

Re-submit APD

Previous submittal: March 24 and July 13th, 2005

Date APD approved: October 13, 2005

ATS-07-420

Form 3160-3  
(April 2004)

704



HIGH CAVEKARST

OCD-ARTESIA

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

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		4318	5. Lease Serial No. NM-98124
1b. Type of Well: <input type="checkbox"/> Oil Well <input checked="" 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. Paradise 5 Federal, Well No. 1
4. Location of Well (Report location clearly and in accordance with any State requirements.) At surface 1940' FSL & 780' FEL At proposed prod. zone same			9. API Well No. 30-015-35630
10. Field and Pool, or Exploratory Burton Flats Morrow		11. Sec., T. R. M. or Blk. and Survey or Area Sec. 5-T21S-R27E	
12. Distance in miles and direction from nearest town or post office* 8.6 miles N. of Carlsbad, NM		13. State NM	
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 780'	16. No. of acres in lease 1529.88	17. Spacing Unit dedicated to this well 320	
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 1320'	19. Proposed Depth 11,450' 11,700'	20. BLM/BIA Bond No. on file NM-1616	
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3247' GL	22. Approximate date work will start* 07/10/2007	23. Estimated duration 5-7 weeks	

24. Attachments

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

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

25. Signature <i>George R. Smith</i>	Name (Printed Typed) George R. Smith	Date 04/10/2007
Title Agent for Chi Operating, Inc.		
Approved by (Signature) <i>Ts/ James Stovall</i>	Name (Printed Typed)	Date MAY 15 2007
Title FIELD MANAGER		
Office BLM-CARLSBAD FIELD OFFICE		

Application approval does not warrant or certify that the applicant holds title to the land 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 4: States any false, fictitious or fraudulent

If earthen pits are used in association with the drilling of this well, an OCD pit permit must be obtained prior to pit construction.

APPROVAL FOR TWO YEARS

willfully to make to any department or agency of the United States

\*(Instructions on page 2)

Lease Responsibility Statement: Chi Operating, Inc. accepts all applicable terms, conditions, stipulations, and restrictions concerning operations conducted on the leased land or portion thereof.

APPROVAL SUBJECT TO  
GENERAL REQUIREMENTS  
AND SPECIAL STIPULATIONS  
ATTACHED

SEE ATTACHED FOR  
CONDITIONS OF APPROVAL

*George R. Smith*  
George R. Smith, agent

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 & Natural Resources Department

OIL CONSERVATION DIVISION

1220 South St. Francis Dr.

Santa Fe, NM 87505

Form C-102

Revised June 10, 2003  
Submit to Appropriate District Office  
State Lease - 4 Copies  
Fee Lease - 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code <b>73280</b>	Pool Name <b>Burton Flats Morrow</b>
Property Code	Property Name <b>PARADISE "5" FEDERAL</b>	Well Number <b>1</b>
OGRID No. <b>4378</b>	Operation Name <b>CHI OPERATING INC.</b>	Elevation <b>3247</b>

Surface Location

UL or Lot No. <b>I*</b>	Section <b>5</b>	Township <b>21-S</b>	Range <b>27-E</b>	Lot Idn.	Feet from the <b>1940</b>	North/South line <b>SOUTH</b>	Feet from the <b>780</b>	East/West line <b>EAST</b>	County <b>EDDY</b>
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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
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Dedicated Acres <b>320</b>	Joint or Infill	Consolidation Code	Order No.
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NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTEREST HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

**\*NOTE: SECTION 5, T21S, R27E, N.M.P.M., IS  
ELONGATED WITH LOTS 1 THRU 16 IN THE NORTH-HALF**

OPERATOR CERTIFICATION

I HEREBY CERTIFY THAT THE INFORMATION CONTAINED HEREIN IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF.

*George R. Smith*  
Signature

George R. Smith

Printed Name  
Agent

Title and E-mail Address  
July 13, 2005

Date  
4/11/07

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 KNOWLEDGE AND BELIEF.

JUNE 23, 2005  
Date of Survey

Signature of Registered Professional Engineer

NEW MEXICO  
REGISTERED PROFESSIONAL ENGINEER  
LAND SURVEYOR  
5412  
NM PE&LS #5412  
Certificate Number

## APPLICATION FOR DRILLING

**CHI OPERATING, INC.**  
Paradise 5 Federal, Well No. 1  
1940' FSL & 780' FEL, Sec. 5-T21S-R27E  
Eddy County, New Mexico  
Lease No.: NM-98124  
(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:

Yates	440'	Atoka	10,509'
Capitan Reef	880'	Morrow	10,893'
Delaware	2,400'	Morrow Lime	11,109'
Bone Spring	5,003'	Lower Morrow	11,403'
Wolfcamp	8,995'	T.D	11,700'
Strawn	10,185'		

3. The estimated depths at which water, oil or gas formations are anticipated to be encountered:  
Water: Surface water between 100' - 300'. Capitan Reef below 880'.  
Oil: Possible in the Queen, Delaware and Bone Spring  
Gas: Possible in the Atoka below 10,509' and the Morrow below 10,893'.

#### 4. Proposed Casing Program:

HOLE SIZE	CASING SIZE	WEIGHT	GRADE	JOINT	SETTING DEPTH	QUANTITY OF CEMENT
17 1/2"	13 3/8"	48.5#	J-55	ST&C	0' - 600'	Circ. 275 sx "C" + add.
12 1/4"	9 5/8"	36.0#	J-55	ST&C	0' - 2,400'	Circ. 800 sx 65/35 sx "C" + POZ.
7 7/8"	5 1/2"	20.0#	N-80	LT&C	0' - 400'	
7 7/8"	5 1/2"	17.0#	N-80	LT&C	400' - 8,450'	
7 7/8"	5 1/2"	20.0#	N-80	LT&C	8,450' - 11,700'	1500 sx of "H" + add.

#### 5. Minimum Specifications for Pressure Control Equipment:

A 12" 5000 psi WP Shaffer, LWS Double Gate BOP will be installed on the 13 3/8" casing and tested per order #2.  
Request waiver to operate as a 3,000 psi WP system and test to the maximum expected surface pressure of 2,500 psi WP  
Casing and BOP will be tested before drilling out with the 11" and will be tested before drilling into the Wolfcamp.

6. MUD PROGRAM:	MUD WEIGHT	VIS.	W/L CONTROL
0' - 600': Fresh water/spud:	8.4 - 8.5 ppg	32 - 36	No W/L control
600' - 2,400': Fresh water mud:	10.0 - 10.1 ppg	29	No W/L control
2400' - 8,500': Fresh water mud:	8.4 - 8.5 ppg	28	No W/L control
8500' - 10,300': Brine mud:	10.0 - 10.1 ppg	29	No W/L control
10,300' - 10,840': Brine/C.Braine(starch):	9.5 - 10+ ppg	32 - 34	W/L control 12-15 cc +/-
10,840' - 11,700': XCD-LSRV-40000	9.5 - 10+ ppg	42 - 45	W/L control 8 cc +/-
(XCD subject to change)			

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

**8. Testing, Logging, and Coring Program:**

Drill Stem Tests: As deemed necessary.

Logging: Intermediate, Depending on mud log shows: 350' - 4350': (GR-CAL-CNL-LDT)(GR-CAL-DLL-MICRO)

T.D. - 2400: (GR-CAL-CNL-LDT)(GR-CAL-DLL-MICRO)

2400: - Surface: GR/CNL.

Coring: As dictated by logs.

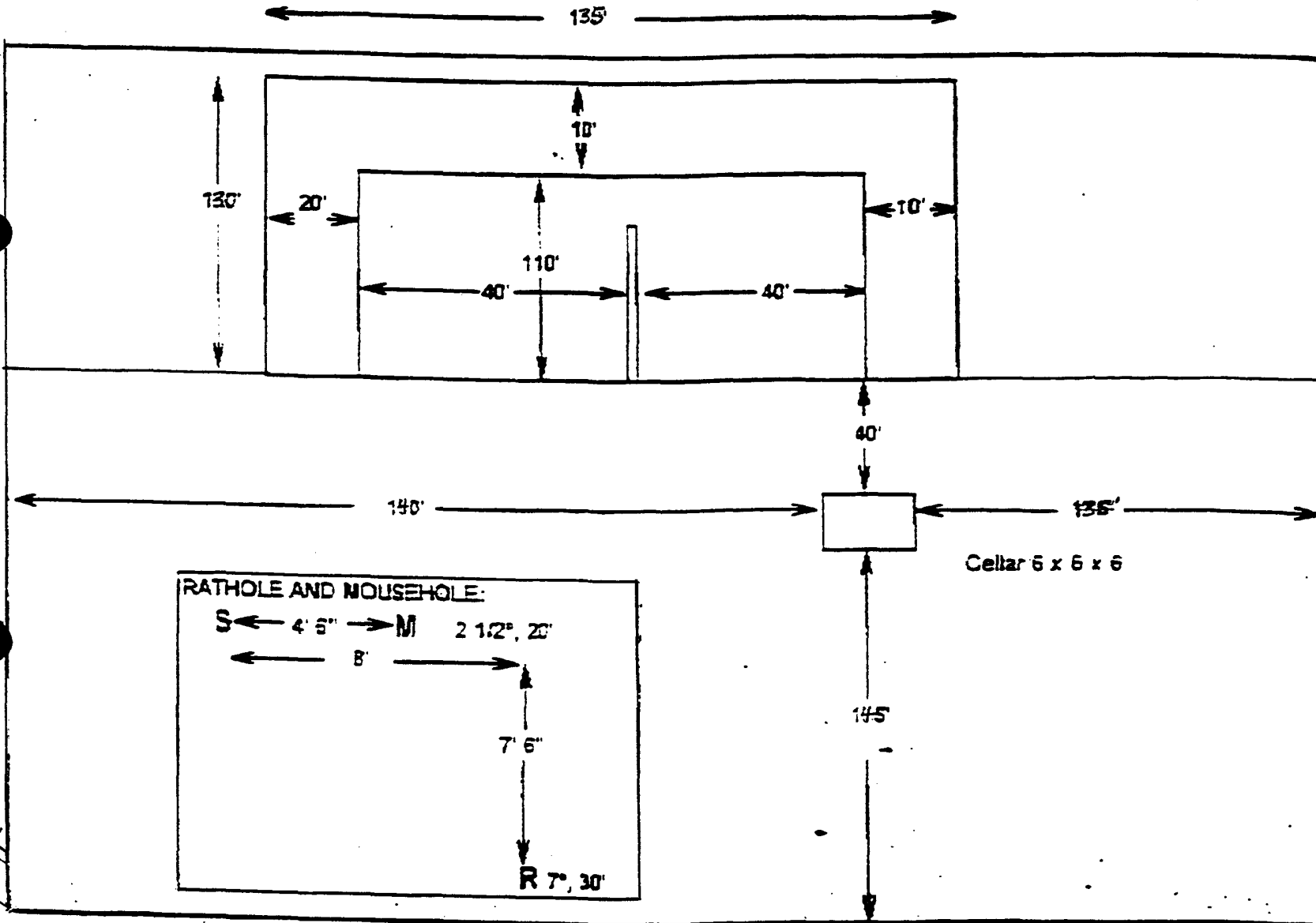
9. No abnormal pressures or temperatures are anticipated. In the event abnormal pressures are encountered the proposed mud program will be modified to increase the mud weight. Estimated evacuated BHP = 5148 psi and surface pressure of 2574 psi with a BH temperature of 177°.

10.  $H_2S$ : None expected. The Mud Log Unit will be cautioned to use a gas trap to detect  $H_2S$  and if any is detected the mud weight will be increased along with  $H_2S$  inhibitors sufficient to control the gas.

11. Anticipated starting date: July 10, 2007.

Anticipated completion of drilling operations: Approximately 30 - 40days.

# TMBR/Sharp Rig #22



W.S. PLAN  
ACCESS  
ROAD

EXHIBIT "D"  
CHI OPERATING, INC.  
Paradise 5 Federal, Well No. 1  
Pad & Pit Layout

# TIMBER//SHARP DRILLING

B.O.P. Equipment Intended for use on Rig # 24 & 22

Well To Be drilled for Timber/Sharp

\* All B.O.P. equipment is H2S Tlm \*

\* All Accumulators are Kookey Type-80 : Dual Power Electric/Air \*

\* Choke Manifold: \* See sheet 2

4" Valves : Cameron F/FC, Shaffer DB Hydraulic

2" Check Valve: Cameron Type R

2" Valves : Cameron or Shaffer

**Annular:** Shaffer Type: Spherical

**Annular PSI:** 3000

( If Shaffer: Spherical , If Hydril: Type GK )

**BOP Type** Shaffer LWS

( If Shaffer: LWS or SL, If Cameron: Type U )

**BOP Size:** 13 5/8" - 5000 PSI

**Rotating Head Type** Smith

**Rot-Head** Furnished By Timber

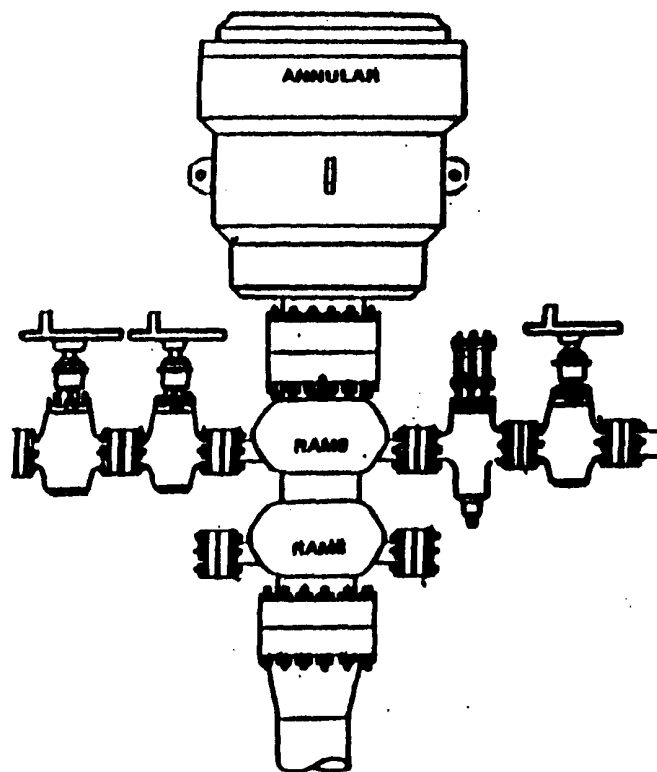
**Rams in top gate:** 4 1/2" pipe

**Rams in bottom:** Blinds

**Side Outlets used:**

Bottom X Top     

4" Valves on Tee



B.O.P. Equipment Intended for use on Rig # 24 & 22

Well To Be drilled for Timber/Sharp

\* All Valves (H2S) \*

**Choke Manifold:**

Pressure Rating 3,000 or 5,000 (as Req.)

1 - 4" Valves

2 - 2" Valves

2 - 2" Adjustable Chokes

**Valve Types Used:**

Cameron - F or FC

Shaffer - B Floseal

WKM - type 2

Chokes - Cameron H2 or TC unibolt

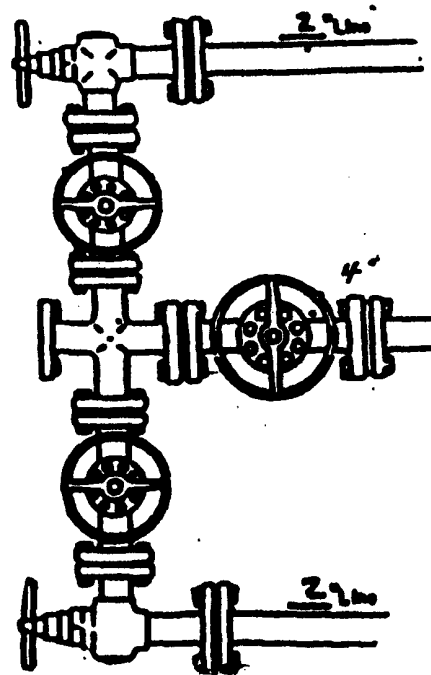


EXHIBIT "E"  
CHI OPERATING, INC.  
Paradise 5 Federal, Well No. 1  
BOP Specifications

## **MULTI POINT SURFACE USE AND OPERATIONS PLAN**

**CHI OPERATING, INC.**  
Paradise 5 Federal, Well No. 1  
1940' FSL & 780' FEL, Sec. 5-T21S-R27E  
Eddy County, New Mexico  
Lease No.: NM-98124  
(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 and environmental effects associated with the operations.

### **1. EXISTING ROADS:**

- A. Exhibit "A" is a portion of a BLM minerals map showing the location of the proposed well as staked. The well site location is approximately 8.6 road miles north of Carlsbad, NM. Traveling north of Carlsbad on CR Road #206 there will be approximately 5.6 miles of paved and 3.0 miles of gravel road.
- B. Directions: Travel north of Carlsbad on County Rd. 206 for approximately 5.6 miles to the Alkali Road turnoff, which is approximately .9 mile north of the CR 34. Turn northeast on Alkali Road for 1.8 miles. Turn southwest on a side road for 1.2 miles to the start of the proposed access road on the left. The proposed access will run east for 600 feet to the southwest 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 600 feet in length. The existing and proposed access roads are color coded on Exhibit "A".
- B. Construction: The proposed access road will be constructed by grading and topping with compacted caliche. The surface will be properly drained.
- C. Turnouts: None required.
- D. Culverts: None.
- E. Cuts and Fills: None required.
- F. Gates, Cattle guards: None required.
- G. Off lease right of way: None required.

### **3. LOCATION OF EXISTING WELLS:**

- A. Existing wells within a two-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, gas separation-process equipment and tank battery, if required, will be installed on the drilling pad. A 4.5" 2200 psi steel gas pipe line will be buried back to the Yates "C" Fed. #31 well site in the NW4SE4 of Sec. 5-T21S-R27E..

**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 access roads

**6. SOURCE OF CONSTRUCTION MATERIALS:**

- A. Caliche for surfacing the proposed access road and well site pad will be obtained from the location, if available, or from a State pit located in the NE4SE4 Sec. 36 T20S-R27E. No surface materials will be disturbed except those necessary for actual repairing, grading and leveling of the drill site and access road.

**7. METHODS OF HANDLING WASTE DISPOSAL:**

- A. Drill cuttings will be disposed of in the reserve pits.
- B. Drilling fluids will be allowed to evaporate in the reserve pits until the pits are dry.
- C. All pits will be fenced with normal fencing materials to prevent livestock from entering the area.
- 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 has been staked and flagged, 500' X 500'.
- B. Mat Size: 275' X 185', plus 130' X 135' reserve pits on the north.
- C. Cut & Fill: There will a 3-4 foot cut on the north with fill to the south and southeast.
- D. The surface will be topped with compacted caliche and the reserve pits will be plastic lined.



**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. Pits will be filled and the location cleaned of all trash and junk to leave the well site in an aesthetically pleasing a condition as possible.
- B. Any unguarded pits containing fluids will be fenced until they are filled.
- 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. All pits will be filled and leveled as soon as they are dry enough to be worked.

**11. OTHER INFORMATION:**

- A. Topography: The proposed well site and access road are located on an overall 1.5% slope to the east from an elevation of 3247'.
- B. Soil: The topsoil at the well site is a fine sandy loam soil of the Tonuco-Berino loamy sands land series. There is a possibility of fractured, platy, indurated caliche at a depth of approximately 20 inches.
- C. Flora and Fauna: The vegetation consists of a sparse grass cover of dropseed, three awn, and bush muhly along with plants of broomweed, cedar and other woody plants, yucca, cacti and miscellaneous weeds and wildflowers. The wildlife consists of rabbits, coyotes, rattlesnakes, lizards, dove, quail and other wildlife typical of the semi-arid desert land.
- D. Ponds and Streams: Alkali Lake is approximately .7 mile northeast of the location.
- E. Residences and Other Structures: None in the immediate vicinity except oilfield equipment on well locations.
- F. Land Use: Cattle grazing.
- G. Surface Ownership: The proposed well site and access road is on Federal surface and minerals.
- H. There was evidence of archaeological, historical or cultural sites in the staked area consisting of 5 I.F.'s of flakes and small pieces of burnt caliche. An archaeological survey was conducted by Archaeological Survey Consultants, P.O. Box 2285, Roswell, NM 88202, and their report # 05-045 was submitted to the appropriate government agencies on June 27, 2005.

**12. OPERATOR'S REPRESENTATIVE:**

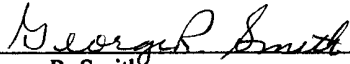
- A. The field representative for assuring compliance with the approved use and operations plan is as follows:

John Qualls  
Chi Operating, Inc.  
P. O. Box 1799  
Midland, Texas 79701  
Office Phone: (432) 685-5001  
Home Phone: (432) 684-8825

**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.

April 11, 2007

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

## **Conditions of Approval Cave and Karst**

Lease No. NM-98124  
Chi Operating, Inc  
Paradise 5 Fed. #1

### **Cave/Karst Surface Mitigation**

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

#### **Berming:**

Any tank batteries will be constructed and bermed large enough to contain any spills that may occur.

Bermed areas will be lined with rip-stop padding to prevent tears or punctures in liners and lined with a permanent 20 mil plastic liner.

### **Cave/Karst Subsurface Mitigation**

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

#### **Rotary Drilling with Fresh Water:**

Rotary drilling techniques in cave or karst areas will include the use of fresh water as a circulating medium in zones where caves or karst features are expected. Use depth to the deepest expected fresh water as listed in the geologist report.

#### **Casing:**

All casing will meet or exceed National Association of Corrosion Engineers specifications pertaining to the geology of the location and be run to American Petroleum Institute and BLM standards.

#### **Lost Circulation:**

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

Regardless of the type of drilling machinery used, if a bit drops of four feet or more and circulation losses greater than 75 percent occur simultaneously while drilling in any cave-bearing zone, drilling operations will immediately stop and the BLM will be notified by the operator. The BLM will assess the consequences of the situation and work with operator on corrective actions to resolve the problem.

#### **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.

**Record Keeping:**

The Operator will track customary drilling activities, including the rate of penetration, pump pressure, weight on bit, bit drops, percent of mud returns, and presence of absence of cuttings returning to the surface. As part of customary record keeping, each detectable void or sudden increase in the rate of penetration not attributable to a change in the formation type should be documented and evaluated as it is encountered.

## CONDITIONS OF APPROVAL - DRILLING

Operator's Name: Chi Operating, Inc  
Well Name & No. Paradise 5 Federal # 1  
Location: 1940'FSL, 780'FEL, SEC5, T21S, R27E, Eddy County, NM  
Lease: NM-98124

### I. DRILLING OPERATIONS REQUIREMENTS:

A. The Bureau of Land Management (BLM) is to be notified a minimum of 4 hours in advance, at the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (505) 361-2822 - for wells in Eddy County, in sufficient time for a representative to witness:

1. Spudding
2. Cementing casing: 13.375 inch 9.625 inch 5.5 inch
3. BOP tests

B. A Hydrogen Sulfide (H<sub>2</sub>S) Drilling Plan is N/A.

C. 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.

D. Gamma-Ray/Neutron logs shall be run from the base of the Salado Formation to the surface; cable speed not to exceed 30 feet per minute.

E. If floor controls are required, (3M or Greater) 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.

### II. CASING:

A. The 13.375 inch surface casing shall be set at 600 feet and cement circulated to the surface.

1. 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.
2. Wait on Cement (WOC) time for a primary cement job will be a minimum of 12 hours for a non-water basin, 18 hours for a water basin, 24 hours in the potash area, or 500 pounds compression strength, which ever is greater. (This is to include the lead cement)
3. WOC time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds of compression strength, which ever is greater.
4. If cement falls back, Remedial cementing shall be completed prior to drilling out that string.

B. The minimum required fill of cement behind the 9.625 inch intermediate casing is circulate cement to the surface. If cement does not circulate see A.1 thru 4.

C. The minimum required fill of cement behind the 5.5 inch production casing is cement shall extend upward a minimum of 200 feet above the base of the intermediate casing string, or if circulation is lost, to the most shallow lost circulation zone in the intermediate casing well bore..

D. If hard band 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.

### **III. PRESSURE CONTROL:**

A. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2.

B. Minimum working pressure of the blowout preventer and related equipment (BOPE) required for drilling the intermediate casing well bore shall be 2000 psi. Minimum working pressure of the blowout preventer and related equipment (BOPE) required for drilling below the 9.625 inch casing shall be 5000 psi.

C. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.

1. The tests shall be done by an independent service company.
2. The results of the test shall be reported to the appropriate BLM office.
3. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of the independent service company test will be submitted to the appropriate BLM office.
4. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi in accordance with API RP 53. The test will be held for a minimum of 10 minutes if the test is done with a test plug and 30 minutes without a test plug.
5. BOP/BOPE must be tested by an independent service within 500 feet of the top of the **Wolfcamp** Formation. This test does not exclude the test prior to drilling out the casing shoe as per onshore order No. 2.
6. A variance to test the \_\_\_\_\_ to the reduced pressure of \_\_\_\_psi with the rig pumps is approved the BOP/BOPE must be tested by an independent service company.

### **IV. 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. Monitoring equipment shall consist of the following:

1. Recording pit level indicator to indicate volume gains and losses.
2. Mud measuring device for accurately determining the mud volumes necessary to fill the hole during trips.
3. Flow-sensor on the flow line to warn of abnormal mud returns from the well.

### **V. Hazards:**

1. Our geologist has indicated that there is high Cave / Karst potential.
2. Our geologist has indicated that there is potential for lost circulation in the Delaware, Bone Springs and the Capitan Reef.
3. Our geologist has indicated that there is potential for abnormal pressure in the Wolfcamp, Strawn, Atoka and Morrow formations.
- 4.

**Engineering may be contacted at 505-706-2779 for variances if necessary.**

**FWright 4/17/07**