

ATS-08-203

R-111-POTASH

7012

Form 3160-3
(April 2004)

OCD-ARTESIA

899

S

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

JUL - 8 2008

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

OCD-ARTESIA APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. NM-0560353
1b. Type of Well: <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other <input type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		6. If Indian, Allottee or Tribe Name
2. Name of Operator Chi Operating, Inc.		7. If Unit or CA Agreement, Name and No.
3a. Address P.O. Box 1799 Midland, TX 79702	3b. Phone No. (include area code) 432-685-5001	8. Lease Name and Well No. Munchkin Federal, Well No. 13
4. Location of Well (Report location clearly and in accordance with any State requirements *) At surface 1550' FNL & 1850' FEL At proposed prod. zone same Capitan Controlled Water Basin		9. API Well No. 30-015-36425
14. Distance in miles and direction from nearest town or post office* 17 mile south of Loco Hills, NM		10. Field and Pool, or Exploratory Benson Bone Spring ✓
15. Distance from proposed* location to nearest property or lease line, ft (Also to nearest drig. unit line, if any) 1550'	16. No. of acres in lease 2160.32	11. Sec., T. R. M. or Blk. and Survey or Area Sec. 11-T19S-R30E
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft 1734' & 899.4'	19. Proposed Depth 8,950'	12. County or Parish Eddy
21. Elevations (Show whether DF, KDB, RT, GL, etc) 3394' GL	22. Approximate date work will start* 06/03/2008	13. State NM
23. Estimated duration 45 days		

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, shall 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 shall be filed with the appropriate Forest Service Office) | 6. Such other site specific information and/or plans as may be required by the authorized officer. |

25. Signature <i>George R. Smith</i>	Name (Printed/Typed) George R. Smith	Date 5/8/08
Title Agent for Chi Operating, Inc.		
Approved by (Signature) <i>15/ Tony J. Herrell</i>	Name (Printed/Typed) <i>15/ Tony J. Herrell</i>	Date JUL 07 2008
Title for: STATE DIRECTOR		
Office NM STATE 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.

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)

NOTE: NEW PIT RULE

19-15-17 NMAC PART 17

A form C-144 must be approved
before starting drilling operations.

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

APPROVAL SUBJECT TO
GENERAL REQUIREMENTS
AND SPECIAL STIPULATIONS
ATTACHED

✓ Rep OK
7-18-08 JH

ub

District I
1825 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brasos Rd., Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87506

State of New Mexico
Energy, Minerals & 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

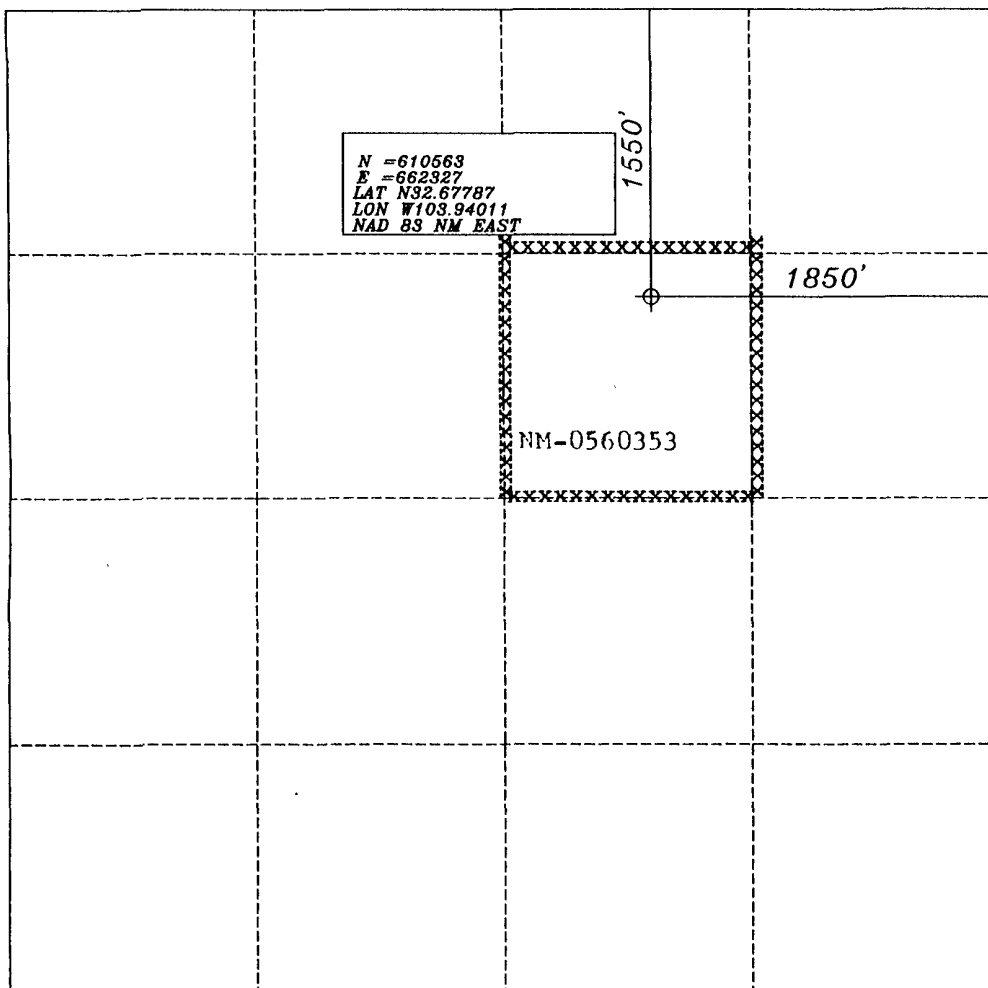
1220 South St. Francis Dr.
Santa Fe, NM 87505

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

1 API Number 30-015-36425		2 Pool Code 5200		3 Pool Name Benson Bone Spring					
4 Property Code 27108		5 Property Name MUNCHKIN FEDERAL				6 Well Number 13			
7 OGRID No. 4378		8 Operator Name CHI OPERATING, INC.				9 Elevation 3394			
10 Surface Location									
UL or Lot no. G	Section 11	Township 19-S	Range 30-E	Lot Idn.	Feet from the 1550	North/South line NORTH	Feet from the 1850	East/West line EAST	County EDDY
11 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
12 Dedicated Acres 40									
13 Joint or Infill									
14 Consolidation Code									
15 Order No.									

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.



17 OPERATORS 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 or has a right to drill this well at this location pursuant to a contract with an owner of such mineral or working interest, or to voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.	
Signature George R. Smith	Date 5/7/08
Printed Name George R. Smith, agent	
18 SURVEYOR CERTIFICATION SURFACE LOCATION ONLY	
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.	
Signature and Seal of Professional Surveyor: NOV. 15, 2007	
Date of Survey	
DAN R. REDDY NEW MEXICO 5412 REGISTERED LAND SURVEYOR	
Certificate Number DAN R. REDDY NM PEPS #5412	

APPLICATION FOR DRILLING

CHI OPERATING, INC.
Munchkin Federal, Well No. 13
1550' FNL & 1850' FEL, Sec. 11-T19S-R30E
Eddy County, New Mexico
Lease No.: NM-0560353
(Development Well)

In conjunction with Form 3160-3, Application for Permit to Drill subject well, Chi Operating, Inc. submits the following items of pertinent information in accordance with BLM requirements:

1. The geologic surface formation is recent Permian with quaternary alluvium and other surficial deposits.
2. The estimated tops of geologic markers are as follows:

Anhydrite	400'	Lower Brushy	5275'
Yates	2320'	Bone Spring C.	6240'
Seven Rivers	2520'	Bone Spring Sand	6460'
Queen	3125'	BS 1 st SD	7360'
Penrose	3360'	BS 2 nd SD	8520'
Cherry Canyon	4450'	T.D.	8950'

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

Water: Surface water between 100' - 300'.
Oil: Possible in the Queen, Delaware, Bone Spring
Gas: Possible in the Delaware

4. Proposed New Casing Program:

HOLE SIZE	CASING SIZE	WEIGHT	GRADE	JOINT	SETTING DEPTH FACTOR	COLLAPSE DESIGN FACTOR	BURST DESIGN FACTOR	TENSION DESIGN FACTOR
17 1/2"	13 3/8"	48.0#	H-40	ST&C	500'	3.275	1.38	15.37
11"	8 5/8"	32.0#	J-55	ST&C	3,200'	1.522	1.23	4.27
7 7/8"	5 1/2"	17.0#	J-55	LT&C	6,800'	1.371	1.21	1.91
7 7/8"	5 1/2"	17.0#	L-80	LT&C	8,950'	1.353	1.66	25.08

2150'
17# L-80
Perchi
6-9-08

5. Cement Program

CASING	SETTING DEPTH	QUANTITY OF CEMENT	TOC	YIELD
13 3/8"	500'	Est. 500 sx "C" plus additives	Surface	1.34
8 5/8"	3,200'	Est. 700 sx "C" lite & "C" plus add.	"	1.34
5 1/2"	8,950'	Stage 1: 550 sx "C" plus add.	"	1.55
5 1/2"	"	Stage 2: 425 sx (35:65) POZ: Prem Plus "C"		2.10
5 1/2"	"	50 sx Prem. Plus "C" plus add.	"	1.34

see
COA

Note: DV tool @ +/- 3700'

see
COA

6. Proposed Control Equipment: A 10" 3000 psi wp Shaffer Type E double gate hydraulic ram BOP will be installed on the 13 3/8" casing. Casing and BOP will be tested to 500 psi before drilling out with the 11". Prior to drilling out the 8 5/8" casing shoe, the BOP will be tested as per Onshore Oil & Gas Order #2. The pipe rams will be operated and checked daily, plus each time drill pipe is out of hole. This will be documented on driller's log. See Exhibit "E".

7. MUD PROGRAM

MUD PROGRAM		MUD WEIGHT	VIS.	W/L CONTROL
DEPTH	MUD			
0-500'	Fresh water mud:	8.4 - 8.7 ppg	32 - 34	No W/L control
500'-1900'	Brine	10 ppg	29	NC
1900-5500'	Cut brine or Fresh water *	9.2 ppg	29	NC
5500-8950'	Cut Brine	9.2 ppg	29-34	<15 cc @TD for logs
*NOTE:	Switch to fresh water mud if loose circulation			

8. Auxiliary Equipment: Blowout Preventer, gas detector, Kelly cock, pit level monitor, flow sensors and stabbing valve.

9. Testing, Logging, and Coring Program:

Drill Stem Tests: As deemed necessary.

Logging: T.D thru pay: GR-CAL-CNL-LDT-DLL-MICRO

T.D. to Surface: GR-Neutron

Coring: Rotary Sidewall: as dictated by logs.

Mud Logging: 10' samples-2000' to TD (2 sets of samples).

10. No abnormal pressures or temperatures are anticipated. In the event abnormal pressures are encountered the proposed mud program will be modified to increase the mud weight. Estimated evacuated BHP = 3,580 psi with a temperature of 150°.
11. H₂S: None expected. None in the previous drilling of wells in area, but the Mud Log Unit will be cautioned to use a gas trap to detect H₂S and if any is detected the mud weight will be increased along with H₂S inhibitors sufficient to control the gas.
12. Anticipated starting date: June 3, 2008
Anticipated completion of drilling operations: Approximately 40 days.

Rig 65

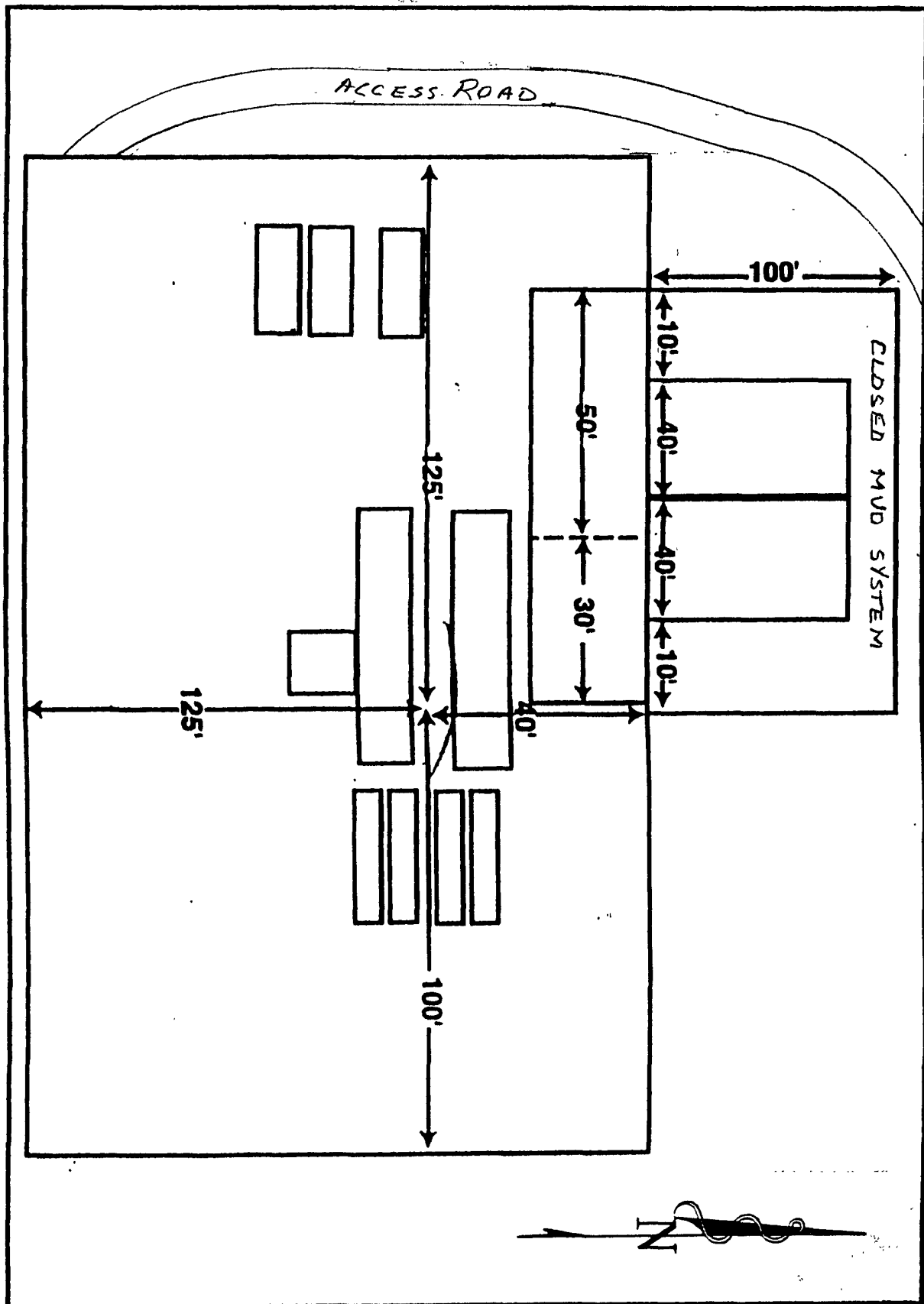


EXHIBIT "D"
CHI OPERATING, INC.
Munchkin Federal, Well No. 13
Pad & Pit Layout

3000 psi System

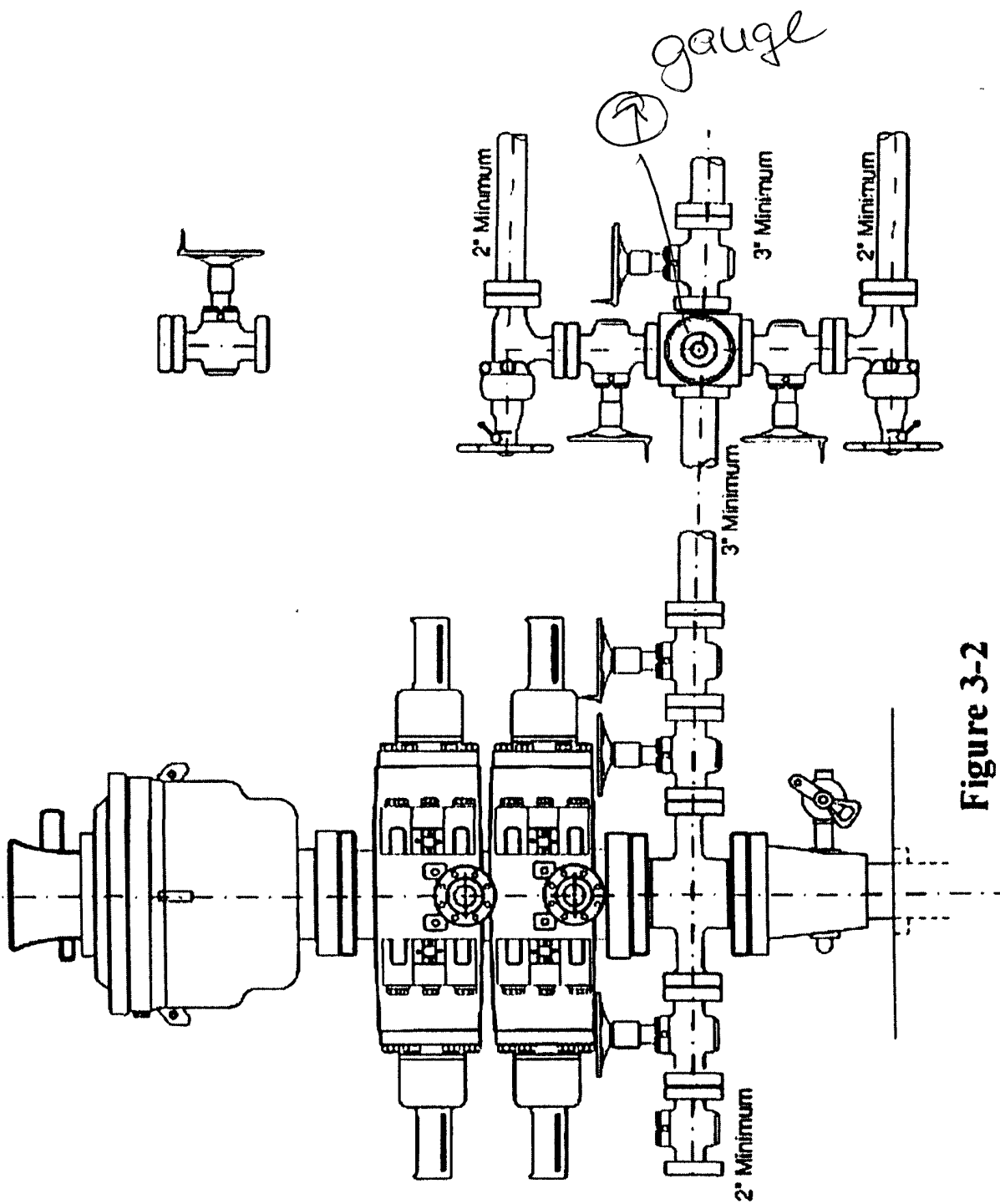


Figure 3-2

MULTI POINT SURFACE USE AND OPERATIONS PLAN

CHI OPERATING, INC
Munchkin Federal, Well No.13
1550' FNL & 1850' FEL, Sec. 11 -T19S-R30E
Eddy County, New Mexico
Lease No.: NM-0560353
(Development Well)

This plan is submitted with the Application for Permit to Drill the above described well. The purpose of the plan is to describe the location of the proposed well, the proposed construction activities and operations plan, to be followed in rehabilitating the surface environmental effects associated with the operations.

1. EXISTING ROADS:

- A. Exhibit "A" is a portion of a BLM Hackberry Lake Topo map showing the location of the proposed well as staked. The well site location is approximately 36 road miles southeast of Artesia, NM. Traveling east of Artesia on U.S. Highway 82, NM Hwy 360 and county roads No. 250 and 251, there will be 33 miles of paved highway, plus 3 miles of existing gravel oilfield roads.
- B. Directions: Travel east from U. S. Highway #285 in Artesia, NM on U. S. Highway 82 for approximately 14 miles, turn southeast on NM Hwy 360 for approximately 13 miles to paved County Rd #251. Turn north on #251 for 1.8 mile to County Rd. # 250, then turn right on #250 for 3.8 miles to top of Nimenim Ridge. Turn south onto a gravel oilfield road just west of a cattle guard. Continue south for .8 mile to a large tank battery and water injection pump house; turn right (west) for .25 mile to a pump jack, then south (left) for .63 mile to a P/A well site with a gas line tap. Turn right (west) for .3 mile, then south .25 mile to the Munchkin Fed. #1 well site. Turn west, north of the #1, for .2 mile to the access road on the left (south) side. Follow this road southeast then south to the southwest corner of the Munchkin Fed. #4 well pad. The access road continues southeast for 1000 feet to the southeast corner of the Munchkin Fed. #5 well pad. Continue south on the access road for 900' to the Conoco Phillips pipeline; then 2,300' west, south of the pipeline, passing the Munchkin Federal #8, to the SW corner of the Munchkin Federal Well No. 10.. The proposed access road will start on the SW corner of the No. 10 well pad and continue northwest to the Phillips gas pipeline access road. Turn northwest on the pipeline road for approximately 650' to the NE corner of the proposed well site.

2. PLANNED ACCESS ROAD:

- A. Length and Width: The proposed access road will be constructed to a width of 12 feet (24' Max.) and approximately 700' from the Munchkin Fed. #10 to the Conoco Phillips pipeline road. The existing pipeline road will be upgraded for approximately 650'. The proposed and existing roads are color coded on Exhibit "A".
- B. Construction: The existing access road will be repaired, as needed, and the proposed access road will be constructed by grading and topping with compacted caliche and will be properly drained. The work will be coordinated with the pipeline company.
- C. Turnouts: At least one 20' turnout will be required in the new section for passing.
- D. Culverts: One culvert may be required on the pipeline at a low water crossing.
- E. Cuts and Fills: None required.
- F. Gates, Cattle guards: One cattle guard will be required at the start of the new portion of the access road at the SW corner of the Munchkin Fed. #10 well pad.
- G. Off Lease ROW: An off lease ROW No. NM-102279 was issued previously.

3. LOCATION OF EXISTING WELLS:

- A. Existing wells within a one-mile radius are shown on Exhibit "C".

4. LOCATION OF EXISTING AND/OR PROPOSED FACILITIES:

- A. Chi Operating, Inc. has production facilities on the lease at this time.
- B. If the well proves to be commercial, the necessary production facilities and gas production-process equipment will be installed on the drilling pad. A 3" SDR 11 300 psi poly line will be run on the south side of the access road back to the Munchkin Fed. #10 well site, which has storage facilities, separators and pipelines available on the well pad. Additional storage may be added if required. The production will be metered separately for both wells.

5. LOCATION AND TYPE OF WATER SUPPLY:

- A. It is planned to drill the proposed well with fresh water that will be obtained from private or commercial sources and will be transported over the existing and proposed access roads

6. SOURCE OF CONSTRUCTION MATERIALS:

- A. Caliche for surfacing and maintenance of the new and existing access road and construction of the well site pad will be obtained from a pit on the location, if available, or from a BLM approved pit on the drill site for the Wizard Federal #3 in the NW¼SE¼, Sec. 1-T19S-R30E. No surface materials will be disturbed except those necessary for actual grading and leveling of the drill site and access roads.

7. METHODS OF HANDLING WASTE DISPOSAL:

- A. Drill cuttings will be disposed in a closed mud system to be hauled to a disposal site.
- B. Drilling fluids will be trucked away for disposal.
- C. No pits will need to be fenced.
- D. Water produced during operations will be collected in tanks until hauled to an approved disposal system, or a separate disposal application will be submitted to the BLM for approval.
- E. Oil produced during operations will be stored in tanks until sold.
- F. Current laws and regulations pertaining to the disposal of human waste will be complied with.
- G. Trash, waste paper, garbage and junk will be contained in trash bins to prevent scattering by the wind and will be removed for deposit in an approved sanitary landfill within 30 days after finishing drilling and/or completion operations.

8. ANCILLARY FACILITIES:

- A. None required.

9. WELL SITE LAYOUT:

- A. Exhibit "D" shows the relative location and dimensions of the well pad, reserve pits, and major rig components. The pad and pit area was originally staked and flagged, 600' X 600'.
- B. Mat Size: 225' X 165', plus 100' X 80' working area for closed mud system on the east.
- C. Cut & Fill: The location will require a 4 - 8 foot cut of a hill on the east with fill to the south and west. There is a 2 - 8 foot deep 2' wide ditch south of the well to be filled.
- D. The surface will be topped with compacted caliche.

10. PLANS FOR RESTORATION OF THE SURFACE:

- A. After completion of drilling and/or completion operations, all equipment and other material not required for operations will be removed. The location will be cleaned of all trash and junk to leave the well site in an aesthetically pleasing condition as possible.
- B. There will be no unguarded pits containing fluids.
- C. If the proposed well is non-productive, all rehabilitation and/or vegetation requirements of the Bureau of Land Management will be complied with and will be accomplished as expeditiously as possible.

11. OTHER INFORMATION:

- A. Topography: The proposed location and access road are located in an area on top of and east of the Niminem Ridge. The location has an overall 3% slope to the southwest from an elevation of 3394' GL.
- B. Soil: The topsoil at the well site is a deep reddish brown calcareous loam with some caliche scatter on the surface. The soil is of the Largo Loam alluvium loamy soils series.
- C. Flora and Fauna: The vegetation cover is a fair to poor grass cover of threeawn, grama, dropseed, fluff grass and bush muhly along with plants of mesquite, broomweed, yucca, cacti and miscellaneous weeds and wildflowers. The wildlife consists of rabbits, coyotes, antelope, rattlesnakes, lizards, dove, quail and other wildlife typical of the semi-arid desert land.
- D. Ponds and Streams: There are two deep draws east, south and west of the location.
- E. Residences and Other Structures: None in the area except oil field equipment and tank batteries.
- F. Land Use: Cattle grazing.
- G. Surface Ownership: The proposed well site and access road is on Federal surface and minerals.
- H. There is some evidence of archaeological, historical or cultural sites in the area. Archaeological Survey Consultants, P. O. Box D, Roswell, NM 88202 have conducted an archaeological survey and their report will be submitted to the appropriate government agencies.

12. OPERATOR'S REPRESENTATIVE:

- A. The field representative for assuring compliance with the approved use and operations plan is as follows:

John Qualls
Chi Operating, Inc.
P. O. Box 1799
Midland, Texas 79701
Office Phone: (432) 685-5001
Cell Phone: (432) 557-8774

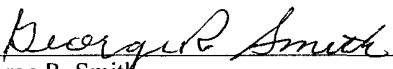
Gary Womack
Chi Operating, Inc
P. O. Box 1799
Midland, Texas 79701
Office Phone: (432) 685-5001
Cell Phone: (432) 634-8958

Chi Operating, Inc.
Munchkin Federal, Well No. 13

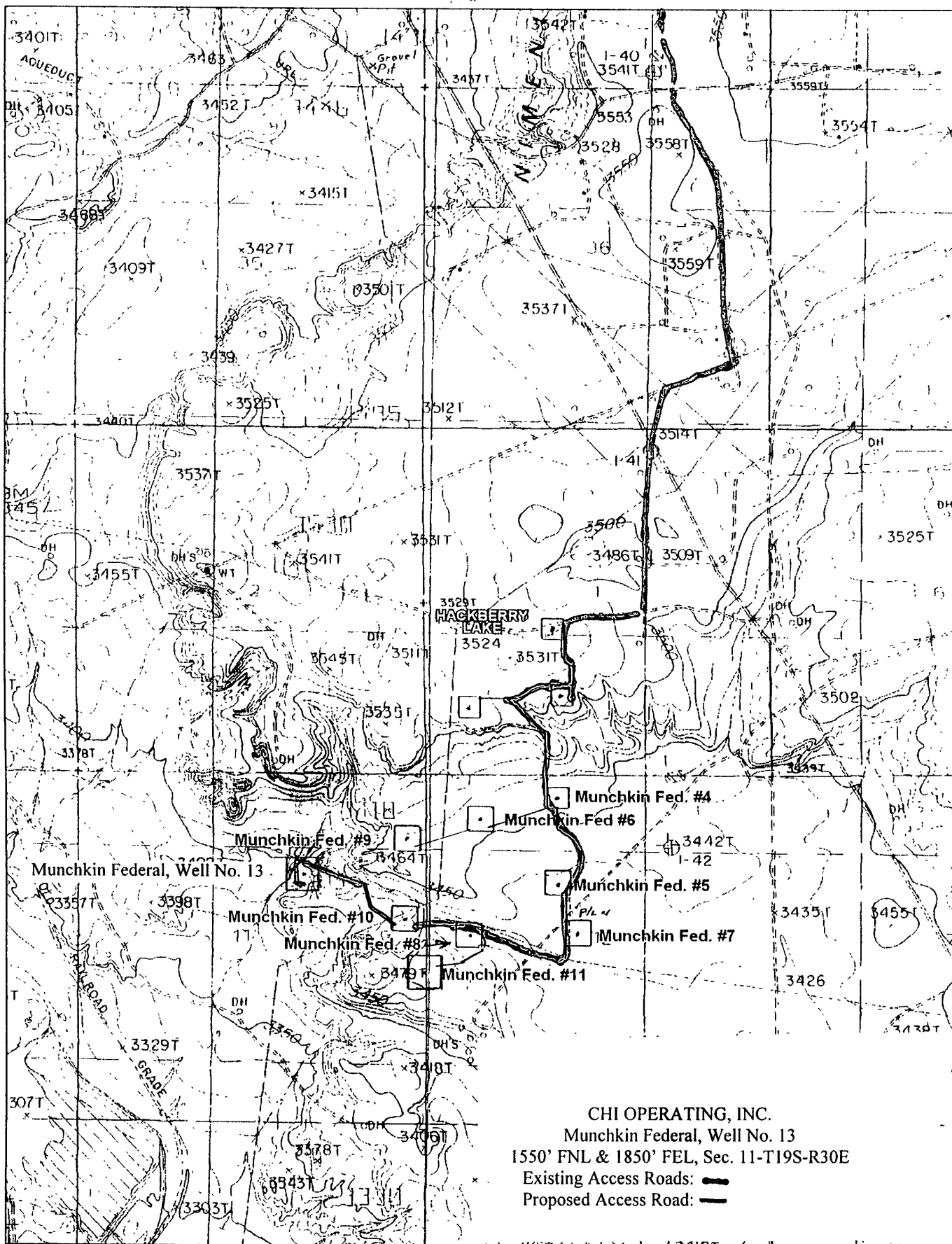
CERTIFICATION:

I hereby certify that I have inspected the proposed drill site and access route; that I am familiar with the conditions which presently exist; that the statements made in the 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 Chi Operating, Inc. and its contractors and 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.

May 2, 2008



George R. Smith
Agent for: Chi Operating, Inc.



DeLORME

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www.delorme.com

Scale 1 : 24,000
 1" = 2000 ft

0 200 400 600 800 1000

0 200 400 600 800 1000

0 200 400 600 800 1000

TN
 MN
 90°E

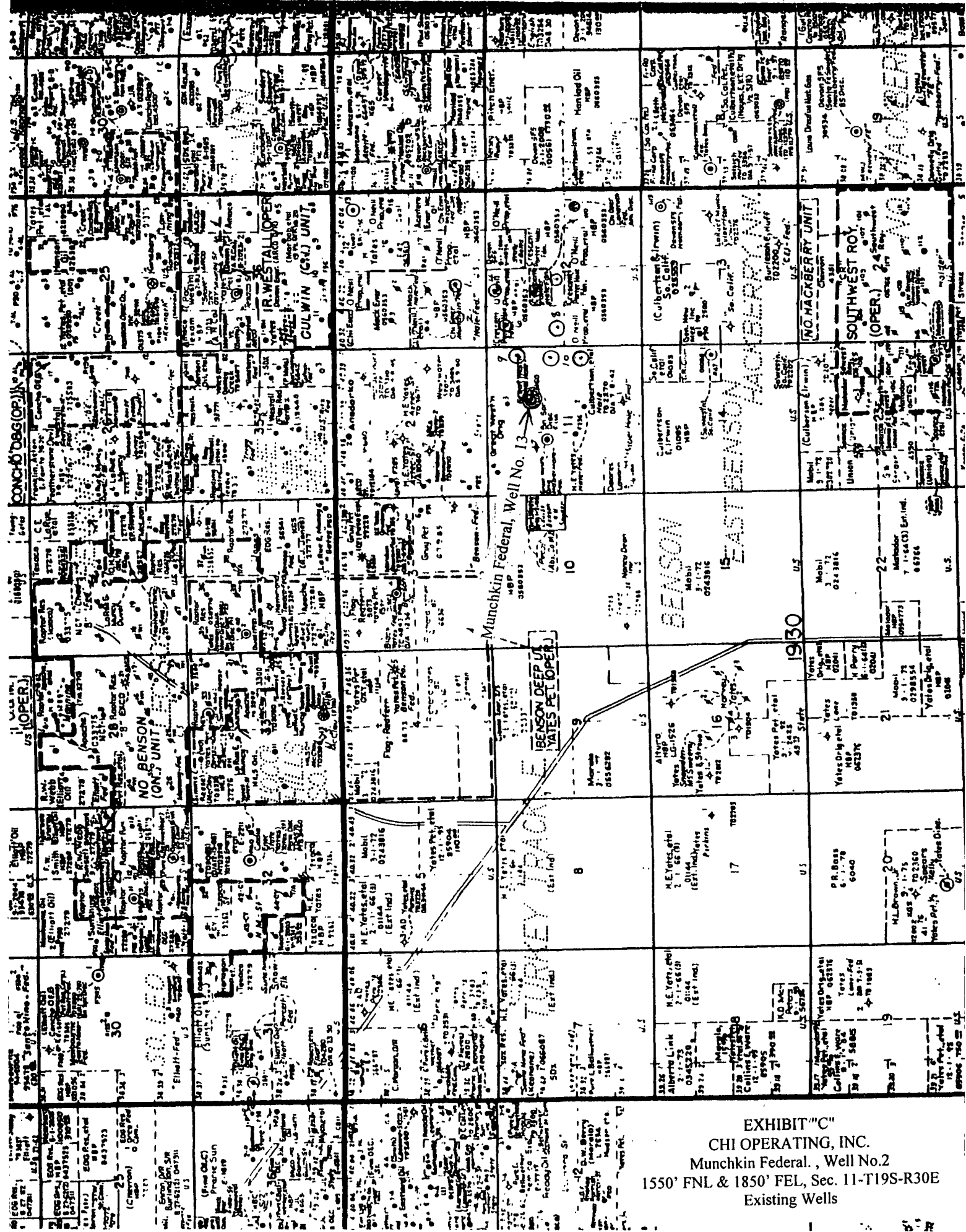


EXHIBIT "C"
CHI OPERATING, INC.
Munchkin Federal, Well No.2
1550' FNL & 1850' FEL, Sec. 11-T19S-R30E
Existing Wells

PECOS DISTRICTa
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	CHI OPERATING INC.
LEASE NO.:	NM-0560353
WELL NAME & NO.:	Munchkin Federal No. 13
SURFACE HOLE FOOTAGE:	1550' FNL & 1850' FEL
BOTTOM HOLE FOOTAGE	
LOCATION:	Section 11, T. 19 S., R 30 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**
 - Pad Orientation and size restriction
 - Hackberry Lake OHV restrictions
- ☐ **Construction**
 - Notification
 - Topsoil
 - Reserve Pit
 - Federal Mineral Material Pits
 - Well Pads
 - Roads
- ☐ **Road Section Diagram**
- ☒ **Drilling**
- ☒ **Production (Post Drilling)**
 - Well Structures & Facilities
 - Pipelines
- ☐ **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)

V-DOOR SOUTH. PAD NOT TO EXCEED 115 FT. TO THE SOUTH

The proposed action is located within the Hackberry Lake OHV Recreation Area. The pipeline intersects the OHV trail in one localized area. There is a bike trail that is at the beginning of the new access road off the northwest corner of the #10 well location that will be blocked and will be crossed by the surface line. The area is designated for OHV use and may be occupied at any time by trail users. Safety considerations of trail users require that the pipeline will be buried with a minimum cover of 36 inches between the top of the pipe and ground level wherever it crosses a trail. The project may impede the use of trails and create hazardous riding conditions in the localized area. At no time will ditches remain open unless temporary barricade fence is installed to protect OHV users in the area. Signs will be posted where trail and pipeline intersect locations to warn OHV users in the area of pipeline construction.

Surface Mitigation

The following mitigations will apply to minimize impacts during all phases of pipeline construction.

1. CHI will post signs at trail and pipeline intersect locations to warn OHV users in the area of pipeline construction.
2. At no time will ditches remain open unless temporary barricade fence is installed to protect OHV users in the area.
3. All pipelines associated with this project will be buried at minimum stipulation specifications when crossing or paralleling trails.
4. Upon completion of pipeline construction, the company will replace the affected trail portions to the quality they were before the project's start.

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 (575) 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

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 (575) 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

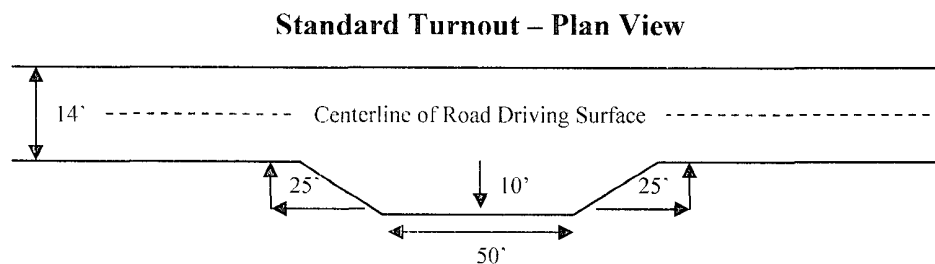
Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

Ditching

Ditching shall be required on both sides of the road.

Turnouts

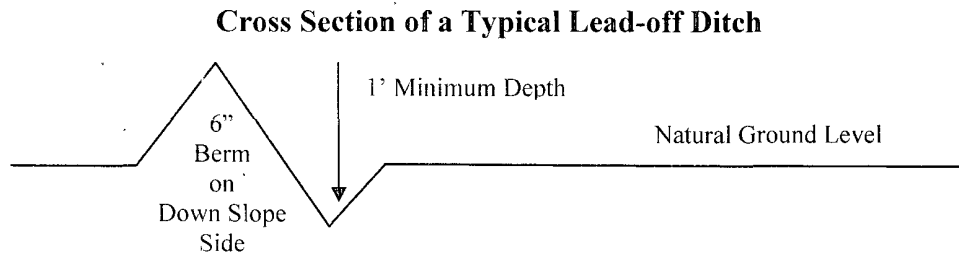
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall be constructed on all blind curves. Turnouts shall conform to the following diagram:



Drainage

Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outsloping 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

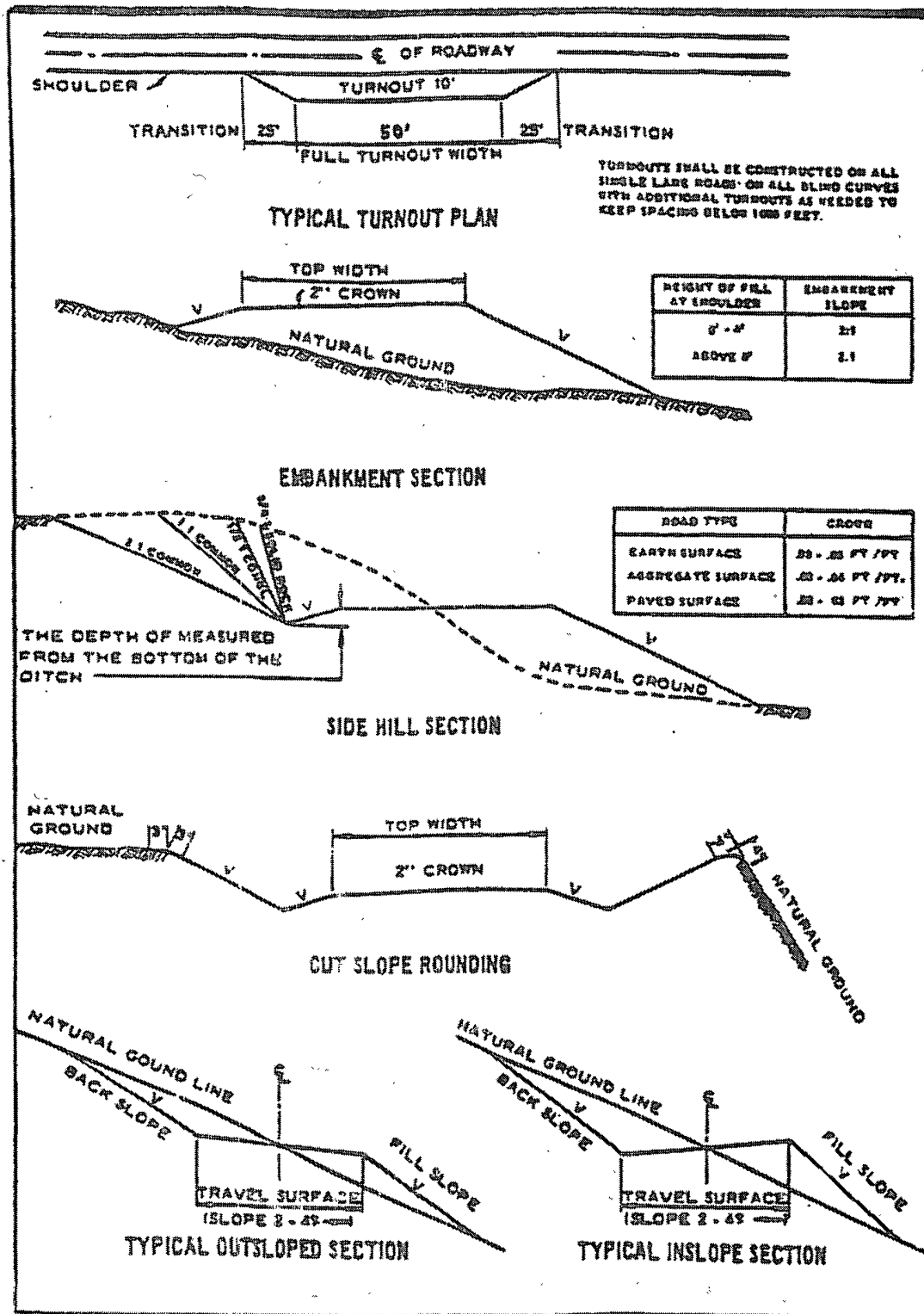
Where entry is required across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting.

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 **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. **Hydrogen Sulfide has not been reported in this section but it has been reported in Sections 3 and 14. 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 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.
4. Gamma-Ray/Neutron logs shall be run from the base of the Salado formation to the surface. The logs shall be run at a speed which allows the logs to be legible and no faster than manufactures of the logging tools recommended speed.

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 as 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

R-111-P Potash

Possible lost circulation in Artesia Group

Possible lost circulation in Capitan Reef (if present)

Possible H2O flows in Salado & Artesia Group

1. The 13-3/8 inch surface casing shall be set at **approximately 500 feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt)** and cemented to the surface. If salt is penetrated surface casing shall be set **25 feet above the top of the salt**.
 - 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 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 8-5/8 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:
 - a. **First stage to DV tool, cement shall:**
☒ Cement to circulate. If cement does not circulate, contact the appropriate BLM office, before proceeding with second stage cement job. **Additional cement will be required for cement to circulate.**
 - b. **Second stage above DV tool, cement shall:**
☒ Cement to surface. If cement does not circulate, contact the appropriate BLM office.

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.
5. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

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. A variance to test the surface casing and BOP/BOPE (**entire system**) to the reduced pressure of 1000 psi with the rig pumps is approved.

D. DRILL STEM TEST

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

LB 6/10/08

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

B. PIPELINES

STANDARD STIPULATIONS FOR SURFACE INSTALLED PIPELINES

A copy of the APD and attachments, including stipulations, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.
2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.
3. The holder agrees to indemnify the United States against any liability arising from the

release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to activity of the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. The holder shall be liable for damage or injury to the United States to the extent provided by 43 CFR Sec. 2883.1-4. The holder shall be held to a standard of strict liability for damage or injury to the United States resulting from pipe rupture, fire, or spills caused or substantially aggravated by any of the following within the right-of-way or permit area:

- a. Activities of the holder including, but not limited to construction, operation, maintenance, and termination of the facility.
- b. Activities of other parties including, but not limited to:
 - (1) Land clearing.
 - (2) Earth-disturbing and earth-moving work.
 - (3) Blasting.
 - (4) Vandalism and sabotage.
- c. Acts of God.

The maximum limitation for such strict liability damages shall not exceed one million dollars (\$1,000,000) for any one event, and any liability in excess of such amount shall be determined by the ordinary rules of negligence of the jurisdiction in which the damage or injury occurred.

This section shall not impose strict liability for damage or injury resulting primarily from an act of war or from the negligent acts or omissions of the United States.

5. If, during any phase of the construction, operation, maintenance, or termination of the pipeline, any oil, salt water, or other pollutant should be discharged from the pipeline system, impacting Federal lands, the control and total removal, disposal, and cleaning up of such oil, salt water, or other pollutant, wherever found, shall be the responsibility of the holder, regardless of fault. Upon failure of the holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages resulting therefrom, on the Federal lands, the Authorized Officer may take such measures as he deems necessary to control and clean up the discharge and restore the area, including, where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of the holder. Such action by the Authorized Officer shall not relieve the holder of any responsibility as provided herein.

6. All construction and maintenance activity will be confined to the authorized right-of-way width of 25 feet.
7. No blading or clearing of any vegetation will be allowed unless approved in writing by the Authorized Officer.
8. The holder shall install the pipeline on the surface in such a manner that will minimize suspension of the pipeline across low areas in the terrain. In hummocky or dune areas, the pipeline will be "snaked" around hummocks and dunes rather than suspended across these features.
9. The pipeline shall be buried with a minimum of 24 inches under all roads, "two-tracks," and trails. Burial of the pipe will continue for 20 feet on each side of each crossing. The condition of the road, upon completion of construction, shall be returned to at least its former state with no bumps or dips remaining in the road surface.
10. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates will be allowed unless approved by the Authorized Officer.
11. In those areas where erosion control structures are required to stabilize soil conditions, the holder will install such structures as are suitable for the specific soil conditions being encountered and which are in accordance with sound resource management practices.
12. Excluding the pipe, all above-ground structures not subject to safety requirement shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be a color which simulates "Standard Environmental Colors" – **Shale Green**, Munsell Soil Color No. 5Y 4/2; designated by the Rocky Mountain Five State Interagency Committee.
13. The pipeline will be identified by signs at the point of origin and completion of the right-of-way and at all road crossings. At a minimum, signs will state the holder's name, BLM serial number, and the product being transported. Signs will be maintained in a legible condition for the life of the pipeline.
14. The holder shall not use the pipeline route as a road for purposes other than routine maintenance as determined necessary by the Authorized Officer in consultation with the holder. The holder will take whatever steps are necessary to ensure that the pipeline route is not used as a roadway.

15. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the authorized officer. Holder 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 will be made by the authorized officer to determine appropriate cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the authorized officer after consulting with the holder.

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 4, for Gypsum 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>
Alkali Sacaton (<i>Sporobolus airoides</i>)	1.0
DWS Four-wing saltbush (<i>Atriplex canescens</i>)	5.0
⊆DWS: DeWinged Seed	

*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.