

# Remediation Summary Report

## General Information

This report, prepared by Hungry Horse, LLC, is in response to the remediation activities conducted at the Grand Banks Energy, Anderson Ranch Unit #16 (managed by Cambrian Management) that resulted from an unplanned release of crude oil and produced water.

Date: 20Oct16

Client: Cambrian Management

Site Name: Anderson Ranch Unit #16

API: 30-025-00368

County: Lea

State: New Mexico

Site Coordinates

Latitude: 32.9489

Longitude: -103.7435

Legals: UL. T, Sec. 2, T16S, R32E

Property Owner: State of New Mexico

New Mexico Oil Conservation Division RP No.: 1RP 4422

**APPROVED**

**By Olivia Yu at 1:39 pm, Jun 28, 2017**

**NMOCD grants closure to 1RP-4422.**

## Release Description and Assessment

Date of Spill: 10Aug16

Type of Spill:  Oil  Produced Water  Condensate  Other (Specify):

Cause of Spill:  Equipment Failure  Valve Failure  Line Rupture  Leaking Tank  Tank Overfill

Other (Specify):

Other Contributing Factors or Comments:

Quantity Spilled: 2000 bbls

Quantity Recovered: 1990 bbls

Total Released: 10 bbls

Method of Recovery:  Vacuum Truck

Other (Specify):

New Mexico Oil Conservation Division Notified:  Yes  No

C-141 Completed and Submitted:  Yes  No  Not Required

Spill Area Impacted:  Inside Firewall  On Production Pad  In Pasture  In Cultivated Land

Other (Specify):

Area Impacted: 750' x 8' Pasture

Estimated Depth: 1.5'

60' x 50' Pad

Estimated Depth: 2.5'

Other Comments: N/A

## Remediation Activity Summary

The impacted area was divided into two separate work areas for remediation purposes, the pad and the pasture. The pad was excavated to a depth of approximately 2.5' BGS. Three areas were selected for sampling. Soil samples were obtained and lab analysis was conducted for Chlorides, TPH, and BTEX. The impacted in the pasture was excavated to an average depth of approximately 1.5'. Four areas were selected for sampling. Soil samples from these four selected areas were obtained and lab analysis was conducted for Chlorides, TPH, and BTEX. (See attached drawing for impacted areas and sample points.) All impacted soil was transported to a division approved disposal facility.

Analytical results indicated contaminant levels well below the required limits for a site with a Ranking Score of "0". These results were presented to NM OCD requesting approval for closure. The approval was given and the excavated areas were backfilled. The area in the pasture was seeded in accordance with the NM SLO approved Re-vegetation Plan.



Vernon K. Black, Hungry Horse, LLC

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

Form C-141  
Revised August 8, 2011

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

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

**Release Notification and Corrective Action**

**OPERATOR**

Initial Report  Final Report

Name of Company Grand Banks Energy	Contact Denise Jones	
Address 10 Desta Drive, Ste 300-E, Midland, TX 79705	Telephone No. 432 620 9181	
Facility Name Anderson Ranch Unit #16	Facility Type Disposal	
Surface Owner State of NM	Mineral Owner	API No. 30-025-00368

**LOCATION OF RELEASE**

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
T	2	16S	32E	1980'	South	660'	West	Lea

Latitude 32.9489 Longitude-103.7435

**NATURE OF RELEASE**

Type of Release Oil and Produced Water	Volume of Release 2000 bbls	Volume Recovered 1990 bbls
Source of Release SWD Tank	Date and Hour of Occurrence 10Aug16 0600hrs	Date and Hour of Discovery 10Aug16 1400hrs
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Jamie Keyes, NM OCD	
By Whom? Denise Jones	Date and Hour 10Aug16 1500hrs	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse. N/A	

If a Watercourse was Impacted, Describe Fully.\*  
N/A

**APPROVED**

**By Olivia Yu at 1:40 pm, Jun 28, 2017**

**Describe Cause of Problem and Remedial Action Taken.\***

A severe storm in the area turned the pump off and shut down the automation system thus causing the tank to overflow. Upon discovery, vacuum trucks were dispatched to the site to start the recovery of the free standing fluid. An environmental contractor was summoned to conduct the remedial cleanup using back-hoes and loaders to excavate the saturated soil in order to prevent further downward migration and to prevent further run off in the event of more rain. This excavated material was stockpiled on plastic for transport to the disposal site.

**Describe Area Affected and Cleanup Action Taken.\***

The lined containment and tanks were steam cleaned and pressure washed. The impacted area outside the lined tank containment, pad to the north and pasture to the northeast, was excavated and soil samples obtained. Lab analyst was presented to NM OCD seeking closure. Closure was granted and the excavated area in the pasture was backfilled with fresh material and the area seeded in accordance with the NM SLO approve re-vegetation plan. The excavated portion of the pas was backfilled with fresh caliche, compacted and brought back to grade.

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

Signature: <i>Denise Jones</i>	<b>OIL CONSERVATION DIVISION</b>	
Printed Name: Denise Jones	Approved by Environmental Specialist: <i>of</i>	
Title: Regulatory Analyst	Approval Date: <b>6/28/2017</b>	Expiration Date: <b>xx/xx/xxxx</b>
E-mail Address: djones@cambrianmgmt.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: 19Oct16	Phone: 432 620 9181	

\* Attach Additional Sheets If Necessary

IRP-4422

## Vernon Black

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**From:** Lynch, Kristen, EMNRD <Kristen.Lynch@state.nm.us>  
**Sent:** Tuesday, October 18, 2016 3:15 PM  
**To:** Vernon Black  
**Cc:** agroves@slo.state.nm.us; Oberding, Tomas, EMNRD  
**Subject:** RE: Cambrian Mgmt Anderson Ranch Unit #16 Work Plan

Good Afternoon,

Based on documents provided, NMOCD approves your request to backfill. I will be looking forward to receiving your closure report/C141.

Thanks Again,

*Kristen D. Lynch  
Environmental Specialist, District 1  
Oil Conservation Division, EMNRD  
(575) 393-6161 ext. 111  
575-370-3180 (emergency-cell)*

OCD approval does not relieve the operator of liability should their operations fail to adequately investigate and remediate contamination that may pose a threat to ground water, surface water, human health or the environment. In addition, OCD approval does not relieve the operator of responsibility for compliance with any other federal, state, local laws and/or regulations.

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**From:** Vernon Black [<mailto:vblack@hungry-horse.com>]  
**Sent:** Monday, October 17, 2016 3:47 PM  
**To:** Lynch, Kristen, EMNRD  
**Subject:** RE: Cambrian Mgmt Anderson Ranch Unit #16 Work Plan

Hello Kristen,

Please see the attached lab results for the above referenced location. Looks like we've got it all.....We' ready to complete the backfilling with your approval.

Thanks,  
Vernon

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**From:** Lynch, Kristen, EMNRD [<mailto:Kristen.Lynch@state.nm.us>]  
**Sent:** Tuesday, September 20, 2016 9:22 AM  
**To:** Vernon Black <[vblack@hungry-horse.com](mailto:vblack@hungry-horse.com)>  
**Cc:** Oberding, Tomas, EMNRD <[Tomas.Oberding@state.nm.us](mailto:Tomas.Oberding@state.nm.us)>  
**Subject:** RE: Cambrian Mgmt Anderson Ranch Unit #16 Work Plan

Thank you for the update. I will be looking forward to hearing from you.

## Vernon Black

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**From:** Groves, Amber <agroves@slo.state.nm.us>  
**Sent:** Wednesday, September 21, 2016 9:32 AM  
**To:** Vernon Black  
**Cc:** Lynch, Kristen, EMNRD  
**Subject:** RE: Cambrian Mgmt Anderson Ranch Unit #16 Work Plan

Good Morning, Vernon,

NMSLO is in concurrence with NMOCD on additional sampling. Your re-vegetation plan is approved with the stipulation that if desired vegetation is not achieved in one years time, it will continue to be monitored.

Thank you,

**Amber Groves**  
*Remediation Specialist*  
*Field Operations Division*  
(575)392-3697  
(575)263-3209 cell  
New Mexico State Land Office  
2827 N. Dal Paso Suite 117  
Hobbs, NM 88260



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**From:** Vernon Black [mailto:vblack@hungry-horse.com]  
**Sent:** Monday, September 12, 2016 6:06 AM  
**To:** Groves, Amber <agroves@slo.state.nm.us>  
**Subject:** FW: Cambrian Mgmt Anderson Ranch Unit #16 Work Plan

Good Morning Amber,

I sincerely apologize for not including you on this original e-mail when it was sent to the NM OCD. I just realized this weekend , I left you off. Anyway we're about to the point of starting to backfill, we just have one area behind the battery to dig more out of. Let me know what kind of seed you'd lie on this one.

Thanks,  
Vernon

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**From:** Lynch, Kristen, EMNRD [mailto:Kristen.Lynch@state.nm.us]  
**Sent:** Friday, September 09, 2016 9:34 AM

**To:** Vernon Black <[vblack@hungry-horse.com](mailto:vblack@hungry-horse.com)>; [djones@cambrianmgmt.com](mailto:djones@cambrianmgmt.com)  
**Cc:** Keyes, Jamie, EMNRD <[Jamie.Keyes@state.nm.us](mailto:Jamie.Keyes@state.nm.us)>  
**Subject:** RE: Cambrian Mgmt Anderson Ranch Unit #16 Work Plan

Good Morning,

In regards to our site meeting yesterday, NMOCD is requesting additional sampling as per our discussion.

Thank You,

*Kristen D. Lynch  
Environmental Specialist, District 1  
Oil Conservation Division, EMNRD  
(575) 393-6161 ext. 111  
575-370-3180 (emergency-cell)*

OCD approval does not relieve the operator of liability should their operations fail to adequately investigate and remediate contamination that may pose a threat to ground water, surface water, human health or the environment. In addition, OCD approval does not relieve the operator of responsibility for compliance with any other federal, state, local laws and/or regulations.

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**From:** Vernon Black [<mailto:vblack@hungry-horse.com>]  
**Sent:** Wednesday, August 31, 2016 3:53 PM  
**To:** Lynch, Kristen, EMNRD  
**Subject:** Re: Cambrian Mgmt Anderson Ranch Unit #16 Work Plan

1000 hrs will ok.

Sent from my iPad  
Vernon K. Black

On Aug 31, 2016, at 14:32, Lynch, Kristen, EMNRD <[Kristen.Lynch@state.nm.us](mailto:Kristen.Lynch@state.nm.us)> wrote:

Looking at our schedule 10:00 would be the earliest we could get out there. Let us know!

Thanks,

*Kristen D. Lynch  
Environmental Specialist, District 1  
Oil Conservation Division, EMNRD  
(575) 393-6161 ext. 111  
575-370-3180 (emergency-cell)*

OCD approval does not relieve the operator of liability should their operations fail to adequately investigate and remediate contamination that may pose a threat to ground water, surface water, human health or the environment. In addition, OCD approval does not relieve the operator of responsibility for compliance with any other federal, state, local laws and/or regulations.

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**From:** Vernon Black [<mailto:vblack@hungry-horse.com>]  
**Sent:** Wednesday, August 31, 2016 1:02 PM  
**To:** Lynch, Kristen, EMNRD  
**Subject:** Re: Cambrian Mgmt Anderson Ranch Unit #16 Work Plan

I think Thursday, 8Sept, will work. The earlier the better for me. Let me know what time will work for you.

Sent from my iPad  
Vernon K. Black

On Aug 31, 2016, at 10:32, Lynch, Kristen, EMNRD <[Kristen.Lynch@state.nm.us](mailto:Kristen.Lynch@state.nm.us)> wrote:

Vernon,

Jamie and I were wondering if you would like to schedule a field visit. We went out on Monday to get a visual of this site. We would like to visit with you onsite about your work plan. Thursday Sept 8 would be best for our group.

Thank You,

*Kristen D. Lynch  
Environmental Specialist, District 1  
Oil Conservation Division, EMNRD  
(575) 393-6161 ext. 111  
575-370-3180 (emergency-cell)*

OCD approval does not relieve the operator of liability should their operations fail to adequately investigate and remediate contamination that may pose a threat to ground water, surface water, human health or the environment. In addition, OCD approval does not relieve the operator of responsibility for compliance with any other federal, state, local laws and/or regulations.

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**From:** Vernon Black [<mailto:vblack@hungry-horse.com>]  
**Sent:** Wednesday, August 31, 2016 8:05 AM  
**To:** Keyes, Jamie, EMNRD; Lynch, Kristen, EMNRD  
**Subject:** Fwd: Cambrian Mgmt Anderson Ranch Unit #16 Work Plan

I was just checking to see if you'd gotten a chance to look at this yet.

Sent from my iPad  
Vernon K. Black

Begin forwarded message:

**From:** "Vernon Black" <[vblack@hungry-horse.com](mailto:vblack@hungry-horse.com)>  
**To:** "Keyes, Jamie, EMNRD" <[Jamie.Keyes@state.nm.us](mailto:Jamie.Keyes@state.nm.us)>  
**Subject: Cambrian Mgmt Anderson Ranch Unit #16 Work Plan**

Jamie, please see the attached work plan for the above referenced site. Please don't hesitate to contact me with any questions.

Thanks,  
Vernon K. Black  
Hungry Horse, LLC  
PO Box 1058  
Hobbs, NM 88241

575-393-3386 office  
575-631-2253 cell

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October 14, 2016

VERNON BLACK

Hungry Horse Environmental

P.O. Box 1058

Hobbs, NM 88240

RE: ANDERSON RANCH UNIT #16

Enclosed are the results of analyses for samples received by the laboratory on 10/10/16 13:25.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-16-8. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,



Celey D. Keene

Lab Director/Quality Manager

**Analytical Results For:**

 Hungry Horse Environmental  
 VERNON BLACK  
 P.O. Box 1058  
 Hobbs NM, 88240  
 Fax To: (505) 391-4585

 Received: 10/10/2016  
 Reported: 10/14/2016  
 Project Name: ANDERSON RANCH UNIT #16  
 Project Number: NONE GIVEN  
 Project Location: LEA COUNTY, NM

 Sampling Date: 10/10/2016  
 Sampling Type: Soil  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Jodi Henson

**Sample ID: SP 1 (H602272-01)**

BTEX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/12/2016	ND	2.15	107	2.00	2.56	
Toluene*	<0.050	0.050	10/12/2016	ND	2.21	111	2.00	2.87	
Ethylbenzene*	<0.050	0.050	10/12/2016	ND	2.15	108	2.00	2.86	
Total Xylenes*	<0.150	0.150	10/12/2016	ND	6.47	108	6.00	3.14	
Total BTEX	<0.300	0.300	10/12/2016	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 98.0 % 73.6-140

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	10/11/2016	ND	188	94.1	200	3.55	
DRO >C10-C28	<10.0	10.0	10/11/2016	ND	214	107	200	4.52	

Surrogate: 1-Chlorooctane 98.7 % 35-147

Surrogate: 1-Chlorooctadecane 105 % 28-171

Cardinal Laboratories

\* = Accredited Analyte

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



Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 Hungry Horse Environmental  
 VERNON BLACK  
 P.O. Box 1058  
 Hobbs NM, 88240  
 Fax To: (505) 391-4585

 Received: 10/10/2016  
 Reported: 10/14/2016  
 Project Name: ANDERSON RANCH UNIT #16  
 Project Number: NONE GIVEN  
 Project Location: LEA COUNTY, NM

 Sampling Date: 10/10/2016  
 Sampling Type: Soil  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Jodi Henson

**Sample ID: SP 2 (H602272-02)**

BTEX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/12/2016	ND	2.15	107	2.00	2.56	
Toluene*	<0.050	0.050	10/12/2016	ND	2.21	111	2.00	2.87	
Ethylbenzene*	<0.050	0.050	10/12/2016	ND	2.15	108	2.00	2.86	
<b>Total Xylenes*</b>	<b>0.227</b>	0.150	10/12/2016	ND	6.47	108	6.00	3.14	
Total BTEX	<0.300	0.300	10/12/2016	ND					

Surrogate: 4-Bromofluorobenzene (PII) 103 % 73.6-140

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	10/11/2016	ND	182	91.2	200	12.5	
<b>DRO &gt;C10-C28</b>	<b>57.6</b>	10.0	10/11/2016	ND	192	96.1	200	7.27	QM-07

Surrogate: 1-Chlorooctane 95.4 % 35-147

Surrogate: 1-Chlorooctadecane 102 % 28-171

Cardinal Laboratories

\* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Notes and Definitions**

QR-03	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
QR-02	The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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**Cardinal Laboratories**

\* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

**BILL TO**

**ANALYSIS REQUEST**

Company Name: Hungry Horse, LLC  
 Project Manager: Vernon K Black  
 Address: PO Box 1058  
 City: Hobbs State: NM Zip: 88241  
 Phone #: 575-631-2253 Fax #: 575-391-4585  
 Project #: \_\_\_\_\_ Project Owner: Cambrian  
 Project Name: Anderson Ranch  
 Project Location: 1st county  
 Sampler Name: Vernon K Black

P.O. #: \_\_\_\_\_ Company: \_\_\_\_\_  
 Attn: \_\_\_\_\_ Address: \_\_\_\_\_  
 City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_  
 Phone #: \_\_\_\_\_ Fax #: \_\_\_\_\_

Lab I.D.	Sample I.D.	(G) GRAB OR (C) COMP.	# CONTAINERS	MATRIX							DATE	TIME	TPH	BTEX
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER	ACID/BASE				
H602272	1 SPI	G									10-10-16	11:00	-	-
	2 SP2	G											-	-

PLEASE NOTE: Liability and Damages: Cardinal's liability and client's exclusive remedy for any claim arising which is based in contract or tort shall be limited to the amount paid by the client for the analysis. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By: Albert Best Date: 10-10-16 Time: 1:25 pm  
 Received By: Marie Wernsen

Phone Result:  Yes  No  Add'l Phone #:  
 Fax Result:  Yes  No  Add'l Fax #:  
 REMARKS:

Delivered By: (Circle One)  
 Sampler - UPS - Bus - Other: 27.80  
 Sample Condition: Cool  Intact   
 Checked By: [Signature]

† Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476



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

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October 14, 2016

VERNON BLACK

Hungry Horse Environmental

P.O. Box 1058

Hobbs, NM 88240

RE: ANDERSON RANCH UNIT #16

Enclosed are the results of analyses for samples received by the laboratory on 10/13/16 8:15.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-16-8. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

A handwritten signature in cursive script that reads "Celey D. Keene".

Celey D. Keene

Lab Director/Quality Manager

**Analytical Results For:**

 Hungry Horse Environmental  
 VERNON BLACK  
 P.O. Box 1058  
 Hobbs NM, 88240  
 Fax To: (505) 391-4585

 Received: 10/13/2016  
 Reported: 10/14/2016  
 Project Name: ANDERSON RANCH UNIT #16  
 Project Number: NONE GIVEN  
 Project Location: LEA COUNTY, NM

 Sampling Date: 10/07/2016  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: SP 1 (H602309-01)**

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	10/14/2016	ND	400	100	400	3.92	

**Sample ID: SP 2 (H602309-02)**

Chloride, SM4500Cl-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	10/14/2016	ND	400	100	400	3.92	

Cardinal Laboratories

\* = Accredited Analyte

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



Celey D. Keene, Lab Director/Quality Manager

**Notes and Definitions**

ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C
	Samples reported on an as received basis (wet) unless otherwise noted on report

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\* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



# CARDINAL LABORATORIES

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

### BILL TO

### ANALYSIS REQUEST

Company Name: Hungry Horse, LLC

Project Manager: Vernon K. Black

Address: PO Box 1058

City: Hobbs

Phone #: 575-631-2253

Project #:

Project Name: Anderson Ranch

Project Location: Lea

Sampler Name: Vernon K Black

P.O. #:

Company:

Attn:

Address:

City:

State:

Phone #:

Fax #:

Zip:

PRESERV

SAMPLING

Lab I.D.

Sample I.D.

H002309

1 SP1  
2 SP2

(G)RAB OR (C)OMP.

# CONTAINERS

GROUNDWATER

WASTEWATER

SOIL

OIL

SLUDGE

OTHER

ACID/BASE

ICE / COOL

OTHER

DATE

TIME

10-5-76 8:00

chlorides

PLEASE NOTE: Liability and Damages: Cardinal's liability and damages are limited to the amount paid by the client for the analysis. In no event shall Cardinal be liable for remedial or consequential damages, including without limitation, business interruption, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors, arising out of or related to the performance of services hereunder by Cardinal Laboratories of another such claim. Based upon any of the above stated provisions or otherwise.

Relinquished By:

Date: 10-13-16

Received By:

Vernon K Black

Date: 10-13-16

Received By: Joeli Henderson

Time:

Delivered By: (Circle One)

Sampler - UPS - Bus - Other:

1.62

Sample Condition  
Cool  Intact   
Yes  No

CHECKED BY: [Signature]

Phone Result:  Yes  No  Add'l Phone #:  
Fax Result:  Yes  No  Add'l Fax #:

REMARKS:

\* Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476

Grand Banks Energy-Anderson Ranch Unit #16

