

ENVIRONMENTAL PLUS, INC.

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



Site Characterization and Work Plan

**Vanguard
Staley State #6
Eddy County, New Mexico
Unit Letter "L", Section 30, Township 17 South, Range 28 East
Latitude 32.803136432 North, Longitude 104.220424329 West
NMOCD Reference #2RP-624**

Prepared For:

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

Prepared By:

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

August 2017

A handwritten signature in black ink, appearing to read 'Daniel Dominguez', is written over a horizontal line.

Daniel Dominguez
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 L (NW ¼ SW ¼), Section 30, Township 17 South, Range 30 East, approximately eleven miles east of Artesia, in Eddy County, New Mexico. The property is owned by COG.

The release site is located in the pasture off an active tank battery and flow line; latitude 32.803136 North, longitude 104.220424 West. Area Map, Site Location Map, and Sample/Site Map are included as Figure 1, Figure 2, and Figure 3, respectively. The Initial NMOCD Form C-141 indicates a nipple broke on bottom of the acid truck. Spread 2,000 pounds soda ash and flushed with 130 bbls fresh water. Forty bbls of fluid were picked up. The visually stained area totals approximately 4,000 square feet. 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 I*). 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 92 feet below ground surface (bgs) within a 1,760-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 1,387 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 Staley State #6 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 4,000 square feet. The area is rocky caliche approximately two feet thick over clay.

Delineation Progress:

On August 9-16 24, 2017 EPI personnel mobilized on site to collect soil samples to determine the vertical extent of contamination. A total of forty-two soil samples were collected from six sample locations; SP1 – SP6. Two soil samples from each sample location were sent to Cardinal Labs in Hobbs, New Mexico, for testing. Laboratory analytical results indicate Sulfates and 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

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 four 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 top soil 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. Upon completion of backfill activities, the area will be contoured to blend with existing pasture area and protected against wind/water erosion.

Revegetation Plan:

In an attempt to achieve native plant cover and diversity levels equal to or exceeding the natural potential levels in undisturbed soils adjacent to the release area, the disturbed area will be seeded with BLM mixture #2 at a rate of 22 lbs per acre. Seed will be applied to the area as soon as backfill activities are complete. After seeding has been completed the area will be thoroughly watered. After a period of three months the area will be examined for vegetative growth and re-seeded if no growth has occurred.

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.

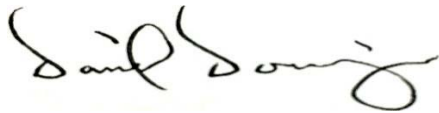
Following completion of NMOCD and NMSLO approved Proposed Actions, EPI will provide a detailed *Final Closure Report* to Vanguard, NMOCD, and NMSLO personnel. Vanguard and EPI personnel would welcome an opportunity to briefly discuss the *Work Plan* at your earliest convenience.

Should you have any questions or concerns please feel free to contact me at (575) 394-3481 or via e-mail at ddominguezepi@gmail.com or Mr. Chuck Johnston at (432) 202-4771 or via e-mail at cjohnston@vnrlc.com. All official communication should be addressed to:

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

Sincerely,

ENVIRONMENTAL PLUS, INC.



Daniel Dominguez
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 – Site Location Map
Figure 3 – 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

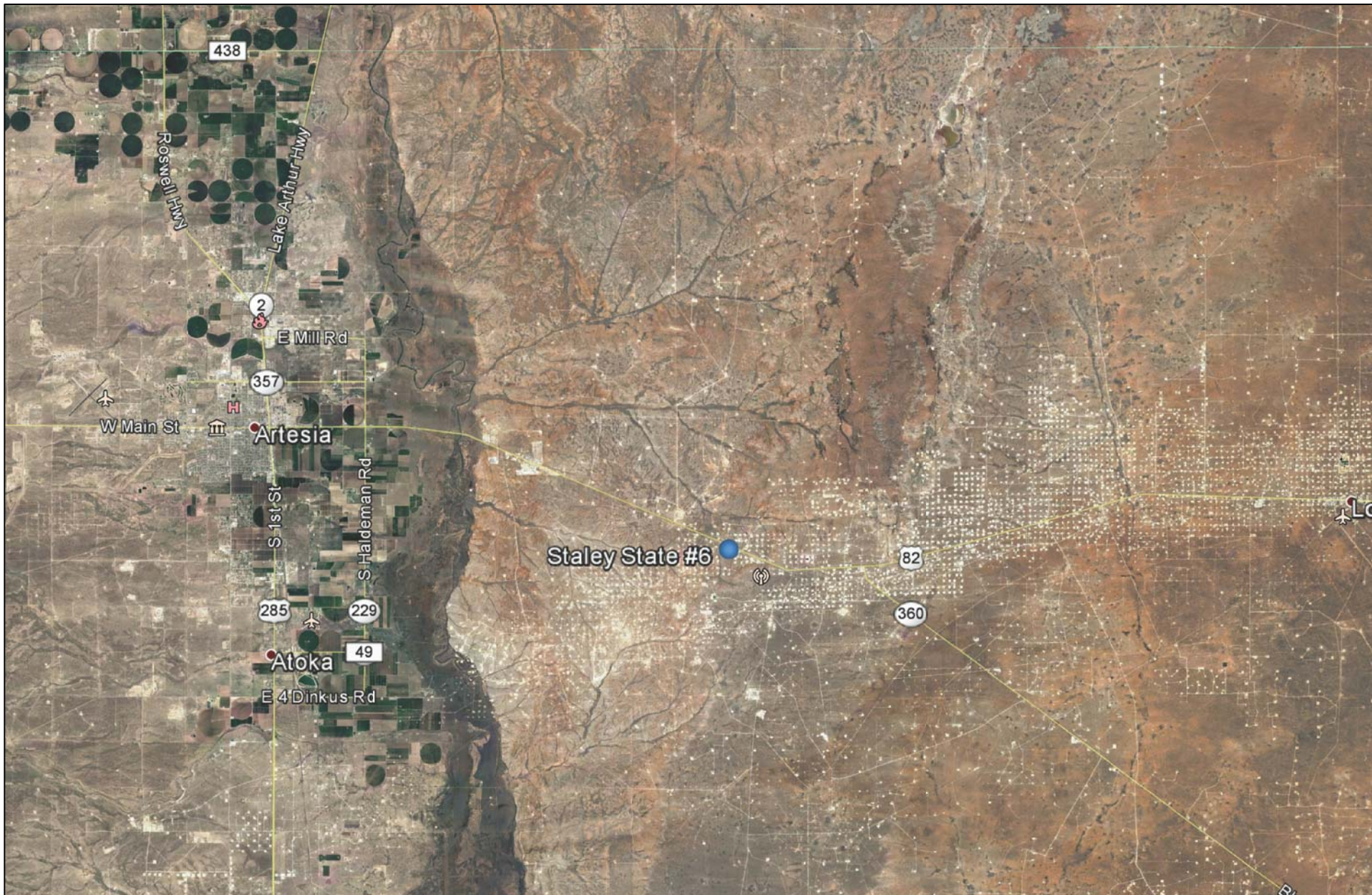
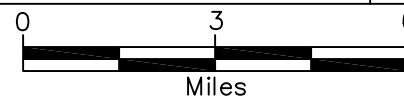


Figure 1
Area Map
Vanguard
Staley State #6

Eddy County, New Mexico
NW 1/4 of SW 1/4, Sec. 30, T17S, R28E
N 32° 48' 11.49" W 104° 13' 13.49"
Elevation: 3,600 feet amsl

DWG By: D Dominguez
August 2017

REVISED:



SHEET
1 of 1

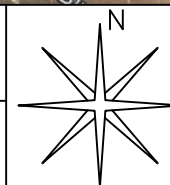


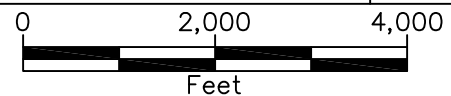


Figure 2
Site Location Map
Vanguard
Staley State #6

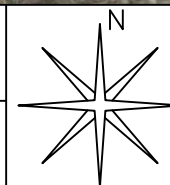
Eddy County, New Mexico
NW 1/4 of SW 1/4, Sec. 30, T17S, R28E
N 32° 48' 11.49" W 104° 13' 13.49"
Elevation: 3,600 feet amsl

DWG By: D Dominguez
August 2017

REVISED:



SHEET
1 of 1






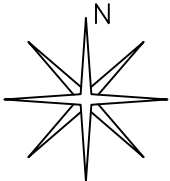
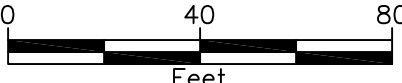
LEGEND	
X SP1	Sample Location
	Release Area (~4,000 sq.ft.)

Figure 3 Site/Sample Map Vanguard Staley State #6	Eddy County, New Mexico NW 1/4 of SW 1/4, Sec. 30, T17S, R28E N 32° 48' 11.49" W 104° 13' 13.49" Elevation: 3,600 feet amsl	DWG By: D Dominguez August 2017		REVISED:	
				SHEET 1 of 1	

TABLES

TABLE 1**Well Data****Vanguard - Staley State #6**

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	RA 12456	STK	3	KEY LIVESTOCK LLC	1	4	4	24	17S	27E	572347	3630969	1,387	09-Sep-16	3,505	92

* = 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

TABLE 2
Summary of Soil Sample Field Testing and Laboratory Analytical Results
Vanguard
Staley State #6

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)	pH	Sulfate (mg/Kg)	Chloride (mg/Kg)
SP1	Surface	In-Situ	09-Aug-17	1.9	>4,000	--	--	--	--	--	--	--	--	7.36	5,250	10,700
	2.5	In-Situ	09-Aug-17	1.8	1,800	--	--	--	--	--	--	--	--	--	--	--
	5	In-Situ	09-Aug-17	1.8	640	--	--	--	--	--	--	--	--	--	--	--
	7.5	In-Situ	09-Aug-17	1.7	400	--	--	--	--	--	--	--	--	--	--	--
	10	In-Situ	09-Aug-17	1.7	240	--	--	--	--	--	--	--	--	--	--	--
	15	In-Situ	09-Aug-17	1.6	240	--	--	--	--	--	--	--	--	--	--	--
	20	In-Situ	09-Aug-17	1.7	240	--	--	--	--	--	--	--	--	8.16	8,070	96
SP2	Surface	In-Situ	10-Aug-17	1.8	>4,000	--	--	--	--	--	--	--	--	7.33	5,420	22,400
	2.5	In-Situ	10-Aug-17	1.7	640	--	--	--	--	--	--	--	--	--	--	--
	5	In-Situ	10-Aug-17	1.7	800	--	--	--	--	--	--	--	--	--	--	--
	7.5	In-Situ	10-Aug-17	1.6	240	--	--	--	--	--	--	--	--	--	--	--
	10	In-Situ	10-Aug-17	1.4	240	--	--	--	--	--	--	--	--	--	--	--
	15	In-Situ	10-Aug-17	1.5	200	--	--	--	--	--	--	--	--	--	--	--
	20	In-Situ	10-Aug-17	1.4	160	--	--	--	--	--	--	--	--	8.28	8,640	304

TABLE 2
Summary of Soil Sample Field Testing and Laboratory Analytical Results
Vanguard
Staley State #6

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)	pH	Sulfate (mg/Kg)	Chloride (mg/Kg)
SP3	Surface	In-Situ	11-Aug-17	1.8	>4,000	--	--	--	--	--	--	--	--	7.46	4,620	17,800
	2	In-Situ	11-Aug-17	1.8	2,400	--	--	--	--	--	--	--	--	--	--	--
	5	In-Situ	11-Aug-17	1.7	480	--	--	--	--	--	--	--	--	--	--	--
	7	In-Situ	11-Aug-17	1.5	320	--	--	--	--	--	--	--	--	--	--	--
	10	In-Situ	11-Aug-17	1.2	240	--	--	--	--	--	--	--	--	--	--	--
	14	In-Situ	11-Aug-17	1.2	160	--	--	--	--	--	--	--	--	--	--	--
	18	In-Situ	11-Aug-17	1.1	160	--	--	--	--	--	--	--	--	8.36	8,770	144
SP4	Surface	In-Situ	14-Aug-17	1.6	440	--	--	--	--	--	--	--	--	7.80	5,260	20,400
	2	In-Situ	14-Aug-17	1.7	2,400	--	--	--	--	--	--	--	--	--	--	--
	4	In-Situ	14-Aug-17	1.6	480	--	--	--	--	--	--	--	--	--	--	--
	6	In-Situ	14-Aug-17	1.5	320	--	--	--	--	--	--	--	--	--	--	--
	10	In-Situ	14-Aug-17	1.5	240	--	--	--	--	--	--	--	--	--	--	--
	14	In-Situ	14-Aug-17	1.4	160	--	--	--	--	--	--	--	--	--	--	--
	18	In-Situ	14-Aug-17	1.5	400	--	--	--	--	--	--	--	--	8.49	8,690	224

TABLE 2
Summary of Soil Sample Field Testing and Laboratory Analytical Results
Vanguard
Staley State #6

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)	pH	Sulfate (mg/Kg)	Chloride (mg/Kg)
SP5	Surface	In-Situ	15-Aug-17	0.0	>4,000	--	--	--	--	--	--	--	--	7.56	5,060	19,400
	2	In-Situ	15-Aug-17	0.0	>4,000	--	--	--	--	--	--	--	--	--	--	--
	4	In-Situ	15-Aug-17	0.0	800	--	--	--	--	--	--	--	--	--	--	--
	6	In-Situ	15-Aug-17	0.0	720	--	--	--	--	--	--	--	--	--	--	--
	10	In-Situ	15-Aug-17	0.0	400	--	--	--	--	--	--	--	--	--	--	--
	12	In-Situ	15-Aug-17	0.0	320	--	--	--	--	--	--	--	--	--	--	--
	15	In-Situ	15-Aug-17	0.0	160	--	--	--	--	--	--	--	--	8.91	5,570	48
SP6	Surface	In-Situ	16-Aug-17	1.9	>4,000	--	--	--	--	--	--	--	--	7.79	4,960	8,400
	2	In-Situ	16-Aug-17	1.9	3,600	--	--	--	--	--	--	--	--	--	--	--
	4	In-Situ	16-Aug-17	1.9	400	--	--	--	--	--	--	--	--	--	--	--
	6	In-Situ	16-Aug-17	1.8	320	--	--	--	--	--	--	--	--	--	--	--
	8	In-Situ	16-Aug-17	1.7	240	--	--	--	--	--	--	--	--	--	--	--
	10	In-Situ	16-Aug-17	1.4	240	--	--	--	--	--	--	--	--	--	--	--
	12	In-Situ	16-Aug-17	1.4	240	--	--	--	--	--	--	--	--	8.35	8,400	160
NMOCD Recommended Remedial Action Levels				100		10				50			5,000		1,000	600

-- = Not Analyzed

Bold values are in excess of NMOCD Recommended Remedial Action Levels

ATTACHMENTS

ATTACHMENT I
Photographs



Photograph #1- Lease sign



Photograph #2- Release area and sample location



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
USGS Well Sites



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																
POD Number	Sub-	basin	County	Q	Q	Q	Sec	Tws	Rng	X	Y	Distance	Depth	Depth	Water	
	Code			64	16	4							Well	Water	Column	
RA 12456 POD1			ED	1	4	4	24	17S	27E	572348	3630969		1387	220	92	128

Average Depth to Water: **92 feet**

Minimum Depth: **92 feet**

Maximum Depth: **92 feet**

Record Count: 1

UTM NAD83 Radius Search (in meters):

Easting (X): 572988.27

Northing (Y): 3629738.38

Radius: 1760

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.



National Water Information System: Web Interface

[USGS Water Resources](#)

Data Category:
Groundwater

Geographic Area:
United States

GO

Click to hideNews Bulletins

- [Please see news on new formats](#)
- [Full News](#) 

Search Results -- No sites found

No sites were found for groundwater level data using your search criteria.

The sites you requested may be available offline. For more information, contact [USGS Water Data Inquiries](#).

lat_long_bounding_box

=

Position	Latitude	Longitude
Corner 1	32.819840	104.237656
Corner 2	32.787952	104.199017
Coordinates are entered as Decimal Degrees. DMS values are converted to Decimal degrees using NAD83 as the datum. Make your bounding box bigger if you are using NAD27 Datum for your DMS values		

Minimum number of 1
levels =

Use the "Back" button on your browser to change your search criteria.

[Return To Previous Page](#)

ATTACHMENT III
Laboratory Analytical Results

August 24, 2017

Daniel Dominguez

Environmental Plus, Inc.

P.O. Box 1558

Eunice, NM 88231

RE: STALEY STATE #6

Enclosed are the results of analyses for samples received by the laboratory on 08/18/17 15:40.

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 accredited 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

Lab Director/Quality Manager

Analytical Results For:

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

Received: 08/18/2017
Reported: 08/24/2017
Project Name: STALEY STATE #6
Project Number: NONE GIVEN
Project Location: UL-B SEC. 30, T17S, R28E

Sampling Date: 08/09/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP 1 (SURFACE) (H702210-01)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	10700	16.0	08/22/2017	ND	448	112	400	0.00		
Sulfate 375.4		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Sulfate	5250	10.0	08/24/2017	ND	23.3	117	20.0	11.4		

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



Celey D. Keene, Lab Director/Quality Manager

Notes and Definitions

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

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



Celey D. Keene, Lab Director/Quality Manager

Page 4 of 4



August 28, 2017

Daniel Dominguez

Environmental Plus, Inc.

P.O. Box 1558

Eunice, NM 88231

RE: STALEY STATE #6

Enclosed are the results of analyses for samples received by the laboratory on 08/18/17 15:40.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-17-9. 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 accredited through the State of Colorado Department of Public Health and Environment for:

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

Cardinal Laboratories is accredited through the State of New Mexico Environment Department for:

Method SM 9223-B	Total Coliform and E. coli (Colilert MMO-MUG)
Method EPA 524.2	Regulated VOCs and Total Trihalomethanes (TTHM)
Method EPA 552.2	Total Haloacetic Acids (HAA-5)

Accreditation applies to public drinking water matrices for State of Colorado and New Mexico.

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

Lab Director/Quality Manager

Analytical Results For:

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

Project: STALEY STATE #6
Project Number: NONE GIVEN
Project Manager: Daniel Dominguez
Fax To: (505) 394-2601

Reported:
28-Aug-17 16:29

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SP 1 (SURFACE)	H702211-01	Soil	09-Aug-17 10:15	18-Aug-17 15:40
SP 1 (20')	H702211-02	Soil	09-Aug-17 14:00	18-Aug-17 15:40
SP 2 (SURFACE)	H702211-03	Soil	10-Aug-17 09:00	18-Aug-17 15:40
SP 2 (20')	H702211-04	Soil	10-Aug-17 14:00	18-Aug-17 15:40
SP 3 (SURFACE)	H702211-05	Soil	11-Aug-17 08:30	18-Aug-17 15:40
SP 3 (18')	H702211-06	Soil	11-Aug-17 13:40	18-Aug-17 15:40
SP 4 (SURFACE)	H702211-07	Soil	14-Aug-17 09:00	18-Aug-17 15:40
SP 4 (18')	H702211-08	Soil	14-Aug-17 12:45	18-Aug-17 15:40
SP 5 (SURFACE)	H702211-09	Soil	15-Aug-17 08:30	18-Aug-17 15:40
SP 5 (15')	H702211-10	Soil	15-Aug-17 14:37	18-Aug-17 15:40
SP 6 (SURFACE)	H702211-11	Soil	16-Aug-17 08:35	18-Aug-17 15:40
SP 6 (12')	H702211-12	Soil	16-Aug-17 12:56	18-Aug-17 15:40

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:Environmental Plus, Inc.
P.O. Box 1558
Eunice NM, 88231Project: STALEY STATE #6
Project Number: NONE GIVEN
Project Manager: Daniel Dominguez
Fax To: (505) 394-2601Reported:
28-Aug-17 16:29**SP 1 (SURFACE)
H702211-01 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	10700		16.0	mg/kg	4	7082104	AC	22-Aug-17	4500-Cl-B	
pH*	7.36		0.100	pH Units	1	7082105	AC	21-Aug-17	9045	I-02
Sulfate	5250		1000	mg/kg	100	7082813	AC	28-Aug-17	375.4	

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:Environmental Plus, Inc.
P.O. Box 1558
Eunice NM, 88231Project: STALEY STATE #6
Project Number: NONE GIVEN
Project Manager: Daniel Dominguez
Fax To: (505) 394-2601Reported:
28-Aug-17 16:29**SP 1 (20')
H702211-02 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	96.0		16.0	mg/kg	4	7082504	AC	28-Aug-17	4500-Cl-B	
pH*	8.16		0.100	pH Units	1	7082105	AC	21-Aug-17	9045	I-02
Sulfate	8070		2000	mg/kg	200	7082813	AC	28-Aug-17	375.4	

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:Environmental Plus, Inc.
P.O. Box 1558
Eunice NM, 88231Project: STALEY STATE #6
Project Number: NONE GIVEN
Project Manager: Daniel Dominguez
Fax To: (505) 394-2601Reported:
28-Aug-17 16:29**SP 2 (SURFACE)****H702211-03 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	22400		16.0	mg/kg	4	7082504	AC	28-Aug-17	4500-Cl-B	
pH*	7.33		0.100	pH Units	1	7082105	AC	21-Aug-17	9045	I-02
Sulfate	5420		1000	mg/kg	100	7082813	AC	28-Aug-17	375.4	

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:Environmental Plus, Inc.
P.O. Box 1558
Eunice NM, 88231Project: STALEY STATE #6
Project Number: NONE GIVEN
Project Manager: Daniel Dominguez
Fax To: (505) 394-2601Reported:
28-Aug-17 16:29**SP 2 (20')**
H702211-04 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	304		16.0	mg/kg	4	7082803	AC	28-Aug-17	4500-Cl-B	QM-07
pH*	8.28		0.100	pH Units	1	7082105	AC	21-Aug-17	9045	I-02
Sulfate	8640		2000	mg/kg	200	7082813	AC	28-Aug-17	375.4	

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:Environmental Plus, Inc.
P.O. Box 1558
Eunice NM, 88231Project: STALEY STATE #6
Project Number: NONE GIVEN
Project Manager: Daniel Dominguez
Fax To: (505) 394-2601Reported:
28-Aug-17 16:29**SP 3 (SURFACE)****H702211-05 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	17800		16.0	mg/kg	4	7082504	AC	28-Aug-17	4500-Cl-B	
pH*	7.46		0.100	pH Units	1	7082105	AC	21-Aug-17	9045	I-02
Sulfate	4620		1000	mg/kg	100	7082813	AC	28-Aug-17	375.4	

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Analytical Results For:Environmental Plus, Inc.
P.O. Box 1558
Eunice NM, 88231Project: STALEY STATE #6
Project Number: NONE GIVEN
Project Manager: Daniel Dominguez
Fax To: (505) 394-2601Reported:
28-Aug-17 16:29**SP 3 (18')****H702211-06 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	144		16.0	mg/kg	4	7082803	AC	28-Aug-17	4500-Cl-B	
pH*	8.36		0.100	pH Units	1	7082105	AC	21-Aug-17	9045	I-02
Sulfate	8770		2000	mg/kg	200	7082813	AC	28-Aug-17	375.4	

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Analytical Results For:Environmental Plus, Inc.
P.O. Box 1558
Eunice NM, 88231Project: STALEY STATE #6
Project Number: NONE GIVEN
Project Manager: Daniel Dominguez
Fax To: (505) 394-2601Reported:
28-Aug-17 16:29**SP 4 (SURFACE)****H702211-07 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	20400		16.0	mg/kg	4	7082803	AC	28-Aug-17	4500-Cl-B	
pH*	7.80		0.100	pH Units	1	7082105	AC	21-Aug-17	9045	
Sulfate	5260		1000	mg/kg	100	7082813	AC	28-Aug-17	375.4	

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Analytical Results For:Environmental Plus, Inc.
P.O. Box 1558
Eunice NM, 88231Project: STALEY STATE #6
Project Number: NONE GIVEN
Project Manager: Daniel Dominguez
Fax To: (505) 394-2601Reported:
28-Aug-17 16:29**SP 4 (18')
H702211-08 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	224		16.0	mg/kg	4	7082803	AC	28-Aug-17	4500-Cl-B	
pH*	8.49		0.100	pH Units	1	7082105	AC	21-Aug-17	9045	
Sulfate	8690		2000	mg/kg	200	7082813	AC	28-Aug-17	375.4	

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:Environmental Plus, Inc.
P.O. Box 1558
Eunice NM, 88231Project: STALEY STATE #6
Project Number: NONE GIVEN
Project Manager: Daniel Dominguez
Fax To: (505) 394-2601Reported:
28-Aug-17 16:29**SP 5 (SURFACE)****H702211-09 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	19400		16.0	mg/kg	4	7082803	AC	28-Aug-17	4500-Cl-B	
pH*	7.56		0.100	pH Units	1	7082105	AC	21-Aug-17	9045	
Sulfate	5060		1000	mg/kg	100	7082813	AC	28-Aug-17	375.4	

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:Environmental Plus, Inc.
P.O. Box 1558
Eunice NM, 88231Project: STALEY STATE #6
Project Number: NONE GIVEN
Project Manager: Daniel Dominguez
Fax To: (505) 394-2601Reported:
28-Aug-17 16:29**SP 5 (15')
H702211-10 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	48.0		16.0	mg/kg	4	7082803	AC	28-Aug-17	4500-Cl-B	
pH*	8.91		0.100	pH Units	1	7082105	AC	21-Aug-17	9045	
Sulfate	5570		1000	mg/kg	100	7082813	AC	28-Aug-17	375.4	

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:Environmental Plus, Inc.
P.O. Box 1558
Eunice NM, 88231Project: STALEY STATE #6
Project Number: NONE GIVEN
Project Manager: Daniel Dominguez
Fax To: (505) 394-2601Reported:
28-Aug-17 16:29**SP 6 (SURFACE)****H702211-11 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	8400		16.0	mg/kg	4	7082803	AC	28-Aug-17	4500-Cl-B	
pH*	7.79		0.100	pH Units	1	7082109	AC	21-Aug-17	9045	
Sulfate	4960		1000	mg/kg	100	7082813	AC	28-Aug-17	375.4	

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:Environmental Plus, Inc.
P.O. Box 1558
Eunice NM, 88231Project: STALEY STATE #6
Project Number: NONE GIVEN
Project Manager: Daniel Dominguez
Fax To: (505) 394-2601Reported:
28-Aug-17 16:29**SP 6 (12')
H702211-12 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	160		16.0	mg/kg	4	7082803	AC	28-Aug-17	4500-Cl-B	
pH*	8.35		0.100	pH Units	1	7082109	AC	21-Aug-17	9045	
Sulfate	8400		2000	mg/kg	200	7082813	AC	28-Aug-17	375.4	

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Project: STALEY STATE #6
Project Number: NONE GIVEN
Project Manager: Daniel Dominguez
Fax To: (505) 394-2601

Reported:
28-Aug-17 16:29

Inorganic Compounds - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 7082104 - 1:4 DI Water

Blank (7082104-BLK1)

Prepared & Analyzed: 21-Aug-17

Chloride	ND	16.0	mg/kg
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LCS (7082104-BS1)

Prepared & Analyzed: 21-Aug-17

Chloride	448	16.0	mg/kg	400	112	80-120
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LCS Dup (7082104-BSD1)

Prepared & Analyzed: 21-Aug-17

Chloride	448	16.0	mg/kg	400	112	80-120	0.00	20
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Batch 7082105 - 1:1 DI

LCS (7082105-BS1)

Prepared & Analyzed: 21-Aug-17

pH	7.34		pH Units	7.00	105	90-110
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Duplicate (7082105-DUP1)

Source: H702211-01

Prepared & Analyzed: 21-Aug-17

pH	7.41	0.100	pH Units	7.36		0.677	20
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Batch 7082109 - 1:1 DI

LCS (7082109-BS1)

Prepared & Analyzed: 21-Aug-17

pH	7.46		pH Units	7.00	107	90-110
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Duplicate (7082109-DUP1)

Source: H702211-11

Prepared & Analyzed: 21-Aug-17

pH	7.84	0.100	pH Units	7.79		0.640	20
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Batch 7082504 - 1:4 DI Water

Blank (7082504-BLK1)

Prepared & Analyzed: 25-Aug-17

Chloride	ND	16.0	mg/kg
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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Project: STALEY STATE #6
Project Number: NONE GIVEN
Project Manager: Daniel Dominguez
Fax To: (505) 394-2601

Reported:
28-Aug-17 16:29

Inorganic Compounds - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 7082504 - 1:4 DI Water

LCS (7082504-BS1)

Prepared & Analyzed: 25-Aug-17

Chloride	448	16.0	mg/kg	400	112	80-120
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LCS Dup (7082504-BSD1)

Prepared & Analyzed: 25-Aug-17

Chloride	432	16.0	mg/kg	400	108	80-120	3.64	20
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Batch 7082803 - 1:4 DI Water

Blank (7082803-BLK1)

Prepared & Analyzed: 28-Aug-17

Chloride	ND	16.0	mg/kg
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LCS (7082803-BS1)

Prepared & Analyzed: 28-Aug-17

Chloride	448	16.0	mg/kg	400	112	80-120
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LCS Dup (7082803-BSD1)

Prepared & Analyzed: 28-Aug-17

Chloride	448	16.0	mg/kg	400	112	80-120	0.00	20
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Batch 7082813 - 1:1 DI

Blank (7082813-BLK1)

Prepared & Analyzed: 28-Aug-17

Sulfate	ND	10.0	mg/kg
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LCS (7082813-BS1)

Prepared & Analyzed: 28-Aug-17

Sulfate	21.7	10.0	mg/kg	20.0	108	80-120
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LCS Dup (7082813-BSD1)

Prepared & Analyzed: 28-Aug-17

Sulfate	22.0	10.0	mg/kg	20.0	110	80-120	1.51	20
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Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence or any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damage including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



Celey D. Keene, Lab Director/Quality Manager

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.
I-02	This result was analyzed outside of the EPA recommended holding time.
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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Celey D. Keene, Lab Director/Quality Manager

Environmental Plus, Inc.

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

P.O. Box 1558, Eunice, NM 88231

Chain of Custody Form
LAB Cardinal

Company Name Environmental Plus, Inc.

Bill To

ANALYSIS REQUEST

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

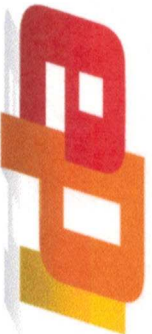
Facility Name Staley State #6

Location UL-B Sec. 30, T17S, R28E

Project Reference

EPI Sampler Name David Robinson

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



LAB I.D.	SAMPLE I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						PRESERV.	SAMPLING													
				GROUND WATER	WASTEWATER	SOIL	CRUDE OIL	SLUDGE	OTHER:		ACID/BASE	ICE/COOL	OTHER	DATE	TIME	BTEX 8021B	TPH 8015M Ext.	CHLORIDES (Cl ⁻)	SULFATES (SO ₄ ^m)	pH	TCLP	OTHER >>>	PAH	
H102.311-	1 SP1 (Surface)	G	1			X					X		09-Aug-17	10:15					X					
	2 SP1 (20')	G	1			X					X		09-Aug-17	14:00					X					
	3 SP2 (Surface)	G	1			X					X		10-Aug-17	9:00					X					
	4 SP2 (20')	G	1			X					X		10-Aug-17	14:00					X					
	5 SP3 (Surface)	G	1			X					X		11-Aug-17	8:30					X					
	6 SP3 (18')	G	1			X					X		11-Aug-17	13:40					X					
	7 SP4 (Surface)	G	1			X					X		14-Aug-17	9:00					X					
	8 SP4 (18')	G	1			X					X		14-Aug-17	12:45					X					
	9 SP5 (Surface)	G	1			X					X		15-Aug-17	8:30					X					
	10 SP5 (15')	G	1			X					X		15-Aug-17	14:37					X					

Sampler Relinquished:

Date 8-17-17

Received By: [Signature]

Relinquished by:

Date 8-18-17

Received By: (lab staff) [Signature]

Delivered by:

Date 8-18-17

Received By: (lab staff) [Signature]

Sample Cool & Intact

Yes

Checked By: [Signature]


E-mail results to: ddominguezepi@gmail.com & cjohnston@vrrlc.com
& bboone.epi@gmail.com

Environmental Plus, Inc.

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

P.O. Box 1558, Eunice, NM 88231

Chain of Custody Form
LAB Cardinal

Company Name		Environmental Plus, Inc.				Bill To		ANALYSIS REQUEST	
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		Staley State #6							
Location		UL- B Sec. 30, T17S, R28E							
Project Reference				Attn: Daniel Dominguez P.O. Box 1558 Eunice, NM 88231					
EPI Sampler Name		David Robinson							

LAB I.D.	SAMPLE I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						PRESERV.	SAMPLING		DATE	TIME	BTEX 8021B	TPH 8015M Ext.	CHLORIDES (Cl ⁻)	SULFATES (SO ₄ ²⁻)	pH	TCLP	OTHER >>>	PAH	
				GROUND WATER	WASTEWATER	SOIL	CRUDE OIL	SLUDGE	OTHER:		ACID/BASE	ICE/COOL											OTHER
4702211-																							
11	SP6 (Surface)	G	1			X					X		16-Aug-17	8:35					X				
12	SP6 (12')	G	1			X					X		16-Aug-17	12:56					X				
13																							
14																							
15																							
16																							
17																							
18																							
19																							
20																							

Relinquished by:	Date	8-17-17	Received By:	
Relinquished by:	Time	6:00 am	Received By: (lab staff)	
Relinquished by:	Date	8-18-17	Received By:	
Relinquished by:	Time	3:40	Received By:	
Delivered by:	Sample Cool & Intact	Yes	Checked By:	
Delivered by:	Sample Cool & Intact	No	Checked By:	

NOTES: E-mail results to: ddominguezepi@gmail.com & cjohnston@vnrllc.com & bboone.epi@gmail.com

ATTACHMENT IV
Copy of Initial NMOCD Form C-141

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, 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 October 10, 2003

Submit 2 Copies to appropriate
District Office in accordance
with Rule 116 on back
side of form

Release Notification and Corrective Action

nkmc 1106139339

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company	Lime Rock Resources	255933	Contact	Michael Barrett
Address	P.O. Box 2147 Roswell, NM 88202-2147		Telephone No.	575-623-8424
Facility Name	Staley State #6		Facility Type	Oil Well

Surface Owner	C.O.G.	Mineral Owner	State	Lease No.	30-015-37056
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LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
3	30'	17S	28E	1960'	FSL	990'	FWL	Eddy

Latitude 32.803136432 Longitude 104.220424329

NATURE OF RELEASE

Type of Release	Acid & Fresh Water	Volume of Release	214 bbls	Volume Recovered	30 bbls
Source of Release	Broken Nipple on Acid Truck	Date and Hour of Occurrence	2/18/11 @ 10:00 am	Date and Hour of Discovery	2/18/11 @ 10:00 am
Was Immediate Notice Given?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom?	Randy Dade		
By Whom?	Jerry Smith	Date and Hour	2/18/11 @ 11:15 am		
Was a Watercourse Reached?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.			

If a Watercourse was Impacted, Describe Fully.*

N/A

Describe Cause of Problem and Remedial Action Taken.*

Nipple broke on bottom of the acid truck.
P/U standing fluid.

Describe Area Affected and Cleanup Action Taken.*

Ground is rocky with loose soil.
Spread 2000 #'s soda ash and flushed with 130 bbls fresh water. P/U 40 bbls of flush.

RECEIVED

FEB 23 2011

NMOCD ARTESIA

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: <i>Michael Barrett</i>	OIL CONSERVATION DIVISION	
Printed Name: Michael Barrett	Approved by District Supervisor	<i>Michael Barrett</i>
Title: Production Supervisor	Approval Date: <i>3/7/11</i>	Expiration Date:
E-mail Address: <i>mbarrett@limerockresources.com</i>	Conditions of Approval:	Attached <input type="checkbox"/>
Date: 2/22/11	Phone: 575-623-8424	

* Attach Additional Sheets If Necessary

Jerry Smith: 505-918-0556

Remediation per OCD Rules &
Guidelines. **SUBMIT REMEDIATION
PROPOSAL NOT LATER THAN:**

4/7/11

2RP-624