District I 1625 N. French Dr., Hobbs, NM 88240 District II 1301 W. Grand Avenue, Artesia, NM 88210 District III 1000 Rio Brazos Road, Aztec, NM 87410

Title: Drilling Engineer E-mail Address: ddurham@plll.com

Phone: 432-684-3727

Date: /-/6-07

### State of New Mexico Energy Minerals and Natural Resources

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505

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105	Form C-101
6	May 27, 2004
\ <b>\</b> \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	4. <b>5</b> 1
Submit to appr	opriate District Office
1	-073
11 20 12	AMENDED REPORT
IRT	(D) (G)
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Evpiration Date JAN 1 9 2008

NOTIFY OCD OF SPUD & TIME

TO WITNESS CEMENTING OF

**SURFACE CASING** 

District IV 1220 S. St. Francis Dr., Santa Fe, NM 87505 APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE Operator Name and Address Parallel Petroleum Corp 1004 N. Big Spring Street, Suite 400, Midland, TX. 79701 Walnut Draw Unit 1821-25 State Property Code 3628C 9 Proposed Pool 1 10 Proposed Pool 2 Wolfcamp **Surface Location** Feet from the North/South line East/West line UL or lot no. Township Lot Idn Feet from the County Section 18S 21E 660 230" Eddy 25 North East Α <sup>8</sup> Proposed Bottom Hole Location If Different From Surface Feet from the North/South line Lot Idn Feet from the East/West line UL or lot no. Township Range County 18S 21E 760' South 660' West Eddy D 25 Additional Well Information 12 Well Type Code 13 Cable/Rotary 15 Ground Level Elevation 11 Work Type Code 14 Lease Type Code 4078 O & G N R 16 Multiple 17 Proposed Depth 18 Formation 19 Contractor 20 Spud Date 8733MD,4549TVD No Wolfcamp NA NA Depth to Groundwater 690 Distance from nearest fresh water well 6000' Distance from nearest surface water 700' Liner: Synthetic X 12 mils thick Clay 🔲 Pit Volume:25,000 bbls Drilling Method: Fresh Water X Brine Diesel/Oil-based Gas/Air Closed-Loop System <sup>21</sup> Proposed Casing and Cement Program Casing weight/foot Estimated TOC Hole Size Casing Size Setting Depth Sacks of Cement 11" 8-5/8" 24# 1500' 325 Surface 7-7/8" 5-1/2" 17# TVD 4549' NA Tie back to MD 8733' Surface casing CBL SUFURL Temn Describe the proposed program. If this application is to DEEPEN or PLUG BACK, give the data on the present productive zone and proposed new productive zone. Describe the blowout prevention program, if any. Use additional sheets if necessary. Well to be Drilled as a Horizontal Wolfcamp test. The attached drilling plan will be utilized for this test and contains details on the cement and mud programs as well as the directional information. The following is a summary of this plan. 1. Prepare surface location. Move in and rig up drilling rig, spud well and drill and set conductor. Install and test BOP's. 2. Drill 11" Surface hole to a minimum depth of 1500'. Set 8 5/8" casing and cement. 3. Drill 7 7/8" production hole to 5500' TD and evaluate running mud logs as well as DLL/CNL/LDT/CAL/GR to TD. Plug back hole and set kickoff point at 4090' drill and advance 7-7/8" hole to a Wolfcamp penetration point at approximately 670' FNL and 660' FEL of the section and continue drilling to BHL, (8733' MD & 4549' TVD) 5. Set 5 ½" to TD and tie cement back to the surface casing. Perforate porosity and stimulate as necessary (specific procedure to be determined). 6. Place well on test. No H2S if anticipated during the drilling of this well. <sup>23</sup> I hereby certify that the information given above is true and complete to the OIL CONSERVATION DIVISION best of my knowledge and belief. I further certify that the drilling pit will be constructed according to NMOCD guidelines Xna general permit , or an Approved by: (attached) alternative OCD-approved plan **BRYAN G. ARRANT** DISTRICT II GEOLOGIST Printed name: Deane Durham Title:

Approval Date JAN 1 9 2007

Conditions of Appro

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

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION

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

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

API Number

### WELL LOCATION AND ACREAGE DEDICATION PLAT Pool Code Pool Name Property Name Property Name Property Name

## Property Code Property Name WALNUT DRAW UNIT 1821-25 STATE OGRID No. Operator Name PARALLEL PETROLEUM CORPORATION 4078'

### Surface Location

1	UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
	Α	25	18 S	21 E		660	NORTH	230	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
D	25	18 S	21 E		760	NORTH	660	WEST	EDDY
Dedicated Acres	Joint of	Infill Co	nsolidation	Code Or	der 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

,09Z (BHL)	\$ 89°01'52"	W – 4079.6'	(PP) — 660'—	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 interestin the land including the proposed bottom hale 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 woluntary pooling agreement or a compulsory pooling order heretofore entered by the division.	
	Producing_ Area	Project		Signature Date  Description of the Name	
Bottom Hole Location Plane Coordinate X = 370,607.8 Y = 627,257.0 Geodetic Coordinate Lat. 32*43*25.39* N Long. 104*45*14.66* W		Penetration Point Plane Coordinate X = 374,685.7 Y = 627,325.9 Geodetic Coordinate Lat. 32*43'26.23" N Long. 104*44'26.93" W	Surface Location Plane Coordinate X = 375,115.5 Y = 627,333.2 Geodetic Coordinate Lat. 32*43'26.32" N Long. 104*44'21.89" W	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 supervison and that the same is true and correct to the best of my belief.  January 5. 2007	
Mercator Grid and Co	wn hereon are Transverse nform to the "New Mexico	(NAD '27)	(NAD '27)	Date of Survey  Signature & Seal of Professional Surveyor  W.O. Nurn 2006 128	
Coordinate System", Ne American Datum of 1927 mean horizontal surface	w Mexico East Zone, North Distances shown hereon are values.			Certificate No. MACÓN' MODONALD 12185	

### PARALLEL PETROLEUM CORPORATION WALNUT DRAW UNIT 1821-25 STATE #1

SL: 660' FNL AND 230' FEL, BHL: 760' FNL AND 660' FWL SL: SEC 25, T18S, R21E, BHL: SEC 25, T18S, R21E EDDY COUNTY, NEW MEXICO

### **Objective**

Drill a horizontal in the Wolfcamp.

### **Expected Geologic Tops**

GL: 4078', KB 4090'. Glorieta 1825' Tubb 2835' Abo Shale 3425' Wolfcamp 4550' Wolfcamp Shale 4740'

### **Well Geometry**

- 8 5/8" casing at 1500'
- kick-off at 4090' for horizontal zone of interest
- 5 1/2" casing through the horizontal Wolfcamp; Cement per completion.

### **Casing Program**

<u>Hole</u>	<u>MD</u> (ft)	Casing	Weight	Grade	Coupling	COMMENT
11"	0 – 1500	8-5/8"	24	J55	ST&C	
7-7/8"	0 – 8733'	5-1/2"	17	N80	LT&C	Run through the horizontal lateral.

### **Casing Cementing Program**

8-5/8" slurry: Lead: 125 sacks (50:50) Poz (Fly Ash): Class C + 5% bwow Sodium Chloride + 10% bwoc Bentonite + 151.7% fresh water. Tail: 200 sacks Class C + 1% bwoc Calcium Chloride + 56.3% fresh water

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

<u>Note</u>: 5-1/2" Cement with acid-soluble CMT per completion procedure. Top of cement should be a tied-back to surface casing.

### **Mud Program**

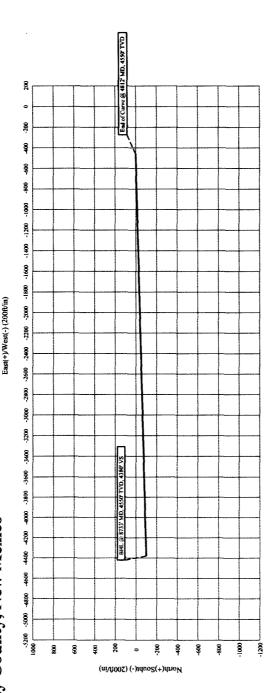
Depth	<u>Hole</u>	MW	Visc.	<u>WL</u>	Synopsis
0 - 1500	11"	8.4 –	28 - 29	No	FRESH WATER mud only to
		8.6	ļ	control	1500 ft. Severe loss potential.
					Circulate inner reserve. LCM:
					paper, fiber, cotton seed hulls.
1500 - 3400	7-7/8"	8.6 –	28 -29	No	Cut brine. Start w/existing & add
		9.2		control	brine t/50K- 60K chlorides
3400 – KOP	7-7/8"	8.9 –	38 - 45	12-14	XCD/polymer as req'd for hole
		9.5			cleaning. Lubricants.
KOP – TD	7-7/8"	8.9 –	38 - 45	12-14	XCD/polymer as req'd for hole
Horizontal		9.5			cleaning. Lubricants.

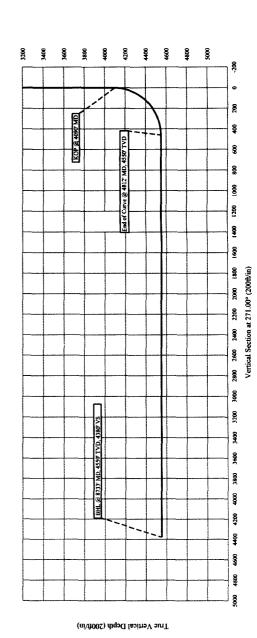
# Parallel Petroleum Corp.

Walnut Draw Unit 1821-25 State #1 660 FNL, 230 FEL Sec. 25, T-18-S, R-21-E 760 FNL, 660 FWL Sec. 25, T-18-S, R-21-E Eddy County, New Mexico

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

COMPANY DETAILS





### SURVEY CALCULATION PROGRAM PETROLEUM CORPORATION OPERATOR: Parallel Petroleum Corporation Supervisors: WELL: Walnut Draw Unit 1821-25 State #1 660 FNL, 230 FEL Sec. 25 T-18-S R-21-E SURF. LOCATION: BH LOCATION: 760 FNL, 660 FWL Sec. 25 T-18-S R-21-E COMMENTS: MAG DEC.(-/+) GRID CORR (-/+) TOTAL CORR.(-/+) 0.0 DATE: 01/12/07 TIME: 9:22 AM w TRUE TO GRID MINIMUM CURVATURE CALCULATIONS(SPE-3362) PROPOSED DIRECTION 271.0 TARGET TRACKING TO CENTER SVY ABOVE(+) RIGHT(+) GRID **VERT** DLS/ NUM MD INC TVD AZM SECT N-S E-W 100 BELOW(-) [LEFT(-) TIE 0 0.0 0.0 0.0 0.0 0.0 0.0 1 4090 0.0 0.0 4090.0 0.0 0.0 0.0 0.0 460.0 0.0 2 4100 1.3 271.0 4100.0 0.1 0.0 -0.1 12.5 450.0 0.0 3 4110 2.5 271.0 4110.0 440.0 0.4 0.0 -0.4 12.5 0.0 4 4812 90.0 271.0 4549.6 459.7 8.0 -459.6 12.5 0.4 0.0 5 8733 90.0 271.0 4549.6 4380.7 76.5 -4380.0 0.0 0.4 0.0

KOP @ 4090' MD BUR = 12.5 DEG per 100 FT End Curve @ 4812' MD, 4550' TVD BHL @ 8733' MD, 4550' TVD, 4380' VS



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@plll.com.

Sincerely,

A. Deane Durham Senior Engineer