APPROVED
By Olivia Yu at 12:10 pm, Oct 07, 2018

NMOCD approves of the delineation completed for 1RP-5073. See email correspondence for clarifications about remediation.

VANGUARD NATURAL RESOURCES, INC.

Chuck Johnston

REMEDIATION PLAN

Abo Pump Water Station B-6

API NO. 30-025-05430 (CS Caylor SR Estate No. 003)

1RP- 5073

Release Date: 5/22/13

Unit B, Section 6, Township 17S, Range 17E

September 4, 2018

Prepared By:

WHITE BUFFALO ENVIRONMENTAL INC.

White Buffalo Environmental, Inc.

407 East Broadway

Hobbs, NM 88240

Phone: (575)738-0424

Fax: (575)738-0430

September 4, 2018

Vanguard Natural Resources, Inc.
C/O Chuck Johnston
205 South JBS Parkway
Odessa, TX 79761

New Mexico Energy, Minerals, & Natural Resources
Oil Conservation Division, Environmental Bureau – District I
C/O Olivia Yu
1625 N. French Drive
Hobbs, NM 88240

RE: Remediation Work Plan Request
Vanguard – Abo Pump Station B-6

Dear Chuck and Olivia,

Vanguard Energy has retained White Buffalo Environmental to address the environmental concerned detailed herein.

The site is located in Lea County, NM, directly off of Hwy 18 between Lovington and Hobbs, New Mexico. The incident occurred as a result of a plug in a tee located on the suction line going to the pump had come loose, causing a release of produced water inside the unlined earthen containment. The tank was immediately isolated and the line was repaired. An unknown amount of produced water was released and 115bbls of produced water was recovered by use of vacuum truck.

The visually affected area of impacted soil is approximately 10,566 sq. ft. The produced water associated with this release is considered TCRA Exempt Oilfield Waste. No evidence of any other contaminants was observed during the delineation process.

Ground Water Data

WBE has conducted an extended groundwater study of the area and it has been determined that according to the New Mexico Office of the Engineer, the vadose zone depth at this release location is estimated to a total depth of 70'bgs, this well is 583' from the site listed herein.

Using the Table I, Closure Criteria for Soils Impacted by a Release Dated 08/14/2018, this site falls under the site ranking of 51' to 100'bgs. This site was delineated before the new rule came into effect. The site rankings are as follows:

Chloride: 10,000 mg/kg
TPH: 2,500 mg/kg
GRO + DRO: 1,000 mg/kg
BTEX: 50 mg/kg
Benzene: 10 mg/kg

Background

The site had an accidental discharge of fluid associated with the Abo Pump Station B-6. It was estimated that over 115bbls of produced water was released, due to the recovery volumes being an estimated 115bbls of produced water.

On May 29, 2018, White Buffalo Environmental personnel-initiated delineation of the site as per the Condition of Approval (COA) received from the NMOCD. Surface soil samples were collected and field tested for chloride. The site was fully delineated, horizontally and vertically to show migration of chloride contamination. Soil samples were taken from seven sample points starting at 1' and 2' intervals by use of hand auger and backhoe. Each sample was tested for chloride and hydrocarbons. SP1-SP12 surface samples ranged from 580-12,554 mg/kg using chloride strip and titration method during field testing operations. No hydrocarbons were detected during any of the field sampling for this site.

The surface field samples are as follows:

SP1-Surface-12,554 mg/kg for chloride
SP2-Surface-9,632 mg/kg for chloride
SP3-Surface-1,596 mg/kg for chloride
SP4-Surface-708 mg/kg for chloride
SP5-Surface-4,260 mg/kg for chloride
SP6-Surface-6,192 mg/kg for chloride
SP7-Surface-5,612 mg/kg for chloride
SP8-Surface-7,992 mg/kg for chloride
SP9-Surface-10,032 mg/kg for chloride
SP10-Surface-4,092 mg/kg for chloride
SP11-Surface-580 mg/kg for chloride
SP12-Surface-2,914 mg/kg for chloride

At this time vertical sampling continued on each sample point until chloride levels were reached using the Old Rule with the requirement being 600 mg/kg concentrations. The greatest area of impact was in the facility berm area. No hydrocarbons were detected except on SP3 at 6'bgs but the concentrations were found by lab analysis only and were below the regulatory levels. Several of the sample points, the crews encountered

impervious rock, rock bars and rock teeth were used. The below bottom hole concentrations were field tested and confirmed with Cardinal labs.

The vertical bottom sample results from the commercial laboratory are as follows:

SP1-24'bgs-304 mg/kg chloride, <0.300 mg/kg BTEX, <10.0 mg/kg TPH
SP2-6'bgs-176 mg/kg chloride, <0.300 mg/kg BTEX, <10.0 mg/kg TPH
SP3-6'bgs-352 mg/kg chloride, <0.300 mg/kg BTEX, <120.60 mg/kg TPH
SP4-6'bgs-432 mg/kg chloride, <0.300 mg/kg BTEX, <10.0 mg/kg TPH
SP5-14'bgs-208 mg/kg chloride, <0.300 mg/kg BTEX, <10.0 mg/kg TPH
SP6-28'bgs-560 mg/kg chloride, <0.300 mg/kg BTEX, <10.0 mg/kg TPH
SP7-40'bgs-352 mg/kg chloride, <0.300 mg/kg BTEX, <10.0 mg/kg TPH
SP8-10'bgs-320 mg/kg chloride, <0.300 mg/kg BTEX, <10.0 mg/kg TPH
SP9-10'bgs-352 mg/kg chloride, <0.300 mg/kg BTEX, <10.0 mg/kg TPH
SP10-28'bgs-608 mg/kg chloride, <0.300 mg/kg BTEX, <10.0 mg/kg TPH
SP11-6'bgs-496 mg/kg chloride, <0.300 mg/kg BTEX, <10.0 mg/kg TPH
SP12-8'bgs-352 mg/kg chloride, <0.300 mg/kg BTEX, <10.0 mg/kg TPH

The site was then fully delineated for horizontal extent. The horizontal delineation was sampled in 2' intervals until field samples indicated that we had reached the end of the horizontal investigation. SW1 thru SW6 showed that the field samples ranged from 84-580 mg/kg on chloride. SW5 expanded across an old overflow pit alongside a buried unmarked line. Hydrocarbons were not detected during sidewall field sampling. The final side wall samples were sent to Cardinal Laboratories for final confirmation. SW6 is at the water tanks of the facility which came back at 624 mg/kg chlorides.

The horizontal sidewall sample results from the commercial laboratory are as follows:

SW1-10'-528 mg/kg chloride, <0.300 mg/kg BTEX, <10.0 mg/kg TPH
SW2-4'-256 mg/kg chloride, <0.300 mg/kg BTEX, 10.0 mg/kg TPH
SW3-2'-288 mg/kg chloride, <0.300 mg/kg BTEX, <10.00 mg/kg TPH
SW4-6'-304 mg/kg chloride, <0.300 mg/kg BTEX, <10.00 mg/kg TPH
SW5-20'-416 mg/kg chloride, <0.300 mg/kg BTEX, <10.0 mg/kg TPH
SW6-8'-624 mg/kg chloride, <0.300 mg/kg BTEX, <10.0 mg/kg TPH

Conclusion

During the delineation process, WBE encountered several unmarked lines in the area of SP1, SP8, SP9 and SP10 running west and east buried at 4'bgs. As well there was a line encountered going north and south thru SP9 and SP5, buried 4'bgs. The owner of the unmarked lines exposed during this sample event were never found. Typically based on the delineation, a work plan for 4' and a liner would be the best course of action to fully close this site to NMOCD Guidelines for Spills and Releases. Unfortunately, it is not feasible to cover lines with a liner in the event that the buried line was to rupture and cause a release. Based on the ground water depth at this site which is 70' below ground surface and that only the surface samples were above the new NMOCD

Guidelines adopted on 08/14/2018, WBE would like to offer the following remedial action plan.

Excavate a total of 2'bgs, which will include the entire impacted area measuring 18,189.51 sq. ft. and haul the contaminated soil to an approved disposal. Final closure samples will be taken at each sample point and sidewall sample points as defined during the delineation process. These samples will be titrated in the field for chlorides, then taken to Cardinal Lab for closure confirmation. Further sidewall closure samples will be taken in the area of the old overflow pit area when delineation takes place. Once closure lab confirmation is received, WBE will backfill the entire site excavation with clean caliche and the disturbed area will be then contoured back to its natural state. Berms will be constructed around the facility following SPCC Guidelines and the berms around the location pad will be rebuilt to ensure that fluids would not escape the site if another release occurred at this site. A final closure report will be then sent to the NMOCD for closure of this release herein.

Thank you for allowing White Buffalo Environmental to assist you in this matter. Please contact me with any questions and/or concerns.

Sincerely,

Natalie Gladden

Natalie Gladden
Environmental & Regulatory Director
White Buffalo Environmental
407 East Broadway
Hobbs, NM 88240
Office (575) 738-0424
Fax (575) 738-0430
Cell (575) 390-6397
Email: natalie.gladden@whitebuffalo.com

Attachments:

- C-141 & COA
- Groundwater Data
- Sample Data and Remediation Site Map with Sample Points
- Lab Analyses
- Proposed Excavation Map w/Sample Points
- Site Photos

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

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised April 3, 2017

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

Release Notification and Corrective Action

OPERATOR

X Initial Report ☐ Final Report

Name of Company Vanguard Operating LLC	Contact John Terry
Address 4001 Penbrook Suite 201 Odessa, TX 79762	Telephone No. 575-631-6933
Facility Name Abo Pump Station B-6	Facility Type Battery

Surface Owner	Mineral Owner	API No.
Federal	Fee	

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
B	6	17S	37E					Lea

Latitude 32.869856 **Longitude** -103.28910483

NATURE OF RELEASE

Type of Release Produced Water	Volume of Release	Volume Recovered 115
Source of Release A cap located on a tee in the suction line of the pump came off.	Date and Hour of Occurrence 5-16-2018	Date and Hour of Discovery 5-16-2018 11:00 am
Was Immediate Notice Given? X Yes ☐ No ☐ Not Required	If YES, To Whom? Maxey Brown	
By Whom? John Terry	Date and Hour 5-16-2018 4:06 pm	
Was a Watercourse Reached? ☐ Yes X No	If YES, Volume Impacting the Watercourse.	
If a Watercourse was Impacted, Describe Fully.*		

RECEIVED
By Olivia Yu at 8:53 am, May 23, 2018

Describe Cause of Problem and Remedial Action Taken.*

A plug in a tee located on the suction line going to the pump came loose allowing produce water to spill inside of the containment. The tank was isolated and the line is being repaired.

Describe Area Affected and Cleanup Action Taken.*

The water was released into the containment and a vacuum truck removed the standing water.

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

Signature:	OIL CONSERVATION DIVISION
Printed Name: Chuck Johnston	Approved by Environmental Specialist:
Title EHS Specialist	Approval Date: 5/23/2018 Expiration Date:
E-mail Address: cjohnston@vnrenergy.com	Conditions of Approval: see attached directive Attached ☑
Date: 05/22/2018 Phone:432-202-4771	

* Attach Additional Sheets If Necessary

1RP-5073 nOY1814332779

fOY1814332674

pOY1814333136

Operator/Responsible Party,

The OCD has received the form C-141 you provided on _5/22/2018_ regarding an unauthorized release. The information contained on that form has been entered into our incident database and remediation case number _1RP-5073__ has been assigned. **Please refer to this case number in all future correspondence.**

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

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

Release characterization is the first phase of corrective action unless the release is ongoing or is of limited volume and all impacts can be immediately addressed. Proper and cost-effective remediation typically cannot occur without adequate characterization of the impacts of any release. Furthermore, the Division has the ability to impose reasonable conditions upon the efforts it oversees. **As such, the Division is requiring a workplan for the characterization of impacts associated with this release be submitted to the OCD District _1_ office in __Hobbs____ on or before _6/23/2018_. If and when the release characterization workplan is approved, there will be an associated deadline for submittal of the resultant investigation report. Modest extensions of time to these deadlines may be granted, but only with acceptable justification.**

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

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

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

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

● Composite sampling is not generally allowed.

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

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

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

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

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

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

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

From: Brown, Maxey G, EMNRD
To: Yu, Olivia, EMNRD
Subject: Vanguard
Date: Wednesday, May 16, 2018 4:12:46 PM

4:10 pm vanguard Abo B prod wtr. Release and recovered > 100 bbls. 575-631-6933. Will submit c141.

Sent from Samsung Mobile

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	Code	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec	Twn	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
L 13414 POD5		L	LE	4	1	2	06	17S	37E	660218	3637979	231	110	93	17
L 01435		L	LE	3	3	4	31	16S	37E	660110	3638415*	261	120	50	70
L 13414 POD1		L	LE	4	1	2	06	17S	37E	660176	3637917	261	110	93	17
L 13038 POD1		L	LE	4	1	2	06	17S	37E	660223	3637928	275	115		
L 13414 POD3		L	LE	2	3	2	06	17S	37E	660143	3637890	276	110	93	17
L 13414 POD2		L	LE	4	1	2	06	17S	37E	660194	3637900	284	102	93	9
L 13038 POD4		L	LE	2	3	2	06	17S	37E	660120	3637865	295	120		
L 13038 POD2		L	LE	2	3	2	06	17S	37E	660146	3637865	300	115		
L 13038 POD3		L	LE	2	3	2	06	17S	37E	660146	3637865	300	115		
L 01604 POD1		L	LE	1	2	2	06	17S	37E	660397	3638214*	333	105		
L 13414 POD4		L	LE	2	3	2	06	17S	37E	660248	3637870	337	110	93	17
L 10652		L	LE		4	3	31	16S	37E	659808	3638511*	439	248	72	176
L 05458		L	LE	1	4	4	31	16S	37E	660512	3638620*	641	240	50	190
L 02078		L	LE		4	4	31	16S	37E	660613	3638521*	654	112	50	62
L 14377 POD4		L	LE	2	3	3	31	16S	37E	659492	3638571	710	120		
L 14377 POD2		L	LE	2	3	3	31	16S	37E	659504	3638600	717	120		
L 01107 POD1		L	LE	1	1	1	05	17S	37E	660800	3638218*	733	92	38	54
L 14377 POD1		L	LE	2	3	3	31	16S	37E	659484	3638621	747	118		
L 00449		L	LE	1	1	4	06	17S	37E	660008	3637404*	755	100	70	30
L 00449 POD5		L	LE	1	1	4	06	17S	37E	660008	3637404*	755	247	101	146
L 00449 POD5	R	L	LE	1	1	4	06	17S	37E	660008	3637404*	755	247	101	146
L 14377 POD3		L	LE	2	3	3	31	16S	37E	659423	3638586	776	115		
L 01398		L	LE		1	1	05	17S	37E	660901	3638119*	833	115	50	65
L 01220 POD1		L	LE		3	3	31	16S	37E	659311	3638504*	833	120	55	65
L 01719		L	LE	2	2	3	31	16S	37E	659901	3639011*	870	148	104	44
L 01719	R	L	LE	2	2	3	31	16S	37E	659901	3639011*	870	148	104	44
L 02561		L	LE	3	3	3	31	16S	37E	659210	3638403*	893	137	50	87
L 02549		L	LE	3	3	1	05	17S	37E	660807	3637616*	915	138	65	73
L 00449 S		L	LE	2	2	4	06	17S	37E	660611	3637409*	923	120	48	72
L 00449 S	R	L	LE	2	2	4	06	17S	37E	660611	3637409*	923	120	48	72

L 11773	L	LE	2	2	4	06	17S	37E	660611	3637409	923	235
L 14228 POD2	L	LE	4	1	3	31	16S	37E	659351	3638764	940	120

Average Depth to Water: **72 feet**

Minimum Depth: **38 feet**

Maximum Depth: **104 feet**

Record Count: 32

UTMNAD83 Radius Search (in meters):

Easting (X): 660068.77 **Northing (Y):** 3638156.62 **Radius:** 1000

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

New Mexico Office of the State Engineer
Point of Diversion Summary

Well Tag	POD Number	(quarters are 1=NW 2=NE 3=SW 4=SE) (quarters are smallest to largest) Q64	Q16	Q4	Sec	Tws	Rng	(NAD83 UTM in meters) X	Y
	L 13414 POD5	4	1	2	06	17S	37E	660218	3637979

Driller License:	1575	**Driller Company:**	TALON/LPE		
Driller Name:	CURRIE, SHANE				
Drill Start Date:	12/03/2013	**Drill Finish Date:**	12/03/2013	**Plug Date:**	
Log File Date:	03/21/2014	**PCW Rcv Date:**		**Source:**	Shallow
Pump Type:		**Pipe Discharge Size:**		**Estimated Yield:**	
Casing Size:	2.00	**Depth Well:**	110 feet	**Depth Water:**	93 feet

Water Bearing Stratifications:	Top	Bottom	Description
	93	110	Other/Unknown

Casing Perforations:	Top	Bottom
	83	110

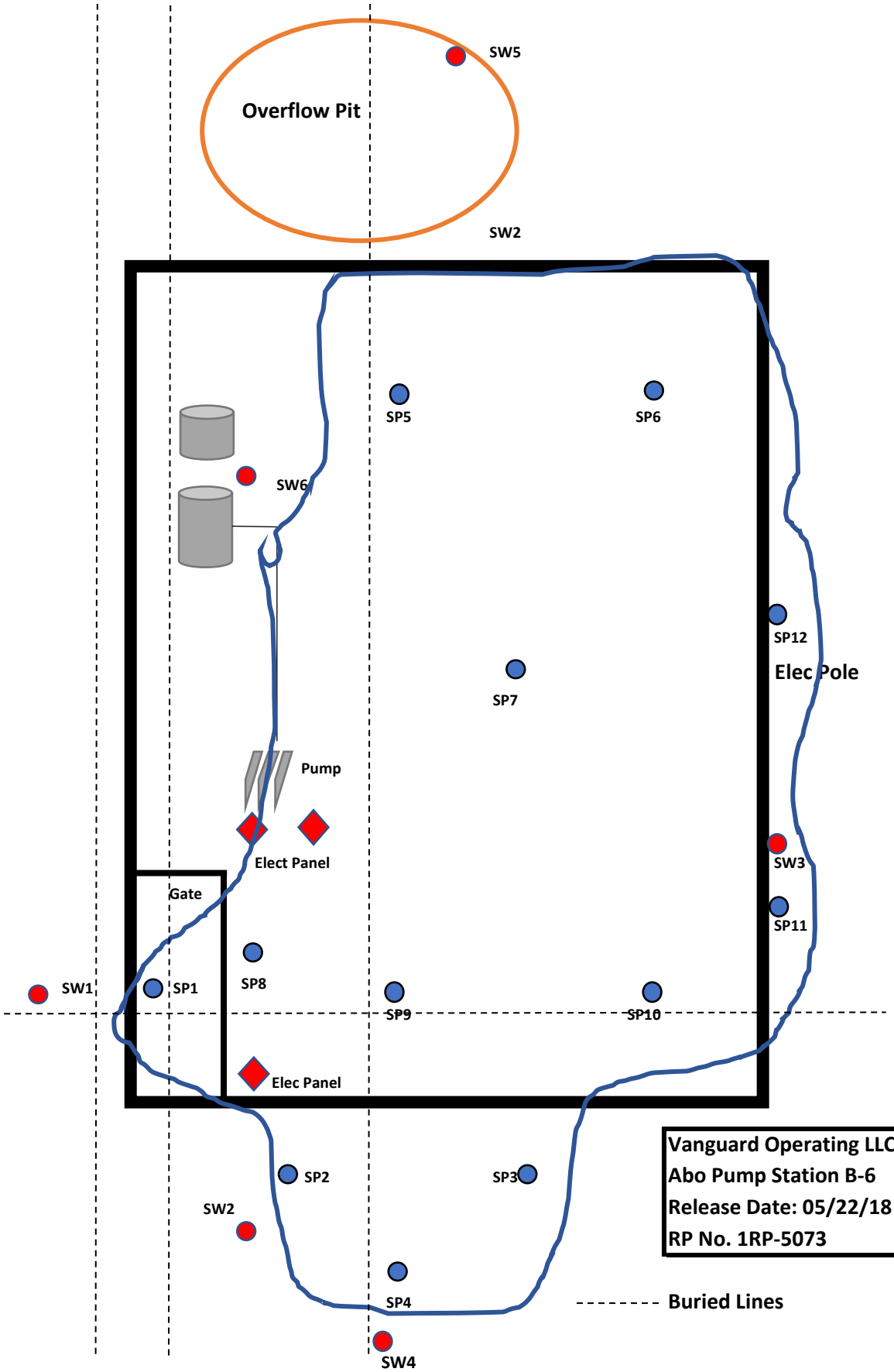
VANGUARD
ABO PWS B-6

FT	SP1	FT	SP2	FT	SP3	FT	SP4	FT	SP5	FT	SP6	FT	SP7
SUR	>12,554	SUR	9632	SUR	1596	SUR	708	SUR	4260	SUR	6192	SUR	5612
1'	3586	1'	6858	1'	CLAY	1'	1242	1'	2032	1'	2800	1'	3298
2'	2914	2'	1020	2'	950	2'	952	2'	1058	2'	2094	2'	1502
4'	3446	4'	166	4'	450	3'	568	4'	2094	4'	2389	4'	2274
6'	2914	6'	166	6'	330	4'	484	6'	1502	5'	1730	6'	1930
8'	3446					6'	594	8'	966	6'	1876	8'	1930
10'	3168							10'	796	7'	2200	10'	2682
12'	3168							12'	330	8'	1876	12'	2247
14'	3168							14'	166	10'	3038	14'	1502
16'	2470									12'	2032	16'	ROCK
18'	1876									14'	1470	18'	1058
20'	1242									16'	1730	20'	1158
22'	580									18'	1242	22'	966
24'	520									20'	1876	24'	720
										22'	796	26'	796
										24'	520	28'	796
										26'	580	30'	1182
										28'	594	32'	1060
												34'	720
												36'	580
												40'	520
T24'	86							T14'	64			T40'	78
L24'	304	L6'	176	L6'	352	L4'	432	L14'	208	L28'	560	L40'	352
FT	**SP8**	**FT**	**SP9**	**FT**	**SP10**	**FT**	**SP11**	**FT**	**SP12**				
SUR	7992	SUR	10032	SUR	4092	SUR	580	SUR	2914				
1'	2682	1'	2274	1'	1776	1'	720	1'	2274				
2'	5892	2'	1470	2'	784	2'	1058	2'	580				
3'	2470	3'	1730	4'	3038	3'	796	3'	2682				
4'	1242	4'	1502	6'	568	4'	568	4'	1182				
6'	966	6'	1058	8'	2682	6'	484	6'	520				
8'	594	8'	388	10'	2682			8'	358				
10'	418	10'	388	12'	2470								
				14'	2274								
				16'	2094								
				18'	1164								
				20'	1060								
				22'	630								
				24'	680								
				26'	584								
				28'	584								
T10'	82	T10'	70	T28'	100	T6'	90	T8'	88				
L10'	320	L10'	352	L28'	608	L6'	496	L8'	352				

FT	SW1	FT	SW2	FT	SW3	FT	SW4	FT	SW5	FT	SW6		
2'	1776	Sur	782	Sur	372	Sur	961	2'	520	2'	966		
4'	3168	2'	388	2'	358	2'	830	4'	1158	4'	630		
6'	966	4'	278			4'	520	6'	1158	6'	588		
8'	796					6'	418	8'	706	8'	568		
10'	580							10'	706				
								12'	1182				
								14'	1182				
								16'	630				
								18'	568				
								20'	450				
T10'	88							T20	84	T8'	78		
L10'	528	L4'	256	L2'	288	L6'	304	L20	416	L8'	624		

Lab data results

Titration



SP ID	Lat/Long
SP1	32 52'11.09"N
	103 17'20.87"W
SP2	32 52'10.85"N
	103 17'20.51"W
SP3	32 52'11.01"N
	103 17'20.21"W
SP4	32 52'10.74"N
	103 17'20.19"W
SP5	32 52'11.57" N
	103 17' 21.05"W
SP6	32 52'11.78"N
	103 17'20.72"W
SP7	32 52'11.52"N
	103 17'20.65"W
SP8	32 52'11.18" N
	103 17'20.76"W
SP9	32 52'11.21"N
	103 17'20.52"W
SP10	32 52'11.37"N
	103 17'20.22"W
SP11	32 52'11.63"N
	103 17'20.18"W
SP12	32 52'11.90"N
	103 17'20.46"W

SW1	32 52'10.99"N
	103 17' 20.93"W
SW2	32 52' 10.70"N
	103 17'20.68"W
SW3	32 52' 11.77"N
	103 17 20.26"W
SW4	32 52' 10.68" N
	103 17' 20.16"W
SW5	32 52' 12.342"N
	103 17' 21.50"W
SW6	32 52' 11.49"N
	103 17'21.09"W

Vanguard Operating LLC
Abo Pump Station B-6
Release Date: 05/22/18
RP No. 1RP-5073

CARDINAL Laboratories

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

June 11, 2018

NATALIE GLADDEN

WHITE BUFFALO

8908 YALE AVE #210

TULSA, OK 74137

RE: ABO PUMP STATION

Enclosed are the results of analyses for samples received by the laboratory on 06/05/18 16:05.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-17-10. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

Celey D. Keene

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

WHITE BUFFALO
NATALIE GLADDEN
8908 YALE AVE #210
TULSA OK, 74137
Fax To:

Received:	06/05/2018	Sampling Date:	05/30/2018
Reported:	06/11/2018	Sampling Type:	Soil
Project Name:	ABO PUMP STATION	Sampling Condition:	Cool & Intact
Project Number:	B-6	Sample Received By:	Tamara Oldaker
Project Location:	NONE GIVEN		

Sample ID: SW2 - 4' (H801526-01)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/06/2018	ND	2.06	103	2.00	0.251	
Toluene*	<0.050	0.050	06/06/2018	ND	2.06	103	2.00	0.602	
Ethylbenzene*	<0.050	0.050	06/06/2018	ND	2.09	104	2.00	0.846	
Total Xylenes*	<0.150	0.150	06/06/2018	ND	6.49	108	6.00	0.729	
Total BTEX	<0.300	0.300	06/06/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID *108 %* *69.8-142*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**256**	16.0	06/06/2018	ND	464	116	400	3.51	

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	06/05/2018	ND	209	105	200	0.669	
DRO >C10-C28*	**10.0**	10.0	06/05/2018	ND	226	113	200	0.0120	
EXT DRO >C28-C36	<10.0	10.0	06/05/2018	ND					

Surrogate: 1-Chlorooctane *86.3 %* *41-142*

Surrogate: 1-Chlorooctadecane *102 %* *37.6-147*

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

WHITE BUFFALO
NATALIE GLADDEN
8908 YALE AVE #210
TULSA OK, 74137
Fax To:

Received:	06/05/2018	Sampling Date:	05/30/2018
Reported:	06/11/2018	Sampling Type:	Soil
Project Name:	ABO PUMP STATION	Sampling Condition:	Cool & Intact
Project Number:	B-6	Sample Received By:	Tamara Oldaker
Project Location:	NONE GIVEN		

Sample ID: SW3 - 2' (H801526-02)

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	06/06/2018	ND	2.06	103	2.00	0.251	
Toluene*	<0.050	0.050	06/06/2018	ND	2.06	103	2.00	0.602	
Ethylbenzene*	<0.050	0.050	06/06/2018	ND	2.09	104	2.00	0.846	
Total Xylenes*	<0.150	0.150	06/06/2018	ND	6.49	108	6.00	0.729	
Total BTEX	<0.300	0.300	06/06/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID *109 %* *69.8-142*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**288**	16.0	06/06/2018	ND	464	116	400	3.51	

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	06/05/2018	ND	209	105	200	0.669	
DRO >C10-C28*	<10.0	10.0	06/05/2018	ND	226	113	200	0.0120	
EXT DRO >C28-C36	<10.0	10.0	06/05/2018	ND					

Surrogate: 1-Chlorooctane *84.5 %* *41-142*

Surrogate: 1-Chlorooctadecane *101 %* *37.6-147*

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

WHITE BUFFALO
NATALIE GLADDEN
8908 YALE AVE #210
TULSA OK, 74137
Fax To:

Received:	06/05/2018	Sampling Date:	05/30/2018
Reported:	06/11/2018	Sampling Type:	Soil
Project Name:	ABO PUMP STATION	Sampling Condition:	Cool & Intact
Project Number:	B-6	Sample Received By:	Tamara Oldaker
Project Location:	NONE GIVEN		

Sample ID: SW4 - 6' (H801526-03)

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	06/07/2018	ND	2.03	101	2.00	2.79	
Toluene*	<0.050	0.050	06/07/2018	ND	2.03	101	2.00	1.82	
Ethylbenzene*	<0.050	0.050	06/07/2018	ND	2.05	103	2.00	1.85	
Total Xylenes*	<0.150	0.150	06/07/2018	ND	6.40	107	6.00	1.86	
Total BTEX	<0.300	0.300	06/07/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID *109 %* *69.8-142*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**304**	16.0	06/06/2018	ND	464	116	400	3.51	

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	06/05/2018	ND	209	105	200	0.669	
DRO >C10-C28*	<10.0	10.0	06/05/2018	ND	226	113	200	0.0120	
EXT DRO >C28-C36	<10.0	10.0	06/05/2018	ND					

Surrogate: 1-Chlorooctane *91.3 %* *41-142*

Surrogate: 1-Chlorooctadecane *109 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

WHITE BUFFALO
NATALIE GLADDEN
8908 YALE AVE #210
TULSA OK, 74137
Fax To:

Received:	06/05/2018	Sampling Date:	05/30/2018
Reported:	06/11/2018	Sampling Type:	Soil
Project Name:	ABO PUMP STATION	Sampling Condition:	Cool & Intact
Project Number:	B-6	Sample Received By:	Tamara Oldaker
Project Location:	NONE GIVEN		

Sample ID: SP2 - 6' (H801526-04)

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	06/07/2018	ND	2.03	101	2.00	2.79	
Toluene*	<0.050	0.050	06/07/2018	ND	2.03	101	2.00	1.82	
Ethylbenzene*	<0.050	0.050	06/07/2018	ND	2.05	103	2.00	1.85	
Total Xylenes*	<0.150	0.150	06/07/2018	ND	6.40	107	6.00	1.86	
Total BTEX	<0.300	0.300	06/07/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID *110 %* *69.8-142*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**176**	16.0	06/06/2018	ND	464	116	400	3.51	

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	06/05/2018	ND	209	105	200	0.669	
DRO >C10-C28*	<10.0	10.0	06/05/2018	ND	226	113	200	0.0120	
EXT DRO >C28-C36	<10.0	10.0	06/05/2018	ND					

Surrogate: 1-Chlorooctane *93.1 %* *41-142*

Surrogate: 1-Chlorooctadecane *109 %* *37.6-147*

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

WHITE BUFFALO
NATALIE GLADDEN
8908 YALE AVE #210
TULSA OK, 74137
Fax To:

Received:	06/05/2018	Sampling Date:	05/30/2018
Reported:	06/11/2018	Sampling Type:	Soil
Project Name:	ABO PUMP STATION	Sampling Condition:	Cool & Intact
Project Number:	B-6	Sample Received By:	Tamara Oldaker
Project Location:	NONE GIVEN		

Sample ID: SP3 - 6' (H801526-05)

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	06/07/2018	ND	2.03	101	2.00	2.79	
Toluene*	<0.050	0.050	06/07/2018	ND	2.03	101	2.00	1.82	
Ethylbenzene*	<0.050	0.050	06/07/2018	ND	2.05	103	2.00	1.85	
Total Xylenes*	<0.150	0.150	06/07/2018	ND	6.40	107	6.00	1.86	
Total BTEX	<0.300	0.300	06/07/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID *110 %* *69.8-142*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**352**	16.0	06/06/2018	ND	464	116	400	3.51	

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	06/06/2018	ND	160	80.0	200	13.9	
DRO >C10-C28*	**91.7**	10.0	06/06/2018	ND	166	83.0	200	14.0	
EXT DRO >C28-C36	**28.9**	10.0	06/06/2018	ND					

Surrogate: 1-Chlorooctane *87.3 %* *41-142*

Surrogate: 1-Chlorooctadecane *89.0 %* *37.6-147*

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

WHITE BUFFALO
NATALIE GLADDEN
8908 YALE AVE #210
TULSA OK, 74137
Fax To:

Received:	06/05/2018	Sampling Date:	05/30/2018
Reported:	06/11/2018	Sampling Type:	Soil
Project Name:	ABO PUMP STATION	Sampling Condition:	Cool & Intact
Project Number:	B-6	Sample Received By:	Tamara Oldaker
Project Location:	NONE GIVEN		

Sample ID: SP4 - 6' (H801526-06)

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	06/07/2018	ND	2.03	101	2.00	2.79	
Toluene*	<0.050	0.050	06/07/2018	ND	2.03	101	2.00	1.82	
Ethylbenzene*	<0.050	0.050	06/07/2018	ND	2.05	103	2.00	1.85	
Total Xylenes*	<0.150	0.150	06/07/2018	ND	6.40	107	6.00	1.86	
Total BTEX	<0.300	0.300	06/07/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID *108 %* *69.8-142*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**432**	16.0	06/06/2018	ND	464	116	400	3.51	

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	06/06/2018	ND	160	80.0	200	13.9	
DRO >C10-C28*	<10.0	10.0	06/06/2018	ND	166	83.0	200	14.0	
EXT DRO >C28-C36	<10.0	10.0	06/06/2018	ND					

Surrogate: 1-Chlorooctane *90.0 %* *41-142*

Surrogate: 1-Chlorooctadecane *86.9 %* *37.6-147*

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

WHITE BUFFALO
NATALIE GLADDEN
8908 YALE AVE #210
TULSA OK, 74137
Fax To:

Received:	06/05/2018	Sampling Date:	05/31/2018
Reported:	06/11/2018	Sampling Type:	Soil
Project Name:	ABO PUMP STATION	Sampling Condition:	Cool & Intact
Project Number:	B-6	Sample Received By:	Tamara Oldaker
Project Location:	NONE GIVEN		

Sample ID: SP6 - 28' (H801526-07)

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	06/07/2018	ND	2.03	101	2.00	2.79	
Toluene*	<0.050	0.050	06/07/2018	ND	2.03	101	2.00	1.82	
Ethylbenzene*	<0.050	0.050	06/07/2018	ND	2.05	103	2.00	1.85	
Total Xylenes*	<0.150	0.150	06/07/2018	ND	6.40	107	6.00	1.86	
Total BTEX	<0.300	0.300	06/07/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID *107 %* *69.8-142*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**560**	16.0	06/06/2018	ND	464	116	400	3.51	

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	06/06/2018	ND	160	80.0	200	13.9	
DRO >C10-C28*	<10.0	10.0	06/06/2018	ND	166	83.0	200	14.0	
EXT DRO >C28-C36	<10.0	10.0	06/06/2018	ND					

Surrogate: 1-Chlorooctane *97.8 %* *41-142*

Surrogate: 1-Chlorooctadecane *94.7 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

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

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

Company Name:	Vanguard Operating	**BILL TO** P.O. #:	White Buffalo
Project Manager:	John Terry	Company:	White Buffalo
Address:		Attn:	Steven McFarlin
City:	Eunice	State: NM Zip: 88231	Address: 5908 Yale Ave #210
Phone #:		Fax #:	City: Tulsa
Project #:		Project Owner:	State: OK Zip: 74157
Project Name:	ABO pump station B-6		Phone #: 918-200-0999
Project Location:			Fax #:
Sampler Name:	Monique Cueto		

FOR LAB USE ONLY				MATRIX						PRESERV.			SAMPLING		ANALYSIS REQUEST		
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :	DATE	TIME	Chloride	B-Tex	TPH (GRO, DRO, MRO)
H801526																	
1	SW2 - 4'	G				X					X		5-30	14:28	X	X	X
2	SW3 - 2'	G				X					X		5-30	14:20	X	X	X
3	SW4 - 6'	G				X					X		5-30	11:54	X	X	X
4	SP2 - 6'	G				X					X		5-30	08:22	X	X	X
5	SP3 - 6'	G				X					X		5-30	15:35	X	X	X
6	SP4 - 6'	G				X					X		5-30	14:52	X	X	X
7	SP6 - 28'	G				X					X		5-31	11:29	X	X	X

Relinquished By:	Date: 6-5-18	Received By:	Phone Result: ☐ Yes ☐ No Add'l Phone #:
	Time: 4:05		Fax Result: ☐ Yes ☐ No Add'l Fax #:
Relinquished By:	Date:	Received By:	REMARKS: Email: Oakcatal-Montanez@whitebuffalo.com Natalie.Gladden@whitebuffalo.com
	Time:		
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	0.8° Corrected 0.1°	Sample Condition Cool ☑ Yes ☐ No Intact ☑ Yes ☐ No	CHECKED BY: (Initials) TC #15

† Cardinal cannot accept verbal changes. Please fax written changes to (575) 393-2326

CARDINAL Laboratories

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

June 27, 2018

NATALIE GLADDEN

WHITE BUFFALO

8908 YALE AVE #210

TULSA, OK 74137

RE: ABO PWS B-6

Enclosed are the results of analyses for samples received by the laboratory on 06/21/18 15:15.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-17-10. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

Celey D. Keene

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

WHITE BUFFALO
NATALIE GLADDEN
8908 YALE AVE #210
TULSA OK, 74137
Fax To:

Received:	06/21/2018	Sampling Date:	06/14/2018
Reported:	06/27/2018	Sampling Type:	Soil
Project Name:	ABO PWS B-6	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NONE GIVEN		

Sample ID: SP1 - 24' (H801704-01)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/22/2018	ND	1.79	89.4	2.00	12.3	
Toluene*	<0.050	0.050	06/22/2018	ND	1.80	89.8	2.00	13.2	
Ethylbenzene*	<0.050	0.050	06/22/2018	ND	1.79	89.4	2.00	13.6	
Total Xylenes*	<0.150	0.150	06/22/2018	ND	5.21	86.8	6.00	13.3	
Total BTEX	<0.300	0.300	06/22/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID *114 %* *69.8-142*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**304**	16.0	06/25/2018	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	06/21/2018	ND	187	93.3	200	1.02	
DRO >C10-C28*	<10.0	10.0	06/21/2018	ND	206	103	200	1.68	
EXT DRO >C28-C36	<10.0	10.0	06/21/2018	ND					

Surrogate: 1-Chlorooctane *81.6 %* *41-142*

Surrogate: 1-Chlorooctadecane *84.3 %* *37.6-147*

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

Analytical Results For:

WHITE BUFFALO
NATALIE GLADDEN
8908 YALE AVE #210
TULSA OK, 74137
Fax To:

Received:	06/21/2018	Sampling Date:	06/14/2018
Reported:	06/27/2018	Sampling Type:	Soil
Project Name:	ABO PWS B-6	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NONE GIVEN		

Sample ID: SP5 - 14' (H801704-02)

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	06/22/2018	ND	1.79	89.4	2.00	12.3	
Toluene*	<0.050	0.050	06/22/2018	ND	1.80	89.8	2.00	13.2	
Ethylbenzene*	<0.050	0.050	06/22/2018	ND	1.79	89.4	2.00	13.6	
Total Xylenes*	<0.150	0.150	06/22/2018	ND	5.21	86.8	6.00	13.3	
Total BTEX	<0.300	0.300	06/22/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID *114 %* *69.8-142*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**208**	16.0	06/25/2018	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	06/21/2018	ND	187	93.3	200	1.02	
DRO >C10-C28*	<10.0	10.0	06/21/2018	ND	206	103	200	1.68	
EXT DRO >C28-C36	<10.0	10.0	06/21/2018	ND					

Surrogate: 1-Chlorooctane *78.6 %* *41-142*

Surrogate: 1-Chlorooctadecane *81.1 %* *37.6-147*

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Analytical Results For:

WHITE BUFFALO
NATALIE GLADDEN
8908 YALE AVE #210
TULSA OK, 74137
Fax To:

Received:	06/21/2018	Sampling Date:	06/14/2018
Reported:	06/27/2018	Sampling Type:	Soil
Project Name:	ABO PWS B-6	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NONE GIVEN		

Sample ID: SP7 - 40' (H801704-03)

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	06/22/2018	ND	1.79	89.4	2.00	12.3	
Toluene*	<0.050	0.050	06/22/2018	ND	1.80	89.8	2.00	13.2	
Ethylbenzene*	<0.050	0.050	06/22/2018	ND	1.79	89.4	2.00	13.6	
Total Xylenes*	<0.150	0.150	06/22/2018	ND	5.21	86.8	6.00	13.3	
Total BTEX	<0.300	0.300	06/22/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID *111 %* *69.8-142*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**352**	16.0	06/25/2018	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	06/21/2018	ND	187	93.3	200	1.02	
DRO >C10-C28*	<10.0	10.0	06/21/2018	ND	206	103	200	1.68	
EXT DRO >C28-C36	<10.0	10.0	06/21/2018	ND					

Surrogate: 1-Chlorooctane *74.9 %* *41-142*

Surrogate: 1-Chlorooctadecane *75.5 %* *37.6-147*

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Analytical Results For:

WHITE BUFFALO
NATALIE GLADDEN
8908 YALE AVE #210
TULSA OK, 74137
Fax To:

Received:	06/21/2018	Sampling Date:	06/14/2018
Reported:	06/27/2018	Sampling Type:	Soil
Project Name:	ABO PWS B-6	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NONE GIVEN		

Sample ID: SP8 - 10' (H801704-04)

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	06/22/2018	ND	1.79	89.4	2.00	12.3	
Toluene*	<0.050	0.050	06/22/2018	ND	1.80	89.8	2.00	13.2	
Ethylbenzene*	<0.050	0.050	06/22/2018	ND	1.79	89.4	2.00	13.6	
Total Xylenes*	<0.150	0.150	06/22/2018	ND	5.21	86.8	6.00	13.3	
Total BTEX	<0.300	0.300	06/22/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID *114 %* *69.8-142*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**320**	16.0	06/25/2018	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	06/21/2018	ND	187	93.3	200	1.02	
DRO >C10-C28*	<10.0	10.0	06/21/2018	ND	206	103	200	1.68	
EXT DRO >C28-C36	<10.0	10.0	06/21/2018	ND					

Surrogate: 1-Chlorooctane *84.9 %* *41-142*

Surrogate: 1-Chlorooctadecane *87.2 %* *37.6-147*

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Analytical Results For:

WHITE BUFFALO
NATALIE GLADDEN
8908 YALE AVE #210
TULSA OK, 74137
Fax To:

Received:	06/21/2018	Sampling Date:	06/14/2018
Reported:	06/27/2018	Sampling Type:	Soil
Project Name:	ABO PWS B-6	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NONE GIVEN		

Sample ID: SP9 - 10' (H801704-05)

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	06/22/2018	ND	1.79	89.4	2.00	12.3	
Toluene*	<0.050	0.050	06/22/2018	ND	1.80	89.8	2.00	13.2	
Ethylbenzene*	<0.050	0.050	06/22/2018	ND	1.79	89.4	2.00	13.6	
Total Xylenes*	<0.150	0.150	06/22/2018	ND	5.21	86.8	6.00	13.3	
Total BTEX	<0.300	0.300	06/22/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID *114 %* *69.8-142*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**352**	16.0	06/25/2018	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	06/21/2018	ND	187	93.3	200	1.02	
DRO >C10-C28*	<10.0	10.0	06/21/2018	ND	206	103	200	1.68	
EXT DRO >C28-C36	<10.0	10.0	06/21/2018	ND					

Surrogate: 1-Chlorooctane *83.8 %* *41-142*

Surrogate: 1-Chlorooctadecane *85.2 %* *37.6-147*

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Analytical Results For:

WHITE BUFFALO
NATALIE GLADDEN
8908 YALE AVE #210
TULSA OK, 74137
Fax To:

Received:	06/21/2018	Sampling Date:	06/14/2018
Reported:	06/27/2018	Sampling Type:	Soil
Project Name:	ABO PWS B-6	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NONE GIVEN		

Sample ID: SP10 - 28' (H801704-06)

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	06/22/2018	ND	1.79	89.4	2.00	12.3	
Toluene*	<0.050	0.050	06/22/2018	ND	1.80	89.8	2.00	13.2	
Ethylbenzene*	<0.050	0.050	06/22/2018	ND	1.79	89.4	2.00	13.6	
Total Xylenes*	<0.150	0.150	06/22/2018	ND	5.21	86.8	6.00	13.3	
Total BTEX	<0.300	0.300	06/22/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID *116 %* *69.8-142*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**608**	16.0	06/25/2018	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	06/21/2018	ND	187	93.3	200	1.02	
DRO >C10-C28*	<10.0	10.0	06/21/2018	ND	206	103	200	1.68	
EXT DRO >C28-C36	<10.0	10.0	06/21/2018	ND					

Surrogate: 1-Chlorooctane *84.6 %* *41-142*

Surrogate: 1-Chlorooctadecane *89.5 %* *37.6-147*

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Analytical Results For:

WHITE BUFFALO
NATALIE GLADDEN
8908 YALE AVE #210
TULSA OK, 74137
Fax To:

Received:	06/21/2018	Sampling Date:	06/14/2018
Reported:	06/27/2018	Sampling Type:	Soil
Project Name:	ABO PWS B-6	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NONE GIVEN		

Sample ID: SP11 - 6' (H801704-07)

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	06/22/2018	ND	1.79	89.4	2.00	12.3	
Toluene*	<0.050	0.050	06/22/2018	ND	1.80	89.8	2.00	13.2	
Ethylbenzene*	<0.050	0.050	06/22/2018	ND	1.79	89.4	2.00	13.6	
Total Xylenes*	<0.150	0.150	06/22/2018	ND	5.21	86.8	6.00	13.3	
Total BTEX	<0.300	0.300	06/22/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID *114 %* *69.8-142*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**496**	16.0	06/25/2018	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	06/21/2018	ND	187	93.3	200	1.02	
DRO >C10-C28*	<10.0	10.0	06/21/2018	ND	206	103	200	1.68	
EXT DRO >C28-C36	<10.0	10.0	06/21/2018	ND					

Surrogate: 1-Chlorooctane *88.2 %* *41-142*

Surrogate: 1-Chlorooctadecane *90.5 %* *37.6-147*

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Analytical Results For:

WHITE BUFFALO
NATALIE GLADDEN
8908 YALE AVE #210
TULSA OK, 74137
Fax To:

Received:	06/21/2018	Sampling Date:	06/14/2018
Reported:	06/27/2018	Sampling Type:	Soil
Project Name:	ABO PWS B-6	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NONE GIVEN		

Sample ID: SP12 - 8' (H801704-08)

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	06/22/2018	ND	1.79	89.4	2.00	12.3	
Toluene*	<0.050	0.050	06/22/2018	ND	1.80	89.8	2.00	13.2	
Ethylbenzene*	<0.050	0.050	06/22/2018	ND	1.79	89.4	2.00	13.6	
Total Xylenes*	<0.150	0.150	06/22/2018	ND	5.21	86.8	6.00	13.3	
Total BTEX	<0.300	0.300	06/22/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID *111 %* *69.8-142*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**352**	16.0	06/25/2018	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	06/21/2018	ND	187	93.3	200	1.02	
DRO >C10-C28*	<10.0	10.0	06/21/2018	ND	206	103	200	1.68	
EXT DRO >C28-C36	<10.0	10.0	06/21/2018	ND					

Surrogate: 1-Chlorooctane *82.2 %* *41-142*

Surrogate: 1-Chlorooctadecane *86.6 %* *37.6-147*

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Analytical Results For:

WHITE BUFFALO
NATALIE GLADDEN
8908 YALE AVE #210
TULSA OK, 74137
Fax To:

Received:	06/21/2018	Sampling Date:	06/14/2018
Reported:	06/27/2018	Sampling Type:	Soil
Project Name:	ABO PWS B-6	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NONE GIVEN		

Sample ID: SW1 - 10' (H801704-09)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/23/2018	ND	1.62	81.1	2.00	0.0677	
Toluene*	<0.050	0.050	06/23/2018	ND	1.62	80.8	2.00	0.921	
Ethylbenzene*	<0.050	0.050	06/23/2018	ND	1.59	79.3	2.00	0.291	
Total Xylenes*	<0.150	0.150	06/23/2018	ND	4.94	82.3	6.00	1.07	
Total BTEX	<0.300	0.300	06/23/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID *102 %* *69.8-142*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**528**	16.0	06/25/2018	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	06/22/2018	ND	187	93.3	200	1.02	
DRO >C10-C28*	<10.0	10.0	06/22/2018	ND	206	103	200	1.68	
EXT DRO >C28-C36	<10.0	10.0	06/22/2018	ND					

Surrogate: 1-Chlorooctane *88.5 %* *41-142*

Surrogate: 1-Chlorooctadecane *88.5 %* *37.6-147*

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Analytical Results For:

WHITE BUFFALO
NATALIE GLADDEN
8908 YALE AVE #210
TULSA OK, 74137
Fax To:

Received:	06/21/2018	Sampling Date:	06/14/2018
Reported:	06/27/2018	Sampling Type:	Soil
Project Name:	ABO PWS B-6	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NONE GIVEN		

Sample ID: SW5 - 20' (H801704-10)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/23/2018	ND	1.62	81.1	2.00	0.0677	
Toluene*	<0.050	0.050	06/23/2018	ND	1.62	80.8	2.00	0.921	
Ethylbenzene*	<0.050	0.050	06/23/2018	ND	1.59	79.3	2.00	0.291	
Total Xylenes*	<0.150	0.150	06/23/2018	ND	4.94	82.3	6.00	1.07	
Total BTEX	<0.300	0.300	06/23/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID *103 %* *69.8-142*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**416**	16.0	06/25/2018	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	06/22/2018	ND	187	93.3	200	1.02	
DRO >C10-C28*	<10.0	10.0	06/22/2018	ND	206	103	200	1.68	
EXT DRO >C28-C36	<10.0	10.0	06/22/2018	ND					

Surrogate: 1-Chlorooctane *90.9 %* *41-142*

Surrogate: 1-Chlorooctadecane *87.9 %* *37.6-147*

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Analytical Results For:

WHITE BUFFALO
NATALIE GLADDEN
8908 YALE AVE #210
TULSA OK, 74137
Fax To:

Received:	06/21/2018	Sampling Date:	06/14/2018
Reported:	06/27/2018	Sampling Type:	Soil
Project Name:	ABO PWS B-6	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NONE GIVEN		

Sample ID: SW6 - 8' (H801704-11)

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	06/23/2018	ND	1.62	81.1	2.00	0.0677	
Toluene*	<0.050	0.050	06/23/2018	ND	1.62	80.8	2.00	0.921	
Ethylbenzene*	<0.050	0.050	06/23/2018	ND	1.59	79.3	2.00	0.291	
Total Xylenes*	<0.150	0.150	06/23/2018	ND	4.94	82.3	6.00	1.07	
Total BTEX	<0.300	0.300	06/23/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID *103 %* *69.8-142*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**624**	16.0	06/25/2018	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	06/22/2018	ND	160	80.1	200	17.9	
DRO >C10-C28*	<10.0	10.0	06/22/2018	ND	182	90.9	200	14.9	
EXT DRO >C28-C36	<10.0	10.0	06/22/2018	ND					

Surrogate: 1-Chlorooctane *77.4 %* *41-142*

Surrogate: 1-Chlorooctadecane *76.2 %* *37.6-147*

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Notes and Definitions

S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C
	Samples reported on an as received basis (wet) unless otherwise noted on report

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

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CARDINAL Laboratories

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

Company Name:	Vanguard
Project Manager:	John Terry
Address:	
City:	Eunice State: NM Zip: 88231
Phone #:	Fax #:
Project #:	Project Owner:
Project Name:	Abo PWS B-6
Project Location:	
Sampler Name:	Monique Cueto

BILL TO

P.O. #:	
Company:	White Buffalo
Attn:	Steve McFarlin
Address:	8908 Yale Ave #210
City:	Tulsa
State:	OK Zip: 74137
Phone #:	918-660-0999
Fax #:	

ANALYSIS REQUEST

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	PRESERV: ACID/BASE:	ICE / COOL	OTHER:	SAMPLING DATE	TIME	Chlorides	B-Jex	TPH (GRO, PRO, MRO)
H801704																	
1	SP1 - 24'	G				X							6/14/18	7:03	X	X	X
2	SP5 - 14'	G				X								7:32	X	X	X
3	SP7 - 40'	G				X								8:12	X	X	X
4	SP8 - 10'	G				X								9:23	X	X	X
5	SP9 - 10'	G				X								9:45	X	X	X
6	SP10 - 28'	G				X								10:11	X	X	X
7	SP11 - 6'	G				X								2:58	X	X	X
8	SP12 - 8'	G				X								3:41	X	X	X
9	SW1 - 10'	G				X								4:08	X	X	X
10	SW5 - 20'	G				X								4:39	X	X	X

Relinquished By:	Date: 6-21-18	Received By:	Phone Result: ☐ Yes ☐ No Add'l Phone #:
	Time: 3:15		Fax Result: ☐ Yes ☐ No Add'l Fax #:
Relinquished By:	Date:	Received By:	REMARKS: email: Dakoatah.Montanez@whitebuffalo.com Natalie.Gladden@whitebuffalo.com
	Time:		
Delivered By: (Circle One)	-14.5°	Sample Condition: Cool ☑ Yes ☐ No Intact ☑ Yes ☐ No	CHECKED BY: (Initials) TO #25
Sampler - UPS - Bus - Other:	Corrected -14.5°		

† Cardinal cannot accept verbal changes. Please fax written changes to (575) 393-2326

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FOR LAB USE ONLY				MATRIX							PRESERV.			SAMPLING		ANALYSIS REQUEST																
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :	DATE	TIME	Chloride	BTEX	TPH (GRO, DRO, MRO)																
H801704																																
11	SW6 - 8'	G				X							6/14	5:14	X	X	X															

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 the client for the 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 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 services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By:	Date: 6-21-18	Received By:	
	Time: 3:15		
Relinquished By:	Date:	Received By:	
	Time:		

Delivered By: (Circle One)
Sampler - UPS - Bus - Other: -14.5c Corrected -14.55c

Sample Condition: Cool ☑ Yes ☐ No; Intact ☐ Yes ☑ No

CHECKED BY: (Initials) TO #15

Phone Result: ☐ Yes ☐ No Add'l Phone #:
Fax Result: ☐ Yes ☐ No Add'l Fax #:
REMARKS:
Email:
Dakoatah.Montanez@whitebuffalo.com
Natalie.Gladden@whitebuffalo.com

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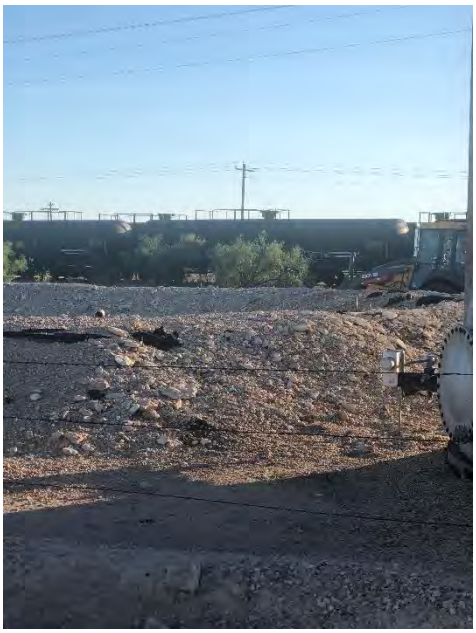
Vanguard Abo Pump Station B-6 1RP-5073

ABO PUMP WATER STATION B-6 PHOTO PAGE



ABO PUMP WATER STATION B-6 PHOTO PAGE

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