

ATS-07-82

# Split Estate

OCD-ARTESIA

Form 3160-3  
(April 2004)

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

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

## APPLICATION FOR PERMIT TO DRILL OR REENTER

|  |  |  |  |
|--|--|--|--|
| 1a. Type of work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER   |  | 5. Lease Serial No.<br>NM NM 115995                                      |  |
| 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<br>Parallel Petroleum Corporation <b>230387</b>  |  | 7. If Unit or CA Agreement, Name and No.                                 |  |
| 3a. Address <b>1004 North Big Spring, Suite 400<br/>Midland, Texas</b>   |  | 8. Lease Name and Well No. <b>36491</b><br>Box Office 1920-26 Fed Com #1 |  |
| 3b. Phone No. (include area code)<br><b>432/684-3727</b>   |  | 9. API Well No.<br><b>30-005-63930</b>                                   |  |
| 4. Location of Well (Report location clearly and in accordance with any State requirements.)*<br>At surface <b>1303' FNL AND 240' FWL</b><br>At proposed prod. zone <b>1303' FNL and 660' FEL</b>                      |  | 10. Field and Pool, or Exploratory<br><b>Wolfcamp</b>                    |  |
| 14. Distance in miles and direction from nearest town or post office*<br><b>13 miles south of Hope, New Mexico</b>   |  | 11. Sec., T. R. M. or Blk. and Survey or Area<br><b>26, T19S, R20E</b>   |  |
| 15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) <b>240'</b>  | 16. No. of acres in lease<br><b>1760</b>                   | 17. Spacing Unit dedicated to this well<br><b>320</b>                    |  |
| 18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. <b>2400'</b>  | 19. Proposed Depth<br><b>5000'</b>                         | 20. BLM/BIA Bond No. on file<br><b>NMB000265</b>                         |  |
| 21. Elevations (Show whether DF, KDB, RT, GL, etc.)<br><b>GL 4706'</b>   | 22. Approximate date work will start*<br><b>05/01/2007</b> | 23. Estimated duration<br><b>30 days</b>                                 |  |

Month-Year  
MAY 1 2007  
OCD-ARTESIA, NM

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.
- 2. A Drilling Plan.
- 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).
- 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
- 5. Operator certification
- 6. Such other site specific information and/or plans as may be required by the authorized officer.

25. Signature *Deane Durham* Name (Printed/Typed) **Deane Durham** Date **3-8-07**

Title **Engineer, Parallel Petroleum Corporation**

Approved by (Signature) *Ts/ James Stovall* Name (Printed/Typed) \_\_\_\_\_ Date **APR 30 2007**

Title **ACTING FIELD MANAGER** Office **BLM-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. **APPROVAL FOR 1 YEAR**

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)

Roswell Controlled Water Basin

### SEE ATTACHED FOR CONDITIONS OF APPROVAL

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

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

**STATEMENT ACCEPTING RESPONSIBILITY FOR OPERATIONS**

Parallel Petroleum Corporation  
1004 N. Big Spring St.  
Suite 400  
Midland, Texas 79701

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

Lease No: NM NM 115995

Legal Description of Land: Box Office 1920-26 Fed Com #1  
SHL: 1303' FNL AND 240' FWL, SEC 26, T19S, R20E  
Chaves County, New Mexico

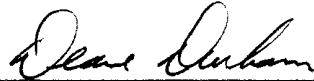
Formation(s) (if applicable:

Bond Coverage: \$25,000 statewide bond of Parallel Petroleum Corporation

BLM Bond File No: **NMB000265**

3-8-07

Date



Name: Deane Durham

Title: Engineer

DISTRICT I  
-1625 N. French Dr., Hobbs, NM 88240

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

DISTRICT II  
1301 W. Grand Avenue, Artesia, NM 88210

OIL CONSERVATION DIVISION  
1220 South St. Frances Dr.  
Santa Fe, NM 87505

DISTRICT III  
1000 Rio Brazos Rd., Artec, NM 87410

DISTRICT IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

|               |   |                                   |
|---------------|---|-----------------------------------|
| API Number    | Pool Code<br>96086                              | Pool Name<br>Wildcat; Wolfeamp SA |
| Property Code | Property Name<br>BOX OFFICE 1920-26 FED COM     | Well Number<br>1                  |
| OGRID No.     | Operator Name<br>PARALLEL PETROLEUM CORPORATION | Elevation<br>4706'                |

Surface Location

| UL or lot No. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|---------------|---------|----------|-------|---------|---------------|------------------|---------------|----------------|--------|
| D             | 26      | 19 S     | 20 E  |         | 1303          | NORTH            | 240           | WEST           | CHAVES |

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 |
|---------------|---------|----------|-------|---------|---------------|------------------|---------------|----------------|--------|
| A             | 26      | 19 S     | 20 E  |         | 1303          | NORTH            | 660           | EAST           | CHAVES |

| Dedicated Acres | Joint or Infill | Consolidation Code | Order No. |
|-----------------|-----------------|--------------------|-----------|
| 320             |                 |                    |           |

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 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 a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

*Deane Durham* 3-8-07  
Signature Date

Deane Durham  
Printed Name

**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.

October 30, 2006  
Date of Survey

Signature & Seal of Professional Surveyor LVA

*M*

W.O. Num. 2006-1035

Certificate No. MACON McDONALD 12185

**Coordinate Table**

| Description                   | Plane Coordinate |
|-------------------------------|------------------|
| Box Office 1920-26 Fed Com #1 | X = 333,182.0    |
| Surface Location              | Y = 595,174.1    |
| Box Office 1920-26 Fed Com #1 | X = 333,602.3    |
| Penetration Point             | Y = 595,172.0    |
| Box Office 1920-26 Fed Com #1 | X = 337,558.6    |
| Bottom Hole Location          | Y = 595,152.0    |

NOTE:

1) Plane Coordinates shown hereon are Transverse Mercator Grid and Conform to the "New Mexico Coordinate System", New Mexico East Zone, North American Datum of 1927, Distances shown hereon are mean horizontal surface values.

**ATTACHMENT TO FORM 3160-3  
BOX OFFICE 1920-26 FED COM #1  
Surface Hole Location  
1303 FNL AND 240 FWL, SEC 26, 19S, 20E  
Bottom Hole Location  
1303 FNL AND 660 FEL, SEC 26, 19S, 20E  
CHAVES COUNTY, NEW MEXICO**

**DRILLING PROGRAM**

**This well is designed as a horizontal test in the Wolfcamp formation.**

1. GEOLOGIC NAME OF SURFACE FORMATION

San Andres

2. ESTIMATED TOPS OF IMPORTANT GEOLOGIC MARKERS

Glorieta 1739'(+2967')  
Tubb 2745'(+1961')  
Yeso 2885' (+1821')  
Abo Shale 3385' (+1321')  
Abo Carbonate 3499' (+1207')  
Wolfcamp 4330' (+376')  
Wolfcamp Shale 4430'(+276')

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

Fresh water            790'  
Oil and Gas            Wolfcamp 4330' (+376')  
No H<sub>2</sub>S gas should be encountered

4. CASING AND CEMENTING PROGRAM

| <u>Casing Size</u> | <u>From</u> | <u>To</u>   | <u>Weight</u> | <u>Grade</u> | <u>Joint</u> |
|--------------------|-------------|-------------|---------------|--------------|--------------|
| 16" conductor      | 0'          | 120'        |               |              |              |
| 8 5/8"             | 0'          | 1500'       | 24#           | J-55         | STC          |
| 5 1/2"             | 0'          | TOTAL DEPTH | 17#           | N-80         | LTC          |

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

**BOX OFFICE 1920-26 FED COM #1**

**Page 2**

8-5/8" slurry: Lead: 225 sacks (50:50) Poz (Fly Ash): Class C + 5% bwow Sodium Chloride + 10% bwoc Bentonite + 151.7% fresh water. Tail: 235 sacks Class C + 1% bwoc Calcium Chloride + 56.3% fresh water

Note: If cement does not circulate to surface, notify BLM. A temperature survey will be required. Top out to surface with 1" pipe in the annulus.

Note: 5-1/2" Acid-soluble cement per completion procedure.

**Drilling Procedure**

- a. Set 16" conductor pipe as deep as possible up to 120' with a rathole unit.
- b. Drill 11" surface hole to an approximate depth of 1500', using fresh water and viscous sweeps for hole cleaning. Set 8 5/8", 24# J-55 casing with 460 sx, Class C cement (lead will be 50/50 Poz, circulate to surface, 1" if necessary).
- c. Set slips on 8 5/8" CSG. Cut 8 5/8" CSG and NU & test BOP.
- d. Drill 7 7/8" production hole to approximately 4,600', using cut brine to an approximate depth of 3,300' and a polymer mud system to TD.
- e. Run open-hole logs
- f. Set CMT kick-off plug.
- g. Dress CMT to kick off point at approximately 3,900'.
- h. Build angle at 13.3 degrees per 100' to 90 degrees and hold.
- i. Drill 7 7/8" horizontal drain hole to a terminus of 660' FEL approximately 8,525'.
- j. Run 5 1/2" 17# N-80 CSG to TD. Cement with 750 sx Class C Acid Soluble
- k. Circulate to surface or run temperature survey to verify tie in to surface casing.
- l. Rig Down Rotary Tools

see  
COA

5. MINIMUM SPECIFICATIONS FOR PRESSURE CONTROL

The BOP stack will consist of a 3,000 psi working pressure, dual ram type preventer and annular.

A BOP sketch is attached.

6. TYPES AND CHARACTERS OF THE PROPOSED MUD SYSTEM

- a. Spud and drill to 1,500' with 8.3 ppg Fresh Water system and viscous sweeps for hole cleaning.
- c. The production section from 1,500' to 3,300' will utilize a cut brine mud system from 8.8 to 9.2 ppg.
- d. The remaining production section from 3,300' to TD will be a polymer mud system with mud weight (8.8 – 9.6) sufficient to control formation pressure anticipated to be approximately 1,900 psi.

7. AUXILIARY WELL CONTROL AND MONITORING EQUIPMENT

None required.

8. LOGGING, TESTING, AND CORING PROGRAM

Mud logs as well as CNL/LDT/CAL/GR logging is planned. Additional open-hole logs, drill stem tests, cores and sidewall cores are possible.

9. ABNORMAL CONDITIONS, PRESSURES, TEMPERATURES & POTENTIAL HAZARDS

None anticipated.

BHP expected to be 1,900 psi.

10. ANTICIPATED STARTING DATE:

It is planned that operations will commence around third quarter of 2007 with drilling and completion operation lasting about 35 days.

# MINIMUM BOP SCHEMATIC

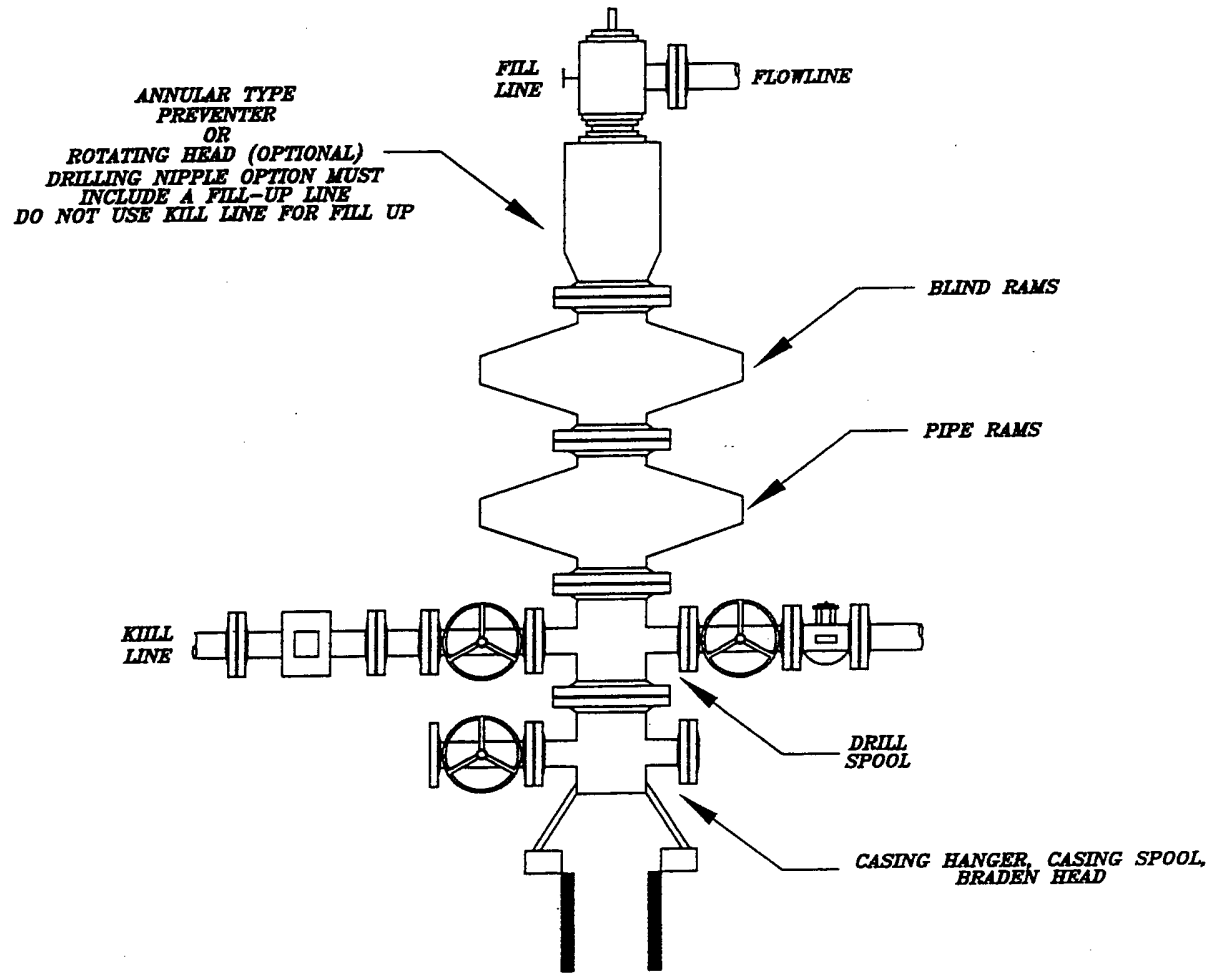


EXHIBIT I

PARALLEL PETROLEUM  
BOP SCHEMATIC

HIGHLANDER ENVIRONMENTAL CORP.  
MIDLAND, TEXAS

DATE:  
7/26/05  
DWN. BY:  
JJ  
FILE:  
C:\PROGRAMS\BOP SCHEMATIC

NOT TO SCALE

# CHOKE MANIFOLD 5M SERVICE

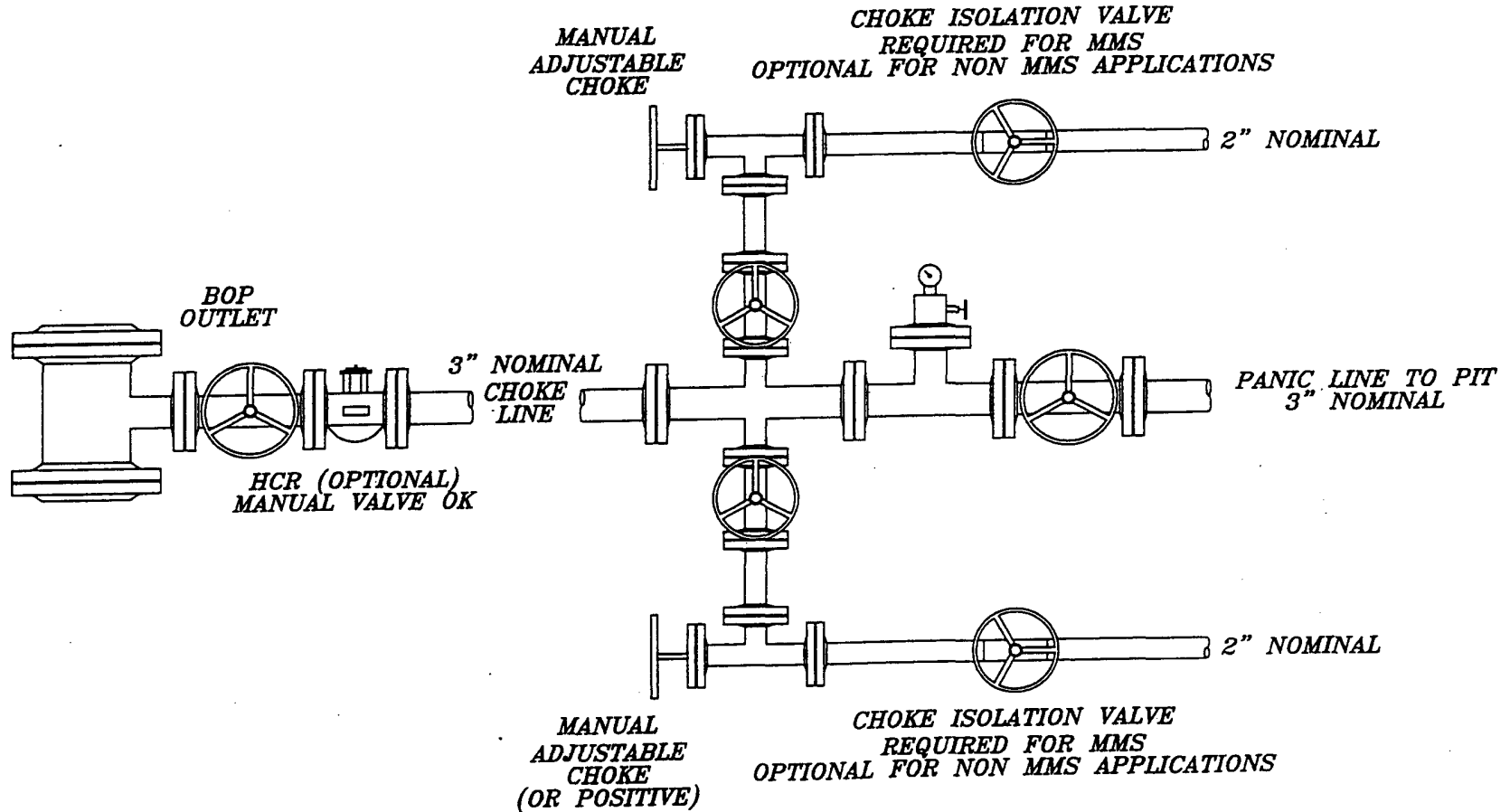


EXHIBIT J

DATE:  
8/17/05  
DWN BY:  
JJ  
FILE:  
C:\PPE\5M\5M CHOKE MANIFOLD

**PARALLEL PETROLEUM**  
**CHOKE MANIFOLD**

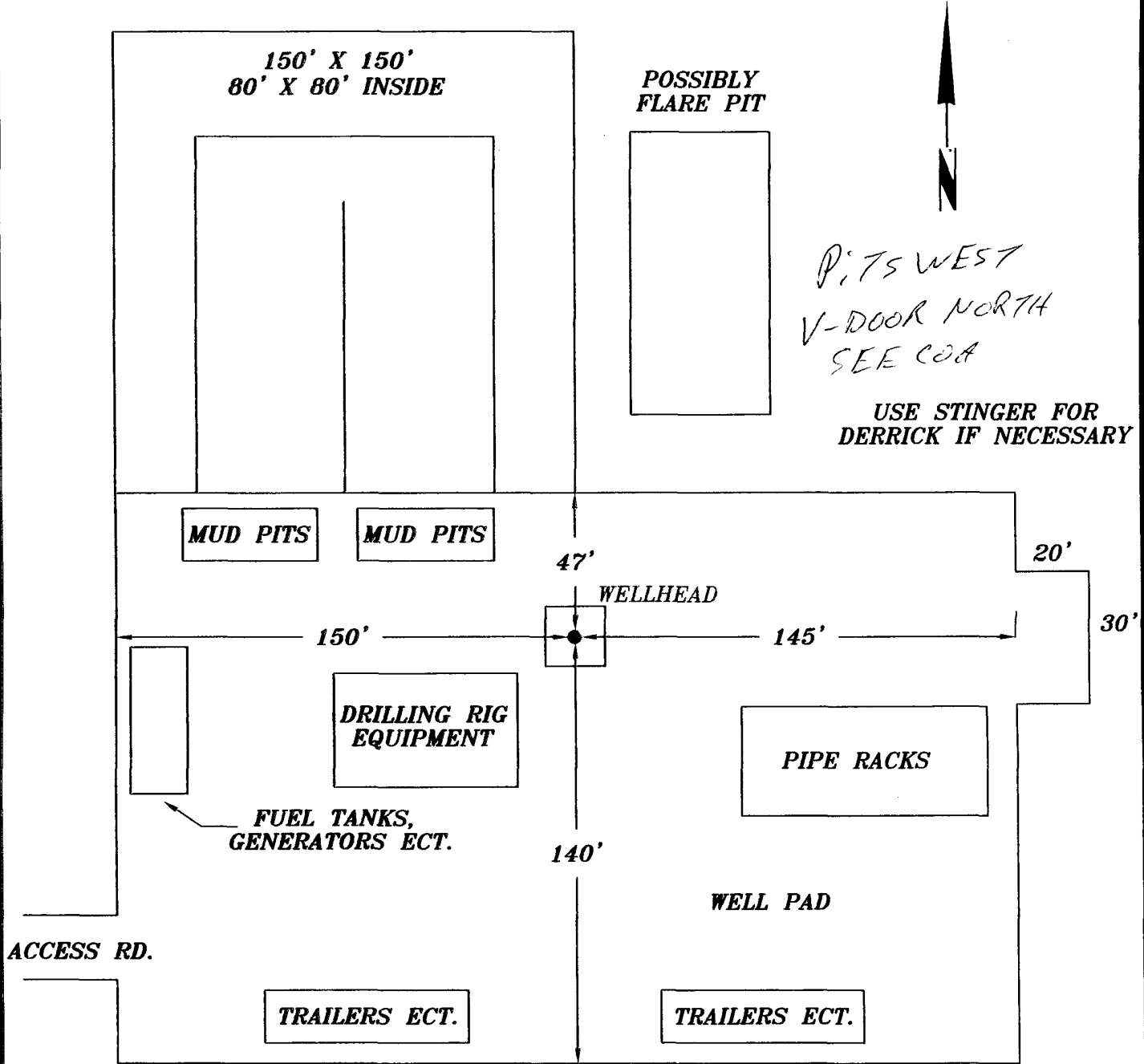
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**HIGHLANDER ENVIRONMENTAL CORP.**  
**MIDLAND, TEXAS**

NOT TO SCALE



**DOUBLE HOESHOE RESERVE PIT**



PITS WEST  
V-DOOR NORTH  
SEE COA

USE STINGER FOR  
DERRICK IF NECESSARY

**EXHIBIT B**

DATE:  
11/3/05  
DWN. BY:  
JJ  
FILE:  
C:\PARALLEL\2005\DRILLING RIG LAYOUT-

**PARALLEL PETROLEUM  
DRILLING RIG LAYOUT**  
**HIGHLANDER ENVIRONMENTAL CORP.  
MIDLAND, TEXAS**

NOT TO SCALE

**PARALLEL SURVEY CALCULATION PROGRAM**  
**PETROLEUM CORPORATION**

|                    |                                |                          |     |
|--------------------|--------------------------------|--------------------------|-----|
| <b>OPERATOR:</b>   | Parallel Petroleum Corporation | <b>Supervisors:</b>      |     |
| <b>WELL:</b>       | Box Office 1920-26 FED COM #1  |                          |     |
| <b>LOCATION:</b>   | N/2 Sec. 26 T-19-S R-20-E      |                          |     |
| <b>API NUMBER:</b> |                                |                          |     |
| <b>COMMENTS:</b>   |                                |                          |     |
|                    |                                | <b>MAG DEC. (-/+)</b>    |     |
|                    |                                | <b>GRID CORR. (-/+)</b>  |     |
|                    |                                | <b>TOTAL CORR. (-/+)</b> | 0.0 |

**DATE:** 02/12/07      **TIME:** 1:20 PM      TRUE TO GRID

| MINIMUM CURVATURE CALCULATIONS(SPE-3362) |      |      |      |        |        |     |        |      | PROPOSED DIRECTION |          | 90.0     |          | TARGET TRACKING TO CENTER |  |
|--|------|------|------|--------|--------|-----|--------|------|--------------------|----------|----------|----------|---------------------------|--|
| SVY                                      | MD   | INC  | GRID | VERT   |        |     |        |      | DLS/               | ABOVE(+) | RIGHT(+) | BELOW(-) | LEFT(-)                   |  |
| NUM                                      |      |      | AZM  | TVD    | SECT   | N-S | E-W    |      | 100                |          |          |          |                           |  |
| TIE                                      | 3800 | 0.0  | 0.0  | 3800.0 | 0.0    | 0.0 | 0.0    |      |                    | 530.0    | 0.0      |          |                           |  |
| 1  | 3900 | 0.0  | 0.0  | 3900.0 | 0.0    | 0.0 | 0.0    | 0.0  | 0.0                | 430.0    | 0.0      |          |                           |  |
| 2  | 3910 | 1.3  | 90.0 | 3910.0 | 0.1    | 0.0 | 0.1    | 13.3 | 13.3               | 420.0    | 0.0      |          |                           |  |
| 3  | 3920 | 2.7  | 90.0 | 3920.0 | 0.5    | 0.0 | 0.5    | 13.3 | 13.3               | 410.0    | 0.0      |          |                           |  |
| 4  | 4575 | 90.0 | 90.0 | 4329.7 | 429.7  | 0.0 | 429.7  | 13.3 | 13.3               | 0.3      | 0.0      |          |                           |  |
| 5  | 8525 | 90.0 | 90.0 | 4329.7 | 4379.7 | 0.0 | 4379.7 | 0.0  | 0.0                | 0.3      | 0.0      |          |                           |  |

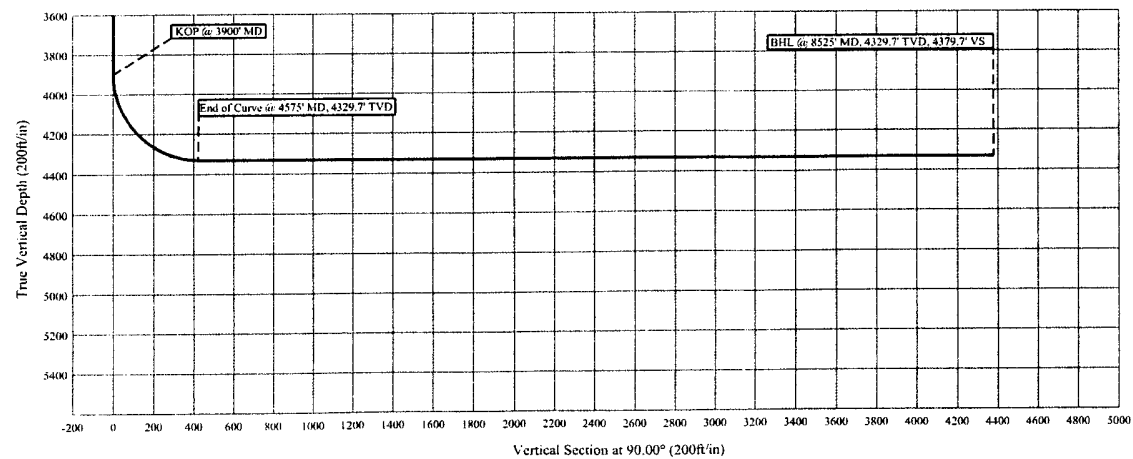
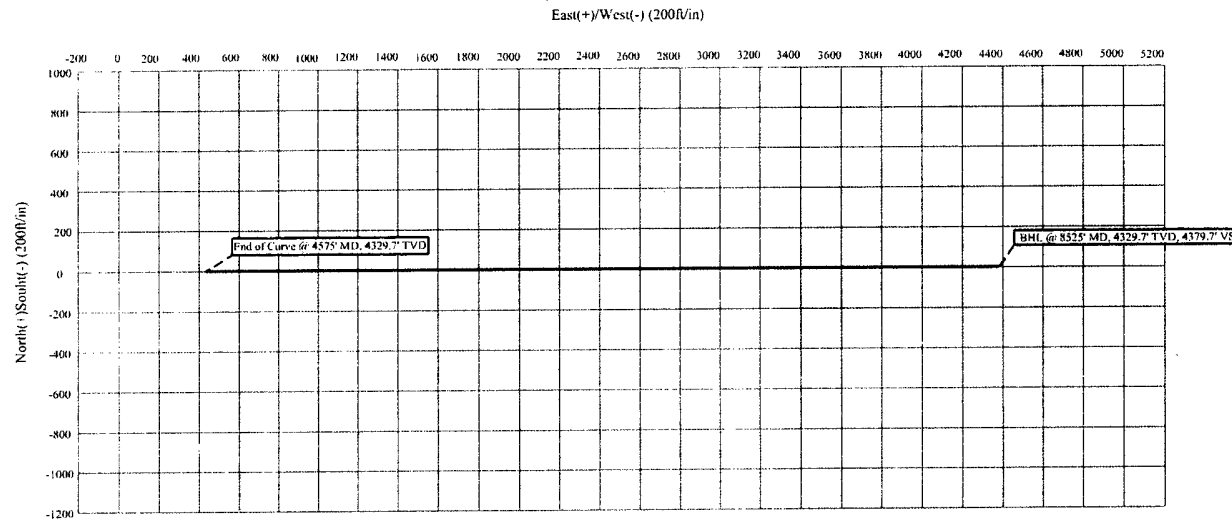
KOP @ 3900' MD  
 BUR = 13.3 DEG per 100 FT  
 End Curve @ 4575' MD, 4329.7' TVD  
 BHL @ 8525' MD, 4329.7' TVD, 4379.7' VS

# Parallel Petroleum Corp.

## COMPANY DETAILS

Parallel Petroleum Corp.  
1004 N. Big Spring, Ste 400  
Midland, Texas 79701

Box Office 1920-26 Fed. Com. #1  
N/2 Sec. 26, T-19-S, R-20-E  
Chaves County, New Mexico



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

**PARALLEL PETROLEUM CORPORATION  
BOX OFFICE 1920-26 FED COM #1  
SHL: 1303' FNL AND 240' FWL, SEC 26, T19S, R20E  
BHL: 1303' FNL AND 660' FEL, SEC 26, T19S, R20E  
CHAVES COUNTY, NEW MEXICO**

LOCATED:

12 miles South of Hope, New Mexico

OIL & GAS LEASE:

NM NM 115995

RECORD LESSEE:

Upland Corporation  
P.O. Box 582  
Midland, TX 79705

BOND COVERAGE:

\$25,000 statewide bond # NMB000265 of Parallel Petroleum Corporation

ACRES IN LEASE:

1760

SURFACE OWNER:

State of New Mexico / united States - BLM

SURFACE TENANT:

Michael Bennett Ranch  
Hope, NM  
505-484-3687

POOL:

Primary Objective - Wolfcamp

Per D. Durham 4-26-07

**BOX OFFICE 1920-26 FED COM #1**

**Page 2**

EXHIBITS:

- A. Area Road Map
- B. Drilling Rig Layout
- C. Pad Elevation Plat
- D. Vicinity Map
- E. Area Production Map
- F. Location Topographic & Location Verification Maps
- G. Well Location & Acreage Dedication Map (NMOCD Form C-102)
- H. NMOCD Form C-144, Pit Registration (Original forwarded to NMOCD)
- I. Blow Out Preventer (BOP) Schematic
- J. Choke Manifold Schematic
- K. Estimated Horizontal Survey Calculation Program
- L. Estimated Wellbore Plot

1. EXISTING ROADS

- A. Exhibits A and D are area road maps showing existing roads in the vicinity of the site.
- B. Exhibit F and F-1 is a topographic map of the location showing existing roads and the proposed new access road.

2. ACCESS ROADS

A. Length and Width

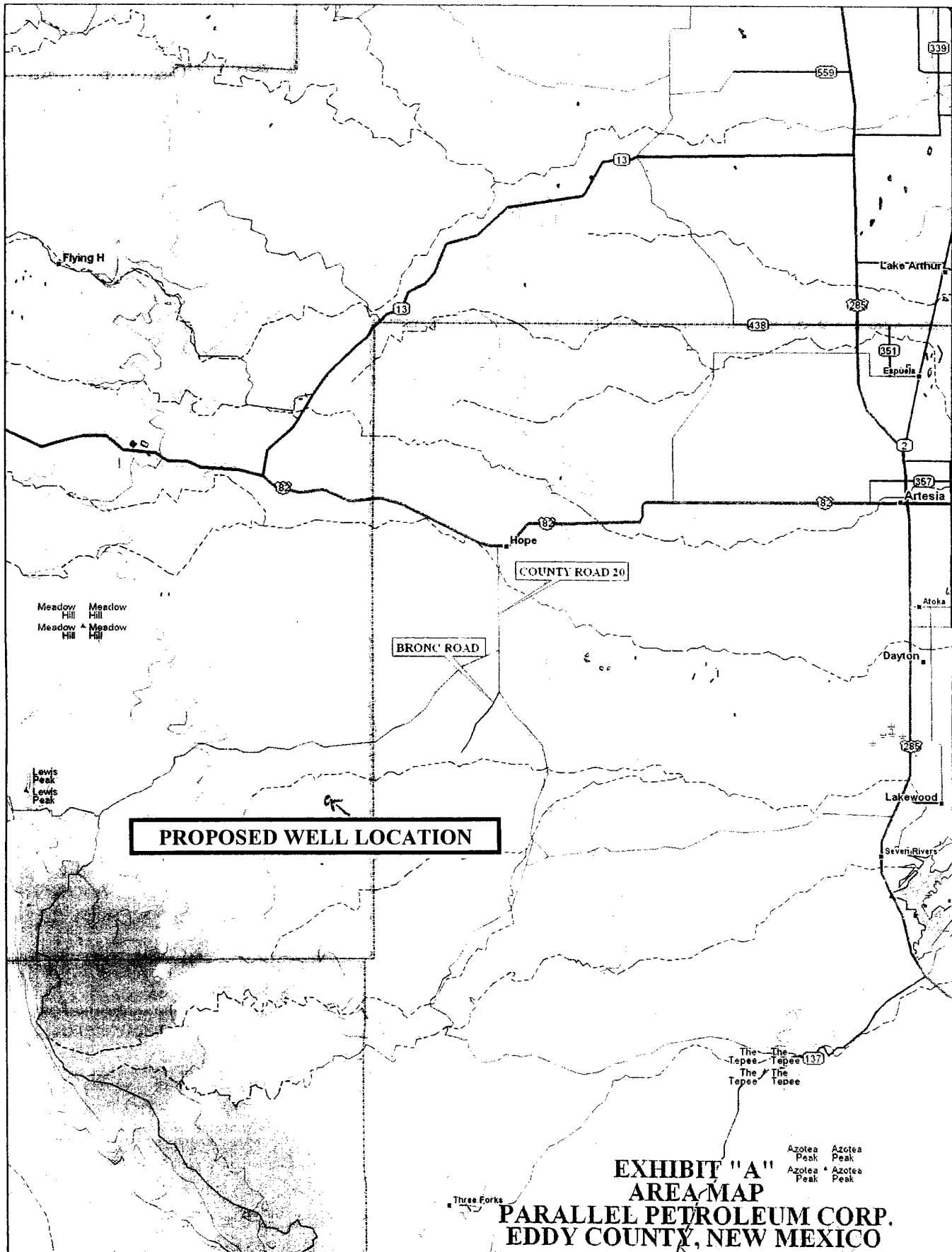
The access road will be built as shown on Exhibit F and F-1. The access road will come off County Road 20 and go west on an existing caliche road for approximately 1.25 mile. At the cattle guard turn left or west on two track road and go .75 mile to a fence and gap gate that is located on the Chaves County, Eddy County line. A cattle guard will be installed at this gate location. Then continue on west approximately 2 miles to access road on right, (up to this point, the access road has been previously permitted and ROW secured for the Dale Evans 1920-26 State Com #1) turn north and go north and west to the location. The new access road for this location will be 7586' in length and will be surfaced with caliche and will be 16' to 24' wide.

B. Surface Material

Caliche from a commercial source.

C. Maximum Grade

Less than five percent.

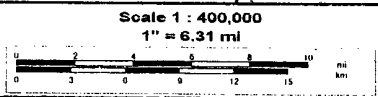


**PROPOSED WELL LOCATION**

**EXHIBIT "A"  
AREA MAP  
PARALLEL PETROLEUM CORP.  
EDDY COUNTY, NEW MEXICO**



© 2002 DeLorme. 3-D TopoQuads ©. Data copyright of content owner.  
www.delorme.com



TN  
MN  
9.4°E

SECTION 26, TOWNSHIP 19 SOUTH, RANGE 21 EAST, N.M.P.M.

CHAVES COUNTY

NEW MEXICO

L-2006-1035-A

4693.1'

600'

4698.2'

7586 L.F. OF NEW ACCESS ROAD

150' NORTH OFFSET  
Elev. 4704.2'

BOX OFFICE 1920-26 FED COM #1

Gr. El. 4706.1'

Lat. 32°38'06.24" N  
Long. 104°52'30.83" W  
(NAD '27)

150' WEST OFFSET  
Elev. 4712.2'

150' EAST OFFSET  
Elev. 4698.0'

SECTION 27  
SECTION 26

600'

600'

150' SOUTH OFFSET  
Elev. 4706.1'

4723.7'

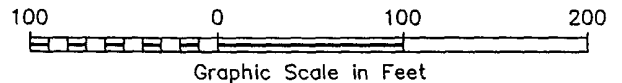
600'

4680.7'



**DRIVING DIRECTIONS**

FROM THE INTERSECTION OF U.S. HIGHWAY 82 AND STATE HIGHWAY 449 IN HOPE, NM GO SOUTH ON SAID STATE HIGHWAY 449 2.2 MILES TO THE END OF SAID STATE HIGHWAY 449 AND THE BEGINNING OF COUNTY ROAD 12, THEN CONTINUE SOUTH ANOTHER 4.8 MILES (6.9 TOTAL) TO A FORK IN THE ROAD, THE INTERSECTION OF SAID COUNTY ROAD 12 AND A LEASE ROAD HEADING SOUTHWEST (RIGHT FORK), THEN GO SOUTHWEST ALONG SAID LEASE ROAD 7.0 MILES TO AN ACCESS ROAD ON WEST (RIGHT) SIDE OF ROAD, THEN GO NORTHWEST ALONG SAID ACCESS ROAD 0.9 MILE TO THE OUT BOX 1921-29 FEDERAL #1 WELL PAD, THEN FROM THE WEST LINE OF SAID WELL PAD GO NORTHWEST 0.4 MILE TO AN NORTHEAST-SOUTHWEST ACCESS ROAD, THEN GO SOUTHWEST ON SAID ACCESS ROAD 2.5 MILES TO A NEW ACCESS ROAD ON NORTH (RIGHT) SIDE OF SAID ACCESS ROAD, THEN GO NORTH AND WEST 1.4 MILES TO THE PROPOSED LOCATION.



**PARALLEL PETROLEUM CORPORATION**

**BOX OFFICE 1920-26 FED COM #1**

Located 1303' FNL & 240' FWL, Section 26  
Township 19 South, Range 20 East, N.M.P.M.  
Chaves County, New Mexico

|                    |                         |
|--------------------|-------------------------|
| Drawn By: LVA      | Date: November 17, 2006 |
| Scale: 1"=100'     | Field Book: 348 / 32-38 |
| Revision Date:     | Quadrangle: Encino Draw |
| W.O. No: 2006-1035 | Dwg. No.: L-2006-1035-A |



110 W. LOUISIANA, STE. 110  
MIDLAND TEXAS, 79701  
(432) 687-0865 - (432) 687-0868 FAX

**PARALLEL**  
Petroleum Corporation

1004 North Big Spring, Suite 400 • Midland, TX 79701 • Ph: 432-684-3727 • Fax: 432-685-6580

June 12, 2006

Mr. Bryan Arrant  
New Mexico Oil Conservation Division  
1301 W. Grand Ave.  
Artesia, New Mexico 88210

Re: Hydrogen Sulfide Potential  
South Hope Area Wolfcamp Program  
SW Chaves and Eddy Counties, New Mexico

Dear Mr. Arrant:

Parallel Petroleum Corporation operates the Boxtop 1921-1 Federal #1 well located in Section 1, T-19-S, R-21-E. The well which was tested in the Wolfcamp formation did not have any indications of hydrogen sulfide from this formation. We believe the potential for it on locations in this area are negligible. There are no occupied dwellings in the area of these new drilling locations.

Should you need any additional information regarding this issue, please contact me at the address or phone number listed or email at [ddurham@ppll.com](mailto:ddurham@ppll.com).

Sincerely,



A. Deane Durham  
Senior Engineer



CONDITIONS OF APPROVAL - DRILLING

Operator's Name: Parallel Petroleum Corp.  
Well Name & No. Box Office 1920-26 Fed Com# 1  
Location: 1303'FNL, 240'FWL, SEC26, T19S, R21E, Eddy County, NM  
BHL: 1303'FNL, 660'FEL, SEC26, T19S, R21E, Eddy County, NM  
Lease: NM-115995

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: 16 inch 8.625 inch 5.5 inch
- 3. BOP tests

B. A Hydrogen Sulfide (H2S) 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 8.625 inch surface casing shall be set at 1500 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 5.5 inch production casing is **cement shall extend upward a minimum of 200 feet above the base of the intermediate casing string. If circulation is lost on the surface casing well bore, cement will be circulated to the surface.**

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 below the 8.625 inch casing shall be 2000 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. 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. Hazards:**

1. Our geologist has indicated that there is potential for lost circulation in the San Andres, Glorieta and Wolfcamp formations.
2. Our geologist has indicated that there is potential for high pressure in the Wolfcamp.
3. Our geologist has indicated that there is medium potential for Cave / Karst features

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

**FWright 3/16/07**