

# ***ENVIRONMENTAL PLUS, INC.***

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Fax: (575) 394-2601



## **Site Characterization and Work Plan**

**Vanguard  
Horse Creek Com #2  
Chaves County, New Mexico  
Unit Letter "E", Section 11, Township 5 South, Range 24 East  
Latitude 33.888512 North, Longitude 104.3996964 West  
NMOCD Reference #2RP-4071**

Prepared For:

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

Prepared By:

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

**July 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 E (SW ¼ NW ¼), Section 11, Township 5 South, Range 24 East, approximately thirty-five miles north of Roswell, in Chaves County, New Mexico. The property is owned by the Waynette Wooton Trust.

The release site is located at the wellhead of a caliche well pad; latitude 33.8888512 North, longitude 104.3996964 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 apparent corrosion on wellhead and casing valve leak. An unknown amount of produced water was released affecting an approximate area of fifteen feet by fifteen feet at the well head. The visually stained area totals approximately 225 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 no wells 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 NMOSE database indicates average water depth is approximately 199 feet below ground surface (bgs) within a 4,500-meter radius (reference *Attachment II*). However, as this is too great a distance to accurately determine depth to water for this location and the closest documented well to this location is 1,943 meters away and doesn't provide depth to groundwater, the Chaves county groundwater flowline map was utilized to determine an approximate depth to water of seventy-five to one hundred feet bgs.

Utilizing this information, the NMOCD guidelines indicate the Horse Creek Com #2 release site to have a ranking score of ten. 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 – 1,000 mg/Kg, and Chloride – 600 mg/Kg.

The visually stained area within containment totals an area of approximately 225 square feet. The pad area is caliche approximately one foot thick.

**Delineation Progress:**

On April 26, 2017 EPI personnel mobilized on site to collect soil samples to determine the horizontal extent of contamination. A total of nineteen soil samples were collected from four sample locations; SP1 – SP4. Two soil samples, surface and final depth, from each sample location were sent to Cardinal Labs in Hobbs, New Mexico, for testing. Laboratory analytical results indicate these areas to be void of Benzene, BTEX, TPH, and Chloride concentrations more than NMOCD RRALs (reference *Figure 3* and *Table 2*).

On April 27, 2017 EPI personnel were on site to collect sidewall soil samples from the

excavation to determine the extent of contamination. A total of four samples were collected, one from each sidewall. All four samples were field tested for chlorides. Field testing indicated chloride concentrations more than NMOCD RRALs (reference *Figure 3* and *Table 2*).

On July 11, 2017 EPI personnel were on site to collect additional horizontal soil samples as well as sampling the excavation floor to determine the vertical extent of contamination. A total of twenty-one samples were collected from six sample locations; SPA – SPF. Two soil samples, surface and final depth, from each sample location were sent to Cardinal labs for testing. Laboratory analytical results indicate these areas to be void of Benzene, BTEX, TPH, and Chloride concentrations more than 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 sidewalls of the excavation one foot horizontally and approximately three feet bgs vertically. A 20-millimeter poly-ethylene liner will be installed in the deepest portion of the excavation, approximately seven feet bgs. The excavation will then be backfilled with clean soil.

Caliche 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 pad area and protected against wind/water erosion.

#### **Revegetation Plan:**

As the release occurred on a caliche well 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.

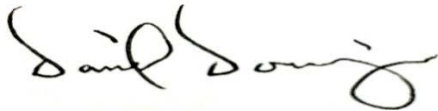
Following completion of NMOCD approved Proposed Actions, EPI will provide a detailed *Final Closure Report* to Vanguard and NMOCD personnel. Vanguard and EPI personnel would welcome an opportunity to briefly discuss the *Work Plan* at your earliest convenience.

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](mailto:ddominguezepi@gmail.com) or Mr. Chuck Johnston at (432) 202-4771 or via e-mail at [cjohnston@vnrlc.com](mailto: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: Crystal Weaver, Environmental Specialist – NMOCD District 2, 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  
Attachment III – Laboratory Analytical Results  
Attachment IV – Copy of Initial NMOCD Form C-141

## **FIGURES**





Chaves County  
De Baca County



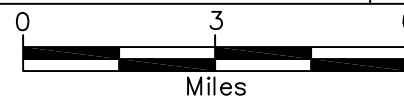
Horse Creek Com #2

Figure 1  
Area Map  
Vanguard  
Horse Creek Com #2

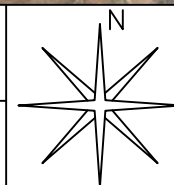
Chaves County, New Mexico  
SW 1/4 of NW 1/4, Sec. 11, T5S, R24E  
N 33° 53' 19.86" W 104° 23' 58.91"  
Elevation: 3,910 feet amsl

DWG By: D Dominguez  
July 2017

REVISED:



SHEET  
1 of 1





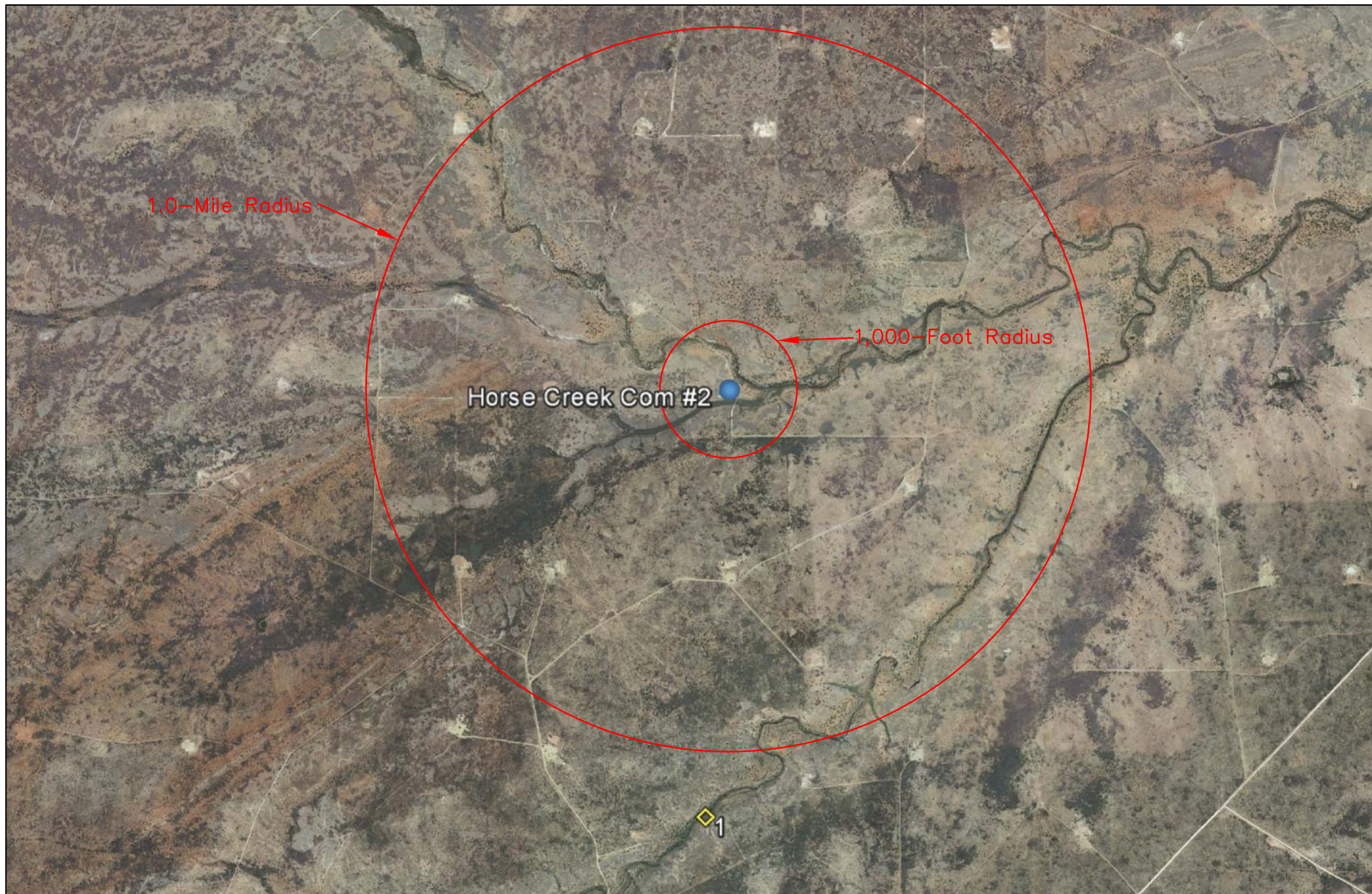
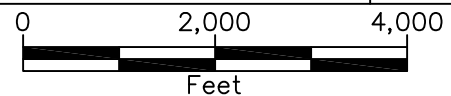


Figure 2  
Site Location Map  
Vanguard  
Horse Creek Com #2

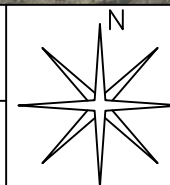
Chaves County, New Mexico  
SW 1/4 of NW 1/4, Sec. 11, T5S, R24E  
N 33° 53' 19.86" W 104° 23' 58.91"  
Elevation: 3,910 feet amsl

DWG By: D Dominguez  
July 2017

REVISED:



SHEET  
1 of 1




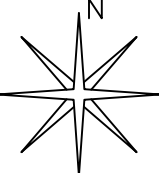





LEGEND

✕SP1 Sample Location

 Release Area (~225 sq.ft.)

<p>Figure 3 Site/Sample Map Vanguard Horse Creek Com #2</p>	<p>Chaves County, New Mexico SW 1/4 of NW 1/4, Sec. 11, T5S, R24E N 33° 53' 19.86" W 104° 23' 58.91" Elevation: 3,910 feet amsl</p>	<p>DWG By: D Dominguez July 2017</p>	<p>REVISED:</p>	
		<p>0 20 40  Feet</p>	<p>SHEET 1 of 1</p>	



## **TABLES**

**TABLE 1**  
**Well Data**  
**Vanguard - Horse Creek Com #2**

Ref #	Well Number	Use	Diversion <sup>A</sup>	Owner	q64	q16	q4	Sec	Twsp	Rng	Easting	Northing	Distance <sup>B</sup>	Date Measured	Surface Elevation <sup>C</sup>	Depth to Water
																(ft bgs)
1	FS 01132	PLS	3	4N LAND & CATTLE CO.	1	1	3	14	05S	24E	555412	3748053	1,943	31-Dec-44	3,920	--
2	FS 01134	PLS	3	4N LAND & CATTLE CO.	2	2	2	21	05S	24E	553572	3747249	3,359	30-Nov-80	3,977	--
3	FS 00557	PLS	3	BUREAU OF LAND MANAGEMENT	3	3	4	22	05S	24E	554601	3745835	4,256	08-Jun-78	4,057	380
4	FS 01135	STK	3	4N LAND & CATTLE CO.	1	4	1	21	05S	24E	552559	3746845	4,314	01-Mar-00	3,983	18
5	FS 01137	PLS	3	4N LAND & CATTLE CO.	1	4	3	24	05S	24E	557456	3746025	4,420	31-Dec-44	3,922	--

\* = Data obtained from the New Mexico Office of the State Engineer Website ([http://iwaters.ose.state.nm.us:7001/iWATERS/wr\\_RegisServlet1](http://iwaters.ose.state.nm.us:7001/iWATERS/wr_RegisServlet1))

<sup>A</sup> = In acre feet per annum

<sup>B</sup> = In meters

<sup>C</sup> = Elevation interpolated from Google Earth based on referenced location.

PLS = Non 72-12-1 Livestock watering

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**



**TABLE 2**  
**Summary of Soil Sample Field Testing and Laboratory Analytical Results**  
**Vanguard**  
**Horse Creek Com #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)	EXT DRO C28-C36 (mg/Kg)	Total TPH (mg/Kg)	Chloride (mg/Kg)
SP1	Surface	In-Situ	26-Apr-17	0.0	240	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<30.0	240
	3	In-Situ	26-Apr-17	0.0	640	--	--	--	--	--	--	--	--	--	--
	7	In-Situ	26-Apr-17	0.0	400	--	--	--	--	--	--	--	--	--	--
	10	In-Situ	26-Apr-17	0.0	240	--	--	--	--	--	--	--	--	--	--
	15	In-Situ	26-Apr-17	0.0	160	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<30.0	96
SP2	Surface	In-Situ	26-Apr-17	0.0	240	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	22.3	<10.0	22.3	176
	3	In-Situ	26-Apr-17	0.0	240	--	--	--	--	--	--	--	--	--	--
	5	In-Situ	26-Apr-17	0.0	160	--	--	--	--	--	--	--	--	--	--
	10	In-Situ	26-Apr-17	0.0	160	<0.050	<0.050	0.060	<0.150	<0.300	<10.0	<10.0	<10.0	<30.0	160
SP3	Surface	In-Situ	26-Apr-17	0.0	240	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<30.0	144
	3	In-Situ	26-Apr-17	0.0	240	--	--	--	--	--	--	--	--	--	--
	5	In-Situ	26-Apr-17	0.0	80	--	--	--	--	--	--	--	--	--	--
	8	In-Situ	26-Apr-17	0.0	80	--	--	--	--	--	--	--	--	--	--
	10	In-Situ	26-Apr-17	0.0	80	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<30.0	80
SP4	Surface	In-Situ	26-Apr-17	0.0	80	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<30.0	112
	5	In-Situ	26-Apr-17	0.0	80	--	--	--	--	--	--	--	--	--	--
	8	In-Situ	26-Apr-17	0.0	160	--	--	--	--	--	--	--	--	--	--
	10	In-Situ	26-Apr-17	0.0	80	--	--	--	--	--	--	--	--	--	--
	15	In-Situ	26-Apr-17	0.0	80	<0.050	<0.050	0.060	<0.150	<0.300	<10.0	<10.0	<10.0	<30.0	96

**TABLE 2**  
**Summary of Soil Sample Field Testing and Laboratory Analytical Results**  
**Vanguard**  
**Horse Creek Com #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)	EXT DRO C28-C36 (mg/Kg)	Total TPH (mg/Kg)	Chloride (mg/Kg)
NW	3	In-Situ	27-Apr-17	0.0	1,360	--	--	--	--	--	--	--	--	--	--
EW	3	In-Situ	27-Apr-17	0.0	720	--	--	--	--	--	--	--	--	--	--
SW	3	In-Situ	27-Apr-17	0.0	1,600	--	--	--	--	--	--	--	--	--	--
WW	3	In-Situ	27-Apr-17	0.0	400	--	--	--	--	--	--	--	--	--	--
SPA	8	In-Situ	11-Jul-17	1.4	240	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	53.1	53.1	64
	10	In-Situ	11-Jul-17	1.0	200	--	--	--	--	--	--	--	--	--	--
	12	In-Situ	11-Jul-17	0.5	200	--	--	--	--	--	--	--	--	--	--
	14	In-Situ	11-Jul-17	0.2	200	--	--	--	--	--	--	--	--	--	--
	16	In-Situ	11-Jul-17	0.3	160	<0.050	<0.050	0.060	<0.150	<0.300	<10.0	<10.0	12	12	80
SPB	8	In-Situ	11-Jul-17	1.0	200	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<30.0	48
	10	In-Situ	11-Jul-17	0.5	160	--	--	--	--	--	--	--	--	--	--
	12	In-Situ	11-Jul-17	0.5	160	--	--	--	--	--	--	--	--	--	--
	14	In-Situ	11-Jul-17	0.5	160	--	--	--	--	--	--	--	--	--	--
	16	In-Situ	11-Jul-17	0.3	160	<0.050	<0.050	0.060	<0.150	<0.300	<10.0	<10.0	<10.0	<30.0	96
SPC	8	In-Situ	11-Jul-17	1.0	200	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<30.0	48
	10	In-Situ	11-Jul-17	0.8	200	--	--	--	--	--	--	--	--	--	--
	12	In-Situ	11-Jul-17	0.6	200	--	--	--	--	--	--	--	--	--	--
	14	In-Situ	11-Jul-17	0.6	200	--	--	--	--	--	--	--	--	--	--
	16	In-Situ	11-Jul-17	0.3	200	<0.050	<0.050	0.060	<0.150	<0.300	<10.0	<10.0	<10.0	<30.0	80



**TABLE 2**  
**Summary of Soil Sample Field Testing and Laboratory Analytical Results**  
**Vanguard**  
**Horse Creek Com #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)	EXT DRO C28-C36 (mg/Kg)	Total TPH (mg/Kg)	Chloride (mg/Kg)
SPD	Surface	In-Situ	25-Apr-17	0.0	200	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<30.0	32
	3	In-Situ	25-Apr-17	0.0	200	<0.050	<0.050	0.060	<0.150	<0.300	<10.0	<10.0	<10.0	<30.0	80
SPE	Surface	In-Situ	25-Apr-17	0.0	200	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<30.0	80
	3	In-Situ	25-Apr-17	0.0	160	<0.050	<0.050	0.060	<0.150	<0.300	<10.0	<10.0	<10.0	<30.0	80
SPF	Surface	In-Situ	09-Jun-17	0.0	200	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<30.0	80
	3	In-Situ	09-Jun-17	0.0	200	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<30.0	80
NMOCD Recommended Remedial Action Levels				100		10				50				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- Looking across excavation



Photograph #3- Looking across excavation



Photograph #4- Looking across excavation





Photograph #5- Looking across excavation



Photograph #6- Looking across excavation



**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-Code	basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
<a href="#">FS 01132</a>	FS	CH		1	1	3	14	05S	24E	555412	3748053*	1943	60		
<a href="#">FS 01134</a>	FS	CH		2	2	2	21	05S	24E	553572	3747249*	3359	60		
<a href="#">FS 00557</a>	FS	CH		3	3	4	22	05S	24E	554601	3745835*	4256	411	380	31
<a href="#">FS 01136</a>	FS	CH		3	3	4	22	05S	24E	554601	3745835*	4256	378		
<a href="#">FS 01135</a>	FS	CH		1	4	1	21	05S	24E	552559	3746845*	4314	40	18	22
<a href="#">FS 01137</a>	FS	CH		1	4	3	24	05S	24E	557456	3746025*	4420	100		

Average Depth to Water: **199 feet**

Minimum Depth: **18 feet**

Maximum Depth: **380 feet**

Record Count: 6

UTM NAD83 Radius Search (in meters):

Easting (X): 555509

Northing (Y): 3749994

Radius: 4500

\*UTM location was derived from PLSS - see Help

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.

**ATTACHMENT III**  
**Laboratory Analytical Results**



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

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May 05, 2017

Daniel Dominguez

Environmental Plus, Inc.

P.O. Box 1558

Eunice, NM 88231

RE: HORSE CREEK COM #2

Enclosed are the results of analyses for samples received by the laboratory on 04/28/17 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](http://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,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive, flowing style.

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:	04/28/2017	Sampling Date:	04/26/2017
Reported:	05/05/2017	Sampling Type:	Soil
Project Name:	HORSE CREEK COM #2	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	UL-C SEC.11, T5S, R24E		

**Sample ID: SP1 ( SURFACE ) (H701150-01)**

BTX 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	05/01/2017	ND	1.90	95.0	2.00	3.78	
Toluene*	<0.050	0.050	05/01/2017	ND	1.83	91.3	2.00	3.72	
Ethylbenzene*	<0.050	0.050	05/01/2017	ND	1.87	93.4	2.00	3.63	
Total Xylenes*	<0.150	0.150	05/01/2017	ND	5.33	88.9	6.00	3.74	
Total BTX	<0.300	0.300	05/01/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 98.9 % 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	240	16.0	05/01/2017	ND	432	108	400	0.00		

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	05/01/2017	ND	175	87.3	200	2.73	
DRO >C10-C28	<10.0	10.0	05/01/2017	ND	184	92.1	200	2.28	

Surrogate: 1-Chlorooctane 87.2 % 28.3-164

Surrogate: 1-Chlorooctadecane 95.7 % 34.7-157

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\*=Accredited Analyte

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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:	04/28/2017	Sampling Date:	04/26/2017
Reported:	05/05/2017	Sampling Type:	Soil
Project Name:	HORSE CREEK COM #2	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	UL-C SEC.11, T5S, R24E		

**Sample ID: SP1 ( 15' ) (H701150-02)**

BTX 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	05/01/2017	ND	1.90	95.0	2.00	3.78		
Toluene*	<0.050	0.050	05/01/2017	ND	1.83	91.3	2.00	3.72		
Ethylbenzene*	<0.050	0.050	05/01/2017	ND	1.87	93.4	2.00	3.63		
Total Xylenes*	<0.150	0.150	05/01/2017	ND	5.33	88.9	6.00	3.74		
Total BTX	<0.300	0.300	05/01/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 98.6 % 72-148

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	96.0	16.0	05/01/2017	ND	432	108	400	0.00	

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	05/01/2017	ND	175	87.3	200	2.73	
DRO >C10-C28	<10.0	10.0	05/01/2017	ND	184	92.1	200	2.28	

Surrogate: 1-Chlorooctane 84.6 % 28.3-164

Surrogate: 1-Chlorooctadecane 96.2 % 34.7-157

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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:	04/28/2017	Sampling Date:	04/26/2017
Reported:	05/05/2017	Sampling Type:	Soil
Project Name:	HORSE CREEK COM #2	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	UL-C SEC.11, T5S, R24E		

**Sample ID: SP2 ( SURFACE ) (H701150-03)**

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	05/01/2017	ND	1.90	95.0	2.00	3.78		
Toluene*	<0.050	0.050	05/01/2017	ND	1.83	91.3	2.00	3.72		
Ethylbenzene*	<0.050	0.050	05/01/2017	ND	1.87	93.4	2.00	3.63		
Total Xylenes*	<0.150	0.150	05/01/2017	ND	5.33	88.9	6.00	3.74		
Total BTEx	<0.300	0.300	05/01/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 98.0 % 72-148

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	176	16.0	05/01/2017	ND	432	108	400	0.00	

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	05/01/2017	ND	175	87.3	200	2.73	
DRO >C10-C28	<10.0	10.0	05/01/2017	ND	184	92.1	200	2.28	

Surrogate: 1-Chlorooctane 61.6 % 28.3-164

Surrogate: 1-Chlorooctadecane 73.3 % 34.7-157

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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:	04/28/2017	Sampling Date:	04/26/2017
Reported:	05/05/2017	Sampling Type:	Soil
Project Name:	HORSE CREEK COM #2	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	UL-C SEC.11, T5S, R24E		

**Sample ID: SP2 ( 10' ) (H701150-04)**

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	05/02/2017	ND	1.91	95.5	2.00	0.137	
Toluene*	<0.050	0.050	05/02/2017	ND	1.83	91.5	2.00	0.106	
Ethylbenzene*	<0.050	0.050	05/02/2017	ND	1.87	93.7	2.00	0.609	
Total Xylenes*	<0.150	0.150	05/02/2017	ND	5.34	89.0	6.00	0.446	
Total BTEx	<0.300	0.300	05/02/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 96.6 % 72-148

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	160	16.0	05/01/2017	ND	432	108	400	0.00	

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	05/01/2017	ND	175	87.3	200	2.73	
DRO >C10-C28	<10.0	10.0	05/01/2017	ND	184	92.1	200	2.28	

Surrogate: 1-Chlorooctane 86.1 % 28.3-164

Surrogate: 1-Chlorooctadecane 97.0 % 34.7-157

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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:	04/28/2017	Sampling Date:	04/27/2017
Reported:	05/05/2017	Sampling Type:	Soil
Project Name:	HORSE CREEK COM #2	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	UL-C SEC.11, T5S, R24E		

**Sample ID: SP3 ( SURFACE ) (H701150-05)**

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	05/02/2017	ND	1.91	95.5	2.00	0.137		
Toluene*	<0.050	0.050	05/02/2017	ND	1.83	91.5	2.00	0.106		
Ethylbenzene*	<0.050	0.050	05/02/2017	ND	1.87	93.7	2.00	0.609		
Total Xylenes*	<0.150	0.150	05/02/2017	ND	5.34	89.0	6.00	0.446		
Total BTEx	<0.300	0.300	05/02/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 97.9 % 72-148

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	144	16.0	05/01/2017	ND	432	108	400	0.00	

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	05/02/2017	ND	183	91.4	200	2.09	
DRO >C10-C28	<10.0	10.0	05/02/2017	ND	194	96.9	200	2.95	

Surrogate: 1-Chlorooctane 75.4 % 28.3-164

Surrogate: 1-Chlorooctadecane 97.3 % 34.7-157

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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:	04/28/2017	Sampling Date:	04/27/2017
Reported:	05/05/2017	Sampling Type:	Soil
Project Name:	HORSE CREEK COM #2	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	UL-C SEC.11, T5S, R24E		

**Sample ID: SP3 ( 10' ) (H701150-06)**

BTX 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	05/02/2017	ND	1.91	95.5	2.00	0.137	
Toluene*	<0.050	0.050	05/02/2017	ND	1.83	91.5	2.00	0.106	
Ethylbenzene*	<0.050	0.050	05/02/2017	ND	1.87	93.7	2.00	0.609	
Total Xylenes*	<0.150	0.150	05/02/2017	ND	5.34	89.0	6.00	0.446	
Total BTX	<0.300	0.300	05/02/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 97.9 % 72-148

Chloride, SM4500CI-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	05/01/2017	ND	432	108	400	0.00		

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	05/02/2017	ND	183	91.4	200	2.09	
DRO >C10-C28	<10.0	10.0	05/02/2017	ND	194	96.9	200	2.95	

Surrogate: 1-Chlorooctane 79.8 % 28.3-164

Surrogate: 1-Chlorooctadecane 95.2 % 34.7-157

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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:	04/28/2017	Sampling Date:	04/27/2017
Reported:	05/05/2017	Sampling Type:	Soil
Project Name:	HORSE CREEK COM #2	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	UL-C SEC.11, T5S, R24E		

**Sample ID: SP4 ( SURFACE ) (H701150-07)**

BTX 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	05/02/2017	ND	1.91	95.5	2.00	0.137	
Toluene*	<0.050	0.050	05/02/2017	ND	1.83	91.5	2.00	0.106	
Ethylbenzene*	<0.050	0.050	05/02/2017	ND	1.87	93.7	2.00	0.609	
Total Xylenes*	<0.150	0.150	05/02/2017	ND	5.34	89.0	6.00	0.446	
Total BTX	<0.300	0.300	05/02/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 98.2 % 72-148

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	112	16.0	05/01/2017	ND	432	108	400	0.00	

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	05/02/2017	ND	183	91.4	200	2.09	
DRO >C10-C28	<10.0	10.0	05/02/2017	ND	194	96.9	200	2.95	

Surrogate: 1-Chlorooctane 74.7 % 28.3-164

Surrogate: 1-Chlorooctadecane 95.8 % 34.7-157

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**Analytical Results For:**

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

Received:	04/28/2017	Sampling Date:	04/27/2017
Reported:	05/05/2017	Sampling Type:	Soil
Project Name:	HORSE CREEK COM #2	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	UL-C SEC.11, T5S, R24E		

**Sample ID: SP4 ( 15' ) (H701150-08)**

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	05/03/2017	ND	2.07	103	2.00	3.76		
Toluene*	<0.050	0.050	05/03/2017	ND	1.91	95.4	2.00	3.63		
Ethylbenzene*	<0.050	0.050	05/03/2017	ND	1.88	94.2	2.00	3.64		
Total Xylenes*	<0.150	0.150	05/03/2017	ND	5.33	88.9	6.00	3.77		
Total BTEx	<0.300	0.300	05/03/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 94.1 % 72-148

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	96.0	16.0	05/01/2017	ND	432	108	400	0.00	

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	05/02/2017	ND	183	91.4	200	2.09	
DRO >C10-C28	<10.0	10.0	05/02/2017	ND	194	96.9	200	2.95	

Surrogate: 1-Chlorooctane 65.6 % 28.3-164

Surrogate: 1-Chlorooctadecane 80.5 % 34.7-157

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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

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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**

Page 11 of 11

Company Name		Environmental Plus, Inc.		Bill To										ANALYSIS REQUEST										
EPI Project Manager		Daniel Dominguez		 <p>Attn: Daniel Dominguez P.O. Box 1558 Eunice, NM 88231</p>																				
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		Horse Creek Com #2																						
Location		UL- C Sec. 11, T5S, R24E																						
Project Reference																								
EPI Sampler Name		Dustin Crockett																						
LAB I.D.	SAMPLE I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						PRESERV.			SAMPLING		BTEX 8021B	TPH 8015M	CHLORIDES (Cl <sup>-</sup> )	SULFATES (SO <sub>4</sub> <sup>2-</sup> )	pH	TCLP	OTHER >>>	PAH		
				GROUND WATER	WASTEWATER	SOIL	CRUDE OIL	SLUDGE	OTHER:	ACID/BASE	ICE/COOL	OTHER	DATE	TIME										
H701150	1 SP1 (Surface)	G	1			X				X			26-Apr-17	8:10	X	X	X							
	2 SP1 (15')	G	1			X				X			26-Apr-17	13:30	X	X	X							
	3 SP2 (Surface)	G	1			X				X			26-Apr-17	14:05	X	X	X							
	4 SP2 (10')	G	1			X				X			26-Apr-17	15:00	X	X	X							
	5 SP3 (Surface)	G	1			X				X			27-Apr-17	7:20	X	X	X							
	6 SP3 (10')	G	1			X				X			27-Apr-17	12:20	X	X	X							
	7 SP4 (Surface)	G	1			X				X			27-Apr-17	13:10	X	X	X							
	8 SP4 (15')	G	1			X				X			27-Apr-17	15:15	X	X	X							
	9																							
	10																							

Sampler Relinquished:	Date 4-28-17	Received By:	E-mail results to: ddominguezepi@gmail.com & cjohnston@vnrlc.com
<i>Dustin Crockett</i>	Time 6:00 am	<i>[Signature]</i>	NOTES:
Relinquished by:	Date 4-28-17	Received By: (lab staff)	
<i>[Signature]</i>	Time 5:30	<i>Jamara Olden</i>	
Delivered by:	-13.12	Sample Cool & Intact Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Checked By: <i>TO- #75</i>



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

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July 18, 2017

Daniel Dominguez

Environmental Plus, Inc.

P.O. Box 1558

Eunice, NM 88231

RE: HORSE CREEK COM #2

Enclosed are the results of analyses for samples received by the laboratory on 07/12/17 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](http://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,

A handwritten signature in black ink that reads "Mike Snyder". The signature is fluid and cursive, with the first name "Mike" and last name "Snyder" clearly distinguishable.

Mike Snyder For 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:	07/12/2017	Sampling Date:	07/11/2017
Reported:	07/18/2017	Sampling Type:	Soil
Project Name:	HORSE CREEK COM #2	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	UL-C SEC.11, T5S, R24E		

**Sample ID: SPA ( 8' ) (H701813-01)**

BTX 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	07/14/2017	ND	2.15	108	2.00	1.12	
Toluene*	<0.050	0.050	07/14/2017	ND	2.04	102	2.00	0.920	
Ethylbenzene*	<0.050	0.050	07/14/2017	ND	2.17	109	2.00	1.49	
Total Xylenes*	<0.150	0.150	07/14/2017	ND	6.45	108	6.00	1.48	
Total BTX	<0.300	0.300	07/14/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 103 % 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	64.0	16.0	07/13/2017	ND	416	104	400	3.77	

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	07/14/2017	ND	189	94.7	200	3.41	
DRO >C10-C28	<10.0	10.0	07/14/2017	ND	195	97.7	200	17.0	
EXT DRO >C28-C36	53.1	10.0	07/14/2017	ND					

Surrogate: 1-Chlorooctane 93.6 % 28.3-164

Surrogate: 1-Chlorooctadecane 96.2 % 34.7-157

Cardinal Laboratories

\*=Accredited Analyte

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Mike Snyder For 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:	07/12/2017	Sampling Date:	07/11/2017
Reported:	07/18/2017	Sampling Type:	Soil
Project Name:	HORSE CREEK COM #2	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	UL-C SEC.11, T5S, R24E		

**Sample ID: SPA ( 16' ) (H701813-02)**

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	07/14/2017	ND	2.15	108	2.00	1.12	
Toluene*	<0.050	0.050	07/14/2017	ND	2.04	102	2.00	0.920	
Ethylbenzene*	<0.050	0.050	07/14/2017	ND	2.17	109	2.00	1.49	
Total Xylenes*	<0.150	0.150	07/14/2017	ND	6.45	108	6.00	1.48	
Total BTEx	<0.300	0.300	07/14/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 104 % 72-148

Chloride, SM4500CI-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	07/13/2017	ND	416	104	400	3.77		

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	07/14/2017	ND	189	94.7	200	3.41	
DRO >C10-C28	<10.0	10.0	07/14/2017	ND	195	97.7	200	17.0	
EXT DRO >C28-C36	12.0	10.0	07/14/2017	ND					

Surrogate: 1-Chlorooctane 101 % 28.3-164

Surrogate: 1-Chlorooctadecane 101 % 34.7-157

Cardinal Laboratories

\*=Accredited Analyte

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Mike Snyder For 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:	07/12/2017	Sampling Date:	07/11/2017
Reported:	07/18/2017	Sampling Type:	Soil
Project Name:	HORSE CREEK COM #2	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	UL-C SEC.11, T5S, R24E		

**Sample ID: SPB ( 8' ) (H701813-03)**

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	07/14/2017	ND	2.15	108	2.00	1.12	
Toluene*	<0.050	0.050	07/14/2017	ND	2.04	102	2.00	0.920	
Ethylbenzene*	<0.050	0.050	07/14/2017	ND	2.17	109	2.00	1.49	
Total Xylenes*	<0.150	0.150	07/14/2017	ND	6.45	108	6.00	1.48	
Total BTEx	<0.300	0.300	07/14/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 104 % 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	07/13/2017	ND	416	104	400	3.77	

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	07/14/2017	ND	189	94.7	200	3.41	
DRO >C10-C28	<10.0	10.0	07/14/2017	ND	195	97.7	200	17.0	
EXT DRO >C28-C36	<10.0	10.0	07/14/2017	ND					

Surrogate: 1-Chlorooctane 104 % 28.3-164

Surrogate: 1-Chlorooctadecane 107 % 34.7-157

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\*=Accredited Analyte

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Mike Snyder For 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:	07/12/2017	Sampling Date:	07/11/2017
Reported:	07/18/2017	Sampling Type:	Soil
Project Name:	HORSE CREEK COM #2	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	UL-C SEC.11, T5S, R24E		

**Sample ID: SPB ( 16' ) (H701813-04)**

BTX 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	07/14/2017	ND	2.15	108	2.00	1.12	
Toluene*	<0.050	0.050	07/14/2017	ND	2.04	102	2.00	0.920	
Ethylbenzene*	<0.050	0.050	07/14/2017	ND	2.17	109	2.00	1.49	
Total Xylenes*	<0.150	0.150	07/14/2017	ND	6.45	108	6.00	1.48	
Total BTX	<0.300	0.300	07/14/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 103 % 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	96.0	16.0	07/13/2017	ND	416	104	400	3.77	

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	07/14/2017	ND	189	94.7	200	3.41	
DRO >C10-C28	<10.0	10.0	07/14/2017	ND	195	97.7	200	17.0	
EXT DRO >C28-C36	<10.0	10.0	07/14/2017	ND					

Surrogate: 1-Chlorooctane 94.2 % 28.3-164

Surrogate: 1-Chlorooctadecane 98.5 % 34.7-157

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Mike Snyder For 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:	07/12/2017	Sampling Date:	07/11/2017
Reported:	07/18/2017	Sampling Type:	Soil
Project Name:	HORSE CREEK COM #2	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	UL-C SEC.11, T5S, R24E		

**Sample ID: SPC ( 8' ) (H701813-05)**

BTX 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	07/15/2017	ND	2.15	108	2.00	1.12	
Toluene*	<0.050	0.050	07/15/2017	ND	2.04	102	2.00	0.920	
Ethylbenzene*	<0.050	0.050	07/15/2017	ND	2.17	109	2.00	1.49	
Total Xylenes*	<0.150	0.150	07/15/2017	ND	6.45	108	6.00	1.48	
Total BTX	<0.300	0.300	07/15/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 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	07/13/2017	ND	416	104	400	3.77	

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	07/14/2017	ND	189	94.7	200	3.41	
DRO >C10-C28	<10.0	10.0	07/14/2017	ND	195	97.7	200	17.0	
EXT DRO >C28-C36	<10.0	10.0	07/14/2017	ND					

Surrogate: 1-Chlorooctane 96.6 % 28.3-164

Surrogate: 1-Chlorooctadecane 98.1 % 34.7-157

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Mike Snyder For 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:	07/12/2017	Sampling Date:	07/11/2017
Reported:	07/18/2017	Sampling Type:	Soil
Project Name:	HORSE CREEK COM #2	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	UL-C SEC.11, T5S, R24E		

**Sample ID: SPC ( 16' ) (H701813-06)**

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	07/15/2017	ND	2.15	108	2.00	1.12	
Toluene*	<0.050	0.050	07/15/2017	ND	2.04	102	2.00	0.920	
Ethylbenzene*	<0.050	0.050	07/15/2017	ND	2.17	109	2.00	1.49	
Total Xylenes*	<0.150	0.150	07/15/2017	ND	6.45	108	6.00	1.48	
Total BTEx	<0.300	0.300	07/15/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 103 % 72-148

Chloride, SM4500CI-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	07/13/2017	ND	416	104	400	3.77		

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	07/14/2017	ND	189	94.7	200	3.41	
DRO >C10-C28	<10.0	10.0	07/14/2017	ND	195	97.7	200	17.0	
EXT DRO >C28-C36	<10.0	10.0	07/14/2017	ND					

Surrogate: 1-Chlorooctane 90.8 % 28.3-164

Surrogate: 1-Chlorooctadecane 92.9 % 34.7-157

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Mike Snyder For 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:	07/12/2017	Sampling Date:	07/11/2017
Reported:	07/18/2017	Sampling Type:	Soil
Project Name:	HORSE CREEK COM #2	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	UL-C SEC.11, T5S, R24E		

**Sample ID: SPD ( SURFACE ) (H701813-07)**

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	07/15/2017	ND	2.15	108	2.00	1.12	
Toluene*	<0.050	0.050	07/15/2017	ND	2.04	102	2.00	0.920	
Ethylbenzene*	<0.050	0.050	07/15/2017	ND	2.17	109	2.00	1.49	
Total Xylenes*	<0.150	0.150	07/15/2017	ND	6.45	108	6.00	1.48	
Total BTEx	<0.300	0.300	07/15/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 104 % 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	07/13/2017	ND	416	104	400	3.77	

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	07/14/2017	ND	189	94.7	200	3.41	
DRO >C10-C28	<10.0	10.0	07/14/2017	ND	195	97.7	200	17.0	
EXT DRO >C28-C36	<10.0	10.0	07/14/2017	ND					

Surrogate: 1-Chlorooctane 94.8 % 28.3-164

Surrogate: 1-Chlorooctadecane 97.8 % 34.7-157

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\*=Accredited Analyte

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Mike Snyder For 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:	07/12/2017	Sampling Date:	07/11/2017
Reported:	07/18/2017	Sampling Type:	Soil
Project Name:	HORSE CREEK COM #2	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	UL-C SEC.11, T5S, R24E		

**Sample ID: SPD ( 3' ) (H701813-08)**

BTX 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	07/15/2017	ND	2.15	108	2.00	1.12	
Toluene*	<0.050	0.050	07/15/2017	ND	2.04	102	2.00	0.920	
Ethylbenzene*	<0.050	0.050	07/15/2017	ND	2.17	109	2.00	1.49	
Total Xylenes*	<0.150	0.150	07/15/2017	ND	6.45	108	6.00	1.48	
Total BTX	<0.300	0.300	07/15/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 104 % 72-148

Chloride, SM4500CI-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	07/13/2017	ND	416	104	400	3.77	

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	07/14/2017	ND	189	94.7	200	3.41	
DRO >C10-C28	<10.0	10.0	07/14/2017	ND	195	97.7	200	17.0	
EXT DRO >C28-C36	<10.0	10.0	07/14/2017	ND					

Surrogate: 1-Chlorooctane 104 % 28.3-164

Surrogate: 1-Chlorooctadecane 104 % 34.7-157

Cardinal Laboratories

\*=Accredited Analyte

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Mike Snyder For 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:	07/12/2017	Sampling Date:	07/11/2017
Reported:	07/18/2017	Sampling Type:	Soil
Project Name:	HORSE CREEK COM #2	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	UL-C SEC.11, T5S, R24E		

**Sample ID: SPE ( SURFACE ) (H701813-09)**

BTX 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	07/15/2017	ND	2.15	108	2.00	1.12	
Toluene*	<0.050	0.050	07/15/2017	ND	2.04	102	2.00	0.920	
Ethylbenzene*	<0.050	0.050	07/15/2017	ND	2.17	109	2.00	1.49	
Total Xylenes*	<0.150	0.150	07/15/2017	ND	6.45	108	6.00	1.48	
Total BTX	<0.300	0.300	07/15/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 103 % 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	07/13/2017	ND	416	104	400	3.77	

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	07/14/2017	ND	189	94.7	200	3.41	
DRO >C10-C28	<10.0	10.0	07/14/2017	ND	195	97.7	200	17.0	
EXT DRO >C28-C36	<10.0	10.0	07/14/2017	ND					

Surrogate: 1-Chlorooctane 91.2 % 28.3-164

Surrogate: 1-Chlorooctadecane 93.4 % 34.7-157

Cardinal Laboratories

\*=Accredited Analyte

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Mike Snyder For 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:	07/12/2017	Sampling Date:	07/11/2017
Reported:	07/18/2017	Sampling Type:	Soil
Project Name:	HORSE CREEK COM #2	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	UL-C SEC.11, T5S, R24E		

**Sample ID: SPE ( 3' ) (H701813-10)**

BTX 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	07/15/2017	ND	2.15	108	2.00	1.12	
Toluene*	<0.050	0.050	07/15/2017	ND	2.04	102	2.00	0.920	
Ethylbenzene*	<0.050	0.050	07/15/2017	ND	2.17	109	2.00	1.49	
Total Xylenes*	<0.150	0.150	07/15/2017	ND	6.45	108	6.00	1.48	
Total BTX	<0.300	0.300	07/15/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 103 % 72-148

Chloride, SM4500CI-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	07/13/2017	ND	416	104	400	3.77		

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	07/14/2017	ND	189	94.7	200	3.41	
DRO >C10-C28	<10.0	10.0	07/14/2017	ND	195	97.7	200	17.0	
EXT DRO >C28-C36	<10.0	10.0	07/14/2017	ND					

Surrogate: 1-Chlorooctane 88.2 % 28.3-164

Surrogate: 1-Chlorooctadecane 89.8 % 34.7-157

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Mike Snyder For 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:	07/12/2017	Sampling Date:	07/11/2017
Reported:	07/18/2017	Sampling Type:	Soil
Project Name:	HORSE CREEK COM #2	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	UL-C SEC.11, T5S, R24E		

**Sample ID: SPF ( SURFACE ) (H701813-11)**

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	07/15/2017	ND	2.15	108	2.00	1.12	
Toluene*	<0.050	0.050	07/15/2017	ND	2.04	102	2.00	0.920	
Ethylbenzene*	<0.050	0.050	07/15/2017	ND	2.17	109	2.00	1.49	
Total Xylenes*	<0.150	0.150	07/15/2017	ND	6.45	108	6.00	1.48	
Total BTEx	<0.300	0.300	07/15/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 103 % 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	07/13/2017	ND	416	104	400	3.77	

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	07/14/2017	ND	189	94.7	200	3.41	
DRO >C10-C28	<10.0	10.0	07/14/2017	ND	195	97.7	200	17.0	
EXT DRO >C28-C36	<10.0	10.0	07/14/2017	ND					

Surrogate: 1-Chlorooctane 89.0 % 28.3-164

Surrogate: 1-Chlorooctadecane 89.3 % 34.7-157

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Mike Snyder For 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:	07/12/2017	Sampling Date:	07/11/2017
Reported:	07/18/2017	Sampling Type:	Soil
Project Name:	HORSE CREEK COM #2	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	UL-C SEC.11, T5S, R24E		

**Sample ID: SPF ( 3' ) (H701813-12)**

BTX 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	07/15/2017	ND	2.15	108	2.00	1.12	
Toluene*	<0.050	0.050	07/15/2017	ND	2.04	102	2.00	0.920	
Ethylbenzene*	<0.050	0.050	07/15/2017	ND	2.17	109	2.00	1.49	
Total Xylenes*	<0.150	0.150	07/15/2017	ND	6.45	108	6.00	1.48	
Total BTX	<0.300	0.300	07/15/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 104 % 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	07/13/2017	ND	416	104	400	3.77	

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	07/14/2017	ND	189	94.7	200	3.41	
DRO >C10-C28	<10.0	10.0	07/14/2017	ND	195	97.7	200	17.0	
EXT DRO >C28-C36	<10.0	10.0	07/14/2017	ND					

Surrogate: 1-Chlorooctane 89.1 % 28.3-164

Surrogate: 1-Chlorooctadecane 90.7 % 34.7-157

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Mike Snyder For 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

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Mike Snyder For 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		 <p>Attn: Daniel Dominguez P.O. Box 1558 Eunice, NM 88231</p>																							
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		Horse Creek Com #2																									
Location		UL- C Sec. 11, T5S, R24E																									
Project Reference																											
EPI Sampler Name		David Robinson																									
LAB I.D.	SAMPLE I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX							PRESERV.		SAMPLING		BTEX 8021B	TPH 8015M Ext.	CHLORIDES (Cl <sup>-</sup> )	SULFATES (SO <sub>4</sub> <sup>2-</sup> )	pH	TCLP	OTHER >>>	PAH					
				GROUND WATER	WASTEWATER	SOIL	CRUDE OIL	SLUDGE	OTHER:	ACID/BASE	ICE/COOL	OTHER	DATE	TIME													
H701813	1 SPA (8')	G	1			X					X		11-Jul-17	10:10	X	X	X										
	2 SPA (16')	G	1			X					X		11-Jul-17	11:19	X	X	X										
	3 SPB (8')	G	1			X					X		11-Jul-17	11:40	X	X	X										
	4 SPB (16')	G	1			X					X		11-Jul-17	12:10	X	X	X										
	5 SPC (8')	G	1			X					X		11-Jul-17	12:20	X	X	X										
	6 SPC (16')	G	1			X					X		11-Jul-17	13:08	X	X	X										
	7 SPD (Surface)	G	1			X					X		11-Jul-17	13:45	X	X	X										
	8 SPD (3')	G	1			X					X		11-Jul-17	13:55	X	X	X										
	9 SPE (Surface)	G	1			X					X		11-Jul-17	14:20	X	X	X										
	10 SPE (3')	G	1			X					X		11-Jul-17	14:30	X	X	X										

Sampler Relinquished:		Date 7-12-17	Received By:	E-mail results to: ddominguezepi@gmail.com & cjohnston@vnrllc.com	
Relinquished by: <i>David Robinson</i>		Time 6:00 am	<i>[Signature]</i>	NOTES:	
Relinquished by: <i>[Signature]</i>		Date 7/12/17	Received By: (lab staff)	& bboonepi@gmail.com	
Time 3:40 pm		<i>[Signature]</i>	Checked By:		
Delivered by: <i>[Signature]</i>		Sample Cool & Intact	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	TO- #75	

-6.98  
Corrected - 7.158



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

### Chain of Custody Form

LAB Cardinal

LAB I.D.		SAMPLE I.D.		(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX					PRESERV.			SAMPLING		BTEX 8021B	TPH 8015M Ext.	CHLORIDES (Cl <sup>-</sup> )	SULFATES (SO <sub>4</sub> <sup>=</sup> )	pH	TCLP	OTHER >>>	PAH
						GROUND WATER	WASTEWATER	SOIL	CRUDE OIL	SLUDGE	OTHER:	ACID/BASE	ICE/COOL	OTHER	DATE								
11	SPF (Surface)	G	1					X					X		11-Jul-17	14:45	X	X	X				
12	SPF (3')	G	1					X					X		11-Jul-17	15:00	X	X	X				
13																							
14																							
15																							
16																							
17																							
18																							
19																							
20																							

**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** Horse Creek Com #2

**Location** UL- C Sec. 11, T5S, R24E

**Project Reference**

**EPI Sampler Name** David Robinson

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

**ANALYSIS REQUEST**

**Sampler Relinquished:** *David Robinson*

**Relinquished by:** *[Signature]*

**Delivered by:** *[Signature]*

**Date** 7-12-17 **Time** 6:00 am

**Date** 7/12/17 **Time** 3:30 pm

**Received By:** (lab staff) *[Signature]*

**Sample Cool & Intact**  
☒ Yes ☐ No

**Checked By:** *T.O. #15*

**NOTES:**

**E-mail results to:** ddominguezepi@gmail.com & cjohnston@vnrlc.com & bbooneepi@gmail.com

$-6.9^{\circ}\text{C}$   
Corrected  $-7.15^{\circ}\text{C}$

**ATTACHMENT IV**  
**Copy of Initial NMOCD Form C-141**

# NM OIL CONSERVATION

ARTESIA DISTRICT

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

JAN 10 2017

Form C-141  
Revised August 8, 2011

**RECEIVED** appropriate District Office in  
accordance with 19.15.29 NMAC.

## Release Notification and Corrective Action

NAB1701252341 OPERATOR ☒ Initial Report ☐ Final Report

Name of Company: Vanguard Operating, LLC <u>268350</u>	Contact : Chuck Johnston
Address: 4001 Penbrook Suite 201 Odessa, TX 79762	Telephone No. 432-202-4771
Facility Name: Horse Creek Com #002	Facility Type: Well Site

Surface Owner	Mineral Owner	API No. 30-005-61335
---------------	---------------	----------------------

## LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
E	11	05 S	24E	1930	North	660	West	Chaves

Latitude 33.8888512 Longitude -104.3996964

## NATURE OF RELEASE

Type of Release: Produced Water	Volume of Release: Unknown	Volume Recovered:
Source of Release: Wellhead area	Date and Hour of Occurrence	Date and Hour of Discovery 12-20-2016 11:47 a.m. by field inspector
Was Immediate Notice Given? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom?	
By Whom?	Date and Hour:	
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.*		
Describe Cause of Problem and Remedial Action Taken. Appears to be corrosion on wellhead and casing valve leak.		
Describe Area Affected and Cleanup Action Taken. Approximately a 15 ft X 15 ft. area at the wellhead. A crew will make repairs. A backhoe and soil tester will check for depth of the contaminated area. Once determined the soil will be remediated and backfilled with new soil.		
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: <u>Chuck Johnston</u>	OIL CONSERVATION DIVISION	
Printed Name: Chuck Johnston	Signed By: <u>[Signature]</u> Approved by Environmental Specialist:	
Title: EHS / Operations Specialist	Approval Date: <u>1/12/17</u>	Expiration Date: <u>N/A</u>
E-mail Address: cjohnston@vnrllc.com	Conditions of Approval: <u>See attached</u>	Attached <input checked="" type="checkbox"/>
Date: 1-6-2016	Phone: 432-202-4771	

\* Attach Additional Sheets If Necessary

2RP-4071