District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-144
June 1, 2004

✓ **For drilling and production facilities**, submit to appropriate NMOCD District Office.
For downstream facilities, submit to Santa Fe office

Pit or Below-Grade Tank Registration or Closure
Is pit or below-grade tank covered by a "general plan"? Yes ☐ No ☐
Type of action: Registration of a pit or below-grade tank ☐ Closure of a pit or below-grade tank **X**

Operator: **MURCHISON OIL AND GAS, INC.** Telephone: **505-628-3932** e-mail address: **tommyfolsom@valornet.com**

Address: **1100 Mira Vista Blvd., Plano, Texas 75093-4698**

Facility or well name: **Hightower State Unit No. 1** **API #: 30-025-37901** **U/L A Sec 27 T12S R33E 660' FNL and 1300' FEL**

County: **Lea** Latitude N_____ Longitude W_____ NAD: 1927 ☐ 1983 ☐

Surface Owner: **State X**

Month - Year MAR 26 2007 OCD - ARTESIA, NM

Recd Hobbs OCD 5/25/07

Pit	**Below-grade tank N/A**	
Type: **Drilling X** Lined **X** Liner type: Synthetic **X** Thickness: **12ml HDPE Liner** Pit Volume: **2000 bbl. (Approximately)**	Volume: **N/A** bbl Type of fluid: **N/A** Construction material: **N/A** Double-walled, with leak detection? ☐ If not, explain why not.	
Depth to ground water (vertical distance from bottom of pit to seasonal high water elevation of groundwater.) **Groundwater well survey performed on 18 May 06 shows no water to a depth of 70 feet.**	Less than 50 feet 50 feet or more, but less than 100 feet 100 feet or more	(20 points) (10 points) (0 points) **10 pts.** 79'
Wellhead protection area: (Less than 200 feet from a private domestic water source, or less than 1000 feet from all other water sources.)	Yes No **X**	(20 points) (0 points) **0 pts.**
Distance to surface water: (horizontal distance to all wetlands, playas, irrigation canals, ditches, and perennial and ephemeral watercourses.)	Less than 200 feet 200 feet or more, but less than 1000 feet 1000 feet or more	(20 points) (10 points) (0 points) **0 pts.**
	Ranking Score (Total Points)	**0 pts.**

If this is a pit closure: (1) Attach a diagram of the facility showing the pit's relationship to other equipment and tanks. **Digital photos shall be submitted for before and after remediation activity (final report).** (2) Indicate disposal location: **Insitu.** If offsite, name of facility: **N/A** (4) Groundwater encountered: No **X** Yes ☐ If yes, show depth below ground surface _ ft. and attach sample results. (5) Attach soil sample results and a diagram of sample locations and excavations.

Additional Comments: **Please refer to the attached "Closure Plan" information. Well log record of groundwater survey conducted on 18 may 2006 is attached. For purposes of continuity, all materials shall be submitted as part of the final closure report.**

I hereby certify that the information above is true and complete to the best of my knowledge and belief. I further certify that the above-described pit or below-grade tank has been/will be constructed or closed according to NMOCD guidelines **X**, a general permit ☐, or an (attached) alternative OCD-approved plan ☐.

Date: **21 March 2007**

Printed Name/Title: **Tommy W. Folsom, Production Manager** Signature J W Folsom

Your certification and NMOCD approval of this application/closure does not relieve the operator of liability should the contents of the pit or tank contaminate groundwater or otherwise endanger public health or the environment. Nor does it relieve the operator of its responsibility for compliance with any other federal, state, or local laws and/or regulations.

Approval:

Printed Name/Title: L JOHNSON - ENVIR. ENGR Signature _____ Date: 5.25.07

RPF 1353

Mr. Tommy W. Folsom
Production Manager
MURCHISON OIL AND GAS, INC.
PO Box 627
Carlsbad, NM 88221-0627

21 March 2007

Mr. Larry Johnson
OIL CONSERVATION DIVISION
1625 North French Drive
Hobbs, NM 88240

Re: Hightower State Unit No. 1 Pit Closure Documents

Dear Mr. Johnson:

Pursuant to the State of New Mexico regulatory requirements for permanent closure of drilling pits, enclosed herewith is the completed Form C-144, New Mexico Office of the State Engineer Well Record and additional information constituting the "Closure Plan" for closure of the Murchison Oil and Gas, Inc., hereinafter "Murchison", Hightower State Unit No. 1 drilling pit (API No. 30-015-37901) located in U/L A S27 T12S, R33E, 660' FNL and 1300' FEL of Lea County, New Mexico.

INTRODUCTION

Remediation of the Murchison, hereinafter "Hightower", drilling pit is targeted to begin 29 March 2007 with completion expected by 18 April 2007, permitting weather and the occurrence of unexpected conditions not within the Operator's control do not create delays or exacerbate the proposed schedule in any way. Murchison intends to maintain its commitment to environmental health and safety and fully comply with the Regulatory Performa of the State of New Mexico, OCD regarding this disposal action and permanent closure of the Hightower drilling pit.

Potential, temporary contamination from the Hightower drilling pit site, should any exist, resulted solely from oil and gas production activities. Potential contaminates of concern are typical mid to high-level concentrations of brines, typical polymers (such as xanthium gum and starch) and in general, drilling mud and fluids remaining upon completion of said drilling operations.

Area land use is primarily ranching with domestic pasturage and oil and gas production activities. The Murchison Hightower drilling pit is located in a Section 27 wherein groundwater depth to surface data was established by drilling a groundwater survey well (White Drilling Company, Inc. 18 May 2006) showing the total depth of the well at 70 feet dry at completion.

Consequently, Murchison intends to employ traditional insitu disposal on location. It is the belief of Murchison that compliant environmental performance and reduction of liability pursuant to New Mexico; OCD regulations can be achieved with *insitu* disposal predicated on the evidentiary data heretofore presented. Further, should future Regulatory Performa mandate additional action or

should the Operator choose to take additional action, the insitu option, in this case, (1) limits the environmental impact in general, (2) allows the Operator/government immediate access to said liability, (3) contains said material within the Operator's lease boundary and (4) in the event evidence of water is discovered during the digging of the *insitu* pit, all actions would cease and the State would be immediately notified.

Murchison intends to engage in *insitu* disposal upon approval from the New Mexico, OCD. This compliance action shall strictly apply the State of New Mexico, OCD standards, i.e. clean-up level for the Hightower drilling pit shall meet the less than 100ppm of TPH, ND for BTEX and the less than 250ppm of chlorides unless approved otherwise and substantiated by background information documented to be higher than the above cited indices.

CLOSURE PLAN

Prior to commencement of closure activities, Murchison contractor will contact One-Call for line spot clearance confirming the State of New Mexico, OCD is in agreement with the proposed Closure Plan for removal of approximately 2,000 bbl. of liquid followed by the removal of all fines (drill cuttings) assuming these fines have sufficiently dried allowing for maneuverability of heavy equipment in the pit area, enabling *insitu* burial application to take place and final closure of the pit occur.

Environmental health and safety regulations mandate control of pit volumes at all times. Thus, the liquid material was pumped off as needed and properly disposed of during active drilling operations. Water accumulated since this time is either due to liquid material not completely hauled from actual drilling operations or rain. This water has subsequently been hauled from the location and properly disposed of pursuant to OCD Regulatory Performa.

- Contractor shall mobilize to Hightower drilling pit site located in Section 27, Township 12S and Range 33E of Lea County, New Mexico.

- No remediation activity shall occur off the existing pad or already disturbed areas as authorized by the APD and approved Best Management Practices (BMP's). Murchison shall consider weather conditions and necessary equipment positioning to provide a clear area for adequate staging for site control and safety compliance, ensuring operations shall be compliant with New Mexico, OCD Regulatory Performa.

- The Hightower drilling pit is currently lined with a 12ml HDPE liner, which shall be removed by heavy equipment and disposed of with the drilling fines *inistu* pursuant to New Mexico, OCD requirements. *Insitu* actions provide for the encasement of all drilling pit contents in a 20 ml HDPE liner and capped with a 20 ml HDPE liner.

- Once the burial trench/pit has been dug to sufficient dimensions to ensure proper placement of the pit contents, the track hoe shall begin to deposit pit materials within the secured container until all pit material has been placed within it. This 12ml HDPE liner

container shall not be permanently sealed until after the pit bottom has been sampled and approved for closure by the State of New Mexico, OCD.

- Prior to initiation of backfilling, the Operator shall take appropriate samples of the pit area to ensure compliance with OCD Standards for remediation of possible TPH, ND for BTEX and levels of less than 250ppm of chlorides. However if levels at the bottom of the drilling pit test too high, a background set of samples shall be obtained for testing from the immediate vicinity and compared to those of the pit bottom. Simultaneously, more soil shall be removed from the "hot spots". Once completed, new data acquisition shall occur and sample results determine whether or not compliance has been reached in order to begin backfilling. No backfilling shall begin without authorization by the State of New Mexico, OCD.

- Backfilling of the Hightower drilling pit shall be commensurate with existing topography and terrain relief features (contouring) so as to return it to its "near-as" previous condition, including a contour for moisture accumulation which prevents abnormal or unsustainable water impoundment resulting in erosive actions.

- The Closure Plan shall include a final report providing lab analysis of the backfill material, digital project photos and evidentiary narrative to support the completed disposition of the reclaimed Hightower drilling pit site.

Should you have questions, please call 505-628-3932 (office) or 505-706-0667 (cell).

Sincerely,

T W Folsom

Tommy W. Folsom
Production Manager

cc: State of New Mexico, OCD, Form C-144, State Engineer's Well Record

File Number: _____

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

5. PRINCIPAL WATER-BEARING STRATA - Hightower State Unit #1

Depth in Feet From	To	Thickness in feet	Description of water-bearing formation	Estimated Yield (GPM)

6. RECORD OF CASING

Diameter (inches)	Pounds per ft.	Threads per in.	Depth in Feet Top	Bottom	Length (feet)	Type of Shoe	Perforations From	To
2.0	Sch. 40	4.0	0.0	60.0	60.0			
2.0	.020	4.0	60.0	70.0	10.0		60.0	70.0

7. RECORD OF MUDDING AND CEMENTING

Depth in Feet From	To	Hole Diameter	Sacks of mud	Cubic Feet of Cement	Method of Placement

8. PLUGGING RECORD

Plugging Contractor: White Drilling Company, Inc.

Address: P.O. Box 906

Plugging Method: Hand Mix

Date Well Plugged: 5/09/06

Plugging approved by: _____

State Engineer Representative

No.	Depth in Feet Top	Bottom	Cubic Feet of Cement
1	0.0	10.0	2.304 cement
2	10.0	70.0	21 sacks bentonite pellets
3			
4			
5			

File Number: _____

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

9. LOG OF HOLE - Hightower State Unit #1

Depth in feet From	To	Thickness in feet	Color and Type of Material Encountered
0.0	4.0	4.0	Light brown clayey sand.
4.0	7.0	3.0	Caliche & tan sand.
7.0	12.0	5.0	Caliche.
12.0	14.0	2.0	Grayish green shale.
14.0	19.0	5.0	Light greenish white shale.
19.0	22.0	3.0	Reddish brown sand.
22.0	27.0	5.0	Blue gray shale.
27.0	35.0	8.0	Tan sand & light brown sand.
35.0	40.0	5.0	Tan sandstone & sand.
40.0	70.0	30.0	Light reddish brown sand tight packed.