



QIL78-200317-C-1410



Lupe Carrillo

Morris Boyd 26 Fee Com 1H Closure Plan

API NO. 30-015-38962

2RP-5353

Release Date: 3/27/2019

U/L I, Section 26, Township 19S, Range 25E

Eddy County

8/19/2019

Prepared By:

Hungry Horse, LLC

4024 Plains Hwy

Lovington NM 88260

Phone: (575)390-6387



August 19, 2019

New Mexico Energy, Minerals & Natural Resources
NMOCD District II
C/O Mike Bratcher, Robert Hamlet & Victoria Venegas
811 S. First Street
Artesia, NM 88210

Percussion Petroleum, LLC
C/O Lupe Carrillo/Jerry Mathews
919 Milam Street, Suite 2475
Houston, TX 77002

Subject: Closure Request for Percussion Petroleum – Morris Boyd 26 Fee Com 1H

To Whom it May Concern,

On behalf of Percussion Petroleum, Hungry Horse, LLC has prepared this CLOSURE REPORT that describes the assessment, delineation and remediation for the release associated with the Morris Boyd 26 Fee Com 1H dated 3/27/19 with the RP# 2RP-5353.

Background

The site is located in Eddy County, New Mexico. The release was located on March 27, 2019. The spill was due to a leak in one of our SWD lines going to a company operated SWD well. The spill was north of our Morris Boyd #1H location (listed closest well for site name). The spill was estimated to be 25bbls and was mostly dried up when it was discovered. We repaired the line and put it back in service. The corresponding C141 for the release is attached.

Ground Water Information

Hungry Horse, LLC has conducted a ground water study of this area. It has been determined that according to the New Mexico Office of the State Engineer, the average depth of ground water is 60'bgs (below ground surface). The top three closest wells to the site area listed below:

RA 10496 – shows the well is set at 110'bgs, with a ground water depth of 40'bgs and 1269' from the site.
RA 10155 – shows the well is set at 225'bgs, with a ground water depth of 60'bgs and 1457' from the site.
RA 07026 – shows the well is set at 135'bgs, with a ground water depth of 105'bgs and 2109' from the site.



The Average Depth to GW is 60bgs, minimum depth is 40'bgs and the maximum depth is 105'bgs. The old Chevron Map shows the site to be 100'bgs.

Closure Criteria for Soils Impacted by a Release

DGW	Constituent	Method	Limit
51'-100'	Chloride	EPA 300.0 OR SM4500 CLB	10,000 mg/kg
	TPH (GRO + DRO + MRO)	EPA SW-846 METHOD 8015M	2,500 mg/kg
	GRO + DRO	EPA SW-846 METHOD 8015M	1,000 mg/kg
	BTEX	EPA SW-846 METHOD 8021B OR 8260B	50 mg/kg
	Benzene	EPA SW-846 METHOD 8021B OR 8260B	10 mg/kg

The Closure Criteria for Soils Impacted by Release above, based on ground water depth of 60'bgs, which falls under the 51'-100' depth category. Therefore, the site was delineated according to the above closure criteria.

Karst Mapping

The Karst Mapping Data found for this site is located inside the low marked area in blue. When the site was delineated, it was fully delineated to meet the NMOCD standards for Karst areas. Please see the Karst Map that is attached herein.

Site Delineation and Remediation

Hungry Horse, LLC fully delineated the site vertically and horizontally starting on April 16, 2019. The site was assessed, measured and photographed. After the one-call was clear to proceed delineation began by use of a hand-auger. The soil was field tested for chloride using both the chloride strip and the titration method. A PID meter was also used to indicate concentrations of BTEX and hydrocarbons. Soil samples were taken from nine sample points of the pasture area. The area was sampled using 1' intervals for each sample point. TPH was found in most of the field sampling, so you will see that the depths of the sampling were due high concentrations of TPH. All of the delineation samples were taken to Cardinal Laboratory for confirmation. **Please see the sample trending data sheet attached to this report for more information. Below you will find the vertical final sample depth data confirmed by Cardinal Lab.



Ver Sam ID	Depth	CHL mg/kg	BTEX mg/kg	GRO mg/kg	DRO mg/kg	E-DRO mg/kg	Ttl TPH mg/kg
SP1	8'	800	<0.300	<10	<10	<10	<10
SP2	6'	288	<0.300	<10	<10	<10	<10
SP3	4'	112	<0.300	<10	<10	<10	<10
SP4	14'	5240	<0.300	<10	<10	<10	<10
SP5	4'	112	<0.300	<10	<10	<10	<10
SP6	4'	336	<0.300	<10	<10	<10	<10
SP7	16'	4520	<0.300	<10	<10	<10	<10
SP8	16'	240	<0.300	<10	<10	<10	<10
SP9	14'	5240	<0.300	<10	<10	<10	<10

With the vertical samples confirmations from Cardinal Lab's it was determined that 6" to 1' in the area of the pasture for sample points 1,4,7 and 9 that the excavation needed to go deeper. These three areas were further delineated and four side walls were jarred and delivered to Cardinal Lab for confirmation.

Horizontal samples then were conducted to find the horizontal extent for the impacted area. Each sample was sampled in the field and then taken to Cardinal lab for confirmation. Below you will find the closure samples for the sidewalls that were jarred and delivered to Cardinal Lab.

Horz Sam ID	Depth	CHL mg/kg	BTEX mg/kg	GRO mg/kg	DRO mg/kg	E-DRO mg/kg	Ttl TPH mg/kg
SW1	2'	80	<0.300	<10	<10	<10	<10
SW2	2'	80	<0.300	<10	<10	<10	<10
SW3	2'	128	<0.300	<10	<10	<10	<10
SW4	2'	16	<0.300	<10	<10	<10	<10
SP 1	22'	320	<0.300	<10	<10	<10	<10
SP 4	26'	1380	<0.300	<10	<10	<10	<10
SP 7	28'	144	<0.300	<10	<10	<10	<10
SP 9	34'	8400	<0.300	<10	<10	<10	<10

On May 11, 2019 an email was sent to the NMOCD to request to witness final closure samples. The closure samples for this site all came back with passing levels. The spill area was dug out and side wall samples were taken from eleven sample points. Five bottom hole, one composite was taken and twelve side- walls were jarred and delivered to Cardinal Lab for confirmation. Based on the lab results, it was



determined that a 20mil liner was to be installed at 4' bgs. A total of 1380 cubic yards were hauled to Lea Land Disposal and 1552 yards of clean caliche was brought back in for backfill of the excavated area mentioned above.

Below you will find the closure samples of the excavated final samples for this site and confirmed by Cardinal Laboratories. Please also see details on the sample map attached herein.

CLOSURE SAM ID	Depth	CHL mg/kg	BTEX mg/kg	GRO mg/kg	DRO mg/kg	E-DRO mg/kg	Ttl TPH mg/kg
COMP ESW	1'	48	<0.300	<10	<10	<10	<10
COMP ESW	2'	112	<0.300	<10	<10	<10	<10
COMP ESW	3'	32	<0.300	<10	<10	<10	<10
COMP ESW	4'	96	<0.300	<10	<10	<10	<10
COMP NSW	1'	272	<0.300	<10	<10	<10	<10
COMP NSW	2'	96	<0.300	<10	<10	<10	<10
COMP SSW	1'	<16	<0.300	<10	<10	<10	<10
COMP SSW	2'	32	<0.300	<10	<10	<10	<10
COMP WSW	1'	224	<0.300	<10	<10	<10	<10
COMP WSW	2'	32	<0.300	<10	<10	<10	<10
COMP WSW	3'	32	<0.300	<10	<10	<10	<10
COMP WSW	4'	64	<0.300	<10	<10	<10	<10
BH #1		128	<0.300	<10	<10	<10	<10
BH #2		<16	<0.300	<10	<10	<10	<10
BH #3		6240	<0.300	<10	<10	<10	<10
BH #4		688	<0.300	<10	<10	<10	<10
BH #5		5040	<0.300	<10	<10	<10	<10
BH COMP		2520	<0.300	<10	<10	<10	<10

Scope and Limitations

The scope of our services consisted of the performance of the assessment sampling, vertical and horizontal of the release stabilization, liner installation, regulatory liaison and preparation of this closure report. All work has been performed in accordance with the NMOC Rules and Regulations for Spills and Releases dated August 14, 2018.



On behalf of Percussion Petroleum and Hungry Horse, LLC., we respectfully request closure of the release on the Morris Boyd 26 Fee Com 1H. If you have any concerns or questions please direct them to me, contact information is listed below.

Sincerely,

Natalie Gladden

Environmental & Regulatory Director

Hungry Horse, LLC

4024 Plains Hwy

Lovington, NM 88260

Cell (575) 390-6397

Email: ngladden@hungry-horse.com

Attachments:

C-141 & COA, including pages 3-6

Groundwater Data

Site Photographs & Site Diagram

Karst Map's

Sample Data and Sample Map

Lab Results

C-141 & COA

Final C-141

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

State of New Mexico
Energy Minerals and Natural
Resources Department

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

Form C-141
Revised August 24, 2018
Submit to appropriate OCD District office

Incident ID	NAB1910937075
District RP	2RP-5353
Facility ID	
Application ID	pAB1910936795

Release Notification

Responsible Party

Responsible Party Percussion Petroleum	OGRID 371755
Contact Name Michael Martin	Contact Telephone (713) 429-4249
Contact email Michael@percussionpetroleum.com	Incident # (assigned by OCD) NAB1910937075
Contact mailing address 919 Milam Street, Suite 2475 Houston, TX 77002	

Location of Release Source

Latitude 32.62931 Longitude -104.44991
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Morris Boyd 26 Fee Com #1H	Site Type SWD Line
Date Release Discovered 3/27/2019	API# (if applicable) 30-015-38962

Unit Letter	Section	Township	Range	County
I	26	19S	25E	Eddy

Surface Owner: ☐ State ☐ Federal ☐ Tribal ☒ Private (Name: _____)

Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)

<input type="checkbox"/> Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
<input checked="" type="checkbox"/> Produced Water	Volume Released (bbls) 25 bbls	Volume Recovered (bbls) 0 bbls
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release

Spill was due to a leak in one of our SWD lines going to a company-operated SWD well. The spill was north of our Morris Boyd #1H location (listed closest well for site name). The spill was estimated to be 25 bbls (length x width x depth divided by 5.62) and was mostly dried up when we discovered it. We repaired the line and put it back in service.

State of New Mexico
Oil Conservation Division

Incident ID	NAB1910937075
District RP	2RP-5353
Facility ID	
Application ID	pAB1910936795

Was this a major release as defined by 19.15.29.7(A) NMAC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If YES, for what reason(s) does the responsible party consider this a major release? Release of 25 bbls fluid.
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? Yes, Michael Martin emailed Mike Bratcher (NMOCD) on 3/28/2019 at 3:20 PM	

Initial Response

The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury

- ☒ The source of the release has been stopped.
- ☒ The impacted area has been secured to protect human health and the environment.
- ☒ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.
- ☒ All free liquids and recoverable materials have been removed and managed appropriately.


If all the actions described above have not been undertaken, explain why:

Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.

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

Printed Name: Michael Martin

Title: Production Engineer


Signature: 

Date: 4/4/2019

email: Michael@percussionpetroleum.com

Telephone: (713) 429-4249

OCD Only

Received by: 

Date: 4/19/2019

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
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Printed Name: Michael Martin

Title: Production Engineer


Signature: 

Date: 4/4/2019

email: Michael@percussionpetroleum.com

Telephone: (713) 429-4249

OCD Only

Received by: 

Date: 4/19/2019

Incident ID	
District RP	
Facility ID	
Application ID	

Site Assessment/Characterization

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

What is the shallowest depth to groundwater beneath the area affected by the release?	40-105 (ft bgs)
Did this release impact groundwater or surface water?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Did the release impact areas not on an exploration, development, production, or storage site?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

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

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

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

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

Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

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Printed Name: Natalie Gladden Title: Environmental and Regulatory Director

Signature Natalie Gladden

Date: 8/22/19

email: ngladden@hungry-horse.com

Telephone: 575-390-6397

OCD Only

Received by: _____

Date: _____

Incident ID	
District RP	
Facility ID	
Application ID	

Remediation Plan

Remediation Plan Checklist: *Each of the following items must be included in the plan.*

- ☒ Detailed description of proposed remediation technique
- ☒ Scaled sitemap with GPS coordinates showing delineation points
- ☒ Estimated volume of material to be remediated
- ☒ Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC
- ☒ Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required)

Deferral Requests Only: *Each of the following items must be confirmed as part of any request for deferral of remediation.*

- ☒ Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.
- ☒ Extents of contamination must be fully delineated.
- ☒ Contamination does not cause an imminent risk to human health, the environment, or groundwater.

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Printed Name: Natalie Gladden Title: Environmental and Regulatory Director

Signature:  Date: 8/22/19

email: ngladden@hungry-horse.com Telephone: 575-390-6397

OCD Only

Received by: _____ Date: _____

☐ Approved ☐ Approved with Attached Conditions of Approval ☐ Denied ☐ Deferral Approved

Signature: _____ Date: _____

Incident ID	
District RP	
Facility ID	
Application ID	

Closure

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

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

- ☒ A scaled site and sampling diagram as described in 19.15.29.11 NMAC
- ☒ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)
- ☒ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)
- ☒ Description of remediation activities

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Printed Name: Natalie Gladden Title: Environmental and Regulatory Director

Signature:  Date: 8/22/19

email: ngladden@hungry-horse.com Telephone: 575-390-6397

OCD Only

Received by: _____ Date: _____

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

Closure Approved by: _____ Date: _____

Printed Name: _____ Title: _____

Groundwater Data



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

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest) (NAD83 UTM in meters)

No records found.

UTMNAD83 Radius Search (in meters):

Easting (X): 551618.87

Northing (Y): 3610327

Radius: 1000

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.

4/22/19 2:59 PM

WATER COLUMN/ AVERAGE
DEPTH TO WATER



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 Code	Sub-basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	DepthWell	DepthWater	Water Column
RA 10496	RA	ED		3	3	4	25	19S	25E	552801	3609865*	1269	110	40	70
RA 10155	RA	ED		4	3	4	25	19S	25E	553001	3609865*	1457	225	60	165
RA 07026	RA	ED			3	3	30	19S	26E	553699	3609975*	2109	135	105	30
RA 03018	RA	ED		3	2	4	34	19S	25E	549987	3608639*	2347	530		
RA 02958	RA	ED			1	4	34	19S	25E	549681	3608740*	2504	450		
RA 03304	RA	ED				1	27	19S	25E	549081	3610973*	2618	130	60	70
RA 10002	RA	ED		2	2	1	31	19S	26E	554208	3609675*	2669	200	95	105
RA 08986	RA	ED		1	3	3	22	19S	25E	548825	3611507	3033	320	220	100
RA 09295	RA	ED		4	3	4	13	19S	25E	552979	3613115*	3101	250	85	165
RA 10898 POD1	RA	ED		2	1	3	01	20S	25E	552198	3607248*	3133	810	121	689
RA 09293	RA	ED		3	4	4	13	19S	25E	553180	3613114*	3194	250	60	190
RA 09294	RA	ED		3	4	4	13	19S	25E	553180	3613114*	3194	194	76	118
RA 02909	RA	ED			1	3	22	19S	25E	548864	3611989*	3217	188	130	58
RA 08611	RA	ED		1	1	1	19	19S	26E	553583	3612909*	3244	235	90	145
RA 09988	RA	ED		2	4	1	19	19S	26E	554190	3612507*	3370	100	65	35
RA 08612	RA	ED		1	2	1	19	19S	26E	553989	3612912*	3507	221	80	141
RA 05458	RA	ED			3	3	01	20S	25E	552101	3606747*	3612	500	95	405
RA 10949 POD1	RA	ED		3	1	2	06	20S	26E	554409	3607867*	3719	807	71	736
RA 10817	RA	ED		1	1	1	12	20S	25E	552002	3606443*	3902	743	102	641
RA 07817	RA	ED		2	1	2	19	19S	26E	554592	3612915*	3941	224	145	79
RA 07817 CLW	RA	ED		2	1	2	19	19S	26E	554592	3612915*	3941	275	130	145
RA 09077	RA	ED		2	1	2	19	19S	26E	554592	3612915*	3941	200		
RA 05550	RA	ED		3	1	3	32	19S	26E	555209	3608679*	3950	185	95	90
RA 09497	RA	ED		3	3	2	06	20S	26E	554410	3607460*	4001	200		
RA 05450	RA	CH			4	2	15	19S	25E	550057	3614015*	4005	204	80	124
RA 08962	RA	ED		2	2	1	32	19S	26E	555810	3609680*	4240	300	180	120
RA 10262	RA	ED		2	2	2	19	19S	26E	554994	3612917*	4254	200	85	115
RA 01451 CLW-1	RA	ED		2	1	4	06	20S	26E	554611	3607258*	4286	271	65	206
RA 02182	RA	ED			1	4	06	20S	26E	554512	3607159*	4290	575		
RA 00434 S	RA	ED		3	1	1	05	20S	26E	555210	3607873*	4349	650	20	630
RA 10818	RA	ED		1	3	2	12	20S	25E	552807	3606039*	4449	692	72	620
RA 01143	RA	ED			3	4	06	20S	26E	554513	3606757*	4595	650		
RA 01451	RA	ED			3	4	06	20S	26E	554513	3606757*	4595	330		

nmwrrs.ose.state.nm.us/nmwrrs/ReportProxy?queryData=%7B"report"%3A"waterColumn"%2C%0A"BasinDiv"%3A"true"%2C%0A"Basin...

Average Depth to Water:	92 feet
Minimum Depth:	20 feet
Maximum Depth:	220 feet

UTMNAD83 Radius Search (in meters):

Northing (Y): 3610327

Radius: 5000

*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.

WATER COLUMN/ AVERAGE DEPTH TO WATER



New Mexico Office of the State Engineer

Point of Diversion Summary

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

Well Tag	POD Number	Q64	Q16	Q4	Sec	Tws	Rng	X	Y
RA 10155		4	3	4	25	19S	25E	553001	3609865*

Driller License: 1064

Driller Company: DELFORD W. MARTIN

Driller Name: MARTIN, DELFORD

Drill Start Date: 05/26/2002

Drill Finish Date: 06/01/2002

Plug Date:

Log File Date: 06/07/2002

PCW Rcv Date:

Source: Shallow

Pump Type:

Pipe Discharge Size:

Estimated Yield:

Casing Size: 5.50

Depth Well: 225 feet

Depth Water: 60 feet

Water Bearing Stratifications:

Top	Bottom	Description
-----	--------	-------------

182	225	Shallow Alluvium/Basin Fill
-----	-----	-----------------------------

Casing Perforations:

Top	Bottom
-----	--------

40	225
----	-----

*UTM location was derived from PLSS - see Help

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4/22/19 3:01 PM

POINT OF DIVERSION SUMMARY



New Mexico Office of the State Engineer

Point of Diversion Summary

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

Well Tag	POD Number	Q64 Q16 Q4	Sec	Tw	Rng	X	Y
RA 07026		3 3 30	19S	26E	553699	3609975*	

Driller License: 749	Driller Company: HUGHES, SAMUEL DALE	
Driller Name: EXISTING WELL		
Drill Start Date: 12/09/1982	Drill Finish Date: 12/30/1982	Plug Date:
Log File Date: 07/05/1983	PCW Rcv Date:	Source: Shallow
Pump Type:	Pipe Discharge Size:	Estimated Yield: 50 GPM
Casing Size: 7.00	Depth Well: 135 feet	Depth Water: 105 feet

Water Bearing Stratifications:	Top	Bottom	Description
	85	110	Sandstone/Gravel/Conglomerate
	110	135	Sandstone/Gravel/Conglomerate

Casing Perforations:	Top	Bottom
	100	135

Meter Number: 9020	Meter Make: ROCKWELL
Meter Serial Number: 027	Meter Multiplier: 100.0000
Number of Dials: 6	Meter Type: Diversion
Unit of Measure: Gallons	Return Flow Percent:
Usage Multiplier:	Reading Frequency:

Meter Readings (in Acre-Feet)

Read Date	Year	Mtr Reading	Flag	Rdr	Comment	Mtr Amount
04/13/2005	2005	172932	A	RPT		0
06/02/2005	2005	179072	A	RPT		1.884

**YTD Meter Amounts:	Year	Amount
	2005	1.884

*UTM location was derived from PLSS - see Help

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4/22/19 3:02 PM

POINT OF DIVERSION SUMMARY

Site Diagram & Site Photographs

MORRIS BOYD 26 FED COM #1H

Legend

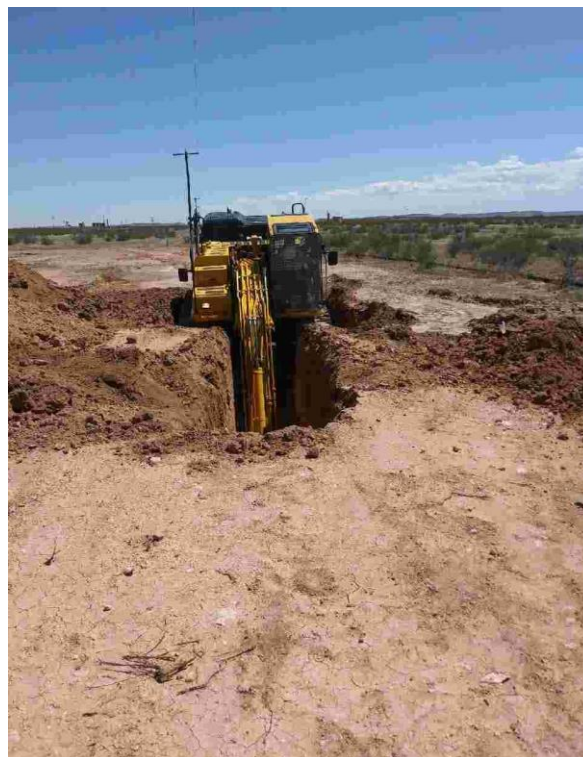
- High
- Low
- Medium

MORRIS BOYD 26 FED COM #1H

Morris Boyd 26 Fee Com 1H
Photo Page



Morris Boyd 26 Fee Com 1H
Photo Page



Morris Boyd 26 Fee Com 1H
Photo Page



Morris Boyd 26 Fee Com 1H
Photo Page



Morris Boyd 26 Fee Com 1H
Photo Page



Morris Boyd 26 Fee Com 1H
Photo Page



Morris Boyd 26 Fee Com 1H
Photo Page



Morris Boyd 26 Fee Com 1H
Photo Page

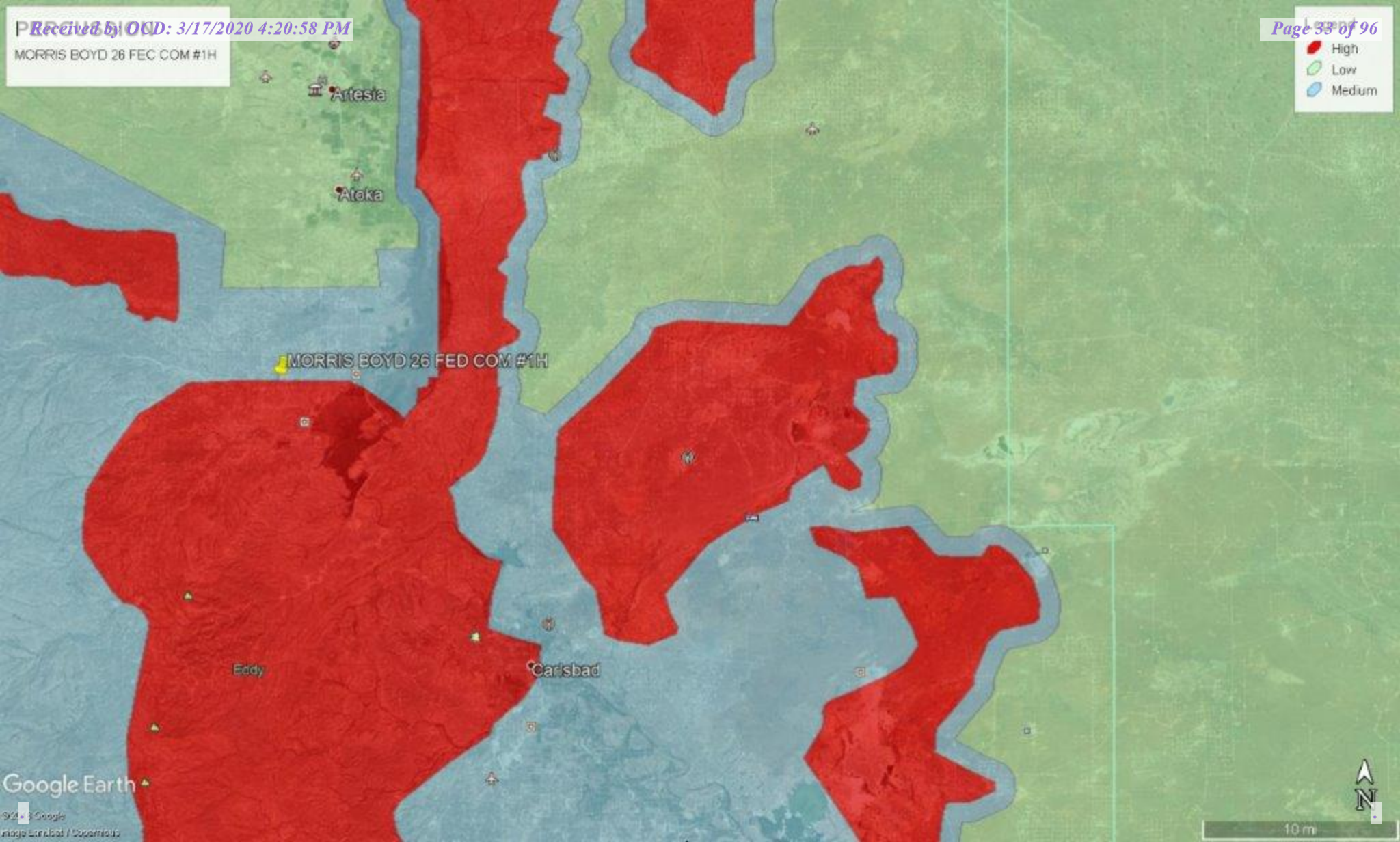


Karst Maps

MORRIS BOYD 26 FED COM #1H

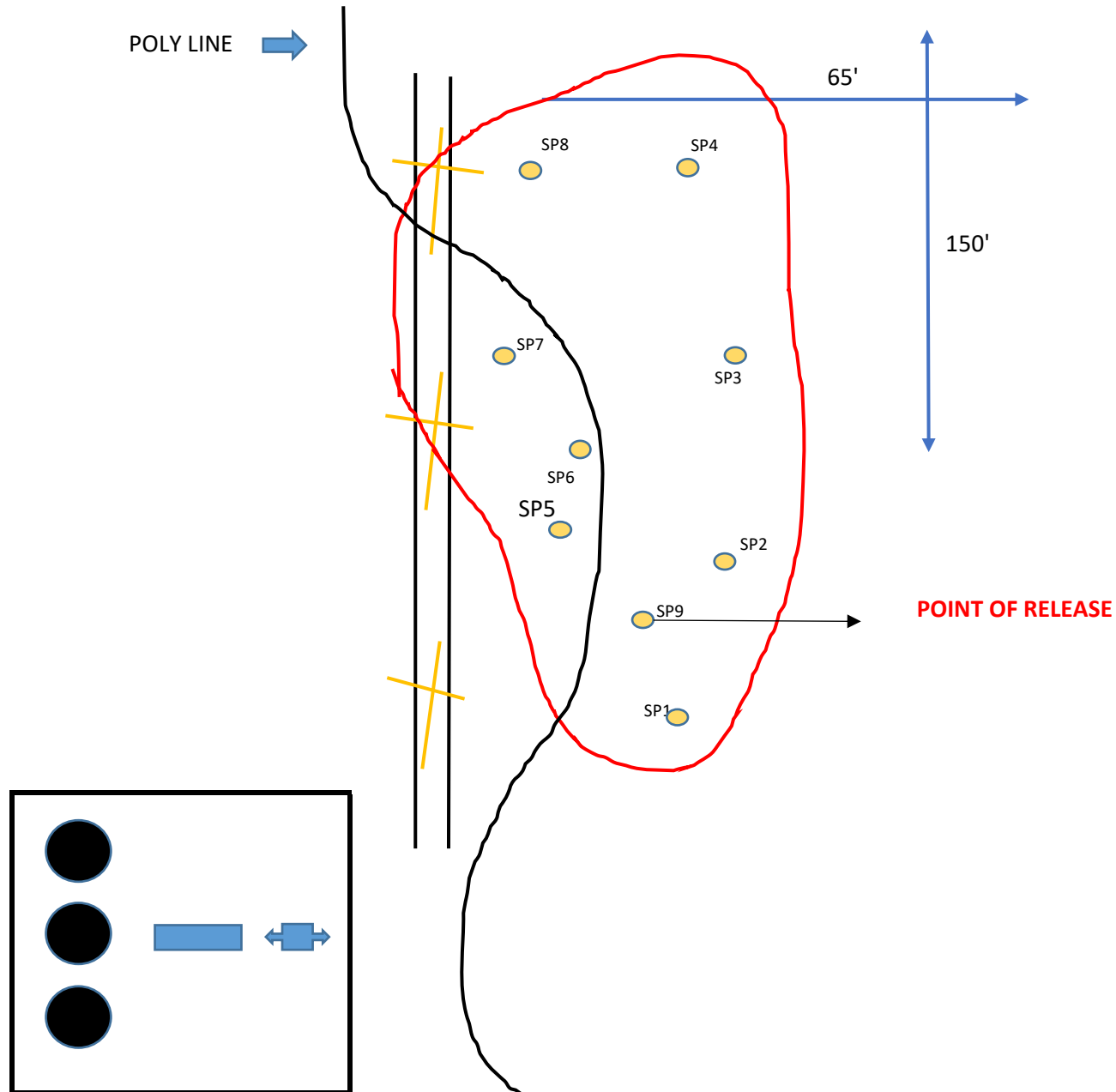
Legend

- High
- Low
- Medium



Final Sampling Results & Lab Results

PERCUSSION - MORRIS BOYD FEE COM 1 H



Company Name PERCUSSIONLocation Name: MORRIS BOYD FED COM 1H

Release Date: _____

SP ID	Depth	Tit	PID	L-Chl	L-BTEX	L-GRO	L-DRO	L-MRO	Ttl TPH	Soil	Notes
SP1	SUR	<10.000									
	2'	8640									
	4'	400									
	6'	480									
	8'	480		800	<0.300	<10	<10	<10	<30		GET BELOW 600
	10'	2400									
	12'	2400									
	14'	10000									
	16'	3680									
	18'	4560									
	20'	400									
	22'	6880		320	<0.300	<10	<10	<10	<30		
SP2	SUR	>10.000									
	2'	8000									
	4'	480									
	6'	400		288	<0.300	<10	<10	<10	<30		
SP 3	SUR	240									
	2'	400									
	4'	400		112	<0.300	<10	<10	<10	<30		
SP 4	SUR	400									
	2'	1760									
	4'	320									
	6'	5720									
	8'	6960									
	10'	3200									
	12'	2640									
	14'	3600		5240	<0.300	<10	<10	<10	<30		GET TO 600

[illegible]



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

April 22, 2019

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

RE: MORRIS BOYD FED COM #1H

Enclosed are the results of analyses for samples received by the laboratory on 04/18/19 8:13.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

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



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:	04/18/2019	Sampling Date:	04/16/2019
Reported:	04/22/2019	Sampling Type:	Soil
Project Name:	MORRIS BOYD FED COM #1H	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NONE GIVEN		

Sample ID: SP 1 - 8 (H901410-01)

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	04/18/2019	ND	1.94	97.2	2.00	0.288	
Toluene*	<0.050	0.050	04/18/2019	ND	2.09	105	2.00	1.68	
Ethylbenzene*	<0.050	0.050	04/18/2019	ND	2.01	101	2.00	3.34	
Total Xylenes*	<0.150	0.150	04/18/2019	ND	6.07	101	6.00	2.65	
Total BTEx	<0.300	0.300	04/18/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 91.1 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	800	16.0	04/18/2019	ND	432	108	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/18/2019	ND	193	96.5	200	1.43	
DRO >C10-C28*	<10.0	10.0	04/18/2019	ND	205	103	200	8.42	
EXT DRO >C28-C36	<10.0	10.0	04/18/2019	ND					

Surrogate: 1-Chlorooctane 96.1 % 41-142

Surrogate: 1-Chlorooctadecane 97.7 % 37.6-147

Cardinal Laboratories

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received:	04/18/2019	Sampling Date:	04/16/2019
Reported:	04/22/2019	Sampling Type:	Soil
Project Name:	MORRIS BOYD FED COM #1H	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NONE GIVEN		

Sample ID: SP 2 - 6 (H901410-02)

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	04/18/2019	ND	1.94	97.2	2.00	0.288		
Toluene*	<0.050	0.050	04/18/2019	ND	2.09	105	2.00	1.68		
Ethylbenzene*	<0.050	0.050	04/18/2019	ND	2.01	101	2.00	3.34		
Total Xylenes*	<0.150	0.150	04/18/2019	ND	6.07	101	6.00	2.65		
Total BTEX	<0.300	0.300	04/18/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 96.7 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	288	16.0	04/18/2019	ND	432	108	400	3.64	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/19/2019	ND	193	96.5	200	1.43	
DRO >C10-C28*	<10.0	10.0	04/19/2019	ND	205	103	200	8.42	
EXT DRO >C28-C36	<10.0	10.0	04/19/2019	ND					

Surrogate: 1-Chlorooctane 96.5 % 41-142

Surrogate: 1-Chlorooctadecane 98.2 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received:	04/18/2019	Sampling Date:	04/16/2019
Reported:	04/22/2019	Sampling Type:	Soil
Project Name:	MORRIS BOYD FED COM #1H	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NONE GIVEN		

Sample ID: SP 3 - 4 (H901410-03)

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	04/18/2019	ND	1.94	97.2	2.00	0.288	
Toluene*	<0.050	0.050	04/18/2019	ND	2.09	105	2.00	1.68	
Ethylbenzene*	<0.050	0.050	04/18/2019	ND	2.01	101	2.00	3.34	
Total Xylenes*	<0.150	0.150	04/18/2019	ND	6.07	101	6.00	2.65	
Total BTEX	<0.300	0.300	04/18/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 98.1 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	112	16.0	04/18/2019	ND	432	108	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/19/2019	ND	193	96.5	200	1.43	
DRO >C10-C28*	<10.0	10.0	04/19/2019	ND	205	103	200	8.42	
EXT DRO >C28-C36	<10.0	10.0	04/19/2019	ND					

Surrogate: 1-Chlorooctane 101 % 41-142

Surrogate: 1-Chlorooctadecane 104 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received:	04/18/2019	Sampling Date:	04/16/2019
Reported:	04/22/2019	Sampling Type:	Soil
Project Name:	MORRIS BOYD FED COM #1H	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NONE GIVEN		

Sample ID: SP 4 - 14 (H901410-04)

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	04/18/2019	ND	1.94	97.2	2.00	0.288	
Toluene*	<0.050	0.050	04/18/2019	ND	2.09	105	2.00	1.68	
Ethylbenzene*	<0.050	0.050	04/18/2019	ND	2.01	101	2.00	3.34	
Total Xylenes*	<0.150	0.150	04/18/2019	ND	6.07	101	6.00	2.65	
Total BTEX	<0.300	0.300	04/18/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 95.8 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	5240	16.0	04/18/2019	ND	432	108	400	3.64	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/19/2019	ND	193	96.5	200	1.43	
DRO >C10-C28*	<10.0	10.0	04/19/2019	ND	205	103	200	8.42	
EXT DRO >C28-C36	<10.0	10.0	04/19/2019	ND					

Surrogate: 1-Chlorooctane 98.3 % 41-142

Surrogate: 1-Chlorooctadecane 103 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received:	04/18/2019	Sampling Date:	04/16/2019
Reported:	04/22/2019	Sampling Type:	Soil
Project Name:	MORRIS BOYD FED COM #1H	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NONE GIVEN		

Sample ID: SP 5 - 4 (H901410-05)

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	04/18/2019	ND	1.94	97.2	2.00	0.288	
Toluene*	<0.050	0.050	04/18/2019	ND	2.09	105	2.00	1.68	
Ethylbenzene*	<0.050	0.050	04/18/2019	ND	2.01	101	2.00	3.34	
Total Xylenes*	<0.150	0.150	04/18/2019	ND	6.07	101	6.00	2.65	
Total BTX	<0.300	0.300	04/18/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 97.2 % 73.3-129

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	04/18/2019	ND	432	108	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/19/2019	ND	193	96.5	200	1.43	
DRO >C10-C28*	<10.0	10.0	04/19/2019	ND	205	103	200	8.42	
EXT DRO >C28-C36	<10.0	10.0	04/19/2019	ND					

Surrogate: 1-Chlorooctane 96.9 % 41-142

Surrogate: 1-Chlorooctadecane 101 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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:	04/18/2019	Sampling Date:	04/16/2019
Reported:	04/22/2019	Sampling Type:	Soil
Project Name:	MORRIS BOYD FED COM #1H	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NONE GIVEN		

Sample ID: SP 6 - 4 (H901410-06)

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	04/18/2019	ND	1.94	97.2	2.00	0.288		
Toluene*	<0.050	0.050	04/18/2019	ND	2.09	105	2.00	1.68		
Ethylbenzene*	<0.050	0.050	04/18/2019	ND	2.01	101	2.00	3.34		
Total Xylenes*	<0.150	0.150	04/18/2019	ND	6.07	101	6.00	2.65		
Total BTEX	<0.300	0.300	04/18/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 97.3 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	336	16.0	04/18/2019	ND	432	108	400	3.64	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/19/2019	ND	193	96.5	200	1.43	
DRO >C10-C28*	<10.0	10.0	04/19/2019	ND	205	103	200	8.42	
EXT DRO >C28-C36	<10.0	10.0	04/19/2019	ND					

Surrogate: 1-Chlorooctane 92.4 % 41-142

Surrogate: 1-Chlorooctadecane 97.7 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received:	04/18/2019	Sampling Date:	04/16/2019
Reported:	04/22/2019	Sampling Type:	Soil
Project Name:	MORRIS BOYD FED COM #1H	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NONE GIVEN		

Sample ID: SP 7 - 16 (H901410-07)

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	04/18/2019	ND	1.94	97.2	2.00	0.288	
Toluene*	<0.050	0.050	04/18/2019	ND	2.09	105	2.00	1.68	
Ethylbenzene*	<0.050	0.050	04/18/2019	ND	2.01	101	2.00	3.34	
Total Xylenes*	<0.150	0.150	04/18/2019	ND	6.07	101	6.00	2.65	
Total BTEX	<0.300	0.300	04/18/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 96.5 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	4520	16.0	04/18/2019	ND	432	108	400	3.64	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/19/2019	ND	193	96.5	200	1.43	
DRO >C10-C28*	<10.0	10.0	04/19/2019	ND	205	103	200	8.42	
EXT DRO >C28-C36	<10.0	10.0	04/19/2019	ND					

Surrogate: 1-Chlorooctane 93.1 % 41-142

Surrogate: 1-Chlorooctadecane 96.2 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received:	04/18/2019	Sampling Date:	04/16/2019
Reported:	04/22/2019	Sampling Type:	Soil
Project Name:	MORRIS BOYD FED COM #1H	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NONE GIVEN		

Sample ID: SP 8 - 16 (H901410-08)

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	04/18/2019	ND	1.94	97.2	2.00	0.288	
Toluene*	<0.050	0.050	04/18/2019	ND	2.09	105	2.00	1.68	
Ethylbenzene*	<0.050	0.050	04/18/2019	ND	2.01	101	2.00	3.34	
Total Xylenes*	<0.150	0.150	04/18/2019	ND	6.07	101	6.00	2.65	
Total BTEX	<0.300	0.300	04/18/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 96.9 % 73.3-129

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	04/18/2019	ND	432	108	400	3.64	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/19/2019	ND	193	96.5	200	1.43	
DRO >C10-C28*	<10.0	10.0	04/19/2019	ND	205	103	200	8.42	
EXT DRO >C28-C36	<10.0	10.0	04/19/2019	ND					

Surrogate: 1-Chlorooctane 88.3 % 41-142

Surrogate: 1-Chlorooctadecane 88.8 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received:	04/18/2019	Sampling Date:	04/16/2019
Reported:	04/22/2019	Sampling Type:	Soil
Project Name:	MORRIS BOYD FED COM #1H	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NONE GIVEN		

Sample ID: SP 9 - 14 (H901410-09)

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	04/18/2019	ND	1.94	97.2	2.00	0.288	
Toluene*	<0.050	0.050	04/18/2019	ND	2.09	105	2.00	1.68	
Ethylbenzene*	<0.050	0.050	04/18/2019	ND	2.01	101	2.00	3.34	
Total Xylenes*	<0.150	0.150	04/18/2019	ND	6.07	101	6.00	2.65	
Total BTEX	<0.300	0.300	04/18/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 95.7 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	6640	16.0	04/18/2019	ND	432	108	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/19/2019	ND	193	96.5	200	1.43	
DRO >C10-C28*	24.2	10.0	04/19/2019	ND	205	103	200	8.42	
EXT DRO >C28-C36	<10.0	10.0	04/19/2019	ND					

Surrogate: 1-Chlorooctane 93.9 % 41-142

Surrogate: 1-Chlorooctadecane 97.2 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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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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A handwritten signature in black ink, appearing to read "Celey D. Keene".

Celey D. Keene, Lab Director/Quality Manager



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

Push!

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

[illegible]



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

April 24, 2019

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

RE: MORRIS BOYD FED COM #1H

Enclosed are the results of analyses for samples received by the laboratory on 04/22/19 15:50.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

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



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:	04/22/2019	Sampling Date:	04/17/2019
Reported:	04/24/2019	Sampling Type:	Soil
Project Name:	MORRIS BOYD FED COM #1H	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NONE GIVEN		

Sample ID: SW 1 - 2 (H901436-01)

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	04/23/2019	ND	1.94	97.2	2.00	4.63	
Toluene*	<0.050	0.050	04/23/2019	ND	1.97	98.5	2.00	1.38	
Ethylbenzene*	<0.050	0.050	04/23/2019	ND	1.99	99.5	2.00	1.40	
Total Xylenes*	<0.150	0.150	04/23/2019	ND	5.69	94.9	6.00	0.526	
Total BTEx	<0.300	0.300	04/23/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 81.7 % 73.3-129

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	04/23/2019	ND	432	108	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	04/23/2019	ND	213	107	200	8.99	
DRO >C10-C28*	<10.0	10.0	04/23/2019	ND	203	101	200	7.33	
EXT DRO >C28-C36	<10.0	10.0	04/23/2019	ND					

Surrogate: 1-Chlorooctane 105 % 41-142

Surrogate: 1-Chlorooctadecane 100 % 37.6-147

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Analytical Results For:

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

Received: 04/22/2019
 Reported: 04/24/2019
 Project Name: MORRIS BOYD FED COM #1H
 Project Number: NONE GIVEN
 Project Location: NONE GIVEN

Sampling Date: 04/17/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SW 2 - 2 (H901436-02)

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	04/23/2019	ND	1.94	97.2	2.00	4.63		
Toluene*	<0.050	0.050	04/23/2019	ND	1.97	98.5	2.00	1.38		
Ethylbenzene*	<0.050	0.050	04/23/2019	ND	1.99	99.5	2.00	1.40		
Total Xylenes*	<0.150	0.150	04/23/2019	ND	5.69	94.9	6.00	0.526		
Total BTX	<0.300	0.300	04/23/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 86.6 % 73.3-129

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	04/23/2019	ND	432	108	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	04/23/2019	ND	213	107	200	8.99	
DRO >C10-C28*	<10.0	10.0	04/23/2019	ND	203	101	200	7.33	
EXT DRO >C28-C36	<10.0	10.0	04/23/2019	ND					

Surrogate: 1-Chlorooctane 106 % 41-142

Surrogate: 1-Chlorooctadecane 101 % 37.6-147

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Analytical Results For:

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

Received: 04/22/2019
 Reported: 04/24/2019
 Project Name: MORRIS BOYD FED COM #1H
 Project Number: NONE GIVEN
 Project Location: NONE GIVEN

Sampling Date: 04/17/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SW 3 - 2 (H901436-03)

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	04/23/2019	ND	1.94	97.2	2.00	4.63		
Toluene*	<0.050	0.050	04/23/2019	ND	1.97	98.5	2.00	1.38		
Ethylbenzene*	<0.050	0.050	04/23/2019	ND	1.99	99.5	2.00	1.40		
Total Xylenes*	<0.150	0.150	04/23/2019	ND	5.69	94.9	6.00	0.526		
Total BTEX	<0.300	0.300	04/23/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 89.9 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	128	16.0	04/23/2019	ND	432	108	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	04/23/2019	ND	213	107	200	8.99	
DRO >C10-C28*	<10.0	10.0	04/23/2019	ND	203	101	200	7.33	
EXT DRO >C28-C36	<10.0	10.0	04/23/2019	ND					

Surrogate: 1-Chlorooctane 104 % 41-142

Surrogate: 1-Chlorooctadecane 99.7 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 04/22/2019
 Reported: 04/24/2019
 Project Name: MORRIS BOYD FED COM #1H
 Project Number: NONE GIVEN
 Project Location: NONE GIVEN

Sampling Date: 04/17/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SW 4 - 2 (H901436-04)

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	04/23/2019	ND	1.94	97.2	2.00	4.63		
Toluene*	<0.050	0.050	04/23/2019	ND	1.97	98.5	2.00	1.38		
Ethylbenzene*	<0.050	0.050	04/23/2019	ND	1.99	99.5	2.00	1.40		
Total Xylenes*	<0.150	0.150	04/23/2019	ND	5.69	94.9	6.00	0.526		
Total BTX	<0.300	0.300	04/23/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 97.6 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	04/23/2019	ND	432	108	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	04/23/2019	ND	213	107	200	8.99	
DRO >C10-C28*	<10.0	10.0	04/23/2019	ND	203	101	200	7.33	
EXT DRO >C28-C36	<10.0	10.0	04/23/2019	ND					

Surrogate: 1-Chlorooctane 99.7 % 41-142

Surrogate: 1-Chlorooctadecane 96.9 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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

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A handwritten signature in black ink, appearing to read "Celey D. Keene".

Celey D. Keene, Lab Director/Quality Manager

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

[illegible]



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

May 08, 2019

JERRY MATTHEWS

WHITE BUFFALO

8908 YALE AVE #210

TULSA, OK 74137

RE: MORRIS BOYD FED COM #1H

Enclosed are the results of analyses for samples received by the laboratory on 05/02/19 16:05.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive style with a large, stylized 'C' and 'K'.

Celey D. Keene

Lab Director/Quality Manager



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

Analytical Results For:

WHITE BUFFALO
 JERRY MATTHEWS
 8908 YALE AVE #210
 TULSA OK, 74137
 Fax To:

Received: 05/02/2019
 Reported: 05/08/2019
 Project Name: MORRIS BOYD FED COM #1H
 Project Number: NONE GIVEN
 Project Location: NONE GIVEN

Sampling Date: 04/26/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SP 9 - 34' (H901597-01)

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	05/07/2019	ND	2.07	103	2.00	0.266	
Toluene*	<0.050	0.050	05/07/2019	ND	2.17	108	2.00	1.44	
Ethylbenzene*	<0.050	0.050	05/07/2019	ND	2.07	104	2.00	0.912	
Total Xylenes*	<0.150	0.150	05/07/2019	ND	6.33	106	6.00	0.408	
Total BTX	<0.300	0.300	05/07/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 108 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	8400	16.0	05/07/2019	ND	416	104	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	05/06/2019	ND	195	97.7	200	1.90	
DRO >C10-C28*	<10.0	10.0	05/06/2019	ND	201	101	200	10.0	
EXT DRO >C28-C36	<10.0	10.0	05/06/2019	ND					

Surrogate: 1-Chlorooctane 98.4 % 41-142

Surrogate: 1-Chlorooctadecane 111 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

WHITE BUFFALO
 JERRY MATTHEWS
 8908 YALE AVE #210
 TULSA OK, 74137
 Fax To:

Received: 05/02/2019
 Reported: 05/08/2019
 Project Name: MORRIS BOYD FED COM #1H
 Project Number: NONE GIVEN
 Project Location: NONE GIVEN

Sampling Date: 04/30/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SP 1 - 22' (H901597-02)

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	05/07/2019	ND	2.07	103	2.00	0.266		
Toluene*	<0.050	0.050	05/07/2019	ND	2.17	108	2.00	1.44		
Ethylbenzene*	<0.050	0.050	05/07/2019	ND	2.07	104	2.00	0.912		
Total Xylenes*	<0.150	0.150	05/07/2019	ND	6.33	106	6.00	0.408		
Total BTEx	<0.300	0.300	05/07/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 108 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	320	16.0	05/07/2019	ND	416	104	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	05/06/2019	ND	195	97.7	200	1.90	
DRO >C10-C28*	<10.0	10.0	05/06/2019	ND	201	101	200	10.0	
EXT DRO >C28-C36	<10.0	10.0	05/06/2019	ND					

Surrogate: 1-Chlorooctane 96.7 % 41-142

Surrogate: 1-Chlorooctadecane 108 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

WHITE BUFFALO
 JERRY MATTHEWS
 8908 YALE AVE #210
 TULSA OK, 74137
 Fax To:

Received: 05/02/2019
 Reported: 05/08/2019
 Project Name: MORRIS BOYD FED COM #1H
 Project Number: NONE GIVEN
 Project Location: NONE GIVEN

Sampling Date: 04/29/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SP 4 - 26' (H901597-03)

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	05/07/2019	ND	2.07	103	2.00	0.266	
Toluene*	<0.050	0.050	05/07/2019	ND	2.17	108	2.00	1.44	
Ethylbenzene*	<0.050	0.050	05/07/2019	ND	2.07	104	2.00	0.912	
Total Xylenes*	<0.150	0.150	05/07/2019	ND	6.33	106	6.00	0.408	
Total BTEx	<0.300	0.300	05/07/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 106 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1380	16.0	05/07/2019	ND	416	104	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	05/06/2019	ND	195	97.7	200	1.90	
DRO >C10-C28*	<10.0	10.0	05/06/2019	ND	201	101	200	10.0	
EXT DRO >C28-C36	<10.0	10.0	05/06/2019	ND					

Surrogate: 1-Chlorooctane 95.9 % 41-142

Surrogate: 1-Chlorooctadecane 107 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

WHITE BUFFALO
 JERRY MATTHEWS
 8908 YALE AVE #210
 TULSA OK, 74137
 Fax To:

Received: 05/02/2019
 Reported: 05/08/2019
 Project Name: MORRIS BOYD FED COM #1H
 Project Number: NONE GIVEN
 Project Location: NONE GIVEN

Sampling Date: 04/29/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SP 7 - 28' (H901597-04)

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	05/07/2019	ND	2.07	103	2.00	0.266	
Toluene*	<0.050	0.050	05/07/2019	ND	2.17	108	2.00	1.44	
Ethylbenzene*	<0.050	0.050	05/07/2019	ND	2.07	104	2.00	0.912	
Total Xylenes*	<0.150	0.150	05/07/2019	ND	6.33	106	6.00	0.408	
Total BTEX	<0.300	0.300	05/07/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 108 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	144	16.0	05/07/2019	ND	416	104	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	05/06/2019	ND	195	97.7	200	1.90	
DRO >C10-C28*	<10.0	10.0	05/06/2019	ND	201	101	200	10.0	
EXT DRO >C28-C36	<10.0	10.0	05/06/2019	ND					

Surrogate: 1-Chlorooctane 92.6 % 41-142

Surrogate: 1-Chlorooctadecane 103 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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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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A handwritten signature in black ink, appearing to read "Celey D. Keene".

Celey D. Keene, Lab Director/Quality Manager

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

(575) 393-2326 FAX (575) 393-2476

[illegible]



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

May 15, 2019

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

RE: MORRIS BOYD FED COM #1H

Enclosed are the results of analyses for samples received by the laboratory on 05/14/19 15:00.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

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



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: 05/14/2019
 Reported: 05/15/2019
 Project Name: MORRIS BOYD FED COM #1H
 Project Number: NONE GIVEN
 Project Location: NONE GIVEN

Sampling Date: 05/11/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: ESW 1 (H901752-01)

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	05/15/2019	ND	1.94	97.1	2.00	0.954	
Toluene*	<0.050	0.050	05/15/2019	ND	2.05	103	2.00	0.861	
Ethylbenzene*	<0.050	0.050	05/15/2019	ND	1.97	98.4	2.00	0.174	
Total Xylenes*	<0.150	0.150	05/15/2019	ND	5.93	98.8	6.00	1.12	
Total BTEX	<0.300	0.300	05/15/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 96.5 % 73.3-129

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	05/15/2019	ND	400	100	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	05/15/2019	ND	195	97.7	200	3.22	
DRO >C10-C28*	<10.0	10.0	05/15/2019	ND	183	91.5	200	3.40	
EXT DRO >C28-C36	<10.0	10.0	05/15/2019	ND					

Surrogate: 1-Chlorooctane 83.8 % 41-142

Surrogate: 1-Chlorooctadecane 87.2 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 05/14/2019
 Reported: 05/15/2019
 Project Name: MORRIS BOYD FED COM #1H
 Project Number: NONE GIVEN
 Project Location: NONE GIVEN

Sampling Date: 05/11/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: ESW 2 (H901752-02)

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	05/15/2019	ND	1.94	97.1	2.00	0.954	
Toluene*	<0.050	0.050	05/15/2019	ND	2.05	103	2.00	0.861	
Ethylbenzene*	<0.050	0.050	05/15/2019	ND	1.97	98.4	2.00	0.174	
Total Xylenes*	<0.150	0.150	05/15/2019	ND	5.93	98.8	6.00	1.12	
Total BTEX	<0.300	0.300	05/15/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.8 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	112	16.0	05/15/2019	ND	400	100	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	05/15/2019	ND	195	97.7	200	3.22	
DRO >C10-C28*	<10.0	10.0	05/15/2019	ND	183	91.5	200	3.40	
EXT DRO >C28-C36	<10.0	10.0	05/15/2019	ND					

Surrogate: 1-Chlorooctane 91.5 % 41-142

Surrogate: 1-Chlorooctadecane 95.3 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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: 05/14/2019
 Reported: 05/15/2019
 Project Name: MORRIS BOYD FED COM #1H
 Project Number: NONE GIVEN
 Project Location: NONE GIVEN

Sampling Date: 05/11/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: ESW 3 (H901752-03)

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	05/15/2019	ND	1.94	97.1	2.00	0.954	
Toluene*	<0.050	0.050	05/15/2019	ND	2.05	103	2.00	0.861	
Ethylbenzene*	<0.050	0.050	05/15/2019	ND	1.97	98.4	2.00	0.174	
Total Xylenes*	<0.150	0.150	05/15/2019	ND	5.93	98.8	6.00	1.12	
Total BTEX	<0.300	0.300	05/15/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.0 % 73.3-129

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	05/15/2019	ND	400	100	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	05/15/2019	ND	195	97.7	200	3.22	
DRO >C10-C28*	<10.0	10.0	05/15/2019	ND	183	91.5	200	3.40	
EXT DRO >C28-C36	<10.0	10.0	05/15/2019	ND					

Surrogate: 1-Chlorooctane 92.9 % 41-142

Surrogate: 1-Chlorooctadecane 96.6 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 05/14/2019
 Reported: 05/15/2019
 Project Name: MORRIS BOYD FED COM #1H
 Project Number: NONE GIVEN
 Project Location: NONE GIVEN

Sampling Date: 05/11/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: ESW 4 (H901752-04)

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	05/15/2019	ND	1.94	97.1	2.00	0.954	
Toluene*	<0.050	0.050	05/15/2019	ND	2.05	103	2.00	0.861	
Ethylbenzene*	<0.050	0.050	05/15/2019	ND	1.97	98.4	2.00	0.174	
Total Xylenes*	<0.150	0.150	05/15/2019	ND	5.93	98.8	6.00	1.12	
Total BTX	<0.300	0.300	05/15/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 98.3 % 73.3-129

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	05/15/2019	ND	400	100	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	05/15/2019	ND	195	97.7	200	3.22	
DRO >C10-C28*	<10.0	10.0	05/15/2019	ND	183	91.5	200	3.40	
EXT DRO >C28-C36	<10.0	10.0	05/15/2019	ND					

Surrogate: 1-Chlorooctane 93.2 % 41-142

Surrogate: 1-Chlorooctadecane 97.2 % 37.6-147

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Analytical Results For:

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

Received: 05/14/2019
 Reported: 05/15/2019
 Project Name: MORRIS BOYD FED COM #1H
 Project Number: NONE GIVEN
 Project Location: NONE GIVEN

Sampling Date: 05/11/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: NSW 1 (H901752-05)

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	05/15/2019	ND	1.94	97.1	2.00	0.954	
Toluene*	<0.050	0.050	05/15/2019	ND	2.05	103	2.00	0.861	
Ethylbenzene*	<0.050	0.050	05/15/2019	ND	1.97	98.4	2.00	0.174	
Total Xylenes*	<0.150	0.150	05/15/2019	ND	5.93	98.8	6.00	1.12	
Total BTEX	<0.300	0.300	05/15/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 98.9 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	272	16.0	05/15/2019	ND	400	100	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	05/15/2019	ND	195	97.7	200	3.22	
DRO >C10-C28*	<10.0	10.0	05/15/2019	ND	183	91.5	200	3.40	
EXT DRO >C28-C36	<10.0	10.0	05/15/2019	ND					

Surrogate: 1-Chlorooctane 89.4 % 41-142

Surrogate: 1-Chlorooctadecane 92.9 % 37.6-147

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Analytical Results For:

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

Received: 05/14/2019
 Reported: 05/15/2019
 Project Name: MORRIS BOYD FED COM #1H
 Project Number: NONE GIVEN
 Project Location: NONE GIVEN

Sampling Date: 05/11/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: NSW 2 (H901752-06)

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	05/15/2019	ND	1.94	97.1	2.00	0.954		
Toluene*	<0.050	0.050	05/15/2019	ND	2.05	103	2.00	0.861		
Ethylbenzene*	<0.050	0.050	05/15/2019	ND	1.97	98.4	2.00	0.174		
Total Xylenes*	<0.150	0.150	05/15/2019	ND	5.93	98.8	6.00	1.12		
Total BTEX	<0.300	0.300	05/15/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 100 % 73.3-129

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	05/15/2019	ND	400	100	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	05/15/2019	ND	195	97.7	200	3.22	
DRO >C10-C28*	<10.0	10.0	05/15/2019	ND	183	91.5	200	3.40	
EXT DRO >C28-C36	<10.0	10.0	05/15/2019	ND					

Surrogate: 1-Chlorooctane 93.7 % 41-142

Surrogate: 1-Chlorooctadecane 98.3 % 37.6-147

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Analytical Results For:

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

Received: 05/14/2019
 Reported: 05/15/2019
 Project Name: MORRIS BOYD FED COM #1H
 Project Number: NONE GIVEN
 Project Location: NONE GIVEN

Sampling Date: 05/11/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SSW 1 (H901752-07)

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	05/15/2019	ND	1.94	97.1	2.00	0.954	
Toluene*	<0.050	0.050	05/15/2019	ND	2.05	103	2.00	0.861	
Ethylbenzene*	<0.050	0.050	05/15/2019	ND	1.97	98.4	2.00	0.174	
Total Xylenes*	<0.150	0.150	05/15/2019	ND	5.93	98.8	6.00	1.12	
Total BTX	<0.300	0.300	05/15/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 96.1 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	05/15/2019	ND	400	100	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	05/15/2019	ND	195	97.7	200	3.22	
DRO >C10-C28*	<10.0	10.0	05/15/2019	ND	183	91.5	200	3.40	
EXT DRO >C28-C36	<10.0	10.0	05/15/2019	ND					

Surrogate: 1-Chlorooctane 88.4 % 41-142

Surrogate: 1-Chlorooctadecane 92.2 % 37.6-147

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Analytical Results For:

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

Received: 05/14/2019
 Reported: 05/15/2019
 Project Name: MORRIS BOYD FED COM #1H
 Project Number: NONE GIVEN
 Project Location: NONE GIVEN

Sampling Date: 05/11/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SSW 2 (H901752-08)

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	05/15/2019	ND	1.94	97.1	2.00	0.954	
Toluene*	<0.050	0.050	05/15/2019	ND	2.05	103	2.00	0.861	
Ethylbenzene*	<0.050	0.050	05/15/2019	ND	1.97	98.4	2.00	0.174	
Total Xylenes*	<0.150	0.150	05/15/2019	ND	5.93	98.8	6.00	1.12	
Total BTX	<0.300	0.300	05/15/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 73.3-129

Chloride, SM4500CI-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	05/15/2019	ND	400	100	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	05/15/2019	ND	195	97.7	200	3.22	
DRO >C10-C28*	<10.0	10.0	05/15/2019	ND	183	91.5	200	3.40	
EXT DRO >C28-C36	<10.0	10.0	05/15/2019	ND					

Surrogate: 1-Chlorooctane 85.1 % 41-142

Surrogate: 1-Chlorooctadecane 87.4 % 37.6-147

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Analytical Results For:

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

Received: 05/14/2019
 Reported: 05/15/2019
 Project Name: MORRIS BOYD FED COM #1H
 Project Number: NONE GIVEN
 Project Location: NONE GIVEN

Sampling Date: 05/11/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: WSW 1 (H901752-09)

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	05/15/2019	ND	1.94	97.1	2.00	0.954	
Toluene*	<0.050	0.050	05/15/2019	ND	2.05	103	2.00	0.861	
Ethylbenzene*	<0.050	0.050	05/15/2019	ND	1.97	98.4	2.00	0.174	
Total Xylenes*	<0.150	0.150	05/15/2019	ND	5.93	98.8	6.00	1.12	
Total BTX	<0.300	0.300	05/15/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 98.9 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	224	16.0	05/15/2019	ND	400	100	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	05/15/2019	ND	195	97.7	200	3.22	
DRO >C10-C28*	<10.0	10.0	05/15/2019	ND	183	91.5	200	3.40	
EXT DRO >C28-C36	<10.0	10.0	05/15/2019	ND					

Surrogate: 1-Chlorooctane 87.5 % 41-142

Surrogate: 1-Chlorooctadecane 90.1 % 37.6-147

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Analytical Results For:

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

Received: 05/14/2019
 Reported: 05/15/2019
 Project Name: MORRIS BOYD FED COM #1H
 Project Number: NONE GIVEN
 Project Location: NONE GIVEN

Sampling Date: 05/11/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: WSW 2 (H901752-10)

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	05/15/2019	ND	1.94	97.1	2.00	0.954	
Toluene*	<0.050	0.050	05/15/2019	ND	2.05	103	2.00	0.861	
Ethylbenzene*	<0.050	0.050	05/15/2019	ND	1.97	98.4	2.00	0.174	
Total Xylenes*	<0.150	0.150	05/15/2019	ND	5.93	98.8	6.00	1.12	
Total BTEX	<0.300	0.300	05/15/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 97.5 % 73.3-129

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	05/15/2019	ND	400	100	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	05/15/2019	ND	195	97.7	200	3.22	
DRO >C10-C28*	<10.0	10.0	05/15/2019	ND	183	91.5	200	3.40	
EXT DRO >C28-C36	<10.0	10.0	05/15/2019	ND					

Surrogate: 1-Chlorooctane 73.4 % 41-142

Surrogate: 1-Chlorooctadecane 76.3 % 37.6-147

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Analytical Results For:

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

Received: 05/14/2019
 Reported: 05/15/2019
 Project Name: MORRIS BOYD FED COM #1H
 Project Number: NONE GIVEN
 Project Location: NONE GIVEN

Sampling Date: 05/11/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: WSW 3 (H901752-11)

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	05/15/2019	ND	1.94	97.1	2.00	0.954		
Toluene*	<0.050	0.050	05/15/2019	ND	2.05	103	2.00	0.861		
Ethylbenzene*	<0.050	0.050	05/15/2019	ND	1.97	98.4	2.00	0.174		
Total Xylenes*	<0.150	0.150	05/15/2019	ND	5.93	98.8	6.00	1.12		
Total BTEX	<0.300	0.300	05/15/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 97.7 % 73.3-129

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	05/15/2019	ND	400	100	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	05/15/2019	ND	195	97.7	200	3.22	
DRO >C10-C28*	<10.0	10.0	05/15/2019	ND	183	91.5	200	3.40	
EXT DRO >C28-C36	<10.0	10.0	05/15/2019	ND					

Surrogate: 1-Chlorooctane 87.8 % 41-142

Surrogate: 1-Chlorooctadecane 91.0 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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: 05/14/2019
 Reported: 05/15/2019
 Project Name: MORRIS BOYD FED COM #1H
 Project Number: NONE GIVEN
 Project Location: NONE GIVEN

Sampling Date: 05/11/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: WSW 4 (H901752-12)

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	05/15/2019	ND	1.94	97.1	2.00	0.954	
Toluene*	<0.050	0.050	05/15/2019	ND	2.05	103	2.00	0.861	
Ethylbenzene*	<0.050	0.050	05/15/2019	ND	1.97	98.4	2.00	0.174	
Total Xylenes*	<0.150	0.150	05/15/2019	ND	5.93	98.8	6.00	1.12	
Total BTX	<0.300	0.300	05/15/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 96.6 % 73.3-129

Chloride, SM4500CI-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	05/15/2019	ND	400	100	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	05/15/2019	ND	195	97.7	200	3.22	
DRO >C10-C28*	<10.0	10.0	05/15/2019	ND	183	91.5	200	3.40	
EXT DRO >C28-C36	<10.0	10.0	05/15/2019	ND					

Surrogate: 1-Chlorooctane 88.8 % 41-142

Surrogate: 1-Chlorooctadecane 92.0 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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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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A handwritten signature in black ink, appearing to read "Celey D. Keene".

Celey D. Keene, Lab Director/Quality Manager

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

[illegible]



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

May 15, 2019

NATALIE GLADDEN

WHITE BUFFALO

8908 YALE AVE #210

TULSA, OK 74137

RE: MORRIS BOYD FED COM #1H

Enclosed are the results of analyses for samples received by the laboratory on 05/14/19 15:00.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive style with a large, stylized 'C' and 'K'.

Celey D. Keene

Lab Director/Quality Manager



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: 05/14/2019
 Reported: 05/15/2019
 Project Name: MORRIS BOYD FED COM #1H
 Project Number: NONE GIVEN
 Project Location: NONE GIVEN

Sampling Date: 05/14/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: BH # 3 (H901748-01)

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	05/14/2019	ND	1.57	78.5	2.00	0.230	
Toluene*	<0.050	0.050	05/14/2019	ND	1.81	90.4	2.00	0.387	
Ethylbenzene*	<0.050	0.050	05/14/2019	ND	1.82	91.2	2.00	0.480	
Total Xylenes*	<0.150	0.150	05/14/2019	ND	5.76	96.0	6.00	0.276	
Total BTEX	<0.300	0.300	05/14/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 86.8 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	6240	16.0	05/15/2019	ND	416	104	400	3.92		

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	05/15/2019	ND	206	103	200	0.00242	
DRO >C10-C28*	<10.0	10.0	05/15/2019	ND	206	103	200	4.87	
EXT DRO >C28-C36	<10.0	10.0	05/15/2019	ND					

Surrogate: 1-Chlorooctane 98.9 % 41-142

Surrogate: 1-Chlorooctadecane 105 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 05/14/2019
 Reported: 05/15/2019
 Project Name: MORRIS BOYD FED COM #1H
 Project Number: NONE GIVEN
 Project Location: NONE GIVEN

Sampling Date: 05/14/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: BH # 5 (H901748-02)

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	05/14/2019	ND	1.57	78.5	2.00	0.230	
Toluene*	<0.050	0.050	05/14/2019	ND	1.81	90.4	2.00	0.387	
Ethylbenzene*	<0.050	0.050	05/14/2019	ND	1.82	91.2	2.00	0.480	
Total Xylenes*	<0.150	0.150	05/14/2019	ND	5.76	96.0	6.00	0.276	
Total BTEX	<0.300	0.300	05/14/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 98.6 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	5040	16.0	05/15/2019	ND	416	104	400	3.92	

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	05/15/2019	ND	206	103	200	0.00242	
DRO >C10-C28*	<10.0	10.0	05/15/2019	ND	206	103	200	4.87	
EXT DRO >C28-C36	<10.0	10.0	05/15/2019	ND					

Surrogate: 1-Chlorooctane 98.4 % 41-142

Surrogate: 1-Chlorooctadecane 104 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 05/14/2019
 Reported: 05/15/2019
 Project Name: MORRIS BOYD FED COM #1H
 Project Number: NONE GIVEN
 Project Location: NONE GIVEN

Sampling Date: 05/14/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: BH # 1 (H901748-03)

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	05/14/2019	ND	1.57	78.5	2.00	0.230	
Toluene*	<0.050	0.050	05/14/2019	ND	1.81	90.4	2.00	0.387	
Ethylbenzene*	<0.050	0.050	05/14/2019	ND	1.82	91.2	2.00	0.480	
Total Xylenes*	<0.150	0.150	05/14/2019	ND	5.76	96.0	6.00	0.276	
Total BTEX	<0.300	0.300	05/14/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 77.7 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	128	16.0	05/15/2019	ND	416	104	400	3.92	

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	05/15/2019	ND	206	103	200	0.00242	
DRO >C10-C28*	<10.0	10.0	05/15/2019	ND	206	103	200	4.87	
EXT DRO >C28-C36	<10.0	10.0	05/15/2019	ND					

Surrogate: 1-Chlorooctane 91.2 % 41-142

Surrogate: 1-Chlorooctadecane 95.4 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 05/14/2019
 Reported: 05/15/2019
 Project Name: MORRIS BOYD FED COM #1H
 Project Number: NONE GIVEN
 Project Location: NONE GIVEN

Sampling Date: 05/14/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: BH # 2 (H901748-04)

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	05/14/2019	ND	1.57	78.5	2.00	0.230		
Toluene*	<0.050	0.050	05/14/2019	ND	1.81	90.4	2.00	0.387		
Ethylbenzene*	<0.050	0.050	05/14/2019	ND	1.82	91.2	2.00	0.480		
Total Xylenes*	<0.150	0.150	05/14/2019	ND	5.76	96.0	6.00	0.276		
Total BTEx	<0.300	0.300	05/14/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 96.8 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	05/15/2019	ND	416	104	400	3.92	

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	05/15/2019	ND	206	103	200	0.00242	
DRO >C10-C28*	<10.0	10.0	05/15/2019	ND	206	103	200	4.87	
EXT DRO >C28-C36	<10.0	10.0	05/15/2019	ND					

Surrogate: 1-Chlorooctane 90.0 % 41-142

Surrogate: 1-Chlorooctadecane 96.7 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 05/14/2019
 Reported: 05/15/2019
 Project Name: MORRIS BOYD FED COM #1H
 Project Number: NONE GIVEN
 Project Location: NONE GIVEN

Sampling Date: 05/14/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: BH # 4 (H901748-05)

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	05/14/2019	ND	1.57	78.5	2.00	0.230	
Toluene*	<0.050	0.050	05/14/2019	ND	1.81	90.4	2.00	0.387	
Ethylbenzene*	<0.050	0.050	05/14/2019	ND	1.82	91.2	2.00	0.480	
Total Xylenes*	<0.150	0.150	05/14/2019	ND	5.76	96.0	6.00	0.276	
Total BTEX	<0.300	0.300	05/14/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 100 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	688	16.0	05/15/2019	ND	416	104	400	3.92	

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	05/15/2019	ND	206	103	200	0.00242	
DRO >C10-C28*	<10.0	10.0	05/15/2019	ND	206	103	200	4.87	
EXT DRO >C28-C36	<10.0	10.0	05/15/2019	ND					

Surrogate: 1-Chlorooctane 94.2 % 41-142

Surrogate: 1-Chlorooctadecane 98.5 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 05/14/2019
 Reported: 05/15/2019
 Project Name: MORRIS BOYD FED COM #1H
 Project Number: NONE GIVEN
 Project Location: NONE GIVEN

Sampling Date: 05/14/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: BH COM. (H901748-06)

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	05/14/2019	ND	1.57	78.5	2.00	0.230		
Toluene*	<0.050	0.050	05/14/2019	ND	1.81	90.4	2.00	0.387		
Ethylbenzene*	<0.050	0.050	05/14/2019	ND	1.82	91.2	2.00	0.480		
Total Xylenes*	<0.150	0.150	05/14/2019	ND	5.76	96.0	6.00	0.276		
Total BTEX	<0.300	0.300	05/14/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 87.8 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	2520	16.0	05/15/2019	ND	416	104	400	3.92		

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	05/15/2019	ND	206	103	200	0.00242	
DRO >C10-C28*	<10.0	10.0	05/15/2019	ND	206	103	200	4.87	
EXT DRO >C28-C36	<10.0	10.0	05/15/2019	ND					

Surrogate: 1-Chlorooctane 91.9 % 41-142

Surrogate: 1-Chlorooctadecane 97.7 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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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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A handwritten signature in black ink, appearing to read "Celey D. Keene".

Celey D. Keene, Lab Director/Quality Manager



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

+ Cardinal cannot accept verbal changes. Please for written changes to (K75) 202-2226

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 Department

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

Form C-141
Revised August 24, 2018
Submit to appropriate OCD District office

Incident ID	NAB1910937075
District RP	2RP-5353
Facility ID	
Application ID	pAB1910936795

Release Notification

Responsible Party

Responsible Party Percussion Petroleum	OGRID 371755
Contact Name Michael Martin	Contact Telephone (713) 429-4249
Contact email Michael@percussionpetroleum.com	Incident # (assigned by OCD) NAB1910937075
Contact mailing address 919 Milam Street, Suite 2475 Houston, TX 77002	

Location of Release Source

Latitude 32.62931 Longitude -104.44991
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Morris Boyd 26 Fee Com #1H	Site Type SWD Line
Date Release Discovered 3/27/2019	API# (if applicable) 30-015-38962

Unit Letter	Section	Township	Range	County
I	26	19S	25E	Eddy

Surface Owner: ☐ State ☐ Federal ☐ Tribal ☒ Private (Name: _____)

Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)

<input type="checkbox"/> Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
<input checked="" type="checkbox"/> Produced Water	Volume Released (bbls) 25 bbls	Volume Recovered (bbls) 0 bbls
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release
Spill was due to a leak in one of our SWD lines going to a company-operated SWD well. The spill was north of our Morris Boyd #1H location (listed closest well for site name). The spill was estimated to be 25 bbls (length x width x depth divided by 5.62) and was mostly dried up when we discovered it. We repaired the line and put it back in service.

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Incident ID	NAB1910937075
District RP	2RP-5353
Facility ID	
Application ID	pAB1910936795

Was this a major release as defined by 19.15.29.7(A) NMAC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If YES, for what reason(s) does the responsible party consider this a major release? Release of 25 bbls fluid.
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? Yes, Michael Martin emailed Mike Bratcher (NMOCD) on 3/28/2019 at 3:20 PM	

Initial Response

The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury

<input checked="" type="checkbox"/> The source of the release has been stopped. <input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment. <input checked="" type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. <input checked="" type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> been undertaken, explain why: 	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
Printed Name: <u>Michael Martin</u>	Title: <u>Production Engineer</u>
Signature: <u></u>	Date: <u>4/4/2019</u>
email: <u>Michael@percussionpetroleum.com</u>	Telephone: <u>(713) 429-4249</u>
OCD Only	
Received by: <u></u>	Date: <u>4/19/2019</u>

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

What is the shallowest depth to groundwater beneath the area affected by the release?	40-105 (ft bgs)
Did this release impact groundwater or surface water?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Did the release impact areas not on an exploration, development, production, or storage site?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

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

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

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

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

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Printed Name: Natalie Gladden Title: Environmental and Regulatory Director

Signature 

Date: 8/22/19 + 3/17/20

email: _ngladden@hungry-horse.com

Telephone: _575-390-6397

OCD Only

Received by: _____

Date: _____

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Remediation Plan

Remediation Plan Checklist: *Each of the following items must be included in the plan.*

- ☒ Detailed description of proposed remediation technique
- ☒ Scaled sitemap with GPS coordinates showing delineation points
- ☒ Estimated volume of material to be remediated
- ☒ Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC
- ☒ Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required)

Deferral Requests Only: *Each of the following items must be confirmed as part of any request for deferral of remediation.*

- ☒ Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.
- ☒ Extents of contamination must be fully delineated.
- ☒ Contamination does not cause an imminent risk to human health, the environment, or groundwater.

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Printed Name: Natalie Gladden Title: Environmental and Regulatory Director

Signature: Natalie Gladden Date: 8/22/19 + 3/17/20email: ngladden@hungry-horse.com Telephone: 575-390-6397**OCD Only**

Received by: _____ Date: _____

☐ Approved ☐ Approved with Attached Conditions of Approval ☐ Denied ☐ Deferral Approved

Signature: _____ Date: _____

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Closure

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

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

- ☒ A scaled site and sampling diagram as described in 19.15.29.11 NMAC
- ☐ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)
- ☒ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)
- ☒ Description of remediation activities

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Printed Name: Natalie Gladden Title: Environmental and Regulatory Director
Signature:  Date: 8/22/19 + 3/17/20
email: ngladden@hungry-horse.com Telephone: 575-390-6397

OCD Only

Received by: _____ Date: _____

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

Closure Approved by: _____ Date: _____

Printed Name: _____ Title: _____