

ATS-07-362

Form 3160-3  
(April 2004)

# OCD-ARTESIA

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. NM NM 103570	
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 Parallel Petroleum Corporation		7. If Unit or CA Agreement, Name and No.	
3a. Address 1004 North Big Spring, Suite 400 Midland, Texas		8. Lease Name and Well No. Sand Box 1921-24 Federal #1	
3b. Phone No. (include area code) 432/684-3727		9. API Well No. 30-015-35588	
4. Location of Well (Report location clearly and in accordance with any State requirements.) At surface SHL 742' FSL AND 300' FEL, Section 23 At proposed prod. zone BHL 742' FSL and 660' FEL, Section 24		10. Field and Pool, or Exploratory Wolfcamp SW	
11. Sec., T. R. M. or Blk. and Survey or Area 23, T19S, R21E		12. County or Parish Eddy	
13. State NM		14. Distance in miles and direction from nearest town or post office* 9 miles south of Hope, New Mexico	
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 742'		16. No. of acres in lease 2,560.00	
17. Spacing Unit dedicated to this well 320		18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 2500'	
19. Proposed Depth 5000'		20. BLM/BIA Bond No. on file NMB000265	
21. Elevations (Show whether DF, KDB, RT, GL, etc.) GL 4260'		22. Approximate date work will start* 04/15/2007	
23. Estimated duration 30 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.
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 <i>Deane Durham</i>	Name (Printed/Typed) Deane Durham	Date 3-8-07
Title Engineer, Parallel Petroleum Corporation		
Approved by (Signature) <i>Ts/ James Stovall</i>	Name (Printed/Typed) Office	Date APR 30 2007
ACTING FIELD MANAGER		CARLSBAD FIELD OFFICE

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

APPROVAL FOR 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)

SEE ATTACHED FOR  
CONDITIONS OF APPROVAL

APPROVAL SUBJECT TO  
GENERAL REQUIREMENTS  
AND SPECIAL STIPULATIONS  
ATTACHED

Roswell Controlled Water Basin

Subject to  
Like Approval  
By State

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

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. Frances Dr.  
Santa Fe, NM 87505

Form C-102  
Revised October 12, 2005  
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 97583	Pool Name Four Mile Draw; Wolfcamp, SW
Property Code	Property Name SAND BOX 1921-24 FEDERAL	Well Number 1
OGRID No.	Operator Name PARALLEL PETROLEUM CORPORATION	Elevation 4260'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	23	19 S	21 E		742	SOUTH	300	EAST	EDDY

Bottom Hole Location If Different From Surface

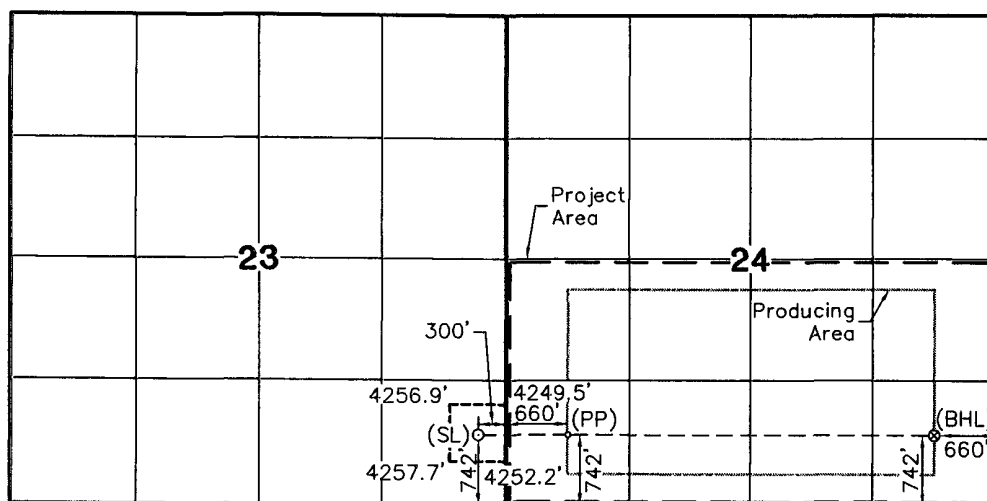
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	24	19 S	21 E		742	SOUTH	660	EAST	EDDY

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

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.



Coordinate Table	
Description	Plane Coordinate
Sand Box 1921-24 Federal #1	X = 369,688.3
Surface Location	Y = 597,020.6
Sand Box 1921-24 Federal #1	X = 370,648.0
Penetration Point	Y = 597,018.2
Sand Box 1921-24 Federal #1	X = 374,600.7
Bottom Hole Location	Y = 597,012.3

OPERATOR CERTIFICATION

I hereby certify the 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 26, 2006  
Date of Survey  
Signature & Seal of Professional Surveyor  
W.O. Num. 2006-1083  
Certificate No. MACON McDONALD 12185

ATTACHMENT TO FORM 3160-3  
SAND BOX 1921-24 FEDERAL #1  
Surface Hole Location  
742 FSL AND 300 FEL, SEC 23, 19S, 21E  
Bottom Hole Location  
742 FSL AND 660 FEL, SEC 24, 19S, 21E  
EDDY 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'(+2521')  
Tubb 2745'(+1515')  
Yeso 2885' (+1375')  
Abo Shale 3385' (+875')  
Abo Carbonate 3499' (+1207')  
Wolfcamp 4330' (+761')  
Wolfcamp Shale 4430'(-170')

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

Fresh water 790'  
Oil and Gas Wolfcamp 4330' (+761')  
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.

**SAND BOX 1921-24 FEDERAL #1**

**Page 2**

8-5/8" slurry: Lead: 225 sacks (50:50) Poz (Fly Ash): Class C + 5% bwoc 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 3,368'.
- h. Build angle at 6 degrees per 100' to 90 degrees and hold.
- i. Drill 7 7/8" horizontal drain hole to a terminus of 660' FEL approximately 8,817'.
- 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.

DOUBLE HORESHOE RESERVE PIT

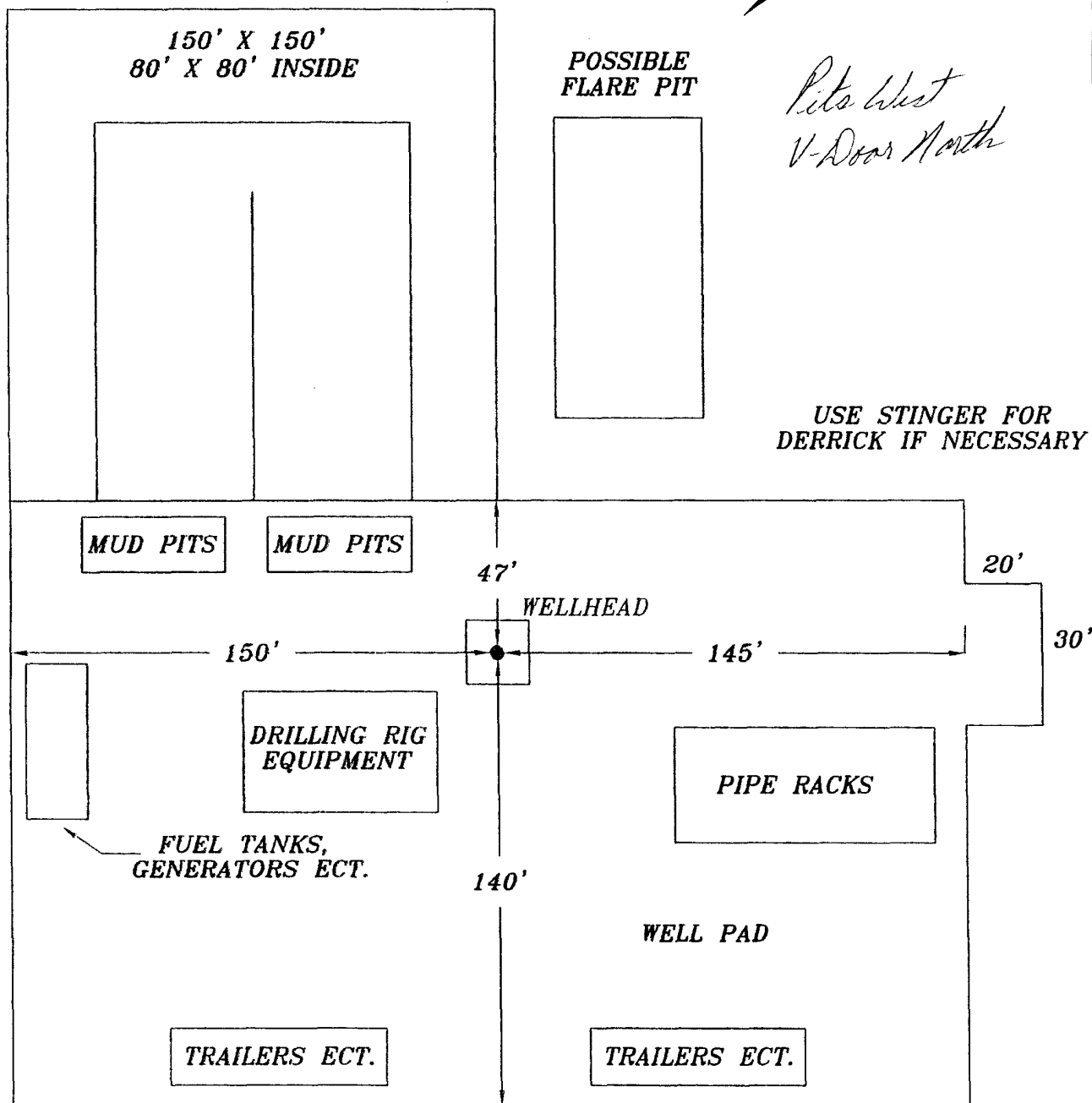


EXHIBIT B

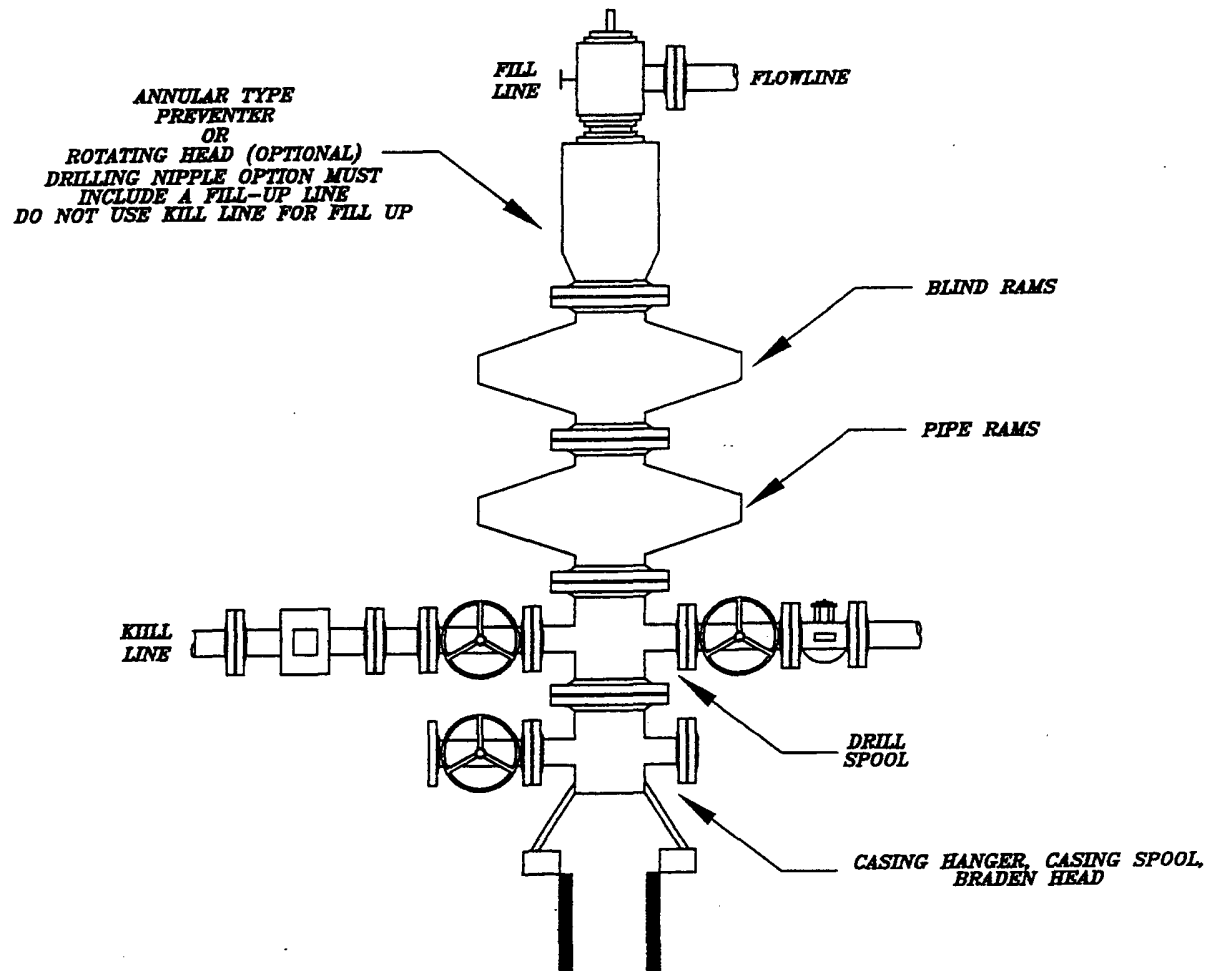
DATE:  
11/3/05  
OWN. BY:  
JJ  
FILE:  
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DRILLING RIG LAYOUT-2

PARALLEL PETROLEUM  
DRILLING RIG LAYOUT

HIGHLANDER ENVIRONMENTAL CORP.  
MIDLAND, TEXAS

NOT TO SCALE

# MINIMUM BOP SCHEMATIC



NOT TO SCALE

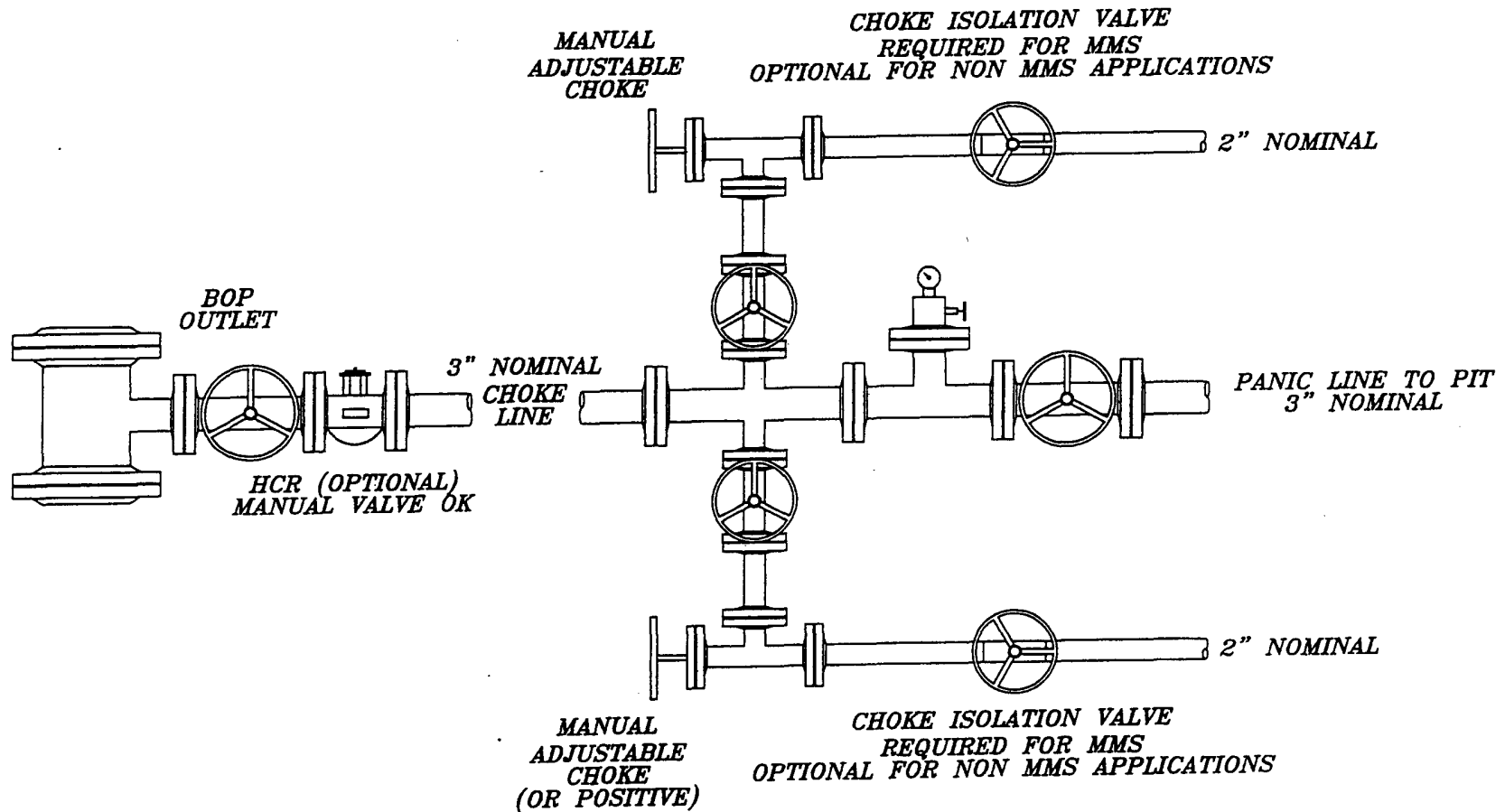
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7/26/05  
DWG. BY:  
JJ  
FILE:  
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BOP SCHEMATIC

EXHIBIT I

PARALLEL PETROLEUM  
BOP SCHEMATIC

HIGHLANDER ENVIRONMENTAL CORP.  
MIDLAND, TEXAS

# CHOKE MANIFOLD 5M SERVICE



NOT TO SCALE

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

EXHIBIT J

PARALLEL PETROLEUM  
CHOKE MANIFOLD

HIGHLANDER ENVIRONMENTAL CORP.  
MIDLAND, TEXAS



# **PARALLEL** SURVEY CALCULATION PROGRAM PETROLEUM CORPORATION

<b>OPERATOR:</b>	Parallel Petroleum Corporation		<b>Supervisors:</b>	
<b>WELL:</b>	Sand Box 1921-24 Federal #1			
<b>LOCATION:</b>	S/2 Sec. 24 T-19-S R-21-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:** 2:57 PM      TRUE TO GRID ☐

MINIMUM CURVATURE CALCULATIONS(SPE-3362)									PROPOSED DIRECTION		90.0	TARGET TRACKING TO CENTER	
SVY	NUM	MD	INC	GRID	TVD	VERT	N-S	E-W	DLS/	100		ABOVE(+)	RIGHT(+)
				AZM		SECT						BELOW(-)	LEFT(-)
TIE	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0					
1	3368	0.0	0.0	0.0	3368.0	0.0	0.0	0.0	0.0	962.0	0.0		
2	3378	0.6	90.0	3378.0	0.1	0.0	0.1	6.0	952.0	0.0			
3	3388	1.2	90.0	3388.0	0.2	0.0	0.2	6.0	942.0	0.0			
4	4879	90.0	90.0	4329.9	962.0	0.0	962.0	6.0	0.1	0.0			
5	8817	90.0	90.0	4329.9	4900.0	0.0	4900.0	0.0	0.1	0.0			

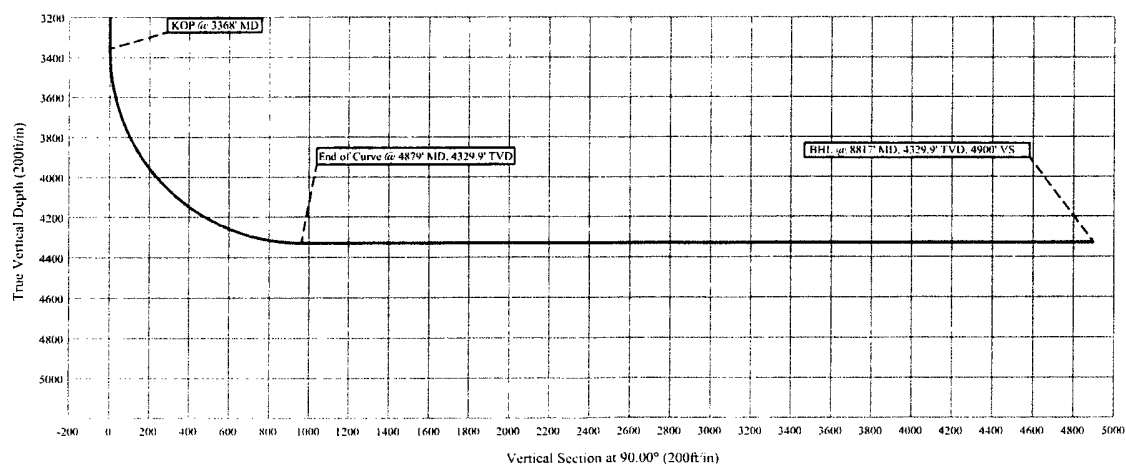
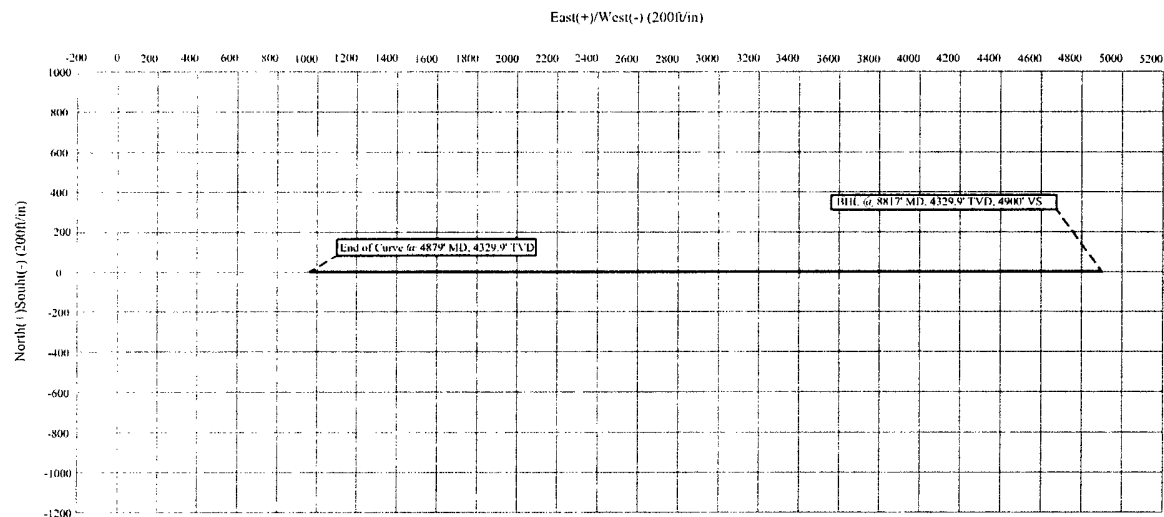
KOP @ 3368' MD  
 BUR = 6 DEG per 100 FT  
 End Curve @ 4879' MD, 4329.9' TVD  
 BHL @ 8817' MD, 4329.9' TVD, 4900' VS

# Parallel Petroleum Corp.

Sand Box 1921-24 Federal #1  
S/2 Sec. 24, T-19-S, R-21-E  
Eddy County, New Mexico

## COMPANY DETAILS

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



**SAND BOX 1921-24 FEDERAL #1**

**Page 5**

D. Ponds and Streams

Gardner Draw, an intermittent stream which flows west to east, is located 9000' south of the site. A Crooked Canyon, smaller drainage is located 3000' west and flows north east into Gardner Draw. There are no other rivers, lakes, ponds, or streams in the area.

E. Residences and Other Structures

The Runyon Ranch headquarters are located 5 miles north east of the location.

F. Archaeological, Historical, and Cultural Sites

See archaeological report # SNMAS-06NM-2456/2457/2459/2464  
submitted by: Southern New Mexico Archaeological Services, Inc.,  
P.O. Box 1  
Bent, New Mexico 88314 Phone 505-67-4797

G. Land Use

Grazing

H. Surface Ownership

Federal

11. OPERATOR'S REPRESENTATIVE

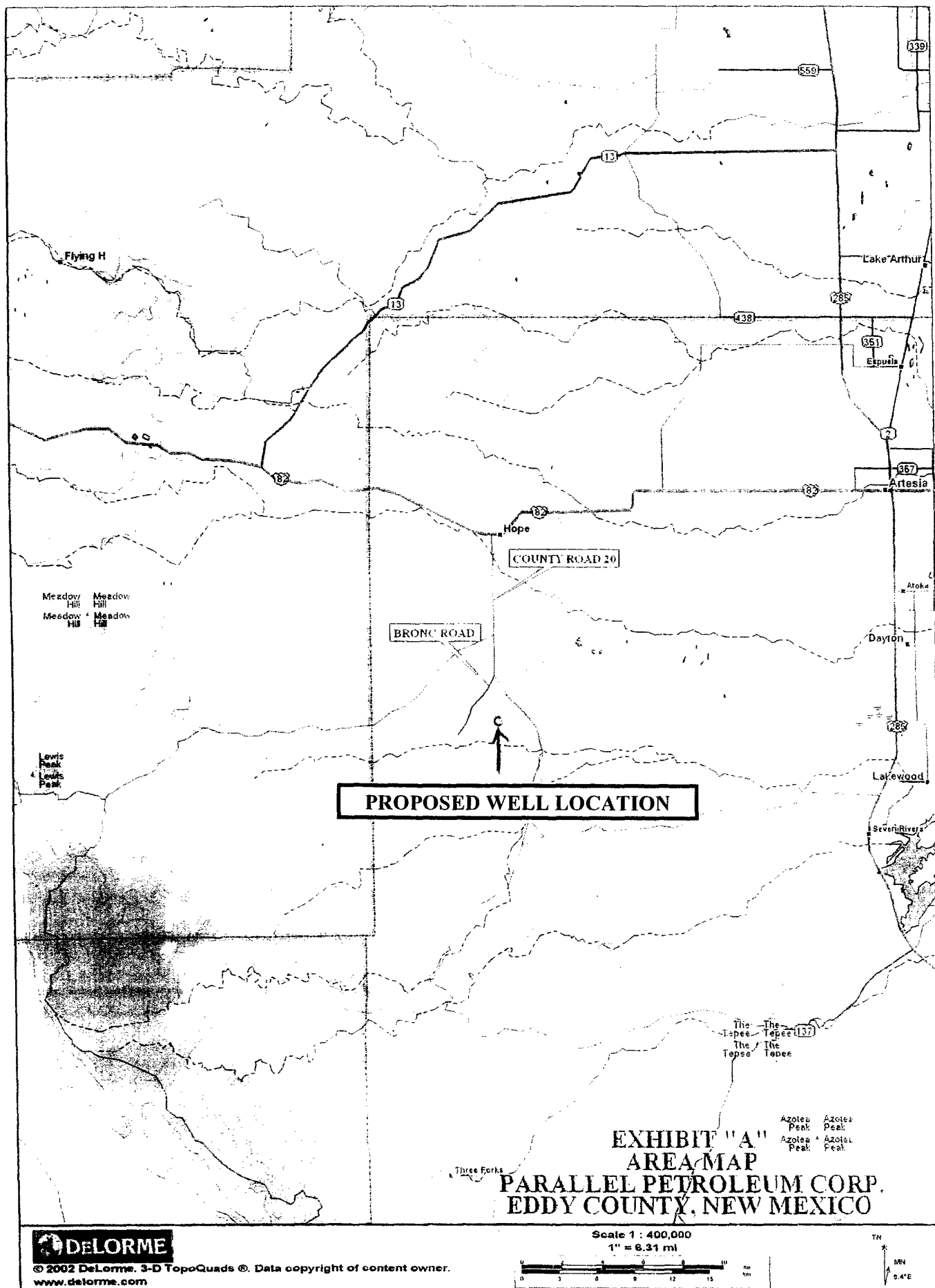
Deane Durham, Engineer  
Parallel Petroleum Corporation  
1004 North Big Spring Street, Suite 400  
Midland, Texas 79701  
Office: (432) 684-3727

12. CERTIFICATION

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

3-8-07  
Date

Deane Durham  
Name: Deane Durham  
Title: Engineer

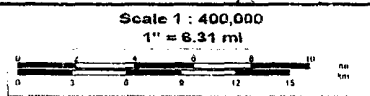


**PROPOSED WELL LOCATION**

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



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www.delorme.com



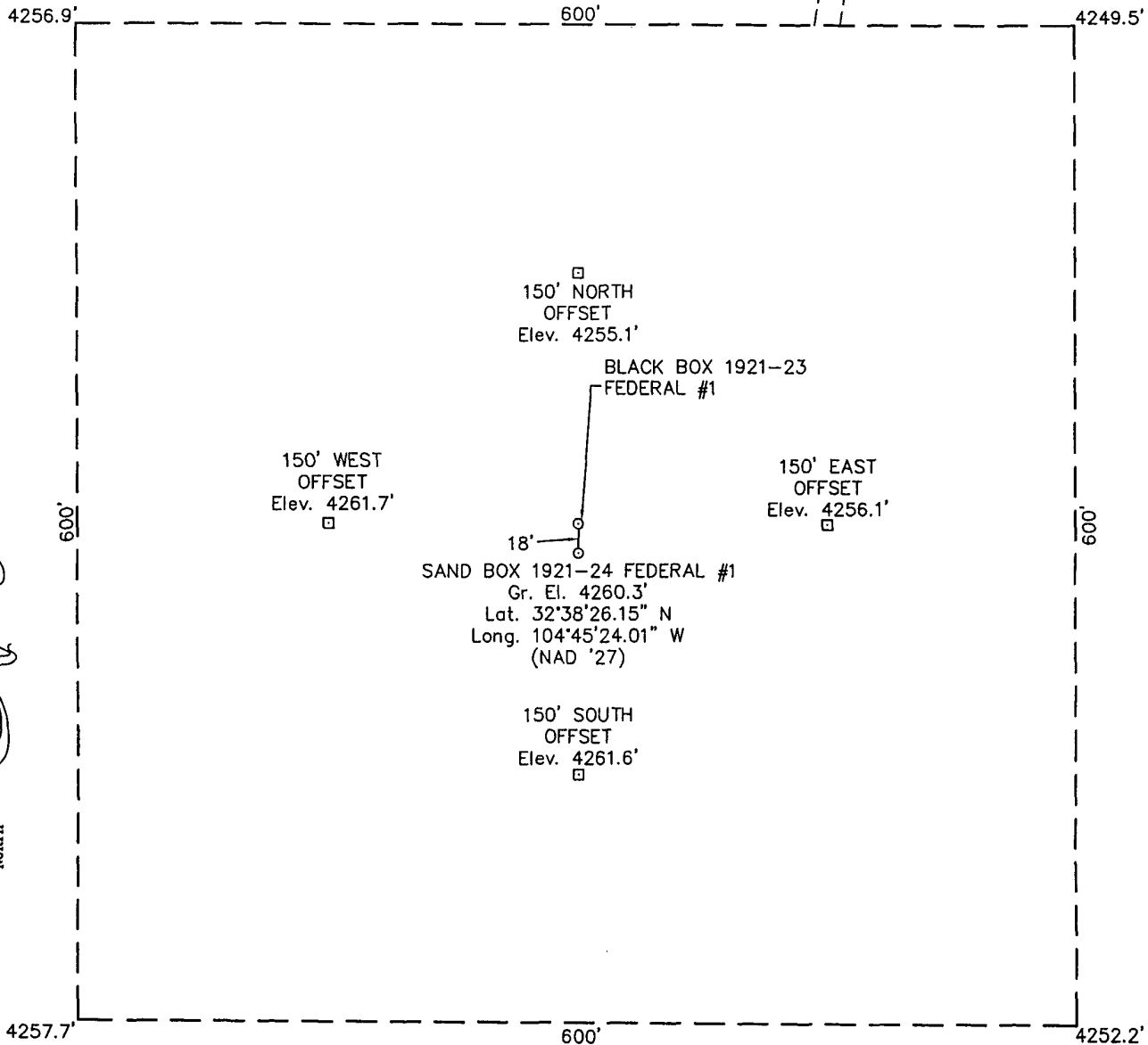
# SECTION 23, TOWNSHIP 19 SOUTH, RANGE 21 EAST, N.M.P.M.

EDDY COUNTY

NEW MEXICO

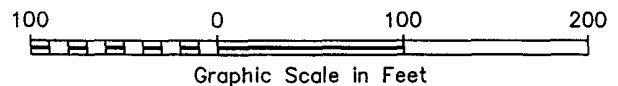
2154 L.F. OF NEW  
ACCESS ROAD

L-2006-1063-A



## 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 4.2 MILES TO AN ACCESS ROAD ON EAST (LEFT) SIDE OF ROAD, THEN GO EAST ALONG SAID ACCESS ROAD 0.7 MILE TO A NEW ACCESS ROAD ON THE EAST (LEFT) SIDE OF ROAD, THEN GO EAST AND SOUTH 0.8 MILE TO THE WELL PAD FOR THE BOX CARS 1921-13 FEDERAL #1 WELL THEN FROM THE SOUTH LINE OF SAID WELL PAD, GO SOUTH ALONG ANOTHER ACCESS ROAD 0.4 MILE TO THE WELL PAD FOR THE P.O. BOX 1921-23 FEDERAL #1 AND 3 LOCK BOX 1921-24 FEDERAL #1 WELLS, THEN FROM THE SOUTH LINE OF SAID WELL PAD GO SOUTH 0.4 MILE TO THE PROPOSED LOCATION.



## PARALLEL PETROLEUM CORPORATION

### SAND BOX 1921-24 FEDERAL #1

Located 742' FSL & 300' FEL, Section 23  
Township 19 South, Range 21 East, N.M.P.M.  
Eddy County, New Mexico

Drawn By: LVA	Date: November 20, 2006
Scale: 1"=100'	Field Book: 348 / 32-38
Revision Date:	Quadrangle: Holt Tank
W.O. No: 2006-1063	Dwg. No.: L-2006-1063-A



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

EXHIBIT C

**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

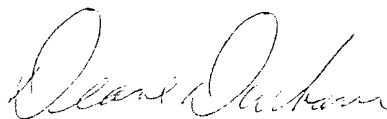
Re: Hydrogen Sulfide Potential  
South Hope Area Wolfcamp Program  
SW Chaves and Eddy Counties, New Mexico

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. **Sand Box 1921-24 Federal # 1**  
Location: **742'FSL, 300'FEL, SEC23, T19S, R21E, Eddy County, NM**  
BHL: **742'FSL, 660'FEL, SEC24, T19S, R21E, Eddy County, NM**  
Lease: **NM-103570**

### 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 (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 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**