **Prep Type: Soluble**
Analysis Batch: 25928

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00		mg/Kg			05/19/22 20:27	1

Lab Sample ID: LCS 880-25730/2-A **Client Sample ID: Lab Control Sample**
Matrix: Solid **Prep Type: Soluble**
Analysis Batch: 25928

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	238.5		mg/Kg		95	90 - 110		

Lab Sample ID: LCSD 880-25730/3-A **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid **Prep Type: Soluble**
Analysis Batch: 25928

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			250	238.4		mg/Kg		95	90 - 110	0	20

Lab Sample ID: 880-14809-1 MS **Client Sample ID: AH1**
Matrix: Solid **Prep Type: Soluble**
Analysis Batch: 25928

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	690		1250	1854		mg/Kg		93	90 - 110		

QC Sample Results

Client: American Safety Services Inc. Job ID: 880-14809-1
Project/Site: Contango - Karlsbad Corral SWD 2 SDG: Eddy Co NM

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 880-14809-1 MSD **Client Sample ID: AH1**
Matrix: Solid **Prep Type: Soluble**
Analysis Batch: 25928

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	690		1250	1894		mg/Kg		96	90 - 110	2	20

Lab Sample ID: 880-14809-11 MS **Client Sample ID: AH4**
Matrix: Solid **Prep Type: Soluble**
Analysis Batch: 25928

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	102		249	327.6		mg/Kg		91	90 - 110

Lab Sample ID: 880-14809-11 MSD **Client Sample ID: AH4**
Matrix: Solid **Prep Type: Soluble**
Analysis Batch: 25928

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	102		249	336.7		mg/Kg		94	90 - 110	3	20

QC Association Summary

Client: American Safety Services Inc. Job ID: 880-14809-1
Project/Site: Contango - Karlsbad Corral SWD 2 SDG: Eddy Co NM

GC VOA

Prep Batch: 25649

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-25649/5-A	Method Blank	Total/NA	Solid	5035	

Prep Batch: 25652

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-14809-1	AH1	Total/NA	Solid	5035	
MB 880-25652/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-25652/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-25652/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-14808-A-1-I MS	Matrix Spike	Total/NA	Solid	5035	
880-14808-A-1-J MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Prep Batch: 25653

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-14809-10	AH4	Total/NA	Solid	5035	
880-14809-12	AH North	Total/NA	Solid	5035	
880-14809-13	AH South	Total/NA	Solid	5035	
880-14809-14	AH East	Total/NA	Solid	5035	
880-14809-15	AH West	Total/NA	Solid	5035	
MB 880-25653/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-25653/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-25653/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-14809-10 MS	AH4	Total/NA	Solid	5035	
880-14809-10 MSD	AH4	Total/NA	Solid	5035	

Analysis Batch: 25726

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-14809-1	AH1	Total/NA	Solid	8021B	25652
MB 880-25649/5-A	Method Blank	Total/NA	Solid	8021B	25649
MB 880-25652/5-A	Method Blank	Total/NA	Solid	8021B	25652
LCS 880-25652/1-A	Lab Control Sample	Total/NA	Solid	8021B	25652
LCSD 880-25652/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	25652
880-14808-A-1-I MS	Matrix Spike	Total/NA	Solid	8021B	25652
880-14808-A-1-J MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	25652

Analysis Batch: 25750

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-14809-10	AH4	Total/NA	Solid	8021B	25653
880-14809-12	AH North	Total/NA	Solid	8021B	25653
880-14809-13	AH South	Total/NA	Solid	8021B	25653
880-14809-14	AH East	Total/NA	Solid	8021B	25653
880-14809-15	AH West	Total/NA	Solid	8021B	25653
MB 880-25653/5-A	Method Blank	Total/NA	Solid	8021B	25653
LCS 880-25653/1-A	Lab Control Sample	Total/NA	Solid	8021B	25653
LCSD 880-25653/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	25653
880-14809-10 MS	AH4	Total/NA	Solid	8021B	25653
880-14809-10 MSD	AH4	Total/NA	Solid	8021B	25653

Analysis Batch: 25796

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-14809-4	AH2	Total/NA	Solid	8021B	25810
880-14809-7	AH3	Total/NA	Solid	8021B	25810

QC Association Summary

Client: American Safety Services Inc. Job ID: 880-14809-1
Project/Site: Contango - Karlsbad Corral SWD 2 SDG: Eddy Co NM

GC VOA (Continued)

Analysis Batch: 25796 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-25810/5-A	Method Blank	Total/NA	Solid	8021B	25810
LCS 880-25810/1-A	Lab Control Sample	Total/NA	Solid	8021B	25810
LCSD 880-25810/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	25810
890-2313-A-3-E MS	Matrix Spike	Total/NA	Solid	8021B	25810
890-2313-A-3-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	25810

Analysis Batch: 25803

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-14809-1	AH1	Total/NA	Solid	Total BTEX	
880-14809-4	AH2	Total/NA	Solid	Total BTEX	
880-14809-7	AH3	Total/NA	Solid	Total BTEX	
880-14809-10	AH4	Total/NA	Solid	Total BTEX	
880-14809-12	AH North	Total/NA	Solid	Total BTEX	
880-14809-13	AH South	Total/NA	Solid	Total BTEX	
880-14809-14	AH East	Total/NA	Solid	Total BTEX	
880-14809-15	AH West	Total/NA	Solid	Total BTEX	

Prep Batch: 25810

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-14809-4	AH2	Total/NA	Solid	5035	
880-14809-7	AH3	Total/NA	Solid	5035	
MB 880-25810/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-25810/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-25810/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-2313-A-3-E MS	Matrix Spike	Total/NA	Solid	5035	
890-2313-A-3-F MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

GC Semi VOA

Prep Batch: 25667

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-14809-1	AH1	Total/NA	Solid	8015NM Prep	
880-14809-4	AH2	Total/NA	Solid	8015NM Prep	
880-14809-7	AH3	Total/NA	Solid	8015NM Prep	
880-14809-10	AH4	Total/NA	Solid	8015NM Prep	
880-14809-12	AH North	Total/NA	Solid	8015NM Prep	
880-14809-13	AH South	Total/NA	Solid	8015NM Prep	
880-14809-14	AH East	Total/NA	Solid	8015NM Prep	
880-14809-15	AH West	Total/NA	Solid	8015NM Prep	
MB 880-25667/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-25667/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-25667/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-14809-1 MS	AH1	Total/NA	Solid	8015NM Prep	
880-14809-1 MSD	AH1	Total/NA	Solid	8015NM Prep	

Analysis Batch: 25669

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-14809-1	AH1	Total/NA	Solid	8015B NM	25667
880-14809-4	AH2	Total/NA	Solid	8015B NM	25667
880-14809-7	AH3	Total/NA	Solid	8015B NM	25667
880-14809-10	AH4	Total/NA	Solid	8015B NM	25667

QC Association Summary

Client: American Safety Services Inc. Job ID: 880-14809-1
Project/Site: Contango - Karlsbad Corral SWD 2 SDG: Eddy Co NM

GC Semi VOA (Continued)

Analysis Batch: 25669 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-14809-12	AH North	Total/NA	Solid	8015B NM	25667
880-14809-13	AH South	Total/NA	Solid	8015B NM	25667
880-14809-14	AH East	Total/NA	Solid	8015B NM	25667
880-14809-15	AH West	Total/NA	Solid	8015B NM	25667
MB 880-25667/1-A	Method Blank	Total/NA	Solid	8015B NM	25667
LCS 880-25667/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	25667
LCSD 880-25667/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	25667
880-14809-1 MS	AH1	Total/NA	Solid	8015B NM	25667
880-14809-1 MSD	AH1	Total/NA	Solid	8015B NM	25667

Analysis Batch: 25759

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-14809-1	AH1	Total/NA	Solid	8015 NM	
880-14809-4	AH2	Total/NA	Solid	8015 NM	
880-14809-7	AH3	Total/NA	Solid	8015 NM	
880-14809-10	AH4	Total/NA	Solid	8015 NM	
880-14809-12	AH North	Total/NA	Solid	8015 NM	
880-14809-13	AH South	Total/NA	Solid	8015 NM	
880-14809-14	AH East	Total/NA	Solid	8015 NM	
880-14809-15	AH West	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 25730

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-14809-1	AH1	Soluble	Solid	DI Leach	
880-14809-2	AH1	Soluble	Solid	DI Leach	
880-14809-3	AH1	Soluble	Solid	DI Leach	
880-14809-4	AH2	Soluble	Solid	DI Leach	
880-14809-5	AH2	Soluble	Solid	DI Leach	
880-14809-6	AH2	Soluble	Solid	DI Leach	
880-14809-7	AH3	Soluble	Solid	DI Leach	
880-14809-8	AH3	Soluble	Solid	DI Leach	
880-14809-9	AH3	Soluble	Solid	DI Leach	
880-14809-10	AH4	Soluble	Solid	DI Leach	
880-14809-11	AH4	Soluble	Solid	DI Leach	
880-14809-12	AH North	Soluble	Solid	DI Leach	
880-14809-13	AH South	Soluble	Solid	DI Leach	
880-14809-14	AH East	Soluble	Solid	DI Leach	
880-14809-15	AH West	Soluble	Solid	DI Leach	
MB 880-25730/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-25730/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-25730/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
880-14809-1 MS	AH1	Soluble	Solid	DI Leach	
880-14809-1 MSD	AH1	Soluble	Solid	DI Leach	
880-14809-11 MS	AH4	Soluble	Solid	DI Leach	
880-14809-11 MSD	AH4	Soluble	Solid	DI Leach	

Analysis Batch: 25928

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-14809-1	AH1	Soluble	Solid	300.0	25730

QC Association Summary

Client: American Safety Services Inc. Job ID: 880-14809-1
Project/Site: Contango - Karlsbad Corral SWD 2 SDG: Eddy Co NM

HPLC/IC (Continued)

Analysis Batch: 25928 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-14809-2	AH1	Soluble	Solid	300.0	25730
880-14809-3	AH1	Soluble	Solid	300.0	25730
880-14809-4	AH2	Soluble	Solid	300.0	25730
880-14809-5	AH2	Soluble	Solid	300.0	25730
880-14809-6	AH2	Soluble	Solid	300.0	25730
880-14809-7	AH3	Soluble	Solid	300.0	25730
880-14809-8	AH3	Soluble	Solid	300.0	25730
880-14809-9	AH3	Soluble	Solid	300.0	25730
880-14809-10	AH4	Soluble	Solid	300.0	25730
880-14809-11	AH4	Soluble	Solid	300.0	25730
880-14809-12	AH North	Soluble	Solid	300.0	25730
880-14809-13	AH South	Soluble	Solid	300.0	25730
880-14809-14	AH East	Soluble	Solid	300.0	25730
880-14809-15	AH West	Soluble	Solid	300.0	25730
MB 880-25730/1-A	Method Blank	Soluble	Solid	300.0	25730
LCS 880-25730/2-A	Lab Control Sample	Soluble	Solid	300.0	25730
LCSD 880-25730/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	25730
880-14809-1 MS	AH1	Soluble	Solid	300.0	25730
880-14809-1 MSD	AH1	Soluble	Solid	300.0	25730
880-14809-11 MS	AH4	Soluble	Solid	300.0	25730
880-14809-11 MSD	AH4	Soluble	Solid	300.0	25730

Lab Chronicle

Client: American Safety Services Inc. Job ID: 880-14809-1
Project/Site: Contango - Karlsbad Corral SWD 2 SDG: Eddy Co NM

Client Sample ID: AH1 Lab Sample ID: 880-14809-1

Date Collected: 05/12/22 14:30 **Matrix: Solid**
Date Received: 05/16/22 10:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	25652	05/16/22 15:51	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	25726	05/18/22 09:30	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			25803	05/18/22 09:15	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			25759	05/17/22 16:30	SM	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	25667	05/17/22 08:22	DM	XEN MID
Total/NA	Analysis	8015B NM		1			25669	05/17/22 11:35	SM	XEN MID
Soluble	Leach	DI Leach			5 g	50 mL	25730	05/17/22 12:18	CH	XEN MID
Soluble	Analysis	300.0		5			25928	05/19/22 20:55	CH	XEN MID

Client Sample ID: AH1 Lab Sample ID: 880-14809-2

Date Collected: 05/12/22 14:35 **Matrix: Solid**
Date Received: 05/16/22 10:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			5.05 g	50 mL	25730	05/17/22 12:18	CH	XEN MID
Soluble	Analysis	300.0		1			25928	05/19/22 21:22	CH	XEN MID

Client Sample ID: AH1 Lab Sample ID: 880-14809-3

Date Collected: 05/12/22 14:40 **Matrix: Solid**
Date Received: 05/16/22 10:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			4.99 g	50 mL	25730	05/17/22 12:18	CH	XEN MID
Soluble	Analysis	300.0		1			25928	05/19/22 21:31	CH	XEN MID

Client Sample ID: AH2 Lab Sample ID: 880-14809-4

Date Collected: 05/12/22 14:45 **Matrix: Solid**
Date Received: 05/16/22 10:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.04 g	5 mL	25810	05/18/22 10:00	MR	XEN MID
Total/NA	Analysis	8021B		1			25796	05/18/22 15:16	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			25803	05/18/22 09:15	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			25759	05/17/22 16:30	SM	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	25667	05/17/22 08:22	DM	XEN MID
Total/NA	Analysis	8015B NM		1			25669	05/17/22 12:39	SM	XEN MID
Soluble	Leach	DI Leach			5.02 g	50 mL	25730	05/17/22 12:18	CH	XEN MID
Soluble	Analysis	300.0		1			25928	05/19/22 21:41	CH	XEN MID

Lab Chronicle

Client: American Safety Services Inc. Job ID: 880-14809-1
Project/Site: Contango - Karlsbad Corral SWD 2 SDG: Eddy Co NM

Client Sample ID: AH2 — Lab Sample ID: 880-14809-5

Date Collected: 05/12/22 14:50 **Matrix: Solid**
Date Received: 05/16/22 10:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			4.95 g	50 mL	25730	05/17/22 12:18	CH	XEN MID
Soluble	Analysis	300.0		1			25928	05/19/22 21:50	CH	XEN MID

Client Sample ID: AH2 — Lab Sample ID: 880-14809-6

Date Collected: 05/12/22 14:55 **Matrix: Solid**
Date Received: 05/16/22 10:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			5.01 g	50 mL	25730	05/17/22 12:18	CH	XEN MID
Soluble	Analysis	300.0		1			25928	05/19/22 22:17	CH	XEN MID

Client Sample ID: AH3 — Lab Sample ID: 880-14809-7

Date Collected: 05/12/22 15:00 **Matrix: Solid**
Date Received: 05/16/22 10:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.99 g	5 mL	25810	05/18/22 10:00	MR	XEN MID
Total/NA	Analysis	8021B		1			25796	05/18/22 15:36	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			25803	05/18/22 09:15	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			25759	05/17/22 16:30	SM	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	25667	05/17/22 08:22	DM	XEN MID
Total/NA	Analysis	8015B NM		1			25669	05/17/22 13:00	SM	XEN MID
Soluble	Leach	DI Leach			5.04 g	50 mL	25730	05/17/22 12:18	CH	XEN MID
Soluble	Analysis	300.0		5			25928	05/19/22 22:27	CH	XEN MID

Client Sample ID: AH3 — Lab Sample ID: 880-14809-8

Date Collected: 05/12/22 15:05 **Matrix: Solid**
Date Received: 05/16/22 10:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			4.99 g	50 mL	25730	05/17/22 12:18	CH	XEN MID
Soluble	Analysis	300.0		1			25928	05/19/22 22:36	CH	XEN MID

Client Sample ID: AH3 — Lab Sample ID: 880-14809-9

Date Collected: 05/12/22 15:10 **Matrix: Solid**
Date Received: 05/16/22 10:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			4.95 g	50 mL	25730	05/17/22 12:18	CH	XEN MID
Soluble	Analysis	300.0		1			25928	05/19/22 22:45	CH	XEN MID

Lab Chronicle

Client: American Safety Services Inc. Job ID: 880-14809-1
Project/Site: Contango - Karlsbad Corral SWD 2 SDG: Eddy Co NM

Client Sample ID: AH4 — Lab Sample ID: 880-14809-10

Date Collected: 05/12/22 15:15 **Matrix: Solid**
Date Received: 05/16/22 10:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.96 g	5 mL	25653	05/16/22 15:56	MR	XEN MID
Total/NA	Analysis	8021B		1			25750	05/17/22 18:45	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			25803	05/18/22 09:15	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			25759	05/17/22 16:30	SM	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	25667	05/17/22 08:22	DM	XEN MID
Total/NA	Analysis	8015B NM		1			25669	05/17/22 13:21	SM	XEN MID
Soluble	Leach	DI Leach			5.01 g	50 mL	25730	05/17/22 12:18	CH	XEN MID
Soluble	Analysis	300.0		1			25928	05/19/22 22:54	CH	XEN MID

Client Sample ID: AH4 — Lab Sample ID: 880-14809-11

Date Collected: 05/12/22 15:20 **Matrix: Solid**
Date Received: 05/16/22 10:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			5.03 g	50 mL	25730	05/17/22 12:18	CH	XEN MID
Soluble	Analysis	300.0		1			25928	05/19/22 23:03	CH	XEN MID

Client Sample ID: AH North — Lab Sample ID: 880-14809-12

Date Collected: 05/12/22 15:35 **Matrix: Solid**
Date Received: 05/16/22 10:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	25653	05/16/22 15:56	MR	XEN MID
Total/NA	Analysis	8021B		1			25750	05/17/22 19:10	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			25803	05/18/22 09:15	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			25759	05/17/22 16:30	SM	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	25667	05/17/22 08:22	DM	XEN MID
Total/NA	Analysis	8015B NM		1			25669	05/17/22 13:43	SM	XEN MID
Soluble	Leach	DI Leach			5 g	50 mL	25730	05/17/22 12:18	CH	XEN MID
Soluble	Analysis	300.0		1			25928	05/19/22 23:31	CH	XEN MID

Client Sample ID: AH South — Lab Sample ID: 880-14809-13

Date Collected: 05/12/22 15:40 **Matrix: Solid**
Date Received: 05/16/22 10:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	25653	05/16/22 15:56	MR	XEN MID
Total/NA	Analysis	8021B		1			25750	05/17/22 19:37	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			25803	05/18/22 09:15	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			25759	05/17/22 16:30	SM	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	25667	05/17/22 08:22	DM	XEN MID
Total/NA	Analysis	8015B NM		1			25669	05/17/22 14:04	SM	XEN MID
Soluble	Leach	DI Leach			5.02 g	50 mL	25730	05/17/22 12:18	CH	XEN MID
Soluble	Analysis	300.0		1			25928	05/19/22 23:40	CH	XEN MID

Lab Chronicle

Client: American Safety Services Inc.
Project/Site: Contango - Karlsbad Corral SWD 2

Job ID: 880-14809-1
SDG: Eddy Co NM

Client Sample ID: AH East

Date Collected: 05/12/22 15:45
Date Received: 05/16/22 10:10

Lab Sample ID: 880-14809-14

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	25653	05/16/22 15:56	MR	XEN MID
Total/NA	Analysis	8021B		1			25750	05/17/22 20:05	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			25803	05/18/22 09:15	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			25759	05/17/22 16:30	SM	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	25667	05/17/22 08:22	DM	XEN MID
Total/NA	Analysis	8015B NM		1			25669	05/17/22 14:25	SM	XEN MID
Soluble	Leach	DI Leach			5 g	50 mL	25730	05/17/22 12:18	CH	XEN MID
Soluble	Analysis	300.0		1			25928	05/20/22 00:08	CH	XEN MID

Client Sample ID: AH West

Date Collected: 05/12/22 15:50
Date Received: 05/16/22 10:10

Lab Sample ID: 880-14809-15

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	25653	05/16/22 15:56	MR	XEN MID
Total/NA	Analysis	8021B		1			25750	05/17/22 20:31	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			25803	05/18/22 09:15	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			25759	05/17/22 16:30	SM	XEN MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	25667	05/17/22 08:22	DM	XEN MID
Total/NA	Analysis	8015B NM		1			25669	05/17/22 14:47	SM	XEN MID
Soluble	Leach	DI Leach			5.01 g	50 mL	25730	05/17/22 12:18	CH	XEN MID
Soluble	Analysis	300.0		1			25928	05/20/22 00:17	CH	XEN MID

Laboratory References:

XEN MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Accreditation/Certification Summary

Client: American Safety Services Inc.
Project/Site: Contango - Karlsbad Corral SWD 2

Job ID: 880-14809-1
SDG: Eddy Co NM

Laboratory: Eurofins Midland

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-21-22	06-30-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015 NM		Solid	Total TPH
Total BTEX		Solid	Total BTEX

Method Summary

Client: American Safety Services Inc. Job ID: 880-14809-1
Project/Site: Contango - Karlsbad Corral SWD 2 SDG: Eddy Co NM

Method	Method Description	Protocol	Laboratory
8021B	Volatile Organic Compounds (GC)	SW846	XEN MID
Total BTEX	Total BTEX Calculation	TAL SOP	XEN MID
8015 NM	Diesel Range Organics (DRO) (GC)	SW846	XEN MID
8015B NM	Diesel Range Organics (DRO) (GC)	SW846	XEN MID
300.0	Anions, Ion Chromatography	MCAWW	XEN MID
5035	Closed System Purge and Trap	SW846	XEN MID
8015NM Prep	Microextraction	SW846	XEN MID
DI Leach	Deionized Water Leaching Procedure	ASTM	XEN MID

Protocol References:

ASTM = ASTM International

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

XEN MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Sample Summary

Client: American Safety Services Inc.
Project/Site: Contango - Karlsbad Corral SWD 2

Job ID: 880-14809-1
SDG: Eddy Co NM

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
880-14809-1	AH1	Solid	05/12/22 14:30	05/16/22 10:10	0-0.5
880-14809-2	AH1	Solid	05/12/22 14:35	05/16/22 10:10	0.5-1
880-14809-3	AH1	Solid	05/12/22 14:40	05/16/22 10:10	1-1.5
880-14809-4	AH2	Solid	05/12/22 14:45	05/16/22 10:10	0-0.5
880-14809-5	AH2	Solid	05/12/22 14:50	05/16/22 10:10	0.5-1
880-14809-6	AH2	Solid	05/12/22 14:55	05/16/22 10:10	1-1.5
880-14809-7	AH3	Solid	05/12/22 15:00	05/16/22 10:10	0-0.5
880-14809-8	AH3	Solid	05/12/22 15:05	05/16/22 10:10	0.5-1
880-14809-9	AH3	Solid	05/12/22 15:10	05/16/22 10:10	1-1.5
880-14809-10	AH4	Solid	05/12/22 15:15	05/16/22 10:10	0-0.5
880-14809-11	AH4	Solid	05/12/22 15:20	05/16/22 10:10	0.5-1
880-14809-12	AH North	Solid	05/12/22 15:35	05/16/22 10:10	0-0.5
880-14809-13	AH South	Solid	05/12/22 15:40	05/16/22 10:10	0-0.5
880-14809-14	AH East	Solid	05/12/22 15:45	05/16/22 10:10	0-0.5
880-14809-15	AH West	Solid	05/12/22 15:50	05/16/22 10:10	0-0.5

XENCO LABORATORIES

Setting the Standard since 1990

Stafford,Texas (281-240-4200)
Dallas Texas (214-902-0300)
San Antonio, Texas (210-509-3334)
Midland, Texas (432-704-5251)
Phoenix, Arizona (480-355-0900)
www.xenco.com

CHAIN OF CUSTODY

Page 1 Of 2

14809

5/20/2022

Xenco Quote # | Xenco Job #

Client / Reporting Information

Company Name / Branch: American Safety Services Inc.
Company Address: 8715 Andrews Hwy, Odessa Tx 79765
Email: tfranklin@americansafety.net
Phone No: 432-557-9868
Project Contact: Thomas Franklin
Samplers's Name: Miguel

Project Information Contango

Project Name/Number: Karlsbad Corral SWD 2
Project Location: Eddy Co NM
Invoice To: Jr Curtis
jr.curtis@contango.com
PO Number:

Analytical Information

Matrix Codes

W = Water
S = Soil/Sed/Solid
GW =Ground Water
DW = Drinking Water
P = Product
SW = Surface water
SL = Sludge
OW =Ocean/Sea Water
WI = Wipe
O = Oil
WW= Waste Water
A = Air

No	Field ID / Point of Collection	Collection: Sample Depth	Date	Time	Matrix	# of bottles	Number of preserved bottles: HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	Chloride E 3000	TPH 8015M	BTEX 8021B	Field Comments
1	AH1	0-0.5	5/12/2022	2:30	s	1								X	X	X	X	
2	AH1	0.5-1	5/12/2022	2:35	s	1								X	X			
3	AH1	1-1.5	5/12/2022	2:40	s	1								X	X			
4	AH2	0-0.5	5/12/2022	2:45	s	1								X	X	X	X	
5	AH2	0.5-1	5/12/2022	2:50	s	1								X	X			
6	AH2	1-1.5	5/12/2022	2:55	s	1								X	X			
7	AH3	0-0.5	5/12/2022	3:00	s	1								X	X	X	X	
8	AH3	0.5-1	5/12/2022	3:05	s	1								X	X			
9	AH3	1-1.5	5/12/2022	3:10	s	1								X	X			
10	AH4	0-0.5	5/12/2022	3:15	s	1								X	X	X	X	

880-14809 Chain of Custody

Turnaround Time (Business days)

- [ ] Same Day TAT
- [ ] 5 Day TAT
- [ ] Next Day EMERGENCY
- [ ] 7 Day TAT
- [ ] 2 Day EMERGENCY
- [X] Contract TAT
- [ ] 3 Day EMERGENCY

TAT Starts Day received by Lab, if received by 5:00 pm

Data Deliverable Information

- [ ] Level II Std QC
- [ ] Level IV (Full Data Pkg /raw data)
- [ ] Level III Std QC+ Forms
- [ ] TRRP Level IV
- [ ] Level 3 (CLP Forms)
- [ ] UST / RG -411
- [ ] TRRP Checklist

Notes

FED-EX / UPS Tracking #

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY

	Relinquished by Sampler:	Date Time:	Received By:	Relinquished By	Date Time:	Received By
1	Taylor Meriot	5-12-2022/16:00	1	2		2
3	Relinquished by	Date Time	Received By	Relinquished By	Date Time	Received By:
5	Relinquished by:	Date Time	Received By	Custody Seal #	Preserved where applicable	On Ice: X; Cooler Temp. 3.7/3.5; Thermo. Corr Factor -2 IR8

Notice Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco its affiliates and subcontractors It assigns standard terms and conditions of service Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the Client if such loses are due to circumstances beyond the control of Xenco. A minimum charge of $75 will be applied to each project. Xenco's liability will be limited to the cost of samples Any samples received by Xenco but not analyzed will be invoiced at $5 per sample. These terms will be enforced unless previously negotiated under a fully executed client contract.

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San Antonio, Texas (210-509-3334)
Midland, Texas (432-704-5251)
Phoenix, Arizona (480-355-0900)
www.xenco.com

CHAIN OF CUSTODY

Page 2 of 2

14809

5/20/2022

Xenco Quote #

Xenco Job #

Client / Reporting Information

Company Name / Branch: American Safety Services Inc.
Company Address: 8715 Andrews Hwy, Odessa Tx 79765
Email: tfranklin@americansafety.net
Phone No: 432-557-9868
Project Contact: Thomas Franklin
Samplers's Name Miguel

Project Information

Project Name/Number: Karkband Corral SWD2
Project Location:
Invoice To:
PO Number:

Analytical Information

Matrix Codes

W = Water
S = Soil/Sed/Solid
GW =Ground Water
DW = Drinking Water
P = Product
SW = Surface water
SL = Sludge
OW =Ocean/Sea Water
WI = Wipe
O = Oil
WW= Waste Water
A = Air

No	Field ID / Point of Collection	Collection: Sample Depth	Date	Time	Matrix	# of bottles	Number of preserved bottles: HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	Chloride E 300	TPH 8015 M	BTEX 8021 B	Field Comments
1	AH4	0.5-1	5/12/2022	3:20	s	1								X	X			
2	AH North	0-0.5	5/12/2022	3:35	s	1								X	X	X	X	
3	AH South	0-0.5	5/12/2022	3:40	s	1								X	X	X	X	
4	AH East	0-0.5	5/12/2022	3:45	s	1								X	X	X	X	
5	AH West	0-0.5	5/12/2022	3:50	s	1								X	X	X	X	
6					s	1												
7					s	1												
8	NFE				s	1												
9					s	1												
10					s	1												

Loc: 880
14809

Turnaround Time (Business days)

- [ ] Same Day TAT
- [ ] 5 Day TAT
- [ ] Next Day EMERGENCY
- [ ] 7 Day TAT
- [ ] 2 Day EMERGENCY
- [x] Contract TAT
- [ ] 3 Day EMERGENCY

TAT Starts Day received by Lab, if received by 5:00 pm

Data Deliverable Information

- [ ] Level II Std QC
- [ ] Level IV (Full Data Pkg /raw data)
- [ ] Level III Std QC+ Forms
- [ ] TRRP Level IV
- [ ] Level 3 (CLP Forms)
- [ ] UST / RG -411
- [ ] TRRP Checklist

Notes.

FED-EX / UPS Tracking #

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY

Relinquished by Sampler: 1	Taylor Theriot	Date Time: 5-16-2022 10:10	Received By: 1	Relinquished By 2	Date Time:	Received By 2
Relinquished by 3		Date Time:	Received By 3	Relinquished By 4	Date Time:	Received By 4
Relinquished by 5		Date Time:	Received By 5	Custody Seal #	Preserved where applicable	On Ice: X; Cooler Temp. 3.7/3.5; Thermo. Corr Factor -2 IR

Notice Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco its affiliates and subcontractors. It assigns standard terms and conditions of service Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the Client if such loses are due to circumstances beyond the control of Xenco A minimum charge of $75 will be applied to each project. Xenco's liability will be limited to the cost of samples. Any samples received by Xenco but not analyzed will be invoiced at $5 per sample These terms will be enforced unless previously negotiated under a fully executed client contract.

Login Sample Receipt Checklist

Client: American Safety Services Inc.

Job Number: 880-14809-1
SDG Number: Eddy Co NM

Login Number: 14809
List Number: 1
Creator: Rodriguez, Leticia

List Source: Eurofins Midland

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	

APPENDIX E

Groundwater

New Mexico Office of the State Engineer
Water Column/Average Depth to Water

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced, O=orphaned, C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters) (In feet)

POD Number	POD Sub-basin Code	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
C 02371	C	ED	2	3	15	25S	29E		596741	3555106*	1581	200	60	140
C 02680	C	ED	2	3	15	25S	29E		596741	3555106*	1581	200		

Average Depth to Water: **60 feet**

Minimum Depth: **60 feet**

Maximum Depth: **60 feet**

Record Count: 2

UTMNAD83 Radius Search (in meters):

Easting (X): 597843.11 **Northing (Y):** 3556240 **Radius:** 1800

***UTM location was derived from PLSS - see Help**

USGS Well Sites

New Mexico Office of the State Engineer

Active & Inactive Points of Diversion

(with Well Drill Dates & Depths)

(acre ft per annum) (R=POD has been replaced and no longer serves this file, C=the file is closed) (quarters are 1=NW 2=NE 3=SW 4=SE) (quarters are smallest to largest) (NAD83 UTM in meters) (in feet)

WR File Nbr	Sub basin	Use	Diversion	Cnty	POD Number	Code	Grant	Source	q q q 6416 4	Sec	Tws	Rng	X	Y	Distance	Start Date	Finish Date	Depth Well	Depth Water
C 02371	C	STK	3	ED	C 02371			Shallow	2 3	15	25S	29E	596741	3555106*	1581	01/12/1995	01/24/1995	200	60
C 02680	C	STK	3	ED	C 02680				2 3	15	25S	29E	596741	3555106*	1581		04/30/1964	200	
C 03617	C	STK	0	ED	C 03617 POD1				3 4 3	14	25S	29E	598208	3554566	1712				

Record Count: 3

UTMNAD83 Radius Search (in meters):

Easting (X): 597843.11 **Northing (Y):** 3556240 **Radius:** 1800

Sorted by: Distance

***UTM location was derived from PLSS - see Help**

APPENDIX F

C-141

Incident ID	
District RP	
Facility ID	
Application ID	

Site Assessment/Characterization

This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

What is the shallowest depth to groundwater beneath the area affected by the release?	100 (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☒ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☒ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☒ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☒ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☒ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☒ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ☒ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☒ No
Did the release impact areas **not** on an exploration, development, production, or storage site?	☐ Yes ☒ No

Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.

Characterization Report Checklist: ***Each of the following items must be included in the report.***

☒ Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
☒ Field data
☒ Data table of soil contaminant concentration data
☒ Depth to water determination
☒ Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release
☐ Boring or excavation logs
☒ Photographs including date and GIS information
☒ Topographic/Aerial maps
☒ Laboratory data including chain of custody

If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, anticipated timelines for beginning and completing the remediation. The closure criteria for a release are contained in Table 1 of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.

Form C-141
Page 4

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

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.

Printed Name: Chet Stuart

Title: Manager-EHS, Ops Support & Production

Signature: Chet Stuart

Date: 6/7/2022

email: CStuart@Contango.com

Telephone: 713-236-7530

OCD Only

Received by: _____

Date: _____

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Closure

The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.

Closure Report Attachment Checklist: ***Each of the following items must be included in the closure report.***

☒ A scaled site and sampling diagram as described in 19.15.29.11 NMAC

☒ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)

☒ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)

☒ Description of remediation activities

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. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: Chet Stuart Title: Manager-EHS, Ops Support & Production

Signature: Chet Stuart Date: 6/7/2022

email: CStuart@contango.com Telephone: 713-236-7530

OCD Only

Received by: OCD Date: 6/7/2022

Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.

Closure Approved by: Ashley Maxwell Date: 9/21/2022

Printed Name: Ashley Maxwell Title: Environmental Specialist

NM OIL CONSERVATION
ARTESIA DISTRICT
OCT 10 2017

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

RECEIVED

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

nAB1728633686 258350

OPERATOR

☒ Initial Report ☐ Final Repor

Name of Company: Vanguard	Contact: Chuck Johnston
Address: 4001 Penbrook, Suite 201, Odessa Texas 79762	Telephone No. 432-202-4771
Facility Name: Karlsbad Corral SWD 2	Facility Type: Tank Battery / SWD

Surface Owner: State	Mineral Owner:	API No. 3001536167

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
M	11	25S	29E					Eddy

Latitude: N 32.138306° **Longitude:** W -103.962509°

NATURE OF RELEASE

Type of Release: Produced Water	Volume of Release: unknown	Volume Recovered: unknown
Source of Release: Tank Battery	Date and Hour of Occurrence: Historic	Date and Hour of Discovery: Historic
Was Immediate Notice Given? ☐ Yes ☒ No ☐ Not Required	If YES, To Whom?	
By Whom?	Date and Hour:	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse: Not Applicable	

If a Watercourse was Impacted, Describe Fully.* Not Applicable

Describe Cause of Problem and Remedial Action Taken.*
Historic release of produced water from SWD tank battery.

Describe Area Affected and Cleanup Action Taken.*
Discovered historic release areas from SWD tank battery. Samples will be collected and sent to the lab for testing.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD 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 NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD 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.

Signature:	OIL CONSERVATION DIVISION	
Printed Name: Chuck Johnston	Approved by Environmental Specialist: Signed By	
Title: EHS Specialist	Approval Date: 10/12/17	Expiration Date: N/A
E-mail Address: cjohnston@vnrenergy.com	Conditions of Approval: See Attached	Attached ☐ 2RP-4437
Date: 10-10-2017 Phone: 432-202-4771		

* Attach Additional Sheets If Necessary

Please refer to the New Mexico Oil Conservation Division Website for updated form(s) at: http://www.emnrd.state.nm.us/OCD/forms.html Thank you

Operator/Responsible Party,

The OCD has received the form C-141 you provided on 10/10/2017 regarding an unauthorized release. The information contained on that form has been entered into our incident database and remediation case number 2RP-4437 has been assigned. **Please refer to this case number in all future correspondence.**

It is the Division's obligation under both the Oil & Gas Act and Water Quality Act to provide for the protection of public health and the environment. Our regulations (19.15.29.11 NMAC) state the following,

> *The responsible person shall complete division-approved corrective action for releases that endanger public health or the environment. The responsible person shall address releases in accordance with a remediation plan submitted to and approved by the division or with an abatement plan submitted in accordance with 19.15.30 NMAC.* [emphasis added]

Release characterization is the first phase of corrective action unless the release is ongoing or is of limited volume and all impacts can be immediately addressed. Proper and cost-effective remediation typically cannot occur without adequate characterization of the impacts of any release. Furthermore, the Division has the ability to impose reasonable conditions upon the efforts it oversees. **As such, the Division is requiring a workplan for the characterization of impacts associated with this release be submitted to the OCD District 2 office in ARTESIA on or before 11/10/2017 If and when the release characterization workplan is approved, there will be an associated deadline for submittal of the resultant investigation report. Modest extensions of time to these deadlines may be granted, but only with acceptable justification.**

The goals of a characterization effort are: 1) determination of the lateral and vertical extents along with the magnitude of soil contamination. 2) determine if groundwater or surface waters have been impacted. 3) If groundwater or surface waters have been impacted, what are the extents and magnitude of that impact. 4) The characterization of any other adverse impacts that may have occurred (examples: impacts on vegetation, impacts on wildlife, air quality, loss of use of property, etc.). To meet these goals as quickly as possible, the following items must, at a minimum, be addressed in the release characterization workplan and subsequent reporting:

- Horizontal delineation of soil impacts in each of the four cardinal compass directions. Adsorbed soil contamination must be characterized for the following constituents using the associated laboratory methods: benzene, toluene, ethylbenzene, and total xylenes by either Method 8260 or 8021, total petroleum hydrocarbons by Method 8015 extended range (GRO+DRO+MRO; C_6 thru C_{36}), and for chloride by Method 300. This is not an exclusive list of potential contaminants. Analyzed parameters should be modified based on the nature of the released substance(s). Soil sampling must be both within the impacted area and beyond.

- Vertical delineation of soil impacts. Adsorbed soil contamination must be characterized for the following constituents using the associated laboratory methods: benzene, toluene, ethylbenzene, and total xylenes by either Method 8260 or 8021, total petroleum hydrocarbons by Method 8015 extended range (GRO+DRO+MRO; C_6 thru C_{36}), and for chloride by Method 300. As above, this is not an exclusive list of potential contaminants and can be modified. Vertical characterization samples should be taken at depth intervals no greater than five feet apart. Lithologic description of encountered soils must also be provided. At least ten vertical feet of soils with contaminant concentrations at or below these values must be demonstrated as existing above the water table.

- Nominal detection limits for field and laboratory analyses must be provided.

- Composite sampling is not generally allowed.

- Field screening and assessment techniques are acceptable (headspace, titration, EC [include algorithm for validation purposes], EM, etc.), but the sampling and assay procedures must be clearly defined. Copies of field notes are highly desirable. A statistically significant set of split samples must be submitted for confirmatory laboratory analysis, including the laterally farthest and vertically deepest sets of soil samples. Make sure there are at least two soil samples submitted

for laboratory analysis from each borehole or test pit (highest observed contamination and deepest depth investigated). Copies of the actual laboratory results must be provided including chain of custody documentation.

•Probable depth to shallowest protectable groundwater and lateral distance to nearest surface water. If there is an estimate of groundwater depth, the information used to arrive at that estimate must be provided. If there is a reasonable assumption that the depth to protectable water is 50 feet or less, the responsible party should anticipate the need for at least one groundwater monitoring well to be installed in the area of likely maximum contamination.

• If groundwater contamination is encountered, an additional investigation workplan may be required to determine the extents of that contamination. Groundwater and/or surface water samples, if any, must be analyzed by a competent laboratory for volatile organic hydrocarbons (typically Method 8260 full list), total dissolved solids, pH, major anions and cations including chloride and sulfate, dissolved iron, and dissolved manganese. The investigation workplan must provide the groundwater sampling method(s) and sample handling protocols. To the fullest extent possible, aqueous analyses must be undertaken using nominal method detection limits. As with the soil analyses, copies of the actual laboratory results must be provided including chain of custody documentation.

• Accurately scaled and well-drafted site maps must be provided providing the location of borings, test pits, monitoring wells, potentially impacted areas, and significant surface features including roads and site infrastructure that might limit either the release characterization or remedial efforts. Field sketches may be included in subsequent reporting, but should not be considered stand-alone documentation of the site's layout. Digital photographic documentation of the location and fieldwork is recommended, especially if unusual circumstances are encountered.

Nothing herein should be interpreted to preclude emergency response actions or to imply immediate remediation by removal cannot proceed as warranted. Nonetheless, characterization of impacts and confirmation of the effectiveness of remedial efforts must still be provided to the OCD before any release incident will be closed.

Jim Griswold
OCD Environmental Bureau Chief
1220 South St. Francis Drive
Santa Fe, New Mexico 87505
505-476-3465
jim.griswold@state.nm.us

Bratcher, Mike, EMNRD

From: Chuck Johnston <cjohnston@vnrenergy.com>
Sent: Tuesday, October 10, 2017 7:44 AM
To: Bratcher, Mike, EMNRD; Weaver, Crystal, EMNRD
Subject: C-141 Karlsbad Corral #1 and #2 SWD's
Attachments: Scanned from a Xerox Multifunction Device.pdf

Follow Up Flag: Follow up
Flag Status: Completed

Mike and Crystal, I believe these two sites are in your district. Please correct me if I am wrong. The two sites were discovered by Amber Groves a few months ago and we are in the process of completing the work plans for both sites.

Chuck Johnston
EHS / Operations Specialist
432-202-4771 Cell
432-248-8154 Office

-----Original Message-----
From: odessavnr@vnrllc.com [mailto:odessavnr@vnrllc.com]
Sent: Tuesday, October 10, 2017 8:16 AM
To: Chuck Johnston
Subject: Scanned from a Xerox Multifunction Device

EXTERNAL - This is an EXTERNAL email. Exercise caution. DO NOT open attachments or click links from unknown senders or unexpected email.

Please open the attached document. It was scanned and sent to you using a Xerox Multifunction Device.

Attachment File Type: pdf, Multi-Page

Multifunction Device Location:
Device Name: XRX9C934E663307

For more information on Xerox products and solutions, please visit http://www.xerox.com

Bratcher, Mike, EMNRD

From: brandon boone <bboone.epi@gmail.com>
Sent: Friday, October 13, 2017 8:26 AM
To: Chuck Johnston; Weaver, Crystal, EMNRD; Bratcher, Mike, EMNRD; agroves@slo.state.nm.us
Subject: Karlsbad Corral SWD 2
Attachments: Karlsbad Corral SWD 2 Work Plan.pdf

All,

Attached is the work plan for the Karlsbad Coral SWD 2 for approval. Please contact Chuck Johnston from Vanguard if any changes need to be made.

--

ENVIRONMENTAL PLUS, INC.

2100 Ave 'O'
P.O. Box 1558
Eunice, NM 88231
Bboone.epi@gmail.com
Office: (575) 394-3481
Fax: (575) 394-2601

Site Characterization and Work Plan

Vanguard
Karlsbad Corral SWD 2
Eddy County, New Mexico
Unit Letter "M" Section 11, Township 25 South, Range 29 East
Latitude 32.138306 North, Longitude 103.962509 West

Prepared For:

Vanguard Operating, LLC
4001 Penbrook, Suite 201
Odessa, Texas 79762

Prepared By:

Environmental Plus, Inc.
2100 Ave 'O'
Eunice, NM 88231

October 2017

Brandon Boone
Project Manager

The following *Site Characterization and Work Plan* serves as a condensed update on field activities undertaken and proposed actions for the afore referenced Site.

Background:
The site is located in Unit Letter M, Section 11, Township 25 South, Range 29 East, approximately nine miles south-east of Malaga, in Eddy County, New Mexico. Vanguard Permian owns the property.

The release site is located on the caliche pad on an active disposal well; latitude 32.138306° North, longitude -103.962509° West. Area Map, Site Location Map, and Sample/Site Map are included as Figure 1, and Figure 2, respectively. The Initial NMOCD Form C-141 is included as Attachment IV.

NMOCD Site Classification:
A search for water wells was completed utilizing the New Mexico Office of the State Engineer's (NMOSE) website. There is one well located in the area surrounding the release site (reference *Table 1*). Also, no wells (domestic, agriculture or public) and no bodies of surface water exist within a 1,000-foot radius of the release site (reference *Figure 2*). The USGS database located no wells within the surrounding area. The NMOSE database indicates average water depth is approximately 60 feet below ground surface (bgs) within an 1,581-meter radius (reference *Attachment II*). However, as this is too great a distance to accurately determine depth to water for this location as the closest documented well is 1,500 meters away, the Eddy county groundwater flowline map was utilized to determine an approximate depth to water of over one hundred feet bgs.

Utilizing this information, the NMOCD guidelines indicate the Karlsbad Corral SWD 2 release site to have a ranking score of zero. Based on this score, the NMOCD Recommended Remedial Action Levels (RRALs) for delineation at this Site were determined as follows: Benzene – 10 mg/Kg, BTEX – 50 mg/Kg, TPH – 5,000 mg/Kg, and Chloride – 600 mg/Kg.

The visually stained area totals an area of approximately 3,295 square feet. The area is caliche approximately two feet thick on the pad.

Delineation Progress:
On August 25, 2017 to September 13, 2017 EPI personnel mobilized on site to collect soil samples to determine the vertical extent of contamination. A total of thirty-two soil samples were collected from six sample locations; SP1 – SP7. Two soil samples from each sample location were sent to Cardinal Labs in Hobbs, New Mexico, for testing. Laboratory analytical results indicate Chlorides above NMOCD RRALs (reference *Figure 3* and *Table 2*).

Portions of select soil samples were field tested for organic vapors and chloride concentrations. Soil samples collected for field testing of organic vapors were placed in self-sealing polyethylene

ENVIRONMENTAL PLUS, INC.

bags and allowed to equilibrate to ~70° F. Field testing of organic vapors utilized a Mini-Rae™ Photoionization Detector (PID) equipped with a 10.6 electron-volt (eV) calibrated for benzene response. Chloride concentrations were determined via use of a LaMotte Chloride Kit (Titration Method).

Soil samples designated for laboratory analyses were collected into laboratory provided glass containers, labeled and inserted into self-sealing polyethylene bags, placed in a cooler, chilled and transported to an independent laboratory for quantification of contaminant concentrations under Chain-of-Custody protocol.

Proposed Actions:
Based on field testing and laboratory analytical data, EPI proposes to excavate the release area to approximately three feet bgs, with all contaminated soil hauled to a state approved disposal facility. At the conclusion of excavation activities, a twenty-mil poly-ethylene liner will be installed. Bottom and sidewall confirmation samples will also be collected and analyzed. If laboratory analytical results are below NMOCD RRALs the excavation will be backfilled with select caliche to finish grade. If analytical results are above RRALs the process will be repeated until acceptable levels are achieved.

Backfill soil will be free of deleterious material or rocks or large clumps. Backfilling will continue until the excavation is closed.

Revegetation Plan:
As the area in question is a tank battery on an active lease pad, no seeding will be required.

Noxious Weed Management Plan:
In an effort to prevent the spread of noxious weeds such as African Rue, Siberian Elm, Jointed Goatgrass, Russian Olive, Camelthorn, Saltcedar, Starthistle varieties, Hoary Cress and Russian Knapweed, the area will be confirmed to be clear of any noxious weeds. If any are located they will be removed by hand and the area treated with an appropriate herbicide. After a period of three months the area will be examined for noxious weed growth and re-treated if any growth has occurred.

Following completion of NMOCD and NMSLO approved Proposed Actions, EPI will provide a detailed *Final Closure Report* to Vanguard, NMOCD, and NMSLO personnel. Vanguard and EPI personnel would welcome an opportunity to briefly discuss the *Work Plan* at your earliest convenience.

Should you have any questions or concerns please feel free to contact me at (575) 390-7865 or via e-mail bboone.emp@gmail.com or Mr. Chuck Johnston at (432) 202-4771 or via e-mail at cjohnston@vnrllc.com. All official communication should be addressed to:

Mr. Chuck Johnston
Vanguard
4001 Penbrook, Suite 2001
Odessa, Texas 79762

Sincerely,

ENVIRONMENTAL PLUS, INC.

Brandon Boone
Environmental Consultant

cc: Mike Bratcher, Environmental Specialist – NMOCD District 2, Hobbs, NM
Amber Groves, Remediation Specialist – NMSLO, Hobbs, NM
Chuck Johnston, EHS – Vanguard
File

Encl.: Figure 1 – Area Map
Figure 2 – Sample/Site Map
Table 1 – Well Data
Table 2 – Summary of Soil Sample Field Testing and Laboratory Analytical Results
Attachment I – Photographs
Attachment II – NMOSE Average Depth to Groundwater, USGS Well Sites
Attachment III – Laboratory Analytical Results
Attachment IV – Copy of Initial NMOCD Form C-141

FIGURES

Figure 1

Karlsbad Corral SWD 2
Vanguard Permian
UL "M", Sec 11, 25S-29E
N 32.138306 W -103.962509
Elevation 3,100 Ft. AMSL

Legend
- Karlsbad Corral SWD 2
- Malaga

Karlsbad Corral SWD 2

Google Earth

N

3 mi

Figure 1

Karlsbad Corral SWD 2
Vanguard Permian
UL "M", Sec 11, 25S-29E
N 32.138306 W -103.962509
Elevation 3,100 Ft. AMSL

Legend
- 7 SP 7
- 1 SP1
- 2 SP2
- 3 SP3
- 4 SP4
- 5 SP5
- 6 SP6

SP6
SP3
SP2
SP 7
SP1
SP5
SP4

N

90 ft

TABLES

TABLE 1

Well Data

Vanguard - Karlsbad Corral SWD 2

Ref #	Well Number	Use	Diversion[A]	Owner	q64	q16	q4	Sec	Twsp	Rng	Easting	Northing	Distance[B]	Date Measured	Surface Elevation[C]	Depth to Water (ft bgs)
1	C02371	STK	3	Tran King & Western Comm. Bank	**2**	**3**	**15**	15	25S	29E	596741	3555106	1,581	12-Oct-17	3,105	**60**
2	C02680	STK	3	Tran King & Western Comm. Bank	**2**	**3**	**15**	15	25S	29E	596741	3555106	1,581	12-Oct-17	3,105	**60**
3	C03617	STK	0	W P Ranches Family	3	4	3	14	25S	29E	598207	3554566	1,712	12-Oct-17	3,105	0

* = Data obtained from the USGS and New Mexico Office of the State Engineer websites

[A] = In acre feet per annum [B] = In meters [C] = Elevation interpolated from Google Earth based on referenced location.

STK = 72-12-1 Livestock watering

quarters are 1=NW, 2=NE, 3=SW, 4=SE; quarters are smallest to biggest

-- = Data not provided on the NM iwaters website

Shaded area indicates wells not shown in Figure 2

MON = Monitoring Well
PRO = 72-12-1 Prospecting or development of Natural Resource
IND = Industrial
PDM = Non 72-12-1 Domestic
OIL = Oil Production

TABLE 2
Summary of Soil Sample Field Testing and Laboratory Analytical Results
Vanguard
Karlsbad Corral SWD 2

Lab Sample ID	Depth (feet)	Soil Status	Sample Date	PID Reading (ppm)	Field Chloride (mg/Kg)	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Total Xylenes (mg/Kg)	Total BTEX (mg/Kg)	GRO C6-C10 (mg/Kg)	DRO C10-C28 (mg/Kg)	Total TPH (mg/Kg)	Chloride (mg/Kg)
SP1	Surface	In-Situ	25-Aug-17	0.0	400	--	--	--	--	--	--	--	--	**1040**
	2	In-Situ	25-Aug-17	0.0	640	--	--	--	--	--	--	--	--	--
	4	In-Situ	25-Aug-17	0.0	800	--	--	--	--	--	--	--	--	--
	6	In-Situ	25-Aug-17	0.0	1,040	--	--	--	--	--	--	--	--	--
	8	In-Situ	25-Aug-17	0.0	1,200	--	--	--	--	--	--	--	--	--
	12	In-Situ	13-Sep-17	0.0	480	--	--	--	--	--	--	--	--	--
	14	In-Situ	13-Sep-17	0.0	160	--	--	--	--	--	--	--	--	--
	18	In-Situ	13-Sep-17	0.0	80	--	--	--	--	--	--	--	--	32
SP2	Surface	In-Situ	13-Sep-17	0.0	2,240	--	--	--	--	--	--	--	--	**3,080**
	2	In-Situ	13-Sep-17	0.0	880	--	--	--	--	--	--	--	--	--
	4	In-Situ	13-Sep-17	0.0	720	--	--	--	--	--	--	--	--	--
	6	In-Situ	13-Sep-17	0.0	1,440	--	--	--	--	--	--	--	--	--
	10	In-Situ	13-Sep-17	0.0	880	--	--	--	--	--	--	--	--	--
	14	In-Situ	13-Sep-17	0.0	560	--	--	--	--	--	--	--	--	--
	18	In-Situ	13-Sep-17	0.0	160	--	--	--	--	--	--	--	--	--
	22	In-Situ	13-Sep-17	0.0	160	--	--	--	--	--	--	--	--	16

TABLE 2
Summary of Soil Sample Field Testing and Laboratory Analytical Results
Vanguard
Karlsbad Corral SWD 2

Lab Sample ID	Depth (feet)	Soil Status	Sample Date	PID Reading (ppm)	Field Chloride (mg/Kg)	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Total Xylenes (mg/Kg)	Total BTEX (mg/Kg)	GRO C6-C10 (mg/Kg)	DRO C10-C28 (mg/Kg)	Total TPH (mg/Kg)	Chloride (mg/Kg)
SP3	Surface	In-Situ	13-Sep-17	0.0	80	--	--	--	--	--	--	--	--	80
	3	In-Situ	13-Sep-17	0.0	80	--	--	--	--	--	--	--	--	32
SP4	Surface	In-Situ	13-Sep-17	0.0	80	--	--	--	--	--	--	--	--	48
	3	In-Situ	13-Sep-17	0.0	80	--	--	--	--	--	--	--	--	<16.0

TABLE 2
Summary of Soil Sample Field Testing and Laboratory Analytical Results
Vanguard
Karlsbad Corral SWD 2

Lab Sample ID	Depth (feet)	Soil Status	Sample Date	PID Reading (ppm)	Field Chloride (mg/Kg)	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Total Xylenes (mg/Kg)	Total BTEX (mg/Kg)	GRO C6-C10 (mg/Kg)	DRO C10-C28 (mg/Kg)	Total TPH (mg/Kg)	Chloride (mg/Kg)
SP5	Surface	In-Situ	13-Sep-17	0.0	80	--	--	--	--	--	--	--	--	32
	3	In-Situ	13-Sep-17	0.0	80	--	--	--	--	--	--	--	--	48
SP6	Surface	In-Situ	13-Sep-17	0.0	80	--	--	--	--	--	--	--	--	48
	3	In-Situ	13-Sep-17	0.0	80	--	--	--	--	--	--	--	--	32
SP7	Surface	In-Situ	13-Sep-17	0.0	4000	--	--	--	--	--	--	--	--	27,200
	2	In-Situ	13-Sep-17	0.0	560	--	--	--	--	--	--	--	--	--
	4	In-Situ	13-Sep-17	0.0	640	--	--	--	--	--	--	--	--	--
	6	In-Situ	13-Sep-17	0.0	1,280	--	--	--	--	--	--	--	--	--
	8	In-Situ	13-Sep-17	0.0	1,360	--	--	--	--	--	--	--	--	--
	10	In-Situ	13-Sep-17	0.0	800	--	--	--	--	--	--	--	--	--
	14	In-Situ	13-Sep-17	0.0	240	--	--	--	--	--	--	--	--	--
	18	In-Situ	13-Sep-17	0.0	80	--	--	--	--	--	--	--	--	32
NMOCD Recommended Remedial Action Levels				100		10				50			5,000	600

- - = Not Analyzed
Bold values are in excess of NMOCD Recommended Remedial Action Levels
Shaded values indicates soil has been excavated

ATTACHMENTS

ATTACHMENT I

Photographs

Photograph #1- Lease sign

Photograph #2- Release area

Photograph #3- Release area and sample location

Photograph #4- Release area and sample location

Photograph #5- Release area and sample location

Photograph #6- Release area and sample location

ATTACHMENT II

NMOSE Average Depth to Groundwater

New Mexico Office of the State Engineer
Water Column/Average Depth to Water

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced, O=orphaned, C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters) (In feet)

POD Number	POD Sub-basin Code	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
C 02371	C	ED	2	3	15	25S	29E	596741	3555106*		1581	200	60	140
C 02680	C	ED	2	3	15	25S	29E	596741	3555106*		1581	200		

Average Depth to Water: **60 feet**

Minimum Depth: **60 feet**

Maximum Depth: **60 feet**

Record Count: 2

UTMNAD83 Radius Search (in meters):

Easting (X): 597843.11 **Northing (Y):** 3556240 **Radius:** 1800

***UTM location was derived from PLSS - see Help**

USGS Well Sites

New Mexico Office of the State Engineer

Active & Inactive Points of Diversion

(with Well Drill Dates & Depths)

(R=POD has been replaced and no longer serves this file, C=the file is closed) (quarters are 1=NW 2=NE 3=SW 4=SE) (quarters are smallest to largest) (NAD83 UTM in meters) (in feet)

(acre ft per annum)

WR File Nbr	Sub basin	Use	Diversion	Cnty	POD Number	Code	Grant	Source	q 6416	q 4	q Sec	Tws	Rng	X	Y	Distance	Start Date	Finish Date	Depth Well	Depth Water
C 02371	C	STK	3	ED	C 02371			Shallow	2	3	15	25S	29E	596741	3555106*	1581	01/12/1995	01/24/1995	200	60
C 02680	C	STK	3	ED	C 02680				2	3	15	25S	29E	596741	3555106*	1581		04/30/1964	200	
C 03617	C	STK	0	ED	C 03617 POD1				3	4	3	14	25S	29E	598208	3554566	1712				

Record Count: 3

UTMNAD83 Radius Search (in meters):

Easting (X): 597843.11 **Northing (Y):** 3556240 **Radius:** 1800

Sorted by: Distance

***UTM location was derived from PLSS - see Help**

ATTACHMENT III
Laboratory Analytical Results

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

September 21, 2017

Daniel Dominguez

Environmental Plus, Inc.

P.O. Box 1558

Eunice, NM 88231

RE: KARLSBAD CORRAL SWD #2

Enclosed are the results of analyses for samples received by the laboratory on 09/14/17 15:30.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-16-8. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accreditated through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keene

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

Environmental Plus, Inc.
Daniel Dominguez
P.O. Box 1558
Eunice NM, 88231
Fax To: (505) 394-2601

Received:	09/14/2017	Sampling Date:	09/13/2017
Reported:	09/21/2017	Sampling Type:	Soil
Project Name:	KARLSBAD CORRAL SWD #2	Sampling Condition:	Cool & Intact
Project Number:	VANGUARD	Sample Received By:	Jodi Henson
Project Location:	VANGUARD - UL - M SEC. 11, T25S, R29		

Sample ID: SP 1 (SURFACE) (H702491-01)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/21/2017	ND	1.88	94.2	2.00	0.243	
Toluene*	<0.050	0.050	09/21/2017	ND	1.73	86.6	2.00	0.676	
Ethylbenzene*	<0.050	0.050	09/21/2017	ND	1.78	89.2	2.00	0.588	
Total Xylenes*	<0.150	0.150	09/21/2017	ND	5.45	90.9	6.00	0.259	
Total BTEX	<0.300	0.300	09/21/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID *106 %* *72-148*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**1040**	16.0	09/18/2017	ND	432	108	400	3.64	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	09/17/2017	ND	181	90.5	200	0.835	
DRO >C10-C28	<10.0	10.0	09/17/2017	ND	188	94.0	200	1.21	
EXT DRO >C28-C36	<10.0	10.0	09/17/2017	ND					

Surrogate: 1-Chlorooctane *88.7 %* *28.3-164*

Surrogate: 1-Chlorooctadecane *93.7 %* *34.7-157*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

Environmental Plus, Inc.
Daniel Dominguez
P.O. Box 1558
Eunice NM, 88231
Fax To: (505) 394-2601

Received:	09/14/2017	Sampling Date:	09/13/2017
Reported:	09/21/2017	Sampling Type:	Soil
Project Name:	KARLSBAD CORRAL SWD #2	Sampling Condition:	Cool & Intact
Project Number:	VANGUARD	Sample Received By:	Jodi Henson
Project Location:	VANGUARD - UL - M SEC. 11, T25S, R2S		

Sample ID: SP 1 (18') (H702491-02)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/21/2017	ND	1.88	94.2	2.00	0.243	
Toluene*	<0.050	0.050	09/21/2017	ND	1.73	86.6	2.00	0.676	
Ethylbenzene*	<0.050	0.050	09/21/2017	ND	1.78	89.2	2.00	0.588	
Total Xylenes*	<0.150	0.150	09/21/2017	ND	5.45	90.9	6.00	0.259	
Total BTEX	<0.300	0.300	09/21/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID *99.8 %* *72-148*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**32.0**	16.0	09/18/2017	ND	432	108	400	3.64	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	09/17/2017	ND	181	90.5	200	0.835	
DRO >C10-C28	<10.0	10.0	09/17/2017	ND	188	94.0	200	1.21	
EXT DRO >C28-C36	<10.0	10.0	09/17/2017	ND					

Surrogate: 1-Chlorooctane *91.3 %* *28.3-164*

Surrogate: 1-Chlorooctadecane *94.0 %* *34.7-157*

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Fax To: (505) 394-2601

Received:	09/14/2017	Sampling Date:	09/13/2017
Reported:	09/21/2017	Sampling Type:	Soil
Project Name:	KARLSBAD CORRAL SWD #2	Sampling Condition:	Cool & Intact
Project Number:	VANGUARD	Sample Received By:	Jodi Henson
Project Location:	VANGUARD - UL - M SEC. 11, T25S, R2S		

Sample ID: SP 2 (SURFACE) (H702491-03)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/21/2017	ND	1.88	94.2	2.00	0.243	
Toluene*	<0.050	0.050	09/21/2017	ND	1.73	86.6	2.00	0.676	
Ethylbenzene*	<0.050	0.050	09/21/2017	ND	1.78	89.2	2.00	0.588	
Total Xylenes*	<0.150	0.150	09/21/2017	ND	5.45	90.9	6.00	0.259	
Total BTEX	<0.300	0.300	09/21/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID *98.5 %* *72-148*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**3080**	16.0	09/18/2017	ND	432	108	400	3.64	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	09/17/2017	ND	181	90.5	200	0.835	
DRO >C10-C28	<10.0	10.0	09/17/2017	ND	188	94.0	200	1.21	
EXT DRO >C28-C36	<10.0	10.0	09/17/2017	ND					

Surrogate: 1-Chlorooctane *84.1 %* *28.3-164*

Surrogate: 1-Chlorooctadecane *81.3 %* *34.7-157*

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Fax To: (505) 394-2601

Received:	09/14/2017	Sampling Date:	09/13/2017
Reported:	09/21/2017	Sampling Type:	Soil
Project Name:	KARLSBAD CORRAL SWD #2	Sampling Condition:	Cool & Intact
Project Number:	VANGUARD	Sample Received By:	Jodi Henson
Project Location:	VANGUARD - UL - M SEC. 11, T25S, R2S		

Sample ID: SP 2 (22') (H702491-04)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/21/2017	ND	1.88	94.2	2.00	0.243	
Toluene*	<0.050	0.050	09/21/2017	ND	1.73	86.6	2.00	0.676	
Ethylbenzene*	<0.050	0.050	09/21/2017	ND	1.78	89.2	2.00	0.588	
Total Xylenes*	<0.150	0.150	09/21/2017	ND	5.45	90.9	6.00	0.259	
Total BTEX	<0.300	0.300	09/21/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID *101 %* *72-148*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**16.0**	16.0	09/18/2017	ND	432	108	400	3.64	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	09/17/2017	ND	181	90.5	200	0.835	
DRO >C10-C28	<10.0	10.0	09/17/2017	ND	188	94.0	200	1.21	
EXT DRO >C28-C36	<10.0	10.0	09/17/2017	ND					

Surrogate: 1-Chlorooctane *88.3 %* *28.3-164*

Surrogate: 1-Chlorooctadecane *91.7 %* *34.7-157*

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Received:	09/14/2017	Sampling Date:	09/13/2017
Reported:	09/21/2017	Sampling Type:	Soil
Project Name:	KARLSBAD CORRAL SWD #2	Sampling Condition:	Cool & Intact
Project Number:	VANGUARD	Sample Received By:	Jodi Henson
Project Location:	VANGUARD - UL - M SEC. 11, T25S, R2S		

Sample ID: SP 3 (SURFACE) (H702491-05)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/21/2017	ND	1.88	94.2	2.00	0.243	
Toluene*	<0.050	0.050	09/21/2017	ND	1.73	86.6	2.00	0.676	
Ethylbenzene*	<0.050	0.050	09/21/2017	ND	1.78	89.2	2.00	0.588	
Total Xylenes*	<0.150	0.150	09/21/2017	ND	5.45	90.9	6.00	0.259	
Total BTEX	<0.300	0.300	09/21/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID *101 %* *72-148*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**80.0**	16.0	09/18/2017	ND	432	108	400	3.64	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	09/17/2017	ND	181	90.5	200	0.835	
DRO >C10-C28	<10.0	10.0	09/17/2017	ND	188	94.0	200	1.21	
EXT DRO >C28-C36	<10.0	10.0	09/17/2017	ND					

Surrogate: 1-Chlorooctane *67.5 %* *28.3-164*

Surrogate: 1-Chlorooctadecane *70.6 %* *34.7-157*

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Received:	09/14/2017	Sampling Date:	09/13/2017
Reported:	09/21/2017	Sampling Type:	Soil
Project Name:	KARLSBAD CORRAL SWD #2	Sampling Condition:	Cool & Intact
Project Number:	VANGUARD	Sample Received By:	Jodi Henson
Project Location:	VANGUARD - UL - M SEC. 11, T25S, R2S		

Sample ID: SP 3 (3') (H702491-06)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/21/2017	ND	1.88	94.2	2.00	0.243	
Toluene*	<0.050	0.050	09/21/2017	ND	1.73	86.6	2.00	0.676	
Ethylbenzene*	<0.050	0.050	09/21/2017	ND	1.78	89.2	2.00	0.588	
Total Xylenes*	<0.150	0.150	09/21/2017	ND	5.45	90.9	6.00	0.259	
Total BTEX	<0.300	0.300	09/21/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID *99.1 %* *72-148*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**32.0**	16.0	09/18/2017	ND	432	108	400	3.64	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	09/17/2017	ND	181	90.5	200	0.835	
DRO >C10-C28	<10.0	10.0	09/17/2017	ND	188	94.0	200	1.21	
EXT DRO >C28-C36	<10.0	10.0	09/17/2017	ND					

Surrogate: 1-Chlorooctane *90.5 %* *28.3-164*

Surrogate: 1-Chlorooctadecane *97.3 %* *34.7-157*

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Received:	09/14/2017	Sampling Date:	09/13/2017
Reported:	09/21/2017	Sampling Type:	Soil
Project Name:	KARLSBAD CORRAL SWD #2	Sampling Condition:	Cool & Intact
Project Number:	VANGUARD	Sample Received By:	Jodi Henson
Project Location:	VANGUARD - UL - M SEC. 11, T25S, R2S		

Sample ID: SP 4 (SURFACE) (H702491-07)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/20/2017	ND	2.23	112	2.00	2.13	
Toluene*	<0.050	0.050	09/20/2017	ND	2.06	103	2.00	2.29	
Ethylbenzene*	<0.050	0.050	09/20/2017	ND	2.12	106	2.00	1.94	
Total Xylenes*	<0.150	0.150	09/20/2017	ND	6.28	105	6.00	1.07	
Total BTEX	<0.300	0.300	09/20/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID *100 %* *72-148*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**48.0**	16.0	09/18/2017	ND	432	108	400	3.64	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	09/17/2017	ND	181	90.5	200	0.835	
DRO >C10-C28	<10.0	10.0	09/17/2017	ND	188	94.0	200	1.21	
EXT DRO >C28-C36	<10.0	10.0	09/17/2017	ND					

Surrogate: 1-Chlorooctane *80.7 %* *28.3-164*

Surrogate: 1-Chlorooctadecane *82.5 %* *34.7-157*

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Received:	09/14/2017	Sampling Date:	09/13/2017
Reported:	09/21/2017	Sampling Type:	Soil
Project Name:	KARLSBAD CORRAL SWD #2	Sampling Condition:	Cool & Intact
Project Number:	VANGUARD	Sample Received By:	Jodi Henson
Project Location:	VANGUARD - UL - M SEC. 11, T25S, R2S		

Sample ID: SP 4 (3') (H702491-08)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/20/2017	ND	2.23	112	2.00	2.13	
Toluene*	<0.050	0.050	09/20/2017	ND	2.06	103	2.00	2.29	
Ethylbenzene*	<0.050	0.050	09/20/2017	ND	2.12	106	2.00	1.94	
Total Xylenes*	<0.150	0.150	09/20/2017	ND	6.28	105	6.00	1.07	
Total BTEX	<0.300	0.300	09/20/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID *101 %* *72-148*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	09/18/2017	ND	432	108	400	3.64	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	09/17/2017	ND	181	90.5	200	0.835	
DRO >C10-C28	<10.0	10.0	09/17/2017	ND	188	94.0	200	1.21	
EXT DRO >C28-C36	<10.0	10.0	09/17/2017	ND					

Surrogate: 1-Chlorooctane *91.5 %* *28.3-164*

Surrogate: 1-Chlorooctadecane *88.7 %* *34.7-157*

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Received:	09/14/2017	Sampling Date:	09/13/2017
Reported:	09/21/2017	Sampling Type:	Soil
Project Name:	KARLSBAD CORRAL SWD #2	Sampling Condition:	Cool & Intact
Project Number:	VANGUARD	Sample Received By:	Jodi Henson
Project Location:	VANGUARD - UL - M SEC. 11, T25S, R2S		

Sample ID: SP 5 (SURFACE) (H702491-09)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/20/2017	ND	2.23	112	2.00	2.13	
Toluene*	<0.050	0.050	09/20/2017	ND	2.06	103	2.00	2.29	
Ethylbenzene*	<0.050	0.050	09/20/2017	ND	2.12	106	2.00	1.94	
Total Xylenes*	<0.150	0.150	09/20/2017	ND	6.28	105	6.00	1.07	
Total BTEX	<0.300	0.300	09/20/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID *99.8 %* *72-148*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**32.0**	16.0	09/18/2017	ND	432	108	400	3.64	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	09/17/2017	ND	181	90.5	200	0.835	
DRO >C10-C28	<10.0	10.0	09/17/2017	ND	188	94.0	200	1.21	
EXT DRO >C28-C36	<10.0	10.0	09/17/2017	ND					

Surrogate: 1-Chlorooctane *93.6 %* *28.3-164*

Surrogate: 1-Chlorooctadecane *87.0 %* *34.7-157*

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Received:	09/14/2017	Sampling Date:	09/13/2017
Reported:	09/21/2017	Sampling Type:	Soil
Project Name:	KARLSBAD CORRAL SWD #2	Sampling Condition:	Cool & Intact
Project Number:	VANGUARD	Sample Received By:	Jodi Henson
Project Location:	VANGUARD - UL - M SEC. 11, T25S, R2S		

Sample ID: SP 5 (3') (H702491-10)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/20/2017	ND	2.23	112	2.00	2.13	
Toluene*	<0.050	0.050	09/20/2017	ND	2.06	103	2.00	2.29	
Ethylbenzene*	<0.050	0.050	09/20/2017	ND	2.12	106	2.00	1.94	
Total Xylenes*	<0.150	0.150	09/20/2017	ND	6.28	105	6.00	1.07	
Total BTEX	<0.300	0.300	09/20/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID *99.1 %* *72-148*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**48.0**	16.0	09/18/2017	ND	432	108	400	3.64	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	09/17/2017	ND	181	90.5	200	0.835	
DRO >C10-C28	<10.0	10.0	09/17/2017	ND	188	94.0	200	1.21	
EXT DRO >C28-C36	<10.0	10.0	09/17/2017	ND					

Surrogate: 1-Chlorooctane *94.7 %* *28.3-164*

Surrogate: 1-Chlorooctadecane *99.0 %* *34.7-157*

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Received:	09/14/2017	Sampling Date:	09/13/2017
Reported:	09/21/2017	Sampling Type:	Soil
Project Name:	KARLSBAD CORRAL SWD #2	Sampling Condition:	Cool & Intact
Project Number:	VANGUARD	Sample Received By:	Jodi Henson
Project Location:	VANGUARD - UL - M SEC. 11, T25S, R2S		

Sample ID: SP 6 (SURFACE) (H702491-11)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/20/2017	ND	2.23	112	2.00	2.13	
Toluene*	<0.050	0.050	09/20/2017	ND	2.06	103	2.00	2.29	
Ethylbenzene*	<0.050	0.050	09/20/2017	ND	2.12	106	2.00	1.94	
Total Xylenes*	<0.150	0.150	09/20/2017	ND	6.28	105	6.00	1.07	
Total BTEX	<0.300	0.300	09/20/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID *101 %* *72-148*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**48.0**	16.0	09/18/2017	ND	432	108	400	3.64	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	09/17/2017	ND	181	90.5	200	0.835	
DRO >C10-C28	<10.0	10.0	09/17/2017	ND	188	94.0	200	1.21	
EXT DRO >C28-C36	<10.0	10.0	09/17/2017	ND					

Surrogate: 1-Chlorooctane *85.5 %* *28.3-164*

Surrogate: 1-Chlorooctadecane *83.6 %* *34.7-157*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

Environmental Plus, Inc.
Daniel Dominguez
P.O. Box 1558
Eunice NM, 88231
Fax To: (505) 394-2601

Received:	09/14/2017	Sampling Date:	09/13/2017
Reported:	09/21/2017	Sampling Type:	Soil
Project Name:	KARLSBAD CORRAL SWD #2	Sampling Condition:	Cool & Intact
Project Number:	VANGUARD	Sample Received By:	Jodi Henson
Project Location:	VANGUARD - UL - M SEC. 11, T25S, R2S		

Sample ID: SP 6 (3') (H702491-12)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/20/2017	ND	2.23	112	2.00	2.13	
Toluene*	<0.050	0.050	09/20/2017	ND	2.06	103	2.00	2.29	
Ethylbenzene*	<0.050	0.050	09/20/2017	ND	2.12	106	2.00	1.94	
Total Xylenes*	<0.150	0.150	09/20/2017	ND	6.28	105	6.00	1.07	
Total BTEX	<0.300	0.300	09/20/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID *99.5 %* *72-148*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**32.0**	16.0	09/18/2017	ND	432	108	400	3.64	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	09/17/2017	ND	181	90.5	200	0.835	
DRO >C10-C28	<10.0	10.0	09/17/2017	ND	188	94.0	200	1.21	
EXT DRO >C28-C36	<10.0	10.0	09/17/2017	ND					

Surrogate: 1-Chlorooctane *92.9 %* *28.3-164*

Surrogate: 1-Chlorooctadecane *100 %* *34.7-157*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

Environmental Plus, Inc.
Daniel Dominguez
P.O. Box 1558
Eunice NM, 88231
Fax To: (505) 394-2601

Received:	09/14/2017	Sampling Date:	09/13/2017
Reported:	09/21/2017	Sampling Type:	Soil
Project Name:	KARLSBAD CORRAL SWD #2	Sampling Condition:	Cool & Intact
Project Number:	VANGUARD	Sample Received By:	Jodi Henson
Project Location:	VANGUARD - UL - M SEC. 11, T25S, R2S		

Sample ID: SP 7 (SURFACE) (H702491-13)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/20/2017	ND	2.23	112	2.00	2.13	
Toluene*	<0.050	0.050	09/20/2017	ND	2.06	103	2.00	2.29	
Ethylbenzene*	<0.050	0.050	09/20/2017	ND	2.12	106	2.00	1.94	
Total Xylenes*	<0.150	0.150	09/20/2017	ND	6.28	105	6.00	1.07	
Total BTEX	<0.300	0.300	09/20/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID *99.9 %* *72-148*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**27200**	16.0	09/18/2017	ND	432	108	400	3.64	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	09/17/2017	ND	181	90.5	200	0.835	
DRO >C10-C28	<10.0	10.0	09/17/2017	ND	188	94.0	200	1.21	
EXT DRO >C28-C36	<10.0	10.0	09/17/2017	ND					

Surrogate: 1-Chlorooctane *89.9 %* *28.3-164*

Surrogate: 1-Chlorooctadecane *93.8 %* *34.7-157*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

Environmental Plus, Inc.
Daniel Dominguez
P.O. Box 1558
Eunice NM, 88231
Fax To: (505) 394-2601

Received:	09/14/2017	Sampling Date:	09/13/2017
Reported:	09/21/2017	Sampling Type:	Soil
Project Name:	KARLSBAD CORRAL SWD #2	Sampling Condition:	Cool & Intact
Project Number:	VANGUARD	Sample Received By:	Jodi Henson
Project Location:	VANGUARD - UL - M SEC. 11, T25S, R2S		

Sample ID: SP 7 (18') (H702491-14)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/20/2017	ND	2.23	112	2.00	2.13	
Toluene*	<0.050	0.050	09/20/2017	ND	2.06	103	2.00	2.29	
Ethylbenzene*	<0.050	0.050	09/20/2017	ND	2.12	106	2.00	1.94	
Total Xylenes*	<0.150	0.150	09/20/2017	ND	6.28	105	6.00	1.07	
Total BTEX	<0.300	0.300	09/20/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID *99.4 %* *72-148*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**32.0**	16.0	09/18/2017	ND	432	108	400	3.64	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	09/17/2017	ND	181	90.5	200	0.835	
DRO >C10-C28	<10.0	10.0	09/17/2017	ND	188	94.0	200	1.21	
EXT DRO >C28-C36	<10.0	10.0	09/17/2017	ND					

Surrogate: 1-Chlorooctane *89.9 %* *28.3-164*

Surrogate: 1-Chlorooctadecane *97.9 %* *34.7-157*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Notes and Definitions

QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C
	Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

Environmental Plus, Inc.

2100 Avenue O, Eunice, NM 88231 P.O. Box 1558, Eunice, NM 88231
(575) 394-3481 FAX: (575) 394-2601

Chain of Custody Form

LAB Cardinal

Company Name	Environmental Plus, Inc.
EPI Project Manager	Daniel Dominguez
Mailing Address	P.O. BOX 1558
City, State, Zip	Eunice New Mexico 88231
EPI Phone#/Fax#	575-394-3481 / 575-394-2601
Client Company	Vanguard
Facility Name	Karlsbad Corral SWD #2
Location	UL- M Sec. 11, T25S, R29E
Project Reference	
EPI Sampler Name	Dustin Crockett

Bill To

Attn: Daniel Dominguez
P.O. Box 1558
Eunice, NM 88231

ANALYSIS REQUEST

LAB I.D.	SAMPLE I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUND WATER	WASTEWATER	SOIL	CRUDE OIL	SLUDGE	OTHER:	PRESERV.: ACID/BASE	ICE/COOL	OTHER	SAMPLING: DATE	TIME	BTEX 8021B	TPH 8015M Ext.	CHLORIDES (Cl^-)	SULFATES ($SO_4^{=}$)	pH	TCLP	OTHER >>>	PAH			
H702491																									
1	SP1 (Surface)	G	1			X					X		13-Sep-17		X	X	X								
2	SP1 (18')	G	1			X					X		13-Sep-17		X	X	X								
3	SP2 (Surface)	G	1			X					X		13-Sep-17		X	X	X								
4	SP2 (22')	G	1			X					X		13-Sep-17		X	X	X								
5	SP3 (Surface)	G	1			X					X		13-Sep-17		X	X	X								
6	SP3 (3')	G	1			X					X		13-Sep-17		X	X	X								
7	SP4 (Surface)	G	1			X					X		13-Sep-17		X	X	X								
8	SP4 (3')	G	1			X					X		13-Sep-17		X	X	X								
9	SP5 (Surface)	G	1			X					X		13-Sep-17		X	X	X								
10	SP5 (3')	G	1			X					X		13-Sep-17		X	X	X								

Sampler Relinquished: Dustin Crockett
Date 9-14-17
Time 6:00 am
Received By:

Relinquished by:
Date 9/14/17
Time 3:30
Received By: (lab staff)

Delivered by: #75
+15.3°C / -15.1°C
Sample Cool & Intact: Yes (No)
Checked By:
corrected +.2°C

E-mail results to: ddominguezepi@gmail.com & cjohnston@vnrenergy.com & bbooneepi@gmail.com
NOTES:

Environmental Plus, Inc.

2100 Avenue O, Eunice, NM 88231 P.O. Box 1558, Eunice, NM 88231
(575) 394-3481 FAX: (575) 394-2601

Chain of Custody Form

LAB Cardinal

Company Name	Environmental Plus, Inc.
EPI Project Manager	Daniel Dominguez
Mailing Address	P.O. BOX 1558
City, State, Zip	Eunice New Mexico 88231
EPI Phone#/Fax#	575-394-3481 / 575-394-2601
Client Company	Vanguard
Facility Name	Karlsbad Corral SWD #2
Location	UL- M Sec. 11, T25S, R29E
Project Reference	
EPI Sampler Name	Dustin Crockett

Bill To

Attn: Daniel Dominguez
P.O. Box 1558
Eunice, NM 88231

ANALYSIS REQUEST

LAB I.D.	SAMPLE I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUND WATER	WASTEWATER	SOIL	CRUDE OIL	SLUDGE	OTHER:	PRESERV.: ACID/BASE	ICE/COOL	OTHER	SAMPLING: DATE	TIME	BTEX 8021B	TPH 8015M Ext.	CHLORIDES (Cl^-)	SULFATES ($SO_4^{=}$)	pH	TCLP	OTHER >>>	PAH			
11	SP6 (Surface)	G	1			X					X		13-Sep-17		X	X	X								
12	SP6 (3')	G	1			X					X		13-Sep-17		X	X	X								
13	SP7 (Surface)	G	1			X					X		13-Sep-17		X	X	X								
14	SP7 (18')	G	1			X					X		13-Sep-17		X	X	X								
15																									
16																									
17																									
18																									
19																									
20																									

Sampler Relinquished: Dustin Crockett	Date 9-14-17 Time 6:00 am	Received By:	E-mail results to: ddominguezepi@gmail.com & cjohnston@vnrenergy.com & bbooneepi@gmail.com
Relinquished by:	Date 9/14/17 Time 3:30	Received By: (lab staff) Jodi Henson	NOTES:
Delivered by: #75 15.35°C / -15.1°C corrected +.25°C	Sample Cool & Intact Yes / No	Checked By:	

ATTACHMENT IV
Copy of Initial NMOCD Form C-141

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Repor

Name of Company: Vanguard	Contact: Chuck Johnston
Address: 4001 Penbrook, Suite 201, Odessa Texas 79762	Telephone No. 432-202-4771
Facility Name: Karlsbad Corral SWD 2	Facility Type: Tank Battery

Surface Owner: State	Mineral Owner:	API No. 3001536167

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
M	11	25S	29E					Eddy

Latitude: N 32.138306° **Longitude:** W -103.962509°

NATURE OF RELEASE

Type of Release: Produced Water	Volume of Release: unknown	Volume Recovered: unknown
Source of Release: Tank Battery	Date and Hour of Occurrence: Historic	Date and Hour of Discovery: Historic
Was Immediate Notice Given? ☐ Yes ☒ No ☐ Not Required	If YES, To Whom?	
By Whom?	Date and Hour:	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse: Not Applicable	

If a Watercourse was Impacted, Describe Fully.* Not Applicable

Describe Cause of Problem and Remedial Action Taken.*
Historic release of produced water from SWD tank battery.

Describe Area Affected and Cleanup Action Taken.*
Discovered historic release areas from SWD tank battery. Samples will be collected and sent to the lab for testing.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD 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 NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD 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.

Signature:	OIL CONSERVATION DIVISION	
Printed Name: Chuck Johnston	Approved by Environmental Specialist:	
Title: EHS Specialist	Approval Date:	Expiration Date:
E-mail Address: cjohnston@vnrenergy.com	Conditions of Approval:	Attached ☐
Date: 10-10-2017 Phone: 432-202-4771		

* Attach Additional Sheets If Necessary

Bratcher, Mike, EMNRD

From: Bratcher, Mike, EMNRD
Sent: Thursday, October 19, 2017 9:21 AM
To: brandon boone; Chuck Johnston; Weaver, Crystal, EMNRD; agroves@slo.state.nm.us
Subject: RE: Karlsbad Corral SWD 2

RE: Vanguard Operating * Karlsbad Corral SWD 2 * 2RP-4437 * DOR: unknown-historical

Greetings,

The proposal for remediation of the above referenced release is approved, with the following:

Liner placement must be a minimum of 4' bgs, not 3' as proposed.

Please advise once remedial activities have been scheduled.

Thank you,

Mike Bratcher
NMOCD District 2
811 South First Street
Artesia, NM 88210
575-748-1283 Ext 108

OCD approval does not relieve the operator of liability should their operations fail to adequately investigate and remediate contamination that may pose a threat to ground water, surface water, human health or the environment. In addition, OCD approval does not relieve the operator of responsibility for compliance with any other federal, state, local laws and/or regulations.

From: brandon boone [mailto:bboone.epi@gmail.com]
Sent: Friday, October 13, 2017 8:26 AM
To: Chuck Johnston <cjohnston@vnrenergy.com>; Weaver, Crystal, EMNRD <Crystal.Weaver@state.nm.us>; Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>; agroves@slo.state.nm.us
Subject: Karlsbad Corral SWD 2

All,

Attached is the work plan for the Karlsbad Coral SWD 2 for approval. Please contact Chuck Johnston from Vanguard if any changes need to be made.

--

Environmental Plus Inc.

Brandon Boone
Sales/Consulting

Cell:(575)-390-7865
Office:(575)-394-3481
Fax:(575)-394-2601
bboone.epi@gmail.com

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS

Action 114642

CONDITIONS

Operator: Contango Resources, Inc. 717 Texas Ave. Houston, TX 77002	OGRID: 330447
	Action Number: 114642
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
amaxwell	None	9/21/2022