

OCD-ARTESIA

FEB 25 2009

ATS-08-940

Form 3160-3
(February 2005)UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENTFORM APPROVED
OMB No. 1004-0137
Expires March 31, 2007APPLICATION FOR PERMIT TO DRILL OR REENTER **NoS Received 7-30-08**

1a. Type of work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER UNORTHODOX LOCATION		5. Lease Serial No. NMNM 030752
1b. Type of Well: <input type="checkbox"/> Oil Well <input checked="" type="checkbox"/> Gas Well <input type="checkbox"/> Other <input checked="" type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		6. If Indian, Allottee or Tribe Name N/A
2. Name of Operator Murchison Oil & Gas Inc. - OGRID 15363		7. If Unit or CA Agreement Name and No. N/A
3a. Address 1100 Mira Vista Boulevard Plano, TX 75093-4698		8. Lease Name and Well No. Mustang Fed Com #4 36927
3b. Phone No. (include area code) 972-931-0700		9. API Well No. 30-015-36943
4. Location of Well (Report location clearly and in accordance with any State requirements) At surface 2140' FSL & 1980' FWL UNIT K		10. Field and Pool or Exploratory Base Penn/Turkey Track N Morrow 86500
At proposed prod. zone: Capitan Controlled Water Basin Split Estate		11. Sec., T., R., M. or BLM and Survey or Area Section 21; T.18S, R.29E
14. Distance in miles and direction from nearest town or post office: approximately 8 miles SW of Loco Hills, New Mexico		12. County or Parish Eddy County
15. Distance from proposed location to nearest property or lease line, ft. (Also to nearest drg. unit line, if any) 1980'		13. State NM
16. No. of acres in lease 840		17. Spacing Unit dedicated to this well 320 acres
18. Distance from proposed location to nearest well, drilling completed, applied for, on this lease, ft. N/A		20. BLM/BIA Bond No. on file NM2163
19. Proposed Depth 11600' MD		21. Estimated duration 35-40 days
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3494' GL		22. Approximate date work will start 12/01/2008
23. Estimated duration 35-40 days		

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, must be attached to this form:

- Well plat certified by a registered surveyor.
- A Drilling Plan.
- A Surface Use Plan (If the location is on National Forest System Lands, the SUPC must be filed with the appropriate Forest Service Office).
- Bond to cover the operations unless covered by an existing bond on file (see item 20 above).
- Operator certification.
- Such other site specific information and/or plans as may be required by the BLM.

25. Signature 	Name (Printed Type) Lee Ann Rollins	Date 9-17-2008
Title Agent		
Approved by 	Name (Printed Type) James Stovall	Date 12/2/08
Title FIELD MANAGER	Office CARLSBAD FIELD OFFICE	

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.
Conditions of approval, if any, are attached.

APPROVAL FOR TWO YEARS

Title 18, U.S.C. Section 1001 and Title 43 U.S.C. Section 1212 make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

* (Instructions on page 2)

SEE ATTACHED FOR
CONDITIONS OF APPROVALAPPROVAL SUBJECT TO
GENERAL REQUIREMENTS
AND SPECIAL STIPULATIONS
ATTACHED

Hold C-104 for NSL

DISTRICT I
1825 N. French Dr., Hobbs, NM 88240

DISTRICT II
1301 W. Grand Avenue, 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 Department

Form C-102
Revised October 12, 2005

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-015-3694386500	Pool Code	Pool Name Turkey Track North Morrow
Property Code 36927	Property Name MUSTANG FEDERAL COM	Well Number 4
OGRID No. 15363	Operator Name MURCHISON OIL & GAS, INC.	Elevation 3494'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
K	21	18 S	29 E		2140	SOUTH	1980	WEST	EDDY

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

Dedicated Acres 320	Joint or Infill	Consolidation Code	Order No.
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NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

	<p>OPERATOR CERTIFICATION</p> <p>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location, pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement, or a compulsory pooling order heretofore entered by the division.</p> <p>Signature: <i>[Signature]</i> Date: 9-17-08</p> <p>Printed Name: Lee M. Rollins</p>
	<p>SURFACE LOCATION</p> <p>LAT - N32°43'53.74"</p> <p>LONG - W104°04'54.87"</p> <p>SPC - N: 629968.863</p> <p>E: 618653.854</p> <p>(NAD 83)</p>
<p>SURVEYOR CERTIFICATION</p> <p>I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.</p> <p>DATE SURVEYED: AUGUST 2, 2008</p> <p>Signature of Professional Surveyor: <i>[Signature]</i></p> <p>W. 2008</p> <p>Certificate No. Gary L. Jones 7977</p> <p>BASIN SURVEYS</p>	



3106 N. Big Spring St. Ste. 100
Midland, TX 79705
Tel: (432) 685-9158

October 5, 2008

Bureau of Land Management
620 E. Greene Street
Carlsbad, New Mexico 88220
Attn: Betty Hill

Re: Mustang Federal Com #4- NM 030752
Section 21, T18S, R29E,
Eddy County, New Mexico

Dear Betty,

Please note that Murchison Oil & Gas, Inc and John R. Gray, LLC (surface owner for the above referenced area) have reached an agreement for the location of the above referenced well.

Please note contact information:

John R. Gray, LLC
P.O. Box 1182
Artesia, NM 88210
(505) 734-5442 office
(505) 365-6927 cell

Sincerely,

A handwritten signature in black ink, appearing to read 'Lee Ann Rollins', with a long horizontal flourish extending to the right.

Lee Ann Rollins
Agent for Murchison Oil & Gas, Inc.
Gray Surface Specialties
leeann@gss04.com

STATEMENT ACCEPTING RESPONSIBILITY FOR OPERATIONS

Murchison Oil & Gas Inc.
1100 Mira Vista Boulevard
Plano, Texas 75093-4698

The undersigned accepts all applicable terms, conditions, stipulations and restrictions covering operations conducted on the leased land or portion thereof, as described below:

Lease No: NMNM #030752

Well Name: Mustang Fed Com #4

Legal Description of Land: 2140' FSL & 1980' FWL, Unit K
Sec 21, T18S, R29E
Eddy County, New Mexico

Formation(s) (if applicable): Base Penn.

Bond Coverage: \$25,000 statewide bond of Murchison Oil & Gas, Inc.

BLM Bond File No: Personal Statewide Bond NM 2163

Sept 11, 2008
Date

Arnold Nall
Arnold Nall
VP, Operations
Murchison Oil & Gas Inc.

ATTACHMENT TO FORM 3160-3
Murchison Oil & Gas, Inc.
Mustang-Fed Com #4
2140' FSL & 1980' FWL, UNIT K
Sec 21, T18S, R29E
Eddy County, New Mexico

1. PRORATION UNIT SPACING: 320 acres*
 * NOTE: This will be the 2nd well (optional) in S2 320-acre proration unit. Murchison is currently in the process of obtaining approval for non-standard location.

2. GROUND ELEVATION: 3494' EST. RKB: 3511'

3. ESTIMATED TOPS OF IMPORTANT GEOLOGIC MARKERS

	DEPTH (KB)	SUBSURFACE
Yates	1011'	+2500'
Queen	1968'	+1548'
Grayburg	2314'	+1197'
San Andres	2796'	+715'
First Bone Spring Sd.	6521'	-3010'
Second Bone Spring Sd.	7802'	-4291'
Third Bone Spring Sd.	8285'	-4764'
Wolfcamp	8570'	-5059'
Cisco	9615'	-6104'
Canyon	9836'	-6325'
Strawn	10062'	-6551'
Atoka	10406'	-6895'
Morrow "A"	11011'	-7500'
Morrow "C"	11161'	-7650'
Morrow "E"	11236'	-7725'
Base Penn.	11475'	-7964"
 TOTAL DEPTH	 11600'	 ----
 Primary Objective	 Morrow	 11011' MD
Secondary Objective	Atoka	10406' MD

4. ESTIMATED DEPTHS OF ANTICIPATED FRESH WATER, OIL, OR GAS

Water	250'-285'	Dewey Lake
Oil	6670'-6850'	First Bone Spring Sd.
Oil	7700'-7840'	Second Bone Spring Sd.
Gas	10700'-10720'	Atoka Sandstone
Gas	11011'-11161'	Morrow "A" Sandstone
Gas	11161'-11236'	Morrow "C" Sandstone
Gas	11236'-11475'	Morrow "E" Sandstone

5. CASING AND CEMENTING PROGRAM

Casing Size	Hole Size	From	To	Weight	Grade	Joint	Conditions
13-3/8"	17-1/2"	0'	300'	48.0#	H-40	ST&C	New
9-5/8"	12-1/4"	0'	3000'	40.0#	J-55	ST&C	New
5-1/2"	8-1/2"	0'	11600'	17.0#	HC P-110	LT&C	New

Attachment to Form 3160-3
Murchison Oil & Gas, Inc.
Mustang Fed Com #4
Page 2 of 4

5. CASING AND CEMENTING PROGRAM (cont'd.)

Casing Size	Burst Rating, psi	Safety Factor	Collapse Rating, psi	Safety Factor	Tension Rating, 1000 lbs.	Safety Factor
13-3/8"	1730	6.2	740	3.2	322	26.4
9-5/8"	3950	1.3	2570	4.3	452	4.4
5-1/2"	10640	2.6	8580	1.2	445	2.6

Equivalent or adequate grades and weights of casing may be substituted at the time casing is run, depending on availability.

13.375" Surface Casing - Cementing Program

Cement with 350 sacks of Premium Plus + additives with yield = 1.34 cu.ft./sack; circulate cement to surface. If cement does not circulate, will run a temperature survey to find actual top of cement and run 1" tubing into annulus and pump cement as necessary to achieve circulation to surface.

9.625" Intermediate Casing - Cementing Program

Cement with 550 sacks of Interfill Class C + additives with yield = 2.45 cu.ft./sack, tail with 200 sacks Premium Plus + additives with yield = 1.34 cu.ft./sack; circulate cement to surface. If cement does not circulate, will run a temperature survey to find actual top of cement and run 1" tubing into annulus and pump cement as necessary to achieve circulation to surface

5.5" Production Casing - Cementing Program

Cement with 880 sacks of Premium Interfill Class H + additives with yield = 2.77 cu.ft./sack, tail with 650 sacks Super Class H + additives with yield = 1.61 cu.ft./sack; circulate cement to a planned 300' overlap inside the 9-5/8" intermediate casing shoe planned to be set at 3,000' for a top of cement of 2,700'. May perform a two-stage cement job utilizing a DV tool if determined to be necessary to raise cement to the above-described height. ← see COA

6. PRESSURE CONTROL EQUIPMENT: Blowout Preventer

We respectfully request a variance for the 13-3/8" surface casing and BOP testing from Onshore Order No. 2, which states all casing strings below the conductor shall be pressure tested to 0.22 psi per foot or 1500 psi, whichever is greater, but not to exceed 70 percent of the minimum internal yield. During the running of the surface casing and the drilling of the intermediate hole, we do not anticipate pressures greater than 1000 psi, and we are requesting a variance to test the 13-3/8" casing and BOP system to 1000 psi and to use the rig pumps instead of an independent service company.

0 - 300' None
 300' - 3000' 13-3/8" 3000# ram type preventers with one set blind rams and one set pipe rams.
 3000' - 11600' 11" 5000# ram type preventers with one set blind rams and one set pipe rams and a 5000# annular type preventer. A choke manifold and 120 gallon accumulator with floor and remote operating stations and auxiliary power system. Rotating head below 6000'. See attached Sketch of BOP Equipment.

A Kelly cock will be installed and maintained in operable condition and a drill string safety valve in the open position will be available on the rig floor.

After setting the 9 5/8" casing, the blowout preventers and related control equipment shall be pressure tested to 5000 psi and 2500 psi respectively. Any equipment failing to test satisfactorily shall be repaired or replaced. Results of the BOP test will be recorded in the Driller's Log.

Attachment to Form 3160-3
Murchison Oil & Gas, Inc.
Mustang Fed Com #4
Page 3 of 4

6. PRESSURE CONTROL EQUIPMENT: Blowout Preventer (cont'd.)

The BOP's will be maintained ready for use until drilling operations are completed. Pipe and blind rams shall be activated each trip. Annular preventer shall be functionally operated at least weekly.

BOP drills will be conducted as necessary to assure that equipment is operational and each crew is properly trained to carry out emergency duties.

Accumulator shall maintain a pressure capacity reserve at all times to provide for the close-open-close sequence of the blind and pipe rams of the hydraulic preventers.

7. MUD PROGRAM

0 – 300' Fresh water / native mud. Wt. 8.4 to 8.6 ppg, vis 32-34 sec, Lime for pH control. Paper for seepage. Lost circulation may be encountered.

300 – 3000' Fresh water 8.4 ppg, vis 28-29 sec. Add 10# brine as make-up to avoid excessive washouts in salt stringers. Caustic for pH control. Paper for seepage. Lost circulation may be encountered

3000' – 8500' Fresh water. Wt. 8.4 ppg, vis 28-29 sec, caustic for pH control. Paper for seepage.

8500' – 10400' Cut brine. Wt. 9.2-9.4 ppg, vis 28-29 sec, caustic for pH control.

10400' – 11600' Mud up with XCD Polymer mud system with the following characteristics: Wt. 10.0 ppg, vis 32-40 sec, WL 6-8 cc.

Sufficient mud materials will be kept on location at all times in order to combat lost circulation, or unexpected kicks. In order to run open-hole logs and casing, the viscosity and water loss may have to be adjusted to meet these needs.

Mud system monitoring equipment with derrick floor indicators and visual / audio alarms shall be installed and operative prior to drilling into the North Morrow formation. This equipment will remain in use until the production casing is run and cemented. Monitoring equipment shall consist of the following:

- A recording pit level indicator.
- A pit volume totalizer.
- A flowline sensor.

8. TESTING, LOGGING AND CORING PROGRAM

Testing Program: None planned.

Mud Logging Program: Two-man unit from 3000' to TD.

Electric Logging Program: CNL/LDT/CAL/GR, DLL/CAL/GR

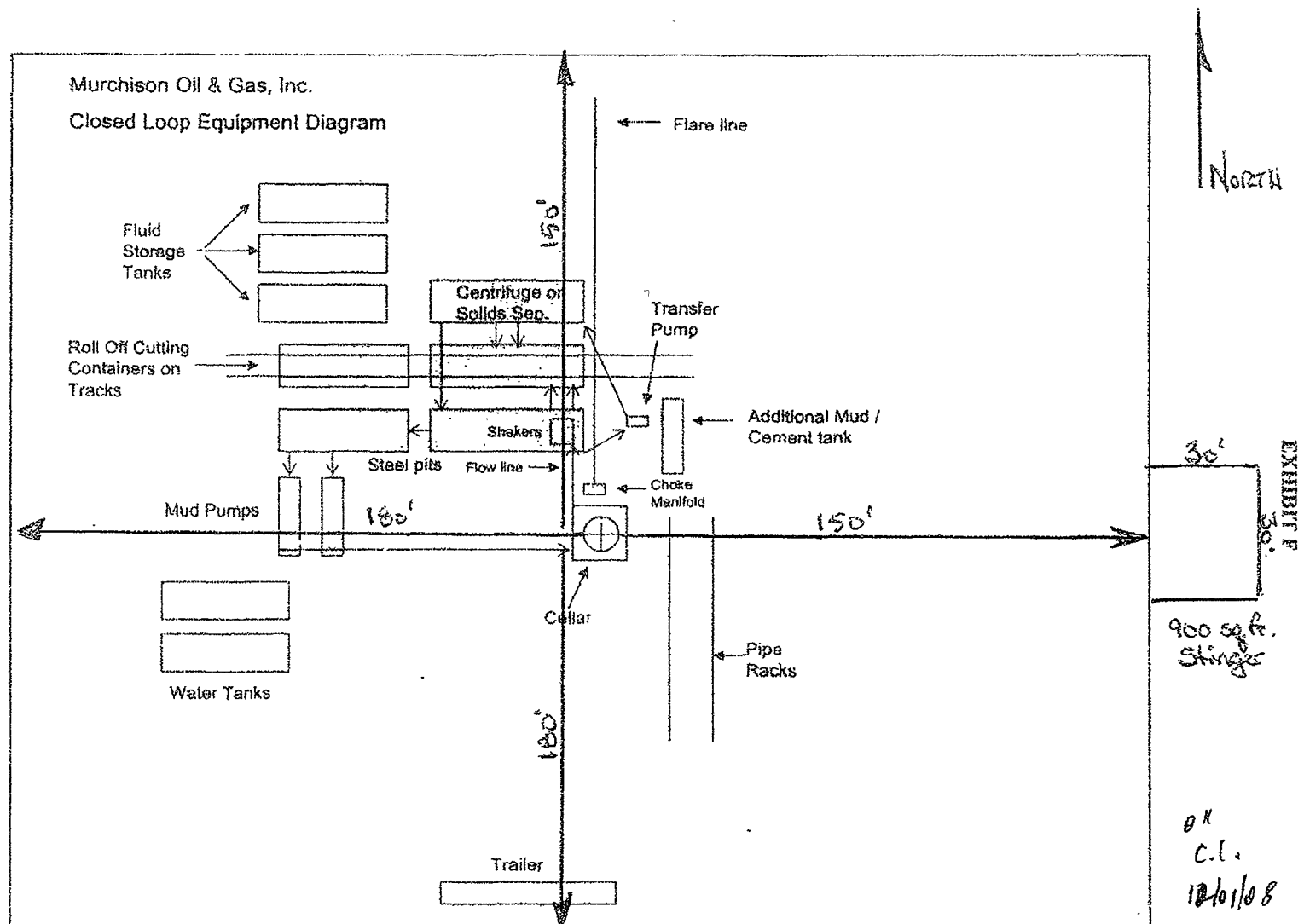
Coring Program: None planned.

9. ABNORMAL CONDITIONS, PRESSURES, TEMPERATURES AND POTENTIAL HAZARDS

No abnormal pressures, temperatures or H₂S gas are anticipated. Adequate flare lines will be installed off the mud/gas separator where gas may be flared safely. Anticipated Bottom Hole Pressure is 4000 psi, and anticipated static Bottom Hole Temperature is 175 degrees Fahrenheit.

**Attachment to Form 3160-3
Murchison Oil & Gas, Inc.
Mustang Fed Com #4
Page 4 of 4**

10. Anticipated starting date is December 1, 2008. It should take approximately 35 – 40 days to drill the well and another 10 days to complete.
11. A statement accepting responsibility for operations is attached.
12. The Multi-Point Surface Use & Operation Plan is attached.
13. If the Bureau of Land Management needs additional information to evaluate this application, please advise.



Pad = 108,000 sq. ft. or ~2.5 acres
 Stinger = 900 sq. ft. or ~0.02 acres
 Total = 109,800 sq. ft. or ~2.52 acres

Murchison Oil & Gas, Inc.

Closed Loop Equipment Diagram

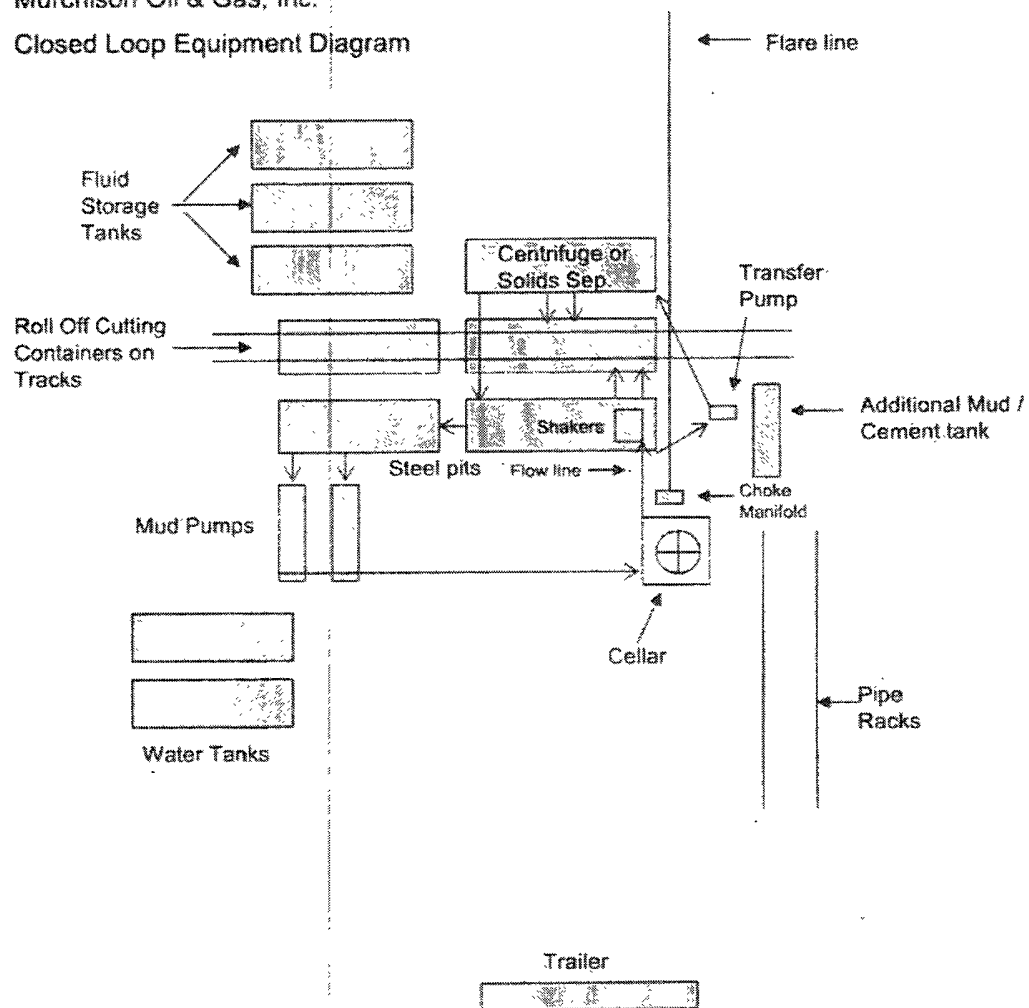


EXHIBIT G

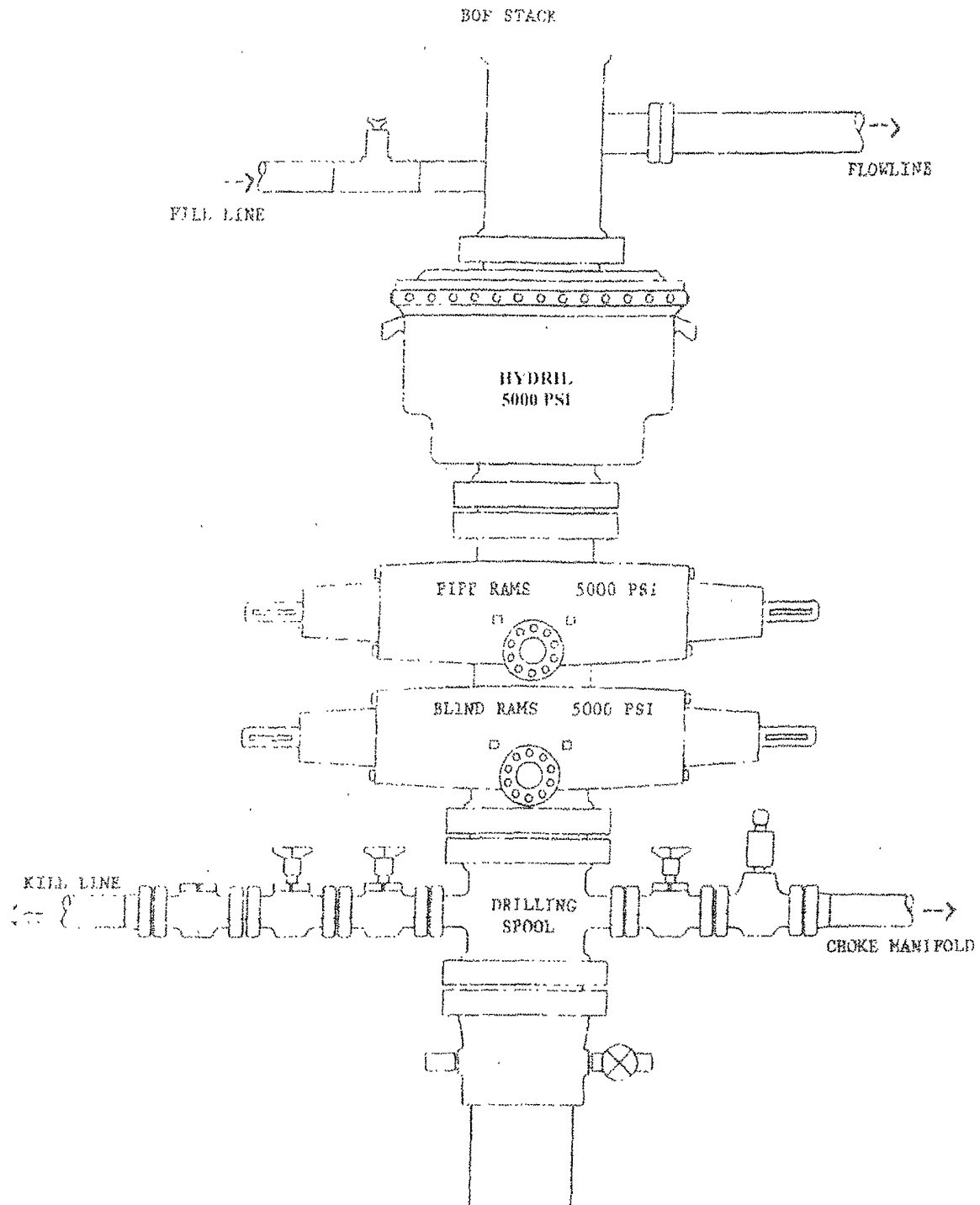
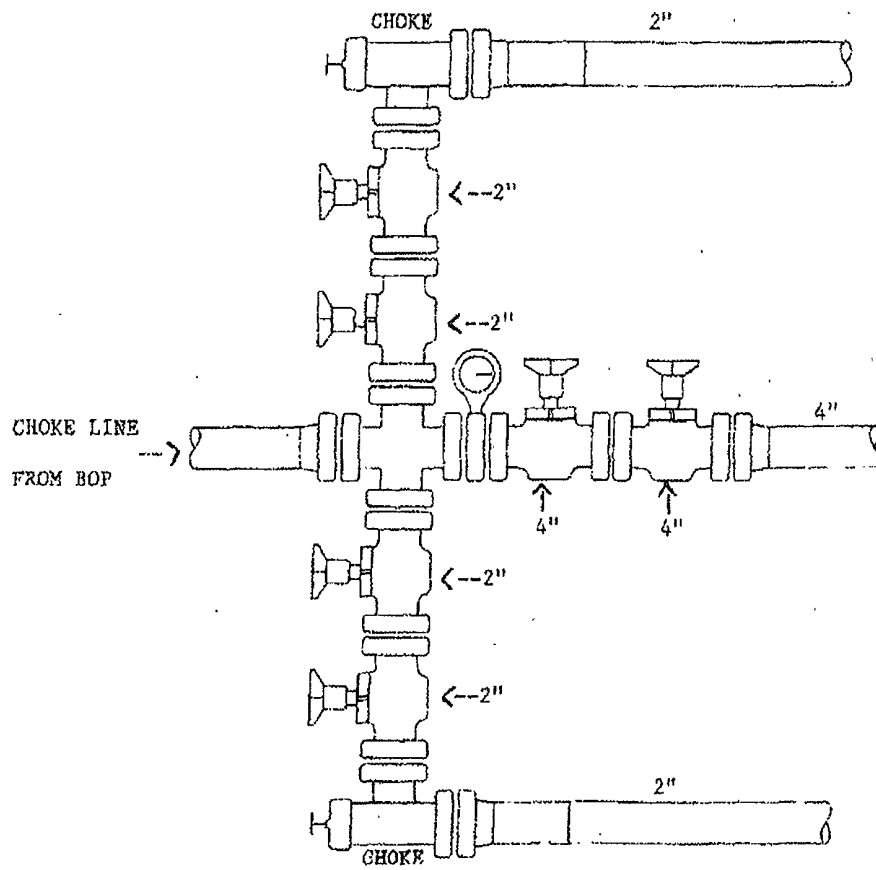


EXHIBIT H

CHOKE MANIFOLD



**SURFACE USE AND OPERATIONS PLAN FOR
DRILLING, COMPLETION, AND PRODUCING**

Murchison Oil & Gas, Inc.
Mustang Fed Com #4
SL: 2140' FSL & 1980' FWL, UNIT K
Sec 21, T18S, R29E
Eddy County, New Mexico

LOCATED

Approximately 8 miles SW of Loco Hills, New Mexico.

OIL & GAS LEASE

NMNM 0 030752

BOND COVERAGE

NM 2163

POOL

Turkey Track North Morrow

OIL & GAS RECORD LESSEE

50% Trigg Family Trust, P.O. Box 520, Roswell, NM 88202
12.5% The Wynn Living Trust, 500 W. Illinois, Midland, TX 79701
37.5% Yates Petro Corp., 105 S. 4th St., Artesia, NM 88210
Operating Rights: Murchison Oil & Gas, Inc., 1100 Mira Vista Blvd, Plano, Texas 75093

SURFACE OWNER

John R. Gray, LLC, P.O. Box 1182, Artesia, NM 88210 (505) 734-5442

MINERAL OWNER

Bureau of Land Management

EXHIBITS

- | | |
|-----------|---|
| A. | Well Location & Acreage Dedication Map |
| B. | Area Road Map |
| C-1 & C-2 | Vicinity Oil & Gas Map |
| D. | Topographic & Location Verification Map |
| E. | Proposed Lease Road and Pad Layout Map |
| F. | Drilling Rig Layout |
| G. | BOPE Schematic |
| H. | Choke Manifold Schematic |

This well will be drilled to a depth of approximately 11600' MD.

EXISTING ROADS

Exhibit A is a portion of a section map showing the location of the proposed well as staked.

Exhibit B is a map showing existing roads in the vicinity of the proposed well site.

Directions to well location: From mile marker 18 of Hwy. 360, go Northwest 0.2 miles to lease road. Go Southwest 0.3 miles to the proposed lease road.

ACCESS ROADS

Length and Width

Proposed access road is 443.7' long and 30' wide (Exhibit E).

Surface Material

Six inches of caliche and water, compacted and graded.

Maximum Grade

Less than three percent

Turnouts

None needed

Drainage Design

N/A

Culverts

None needed

Gates and Cattle Guards

None required

LOCATION OF EXISTING WELLS

The locations of existing wells in Section 21 are shown on Exhibit C-1 and C-2.

LOCATION OF EXISTING AND/OR PROPOSED FACILITIES

Necessary production facilities for this well will be located on the well pad.

LOCATION AND TYPE OF WATER SUPPLY

It is planned to drill the proposed well with a cut-brine water system or with produced water. The water will be obtained from either a private water well owner or a commercial source and will either be piped to location from a nearby water well or will be hauled to location by truck over existing and proposed lease roads as shown on Exhibit E.

SOURCE OF CONSTRUCTION MATERIALS

Caliche required for the construction of the location pad and access road will be obtained from caliche on the location or from the nearest BLM-approved pit.

METHODS OF HANDLING WASTE DISPOSAL

All drilling fluid will be circulated over shaker(s) with cuttings discharged into roll off container.

Fluid and fines below shaker(s) will be circulated with transfer pump through centrifuge(s) or solids separator with cuttings and fines discharged into roll off container.

Fluid will be continuously re-circulated through equipment with polymer added to aid separation of cutting fines.

Roll-off containers will be lined and de-watered with fluids re-circulated into system.

Additional tank will be used to capture unused drilling fluid or cement returns from casing jobs.

This equipment will be maintained 24 hours/day by solids control personnel and/or rig crews that stay on location.

Cuttings will be hauled to one of the following, depending on which rig is available to drill well:

CRI (permit number R9166)
or
GMI (permit number 711-019-001)

ANCILLARY FACILITIES

None required.

WELL SITE LAYOUT

Exhibit F shows the relative location and dimensions of the well pad, mud pits, and trash pit, and the location of major rig components. The V-door will be to the East, and the steel pits will be located to the North

The ground surface at the drilling location is essentially flat.

A Closed-Loop System will be used.

The pad area has been staked and flagged.

PLANS FOR RESTORATION OF THE SURFACE

After finishing drilling and/or completion operations, all equipment and other material not needed for further operations will be removed. The location will be cleared of all trash and junk to leave the site in an as aesthetically pleasing condition as possible.

Any unguarded pits containing fluids will be fenced until they are filled.

If the proposed well is non productive, all rehabilitation and/or vegetation requirements of the Bureau of Land Management and the United States Geological Survey will be complied with and will be accomplished as expeditiously as possible.

OTHER INFORMATION

Topography

The land surface at the well site is slightly sloping downhill to the east with small dunes of 3-20 cm in height.

Soil

The topsoil at the well site is caliche.

Flora and Fauna

The vegetation consists of shinnery oak, mesquite, yucca, bunch grasses, black thorns, and various grasses. Wildlife in the area is sparse, consisting of coyotes, rabbits, rodents, reptiles, dove and quail.

Ponds and Streams

There are no rivers, lakes, ponds, or streams in the area.

Residences and Other Structures

There are no residences within one mile of the proposed well site.

Archaeological, Historical, and Cultural sites

An Archaeological Survey has been sent to the BLM Office.

Land Use

Grazing

OPERATOR'S REPRESENTATIVES

Arnold Nall
1100 Mira Vista Blvd.
Plano, TX 75093-4698
Office Phone: (972) 931-0700

Randy Ford
415 W. Wall Street, Suite 1700
Midland, TX 79701
Office Phone: (432) 682-0440
Cell Phone: (432) 559-2222

**Murchison Oil & Gas, Inc.
Mustang Fed Com #4
SL: 2140' FSL & 1980' FWL, UNIT K
Sec 21, T18S, R29E
Eddy County, New Mexico**

CERTIFICATION

I hereby certify that I, or persons under my direct supervision, have inspected the proposed drill site and access route; that I am familiar with the conditions which presently exist; that the statements made in this plan are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed by Murchison Oil & Gas, Inc. and its contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved.

Sept 11, 2008
Date

Arnold Nall
Arnold Nall
VP, Operations
Murchison Oil & Gas, Inc.

This is a detailed topographic map of a rural area in North Carolina. The map features a grid system and various geographical features:

- Roads:** Major roads include U.S. 82 running horizontally across the top and diagonally from the upper left to the lower right. Other roads shown are General American Road (CR 216), CR 215, CR 214, CR 213, CR 212, CR 211, CR 210, CR 209, CR 208, CR 207, CR 206, CR 205, CR 204, CR 203, CR 202, CR 201, CR 200, CR 199, CR 198, CR 197, CR 196, CR 195, CR 194, CR 193, CR 192, CR 191, CR 190, CR 189, CR 188, CR 187, CR 186, CR 185, CR 184, CR 183, CR 182, CR 181, CR 180, CR 179, CR 178, CR 177, CR 176, CR 175, CR 174, CR 173, CR 172, CR 171, CR 170, CR 169, CR 168, CR 167, CR 166, CR 165, CR 164, CR 163, CR 162, CR 161, CR 160, CR 159, CR 158, CR 157, CR 156, CR 155, CR 154, CR 153, CR 152, CR 151, CR 150, CR 149, CR 148, CR 147, CR 146, CR 145, CR 144, CR 143, CR 142, CR 141, CR 140, CR 139, CR 138, CR 137, CR 136, CR 135, CR 134, CR 133, CR 132, CR 131, CR 130, CR 129, CR 128, CR 127, CR 126, CR 125, CR 124, CR 123, CR 122, CR 121, CR 120, CR 119, CR 118, CR 117, CR 116, CR 115, CR 114, CR 113, CR 112, CR 111, CR 110, CR 109, CR 108, CR 107, CR 106, CR 105, CR 104, CR 103, CR 102, CR 101, CR 100, CR 99, CR 98, CR 97, CR 96, CR 95, CR 94, CR 93, CR 92, CR 91, CR 90, CR 89, CR 88, CR 87, CR 86, CR 85, CR 84, CR 83, CR 82, CR 81, CR 80, CR 79, CR 78, CR 77, CR 76, CR 75, CR 74, CR 73, CR 72, CR 71, CR 70, CR 69, CR 68, CR 67, CR 66, CR 65, CR 64, CR 63, CR 62, CR 61, CR 60, CR 59, CR 58, CR 57, CR 56, CR 55, CR 54, CR 53, CR 52, CR 51, CR 50, CR 49, CR 48, CR 47, CR 46, CR 45, CR 44, CR 43, CR 42, CR 41, CR 40, CR 39, CR 38, CR 37, CR 36, CR 35, CR 34, CR 33, CR 32, CR 31, CR 30, CR 29, CR 28, CR 27, CR 26, CR 25, CR 24, CR 23, CR 22, CR 21, CR 20, CR 19, CR 18, CR 17, CR 16, CR 15, CR 14, CR 13, CR 12, CR 11, CR 10, CR 9, CR 8, CR 7, CR 6, CR 5, CR 4, CR 3, CR 2, CR 1.
- Water Bodies:** Several small lakes or ponds are labeled, including Turkey Track, Red Lake, and others.
- Land Parcels:** Numerous land parcels are outlined and labeled with their respective owners or identifiers, such as "Doughton CR 235", "Wagerman Cutoff", "Herndon", "Lindley CR 245", "Clerk CR 245", "Henderson CR 245", "Clerk CR 245", "Henderson CR 245", "Clerk CR 245", "Henderson CR 245", etc.
- Shaded Area:** A rectangular area in the center-right portion of the map is shaded with diagonal lines, indicating a specific feature or boundary.

basin
surveys
focused on excellence
in the oilfield

W.O. Number: 20208
Survey Date: 08-02-2008
Scale: 1" = 2 MILES
Date: 08-05-2008

MURCHISON OIL
& GAS, INC.

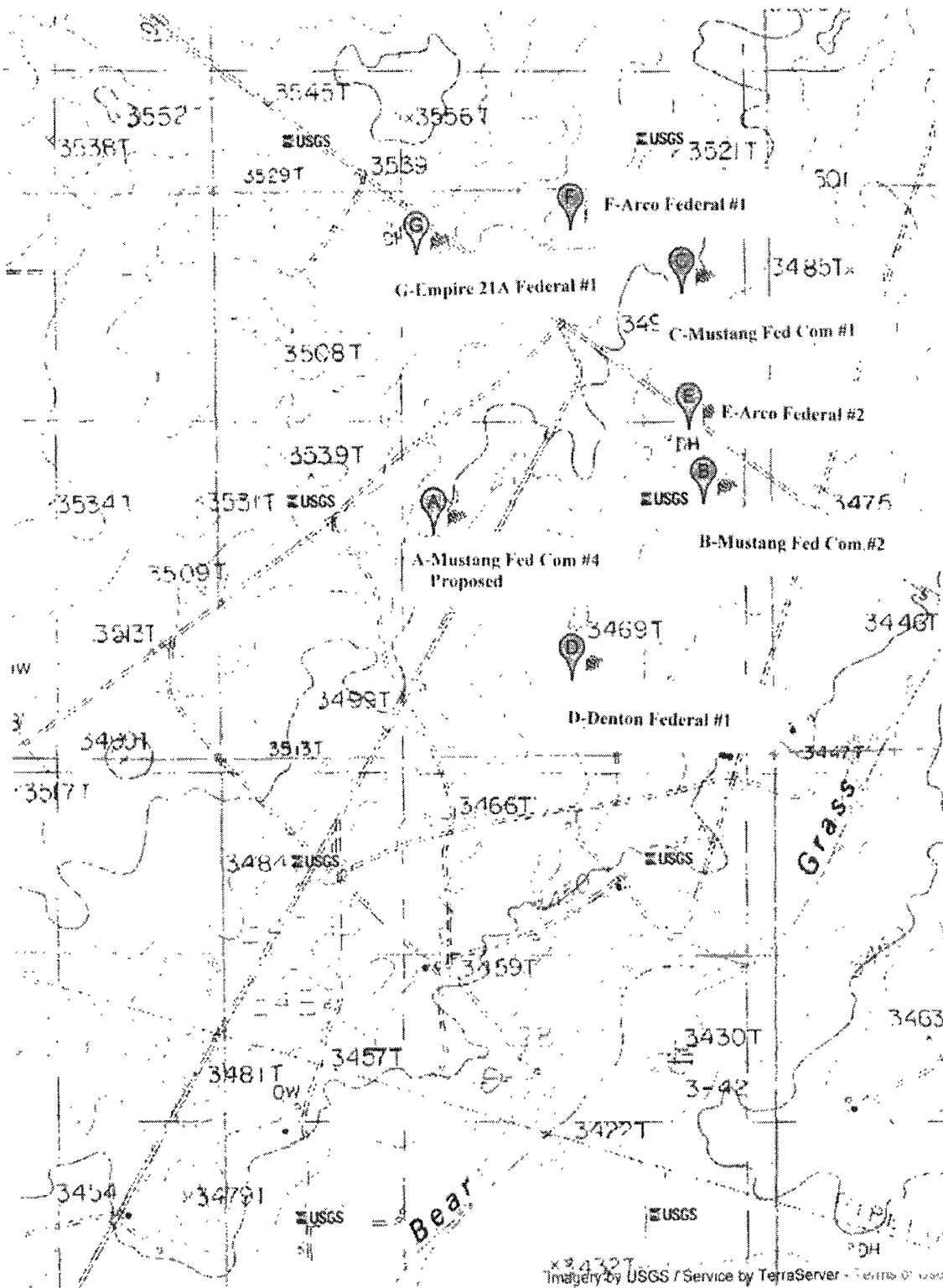


EXHIBIT C-2

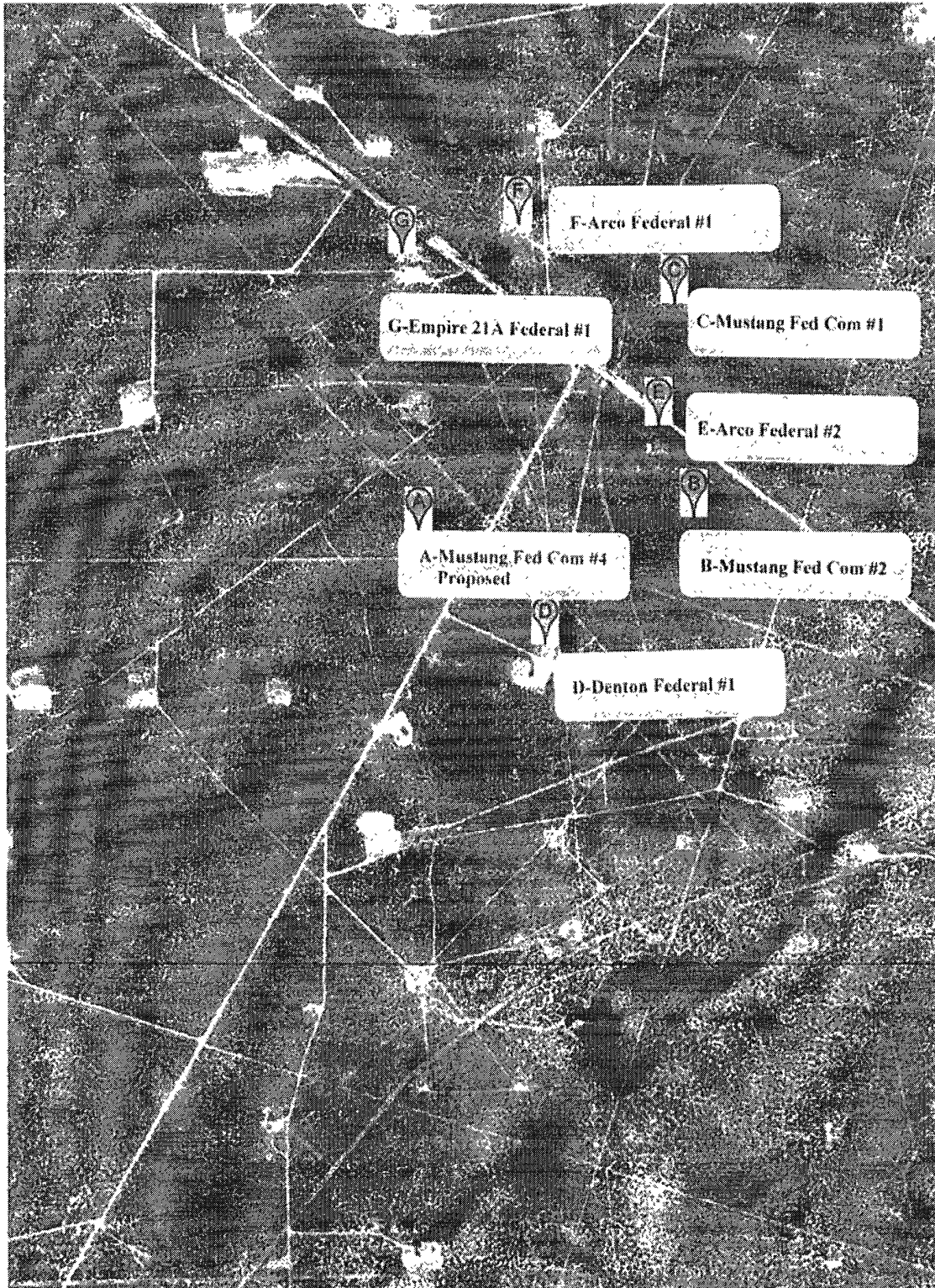
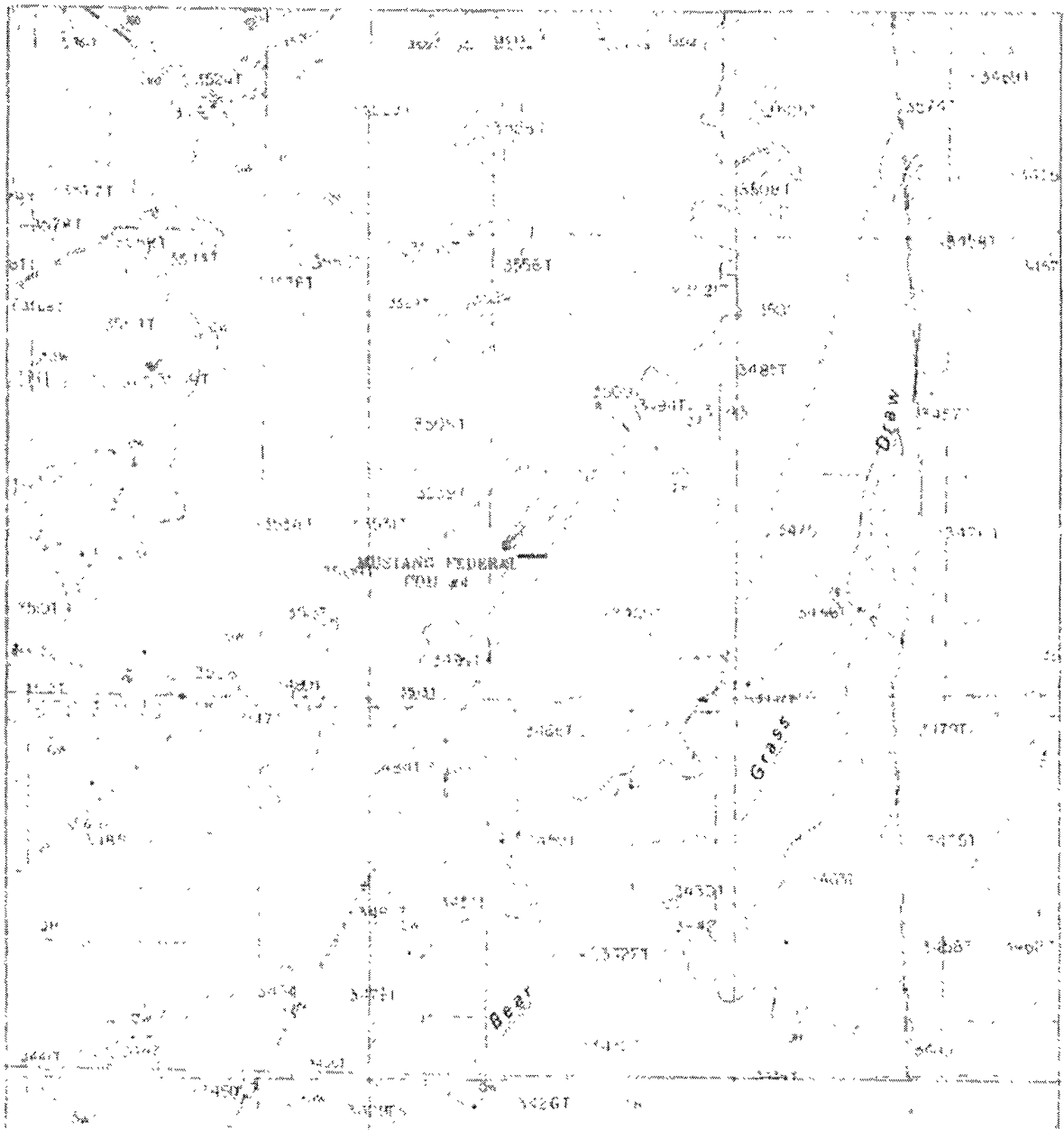


EXHIBIT D



MUSTANG FEDERAL COM #1

Located at 1111 E. 1st and 1000 N. 1st

Section 21, Township 10 North, Range 20 East,

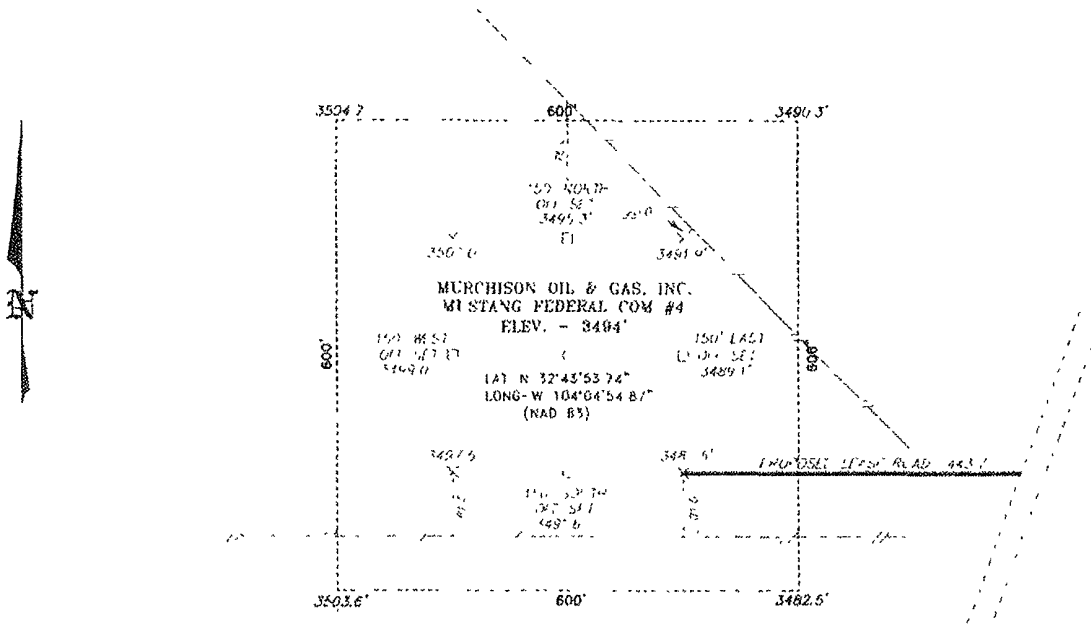
N.M.P.M., El Paso County, New Mexico

Surveys

**MURCHISON OIL
& GAS, INC.**

EXHIBIT L

SECTION 21, TOWNSHIP 18 SOUTH, RANGE 29 EAST, N.M.P.M.,
EDDY COUNTY, NEW MEXICO.



200 0 200 400 FEET

SCALE: 1" = 200'

DIRECTIONS TO LOCATION

FROM MILE MARKER 12 ON HWY 300, GO NORTHWEST
0.2 MILES TO LEAST ROAD, GO SOUTHWEST 0.3 MILES
TO THE PROPOSED LEAST ROAD

BASIN SURVEYS P.O. BOX 1786 - HORRIS, NEW MEXICO

W.O. Number 20208

Drawn By J. SMALL

Date 08-01-2008

Disc JVS 20206

MURCHISON OIL & GAS, INC.

Re: MUSTANG FEDERAL COM #4 / Well Pad Topo

THE MUSTANG FEDERAL COM #4 LOCATED 2140' FROM

THE SOUTH LINE AND 1980' FROM THE WEST LINE OF

SECTION 21, TOWNSHIP 18 SOUTH, RANGE 29 EAST,

N.M.P.M., EDDY COUNTY, NEW MEXICO

Survey Date 08-01-2008

Sheet 1 of 1 Sheets



3106 N Big Spring St Ste. 100
Midland, TX 79705
Tel: (432) 685-9158

September 17, 2008

Bureau of Land Management
620 East Greene Street
Carlsbad, New Mexico 88220

ATTN: Tessa Cisneros

Re: H2S Contingency Plan Waiver
Mustang Fed Com #4
SL: 2140' FSL & 1980' FWL, Unit K
Section 21, T18S, R29E
Eddy County, New Mexico

Dear Ms. Cisneros:

I am writing to request a waiver for the inclusion of an H2S Contingency Plan for the Mustang Fed Com #4. The current plan is to complete this oil well in the Turkey Track; North Morrow area, and Murchison does not anticipate encountering any H2S-bearing formations during drilling operations.

If you have questions, please feel free to call the Gray Surface Specialties office at (432) 685-9158 or send an email to me at the address below.

Sincerely,

A handwritten signature in black ink, appearing to read 'Lee Ann Rollins', is written over a horizontal line.

Lee Ann Rollins
Agent for Murchison Oil & Gas Inc.
Gray Surface Specialties
leeann@graysurfacespecialties.com

PECOS DISTRICT CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Murchison Oil & Gas
LEASE NO.:	NMNM030752
WELL NAME & NO.:	Mustang Fed Com No 4
SURFACE HOLE FOOTAGE:	2140' FSL & 1980' FWL
BOTTOM HOLE FOOTAGE	
LOCATION:	Section 21, T. 18 S., R 29 E., NMPM
COUNTY:	Eddy County, New Mexico

TABLE OF CONTENTS

Standard Conditions of Approval (COA) apply to this APD. If any deviations to these standards exist or special COAs are required, the section with the deviation or requirement will be checked below.

- ☐ **General Provisions**
- ☐ **Permit Expiration**
- ☐ **Archaeology, Paleontology, and Historical Sites**
- ☐ **Noxious Weeds**
- ☐ **Special Requirements**
- ☒ **Construction**
 - Notification
 - Topsoil
 - Closed Loop System
 - Federal Mineral Material Pits
 - Well Pads
 - Roads
- ☒ **Road Section Diagram**
- ☒ **Drilling**
- ☐ **Production (Post Drilling)**
 - Well Structures & Facilities
 - Pipelines
 - Electric Lines
- ☒ **Closed Loop System/Interim Reclamation**
- ☐ **Final Abandonment/Reclamation**

I. GENERAL PROVISIONS

The approval of the Application For Permit To Drill (APD) is in compliance with all applicable laws and regulations: 43 Code of Federal Regulations 3160, the lease terms, Onshore Oil and Gas Orders, Notices To Lessees, New Mexico Oil Conservation Division (NMOCD) Rules, National Historical Preservation Act As Amended, and instructions and orders of the Authorized Officer. Any request for a variance shall be submitted to the Authorized Officer on Form 3160-5, Sundry Notices and Report on Wells.

II. PERMIT EXPIRATION

If the permit terminates prior to drilling and drilling cannot be commenced within 60 days after expiration, an operator is required to submit Form 3160-5, Sundry Notices and Reports on Wells, requesting surface reclamation requirements for any surface disturbance. However, if the operator will be able to initiate drilling within 60 days after the expiration of the permit, the operator must have set the conductor pipe in order to allow for an extension of 60 days beyond the expiration date of the APD. (Filing of a Sundry Notice is required for this 60 day extension.)

III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

Any cultural and/or paleontological resource discovered by the operator or by any person working on the operator's behalf shall immediately report such findings to the Authorized Officer. The operator is fully accountable for the actions of their contractors and subcontractors. The operator shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery shall be made by the Authorized Officer to determine the appropriate actions that shall be required to prevent the loss of significant cultural or scientific values of the discovery. The operator shall be held responsible for the cost of the proper mitigation measures that the Authorized Officer assesses after consultation with the operator on the evaluation and decisions of the discovery. Any unauthorized collection or disturbance of cultural or paleontological resources may result in a shutdown order by the Authorized Officer.

IV. NOXIOUS WEEDS

The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

V. SPECIAL REQUIREMENT(S)

VI. CONSTRUCTION

A. NOTIFICATION

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Carlsbad Field Office at (505) 234-5972 at least 3 working days prior to commencing construction of the access road and/or well pad.

When construction operations are being conducted on this well, the operator shall have the approved APD and Conditions of Approval (COA) on the well site and they shall be made available upon request by the Authorized Officer.

B. TOPSOIL

The operator shall stockpile the topsoil of the well pad. The topsoil shall not be used to backfill the reserve pit and will be used for interim and final reclamation.

C. Closed Loop System

Mustang Fed. Com. # 4: Closed Loop System, Pit North V- Door East

Tanks are required for drilling operations: No Pits.

The operator shall properly dispose of drilling contents at an authorized disposal site.

D. FEDERAL MINERAL MATERIALS PIT

If the operator elects to surface the access road and/or well pad, mineral materials extracted during construction of the reserve pit may be used for surfacing the well pad and access road and other facilities on the lease.

Payment shall be made to the BLM prior to removal of any additional federal mineral materials from any site other than the reserve pit. Call the Carlsbad Field Office at (505) 234-5972.

E. WELL PAD SURFACING

Surfacing of the well pad is not required.

If the operator elects to surface the well pad, the surfacing material may be required to be removed at the time of reclamation.

The well pad shall be constructed in a manner which creates the smallest possible surface disturbance, consistent with safety and operational needs.

F. ON LEASE ACCESS ROADS

Road Width

The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (14) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed thirty (30) feet.

Surfacing

Surfacing material is not required on the new access road driving surface. If the operator elects to surface the new access road or pad, the surfacing material may be required to be removed at the time of reclamation.

Where possible, no improvements should be made on the unsurfaced access road other than to remove vegetation as necessary, road irregularities, safety issues, or to fill low areas that may sustain standing water.

The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing depth and type of material will be determined at the time of notification.

Crowning

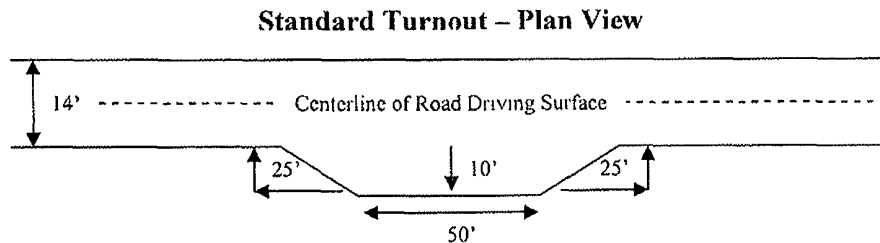
Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

Ditching

Ditching shall be required on both sides of the road.

Turnouts

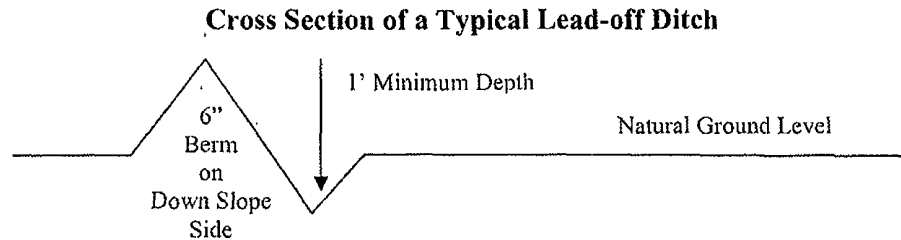
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall be constructed on all blind curves. Turnouts shall conform to the following diagram:



Drainage

Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outslowing and insloping, lead-off ditches, culvert installation, and low water crossings).

A typical lead-off ditch has a minimum depth of 1 foot below and a berm of 6 inches above natural ground level. The berm shall be on the down-slope side of the lead-off ditch.



All lead-off ditches shall be graded to drain water with a 1 percent minimum to 3 percent maximum ditch slope. The spacing interval are variable for lead-off ditches and shall be determined according to the formula for spacing intervals of lead-off ditches, but may be amended depending upon existing soil types and centerline road slope (in %);

Formula for Spacing Interval of Lead-off Ditches

Example - On a 4% road slope that is 400 feet long, the water flow shall drain water into a lead-off ditch. Spacing interval shall be determined by the following formula:

$$400 \text{ foot road with } 4\% \text{ road slope: } \frac{400'}{4\%} + 100' = 200' \text{ lead-off ditch interval}$$

Culvert Installations

Appropriately sized culvert(s) shall be installed at the deep waterway channel flow crossing.

Cattleguards

An appropriately sized cattleguard(s) sufficient to carry out the project shall be installed and maintained at fence crossing(s).

Any existing cattleguard(s) on the access road shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattleguard(s) that are in place and are utilized during lease operations.

A gate shall be constructed and fastened securely to H-braces.

Fence Requirement

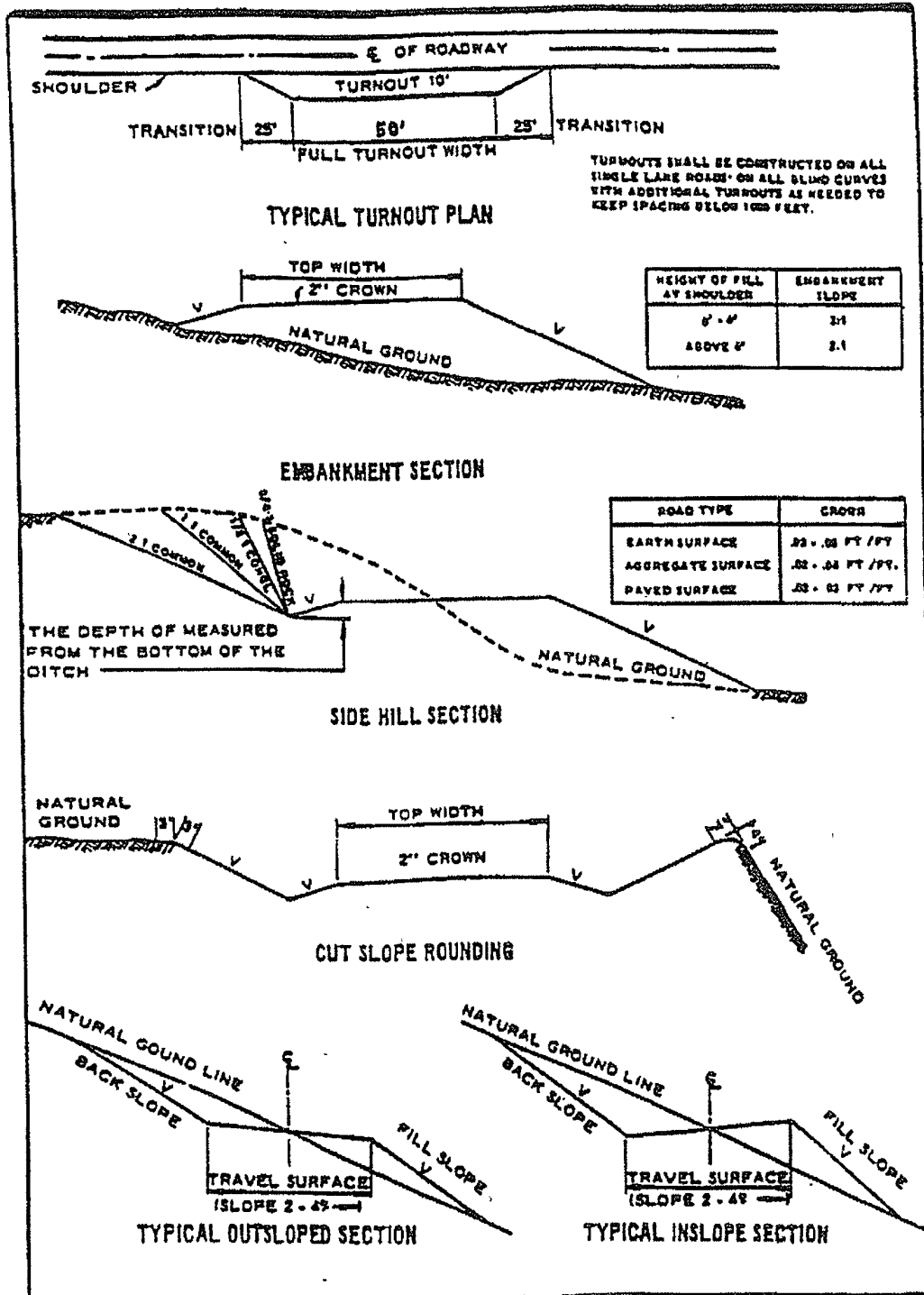
Where entry is required across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting.

The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fence(s).

Public Access

Public access on this road shall not be restricted by the operator without specific written approval granted by the Authorized Officer.

Figure 1 – Cross Sections and Plans For Typical Road Sections



VII. DRILLING

A. DRILLING OPERATIONS REQUIREMENTS

The BLM is to be notified a minimum of 2 hours in advance for a representative to witness:

- a. Spudding well
- b. Setting and/or Cementing of all casing strings
- c. BOPE tests

☒ **Eddy County**

Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220,
(575) 361-2822

1. **Hydrogen Sulfide has been reported as a hazard, but no measurements have been recorded. It is recommended that monitoring equipment be onsite for potential Hydrogen Sulfide. If Hydrogen Sulfide is encountered, please report measurements to the BLM.**
2. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
3. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.

B. CASING

Changes to the approved APD casing and cement program require submitting a sundry and receiving approval prior to work. Failure to obtain approval prior to work will result in an Incident of Non-Compliance being issued.

Centralizers required on surface casing per Onshore Order 2.III.B.1.f.

Wait on cement (WOC) time for a primary cement job will be a minimum 18 hours for a water basin, 24 hours in the potash area, or 500 pounds compressive strength, whichever is greater for all casing strings. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. See individual casing strings for details regarding lead cement slurry requirements.

No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.

Possible lost circulation in the Grayburg and San Andres formations.

Possible water flows in the Salado and Artesia Groups.

Possible high pressure gas bursts in the Wolfcamp and over pressure in the Pennsylvanian Section.

1. The 13-3/8 inch surface casing shall be set **a minimum of 25 feet into the Rustler Anhydrite and above the salt at approximately 250-300 feet** and cemented to the surface.
 - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with a surface log readout will be used or a cement bond log shall be run to verify the top of the cement.
 - b. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry (not needed if program stays as proposed).**
 - c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
 - d. If cement falls back, remedial action will be done prior to drilling out that string.

Brine water mud to be used to drill the 12-1/4" hole due to salt formation.

2. The minimum required fill of cement behind the 9-5/8 inch intermediate casing is:

☒ Cement to surface. If cement does not circulate see B.1.a, c-d above.

Formation below the 9-5/8" shoe to be tested according to Onshore Order 2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe (not the mud weight required to prevent dissolving the salt formation) and the mud weight for the bottom of the hole. Report results to BLM office.

3. The minimum required fill of cement behind the 5-1/2 inch production casing is:

☒ Cement should tie-back at least 200 feet into previous casing string. Operator shall provide method of verification. **Submit sundry if a two stage job with DV tool is determined to be necessary.**

4. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

C. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.
2. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **3000 (3M) psi**.
3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **9-5/8"** intermediate casing shoe shall be **5000 (5M) psi**.
4. The appropriate BLM office shall be notified a minimum of 2 hours in advance for a representative to witness the tests.
 - a. The tests shall be done by an independent service company.
 - b. The results of the test shall be reported to the appropriate BLM office.
 - c. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.
 - d. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug.
 - e. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the **Wolfcamp** formation **if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days**. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.
 - f. **Effective November 1, 2008, no variances will be granted on reduced pressure tests on the surface casing and BOP/BOPE. Onshore Order 2 requirements will be in effect.**

D. DRILLING MUD

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the **Wolfcamp** formation, and shall be used until production casing is run and cemented.

Proposed mud weight may not be adequate for drilling through Wolfcamp.

E. DRILL STEM TEST

If drill stem tests are performed, Onshore Order 2.III.D shall be followed.

WWI 110608

VIII. PRODUCTION (POST DRILLING)

A. WELL STRUCTURES & FACILITIES

Placement of Production Facilities

Production facilities should be placed on the well pad to allow for maximum interim recontouring and revegetation of the well location.

Containment Structures

The containment structure shall be constructed to hold the capacity of the entire contents of the largest tank, plus 24 hour production, unless more stringent protective requirements are deemed necessary by the Authorized Officer.

Painting Requirement

All above-ground structures including meter housing that are not subject to safety requirements shall be painted a flat non-reflective paint color Shale Green, Munsell Soil Color Chart # 5Y 4/2

B. PIPELINES

C. ELECTRIC LINES

IX. INTERIM RECLAMATION & RESERVE PIT CLOSURE

A. INTERIM RECLAMATION

If the well is a producer, interim reclamation shall be conducted on the well site in accordance with the orders of the Authorized Officer. The operator shall submit a Sundry Notices and Reports on Wells (Notice of Intent), Form 3160-5, prior to conducting interim reclamation.

During the life of the development, all disturbed areas not needed for active support of production operations should undergo interim reclamation in order to minimize the environmental impacts of development on other resources and uses.

The operators should work with BLM surface management specialists to devise the best strategies to reduce the size of the location. Any reductions should allow for remedial well operations, as well as safe and efficient removal of oil and gas.

During reclamation, the removal of caliche is important to increasing the success of revegetating the site. Removed caliche may be used for road repairs, fire walls or for building other roads and locations. In order to operate the well or complete workover operations, it may be necessary to drive, park and operate on restored interim vegetation within the previously disturbed area. Disturbing revegetated areas for production or workover operations will be allowed.

If there is significant disturbance and loss of vegetation, the area will need to be revegetated. Communicate with the appropriate BLM office for any exceptions/exemptions if needed.

Seed Mixture 2, for Sandy Sites

The holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed will be done in accordance with State law (s) and within nine (9) months prior to purchase. Commercial seed will be either certified or registered seed. The seed container will be tagged in accordance with State law(s) and available for inspection by the authorized officer.

Seed will be planted using a drill equipped with a depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (smaller/heavier seeds have a tendency to drop the bottom of the drill and are planted first). The holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed will be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled. The seeding will be repeated until a satisfactory stand is established as determined by the authorized officer. Evaluation of growth will not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed* per acre:

<u>Species</u>	<u>lb/acre</u>
Sand dropseed (Sporobolus cryptandrus)	1.0
Sand love grass (Eragrostis trichodes)	1.0
Plains bristlegrass (Setaria macrostachya)	2.0

*Pounds of pure live seed:

Pounds of seed x percent purity x percent germination = pounds pure live seed

X. FINAL ABANDONMENT & REHABILITATION REQUIREMENTS

Upon abandonment of the well and/or when the access road is no longer in service the Authorized Officer shall issue instructions and/or orders for surface reclamation and restoration of all disturbed areas.

On private surface/federal mineral estate land the reclamation procedures on the road and well pad shall be accomplished in accordance with the private surface land owner agreement.