

8055

ATS-02-477

OCD-ARTESIA

Form 3160-3
(February 2005)

892

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
APPLICATION FOR PERMIT TO DRILL OR REENTER

FORM APPROVED
OMB No 1004-0137
Expires March 31, 2007

1a Type of work <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5 Lease Serial No. NM 19418
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
2 Name of Operator Fasken Oil and Ranch, Ltd.		7 If Unit or CA Agreement, Name and No NMNM 106876
3a Address 303 West Wall, Suite 1800 Midland, TX 79701	3b Phone No. (include area code) 432 687-1777	8 Lease Name and Well No. 28831 Knight "28" Federal No. 2
4 Location of Well (Report location clearly and in accordance with any State requirements *) At surface 860' FSL, 660' FEL At proposed prod zone Carlsbad Controlled Water Basin		9 API Well No. 30-015-36463
11 Sec, T R M or Blk and Survey or Area Sec. 28, T20S, R25E		10 Field and Pool, or Exploratory Cemetery Morrow
12 Distance in miles and direction from nearest town or post office* 11 miles SW of Lakewood, New Mexico		12 County or Parish Eddy
13 State NM		13 State NM
14 Distance from proposed* location to nearest property or lease line, ft (Also to nearest drg unit line, if any) 660'	15 No of acres in lease 320	16 Spacing Unit dedicated to this well 320 acres, S/2 of Sec. 28
17 Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft 3980'	18 Proposed Depth 9850'	19 BLM/BIA Bond No on file NM 2729 Statewide Bond
20 Elevations (Show whether DF, KDB, RT, GL, etc) 3582' GL	21 Approximate date work will start* 07/01/2008	22 Estimated duration 45 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

- | | |
|---|--|
| 1. Well plat certified by a registered surveyor | 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above) |
| 2. A Drilling Plan. | 5. Operator certification |
| 3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office) | 6. Such other site specific information and/or plans as may be required by the BLM. |

25 Signature <i>Jimmy D. Carlile</i>	Name (Printed Typed) Jimmy D. Carlile	Date 05/12/2008
Title Regulatory Affairs Coordinator		

Approved by (Signature) James A. Amos	Name (Printed Typed) James A. Amos	Date JUL 28 2008
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 USC Section 1001 and Title 43 USC 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 APPROVAL**

**APPROVAL SUBJECT TO
GENERAL REQUIREMENTS
AND SPECIAL STIPULATIONS
ATTACHED**

DISTRICT I
1625 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

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

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code 74640	Pool Name Cemetery Morrow
Property Code	Property Name KNIGHT "28" FEDERAL	Well Number 2
OGRID No. 151416	Operator Name FASKEN OIL AND RANCH, LTD	Elevation 3582'

Surface Location

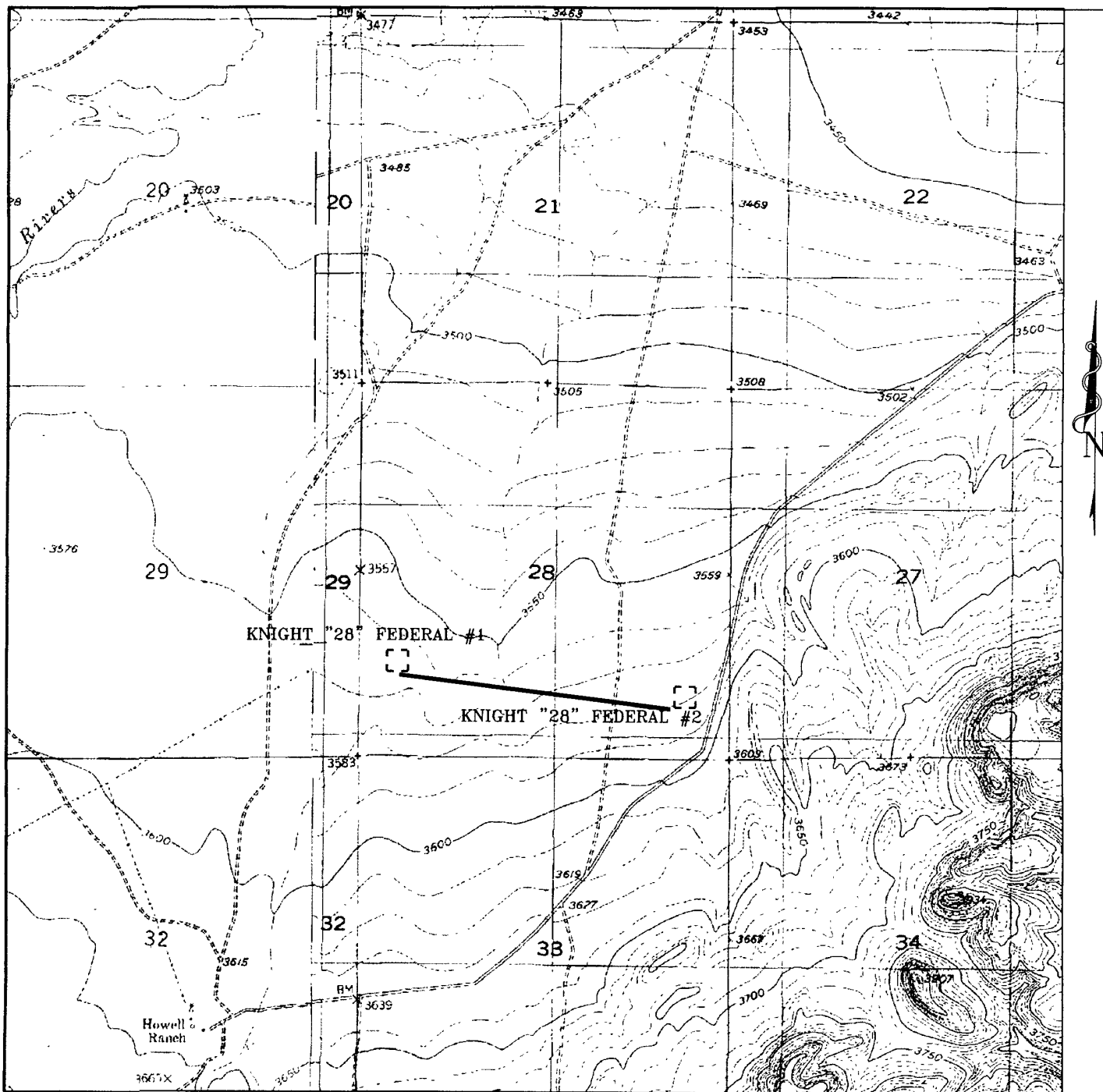
UL or lot No. P	Section 28	Township 20 S	Range 25 E	Lot Idn	Feet from the 860	North/South line SOUTH	Feet from the 660	East/West line EAST	County EDDY
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Bottom Hole Location If Different From Surface

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. NMNM 106876						

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

				OPERATOR CERTIFICATION 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. Signature: <u>Jimmy D. Carlile</u> Date: <u>5/12/08</u> Printed Name: <u>Jimmy D. Carlile</u> Regulatory Affairs Coord. jcarlile@orl.com	
				SURVEYOR CERTIFICATION 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. Date Surveyed: <u>APRIL 9, 2008</u> Signature: <u>GARY L. JONES</u> Professional Surveyor Certificate No. <u>7977</u> Basin Surveys	



PROPOSED PIPELINE TO THE KNIGHT "28" FEDERAL #1
 Section 28, Township 20 South, Range 25 East,
 N.M.P.M., Eddy County, New Mexico.

basin
surveys

focused on excellence
 in the oilfield

P.O. Box 1786
 1120 N. West County Rd.
 Hobbs, New Mexico 88241
 (505) 393-7316 - Office
 (505) 392-3074 - Fax
 basinsurveys.com

W O Number: JMS 19548T

Survey Date 04-09-2008

Scale. 1" = 2000'

Date: 04-10-2008

**FASKEN OIL
 AND RANCH,
 LTD**

APPLICATION FOR PERMIT TO DRILL
 FASKEN OIL AND RANCH, LTD.
 KNIGHT "28" FEDERAL No. 2
 860' FSL AND 660' FEL
 SEC. 28, T20S, R25E
 EDDY COUNTY, NM

In conjunction with Form 3160-3, Application for Permit to Drill, Fasken Oil and Ranch, Ltd. submits the following items of pertinent information in accordance with Onshore Oil & Gas Order Nos. 1 & 2, and with all other applicable federal and state regulations.

1. The geologic surface formation is of Permian age. Ground elevation is 3582'.

2. Estimate tops of geologic markers are as follows:

San Andres	750'
Glorietta	2450'
Bone Springs	3400'
3 rd Bone Spring Sand	6400'
Wolfcamp	6500'
Cisco	7300'
Canyon	7600'
Strawn	8100'
Atoka	8900'
Morrow	9300'

3. The estimated depths at which water, oil or gas formation are expected to be encountered:

Canyon	7600'	Oil/Gas
Strawn	8100'	Gas
Atoka	8900'	Gas
Morrow	9300'	Gas

* Groundwater to be protected by 13-3/8" surface casing with cement circulated to the surface.

** Potentially productive horizons to be protected by 4-1/2" production casing with cement tied back to 6000'.

4. Proposed Casing Program: All casing strings will new pipe. Minimum design safety factors are 1.0 for burst, 1.125 for collapse and 1.8 for tension on 8rd threaded pipe.

String	Footage	Size	Weight	Grade	Thread	Hole Size
Surface	400'	13-3/8"	48.00#	H-40	ST&C	13-3/8" 17 1/2"
Intermediate	3,000'	9-5/8"	36.00#	J-55	ST&C	12-1/4"
Production	9,850'	4-1/2"	11.60#	N-80	LT&C	8-3/4"
Tubing	8,850'	2-3/8"	4.70#	N-80	EUE 8rd	

-5-30-08 D
 -per J.
 Carlisle

5. Proposed Cementing Program:

Cement 13-3/8" casing with 400 sx Class "C" cement with 2% CaCl₂ (s.w. 14.8 ppg, yield 1.32 ft³/sx). Circulate cement to surface.

Cement 9-5/8" casing with 600 sx Class "C" with 4% gel and 2% CaCl₂ (s.w. 13.50 ppg, yield 1.74 ft³/sx) plus 200 sx Class "C" with 2% CaCl₂ (s.w. 14.8 ppg, yield 1.34 ft³/sx). Circulate cement to surface.

see COA Cement 4-1/2" production casing (resin coated and centralized through pay zones) with 1100 sx Super "C" Modified (CSE) with 15#/sx Poz A, 11#/sx CSE, 1% Salt and 1.1% FL-25 (s.w. 14.2 ppg, yield 1.35 ft³/sx). Estimate TOC at 6900'.

6. Pressure Control Equipment: See Exhibit #5 with 3000# BOP. Hydrotest will included testing the rams, choke line, choke manifold, upper and lower kelly valves and floor safety valves to 3000 psig high and 250 psig low. The annular preventor will be hydrotested to 1500 psig high and 250 psig low. Additional BOP Hydrotesting will be performed after any pressure seal is broken, following any BOP repair and at 30 day intervals.

7. Mud Program:

<u>Depth</u>	<u>Type</u>	<u>Weight</u>	<u>Viscosity</u>	<u>Waterloss</u>
0-400'	Fresh Water	8.5	40	N.C.
400'-3000'	Fresh Water	8.5	28	N.C.
3000'-6000'	Fresh Water	8.5	28	N.C.
6000'-8700'	Cut Brine	9.0	29	N.C.
8700'-9850'	Gel/Starch/PAC	9.0-9.5	35-42	10 cc

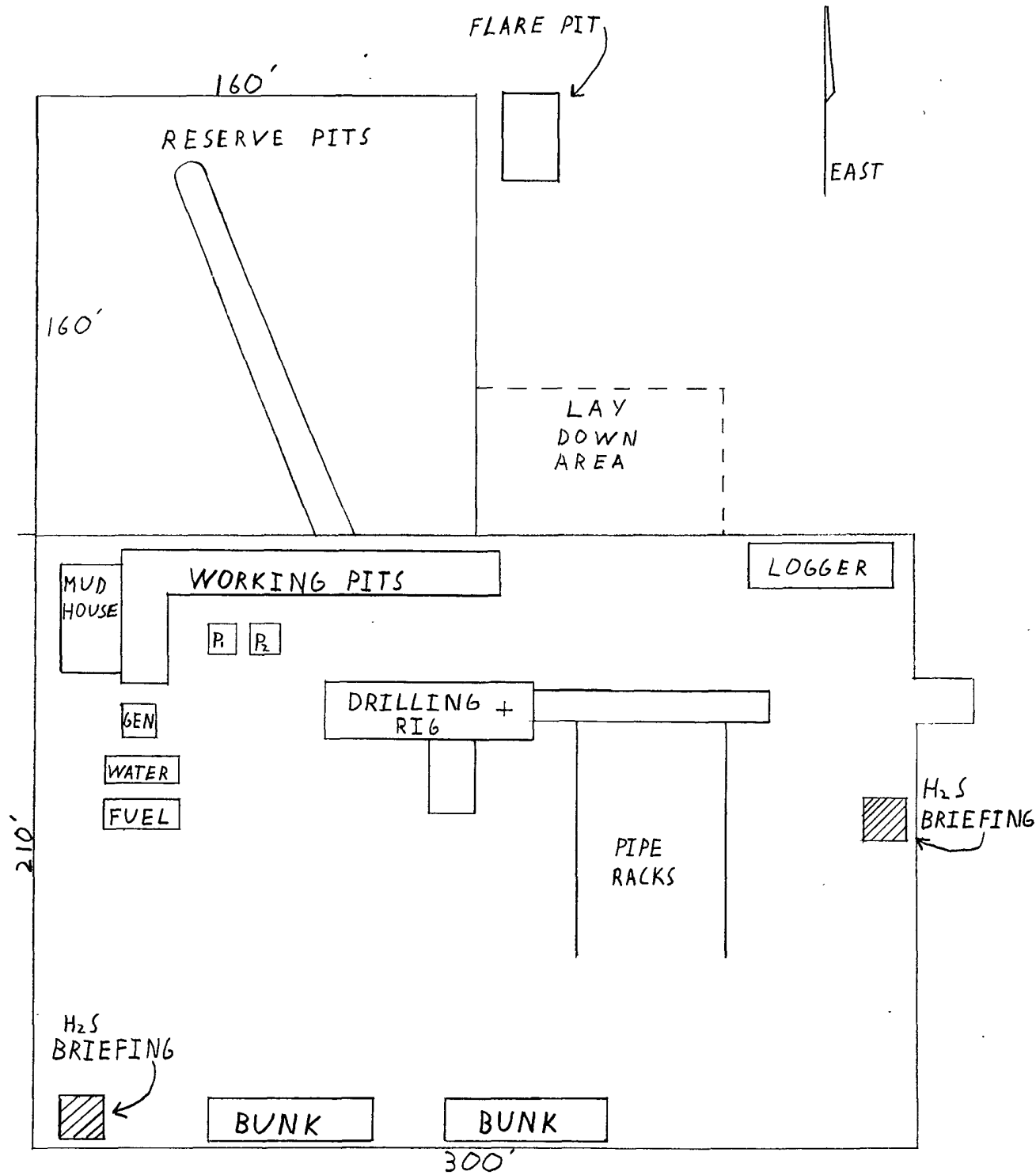
8. Auxiliary Equipment: Upper Kelly Cock, Full Opening Stabbing Valve, PVT.

9. Testing Logging and Coring Programs:

- DST's: A drill stem test will be performed on all shows.
- Logging: 2-man Mudlogging unit from 5000' to T.D.
- Electric Logs: Platform Express with CNL-LDT, DLL-MSFL, GR and Caliper.
- Coring: None anticipated

10. Abnormal Pressure, Temperatures or Other Hazards: Lost circulation is anticipated in the surface. Maximum bottomhole pressure is estimated to be 4300 psig.

11. Anticipated Starting Date: July 1, 2008.



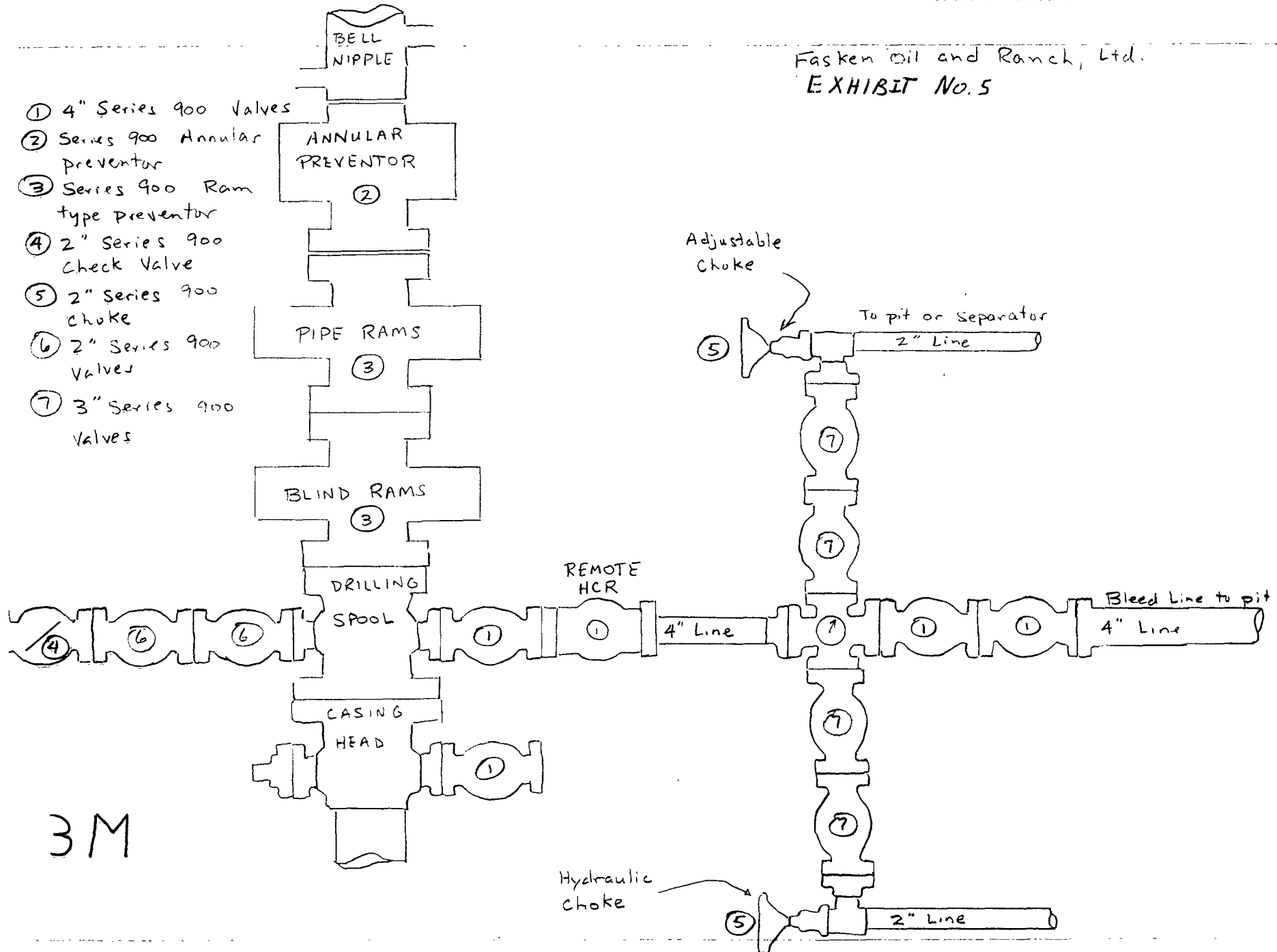
FASKEN OIL AND RANCH, LTD.
SCALE: 1" = 50'
EXHIBIT # 4

22-141 50 SHEETS
22-142 100 SHEETS
22-144 200 SHEETS

22-141 50 SHEETS
22-142 100 SHEETS
22-144 200 SHEETS

Fasken Oil and Ranch, Ltd.
EXHIBIT No. 5

- ① 4" Series 900 Valves
- ② Series 900 Annular preventor
- ③ Series 900 Ram type preventor
- ④ 2" Series 900 Check Valve
- ⑤ 2" Series 900 choke
- ⑥ 2" Series 900 Valves
- ⑦ 3" Series 900 Valves



3M

HYDROGEN SULFIDE DRILLING OPERATIONS PLAN

EXHIBIT #3
FASKEN OIL AND RANCH, LTD.
KNIGHT "28" FEDERAL No. 2
860' FSL AND 660' FEL
SEC.28, T20S, R25E
EDDY COUNTY, NM

I. Hydrogen sulfide Training.

All personnel, whether regularly assigned, contracted or employed on an unscheduled basis, will receive training from a qualified instructor in the following areas prior to commencing drilling operations on this well:

1. The hazards and characteristics of hydrogen sulfide (H₂S).
2. The proper use and maintenance of personal protective equipment and life support systems.
3. The proper use of H₂S detectors, alarms, warning systems, briefing areas, evacuation procedures, and prevailing winds.
4. The proper techniques of first aid and rescue procedures.

In addition the supervisory personnel will be trained in the following areas:

1. The effects of H₂S on metal components. If high tensile tubulars are to be used, personnel will be trained in their special maintenance requirements.
2. Corrective action and shut-in procedures when drilling or reworking a well and blowout prevention and well control procedures.
3. The contents and requirements of the H₂S Drilling Operations Plan.

There will be an initial training session just prior to encountering a known or probable H₂S zone (within 3 days or 500 feet) and weekly H₂S and well control drills for all personnel in each crew. The initial training session shall include a review of the site specific H₂S Drilling Operations Plan. This plan shall be available at the well site. All personnel will be required to carry documentation that they have received the proper training.

II. H₂S Safety Equipment and Systems.

NOTE: All H₂S safety equipment and systems will be installed, tested, and operational when drilling reaches a depth of 500 feet above or three days prior to penetration the first zone containing or reasonable expected to contain H₂S.

1. Well Control Equipment:

- A. Flare line.
- B. Choke manifold.

C. Blind rams and pipe rams to accommodate all pipe sizes with properly sized closing unit.

D. Auxiliary equipment to include: annular preventer, mud-gas separator (if necessary) and rotating head.

2. Protective equipment for essential personnel:

A. 5-minute escape units located in the dog house and 30-minute air units at briefing areas, as indicated on well site diagram.

3. H2S detection and monitoring equipment:

A. 3 - portable H2S monitors positioned on location for best coverage and response. These units have warning lights and audible sirens when H2S levels of 20 PPM are reached.

B. 1 - portable SO2 monitor positioned near flare line during H2S flaring operations.

4. Visual warning systems:

A. Wind direction indicators as shown on well site diagram.

B. Caution/Danger signs shall be posted on roads providing direct access to location. Signs will be painted a high visibility yellow with black lettering of sufficient size to be a readable distance from the immediate location.

5. Mud program:

A. The mud program has been designed to minimize the volume of H2S circulated to the surface. Proper mud weight safe drilling practices and the use of H2S scavengers when necessary will minimize hazards when penetrating H2S bearing zones.

B. A Mud-gas separator will be utilized.

6. Metallurgy:

A. All drill strings, casings, tubing, wellhead, blowout preventors, drilling spools kill lines, choke manifold and lines valves shall be suitable for H2S service.

B. All elastomers used for packing and seals shall be H2S trimmed.

7. Communications:

A. Radio communications will be available in company vehicles and rig dog house.

8. Well testing:

A. Drill stem testing will be performed with a minimum number of personnel in the immediate vicinity which are necessary to safely and adequately conduct the test. The drill stem testing of any known formation that contains H2S will be conducted during daylight hours.

SURFACE USE PLAN
Fasken Oil and Ranch, Ltd.
Knight "28" Federal No. 2
860' FSL & 660' FEL
Sec. 28, T20S, R25E
Eddy County, New Mexico

1. EXISTING ROADS - Area map, Exhibit #1, is a reproduction of the U.S.G.S., Foster Ranch N.M. Quadrangle. Existing and proposed roads are shown on the exhibit. All roads shall be maintained in a condition equal to that which existed prior to start of construction.
 - A. Exhibit #1 shows the proposed development well site as staked.
 - B. From the junction of the County Rd. 28 (White Pine) & State Highway 285 go West on County Rd 28 for 7.1 miles, turn East on lease road for 1.6 miles. Turn left heading West to the Knight 28 Federal No. 2.
2. PLANNED ACCESS ROADS AND PIPELINE – 338' of new access road will be constructed. If the well is successful, we will bury 3,951' of a 4", 1000# working pressure pipeline to connect to the nearest battery at the Knight 28 Federal No. 1
3. LOCATION OF EXISTING WELLS IN A ONE-MILE RADIUS.
 - A. Water wells – None known.
 - B. Disposal wells - None Known.
 - C. Drilling wells - None known.
 - D. Producing wells - As shown on Exhibit #2

Fasken Oil and Ranch, Ltd.	Knight 28 Federal No. 1
Echo Petroleum	Stiletto 27 Federal No. 1
Echo Petroleum	Stiletto 34 Federal No. 1
Echo Petroleum	Cemetery 21 Federal No. 2
Yates Petroleum	Mystery 33 Federal No. 1
Yates Petroleum	Bellugio 33 Federal No. 1
 - E. Abandoned wells - As shown on Exhibit #2.

Western	Mckee 27 No. 1
Capstone	Maudlin Mckee 34 No. 1
Gulf	Jones 33 Federal No. 2
Trojan	Grant 33 Federal No. 1
Western	Mckee 33 Federal No. 1
Resler	Mckee 33 Federal No. 1x
Brown	Shildneck 28 Federal No. 1
Shell	27 Federal No. 1
4. If, upon completion, the well is a producer Fasken Oil and Ranch, Ltd. will furnish maps or plats showing "On Well Pad Facilities" and "Off Well Pad Facilities" (if needed) on a Sundry Notice before construction of these facilities starts.
5. LOCATION AND TYPE OF WATER SUPPLY

Fresh and Brine water will be purchased locally from a private source and trucked over the access roads. Also fresh water will be purchased and transported through poly line from Richard Howell's ranch approximately 2.5 miles southwest of the location.

6. SOURCE OF CONSTRUCTION MATERIALS

If needed, construction materials will be obtained from the drill sites excavations or from a local source. These materials will be transported over the access roads as shown on Exhibit #1.

7. METHOD FOR HANDLING WASTE DISPOSAL

- A.
 - 1. Drill cuttings will be disposed of in the reserve pit.
 - 2. Trash, waste paper, and garbage will be contained in a trash trailer and disposed of in an approved public landfill.
 - 3. All mud materials including salts will be picked up by the mud supplier and transported back to their warehouse facilities.
 - 4. Sewage from trailer houses will drain into hole with a minimum depth of 10'. A "Porta John" will be provided for the rig crews. This will be properly maintained and removed after drilling operations are completed.
 - 5. Chemicals remaining after completion of the well will be stored in the manufacturer containers and picked up by the supplier.
- B. Remaining drilling fluids will be allowed to evaporate in the reserve pit until the pit is dry enough for backfilling. In the event drilling fluids will not evaporate in a reasonable period of time, they will be transported by tank truck to a state approved disposal site.

Water produced during testing of the well will be disposed of in the reserve pit. Oil produced during the testing of the well will be stored in test tanks until sold and hauled from the site.

8. ANCILLARY FACILITIES

No camps or airstrips will be constructed.

9. WELL SITE LAYOUT

- A. Exhibit #3 is the H₂S Drilling Operations Plan.
- B. Exhibit #4 (Scale 1" = 50') shows the proposed well site layout.
- C. This exhibit indicates the proposed location of reserve pit, trash trailer and living facilities.
- D. Mud pits in the active circulation system will be steel pits.
- E. The reserve pit will be lined with a polyethylene liner. The pit liner will be a minimum of 2' over the reserve pit walls where the liner will be anchored down.
- F. The reserve pit will be fenced on three sides with four strands of barbed wire during drilling and completion operations. The fourth side will be fenced after drilling has been completed. If the well is a producer, the reserve pit fence will be torn down. The reserve pit and those areas of the location not essential to production facilities will be reclaimed and seeded per BLM requirements.

10. PLANS FOR RESTORATION OF SURFACE

Rehabilitation of the location and reserve pit will start in a timely manner after all drilling operations cease. The type of reclamation will depend on whether the well is a producer or a dry hole.

However, in either event, the reserve pit will be allowed to dry properly, and fluid removed and disposed of in accordance with Article 7.B as previously noted. The pit area will then be leveled and contoured to conform to the original and surrounding area. Drainage systems, if any, will be reshaped to the original configuration with provisions made to alleviate erosion. These may need to be modified in certain circumstances to prevent inundation of the location pad and surface facilities. After the area has been shaped and contoured, top soil from the spoil pile (if any) will be placed over the disturbed area to the extent possible. Revegetation procedures will comply with BLM standards.

If the well is a dry hole, the pad and road area will be recontoured to match the existing terrain. Topsoil will be spread to the extent possible. Revegetation will comply with BLM standards.

Should the well be a producer, the previously noted procedures will apply to those areas which are not required for production facilities.

11. OTHER INFORMATION

- A. The topography is of hilly terrain with vegetation of sagebrush and native grasses. The soils are silty and very shallow.
- B. The surface is used for livestock grazing. The surface is leased by Henry Terpening, 3612 E. Castleberry Rd, Artesia, NM 88210.
- C. An archeological study over this location, road and proposed pipeline has been prepared and is attached herewith.
- D. There are no buildings of any kind in the area.

12. OPERATOR'S REPRESENTATIVE - Field representative for contact regarding compliance with the Surface Use Plan is:

Before, during & after Construction:

Tommy E. Taylor
303 W. Wall Ave., Suite 1800
Midland, Texas 79701-5116
(432) 687-1777

13. 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 currently exists; 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 Fasken Oil and Ranch, Ltd. and its contractors/subcontractors in conformity with this plan and the terms and conditions under which it is approved. This statement is subject to the provisions of 18 U.S.C. 1001 for the filing of a false statement.

NAME: Tommy E. Taylor
DATE: 5/8/88
TITLE: Drilling Manager

JRE

(KnightFed2apd doc)

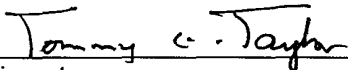
Fasken Oil and Ranch, Ltd.

Knight "28" Federal No. 2

Operator Certification

I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access road proposed herein; that I am familiar with the conditions which currently exist; that I have full knowledge of State and Federal laws application to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.

Executed this 12^h day of May, 2008.



Signature

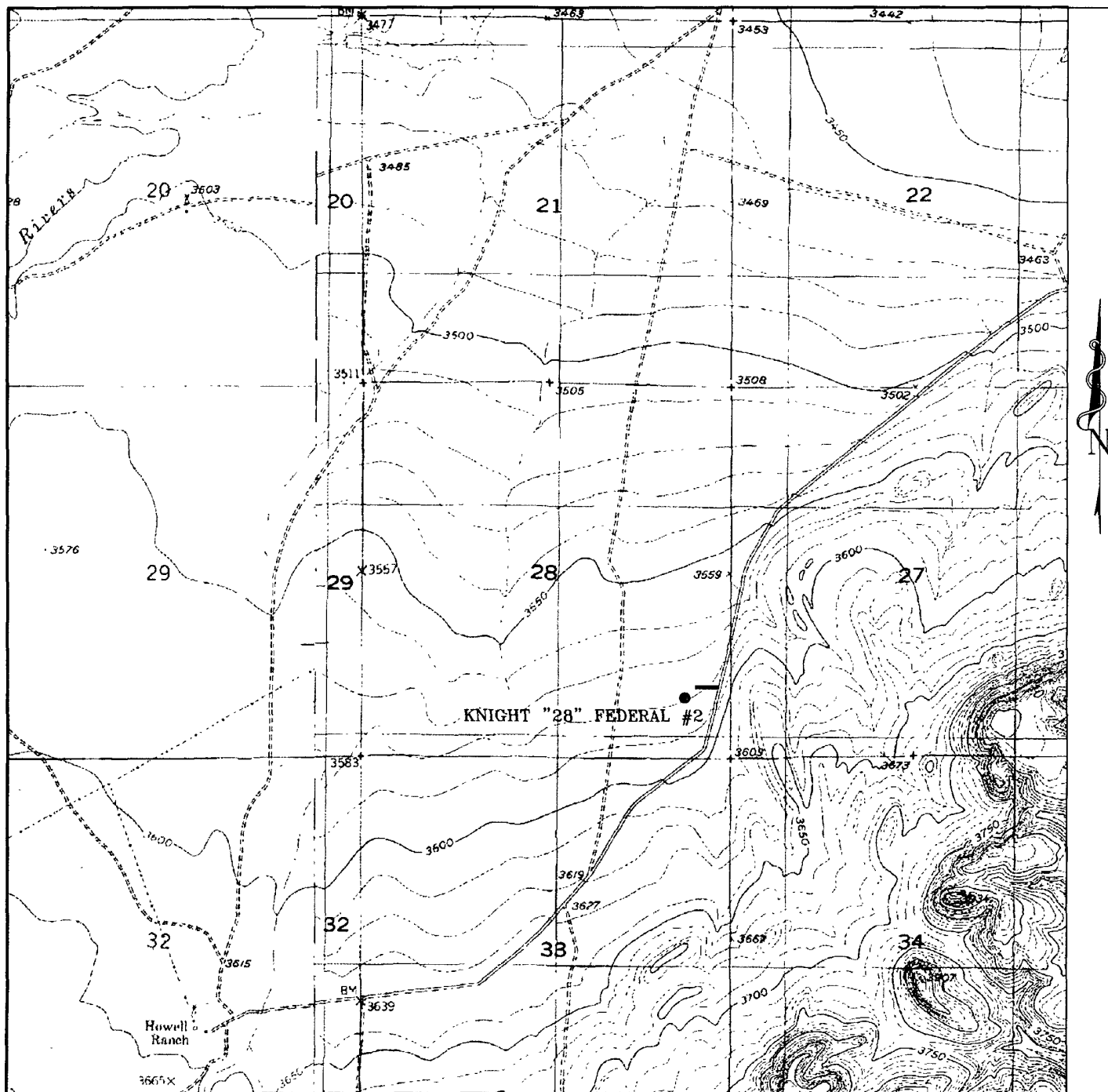
Name: Tommy Taylor

Position: Drilling Manager

Address: 303 West Wall, Suite 1800
Midland, TX 79701

Telephone: (432) 687-1777

Email: tommyt@forl.com



KNIGHT "28" FEDERAL #2
 Located 860' FSL and 660' FEL
 Section 28, Township 20 South, Range 25 East,
 N.M.P.M., Eddy County, New Mexico.

EXHIBIT No. 1

basin
surveys
 focused on excellence
 in the oilfield

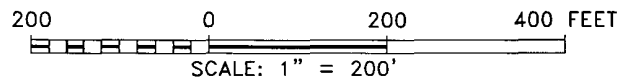
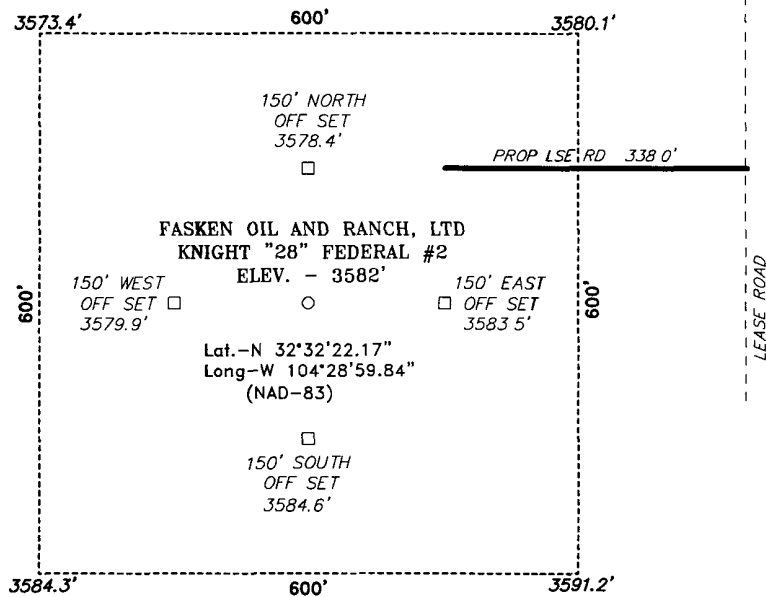
P.O. Box 1786
 1120 N. West County Rd.
 Hobbs, New Mexico 88241
 (505) 393-7316 - Office
 (505) 392-3074 - Fax
 basinsurveys.com

W.O. Number. JMS 19534T
 Survey Date: 04-09-2008
 Scale: 1" = 2000'
 Date: 04-10-2008

**FASKEN OIL
 AND RANCH,
 LTD**

[illegible]

SECTION 28, TOWNSHIP 20 SOUTH, RANGE 25 EAST, N.M.P.M.,
EDDY COUNTY, NEW MEXICO.



Directions to Location:

FROM WHITE PINE TURN LEFT FOR 1.6 MILES TO
PROPOSED LEASE ROAD.

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

W.O. Number: 19534

Drawn By: J. M. SMALL

Date: 04-10-2008

Disk: JMS 19534W

FASKEN OIL AND RANCH, LTD

REF: KNIGHT "28" FEDERAL #2 / WELL PAD TOPO

THE KNIGHT "28" FEDERAL #2 LOCATED 860' FROM
THE SOUTH LINE AND 660' FROM THE EAST LINE OF
SECTION 28, TOWNSHIP 20 SOUTH, RANGE 25 EAST,

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

Survey Date: 04-09-2008

Sheet 1 of 11 Sheets

EXHIBIT No. 6

PECOS DISTRICT CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Fasken Oil & Ranch Ltd
LEASE NO.:	NM-19418
WELL NAME & NO.:	2-Knight 28 Federal
SURFACE HOLE FOOTAGE:	860' FSL & 660' FEL
BOTTOM HOLE FOOTAGE	
LOCATION:	Section 28, T. 20 S., R 25 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**
 - Pipeline not authorized
 - Cave/Karst
- ☐ **Construction**
 - Notification
 - Topsoil
 - Reserve Pit
 - Federal Mineral Material Pits
 - Well Pads
 - Roads
- ☐ **Road Section Diagram**
- ☒ **Drilling**
- ☒ **Production (Post Drilling)**
 - Well Structures & Facilities
 - Pipelines
- ☐ **Reserve Pit Closure/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)

PIPELINE APPLIED FOR UNDER THE APD CROSSES LEASE BOUNDARY AND WILL REQUIRE A ROW PERMIT. PIPELINE IS NOT APPROVED WITH THIS APD.

Conditions of Approval

Cave and Karst

EA#: NM-520-08-0892

Lease #: NM-19418

Fasken Oil and Ranch, Ltd.

Knight 28 Fed. #2

** Depending on location, additional Drilling, Casing, and Cementing procedures may be required to protect critical karst groundwater recharge areas.

Cave/Karst Surface Mitigation

The following stipulations will be applied to minimize impacts during construction, drilling and production.

Berming:

Tank batteries will be bermed to contain 1 ½ times the content of the largest tank.

Bermed areas will be lined with a 4 oz. felt liner to prevent tears or punctures and a permanent 20 mil plastic liner.

Leak Detection System:

A method of detecting leaks is required. The method could incorporate gauges to measure loss, siting valves and lines so they can be visually inspected, or installing electronic sensors to alarm when a leak is present. Leak detection plan will be submitted to BLM for approval.

Closed Mud System Using Steel Tanks with All Fluids and Cuttings Hauled Off.

Cave/Karst Subsurface Mitigation

The following stipulations will be applied to protect cave/karst and ground water concerns:

Lost Circulation:

ALL lost circulation zones from the surface to the base of the cave occurrence zone will be logged and reported in the drilling report.

Regardless of the type of drilling machinery used, if a void of four feet or more and circulation losses greater than 70 percent occur simultaneously while drilling in any cave-bearing zone, the BLM will be notified immediately by the operator. The BLM will assess the situation and work with the operator on corrective actions to resolve the problem.

No Blasting:

No blasting will be utilized for pad construction. The pad will be constructed and leveled by adding the necessary fill and caliche.

Abandonment Cementing:

Upon well abandonment the well bore will be cemented completely from 100 feet below the bottom of the cave bearing zone to the surface.

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 to be stripped is approximately 6 inches in depth. The topsoil shall not be used to backfill the reserve pit and will be used for interim and final reclamation.

C. RESERVE PITS

The reserve pit shall be constructed and closed in accordance with the NMOCD rules.

The reserve pit shall be constructed 160' X 160' on the East side of the well pad.

The reserve pit shall be constructed, so that upon completion of drilling operations, the dried pit contents shall be buried a minimum depth of three feet below ground level. Should the pit content level not meet the three foot minimum depth requirement, the excess contents shall be removed until the required minimum depth of three feet below ground level has been met. The operator shall properly dispose of the excess contents at an authorized disposal site.

The reserve pit shall be constructed and maintained so that runoff water from outside the location is not allowed to enter the pit. The berms surrounding the entire perimeter of the pit shall extend a minimum of two (2) feet above ground level. At no time will standing fluids in the pit be allowed to rise above ground level.

The reserve pit shall be fenced on three (3) sides during drilling operations. The fourth side shall be fenced immediately upon rig release.

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.

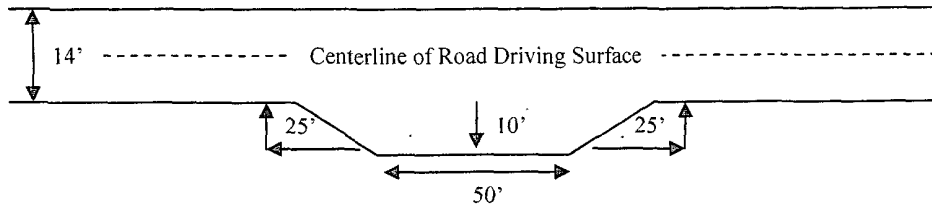
Ditching

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:

Standard Turnout – Plan View

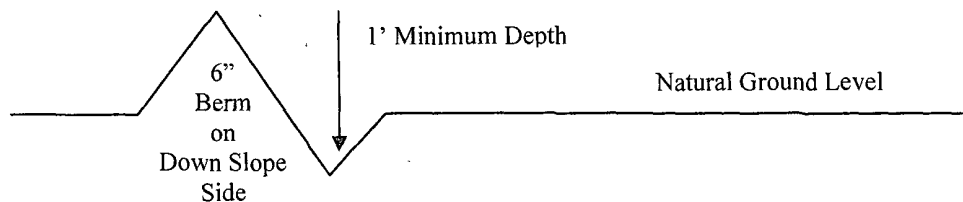


Drainage

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.

Cross Section of a Typical 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

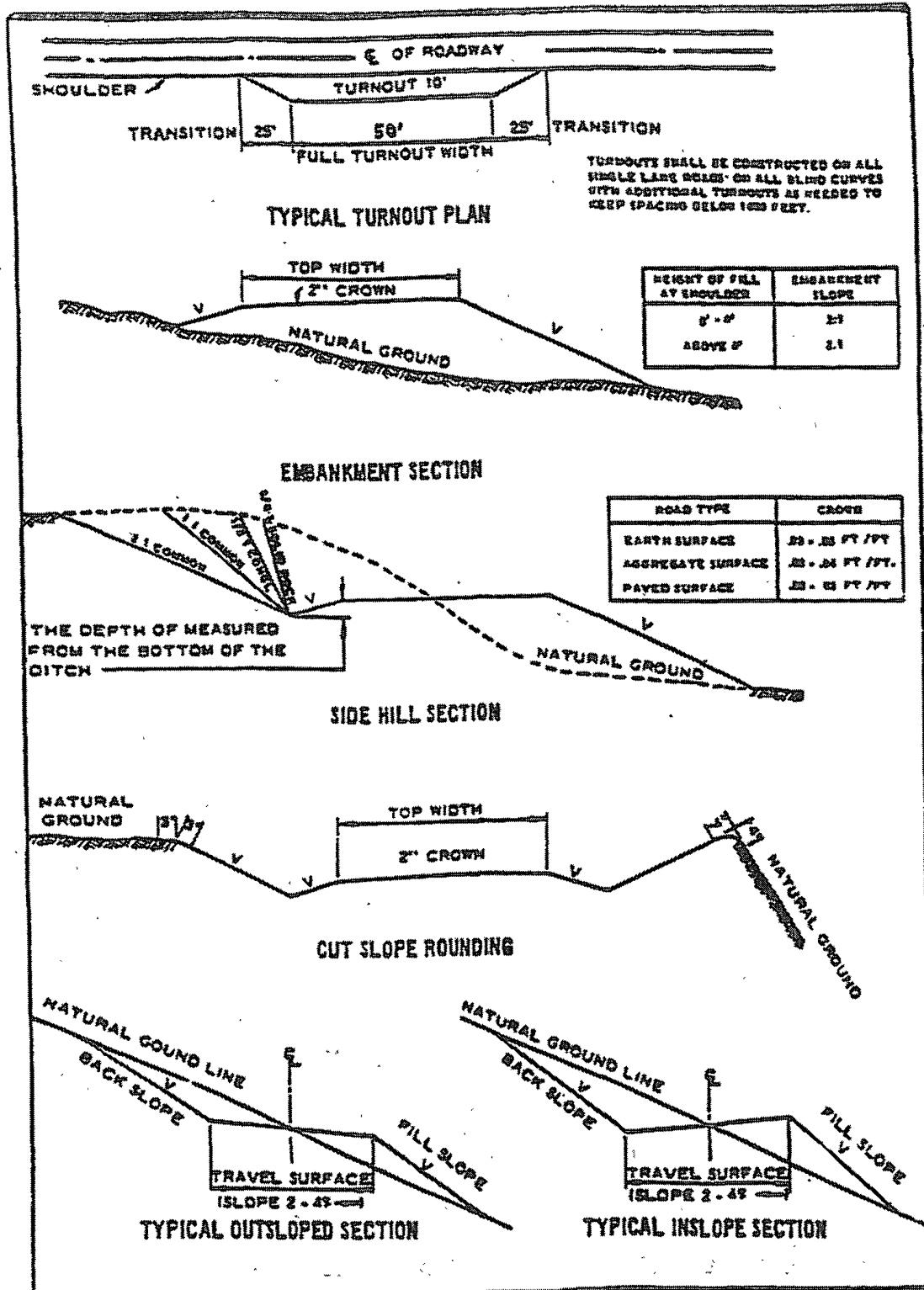
Where entry is required across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting.

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 **4 hours** in advance for a representative to witness:

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

☒ **Eddy County**

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

1. **Although Hydrogen Sulfide has not been reported in this section, it has been reported in Sec 5 on the order of 2000 ppm in the gas stream. It is recommended that monitoring equipment be onsite for potential Hydrogen Sulfide. If Hydrogen Sulfide is encountered, please report measured amounts and formations 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 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.

Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string.

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

Possible lost circulation in the San Andres, Wolfcamp & Strawn formations.
Moderate potential for karst/cave type features
Strong fresh H2O flows may occur in the San Andres & Artesia Group
Wolfcamp & Penn may be overpressured

1. The 13-3/8 inch surface casing shall be set at approximately 400 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 will be a minimum 18 hours for a water basin, 24 hours in the potash area, or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement).
 - 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 cementing will be done prior to drilling out that string.
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-d above.
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. Additional cement will be needed to bring TOC to 2800 feet inside the 9-5/8" casing.**
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. The appropriate BLM office shall be notified a minimum of 4 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.

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.

E. DRILL STEM TEST

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

LB 6/18/08

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

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.

At the time reserve pits are to be reclaimed, 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.

B. RESERVE PIT CLOSURE

The reserve pit, when dried and closed, shall be recontoured, all trash removed, and reseeded as follows:

Seed Mixture 1, for Loamy 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 regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (small/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>
Plains lovegrass (<i>Eragrostis intermedia</i>)	0.5
Sand dropseed (<i>Sporobolus cryptandrus</i>)	1.0
Sideoats grama (<i>Bouteloua curtipendula</i>)	5.0

*Pounds of pure live seed:

Pounds of seed x percent purity x percent germination = pounds pure live seed
(Insert Seed Mixture Here)

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.