APPROVED By Olivia Yu at 11:45 am, Mar 08, 2018

NMOCD approves of the proposed delineation plan for 1RP-1568, 1RP-1711, 1RP-4231. See email correspondence for additional delineation sample locations.

1RP-1568, 1RP-1711 & 1RP-4231 DELINEATION PLAN J.M. Denton Battery Produced Water And Crude Oil Spill Lea County, New Mexico

Latitude: N33.02996 Longitude: W-103.17116

> LAI Project No. 17-0175-02 17-0175-03 17-0175-23

January 8, 2018

Prepared for: Legacy Reserves Operating, LP 303 West Wall Street, Suite 1300 Midland, Texas 79701

Prepared by: Larson & Associates, Inc. 507 North Marienfeld Street, Suite 205 Midland, Texas 79701

Mark J. Larson, P.G. Certified Professional Geologist #10490

Sarah/R. Johnson Staff Geologist

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1.0 INTRODUCTION

Larson & Associates, Inc. (LAI) has prepared this delineation plan on behalf of Legacy Reserves Operating, LP (Legacy) for submittal to the New Mexico Oil Conservation Division (OCD) District I for two produced water spills (1RP-1568 and 1RP-4231) and crude oil spill (1RP-1711) at the J.M. Denton Battery (Site) located in Unit J (NE/4, SW/4), Section 11, Township 15 South, Range 37 East, in Lea County, New Mexico. The geodetic position is North 33.02996 and West -103.17116. Figure 1 presents a topographic map. Figure 2 presents an aerial map.

1.1 Background

A produced water spill occurred on September 10, 2007, due to power outage causing the water transfer pump to shut down and the alarm system to fail. The water tanks overflowed releasing more than 25 barrels (bbl) of produced water. An unknown amount of produced water was recovered. All released fluids were contained within the firewall. The initial C-141 was submitted on September 12, 2017 and assigned remediation permit number 1RP-1568. Appendix A presents the initial C-141.

On November 13, 2007, a crude oil spill occurred due to failure of the free water knock out transferring all the produced fluids to the oil tanks, causing the oil tank to overflow and release 70 barrels (bbl) of crude oil. Approximately 65 bbl were recovered. The released fluids were contained within the firewall surrounding the tank battery. The spill was reported to the OCD (verbal notification with Mark Whitaker) on November 13, 2007. The initial C-141 was submitted on November 14, 2007 and assigned remediation permit number 1RP-1711. Appendix A presents the initial C-141.

On April 3, 2016, a produced water spill occurred due do a leak in a transfer line from the tank battery, releasing 100 barrels (bbl) of produced water. Approximately 80 bbl were recovered. The fluids predominately contained around the well head. The initial C-141 was submitted on April 3, 2016 and assigned remediation permit number 1RP-4231.

1.2 Physical Setting

The physical setting is as follows:

- The surface elevation is approximately 3,800 feet above mean sea level (msl);
- The topography slopes gently towards the southeast;
- There are no surface water features within 1,000 feet of the Site;
- The soils are designated as "Stegall loam, 0 to 1 percent slopes", consisting as 0 to 8 inches of loam underlain by 8 to 28 inches of clay loam;
- The surface geology is the Ogallala Formation (lower Pliocene to middle Miocene)- Alluvial and eolian deposits, and petrocalcic soils of the southern High Plains;
- Groundwater occurs in the Ogallala formation at approximately 57 feet below ground surface (bgs) (1991);
- The nearest fresh water well is located in Unit M (SW/4, SW/4), Section 11, Township 15 South, Range 37 East, about 0.5 miles southwest of the Site.

1.3 Recommended Remediation Action Levels

The recommended remediation action levels (RRAL) were calculated for benzene, BTEX and TPH based on the following criteria established by the OCD in *"Guidelines for Remediation of Leaks, Spills and Releases, pp.6-7, August 13, 1993"*:

Criteria	Result	Score
Depth-to-Groundwater	50 - 99 Feet	10
Wellhead Protection Area	No	0
Distance to Surface Water Body	>1,000 Horizontal Feet	0

The following RRAL apply to the release ranking score: 10

- Benzene 10 mg/Kg
- BTEX 50 mg/Kg
- TPH 1,000 mg/Kg

Depth to groundwater between 50 and 99 feet bgs require vertical delineation for chloride to 600 milligrams per kilogram (mg/Kg) and maintained a minimum of 5 feet farther in depth.

2.0 PRELIMINARY DELINEATION

On August 23, 2016, Environmental Plus, Inc. (EPI) collected soil samples from eight (8) locations (SSP1 through SSP8) outside of the firewall. The samples were collected at the surface (0' bgs) and to a depth of 6 inches bgs. The samples were analyzed for chloride by titration method. The following samples reported chloride levels above 600 mg/Kg:

- SSP1, 0' (4,000 mg/Kg)
- SSP1A, 6" (1,600 mg/Kg)
- SSP2A, 6" (2,400 mg/Kg)
- SSP3A, 6" (720 mg/Kg)

- SSP5, 0' (1,360 mg/Kg)
- SSP6, 0' (2,000 mg/Kg)
- SSP7 0' (4,000 mg/Kg)
- SSP7A 6" (2,000 mg/Kg)

On December 21, 2016, EPI mobilized a drilling rig to collect soil samples at five (5) locations within the firewall (SP1 through SP5). The samples were collected at depths of 40 feet bgs (SP1 and SP4) and 70 feet bgs (SP2, SP3, and SP5). A groundwater sample was collected at SP5 at a depth of 70 feet bgs. The soil samples were delivered under chain of custody and preservation to Cardinal Laboratories (Cardinal), in Hobbs, New Mexico and analyzed for BTEX (the sum of benzene, toluene, ethylbenzene and xylene), total petroleum hydrocarbons (TPH), including gasoline range organics (GRO) and diesel range organics (DRO), and chloride. All samples reported below the RRAL for TPH. Chloride reported above 600 mg/Kg at SP3 (672 mg/Kg). Appendix B presents EPI preliminary delineation data.

3.0 DELINEATION PLAN

LAI proposes to delineate all three spills concurrently. LAI proposes to collect soil samples at fourteen (14) locations within the spill areas. The samples will be collected at 1 foot intervals to approximately 4 feet bgs and 2 foot intervals to approximately 12 feet bgs using direct push technology (DPT) depending

on subsurface conditions. Additional samples will be collected in each cardinal direction (north, south, east and west) of the spill area at the same depth intervals for horizontal delineation. The soil samples will be delivered under chain of custody and preservation to XENCO Laboratories (XENCO) in Midland, Texas, and analyzed for benzene, toluene, ethylbenzne and xylenes (BTEX), total potential hydrocarbons (TPH), including gasoline range organics (GRO), diesel range organics (DRO) and oil range organics (ORO) and chloride by EPA SW-846 Methods 8021B, 8015M and 300 respectively. Pending laboratory results, further delineation may be required to reach cleanup level standards. Figure 3 presents a site map showing proposed soil sample locations. Appendix C presents photographs.

4.0 REMEDIAITON PLAN

Legacy will include a remediation plan in the delineation report to be submitted to the OCD upon receipt of the laboratory report.

Figures

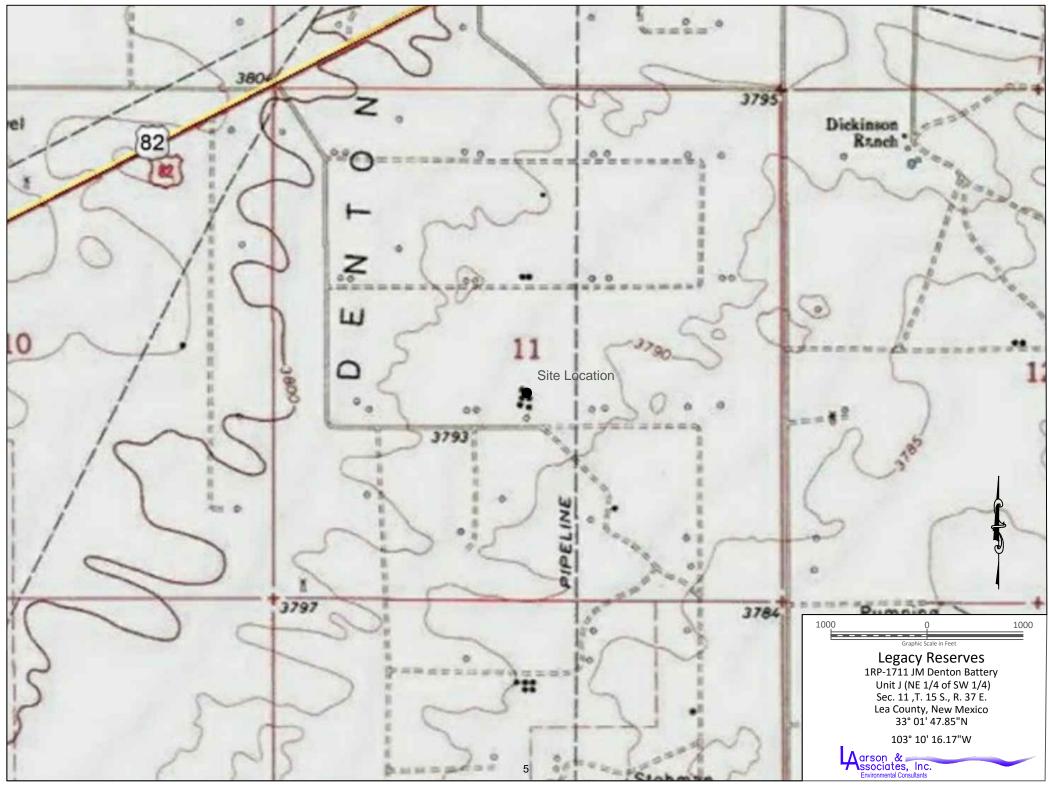


Figure 1 - Topographic Map



Appendix A

Initial C-141

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ination that pose a threat to ground water, surface water, human health elieve the operator of responsibility for compliance with any other				
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by District Superviso ENVIRONMENTAL ENGINEER				
Date: 9.17.07 Expiration Date: 11,16.07				
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	on and Corrective Action				
Release notification					
Name of Company Legacy Reserves Operating LP	OPERATOR Contact Danny M. Broc	Initial Report 🗌 Final Report			
Address P.O. Box 10848, Midland, TX 79702	Telephone No 432-689-5219.				
Facility Name J. M. Denton Battery	Facility Type Production				
Surface Owner Darr Angel Mineral Owner	various	Lease No. 16898			
LOCATIO	ON OF RELEASE				
Unit LetterSectionTownshipRangeFeet from theNorJ1115S37E1980		West Line County East Lea			
(52 ¹) Latitude33.02996	Longitude103.17116				
	E OF RELEASE				
Type of Release Oil Source of Release Oil tanks	Volume of Release 70. Date and Hour of Occurrence	Volume Recovered 65 Date and Hour of Discovery			
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Was Immediate Notice Given?	d If YES, To Whom? d Mark Whitaker w/ OCD				
By Whom? Danny M. Brock		1:30 AM			
Was a Watercourse Reached?	If YES, Volume Impacting the Wa	tercourse. 1314157677			
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If a Watercourse was Impacted, Describe Fully. NA*		NOV 2007 Second 222 Hobbs			
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I hereby certify that the information given above is true and complete to regulations all operators are required to report and/or file certain release	eth? <i>kemove</i> considerant. Call the best of my knowledge and understanotifications and perform corrective ac	tamineted soil antil and that pursuant to NMOCD rules and tions for releases which may endanger			
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Signature: Dann M. Brock	OIL CONSERV	ATION DIVISION			
Printed Name Danny M. Brock	Approved by District Supervisor:	This Williams			
Title: Production Superintendent	Approval Date: 1/16/08	Expiration Date: 4/16/08			
E-mail Address: dbrock@legacylp.com	Conditions of Approval:	Attached 🔲			
Date: 11/14/07 Phone: 432-689-5219		· · · · · · · · · · · · · · · · · · ·			
* Attach Additional Sheets If Necessary	9	RP#1711			

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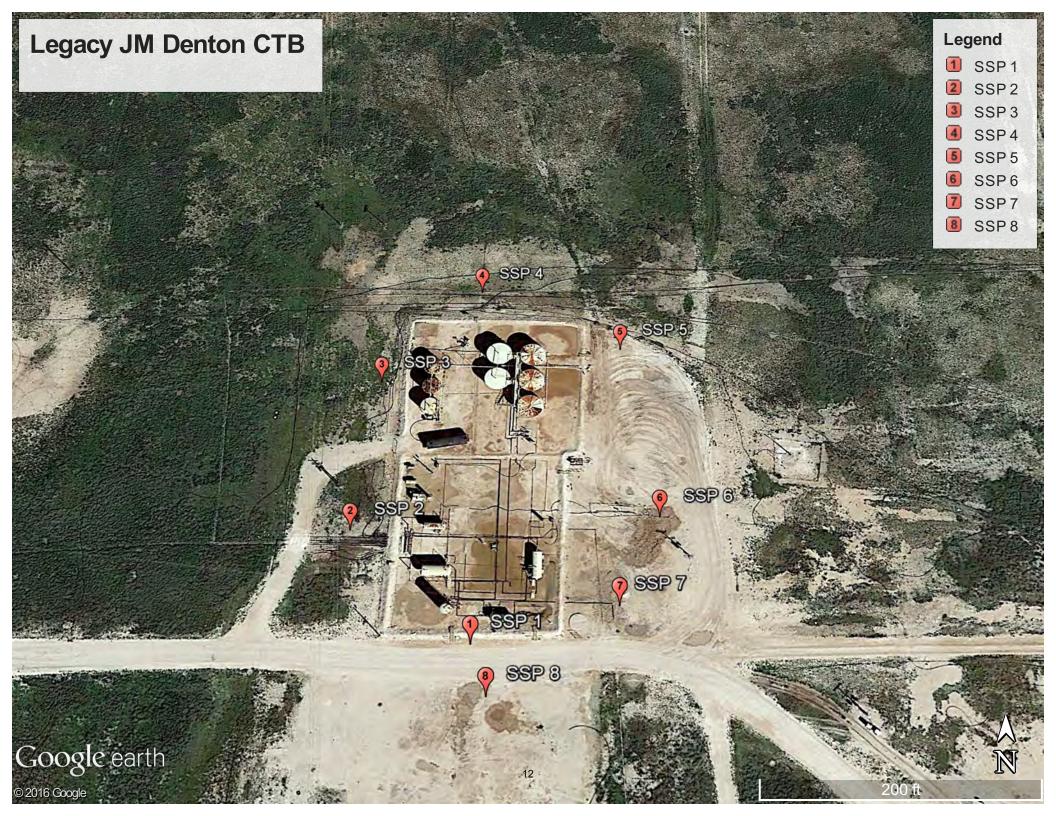
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Appendix B EPI Preliminary Delineation Data





EP	P.O. Bo 2100 Ave Eunice, N	onmental Plus, Inc. P.O. Box 1558 2100 Avenue O unice, NM 88231 (575) 394-3481 COMPANY: Legacy PROJECT NAME: JM Denton CTB															
	(575) 39 (575) 394-2		COMPAN	Y: Legacy	PR	OJECT	NAME: JM D	Denton CTB									
PROJECT MANAGE	R: Brandon E	Boone		FIELD TE	CHNICIAN: HE	RI GAY	TAN							8/23/16			
								CHLOR	DE ANALY	YSIS							
SAMPLE ID	SAMPLE DEPTH (FT)	COLLECT	ION TIME	PID ANALYSIS TIME PID REA		PID READING (PPM)			Titration Tube Reading		mg/Kg	-	SOIL DESCRIPTI	ON			
SSP1	Surface	9::	57				2 gms of soil	40 ml H2O	200	x 20 =	4000+						
SSP1A	6"	10:	05				2 gms of soil	40 ml H2O	80	x 20 =	1600						
SSP2	Surface	10:	15				2 gms of soil	40 ml H2O	28	x 20 =	560						
SSP2A	6"	10:	10				2 gms of soil	40 ml H2O	120	x 20 =	2400						
SSP3	Surface	10:	20				2 gms of soil	40 ml H2O	16	x 20 =	320						
SSP3A	6"	10:	30				2 gms of soil	40 ml H2O	36	x 20 =	720						
SSP4	Surface	10:	45				2 gms of soil	40 ml H2O	4	x 20 =	80						
SSP4A	6"	10:	55				2 gms of soil	40 ml H2O	20	x 20 =	400						
SSP5	Surface	11:	08				2 gms of soil	40 ml H2O	68	x 20 =	1360						
SSP5A	6"	11:	16				2 gms of soil	40 ml H2O	12	x 20 =	240						
SSP6	Surface	11:	24				2 gms of soil	40 ml H2O	100	x 20 =	2000						
SSP6A	6"	11:	38				2 gms of soil	40 ml H2O	28	x 20 =	560						
SSP7	Surface	1:1	15				2 gms of soil	40 ml H2O	200	x 20 =	4000+						
SSP7A	6"	1:2	24				2 gms of soil	40 ml H2O	100	x 20 =	2000						
SSP8	Surface	1::	31				2 gms of soil	40 ml H2O	4	x 20 =	80						
SSP8A	6"	1:4	46				2 gms of soil	40 ml H2O	20	x 20 =	400	I					
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January 03, 2017

Daniel Dominguez Environmental Plus, Inc. P.O. Box 1558 Eunice, NM 88231

RE: JM DENTON TANK BATTERY

Enclosed are the results of analyses for samples received by the laboratory on 12/22/16 15:35.

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/ga/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. Keine

Celey D. Keene Lab Director/Quality Manager



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

Received:	12/22/2016	Sampling Date:	12/21/2016
Reported:	01/03/2017	Sampling Type:	Soil
Project Name:	JM DENTON TANK BATTERY	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	UL-K SEC. 11, T15S, R37E		

Sample ID: SP 1 (40') (H602864-01)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/29/2016	ND	2.06	103	2.00	1.01	
Toluene*	<0.050	0.050	12/29/2016	ND	2.16	108	2.00	0.806	
Ethylbenzene*	<0.050	0.050	12/29/2016	ND	2.12	106	2.00	0.955	
Total Xylenes*	<0.150	0.150	12/29/2016	ND	6.36	106	6.00	0.865	
Total BTEX	<0.300	0.300	12/29/2016	ND					
Surrogate: 4-Bromofluorobenzene (PID	131 %	6 73.6-14	0						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	144	16.0	12/28/2016	ND	416	104	400	0.00	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	12/27/2016	ND	186	93.0	200	6.66	
DRO >C10-C28	<10.0	10.0	12/27/2016	ND	189	94.4	200	6.77	
Surrogate: 1-Chlorooctane	94.7 \$	% 35-147	,						
Surrogate: 1-Chlorooctadecane	105 %	6 28-171							

Cardinal Laboratories

*=Accredited Analyte

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Celeg D. Keine



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

Received:	12/22/2016	Sampling Date:	12/21/2016
Reported:	01/03/2017	Sampling Type:	Soil
Project Name:	JM DENTON TANK BATTERY	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	UL-K SEC. 11, T15S, R37E		

Sample ID: SP 2 (70') (H602864-02)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/29/2016	ND	2.06	103	2.00	1.01	
Toluene*	<0.050	0.050	12/29/2016	ND	2.16	108	2.00	0.806	
Ethylbenzene*	<0.050	0.050	12/29/2016	ND	2.12	106	2.00	0.955	
Total Xylenes*	<0.150	0.150	12/29/2016	ND	6.36	106	6.00	0.865	
Total BTEX	<0.300	0.300	12/29/2016	ND					
Surrogate: 4-Bromofluorobenzene (PID	129 9	73.6-14	0						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	176	16.0	12/28/2016	ND	416	104	400	0.00	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	12/27/2016	ND	186	93.0	200	6.66	
DRO >C10-C28	18.1	10.0	12/27/2016	ND	189	94.4	200	6.77	
Surrogate: 1-Chlorooctane	83.6	% 35-147							
Surrogate: 1-Chlorooctadecane	89.0	% 28-171							

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

Received:	12/22/2016	Sampling Date:	12/21/2016
Reported:	01/03/2017	Sampling Type:	Soil
Project Name:	JM DENTON TANK BATTERY	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	UL-K SEC. 11, T15S, R37E		

Sample ID: SP 3 (70') (H602864-03)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/29/2016	ND	2.06	103	2.00	1.01	
Toluene*	<0.050	0.050	12/29/2016	ND	2.16	108	2.00	0.806	
Ethylbenzene*	<0.050	0.050	12/29/2016	ND	2.12	106	2.00	0.955	
Total Xylenes*	<0.150	0.150	12/29/2016	ND	6.36	106	6.00	0.865	
Total BTEX	<0.300	0.300	12/29/2016	ND					
Surrogate: 4-Bromofluorobenzene (PID	130 %	6 73.6-14	0						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	672	16.0	12/28/2016	ND	416	104	400	0.00	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	12/28/2016	ND	181	90.3	200	0.348	
DRO >C10-C28	<10.0	10.0	12/28/2016	ND	187	93.5	200	2.11	
Surrogate: 1-Chlorooctane	86.5 9	% 35-147							
Surrogate: 1-Chlorooctadecane	97.9 9	28-171							

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

Received:	12/22/2016	Sampling Date:	12/21/2016
Reported:	01/03/2017	Sampling Type:	Soil
Project Name:	JM DENTON TANK BATTERY	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	UL-K SEC. 11, T15S, R37E		

Sample ID: SP 4 (40') (H602864-04)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/29/2016	ND	2.06	103	2.00	1.01	
Toluene*	<0.050	0.050	12/29/2016	ND	2.16	108	2.00	0.806	
Ethylbenzene*	<0.050	0.050	12/29/2016	ND	2.12	106	2.00	0.955	
Total Xylenes*	<0.150	0.150	12/29/2016	ND	6.36	106	6.00	0.865	
Total BTEX	<0.300	0.300	12/29/2016	ND					
Surrogate: 4-Bromofluorobenzene (PID	130 %	6 73.6-14	0						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	112	16.0	12/28/2016	ND	416	104	400	0.00	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	12/28/2016	ND	181	90.3	200	0.348	
DRO >C10-C28	<10.0	10.0	12/28/2016	ND	187	93.5	200	2.11	
Surrogate: 1-Chlorooctane	101 %	6 35-147							
Surrogate: 1-Chlorooctadecane	109 %	6 28-171							

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

Received:	12/22/2016	Sampling Date:	12/21/2016
Reported:	01/03/2017	Sampling Type:	Soil
Project Name:	JM DENTON TANK BATTERY	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	UL-K SEC. 11, T15S, R37E		

Sample ID: SP 5 (70') (H602864-05)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/29/2016	ND	2.06	103	2.00	1.01	
Toluene*	<0.050	0.050	12/29/2016	ND	2.16	108	2.00	0.806	
Ethylbenzene*	<0.050	0.050	12/29/2016	ND	2.12	106	2.00	0.955	
Total Xylenes*	<0.150	0.150	12/29/2016	ND	6.36	106	6.00	0.865	
Total BTEX	<0.300	0.300	12/29/2016	ND					
Surrogate: 4-Bromofluorobenzene (PID	131 %	6 73.6-14	0						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	240	16.0	12/28/2016	ND	416	104	400	0.00	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	12/28/2016	ND	181	90.3	200	0.348	
DRO >C10-C28	<10.0	10.0	12/28/2016	ND	187	93.5	200	2.11	
Surrogate: 1-Chlorooctane	75.6 9	% 35-147							
Surrogate: 1-Chlorooctadecane	93.6 9	28-171							

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Notes and Definitions

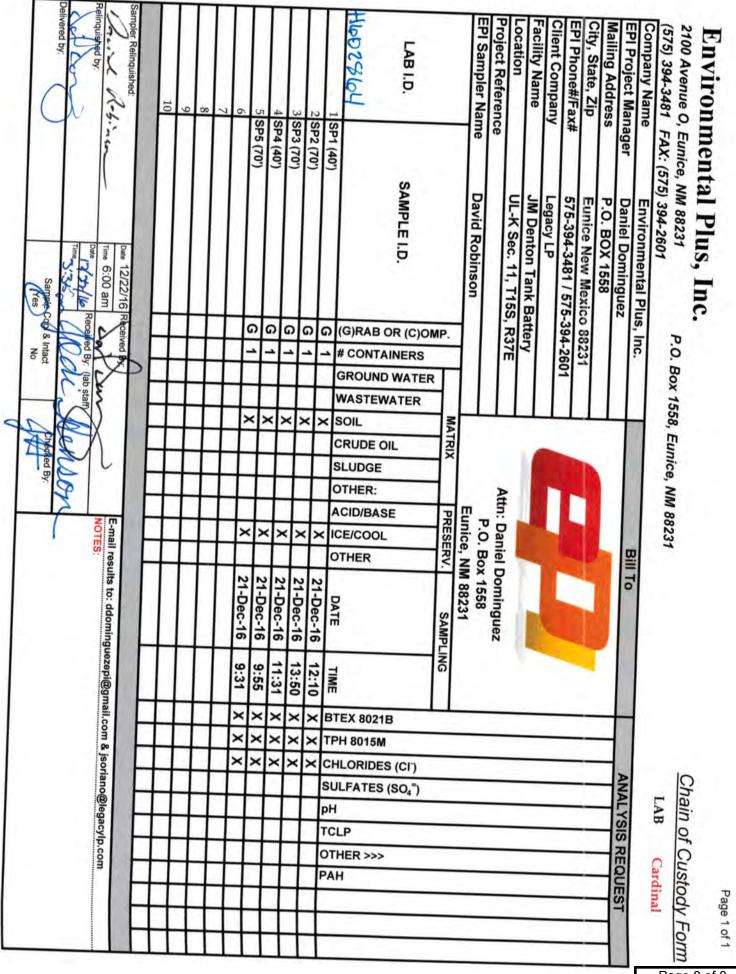
S-06	The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
ND	Analyte 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

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January 03, 2017

Daniel Dominguez Environmental Plus, Inc. P.O. Box 1558 Eunice, NM 88231

RE: JM DENTON TANK BATTERY

Enclosed are the results of analyses for samples received by the laboratory on 12/22/16 15:35.

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/ga/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. Keine

Celey D. Keene Lab Director/Quality Manager



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

Received:	12/22/2016	Sampling Date:	12/21/2016
Reported:	01/03/2017	Sampling Type:	Water
Project Name:	JM DENTON TANK BATTERY	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	UL-K SEC. 11, T15S, R37E		

Sample ID: SP 5 (70') (H602865-01)

BTEX 8021B	mg/	L	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifie
Benzene*	0.003	0.001	12/29/2016	ND	0.020	97.6	0.0200	0.138	
Toluene*	< 0.001	0.001	12/29/2016	ND	0.019	96.9	0.0200	0.00516	
Ethylbenzene*	< 0.001	0.001	12/29/2016	ND	0.020	100	0.0200	0.290	
Total Xylenes*	<0.003	0.003	12/29/2016	ND	0.059	98.2	0.0600	0.299	
Total BTEX	<0.006	0.006	12/29/2016	ND					
Surrogate: 4-Bromofluorobenzene (PID	100 %	6 73.7-14	6						
Chloride, SM4500Cl-B	mg/	L	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifie
Chloride*	370	4.00	12/28/2016	ND	100	100	100	3.92	
TPH 8015M	mg/	L	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifie
GRO C6-C10	<1.00	1.00	12/31/2016	ND	45.1	90.2	50.0	2.12	
DRO >C10-C28	<1.00	1.00	12/31/2016	ND	46.8	93.6	50.0	1.65	
EXT DRO >C28-C35	<1.00	1.00	12/31/2016	ND	0.759		0.00		
Surrogate: 1-Chlorooctane	95.7 9	34.8-13	1						
Surrogate: 1-Chlorooctadecane	108 9	6 30.4-16	7						

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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

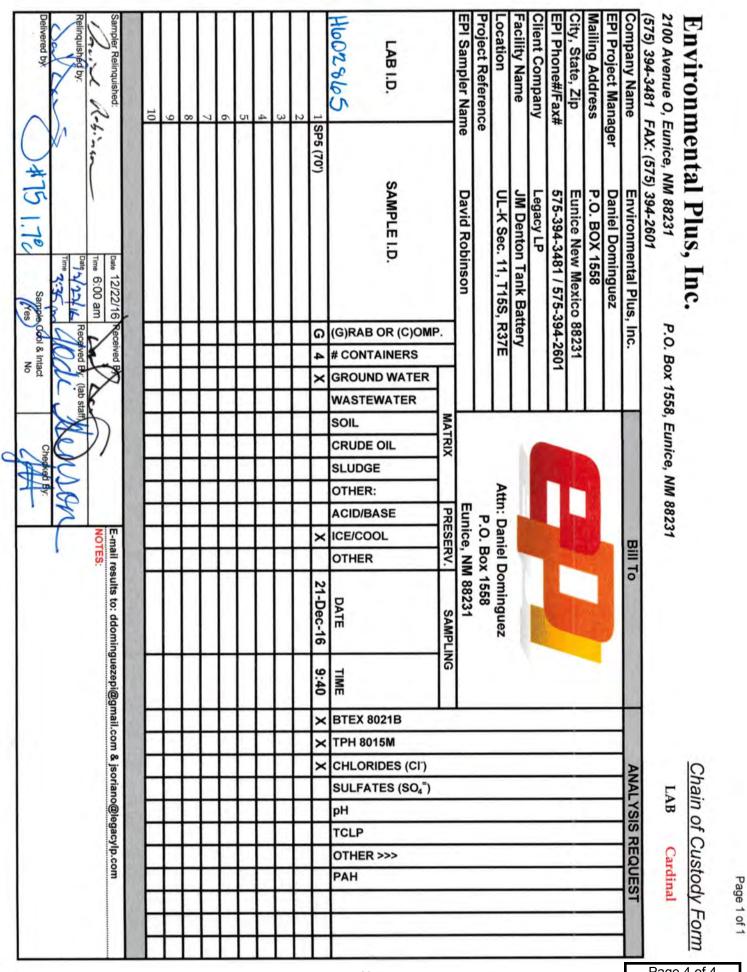
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Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



Appendix C

Photographs



Site Location



Site Prior to Remediation Viewing North, September 14, 2017



Site Prior to Remediation Viewing East, September 14, 2017



Site Prior to Remediation Viewing North, September 14, 2017



Site Prior to Remediation Viewing Southeast, September 14, 2017



Site Prior to Remediation Viewing South, September 14, 2017



Site Prior to Remediation Viewing Southwest, September 14, 2017



Site Prior to Remediation Viewing West, September 14, 2017



Site Prior to Remediation Viewing Northeast, September 14, 2017