R. T. HICKS CONSULTANTS, LTD.

901 Rio Grande Blvd NW ▲ Suite F-142 ▲ Albuquerque, NM 87104 ▲ 505.266.5004 ▲ Fax: 505.266-0745

RECEIVED
By OCD; Dr. Oberding at 12:37 pm, Feb 25, 2015

February 25, 2015

Dr. Tomáš Oberding
NMOCD District 1
1625 French Drive
Hobbs, NM 88240
Via E-Mail

RE: Temporary Pit Closure Report
Jackson Jackson Unit #19H, API #30-025-41138, Pit Permit #P1-06107
Unit N, Section 21, T24S, R33E, Lea County

Dear Dr. Oberding:

On behalf of Murchison Oil and Gas, R.T. Hicks Consultants submits this closure report for the above-referenced temporary pit in accordance with the approved C-144 closure plan. This report includes the following information listed in Part 21 of the C-144 form:

Requirements	Location in this Submission
Proof of Closure Notice (to surface owner and Division)	Attachment 1
Proof of Deed Notice (on-site closure on private land only)	Not applicable; State Land (no deed)
Plot Plan, C-105 form (for on-site closures and temporary pits)	Attachment 2
Confirmation Sampling Analytical Results	Not applicable
Waste Material Sampling Analytical Results (required for on-site closure)	Attachment 3
Disposal Facility Name and Permit Number	Not applicable; on-site closure
Soil Backfilling and Cover Installation	Attachment 4
Re-vegetation Application Rates and Seeding Technique	Attachment 5
Site Reclamation (photo documentation)	To follow
Updated C-144 form	Attachment 6

R.T. Hicks Consultants will notify NMOCD and provide photo-documentation when re-vegetation obligations described in subsection H of 19.15.17.13 NMAC are met.

Sincerely,
R.T. Hicks Consultants

Kristin Pope

Kristin Pope
Project Geologist

Copy: Murchison Oil and Gas
NM State Land Office, Ed Martin

ATTACHMENT 1

R. T. HICKS CONSULTANTS, LTD.

901 Rio Grande Blvd NW ▲ Suite F-142 ▲ Albuquerque, NM 87104 ▲ 505.266.5004 ▲ Fax: 505.266-0745

October 13, 2014

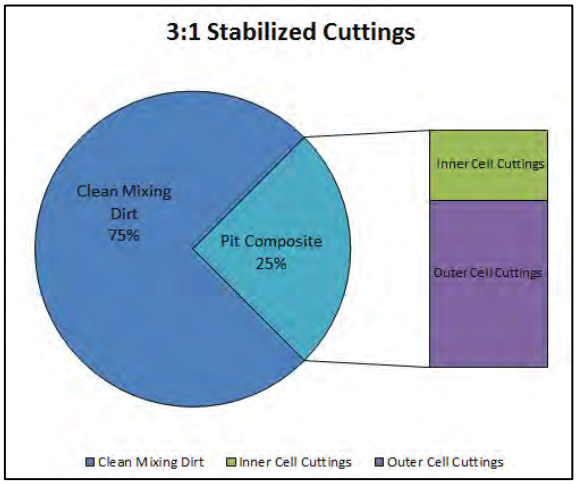
Dr. Tomáš Oberding
NMOCD District 1
1625 French Drive
Hobbs, New Mexico 88240
VIA EMAIL

RE: Jackson Unit 19H Temporary Pit, In-place Burial Notice
Unit N, Section 21, T24S, R33E, API #30-025-41138

Dr. Oberding:

On behalf of Murchison Oil and Gas, R. T. Hicks Consultants is provides this notice to NMOCD with a copy to the State Land Office (certified, return receipt request) that closure operations at the above- referenced pit will begin on **Friday, October 17, 2014**. The closure process should require about two weeks. The "In-place Burial" closure plan for the pit was submitted on October 7, 2013 with the C-144 temporary pit application and NMOCD approved the plan on the same day. The rig was released from the Jackson Unit 19H well on December 21, 2013.

As outlined in an email from Hicks Consultants to NMOCD on March 19, 2014, the Jackson Unit 28H well was drilled next to the Jackson Unit 19H and cuttings from the 28H were placed in the 19H pit. After the 28H well was drilled and hydraulic fracturing and flow-back were completed, composite samples from the entire cuttings of the inner and outer cells of the pit were collected on June 4, 2014 for laboratory analyses in accordance with the Pit Rule. As shown in the table on page 2, these samples meet criteria from Table II of 19.15.17.13 NMAC for every constituent *except* GRO+DRO in the outer cell. Obviously, when the inner cell solids are combined with the outer cell's solids, then stabilized with no more than 3 parts clean, dry dirt ("mixing dirt"), the buried solids will meet the in-place burial criteria.



The table also shows the *calculated* concentration for the "stabilized" sample. The calculated value mathematically mixes 3 parts clean soil from the pit berms beneath the liner (mixing dirt) with 1 part of the weighted pit composite, as depicted in the adjacent chart. The pit composite consists of 28% solids from the inner cell of the drilling pit and 72% of the solids from the outer cell (1:2.4 ratio), calculated by measuring the volume of cuttings in each cell after those from both wells were deposited in the pit.

A request was made of the laboratory to composite the inner and outer cell samples in a 1:2.4 ratio to represent the amount of solids in each cell of the pit, and then mix 1 part of this pit

composite with 3 parts mixing dirt to formulate a “Lab 3:1 Stabilized Cuttings” sample. A miscommunication between the laboratory and Hicks Consultants caused a delay in this sample’s composition and analysis, resulting in a lab report that indicates the EPA’s holding time recommendations have been exceeded. Thus, the sample analyzed was maintained in a closed jar under refrigeration for longer than allowed by protocol.

Jackson Unit 19H/28H pit Sample Name	**Sample Type**	**Sample Date**	**Chloride** *80,000*	**Benzene** *10*	**BTEX** *50*	**GRO+ DRO** *1000*	**TPH 418.1** *2500*
Inner Composite	Field comp.	6/4/2014	46,000	0.0	0.598	771	200
Outer Composite	Field comp.	6/4/2014	31,000	1.2	19.1	4,150	1,300
Mixing Dirt	Field comp.	6/4/2014	0	0	0	0	0
3:1 Stabilized CALCULATED *(3 parts mixing dirt, 1 part weighted pit cuttings)*			***8,852.94***	***0.21***	***3.41***	***789.04***	***244.12***
Lab 3:1 Stabilized Cuttings	Lab comp.; hold time exceeded	6/4/2014	**11,000**	**0.11**	**2.19**	**157**	**100**

The summary table demonstrates a calculated value for the “3:1 Stabilized Cuttings” sample that is based on the individual components’, the inner and outer cells, analyses. Although holding time was exceeded on “Lab 3:1 Stabilized Cuttings” sample, the calculated and lab-composited values are agreeably comparable. Both of these methods demonstrate that concentrations of the Table II parameters will meet the limits that allow in-place burial of the stabilized cuttings. We are certain that these results “demonstrate that, after the waste is solidified or stabilized with soil or other non-waste material at a ratio of no more than 3:1 soil or other non-waste material to waste, the concentration of any contaminant in the stabilized waste is not higher than the parameters listed in Table II of 19.15.17.13 NMAC.”

On June 23, 2014, NMOCD granted an extension for the closure of this pit, creating a new deadline of September 21, 2014, however, as we discussed during our phone conversation on September 18, 2014, closure of this site has been delayed due to record rainfall in the area recently. I will follow up this notice to you with a phone call today as required by the Pit Rule.

Sincerely,

R.T. Hicks Consultants

Kristin Pope

Kristin Pope

Copy: Murchison Oil and Gas,

Ed Martin
New Mexico State Land Office
PO Box 1148
Santa Fe, NM 87504-1148
CERTIFIED MAIL – RETURN RECIEPT REQUEST

Jackson 19H and 25H Closure Notices

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

New Mexico State Land Office
Ed Martin
PO BOX 1148
Santa Fe NM 87504-
1148

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X

☐ Agent
☐ Addressee

B. Received by *(Printed Name)*

C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

OCT 21 2014

3. Service Type
☐ Certified Mail® ☑ Priority Mail Express™
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ Collect on Delivery

4. Restricted Delivery? *(Extra Fee)* ☐ Yes

2. Article Number
(Transfer from service label) 9414 7102 0082 9352 7566 29

PS Form 3811, July 2013 Domestic Return Receipt

From: Kristin Pope
To: tomas.oberding@state.nm.us
Cc: ccottrell@jdmii.com; gboans@jdmii.com; Chace Walls; emartin@slo.state.nm.us; Randy Hicks
Subject: RE: CLOSURE NOTICE: Murchison - Jackson Unit #19H pit
Date: Friday, October 24, 2014 8:43:10 AM

Dr. Oberding:

When I returned from vacation I found out that we were unable to begin closure on last Friday as planned due to free fluid still on the cuttings. This fluid was removed and closure was started on Monday, October 20th. Although not the date indicated in the notice to OCD and SLO, this start date was within the 3-7 days window of notice required by the Pit Rule.
I apologize for any inconvenience this may have caused you and please let me know if you have any questions. Thanks for understanding.

Kristin Pope
R.T. Hicks Consultants
Carlsbad Field Office
575.302.6755

From: Kristin Pope [mailto:kristin@rthicksconsult.com]
Sent: Monday, October 13, 2014 3:03 PM
To: tomas.oberding@state.nm.us
Cc: ccottrell@jdmii.com; 'gboans@jdmii.com'; Chace Walls (cwalls@jdmii.com); emartin@slo.state.nm.us; Randy Hicks
Subject: CLOSURE NOTICE: Murchison - Jackson Unit #19H pit

Dr. Oberding:

On behalf of Murchison, please find the attached notice of in-place closure of the **Jackson Unit #19H** temporary pit which is set to begin on **Friday, October 17, 2014**. As we have discussed over the phone before, we were set to begin this closure last month but the heavy rains and flooding prevented it. I will follow this email with a phone call to you today and I will mail a copy (certified, return receipt request) of this notice to the State Land Office.

Thank you.

Kristin Pope
R.T. Hicks Consultants
Carlsbad Field Office
575.302.6755

R. T. HICKS CONSULTANTS, LTD.

901 Rio Grande Blvd NW ▲ Suite F-142 ▲ Albuquerque, NM 87104 ▲ 505.266.5004 ▲ Fax: 505.266-0745

June 19, 2014

Mr. Geoffrey Leking
NMOCD District 1
1625 French Drive
Hobbs, NM 88240
VIA EMAIL

RE: Murchison – Jackson Unit 19H Temporary Pit
Extension Request for Closure
Unit N, Section 21, T24S, R33E, API #30-025-41138

Dear Mr. Leking:

On behalf of Murchison Oil and Gas, R.T. Hicks Consultants respectfully requests a 3-month extension for the closure of the above-referenced temporary pit. The rig was released from the Jackson Unit 19H well on 12/21/2013, making the closure deadline 6/21/2014. As described in an email from Hicks Consultants to NMOCD on 3/19/2014, this pit was also used for the storage of cuttings from the Jackson Unit 28H well which was drilled 593 feet east. The rig was released from the Jackson Unit 28H well on 5/9/2014; hydraulic fracturing commenced soon after.

The pit contents were sampled for closure criteria on 6/4/2014. As explained during our phone conversation yesterday, we request this extension because a miscommunication with the laboratory caused a delay in the analyses of the stabilized cuttings. The laboratory prepared the samples yesterday and will composite and analyze them this week. If the analyses meet closure criteria, we will begin closure as soon as our schedule of closures and the availability of excavation equipment allows. If the criteria are not met, an extension will allow more time for hydrocarbon to degrade and we will resample within the next few weeks.

The current deadline for closure is 6/21/2014. A 3-month extension would create a new deadline of 9/7/2014. Thank you for your consideration of this request.

Sincerely,

R.T. Hicks Consultants

Kristin Pope

Kristin Pope
Project Geologist

Copy: Murchison Oil and Gas
NM State Land Office, Terry Warnell

From: Leking, Geoffrey R, EMNRD
To: Kristin Pope
Cc: Warnell, Terry G.; ccottrell@jdmii.com; Greg Boans; Randy Hicks; Chace Walls
Subject: RE: Extension Request: Murchison - Jackson Unit 19H
Date: Monday, June 23, 2014 8:18:18 AM

Kristin

The extension is approved.

Geoffrey Leking
Environmental Specialist
NMOCD-Hobbs
1625 N. French Drive
Hobbs, NM 88240
Office: (575) 393-6161 Ext. 113
Cell: (575) 399-2990
email: geoffreyr.leking@state.nm.us

From: Kristin Pope [mailto:kristin@rthicksconsult.com]
Sent: Thursday, June 19, 2014 3:55 PM
To: Leking, Geoffrey R, EMNRD
Cc: Warnell, Terry G.; ccottrell@jdmii.com; Greg Boans; Randy Hicks; Chace Walls
Subject: Extension Request: Murchison - Jackson Unit 19H

Mr. Leking:

Please find the attached extension request for closure of the temporary pit at the Jackson Unit #19H. We discussed this on the phone yesterday; closure deadline is 6/21/2014. Please let me know if you have any questions. Thank you.

Kristin Pope
R.T. Hicks Consultants
Carlsbad Field Office
575.302.6755

From:	Kristin Pope
To:	"Leking, Geoffrey R, EMNRD"
Cc:	ccottrell@jdmii.com; "Chace Walls"; "Greg Boans"; "Randy Hicks"; "Warnell, Terry G."; "Martin, Ed, EMNRD"; "Dawson, Scott, EMNRD"; "Sanchez, Daniel J., EMNRD"
Subject:	RE: Murchison - Closed loop solids from Jackson 28H into approved 19H pit
Date:	Thursday, March 20, 2014 9:27:57 AM

Geoff,

Thanks for your prompt reply. We will not segregate the old and new cuttings and will resample the contents after the Jackson Unit 28H is complete.

Kristin Pope
R.T. Hicks Consultants
Carlsbad Field Office
575.302.6755

From: Leking, Geoffrey R, EMNRD [mailto:GeoffreyR.Leking@state.nm.us]
Sent: Wednesday, March 19, 2014 3:07 PM
To: Kristin Pope
Cc: ccottrell@jdmii.com; Chace Walls; Greg Boans; Randy Hicks; Warnell, Terry G.; Martin, Ed, EMNRD; Dawson, Scott, EMNRD; Sanchez, Daniel J., EMNRD
Subject: RE: Murchison - Closed loop solids from Jackson 28H into approved 19H pit

Kristin

Please do not segregate the new waste from the old. Please do not put the used panels in the pit. Resample the entire waste profile once all of the new waste is deposited in the pit. I believe this will give us a much better representative sample of the entire waste profile in the pit as one homogenous mass. Also, I don't want the additional panels in the pit contents. Thank you.

Geoffrey Leking
Environmental Specialist
NMOCD-Hobbs
1625 N. French Drive
Hobbs, NM 88240
Office: (575) 393-6161 Ext. 113
Cell: (575) 399-2990
email: geoffreyr.leking@state.nm.us

From: Kristin Pope [mailto:kristin@rthicksconsult.com]
Sent: Wednesday, March 19, 2014 2:40 PM
To: Leking, Geoffrey R, EMNRD
Cc: ccottrell@jdmii.com; Chace Walls; Greg Boans; Randy Hicks; Warnell, Terry G.
Subject: Murchison - Closed loop solids from Jackson 28H into approved 19H pit

Mr. Leking:

This email with a read receipt is to inform NMOCD and the State Land Office that Murchison intends to discharge drilling solids from the Jackson Unit 28H (API #30-025-41710) closed-loop system into the approved Jackson Unit 19H temporary pit. The Jackson Unit 28H well is located 593 feet east of the Jackson Unit 19H (see attached photo), within the same State Unit, and we are expecting to spud the new well around April 1.

The definition of a Temporary Pit clearly anticipates that a single pit may receive waste from multiple wells.

> **R.** "Temporary pit" means a pit, including a drilling or workover pit, which is constructed with the intent that the pit will hold liquids and mineral solids. Temporary pits may be used for one or more wells and must be located at one of the associated permitted well drilling locations. Temporary pits must be closed within six months from the date the operator releases the drilling or workover rig from the first well using the pit. Any containment structure such as a pond, pit, or other impoundment that holds only fresh water that has not been treated for oil field purposes, is not a temporary pit.

As the Jackson Unit 28H well is in the same State Unit as the 19H, it is "one of the associated permitted well drilling locations". The rig release date for the Jackson Unit 19H was 12/21/2013.

I examined the 19H pit most recently on 3/14/2014 and can confirm that it maintains sufficient volume, has liner integrity, and is constructed to allow for the placement of the solids from the 28H in a safe and protective manner.

> **19.15.17.11 DESIGN AND CONSTRUCTION SPECIFICATIONS:**
>
> **A.** General specifications. An operator shall design and construct a pit, closed-loop system, below-grade tank or sump to contain liquids and solids; prevent contamination of fresh water; and protect public health and the environment.

Because the 19H pit is currently dry and will receive only solids and limited liquids from the 28H closed loop system, most of the operational requirements of 19.15.17.12 do not apply. The following requirements do apply:

> **A.(3)** The operator shall not discharge into or store any hazardous waste in a pit, closed-loop system, below-grade tank or sump.
>
> **A.(6)** The injection or withdrawal of liquids from a pit shall be accomplished through a header, diverter or other hardware that prevents damage to the liner by erosion, fluid jets or impact from installation and removal of hoses or pipes.

The placement of solids into a pit will be accomplished in a manner that prevents damage to the liner.

With respect to the placement of solids into the 19H pit and the protection of the existing liner, Murchison will lay down and appropriately anchor high-quality, large, used liner panels over exposed areas where solids will be placed into the pit, which will also allow us to sample the 28H separately. This work is tentatively scheduled for this Friday, March 21. In anticipation of closure, we sampled the 19H pit contents on 2/12/2014 and constituents meet Table II limits.

Murchison Oil and Gas understands that all closure requirements associated with the approved

permit remain in place – including the requirement to close the pit within 6 months of rig release from the Jackson Unit 19H well. Thus, in the absence of approval to extend the time of closure by 3 months, the Jackson Unit 19H pit must be closed by June 21. Please note that the new Jackson 28H well lies on the same State Unit as the 19H pit, therefore "onsite burial" of the Jackson Unit 28H solids is allowed.

> **M.** "Onsite" means within the boundaries of a single lease where exploration and production waste is generated.
>
> **D.** Closure where wastes are destined for burial in place or into nearby division approved pits or trenches. This subsection applies to waste from temporary pits and closed-loop systems, when such waste may be disposed of in place in the existing temporary pit or disposed of at a nearby temporary pit or burial trench that is not a permitted commercial facility regulated under 19.15.36 NMAC. A nearby temporary pit or burial trench that receives waste from another temporary pit must be onsite within the same lease.

Please contact me if you have any questions. Thank you.

Kristin Pope
R.T. Hicks Consultants
Carlsbad Field Office
575.302.6755

ATTACHMENT 2

Submit To Appropriate District Office
Two Copies
District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources

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

Form C-105
Revised August 1, 2011

1. WELL API NO.
30-025-41138

2. Type of Lease
☒ STATE ☐ FEE ☐ FED/INDIAN

3. State Oil & Gas Lease No.

WELL COMPLETION OR RECOMPLETION REPORT AND LOG

4. Reason for filing:

☐ **COMPLETION REPORT** (Fill in boxes #1 through #31 for State and Fee wells only)

☒ **C-144 CLOSURE ATTACHMENT** (Fill in boxes #1 through #9, #15 Date Rig Released and #32 and/or #33; attach this and the plat to the C-144 closure report in accordance with 19.15.17.13.K NMAC)

5. Lease Name or Unit Agreement Name
Jackson Unit

6. Well Number:
#19H

7. Type of Completion:
☒ NEW WELL ☐ WORKOVER ☐ DEEPENING ☐ PLUGBACK ☐ DIFFERENT RESERVOIR ☐ OTHER _____

8. Name of Operator
MURCHISON OIL & GAS, INC.

9. OGRID
15363

10. Address of Operator

11. Pool name or Wildcat

12. Location	Unit Ltr	Section	Township	Range	Lot	Feet from the	N/S Line	Feet from the	E/W Line	County
Surface:										
BH:										

13. Date Spudded	14. Date T.D. Reached	15. Date Rig Released	16. Date Completed (Ready to Produce)	17. Elevations (DF and RKB, RT, GR, etc.)
		12/21/2013		

18. Total Measured Depth of Well	19. Plug Back Measured Depth	20. Was Directional Survey Made?	21. Type Electric and Other Logs Run

22. Producing Interval(s), of this completion - Top, Bottom, Name

23. **CASING RECORD** (Report all strings set in well)

CASING SIZE	WEIGHT LB./FT.	DEPTH SET	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED

24. LINER RECORD

SIZE	TOP	BOTTOM	SACKS CEMENT	SCREEN

25. TUBING RECORD

SIZE	DEPTH SET	PACKER SET

26. Perforation record (interval, size, and number)

27. ACID, SHOT, FRACTURE, CEMENT, SQUEEZE, ETC.

DEPTH INTERVAL	AMOUNT AND KIND MATERIAL USED

28. **PRODUCTION**

Date First Production	Production Method *(Flowing, gas lift, pumping - Size and type pump)*	Well Status *(Prod. or Shut-in)*

Date of Test	Hours Tested	Choke Size	Prod'n For Test Period	Oil - Bbl	Gas - MCF	Water - Bbl.	Gas - Oil Ratio

Flow Tubing Press.	Casing Pressure	Calculated 24-Hour Rate	Oil - Bbl.	Gas - MCF	Water - Bbl.	Oil Gravity - API - *(Corr.)*

29. Disposition of Gas *(Sold, used for fuel, vented, etc.)*

30. Test Witnessed By

31. List Attachments

32. If a temporary pit was used at the well, attach a plat with the location of the temporary pit.
PLATE 1 ATTACHED

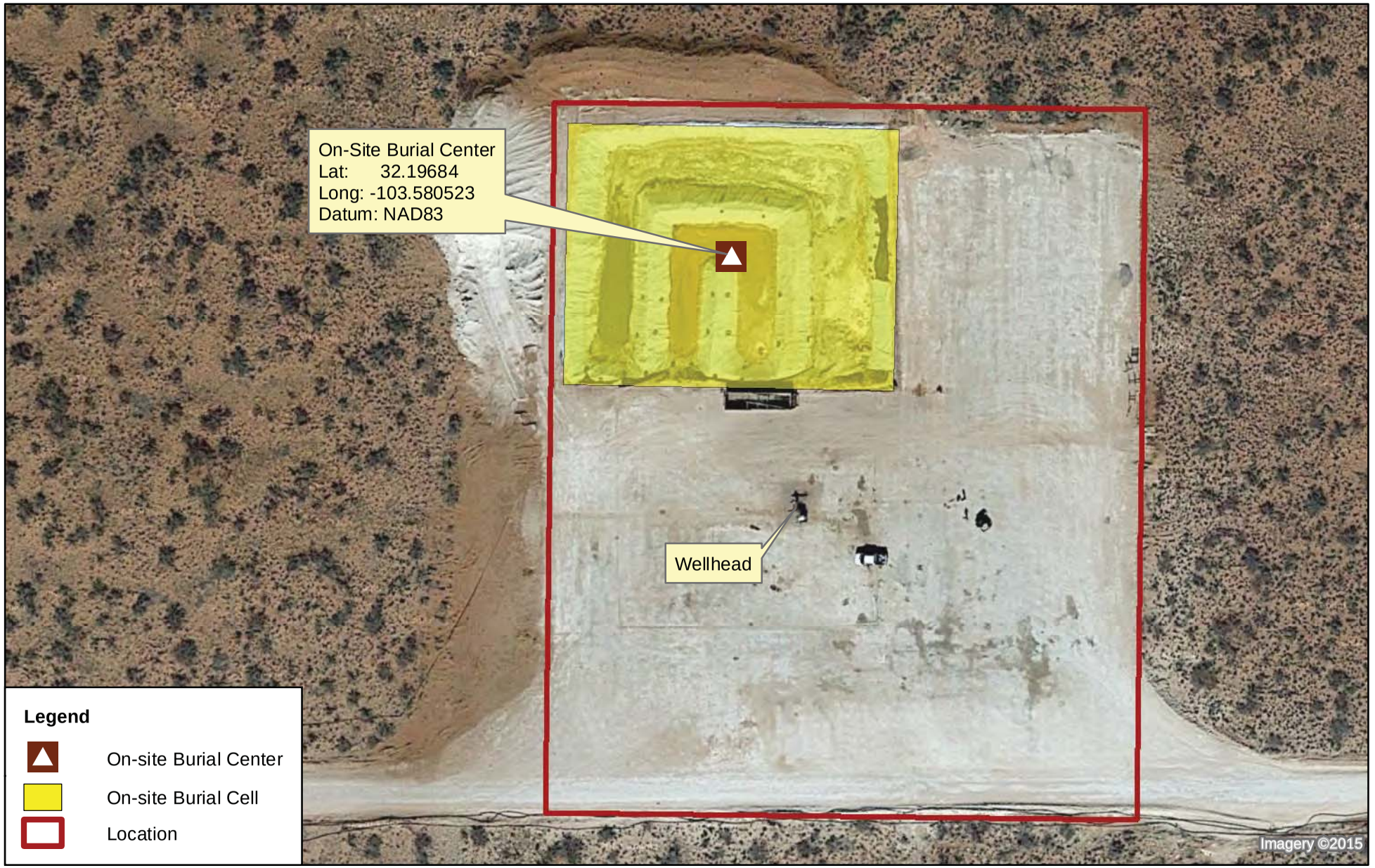
33. If an on-site burial was used at the well, report the exact location of the on-site burial:

Latitude N 32.19684° Longitude W 103.580523° NAD 1927 **1983**

I hereby certify that the information shown on both sides of this form is true and complete to the best of my knowledge and belief

Signature Kristin Pope Printed Name KRISTIN POPE Title PROJECT GEOLOGIST, AGENT FOR MURCHISON Date 2/25/2015

E-mail Address kristin@rthicksconsult.com



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Feet

R.T. Hicks Consultants, Ltd
901 Rio Grande Blvd NW Suite F-142
Albuquerque, NM 87104
Ph: 505.266.5004

On-site Burial Location of Temporary Pit

Plate 1
Form C-105

Murchison Oil & Gas, Inc.
Jackson Unit #19H

February 2015

ATTACHMENT 3

Waste Material Sampling Analytical Results

On June 4, 2014, four-point composite samples of the pit solids from the inner and outer cells respectively and from the berms of the pit (below the liner) were collected in accordance with the Pit Rule and were representative of the cuttings from both the #19H and #28H wells. Hall Environmental Analysis Laboratory of Albuquerque was instructed to compose a "3:1 Stabilized Cuttings" sample in the laboratory consisting of 3 parts available mixing soil and 1 part pit contents. The pit composite consisted of 1 part inner cell cuttings and 2.4 parts outer cell cuttings, reflective of the volume of material in each cell of the pit. Preparation of this sample was delayed and resulted in a lab report that exceeded EPA's holding time recommendation. Because the sample was held in a sealed jar under refrigeration, analyses continued and the 3:1 Stabilized Cuttings sample met Table II limits for BTEX (8260B), GRO/DRO (8015M), TPH (418.1), and Chloride (SM4500)

Sampling Pit Contents 6/4/2014

Additionally, a calculated value for the "3:1 Stabilized Cuttings" sample was created by mathematically mixing the component composite samples from the inner cell, outer cell, and mixing dirt. As shown in the table below, both analytical methods agree that the stabilized material from this pit qualify for closure using in-place burial by meeting Table II limits of 19.15.17.13 NMAC.

Jackson Unit 19H/28H pit Sample Name	Sample Type	Sample Date	Chloride *80,000*	Benzene *10*	BTEX *50*	GRO+ DRO *1000*	TPH 418.1 *2500*
Inner Composite	Field comp.	6/4/2014	46,000	0.0	0.598	771	200
Outer Composite	Field comp.	6/4/2014	31,000	1.2	19.1	4,150	1,300
Mixing Dirt	Field comp.	6/4/2014	0	0	0	0	0
3:1 Stabilized CALCULATED *(3 parts mixing dirt, 1 part weighted pit cuttings)*			***8,852.94***	***0.21***	***3.41***	***789.04***	***244.12***
Lab 3:1 Stabilized Cuttings	Lab comp.; hold time exceeded	6/4/2014	**11,000**	**0.11**	**2.19**	**157**	**100**

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

June 16, 2014

Kristin Pope

R.T. Hicks Consultants, LTD
901 Rio Grande Blvd. NW
Suite F-142
Albuquerque, NM 87104
TEL: (505) 266-5004
FAX (505) 266-0745

RE: Murchison - Jackson Unit #19/28H pit OrderNo.: 1406341

Dear Kristin Pope:

Hall Environmental Analysis Laboratory received 1 sample(s) on 6/6/2014 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1406341**
Date Reported: **6/16/2014**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: R.T. Hicks Consultants, LTD
Client Sample ID: Mixing Dirt
Project: Murchison - Jackson Unit #19/28H pit
Collection Date: 6/4/2014 1:40:00 PM
Lab ID: 1406341-001
Matrix: SOIL
Received Date: 6/6/2014 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: **BCN**	
Diesel Range Organics (DRO)	ND	20		mg/Kg	1	6/12/2014 6:04:52 AM	13578
Motor Oil Range Organics (MRO)	ND	99		mg/Kg	1	6/12/2014 6:04:52 AM	13578
Surr: DNOP	84.2	57.9-140		%REC	1	6/12/2014 6:04:52 AM	13578
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	6/10/2014 3:26:08 PM	13586
Surr: BFB	88.1	80-120		%REC	1	6/10/2014 3:26:08 PM	13586
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.050		mg/Kg	1	6/10/2014 3:26:08 PM	13586
Toluene	ND	0.050		mg/Kg	1	6/10/2014 3:26:08 PM	13586
Ethylbenzene	ND	0.050		mg/Kg	1	6/10/2014 3:26:08 PM	13586
Xylenes, Total	ND	0.099		mg/Kg	1	6/10/2014 3:26:08 PM	13586
Surr: 4-Bromofluorobenzene	104	80-120		%REC	1	6/10/2014 3:26:08 PM	13586
EPA METHOD 300.0: ANIONS						Analyst: **JRR**	
Chloride	ND	30		mg/Kg	20	6/12/2014 5:37:05 PM	13604
EPA METHOD 418.1: TPH						Analyst: **JME**	
Petroleum Hydrocarbons, TR	ND	20		mg/Kg	1	6/11/2014 12:00:00 PM	13571

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
E	Value above quantitation range
J	Analyte detected below quantitation limits
O	RSD is greater than RSDlimit
R	RPD outside accepted recovery limits
S	Spike Recovery outside accepted recovery limits
B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
P	Sample pH greater than 2.
RL	Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1406341**

16-Jun-14

Client: R.T. Hicks Consultants, LTD

Project: Murchison - Jackson Unit #19/28H pit

Sample ID	**MB-13604**	SampType:	**MBLK**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**PBS**	Batch ID:	**13604**	RunNo:	**19180**					
Prep Date:	**6/10/2014**	Analysis Date:	**6/10/2014**	SeqNo:	**554470**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	**LCS-13604**	SampType:	**LCS**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**LCSS**	Batch ID:	**13604**	RunNo:	**19180**					
Prep Date:	**6/10/2014**	Analysis Date:	**6/10/2014**	SeqNo:	**554471**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	96.0	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1406341**

16-Jun-14

Client: R.T. Hicks Consultants, LTD

Project: Murchison - Jackson Unit #19/28H pit

Sample ID	**MB-13571**	SampType:	**MBLK**	TestCode:	**EPA Method 418.1: TPH**					
Client ID:	**PBS**	Batch ID:	**13571**	RunNo:	**19175**					
Prep Date:	**6/6/2014**	Analysis Date:	**6/11/2014**	SeqNo:	**554453**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	ND	20								

Sample ID	**LCS-13571**	SampType:	**LCS**	TestCode:	**EPA Method 418.1: TPH**					
Client ID:	**LCSS**	Batch ID:	**13571**	RunNo:	**19175**					
Prep Date:	**6/6/2014**	Analysis Date:	**6/11/2014**	SeqNo:	**554454**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	92	20	100.0	0	91.5	80	120			

Sample ID	**LCSD-13571**	SampType:	**LCSD**	TestCode:	**EPA Method 418.1: TPH**					
Client ID:	**LCSS02**	Batch ID:	**13571**	RunNo:	**19175**					
Prep Date:	**6/6/2014**	Analysis Date:	**6/11/2014**	SeqNo:	**554455**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	96	20	100.0	0	95.7	80	120	4.44	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1406341**

16-Jun-14

Client: R.T. Hicks Consultants, LTD

Project: Murchison - Jackson Unit #19/28H pit

Sample ID **MB-13578**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **13578**	RunNo: **19152**
Prep Date: **6/9/2014**	Analysis Date: **6/10/2014**	SeqNo: **553568** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	12		10.00		116	57.9	140			

Sample ID **LCS-13578**	SampType: **LCS**	TestCode: **EPA Method 8015D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **13578**	RunNo: **19152**
Prep Date: **6/9/2014**	Analysis Date: **6/10/2014**	SeqNo: **553571** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	54	10	50.00	0	107	60.8	145			
Surr: DNOP	4.8		5.000		95.5	57.9	140			

Sample ID **MB-13630**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **13630**	RunNo: **19186**
Prep Date: **6/11/2014**	Analysis Date: **6/11/2014**	SeqNo: **554717** Units: **%REC**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	9.2		10.00		92.3	57.9	140			

Sample ID **LCS-13630**	SampType: **LCS**	TestCode: **EPA Method 8015D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **13630**	RunNo: **19186**
Prep Date: **6/11/2014**	Analysis Date: **6/11/2014**	SeqNo: **554718** Units: **%REC**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.7		5.000		94.5	57.9	140			

Sample ID **MB-13657**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **13657**	RunNo: **19207**
Prep Date: **6/12/2014**	Analysis Date: **6/12/2014**	SeqNo: **555445** Units: **%REC**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	6.5		10.00		65.0	57.9	140			

Sample ID **LCS-13657**	SampType: **LCS**	TestCode: **EPA Method 8015D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **13657**	RunNo: **19207**
Prep Date: **6/12/2014**	Analysis Date: **6/12/2014**	SeqNo: **555446** Units: **%REC**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	3.1		5.000		61.6	57.9	140			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1406341**

16-Jun-14

Client: R.T. Hicks Consultants, LTD

Project: Murchison - Jackson Unit #19/28H pit

Sample ID **MB-13586**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **13586**	RunNo: **19153**
Prep Date: **6/9/2014**	Analysis Date: **6/10/2014**	SeqNo: **554130** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	25								
Surr: BFB	4500		5000		89.2	80	120			

Sample ID **LCS-13586**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **13586**	RunNo: **19153**
Prep Date: **6/9/2014**	Analysis Date: **6/10/2014**	SeqNo: **554131** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	120	25	125.0	0	92.8	71.7	134			
Surr: BFB	4900		5000		98.7	80	120			

Sample ID **LCSD-13586**	SampType: **LCSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS02**	Batch ID: **13586**	RunNo: **19153**
Prep Date: **6/9/2014**	Analysis Date: **6/10/2014**	SeqNo: **554132** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	110	25	125.0	0	88.4	71.7	134	4.85	20	
Surr: BFB	4900		5000		97.2	80	120	0	0	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1406341**

16-Jun-14

Client: R.T. Hicks Consultants, LTD

Project: Murchison - Jackson Unit #19/28H pit

Sample ID **MB-13586**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **13586**	RunNo: **19153**
Prep Date: **6/9/2014**	Analysis Date: **6/10/2014**	SeqNo: **554155** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.1		1.000		106	80	120			

Sample ID **LCS-13586**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **13586**	RunNo: **19153**
Prep Date: **6/9/2014**	Analysis Date: **6/10/2014**	SeqNo: **554156** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	4.7	0.25	5.000	0	94.7	80	120			
Toluene	4.6	0.25	5.000	0	92.8	80	120			
Ethylbenzene	4.7	0.25	5.000	0	94.2	80	120			
Xylenes, Total	15	0.50	15.00	0	98.8	80	120			
Surr: 4-Bromofluorobenzene	5.5		5.000		109	80	120			

Sample ID **LCSD-13586**	SampType: **LCSD**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS02**	Batch ID: **13586**	RunNo: **19153**
Prep Date: **6/9/2014**	Analysis Date: **6/10/2014**	SeqNo: **554157** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	4.7	0.25	5.000	0	94.0	80	120	0.731	20	
Toluene	4.6	0.25	5.000	0	91.5	80	120	1.42	20	
Ethylbenzene	4.7	0.25	5.000	0	93.4	80	120	0.768	20	
Xylenes, Total	15	0.50	15.00	0	98.3	80	120	0.555	20	
Surr: 4-Bromofluorobenzene	5.6		5.000		113	80	120	0		

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

ENVIRONMENTAL ANALYSIS LABORATORY

4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: RT HICKS | Work Order Number: 1406341 | RcptNo: 1

Received by/date: AT 06/06/14

Logged By: **Michelle Garcia** 6/6/2014 10:00:00 AM Michelle Garcia

Completed By: **Michelle Garcia** 6/6/2014 2:34:39 PM Michelle Garcia

Reviewed By: 06/09/14

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	Client		

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☐	No ☑	NA ☐
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	Not required
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
9. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
11. Were any sample containers received broken?	Yes ☐	No ☑	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)

Adjusted? _____

Checked by: _____

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	8.6	Good	Not Present			

ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

ent: R. T. Hicks Consultants

☒ Standard ☐ Rush

Project Name: Murchison - Jackson Unit #[redacted] 19/28 H pit

Project #:

Project Manager: Kristin Pope

Sampler: Kristin Pope

On Ice: ☒ Yes ☐ No

Sample Temperature: 1.6

iling Address: 901 Rio Grande Blvd NW
Albuquerque, NM 87104

hone #: (505) 266-5004

mail or Fax#: R@rthicksconsult.com

A/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

ccreditation:
☐ NELAP ☐ Other

☐ EDD (Type)

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1406341
6/4/14	1340	soil	Mixing Dirt	2 glass	ice	-001

Analysis Request

BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel) +TMRO	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F^-, Cl^-, NO_3, NO_2, PO_4, SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)		100 grams			Air Bubbles (Y or N)
X		X	X				X					X			

Remarks: Email results to R@..., kristin@rthicksconsult.com

Date:	Time:	Relinquished by:	Received by:	Date	Time
6/5/14	345	Kristin Pope		6/5/14	345
Date:	Time:	Relinquished by:	Received by:	Date	Time
6/6/14	1000			6/6/14	1000

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

June 13, 2014

Kristin Pope

R.T. Hicks Consultants, LTD
901 Rio Grande Blvd. NW
Suite F-142
Albuquerque, NM 87104
TEL: (505) 266-5004
FAX (505) 266-0745

RE: Murchison - Jackson Unit #19/28H pit OrderNo.: 1406340

Dear Kristin Pope:

Hall Environmental Analysis Laboratory received 2 sample(s) on 6/6/2014 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: R.T. Hicks Consultants, LTD
Client Sample ID: Inner Composite
Project: Murchison - Jackson Unit #19/28H pit
Collection Date: 6/4/2014 1:30:00 PM
Lab ID: 1406340-001
Matrix: SOIL
Received Date: 6/6/2014 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: **BCN**	
Diesel Range Organics (DRO)	760	20		mg/Kg	1	6/12/2014 5:05:37 AM	13578
Motor Oil Range Organics (MRO)	470	100		mg/Kg	1	6/12/2014 5:05:37 AM	13578
Surr: DNOP	98.3	57.9-140		%REC	1	6/12/2014 5:05:37 AM	13578
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	11	5.0		mg/Kg	1	6/11/2014 6:47:54 PM	13586
Surr: BFB	121	80-120	S	%REC	1	6/11/2014 6:47:54 PM	13586
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.050		mg/Kg	1	6/11/2014 6:47:54 PM	13586
Toluene	0.18	0.050		mg/Kg	1	6/11/2014 6:47:54 PM	13586
Ethylbenzene	0.088	0.050		mg/Kg	1	6/11/2014 6:47:54 PM	13586
Xylenes, Total	0.33	0.099		mg/Kg	1	6/11/2014 6:47:54 PM	13586
Surr: 4-Bromofluorobenzene	98.3	80-120		%REC	1	6/11/2014 6:47:54 PM	13586
EPA METHOD 300.0: ANIONS						Analyst: **SRM**	
Chloride	46000	1500		mg/Kg	1E	6/11/2014 2:22:07 PM	13604
EPA METHOD 418.1: TPH						Analyst: **JME**	
Petroleum Hydrocarbons, TR	200	20		mg/Kg	1	6/11/2014 12:00:00 PM	13571

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: R.T. Hicks Consultants, LTD
Client Sample ID: Outer Composite
Project: Murchison - Jackson Unit #19/28H pit
Collection Date: 6/4/2014 2:05:00 PM
Lab ID: 1406340-002
Matrix: SOIL
Received Date: 6/6/2014 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: **BCN**	
Diesel Range Organics (DRO)	3900	200		mg/Kg	10	6/12/2014 5:35:11 AM	13578
Motor Oil Range Organics (MRO)	2100	1000		mg/Kg	10	6/12/2014 5:35:11 AM	13578
Surr: DNOP	0	57.9-140	S	%REC	10	6/12/2014 5:35:11 AM	13578
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	250	50		mg/Kg	10	6/11/2014 7:18:08 PM	13586
Surr: BFB	144	80-120	S	%REC	10	6/11/2014 7:18:08 PM	13586
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	1.2	0.50		mg/Kg	10	6/11/2014 7:18:08 PM	13586
Toluene	6.0	0.50		mg/Kg	10	6/11/2014 7:18:08 PM	13586
Ethylbenzene	2.1	0.50		mg/Kg	10	6/11/2014 7:18:08 PM	13586
Xylenes, Total	9.8	0.99		mg/Kg	10	6/11/2014 7:18:08 PM	13586
Surr: 4-Bromofluorobenzene	116	80-120		%REC	10	6/11/2014 7:18:08 PM	13586
EPA METHOD 300.0: ANIONS						Analyst: **SRM**	
Chloride	31000	1500		mg/Kg	1E	6/11/2014 2:34:31 PM	13604
EPA METHOD 418.1: TPH						Analyst: **JME**	
Petroleum Hydrocarbons, TR	1300	200		mg/Kg	10	6/11/2014 12:00:00 PM	13571

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1406340**

13-Jun-14

Client: R.T. Hicks Consultants, LTD

Project: Murchison - Jackson Unit #19/28H pit

Sample ID	**MB-13604**	SampType:	**MBLK**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**PBS**	Batch ID:	**13604**	RunNo:	**19180**					
Prep Date:	**6/10/2014**	Analysis Date:	**6/10/2014**	SeqNo:	**554470**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	**LCS-13604**	SampType:	**LCS**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**LCSS**	Batch ID:	**13604**	RunNo:	**19180**					
Prep Date:	**6/10/2014**	Analysis Date:	**6/10/2014**	SeqNo:	**554471**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	96.0	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1406340**

13-Jun-14

Client: R.T. Hicks Consultants, LTD

Project: Murchison - Jackson Unit #19/28H pit

Sample ID	**MB-13571**	SampType:	**MBLK**	TestCode:	**EPA Method 418.1: TPH**					
Client ID:	**PBS**	Batch ID:	**13571**	RunNo:	**19175**					
Prep Date:	**6/6/2014**	Analysis Date:	**6/11/2014**	SeqNo:	**554453**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	ND	20								

Sample ID	**LCS-13571**	SampType:	**LCS**	TestCode:	**EPA Method 418.1: TPH**					
Client ID:	**LCSS**	Batch ID:	**13571**	RunNo:	**19175**					
Prep Date:	**6/6/2014**	Analysis Date:	**6/11/2014**	SeqNo:	**554454**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	92	20	100.0	0	91.5	80	120			

Sample ID	**LCSD-13571**	SampType:	**LCSD**	TestCode:	**EPA Method 418.1: TPH**					
Client ID:	**LCSS02**	Batch ID:	**13571**	RunNo:	**19175**					
Prep Date:	**6/6/2014**	Analysis Date:	**6/11/2014**	SeqNo:	**554455**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	96	20	100.0	0	95.7	80	120	4.44	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1406340**

13-Jun-14

Client: R.T. Hicks Consultants, LTD

Project: Murchison - Jackson Unit #19/28H pit

Sample ID **MB-13578**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **13578**	RunNo: **19152**
Prep Date: **6/9/2014**	Analysis Date: **6/10/2014**	SeqNo: **553568** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	12		10.00		116	57.9	140			

Sample ID **LCS-13578**	SampType: **LCS**	TestCode: **EPA Method 8015D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **13578**	RunNo: **19152**
Prep Date: **6/9/2014**	Analysis Date: **6/10/2014**	SeqNo: **553571** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	54	10	50.00	0	107	60.8	145			
Surr: DNOP	4.8		5.000		95.5	57.9	140			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1406340**

13-Jun-14

Client: R.T. Hicks Consultants, LTD

Project: Murchison - Jackson Unit #19/28H pit

Sample ID **MB-13586**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **13586**	RunNo: **19153**
Prep Date: **6/9/2014**	Analysis Date: **6/10/2014**	SeqNo: **554130** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	25								
Surr: BFB	4500		5000		89.2	80	120			

Sample ID **LCS-13586**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **13586**	RunNo: **19153**
Prep Date: **6/9/2014**	Analysis Date: **6/10/2014**	SeqNo: **554131** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	120	25	125.0	0	92.8	71.7	134			
Surr: BFB	4900		5000		98.7	80	120			

Sample ID **LCSD-13586**	SampType: **LCSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS02**	Batch ID: **13586**	RunNo: **19153**
Prep Date: **6/9/2014**	Analysis Date: **6/10/2014**	SeqNo: **554132** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	110	25	125.0	0	88.4	71.7	134	4.85	20	
Surr: BFB	4900		5000		97.2	80	120	0	0	

Sample ID **MB-13607**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **13607**	RunNo: **19201**
Prep Date: **6/10/2014**	Analysis Date: **6/11/2014**	SeqNo: **555180** Units: **%REC**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	900		1000		89.9	80	120			

Sample ID **LCS-13607**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **13607**	RunNo: **19201**
Prep Date: **6/10/2014**	Analysis Date: **6/11/2014**	SeqNo: **555181** Units: **%REC**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	940		1000		94.1	80	120			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1406340**

13-Jun-14

Client: R.T. Hicks Consultants, LTD

Project: Murchison - Jackson Unit #19/28H pit

Sample ID **MB-13586**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **13586**	RunNo: **19153**
Prep Date: **6/9/2014**	Analysis Date: **6/10/2014**	SeqNo: **554155** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.1		1.000		106	80	120			

Sample ID **LCS-13586**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **13586**	RunNo: **19153**
Prep Date: **6/9/2014**	Analysis Date: **6/10/2014**	SeqNo: **554156** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	4.7	0.25	5.000	0	94.7	80	120			
Toluene	4.6	0.25	5.000	0	92.8	80	120			
Ethylbenzene	4.7	0.25	5.000	0	94.2	80	120			
Xylenes, Total	15	0.50	15.00	0	98.8	80	120			
Surr: 4-Bromofluorobenzene	5.5		5.000		109	80	120			

Sample ID **LCSD-13586**	SampType: **LCSD**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS02**	Batch ID: **13586**	RunNo: **19153**
Prep Date: **6/9/2014**	Analysis Date: **6/10/2014**	SeqNo: **554157** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	4.7	0.25	5.000	0	94.0	80	120	0.731	20	
Toluene	4.6	0.25	5.000	0	91.5	80	120	1.42	20	
Ethylbenzene	4.7	0.25	5.000	0	93.4	80	120	0.768	20	
Xylenes, Total	15	0.50	15.00	0	98.3	80	120	0.555	20	
Surr: 4-Bromofluorobenzene	5.6		5.000		113	80	120	0		

Sample ID **MB-13607**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **13607**	RunNo: **19201**
Prep Date: **6/10/2014**	Analysis Date: **6/11/2014**	SeqNo: **555210** Units: **%REC**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.1		1.000		106	80	120			

Sample ID **LCS-13607**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **13607**	RunNo: **19201**
Prep Date: **6/10/2014**	Analysis Date: **6/11/2014**	SeqNo: **555211** Units: **%REC**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1406340**

13-Jun-14

Client: R.T. Hicks Consultants, LTD

Project: Murchison - Jackson Unit #19/28H pit

Sample ID	**LCS-13607**	SampType: **LCS**		TestCode: **EPA Method 8021B: Volatiles**					
Client ID:	**LCSS**	Batch ID: **13607**		RunNo: **19201**					
Prep Date:	**6/10/2014**	Analysis Date: **6/11/2014**		SeqNo: **555211**		Units: **%REC**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.1		1.000		114	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: RT HICKS | Work Order Number: 1406340 | RcptNo: 1

Received by/date: AT 06/06/14

Logged By: **Michelle Garcia** 6/6/2014 10:00:00 AM Michelle Garcia

Completed By: **Michelle Garcia** 6/6/2014 2:30:17 PM Michelle Garcia

Reviewed By: 06/09/14

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	Client		

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☐	No ☑	NA ☐
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	Not required
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
9. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
11. Were any sample containers received broken?	Yes ☐	No ☑	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)

Adjusted? _____

Checked by: _____

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	8.6	Good	Not Present			

Chain of Custody

Company: R. T. Hicks Consultants	☒ Standard ☐ Rush
	Project Name: Murchison - Jackson Unit #[redacted] 19/28 H pit
Mailing Address: 901 Rio Grande Blvd NW Albuquerque, NM 87104	Project #:
Phone #: (505) 266-5004	Project Manager: Kristin Pope
email or Fax#: R@rthicksconsult.com	Sampler: Kristin Pope
QA/QC Package: Standard ☐ Level 4 (Full Validation)	On Ice: ☒ Yes ☐ No
Accreditation: NELAP ☐ Other	Sample Temperature: 8.6
EDD (Type)	

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1401340
6/4/14	1330	soil	Inner Composite	2 glass	ice	-001
"	1405	"	Outer Composite	"	"	-002

Analysis Request

BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F^-, Cl^-, NO_3, NO_2, PO_4, SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)		100 grams			Air Bubbles (Y or N)
X		X	X				X					X			
X		X	X				X					X			

Remarks: Email results to R@..., kristin@rthicksconsult.com

Hold "Bit Stabilized Cuttings" Barite KP

Date	Time	Relinquished by	Received by	Date	Time
6/5/14	345	Kristin Pope			
6/6/14	1000			06/06/14	1000

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

ATTACHMENT 4

SOIL BACKFILLING & COVER INSTALLATION

In accordance with the requirements listed in paragraph D of 19.15.17.13 NMAC, the operator employed the following steps for in-place burial of the waste material from the temporary pit:

1. Siting criteria and operations of the pit complied with the C-144 application and the Pit Rule under which it was submitted to the NMOCD on October 7, 2013 and approved on the same day. The rig was released on December 21, 2013, fluid contents in the pit were removed while the cuttings were allowed to dry.

2. After inspection of the liner and notification to NMOCD and the State Land Office, the #19H pit was then used to store the cuttings from the drilling of the nearby Jackson Unit #28H well which spudded on April 8, 2014. The #28H well was completed in May 2014.

3. On June 6, 2014, prior to the initiation of closure activities, samples of the inner and outer cells and clean soil from the berms of the pit below the liner were recovered from the pit. Using two methods, these were mixed in a ratio of 3 parts clean soil to 1 part cuttings and were analyzed for Chloride, TPH, GRO, DRO, MRO, Benzene, and BTEX at Hall Environmental Analysis Laboratory of Albuquerque, New Mexico. The results, as noted in the subsequent closure notice and Attachment 3 of this report, demonstrated that the stabilized pit contents would not exceed the parameter limits listed in Table II of the Pit Rule.

4. To allow time for the return of the laboratory analyses, an extension for closure was submitted to NMOCD on June 19, 2014 and approved on June 23. The extension created a new deadline of September 21, 2014 to begin closure.

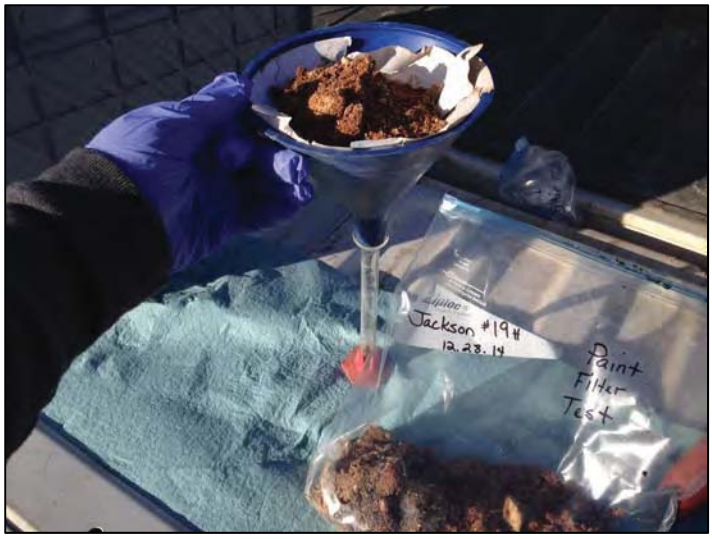
5. Record rainfall in the area during August and September 2014 did not allow closure to begin before the deadline. Hicks Consultants discussed this delay with NMOCD on September 18. A closure notice was submitted to the NMOCD, District 1 office in Hobbs and to the State Land Office on October 13, 2014. Verbal notice in the form of a phone call to NMOCD was placed on the same day.

6. On October 20, 2014, closure activities commenced and stabilization of the pit contents was achieved by mixing the pit contents with the dry soil beneath the liner of the pit and the dividing berms. On December 28, 2014, a paint filter test was performed by Hicks Consultants that confirmed that the process was complete and that the stabilized cuttings were located at least 4 feet below grade.

7. Having achieved all applicable stabilization requirements associated with in-place burial, a geomembrane liner was installed to cover the stabilized cuttings on December 29, 2014. The pit contents and liner were shaped to shed infiltrating water, slightly higher in the center.

8. Once the geomembrane cover was in place, approximately 4 feet or more of non-waste containing, uncontaminated, earthen material and the reserved topsoil were replaced to their relative positions in accordance with Subsection (3) of Paragraph H of 19.15.17.13 NMAC. The soil cover consists of at least four feet of compacted, non-waste containing, earthen material. The uppermost topsoil is equal to the background thickness at least one foot. The surface was contoured to blend with the surrounding topography and to prevent erosion and the ponding of water over the on-site closure. Inclement winter weather delayed closure activities but this work was completed on January 20, 2015.

Beginning closure mixing 10/20/2014



Paint filter test on stabilized cuttings 12/28/2014

Geomembrane cover over stabilized cuttings
12/29/2014

Backfill complete (facing southwest) 1/20/2015

ATTACHMENT 5

RE-VEGETATION PROCEDURES

There were no roads or surface drainage features nearby that required restoration or preservation.

1. On January 29, 2015, Storm Construction seeded the topsoil of the on-site burial area using a seed drill pulled by a tractor that prepared the seedbed in the same pass using discs. The seed furrows were oriented perpendicular to the prevailing western wind to minimize erosion.

2. Approximately 48 pounds of a seed mixture consisting of 50% BLM #2 seed blend and 50% Homesteader's Choice blend was applied to approximately 1 acre of disturbance in accordance with the supplier's instructions to the former temporary pit area. Species constituents of each blend are listed below and are appropriate for the soil type and conditions at this site. Note that Sand Lovegrass, a component of the BLM #2 assortment, was unavailable so appropriate substitute species were used as selected by the seed vendor.

BLM #2	***Homesteader's Choice***
Sideoats Grama	Blue Grama
Switchgrass	Buffalograss
Sand Dropseed	Sideoats Grama
Bristlegrass	Western Wheatgrass
Plains Coreopsis	Sand Dropseed

3. After seeding, a steel plate marking the site as an in-place pit closure has been placed on the surface at the center of the former pit location in accordance with Subsection (3) of Paragraph F of 19.15.17.13 NMAC.

4. The seeded area will be monitored for growth and the operator will repeat seeding until a successful vegetative cover is achieved as outlined in Subsection (5) of Paragraph H of 19.15.17.13 NMAC.

5. If conditions are not favorable for the establishment of vegetation, such as periods of drought, the operator may request that the division allow a delay in additional seeding until soil moisture conditions become favorable. The operator will notify the division and provide photo-documentation when it successful re-vegetation is achieved.

Steel marker plate identifying pit burial site

ATTACHMENT 6

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-144
Revised June 6, 2013

For temporary pits, below-grade tanks, and multi-well fluid management pits, submit to the appropriate NMOCD District Office.
For permanent pits submit to the Santa Fe Environmental Bureau office and provide a copy to the appropriate NMOCD District Office.

Pit, Below-Grade Tank, or Proposed Alternative Method Permit or Closure Plan Application

Type of action:
- ☐ Below grade tank registration
- ☒ Permit of a pit or proposed alternative method
- ☑ Closure of a pit, below-grade tank, or proposed alternative method
- ☒ Modification to an existing permit/or registration
- ☐ Closure plan only submitted for an existing permitted or non-permitted pit, below-grade tank, or proposed alternative method

Instructions: Please submit one application (Form C-144) per individual pit, below-grade tank or alternative request

Please be advised that approval of this request does not relieve the operator of liability should operations result in pollution of surface water, ground water or the environment. Nor does approval relieve the operator of its responsibility to comply with any other applicable governmental authority's rules, regulations or ordinances.

1.
Operator: Murchison Oil & Gas, Inc. OGRID #: 15363
Address: 1100 Mira Vista Blvd., Plano, TX 75093-4698
Facility or well name: Jackson Unit No. 19H
API Number: 30-025-41138 OCD Permit Number: P1-06107
U/L or Qtr/Qtr N Section 21 Township 24S Range 33E County: Lea
Center of Proposed Design: Latitude 32° 11' 47.154" N Longitude 103° 34' 49.364" W NAD: ☐1927 ☒ 1983
Surface Owner: ☐ Federal ☒ State ☐ Private ☐ Tribal Trust or Indian Allotment

2.
☒ **Pit:** Subsection F, G or J of 19.15.17.11 NMAC
Temporary: ☒ Drilling ☐ Workover
☐ Permanent ☐ Emergency ☐ Cavitation ☐ P&A ☐ Multi-Well Fluid Management Low Chloride Drilling Fluid ☐ yes ☒ no
☒ Lined ☐ Unlined Liner type: Thickness 20 mil ☒ LLDPE ☐ HDPE ☐ PVC ☐ Other
☒ String-Reinforced
Liner Seams: ☒ Welded ☐ Factory ☐ Other Volume: 23,712 bbl Dimensions: L 150 x W 170 x D 6-10 ft

3.
☐ **Below-grade tank:** Subsection I of 19.15.17.11 NMAC
Volume: bbl Type of fluid:
Tank Construction material:
☐ Secondary containment with leak detection ☐ Visible sidewalls, liner, 6-inch lift and automatic overflow shut-off
☐ Visible sidewalls and liner ☐ Visible sidewalls only ☐ Other
Liner type: Thickness mil ☐ HDPE ☐ PVC ☐ Other

4.
☐ **Alternative Method:**
Submittal of an exception request is required. Exceptions must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.

5.
Fencing: Subsection D of 19.15.17.11 NMAC *(Applies to permanent pits, temporary pits, and below-grade tanks)*
☐ Chain link, six feet in height, two strands of barbed wire at top *(Required if located within 1000 feet of a permanent residence, school, hospital, institution or church)*
☒ Four foot height, four strands of barbed wire evenly spaced between one and four feet
☐ Alternate. Please specify

6.

Netting: Subsection E of 19.15.17.11 NMAC *(Applies to permanent pits and permanent open top tanks)*

☐ Screen ☐ Netting ☐ Other_____

☐ Monthly inspections (If netting or screening is not physically feasible)

7.

Signs: Subsection C of 19.15.17.11 NMAC

☐ 12"x 24", 2" lettering, providing Operator's name, site location, and emergency telephone numbers

☒ Signed in compliance with 19.15.16.8 NMAC

8.

Variances and Exceptions:

Justifications and/or demonstrations of equivalency are required. Please refer to 19.15.17 NMAC for guidance.

Please check a box if one or more of the following is requested, if not leave blank:

☐ Variance(s): Requests must be submitted to the appropriate division district for consideration of approval.

☐ Exception(s): Requests must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.

9.

Siting Criteria (regarding permitting): 19.15.17.10 NMAC

Instructions: The applicant must demonstrate compliance for each siting criteria below in the application. Recommendations of acceptable source material are provided below. **Siting criteria does not apply to drying pads or above-grade tanks.**

General siting	
Ground water is less than 25 feet below the bottom of a low chloride temporary pit or below-grade tank. - ☐ NM Office of the State Engineer - iWATERS database search; ☐ USGS; ☐ Data obtained from nearby wells	☐ Yes ☐ No ☒ NA
Ground water is less than 50 feet below the bottom of a Temporary pit, permanent pit, or Multi-Well Fluid Management pit . NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells **See Figures 1 & 2**	☐ Yes ☒ No ☐ NA
Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended. **(Does not apply to below grade tanks) See Figure 5** - Written confirmation or verification from the municipality; Written approval obtained from the municipality	☐ Yes ☒ No
Within the area overlying a subsurface mine. **(Does not apply to below grade tanks) See Figure 7** - Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division	☐ Yes ☒ No
Within an unstable area. **(Does not apply to below grade tanks) See Figure 8** - Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map	☐ Yes ☒ No
Within a 100-year floodplain. **(Does not apply to below grade tanks) See Figure 9** - FEMA map	☐ Yes ☒ No
Below Grade Tanks	
Within 100 feet of a continuously flowing watercourse, significant watercourse, lake bed, sinkhole, wetland or playa lake (measured from the ordinary high-water mark). - Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Within 200 horizontal feet of a spring or a fresh water well used for public or livestock consumption;. - NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Temporary Pit using Low Chloride Drilling Fluid (maximum chloride content 15,000 mg/liter)	
Within 100 feet of a continuously flowing watercourse, or any other significant watercourse or within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). (Applies to low chloride temporary pits.) - Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Within 300 feet from a occupied permanent residence, school, hospital, institution, or church in existence at the time of initial application. - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	☐ Yes ☐ No
Within 200 horizontal feet of a spring or a private, domestic fresh water well used by less than five households for domestic or stock watering purposes, or 300feet of any other fresh water well or spring, in existence at the time of the initial application. NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site	☐ Yes ☐ No

Within 100 feet of a wetland. - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Temporary Pit Non-low chloride drilling fluid	
Within 300 feet of a continuously flowing watercourse, or any other significant watercourse, or within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). **See Figure 3** - Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☒ No
Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image. **See Figure 4**	☐ Yes ☒ No
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, or 1000 feet of any other fresh water well or spring, in the existence at the time of the initial application; - NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site **See Figures 1 & 2**	☐ Yes ☒ No
Within 300 feet of a wetland. **See Figure 6** - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☒ No
Permanent Pit or Multi-Well Fluid Management Pit	
Within 300 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse, or lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). - Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	☐ Yes ☐ No
Within 500 horizontal feet of a spring or a fresh water well used for domestic or stock watering purposes, in existence at the time of initial application. - NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Within 500 feet of a wetland. - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☐ No

10.

Temporary Pits, Emergency Pits, and Below-grade Tanks Permit Application Attachment Checklist: Subsection B of 19.15.17.9 NMAC

Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.

☐ Hydrogeologic Report (Below-grade Tanks) - based upon the requirements of Paragraph (4) of Subsection B of 19.15.17.9 NMAC
☒ Hydrogeologic Data (Temporary and Emergency Pits) - based upon the requirements of Paragraph (2) of Subsection B of 19.15.17.9 NMAC
☒ Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC
☒ Design Plan - based upon the appropriate requirements of 19.15.17.11 NMAC
☒ Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC
☒ Closure Plan (Please complete Boxes 14 through 18, if applicable) - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC

☐ Previously Approved Design (attach copy of design) API Number: _____ or Permit Number: _____

11.

Multi-Well Fluid Management Pit Checklist: Subsection B of 19.15.17.9 NMAC

Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.

☐ Design Plan - based upon the appropriate requirements of 19.15.17.11 NMAC
☐ Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC
☐ A List of wells with approved application for permit to drill associated with the pit.
☐ Closure Plan (Please complete Boxes 14 through 18, if applicable) - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC
☐ Hydrogeologic Data - based upon the requirements of Paragraph (4) of Subsection B of 19.15.17.9 NMAC
☐ Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC

☐ Previously Approved Design (attach copy of design) API Number: _____ or Permit Number: _____

12.
Permanent Pits Permit Application Checklist: Subsection B of 19.15.17.9 NMAC
Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.

- ☐ Hydrogeologic Report - based upon the requirements of Paragraph (1) of Subsection B of 19.15.17.9 NMAC
- ☐ Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC
- ☐ Climatological Factors Assessment
- ☐ Certified Engineering Design Plans - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Dike Protection and Structural Integrity Design - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Leak Detection Design - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Liner Specifications and Compatibility Assessment - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Quality Control/Quality Assurance Construction and Installation Plan
- ☐ Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC
- ☐ Freeboard and Overtopping Prevention Plan - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Nuisance or Hazardous Odors, including H_2S, Prevention Plan
- ☐ Emergency Response Plan
- ☐ Oil Field Waste Stream Characterization
- ☐ Monitoring and Inspection Plan
- ☐ Erosion Control Plan
- ☐ Closure Plan - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC

13.
Proposed Closure: 19.15.17.13 NMAC
Instructions: Please complete the applicable boxes, Boxes 14 through 18, in regards to the proposed closure plan.

Type: ☒ Drilling ☐ Workover ☐ Emergency ☐ Cavitation ☐ P&A ☐ Permanent Pit ☐ Below-grade Tank ☐ Multi-well Fluid Management Pit ☐ Alternative

Proposed Closure Method: ☐ Waste Excavation and Removal
☐ Waste Removal (Closed-loop systems only)
☒ On-site Closure Method (Only for temporary pits and closed-loop systems)
☒ In-place Burial ☐ On-site Trench Burial
☐ Alternative Closure Method

14.
Waste Excavation and Removal Closure Plan Checklist: (19.15.17.13 NMAC) ***Instructions: Each of the following items must be attached to the closure plan. Please indicate, by a check mark in the box, that the documents are attached.***

- ☐ Protocols and Procedures - based upon the appropriate requirements of 19.15.17.13 NMAC
- ☐ Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of Subsection C of 19.15.17.13 NMAC
- ☐ Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings)
- ☐ Soil Backfill and Cover Design Specifications - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC
- ☐ Re-vegetation Plan - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC
- ☐ Site Reclamation Plan - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC

15.
Siting Criteria (regarding on-site closure methods only): 19.15.17.10 NMAC
Instructions: Each siting criteria requires a demonstration of compliance in the closure plan. Recommendations of acceptable source material are provided below. Requests regarding changes to certain siting criteria require justifications and/or demonstrations of equivalency. Please refer to 19.15.17.10 NMAC for guidance.

Ground water is less than 25 feet below the bottom of the buried waste. - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	☐ Yes ☒ No ☐ NA
Ground water is between 25-50 feet below the bottom of the buried waste - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	☐ Yes ☒ No ☐ NA
Ground water is more than 100 feet below the bottom of the buried waste. - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	☒ Yes ☐ No ☐ NA
Within 100 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse, lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). - Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☒ No
Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	☐ Yes ☒ No
Within 300 horizontal feet of a private, domestic fresh water well or spring used for domestic or stock watering purposes, in existence at the time of initial application. - NM Office of the State Engineer - iWATERS database; Visual inspection (certification) of the proposed site	☐ Yes ☒ No
Written confirmation or verification from the municipality; Written approval obtained from the municipality	☐ Yes ☒ No
Within 300 feet of a wetland. US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☒ No
Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance	

adopted pursuant to NMSA 1978, Section 3-27-3, as amended. - Written confirmation or verification from the municipality; Written approval obtained from the municipality	☐ Yes ☒ No
Within the area overlying a subsurface mine. - Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division	☐ Yes ☒ No
Within an unstable area. - Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map	☐ Yes ☒ No
Within a 100-year floodplain. - FEMA map	☐ Yes ☒ No

16.
On-Site Closure Plan Checklist: (19.15.17.13 NMAC) ***Instructions: Each of the following items must be attached to the closure plan. Please indicate, by a check mark in the box, that the documents are attached.***

- ☒ Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC
- ☒ Proof of Surface Owner Notice - based upon the appropriate requirements of Subsection E of 19.15.17.13 NMAC
- ☐ Construction/Design Plan of Burial Trench (if applicable) based upon the appropriate requirements of Subsection K of 19.15.17.11 NMAC
- ☒ Construction/Design Plan of Temporary Pit (for in-place burial of a drying pad) - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☒ Protocols and Procedures - based upon the appropriate requirements of 19.15.17.13 NMAC
- ☐ Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of 19.15.17.13 NMAC
- ☒ Waste Material Sampling Plan - based upon the appropriate requirements of 19.15.17.13 NMAC
- ☐ Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings or in case on-site closure standards cannot be achieved)
- ☒ Soil Cover Design - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC
- ☒ Re-vegetation Plan - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC
- ☒ Site Reclamation Plan - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC

17.
Operator Application Certification:

I hereby certify that the information submitted with this application is true, accurate and complete to the best of my knowledge and belief.

Name (Print): Greg Boans Title: Production Superintendent

Signature: [signature] Date: October 7, 2013

e-mail address: gboans@jdmii.com Telephone: (575) 361-4962

18.
OCD Approval: ☒ Permit Application (including closure plan) ☐ Closure Plan (only) ☐ OCD Conditions (see attachment) MOD

OCD Representative Signature: [signature] Approval Date: 10/07/13

Title: Environmental Specialist OCD Permit Number: P1-06107

19.
Closure Report (required within 60 days of closure completion): 19.15.17.13 NMAC

Instructions: Operators are required to obtain an approved closure plan prior to implementing any closure activities and submitting the closure report. The closure report is required to be submitted to the division within 60 days of the completion of the closure activities. Please do not complete this section of the form until an approved closure plan has been obtained and the closure activities have been completed.

☑ **Closure Completion Date:** January 20, 2015

20.
Closure Method:

☐ Waste Excavation and Removal ☑ On-Site Closure Method ☐ Alternative Closure Method ☐ Waste Removal (Closed-loop systems only)

☐ If different from approved plan, please explain.

21.
Closure Report Attachment Checklist: ***Instructions: Each of the following items must be attached to the closure report. Please indicate, by a check mark in the box, that the documents are attached.***

- ☑ Proof of Closure Notice (surface owner and division)
- ☐ Proof of Deed Notice (required for on-site closure for private land only) n/a (State Land)
- ☑ Plot Plan (for on-site closures and temporary pits)
- ☐ Confirmation Sampling Analytical Results (if applicable) n/a (on-site closure)
- ☑ Waste Material Sampling Analytical Results (required for on-site closure)
- ☐ Disposal Facility Name and Permit Number n/a (on-site closure)
- ☑ Soil Backfilling and Cover Installation
- ☑ Re-vegetation Application Rates and Seeding Technique
- ☐ Site Reclamation (Photo Documentation) to follow

On-site Closure Location: Latitude N 32.19684° Longitude W 103.580523° NAD: ☐ 1927 ☑ 1983

22.

Operator Closure Certification:

I hereby certify that the information and attachments submitted with this closure report is true, accurate and complete to the best of my knowledge and belief. I also certify that the closure complies with all applicable closure requirements and conditions specified in the approved closure plan.

Name (Print): Kristin Pope Title: Agent for Murchison Oil and Gas, Inc.

Signature: Kristin Pope Date: February 25, 2015

e-mail address: kristin@rthicksconsult.com Telephone: (575) 302-6755