

NOV 26 2008

OCD-ARTESIA  
UNITED STATES

DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

1409  
WIPP

\$

OCD-ARTESIA

APPLICATION FOR PERMIT TO DRILL OR REENTER

5 Lease Serial No.  
NM-101601

6. If Indian, Allottee or Tribe Name  
-----

7 If Unit or CA Agreement, Name and No  
-----

8. Lease Name and Well No.  
TANKLESS "35" FEDERAL # 1

9. API Well No.  
30-015-36784

1a. Type of work:  DRILL  REENTER **SECRETARY'S POTASH**

1b Type of Well:  Oil Well  Gas Well  Other  Single Zone  Multiple Zone

2. Name of Operator  
OGX RESOURCES, LLC. (JEFF BIRKELBACH 432-685-1287)

3a Address  
P. O. BOX 2064 MIDLAND, TEXAS 79702  
3b. Phone No (include area code)  
432-685-1287

10. Field and Pool, or Exploratory  
LIVINGSTON RIDGE-BONE SPRING

4. Location of Well (Report location clearly and in accordance with any State requirements.)\*  
At surface 730' FNL & 730' FWL SECTION 35 T22S-R31E EDDY CO.  
At proposed prod. zone BHL: 660'N & 350'E ~~UNORTHODOX~~

11. Sec., T. R. M. or Blk. and Survey or Area  
SECTION 35 T22S-R31E

14. Distance in miles and direction from nearest town or post office\*  
Approximately 45 miles Southwest of Hobbs New Mexico ~~LOCATION~~

12. County or Parish  
EDDY CO.  
13. State  
NM

15. Distance from proposed\* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 3730'  
16. No. of acres in lease 320  
17. Spacing Unit dedicated to this well 160

18. Distance from proposed location\* to nearest well, drilling, completed, applied for, on this lease. ft. NA  
19. Proposed Depth MD-11,837'  
TVD- 8220'  
20. BLM/BIA Bond No. on file NMB-000244

21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3451' GL  
22 Approximate date work will start\* Lease expires 12/01/08  
23. Estimated duration 45 days

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, must 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 must 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 BLM.

25. Signature *Joe T. Janica* Name (Printed/Typed) Joe T. Janica Date 09/16/08

Title Permit Eng.

Approved by (Signature) *Shannon J. Shaw* Name (Printed/Typed) Shannon J. Shaw Date 11-18-08

Title ACTING STATE DIRECTOR Office NM STATE OFFICE

Application approval does not warrant or certify conduct operations thereon. Conditions of approval, if any, are attached.  
NOTIFY OCD 24-hrs PRIOR to Spud  
NOTIFY OCD of ALL Lost Circulation and Water Flow Zones  
NOTIFY OCD per 19.15.3.118 of H2S Values WHILE Drilling.  
in the subject lease which would entitle the applicant to  
**APPROVAL FOR TWO YEARS**  
If fully to make to any department or agency of the United

(Continued on page 2)

\*(Instructions on page 2)

SEE ATTACHED FOR  
CONDITIONS OF APPROVAL

*Entered*  
*mead*  
12-3-08

Perched Controlled Water Basin  
NOTIFY OCD 24-hrs PRIOR to Spud  
NOTIFY OCD of ALL Lost Circulation and Water Flow Zones  
NOTIFY OCD per 19.15.3.118 of H2S Values WHILE Drilling.

Subject to General Requirements  
& Special Stipulations Attached

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 and 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, New Mexico 87505

AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number <b>30.015.36784</b>	Pool Code 39350	Pool Name LIVINGSTON RIDGE, BONE SPRING
Property Code <b>37495</b>	Property Name TANKLESS "35" FEDERAL	Well Number 1
OGRID No. 217955	Operator Name OGX RESOURCES, L.L.C.	Elevation 3451'

Surface Location

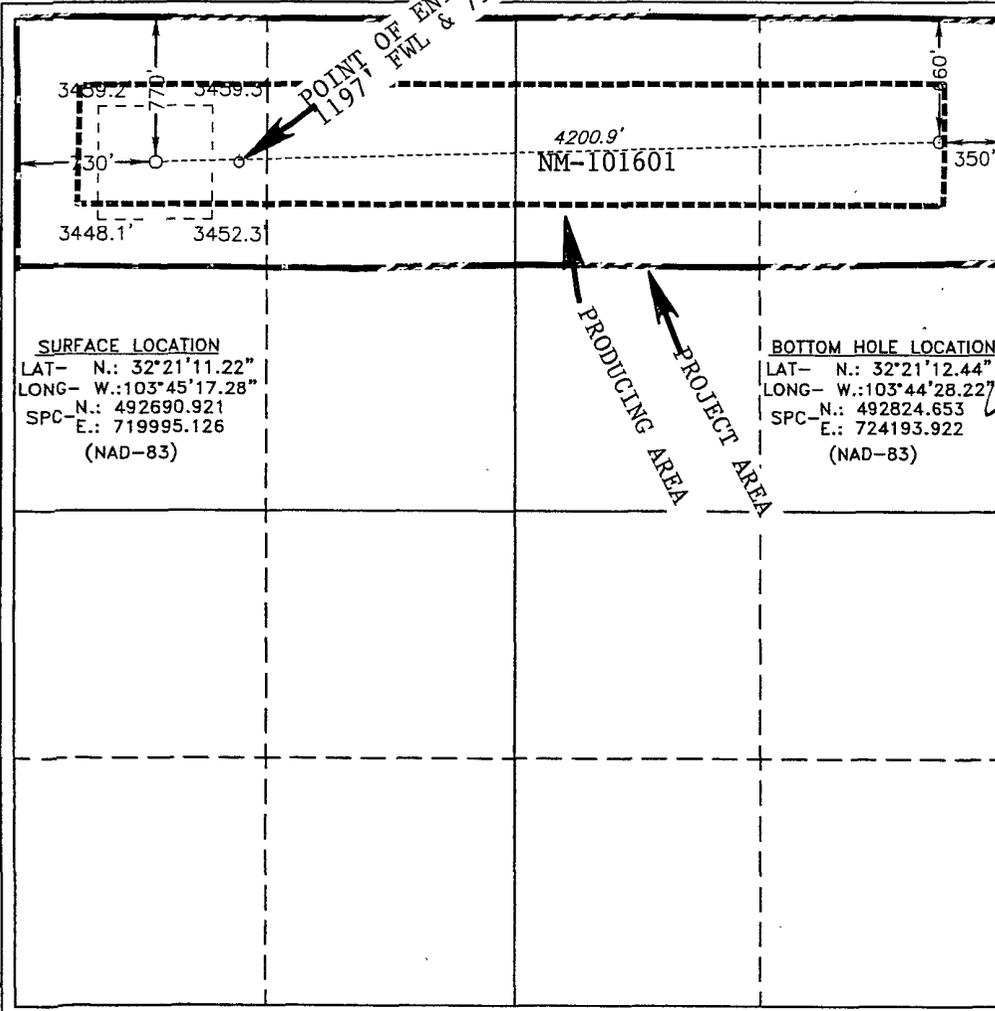
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
D	35	22 S	31 E		770	NORTH	730	WEST	EDDY

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
A	35	22 S	31 E		660	NORTH	350	EAST	EDDY

Dedicated Acres 160	Joint or Infill	Consolidation Code	Order No.
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NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-UNIT HAS BEEN APPROVED BY THE DIVISION



**OPERATOR 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 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.

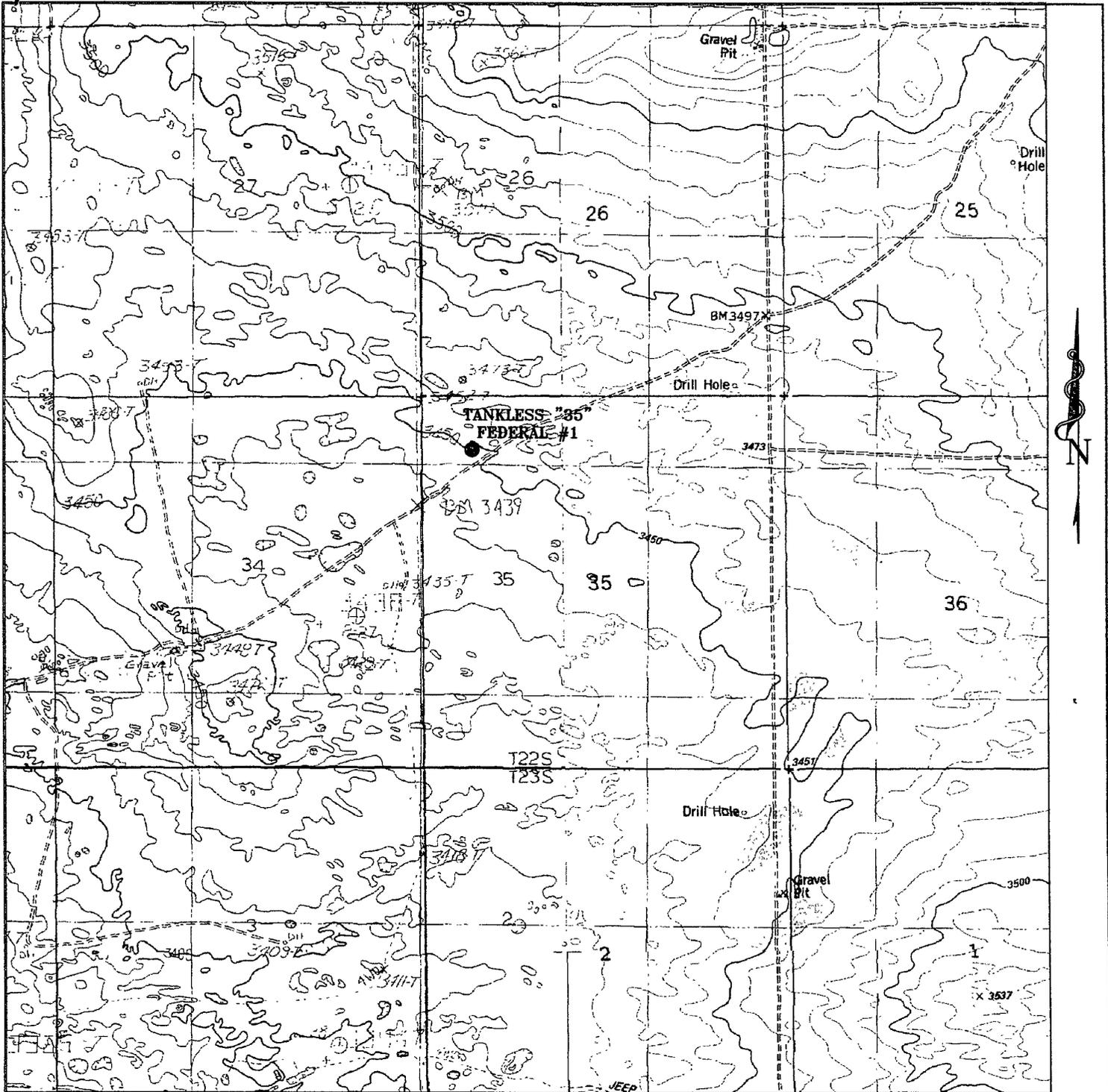
*Joe T. Janica*  
Signature Date  
Joe T. Janica 09/16/08  
Printed Name

**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.

SEPTEMBER 4, 2008

Date Surveyed  
Signature & Seal of Professional Surveyor  
*Gary L. Jones*  
W.O. No. 20333  
Certificate No. Gary L. Jones 7977  
BASIN-SURVEYS



**TANKLESS "35" FEDERAL #1**  
 Located at 770' FNL and 730' FWL  
 Section 35, Township 22 South, Range 31 East,  
 N.M.P.M., Eddy County, New Mexico.



P.O. Box 1786  
 1120 N. West County Rd.  
 Hobbs, New Mexico 88241  
 (575) 393-7316 - Office  
 (575) 392-2206 - Fax  
 basinsurveys.com

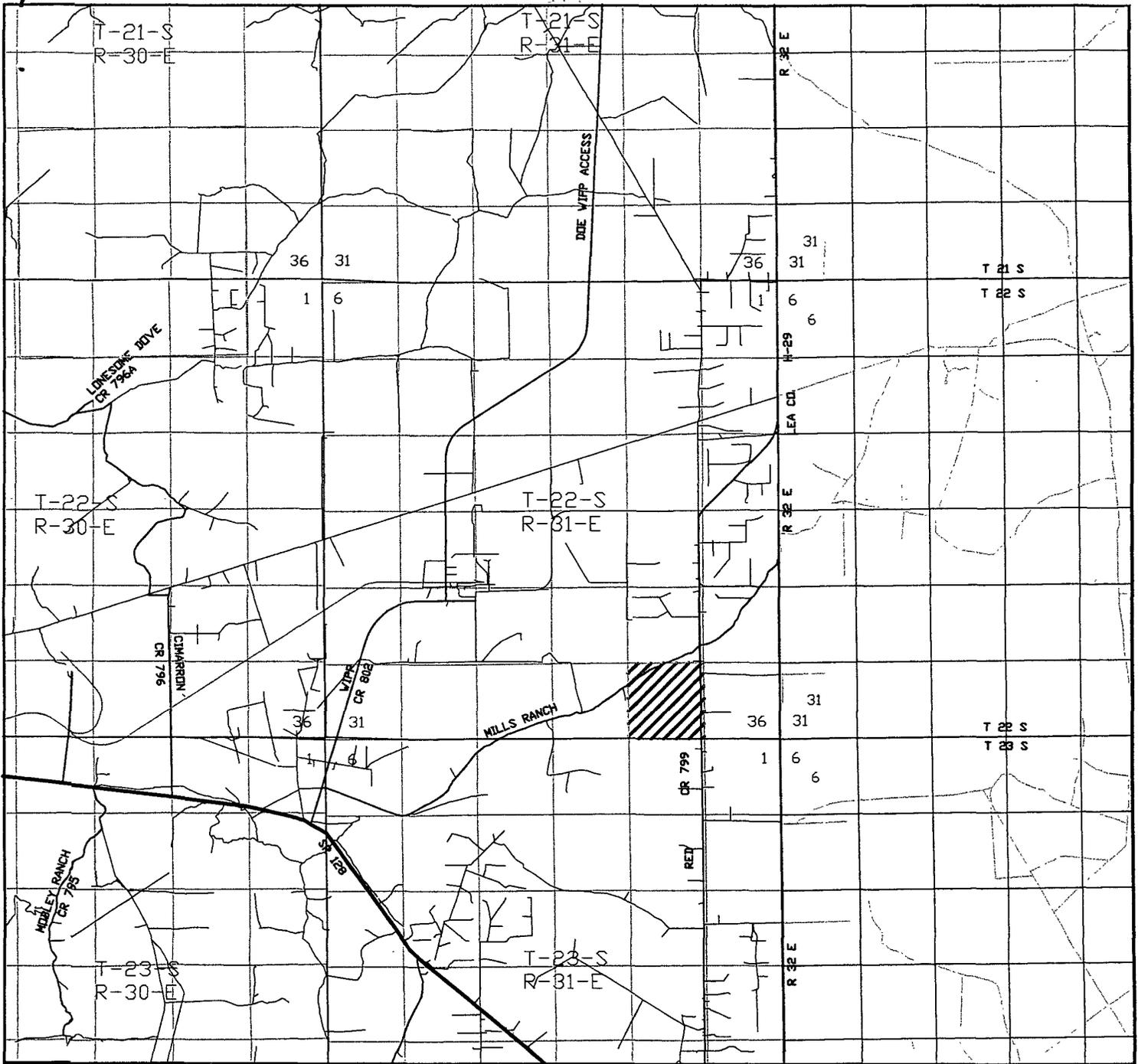
W.O. Number: 20333

Survey Date: 09-04-2008

Scale: 1" = 2000'

Date: 09-05-2008

**OGX  
 RESOURCES,  
 L.L.C.**



TANKLESS "35" FEDERAL #1  
 Located at 770' FNL and 730' FWL  
 Section 35, Township 22 South, Range 31 East,  
 N.M.P.M., Eddy County, New Mexico.



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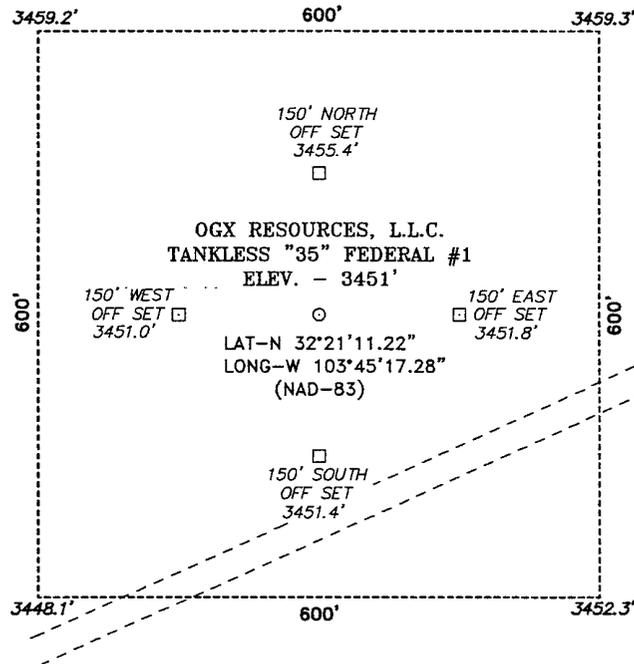
Survey Date: 09-04-2008

Scale: 1" = 2 MILES

Date: 09-05-2008

OGX  
 RESOURCES,  
 L.L.C.

SECTION 35, TOWNSHIP 22 SOUTH, RANGE 31 EAST, N.M.P.M.,  
 EDDY COUNTY, NEW MEXICO.



SCALE: 1" = 200'

**DIRECTIONS TO LOCATION:**

FROM THE JUNCTION OF HWY 128 AND CO. RD. RED (799) GO NORTH ON RED 7.2 MILES TO SWAN MILLS RANCH ROAD, ON SWAN GO 1.0 MILES TO PROPOSED LEASE ROAD.

**OGX RESOURCES, L.L.C.**

REF: TANKLESS "35" FEDERAL #1 / Well Pad Topo  
 THE TANKLESS "35" FEDERAL #1 LOCATED 770' FROM  
 THE NORTH LINE AND 730' FROM THE WEST LINE OF  
 SECTION 35, TOWNSHIP 22 SOUTH, RANGE 31 EAST,  
 N.M.P.M., EDDY COUNTY, NEW MEXICO.

**BASIN SURVEYS** P.O. BOX 1786 - HOBBS, NEW MEXICO

W.O. Number: 20333 Drawn By: J. M. SMALL

Date: 09-05-2008 Disk: JMS 20333

Survey Date: 09-04-2008 Sheet 1 of 1 Sheets

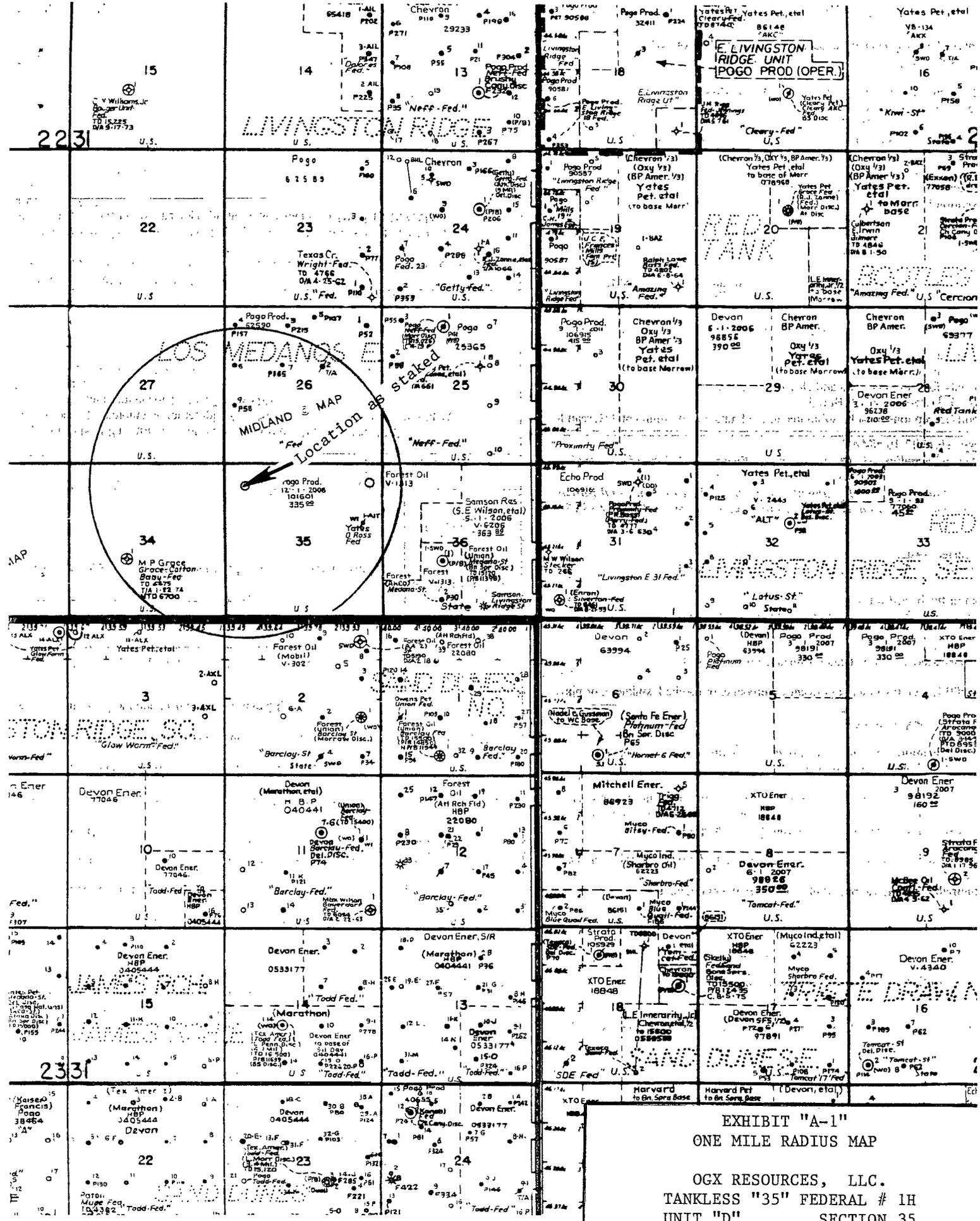


EXHIBIT "A-1"  
ONE MILE RADIUS MAP

OGX RESOURCES, LLC.  
TANKLESS "35" FEDERAL # 1H  
UNIT "D" SECTION 35  
T22S-R31E EDDY CO. NM

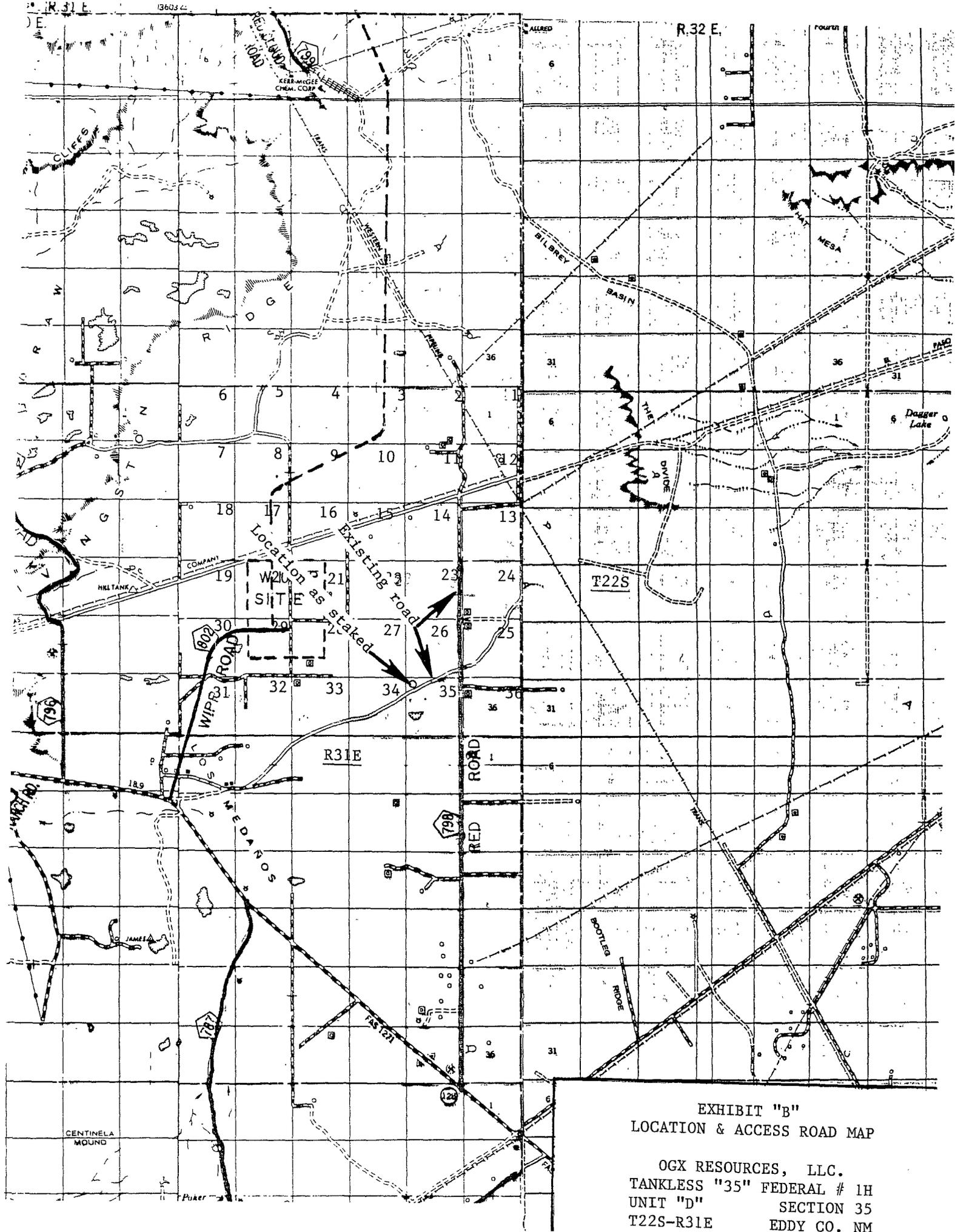
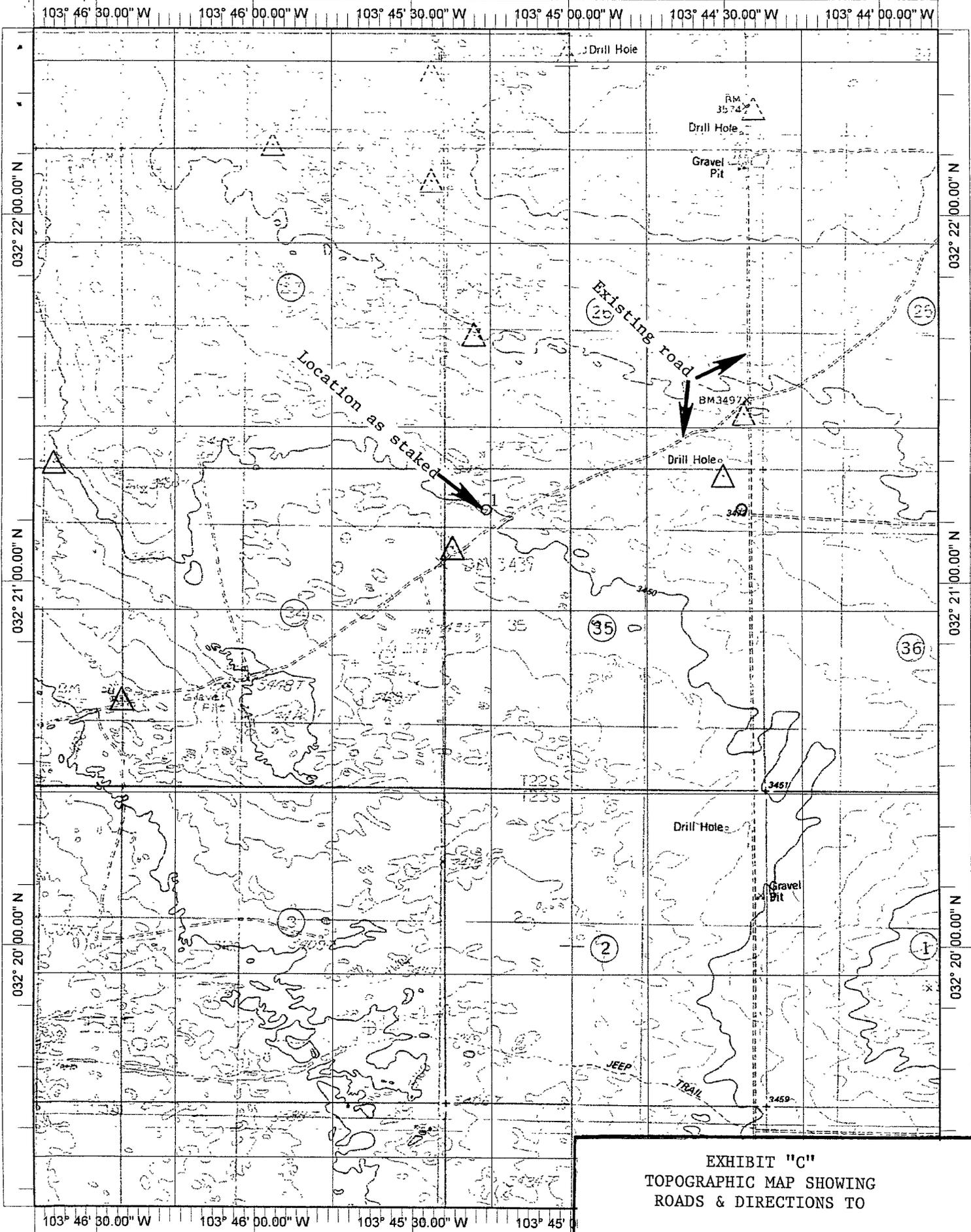


EXHIBIT "B"  
 LOCATION & ACCESS ROAD MAP  
 OGX RESOURCES, LLC.  
 TANKLESS "35" FEDERAL # 1H  
 UNIT "D" SECTION 35  
 T22S-R31E EDDY CO. NM



Datum: NAD27

Copyright (C) 1999, Maptech, Inc.

**EXHIBIT "C"**  
**TOPOGRAPHIC MAP SHOWING**  
**ROADS & DIRECTIONS TO**

**OGX RESOURCES, LLC.**  
**TANKLESS "35" FEDERAL # 1H**  
**UNIT "D" SECTION 35**

**DRILLING PROGRAM**

**Geologic Name of Surface Formation:**

Permian

**FORMATION TOPS / ANTICIPATED FRESH WATER, OIL, or GAS / PRESSURES**

<u>Formation</u>	<u>Depth</u>	<u>Frm Pres</u>	<u>Remarks</u>
Rustler	650'	8.4 ppge	Water
Basal Anhydrite	4250'	10 ppge	Drlg fluid must be saturated salt water
Lamar	4400'	8.4 ppge	Base of Salt
Bell Canyon	4450'	8.4 ppge	Oil / Gas / Formation water / Poss. H <sub>2</sub> S
Cherry Canyon	5550'	8.4 ppge	Oil / Gas / Formation water
Brushy Canyon	6600'	8.4 ppge	Oil / Gas / Formation water
1 <sup>st</sup> BSS	8350'	8.4 ppge	Oil / Gas / Formation water
TVD	8500'		

No other formations are expected to yield oil, gas or fresh water in measurable volumes. The surface fresh water sands will be protected by setting 13 3/8" casing at 850' and circulating cement back to surface. Potash/ fresh water sands will be protected by setting 9 5/8" casing at 4350' and circulating cement above the base of ~~13 3/8" casing~~. The hydrocarbon producing intervals will be isolated by setting 5 1/2" casing to total depth and circulating cement above the base of the 9 5/8" casing

← see COA

see COA

**CASING PROGRAM:**

<u>HOLE SIZE</u>	<u>DEPTH</u>	<u>OD Csg</u>	<u>WEIGHT</u>	<u>COLLAR</u>	<u>GRADE</u>	<u>NEW/USED</u>
17 1/2"	0-825'	13 3/8"	54.5	STC	J55	New
12 1/4"	0-3400'	9 5/8"	36	STC	J55	New
12 1/4"	3400'-4350'	9 5/8"	40	STC	J55	New
8 3/4"	0-7600' MD	5 1/2"	17	LTC	N80	New
8 3/4"	7600'-12235' MD	5 1/2"	17	BTC	N80	New

see COA

11837 per operator 10/27/08  
(5 1/2" BTC will be run thru the curve & Lateral)

<u>DEPTH</u>	<u>OD Csg</u>	<u>WEIGHT</u>	<u>factors: Burst / Collapse / Tension</u>		
0-825'	13 3/8"	54.5	1.1	2.6	11.4
0-3400'	9 5/8"	36	1.12	1.12	2.8
3400'-4350'	9 5/8"	40	1.34	1.36	22.6
0-12235' MD	5 1/2"	17	1.25	1.42	1.67

see COA

11837

(5 1/2 Burst & Collapse Calculated @ 8500' TVD)

APPLICATION TO DRILL

OGX RESOURCES, LLC.  
TANKLESS "35" FEDERAL # 1H  
UNIT "D" SECTION 35  
T22S-R31E EDDY CO. NM

9. CASING SETTING DEPTHS AND CEMENTING:

20"	Conductor	Set 40' of 20" conductor pipe and cement to surface with Redi-mix.
13 3/8"	Surface	Run and set 825' of 13 3/8" 54.5# J-55 ST&C casing. Cement with 480 Sx. of Class "C" 35/65 POZ + 6% Bentonite + 5% Salt; + 5% MPA-5, + .7% Metasilicate, Yield 2.00, tail in with 200 Sx. of Class "C" cement + 2% CaCl, Yield 1.34, circulate cement to surface.
9 5/8"	Intermediate	Run and set 9 5/8" casing as follows: 3850' of 9 5/8" 36# J-55 ST&C casing, 500' of 9 5/8" 40# J-55 ST&C casing. Cement with 580 Sx. of 35/65 Premium Plus Class "C" POZ, + 4% Bentonite, + 5% Salt, + 5% MPA-5, + .7% Metasilicate, +5# LCM /Sx. Yield 2.02, tail in with 200 Sx. of Class "C" cement + 2% CaCl, Yield 1.34, circulate cement to surface.
5 1/2"	Production.	Run and set 11,837' of 5 1/2" 17# N-80 LT&C & BTC. Cement with 535 Sx. of Premium Plus Class "H" cement + 0.7% FL-62, 0.4% BA-10A, + 0.1% FL-52, Yield 2.44, tail in with 525 Sx. of 50/50 Class "C" POZ, + 10% Bentonite, + 5% Salt, Yield 1.33, estimate top of cement 600'.

11. PRESSURE CONTROL EQUIPMENT:

Exhibit "E" shows a 900 Series 3000 PSI working pressure B. O. P. consisting of an annular bag type preventor with middle blind rams and bottom pipe rams. The B.O.P. will be nipples up on the 13 3/8" casing and tested to API specifications. The B.O.P. will be operated at least once in each 24 hour period and the blind rams will be operated when the drill pipe is out of the hole on trips. Full opening stabbing valve and upper Kelly cock will be available at all times in case of need. Exhibit "E-1" shows a hydraulically operated closing unit and a 3" 5000 PSI working pressure choke manifold with dual adjustable chokes. No abnormal pressures or abnormal temperatures are expected during the drilling of this well.

APPLICATION TO DRILL

OGX RESOURCES, LLC.  
 TANKLESS "35" FEDERAL # 1H  
 UNIT "D" SECTION 35  
 T22S-R31E EDDY CO. NM

11. PROPOSED MUD CIRCULATING SYSTEM:

DEPTH	MUD WT.	VISC.	FLUID LOSS	MUD TYPE
40-825' <i>see CCH</i>	8.6-8.8	29-38	NC	Fresh water spud mud use paper to control seepage.
825-4350'	10.0-10.1	29-30	NC	Brine water use paper to control seepage and use high viscosity sweeps to clean hole.
* 4350-8500'	8.4-10.1	28-30	NC	Brine, Cut Brine and fresh water use paper to control seepage and use high viscosity sweeps to clean hole.
6600-11837'	8.4-10.1	34-36	12-15 cc or less	Same as above add Dynazan/ Starch (HB-411) to control water loss.

\* 8500' TVD at this point a plug will be set in order to start horizontal hole.

Sufficient mud materials will be kept on location at all times in order to combat lost circulation, and/or any unexpected kicks. In order to run logs, casing, cores, or DST's the mud system may have to be altered in order to meet these conditions.

APPLICATION TO DRILL

OGX RESOURCES, LLC.  
TANKLESS "35" FEDERAL # 1H  
UNIT "D" SECTION 35  
T22S-R31E EDDY CO. NM

12. LOGGING, CORING, AND TESTING PROGRAM:

- A. Open hole logs will be run in the 8500±' pilot hole: Dual Laterolog, SNP, Neutron-Density, Gamma Ray & Caliper from 8500' back to 9 5/8" casing shoe. Gamma Ray Neutron from 9 5/8" casing shoe back to surface.
- B. Mud logger will be placed on hole below the the 13 3/8" casing to be determined by the Geologist.
- C. No DST's planned. Sidewall cores TBD, Gamma ray to be run at TD via MWD.

13. POTENTIAL HAZARDS:

No abnormal pressures or temperatures are expected. There is no known presence of H<sup>2</sup>S in this area. If H<sup>2</sup>S is encountered the operator will comply with the provisions of Onshore Oil and Gas Order No. 6. No lost circulation is expected to occur. All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well. Estimated BHP 4250± PSI, and Estimated BHT 178°±.

14. ANTICIPATED STARTING DATE AND DURATION OF OPERATION:

Road and location construction will begin after the BLM has approved the APD. Anticipated spud date will be as soon after BLM approval and as soon as a rig will be available. Move in operation and drilling is expected to take 40 days. If production casing is run then an additional 30 days will be needed to complete well and construct surface facilities and/or lay flowlines in order to place well on production.

15. OTHER FACETS OF OPERATIONS:

After running casing, cased hole Gamma Ray, Neutron Collar logs will be run from TD back to all possible productive zones. The BONE SPRING formation will be perforated and stimulated in order to establish production. The well will be swab tested and potentialized as an oil well.

**CEMENT PROGRAM:**

**13 3/8" Surface**

Spacer .....50 bbls of fresh water  
 Slurry .....Lead: 35:65:6 – Poz: Prem Plus C + 6% Bentonite + 5% salt + 5% MPA-5 + .7% Sodium Metasilicate + 5 lbs LCM + 97.9 fresh water  
 Tail: Premium Plus C + 2% CaCl<sub>2</sub> + 56.4% Fresh Water

<b>Cement Properties</b>	<b>Lead</b>	<b>Tail</b>
Est Volume (sacks)	480	200
Density (ppg)	12.80	14.80
Yield (ft <sup>3</sup> /sx)	2.00	1.34
Mix Water, gps	10.21	6.36
Thickening Time, hrs:min		~3:30
Free Water, %		0
Fluid Loss, cc's		~850
Top of Cement	surface	

**9 5/8" Intermediate**

Spacer .....30 bbls of fresh water  
 Lead ..... 35:65 – Poz: Prem Plus C + 4% Bentonite + 5% salt + 5% MPA-5 + .7% Sodium Metasilicate + 5 lbs LCM + 99.6% fresh water  
 Tail .....C + 2% CaCl<sub>2</sub> + 56.4% fresh water

<b>Cement Properties</b>	<b>Lead</b>	<b>Tail</b>
Est Volume (sacks)	580	200
Density (ppg)	12.7	14.8
Yield (ft <sup>3</sup> /sx)	2.02	1.34
Mix Water, gps	10.39	6.36
Thickening Time, hrs:min	4:07	3:32
Free Water, %	2.0	0
Fluid Loss, cc's	~750	~600
Top of Cement	600	

**Kick-Off plug in Pilot Hole for Horizontal**

360 sx Premium Plus H + 1% CD-32 + 29.6% Fresh water  
 17.5 ppg / 0.94 cf/sx / 3.33 mix watr

**5 1/2" Production****Slurry Composition**

Spacer ..... 30 bbls FW  
 Lead ..... Premium Plus H + .7% FL-62 + .4% BA-10A + .1% FL-52 + 45.8% Fresh water  
 Tail ..... 50:50 Poz C + 10% Bentonite + 5% NaCl + 139.7% Fresh water

**Cement Properties**

	<u>Lead</u>	<u>Tail</u>
Estimated Volume, sx	535	525
Density, ppg	11.8	14.8
Yield, cf/sk	2.44	1.33
Mix water required, gps	14.07	6.33
Free Water, %		
Fluid Loss, cc		
Top of cement, ft	9 5/8" csg	

The above cement volumes will be revised pending fluid and open hole caliper measurements.

**MUD PROPERTIES SUMMARY:**

Depth (feet)	Weight (ppg)	Viscosity (sec/1000cc)	Fluid Loss (cc/30min)	PV (cps)	YP (lb/100ft <sup>2</sup> )	Mud Type
0' - 825' Set 13-3/8" Casing	8.6 - 8.8	36 - 38	N/C	6 - 10	6 - 20	Spud Mud
825' - 4,335' Set 9-5/8" Casing	10.0 - 10.1	29 - 30	N/C	0 - 1	0 - 1	Brine
4,335' - 8,500' TVD Pilot Hole	8.4 - 10.0	28 - 29	N/C	0 - 1	0 - 1	Fresh Water To Brine
6,600' - 11,837' MD Set 5-1/2"	8.4 - 10.0	34 - 36	12 - 15	4 - 8	4 - 8	Dynazan / Starch HB 411

#### Auxiliary Well Control & Monitoring Equipment:

A Kelly cock will be in the drill string at all times.

A full opening drill pipe stabbing valve having the appropriate connections will be on the floor at all times.

H<sub>2</sub>S detection equipment will be in operation after drilling on the 13 3/8" casing shoe until the 5 1/2" csg is cemented.

#### LOGGING, CORING, AND TESTING

No logs at surface.

Mud loggers on below 13 3/8" casing shoe - no electric logs at intermediate depth

The Vertical Plot (Production) hole will be logged: GR / Dual Laterolog / Neutron-Density / Caliper  
Sidewall cores at depths TBD

No DST's or pressure testing is anticipated.

The horizontal lateral will be mud logged and GR via MWD.

**Potential Hazards:**

No abnormal pressures or temperatures are expected. There is no known presence of H<sub>2</sub>S in this area. If H<sub>2</sub>S is encountered the operator will comply with the provisions of Onshore Oil & Gas Order No.6. No loss circulation is expected to occur. All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well. Estimated BHP is 3770 psi. & BHT is 135° F.

**Anticipated Starting Date & Duration:**

Road and location construction will begin after the BLM has approved the APD. Anticipated spud date will be prior to December 1, 2008. Move in and drilling operations will take 30 days with an additional 30 days to complete the well and construct production facilities.

# OGX Resources LLC

TANKLESS 35 FED No. 1H

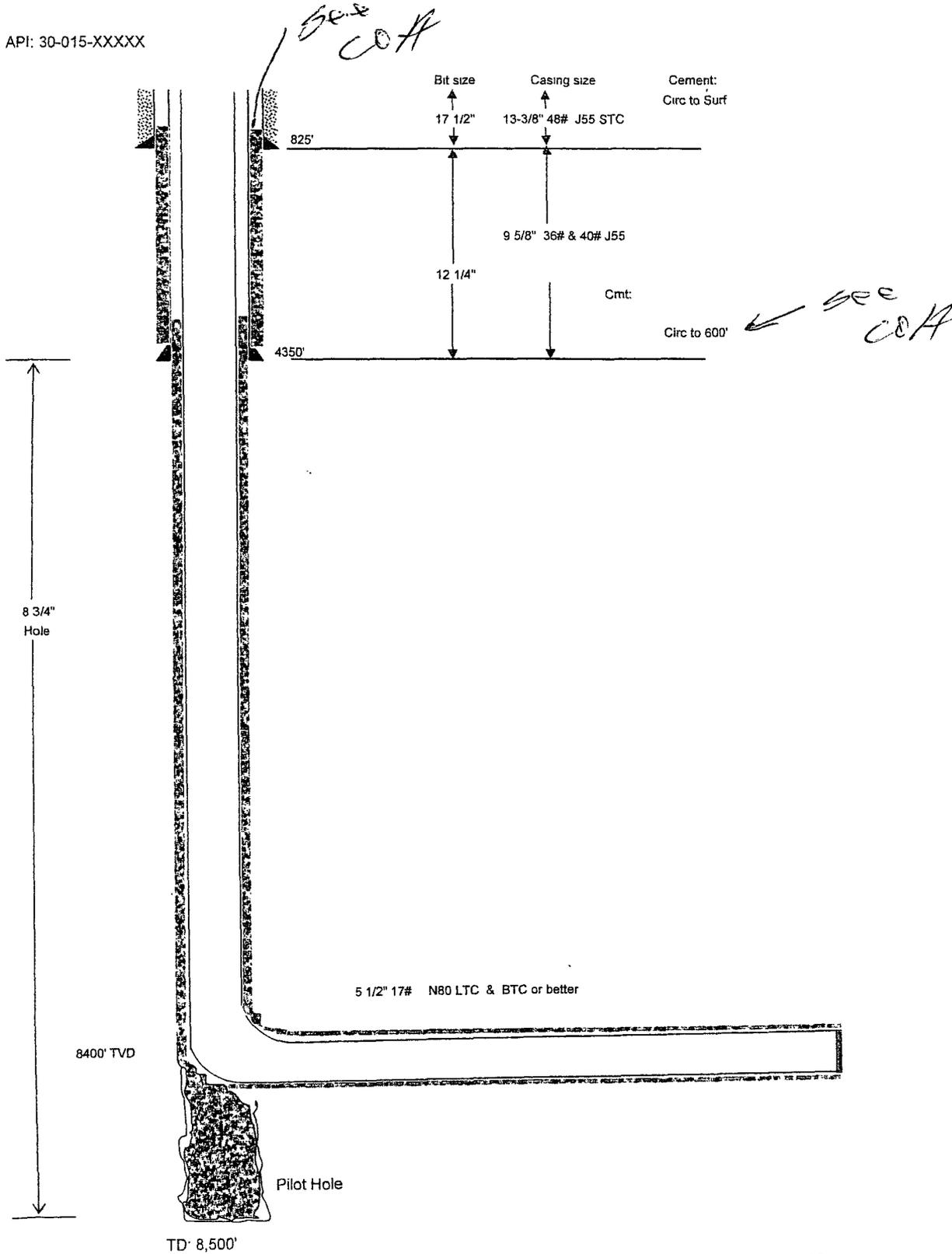
SL: 750' FNL & 730' FWL

BHL: 660' FNL & 330' FEL

Sec. 35, T25S, R31E

Eddy County, New Mexico

API: 30-015-XXXXX



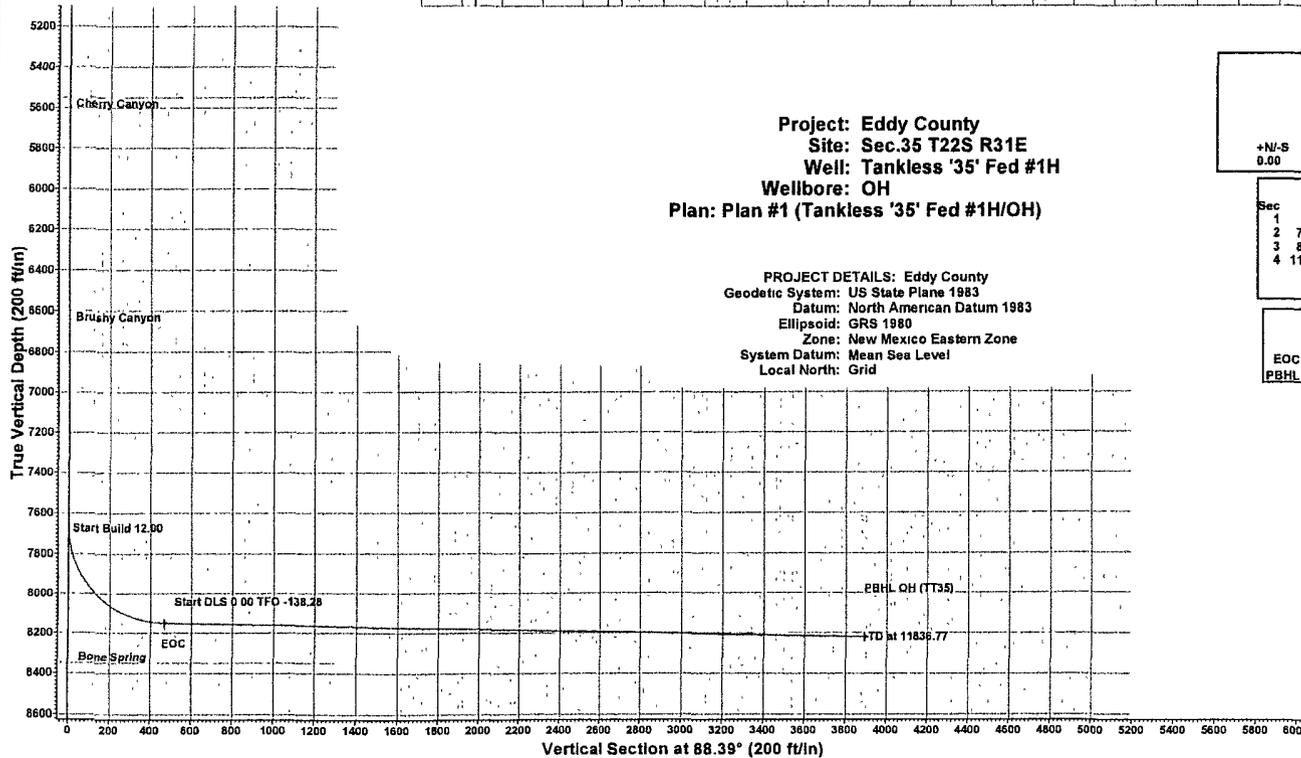
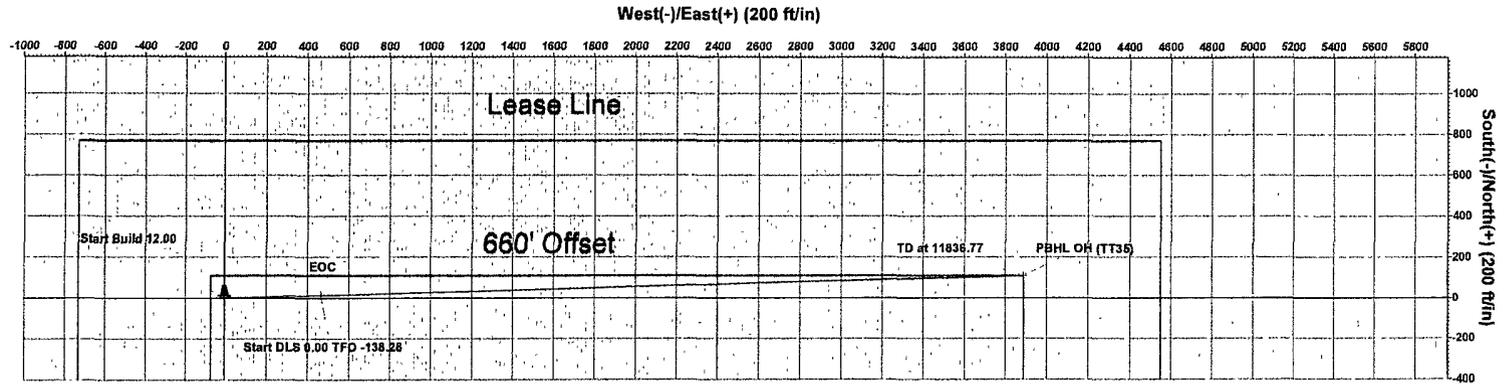
9/6/2008



# OGX Resources

**Azimuths to Grid North**  
 True North: -0.31°  
 Magnetic North: -0.31°

**Magnetic Field**  
 Strength: 0.0snT  
 Dip Angle: 0.00°  
 Date: 2008/08/19  
 Model: USER DEFINED



**Project: Eddy County**  
**Site: Sec.35 T22S R31E**  
**Well: Tankless '35' Fed #1H**  
**Wellbore: OH**  
**Plan: Plan #1 (Tankless '35' Fed #1H/OH)**

**PROJECT DETAILS: Eddy County**  
 Geodetic System: US State Plane 1983  
 Datum: North American Datum 1983  
 Ellipsoid: GRS 1980  
 Zone: New Mexico Eastern Zone  
 System Datum: Mean Sea Level  
 Local North: Grid

WELL DETAILS: Tankless '35' Fed #1H							
Ground Elevation:: 0.00							
RKB Elevation: WELL @ 0.00ft (Original Well Elev)							
Rig Name: Original Well Elev							
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot	
0.00	0.00	492690.921	719995.126	32° 21' 11.344 N	103° 45' 17.179 W		

SECTION DETAILS										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	7672.50	0.00	0.00	7672.50	0.00	0.00	0.00	0.00	0.00	0.00
3	8412.96	88.83	88.39	8150.00	13.14	467.66	12.00	88.39	467.85	
4	11836.77	88.83	88.39	8220.00	109.40	3889.40	0.00	-138.28	3890.94	PBHL OH (TT35)

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)							
EOC	Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
PBHL OH		8150.00	13.14	467.66	492704.061	720462.786	Point
		8220.00	109.40	3889.40	492800.321	723884.626	Point

Plan: Plan #1 (Tankless '35' Fed #1H/OH)  
 Created By: Nate Bingham Date: 10 21, September 08 2008  
 Checked: \_\_\_\_\_ Date: \_\_\_\_\_

**Pathfinder Energy Services**  
Pathfinder X & Y Survey Report



**Company:** OGX Resources  
**Project:** Eddy County  
**Site:** Sec.35 T22S R31E  
**Well:** Tankless '35' Fed #1H  
**Wellbore:** OH  
**Design:** Plan #1

**Local Co-ordinate Reference:** Well Tankless '35' Fed #1H  
**TVD Reference:** WELL @ 0.00ft (Original Well Elev)  
**MD Reference:** WELL @ 0.00ft (Original Well Elev)  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature  
**Database:** EDM 2003.16 Single User Db

**Project** Eddy County, New Mexico

**Map System:** US State Plane 1983  
**Geo Datum:** North American Datum 1983  
**Map Zone:** New Mexico Eastern Zone

**System Datum:** Mean Sea Level

**Site** Sec.35 T22S R31E

**Site Position:** Northing: 492,690.921 ft Latitude: 32° 21' 11.344 N  
**From:** Map Easting: 719,995.126 ft Longitude: 103° 45' 17.179 W  
**Position Uncertainty:** 0.00 ft Slot Radius: " Grid Convergence: 0.31 °

**Well** Tankless '35' Fed #1H

**Well Position** +N-S 0.00 ft Northing: 492,690.921 ft Latitude: 32° 21' 11.344 N  
+E-W 0.00 ft Easting: 719,995.126 ft Longitude: 103° 45' 17.179 W  
**Position Uncertainty** 0.00 ft Wellhead Elevation: ft Ground Level: 0.00 ft

**Wellbore** OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	User Defined	2008/08/19	0.00	0.00	0

**Design** Plan #1

**Audit Notes:**

**Version:** Phase: PLAN Tie On Depth: 0.00

Vertical Section:	Depth From (TVD) (ft)	+N-S (ft)	+E-W (ft)	Direction (°)
	0.00	0.00	0.00	88.39

**Survey Tool Program** Date 2008/09/09

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	11,836.76	Plan #1 (OH)	MWD	MWD - Standard

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**Database:** EDM 2003.16 Single User Db

**Planned Survey**

MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	Northing (ft)	Easting (ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	492,690.92	719,995.13
100.00	0.00	0.00	100.00	100.00	0.00	0.00	0.00	0.00	492,690.92	719,995.13
200.00	0.00	0.00	200.00	200.00	0.00	0.00	0.00	0.00	492,690.92	719,995.13
300.00	0.00	0.00	300.00	300.00	0.00	0.00	0.00	0.00	492,690.92	719,995.13
400.00	0.00	0.00	400.00	400.00	0.00	0.00	0.00	0.00	492,690.92	719,995.13
500.00	0.00	0.00	500.00	500.00	0.00	0.00	0.00	0.00	492,690.92	719,995.13
600.00	0.00	0.00	600.00	600.00	0.00	0.00	0.00	0.00	492,690.92	719,995.13
650.00	0.00	0.00	650.00	650.00	0.00	0.00	0.00	0.00	492,690.92	719,995.13
<b>Rustler</b>										
700.00	0.00	0.00	700.00	700.00	0.00	0.00	0.00	0.00	492,690.92	719,995.13
800.00	0.00	0.00	800.00	800.00	0.00	0.00	0.00	0.00	492,690.92	719,995.13
900.00	0.00	0.00	900.00	900.00	0.00	0.00	0.00	0.00	492,690.92	719,995.13
1,000.00	0.00	0.00	1,000.00	1,000.00	0.00	0.00	0.00	0.00	492,690.92	719,995.13
1,100.00	0.00	0.00	1,100.00	1,100.00	0.00	0.00	0.00	0.00	492,690.92	719,995.13
1,200.00	0.00	0.00	1,200.00	1,200.00	0.00	0.00	0.00	0.00	492,690.92	719,995.13
1,300.00	0.00	0.00	1,300.00	1,300.00	0.00	0.00	0.00	0.00	492,690.92	719,995.13
1,400.00	0.00	0.00	1,400.00	1,400.00	0.00	0.00	0.00	0.00	492,690.92	719,995.13
1,500.00	0.00	0.00	1,500.00	1,500.00	0.00	0.00	0.00	0.00	492,690.92	719,995.13
1,600.00	0.00	0.00	1,600.00	1,600.00	0.00	0.00	0.00	0.00	492,690.92	719,995.13
1,700.00	0.00	0.00	1,700.00	1,700.00	0.00	0.00	0.00	0.00	492,690.92	719,995.13
1,800.00	0.00	0.00	1,800.00	1,800.00	0.00	0.00	0.00	0.00	492,690.92	719,995.13
1,900.00	0.00	0.00	1,900.00	1,900.00	0.00	0.00	0.00	0.00	492,690.92	719,995.13
2,000.00	0.00	0.00	2,000.00	2,000.00	0.00	0.00	0.00	0.00	492,690.92	719,995.13
2,100.00	0.00	0.00	2,100.00	2,100.00	0.00	0.00	0.00	0.00	492,690.92	719,995.13
2,200.00	0.00	0.00	2,200.00	2,200.00	0.00	0.00	0.00	0.00	492,690.92	719,995.13
2,300.00	0.00	0.00	2,300.00	2,300.00	0.00	0.00	0.00	0.00	492,690.92	719,995.13
2,400.00	0.00	0.00	2,400.00	2,400.00	0.00	0.00	0.00	0.00	492,690.92	719,995.13

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MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	N/S (ft)	EW (ft)	V. Sec (ft)	DLeg (°/100ft)	Northing (ft)	Easting (ft)
2,500.00	0.00	0.00	2,500.00	2,500.00	0.00	0.00	0.00	0.00	492,690.92	719,995.13
2,600.00	0.00	0.00	2,600.00	2,600.00	0.00	0.00	0.00	0.00	492,690.92	719,995.13
2,700.00	0.00	0.00	2,700.00	2,700.00	0.00	0.00	0.00	0.00	492,690.92	719,995.13
2,800.00	0.00	0.00	2,800.00	2,800.00	0.00	0.00	0.00	0.00	492,690.92	719,995.13
2,900.00	0.00	0.00	2,900.00	2,900.00	0.00	0.00	0.00	0.00	492,690.92	719,995.13
3,000.00	0.00	0.00	3,000.00	3,000.00	0.00	0.00	0.00	0.00	492,690.92	719,995.13
3,100.00	0.00	0.00	3,100.00	3,100.00	0.00	0.00	0.00	0.00	492,690.92	719,995.13
3,200.00	0.00	0.00	3,200.00	3,200.00	0.00	0.00	0.00	0.00	492,690.92	719,995.13
3,300.00	0.00	0.00	3,300.00	3,300.00	0.00	0.00	0.00	0.00	492,690.92	719,995.13
3,400.00	0.00	0.00	3,400.00	3,400.00	0.00	0.00	0.00	0.00	492,690.92	719,995.13
3,500.00	0.00	0.00	3,500.00	3,500.00	0.00	0.00	0.00	0.00	492,690.92	719,995.13
3,600.00	0.00	0.00	3,600.00	3,600.00	0.00	0.00	0.00	0.00	492,690.92	719,995.13
3,700.00	0.00	0.00	3,700.00	3,700.00	0.00	0.00	0.00	0.00	492,690.92	719,995.13
3,800.00	0.00	0.00	3,800.00	3,800.00	0.00	0.00	0.00	0.00	492,690.92	719,995.13
3,900.00	0.00	0.00	3,900.00	3,900.00	0.00	0.00	0.00	0.00	492,690.92	719,995.13
4,000.00	0.00	0.00	4,000.00	4,000.00	0.00	0.00	0.00	0.00	492,690.92	719,995.13
4,100.00	0.00	0.00	4,100.00	4,100.00	0.00	0.00	0.00	0.00	492,690.92	719,995.13
4,200.00	0.00	0.00	4,200.00	4,200.00	0.00	0.00	0.00	0.00	492,690.92	719,995.13
4,250.00	0.00	0.00	4,250.00	4,250.00	0.00	0.00	0.00	0.00	492,690.92	719,995.13
<b>Basal Anhydrite</b>										
4,300.00	0.00	0.00	4,300.00	4,300.00	0.00	0.00	0.00	0.00	492,690.92	719,995.13
4,400.00	0.00	0.00	4,400.00	4,400.00	0.00	0.00	0.00	0.00	492,690.92	719,995.13
<b>Lamar</b>										
4,450.00	0.00	0.00	4,450.00	4,450.00	0.00	0.00	0.00	0.00	492,690.92	719,995.13
<b>Bell Canyon</b>										
4,500.00	0.00	0.00	4,500.00	4,500.00	0.00	0.00	0.00	0.00	492,690.92	719,995.13
4,600.00	0.00	0.00	4,600.00	4,600.00	0.00	0.00	0.00	0.00	492,690.92	719,995.13

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Pathfinder X & Y Survey Report



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**Planned Survey**

MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	Northing (ft)	Easting (ft)
4,700.00	0.00	0.00	4,700.00	4,700.00	0.00	0.00	0.00	0.00	492,690.92	719,995.13
4,800.00	0.00	0.00	4,800.00	4,800.00	0.00	0.00	0.00	0.00	492,690.92	719,995.13
4,900.00	0.00	0.00	4,900.00	4,900.00	0.00	0.00	0.00	0.00	492,690.92	719,995.13
5,000.00	0.00	0.00	5,000.00	5,000.00	0.00	0.00	0.00	0.00	492,690.92	719,995.13
5,100.00	0.00	0.00	5,100.00	5,100.00	0.00	0.00	0.00	0.00	492,690.92	719,995.13
5,200.00	0.00	0.00	5,200.00	5,200.00	0.00	0.00	0.00	0.00	492,690.92	719,995.13
5,300.00	0.00	0.00	5,300.00	5,300.00	0.00	0.00	0.00	0.00	492,690.92	719,995.13
5,400.00	0.00	0.00	5,400.00	5,400.00	0.00	0.00	0.00	0.00	492,690.92	719,995.13
5,500.00	0.00	0.00	5,500.00	5,500.00	0.00	0.00	0.00	0.00	492,690.92	719,995.13
5,550.00	0.00	0.00	5,550.00	5,550.00	0.00	0.00	0.00	0.00	492,690.92	719,995.13
<b>Cherry Canyon</b>										
5,600.00	0.00	0.00	5,600.00	5,600.00	0.00	0.00	0.00	0.00	492,690.92	719,995.13
5,700.00	0.00	0.00	5,700.00	5,700.00	0.00	0.00	0.00	0.00	492,690.92	719,995.13
5,800.00	0.00	0.00	5,800.00	5,800.00	0.00	0.00	0.00	0.00	492,690.92	719,995.13
5,900.00	0.00	0.00	5,900.00	5,900.00	0.00	0.00	0.00	0.00	492,690.92	719,995.13
6,000.00	0.00	0.00	6,000.00	6,000.00	0.00	0.00	0.00	0.00	492,690.92	719,995.13
6,100.00	0.00	0.00	6,100.00	6,100.00	0.00	0.00	0.00	0.00	492,690.92	719,995.13
6,200.00	0.00	0.00	6,200.00	6,200.00	0.00	0.00	0.00	0.00	492,690.92	719,995.13
6,300.00	0.00	0.00	6,300.00	6,300.00	0.00	0.00	0.00	0.00	492,690.92	719,995.13
6,400.00	0.00	0.00	6,400.00	6,400.00	0.00	0.00	0.00	0.00	492,690.92	719,995.13
6,500.00	0.00	0.00	6,500.00	6,500.00	0.00	0.00	0.00	0.00	492,690.92	719,995.13
6,600.00	0.00	0.00	6,600.00	6,600.00	0.00	0.00	0.00	0.00	492,690.92	719,995.13
<b>Brushy Canyon</b>										
6,700.00	0.00	0.00	6,700.00	6,700.00	0.00	0.00	0.00	0.00	492,690.92	719,995.13
6,800.00	0.00	0.00	6,800.00	6,800.00	0.00	0.00	0.00	0.00	492,690.92	719,995.13
6,900.00	0.00	0.00	6,900.00	6,900.00	0.00	0.00	0.00	0.00	492,690.92	719,995.13
7,000.00	0.00	0.00	7,000.00	7,000.00	0.00	0.00	0.00	0.00	492,690.92	719,995.13

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**Planned Survey**

MD (ft)	Inc (")	Azi (")	TVD (ft)	TVDSS (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg ("/100ft)	Northing (ft)	Easting (ft)
7,100.00	0.00	0.00	7,100.00	7,100.00	0.00	0.00	0.00	0.00	492,690.92	719,995.13
7,200.00	0.00	0.00	7,200.00	7,200.00	0.00	0.00	0.00	0.00	492,690.92	719,995.13
7,300.00	0.00	0.00	7,300.00	7,300.00	0.00	0.00	0.00	0.00	492,690.92	719,995.13
7,400.00	0.00	0.00	7,400.00	7,400.00	0.00	0.00	0.00	0.00	492,690.92	719,995.13
7,500.00	0.00	0.00	7,500.00	7,500.00	0.00	0.00	0.00	0.00	492,690.92	719,995.13
7,600.00	0.00	0.00	7,600.00	7,600.00	0.00	0.00	0.00	0.00	492,690.92	719,995.13
7,672.50	0.00	0.00	7,672.50	7,672.50	0.00	0.00	0.00	0.00	492,690.92	719,995.13
7,675.00	0.30	88.39	7,675.00	7,675.00	0.00	0.01	0.01	12.00	492,690.92	719,995.13
7,700.00	3.30	88.39	7,699.98	7,699.98	0.02	0.79	0.79	12.00	492,690.94	719,995.92
7,725.00	6.30	88.39	7,724.89	7,724.89	0.08	2.88	2.88	12.00	492,691.00	719,998.01
7,750.00	9.30	88.39	7,749.66	7,749.66	0.18	6.27	6.27	12.00	492,691.10	720,001.40
7,775.00	12.30	88.39	7,774.21	7,774.21	0.31	10.95	10.96	12.00	492,691.23	720,006.08
7,800.00	15.30	88.39	7,798.49	7,798.49	0.48	16.91	16.92	12.00	492,691.40	720,012.04
7,825.00	18.29	88.39	7,822.42	7,822.42	0.68	24.13	24.14	12.00	492,691.60	720,019.26
7,850.00	21.29	88.39	7,845.94	7,845.94	0.92	32.59	32.61	12.00	492,691.84	720,027.72
7,875.00	24.29	88.39	7,868.99	7,868.99	1.19	42.27	42.29	12.00	492,692.11	720,037.40
7,900.00	27.29	88.39	7,891.49	7,891.49	1.49	53.15	53.17	12.00	492,692.41	720,048.27
7,925.00	30.29	88.39	7,913.40	7,913.40	1.83	65.18	65.21	12.00	492,692.75	720,060.31
7,950.00	33.29	88.39	7,934.65	7,934.65	2.20	78.34	78.38	12.00	492,693.12	720,073.47
7,975.00	36.29	88.39	7,955.18	7,955.18	2.60	92.60	92.64	12.00	492,693.52	720,087.73
8,000.00	39.29	88.39	7,974.93	7,974.93	3.03	107.91	107.96	12.00	492,693.95	720,103.04
8,025.00	42.29	88.39	7,993.86	7,993.86	3.49	124.24	124.29	12.00	492,694.41	720,119.36
8,050.00	45.29	88.39	8,011.90	8,011.90	3.98	141.53	141.58	12.00	492,694.90	720,136.65
8,075.00	48.29	88.39	8,029.02	8,029.02	4.49	159.74	159.80	12.00	492,695.41	720,154.86
8,100.00	51.29	88.39	8,045.16	8,045.16	5.03	178.82	178.89	12.00	492,695.95	720,173.95
8,125.00	54.28	88.39	8,060.28	8,060.28	5.59	198.72	198.80	12.00	492,696.51	720,193.84
8,150.00	57.28	88.39	8,074.33	8,074.33	6.17	219.38	219.47	12.00	492,697.09	720,214.51

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**Planned Survey**

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8,175.00	60.28	88.39	8,087.29	8,087.29	6.77	240.75	240.85	12.00	492,697.69	720,235.88
8,200.00	63.28	88.39	8,099.11	8,099.11	7.39	262.77	262.87	12.00	492,698.31	720,257.89
8,225.00	66.28	88.39	8,109.76	8,109.76	8.02	285.37	285.49	12.00	492,698.94	720,280.50
8,250.00	69.28	88.39	8,119.21	8,119.21	8.67	308.51	308.63	12.00	492,699.59	720,303.63
8,275.00	72.28	88.39	8,127.44	8,127.44	9.33	332.10	332.23	12.00	492,700.26	720,327.23
8,300.00	75.28	88.39	8,134.42	8,134.42	10.01	356.09	356.23	12.00	492,700.93	720,351.22
8,325.00	78.28	88.39	8,140.14	8,140.14	10.69	380.42	380.57	12.00	492,701.61	720,375.54
8,350.00	81.28	88.39	8,144.58	8,144.58	11.38	405.01	405.17	12.00	492,702.30	720,400.13
8,375.00	84.28	88.39	8,147.72	8,147.72	12.08	429.80	429.97	12.00	492,703.00	720,424.92
8,400.00	87.28	88.39	8,149.56	8,149.56	12.78	454.72	454.90	12.00	492,703.70	720,449.84
8,412.96	88.83	88.39	8,150.00	8,150.00	13.14	467.66	467.84	12.00	492,704.07	720,462.79
<b>EOC</b>										
8,500.00	88.83	88.39	8,151.78	8,151.78	15.59	554.65	554.87	0.00	492,706.51	720,549.78
8,600.00	88.83	88.39	8,153.82	8,153.82	18.40	654.59	654.85	0.00	492,709.32	720,649.72
8,700.00	88.83	88.39	8,155.86	8,155.86	21.21	754.53	754.83	0.00	492,712.13	720,749.66
8,800.00	88.83	88.39	8,157.90	8,157.90	24.02	854.47	854.81	0.00	492,714.94	720,849.60
8,900.00	88.83	88.39	8,159.95	8,159.95	26.83	954.41	954.79	0.00	492,717.75	720,949.54
9,000.00	88.83	88.39	8,161.99	8,161.99	29.64	1,054.35	1,054.77	0.00	492,720.56	721,049.48
9,100.00	88.83	88.39	8,164.03	8,164.03	32.45	1,154.29	1,154.75	0.00	492,723.37	721,149.42
9,200.00	88.83	88.39	8,166.08	8,166.08	35.26	1,254.23	1,254.72	0.00	492,726.18	721,249.35
9,300.00	88.83	88.39	8,168.12	8,168.12	38.07	1,354.17	1,354.70	0.00	492,728.99	721,349.29
9,400.00	88.83	88.39	8,170.16	8,170.16	40.88	1,454.11	1,454.68	0.00	492,731.80	721,449.23
9,500.00	88.83	88.39	8,172.21	8,172.21	43.69	1,554.05	1,554.66	0.00	492,734.61	721,549.17
9,600.00	88.83	88.39	8,174.25	8,174.25	46.50	1,653.99	1,654.64	0.00	492,737.42	721,649.11
9,700.00	88.83	88.39	8,176.29	8,176.29	49.31	1,753.93	1,754.62	0.00	492,740.23	721,749.05
9,800.00	88.83	88.39	8,178.34	8,178.34	52.12	1,853.87	1,854.60	0.00	492,743.04	721,848.99
9,900.00	88.83	88.39	8,180.38	8,180.38	54.93	1,953.81	1,954.58	0.00	492,745.85	721,948.93

**Pathfinder Energy Services**  
Pathfinder X & Y Survey Report



**Company:** OGX Resources  
**Project:** Eddy County  
**Site:** Sec.35 T22S R31E  
**Well:** Tankless '35' Fed #1H  
**Wellbore:** OH  
**Design:** Plan #1

**Local Co-ordinate Reference:** Well Tankless '35' Fed #1H  
**TVD Reference:** WELL @ 0.00ft (Original Well Elev)  
**MD Reference:** WELL @ 0.00ft (Original Well Elev)  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature  
**Database:** EDM 2003.16 Single User Db

**Planned Survey**

MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	Northing (ft)	Easting (ft)
10,000.00	88.83	88.39	8,182.42	8,182.42	57.74	2,053.75	2,054.56	0.00	492,748.66	722,048.87
10,100.00	88.83	88.39	8,184.47	8,184.47	60.55	2,153.69	2,154.54	0.00	492,751.47	722,148.81
10,200.00	88.83	88.39	8,186.51	8,186.51	63.36	2,253.62	2,254.52	0.00	492,754.29	722,248.75
10,300.00	88.83	88.39	8,188.56	8,188.56	66.18	2,353.56	2,354.49	0.00	492,757.10	722,348.69
10,400.00	88.83	88.39	8,190.60	8,190.60	68.99	2,453.50	2,454.47	0.00	492,759.91	722,448.63
10,500.00	88.83	88.39	8,192.65	8,192.65	71.80	2,553.44	2,554.45	0.00	492,762.72	722,548.57
10,600.00	88.83	88.39	8,194.69	8,194.69	74.61	2,653.38	2,654.43	0.00	492,765.53	722,648.51
10,700.00	88.83	88.39	8,196.74	8,196.74	77.42	2,753.32	2,754.41	0.00	492,768.34	722,748.45
10,800.00	88.83	88.39	8,198.78	8,198.78	80.24	2,853.26	2,854.39	0.00	492,771.16	722,848.39
10,900.00	88.83	88.39	8,200.83	8,200.83	83.05	2,953.20	2,954.37	0.00	492,773.97	722,948.33
11,000.00	88.83	88.39	8,202.88	8,202.88	85.86	3,053.14	3,054.35	0.00	492,776.78	723,048.27
11,100.00	88.83	88.39	8,204.92	8,204.92	88.67	3,153.08	3,154.33	0.00	492,779.59	723,148.21
11,200.00	88.83	88.39	8,206.97	8,206.97	91.49	3,253.02	3,254.31	0.00	492,782.41	723,248.15
11,300.00	88.83	88.39	8,209.01	8,209.01	94.30	3,352.96	3,354.29	0.00	492,785.22	723,348.09
11,400.00	88.83	88.39	8,211.06	8,211.06	97.11	3,452.90	3,454.26	0.00	492,788.03	723,448.03
11,500.00	88.83	88.39	8,213.11	8,213.11	99.93	3,552.84	3,554.24	0.00	492,790.85	723,547.96
11,600.00	88.83	88.39	8,215.15	8,215.15	102.74	3,652.78	3,654.22	0.00	492,793.66	723,647.90
11,700.00	88.83	88.39	8,217.20	8,217.20	105.55	3,752.72	3,754.20	0.00	492,796.47	723,747.84
11,800.00	88.83	88.39	8,219.25	8,219.25	108.37	3,852.66	3,854.18	0.00	492,799.29	723,847.78
11,836.77	88.83	88.39	8,220.00	8,220.00	109.40	3,889.40	3,890.94	0.00	492,800.32	723,884.53

PBHL OH (TT35)

**Pathfinder Energy Services**  
Pathfinder X & Y Survey Report



**Company:** OGX Resources  
**Project:** Eddy County  
**Site:** Sec 35 T22S R31E  
**Well:** Tankless '35' Fed #1H  
**Wellbore:** OH  
**Design:** Plan #1

**Local Co-ordinate Reference:** Well Tankless '35' Fed #1H  
**TVD Reference:** WELL @ 0.00ft (Original Well Elev)  
**MD Reference:** WELL @ 0.00ft (Original Well Elev)  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature  
**Database:** EDM 2003.16 Single User Db

**Targets**

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
EOC - plan hits target - Point	0.00	0 00	8,150.00	13.14	467.66	492,704.061	720,462.786	32° 21' 11.449 N	103° 45' 11.726 W
PBHL OH (TT35) - plan hits target - Point	0 00	0.00	8,220.00	109.40	3,889.40	492,800.321	723,884.526	32° 21' 12.216 N	103° 44' 31.831 W

**Formations**

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,400.00	4,400.00	Lamar		0.00	
4,250.00	4,250.00	Basal Anhydrite		0.00	
6,600.00	6,600.00	Brushy Canyon		0.00	
4,450.00	4,450.00	Bell Canyon		0.00	
	8,350.00	Bone Spring		0.00	
650.00	650.00	Rustler		0.00	
5,550.00	5,550.00	Cherry Canyon		0.00	

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_

# DRILLING RIG LAYOUT OGX Resources, LLC.

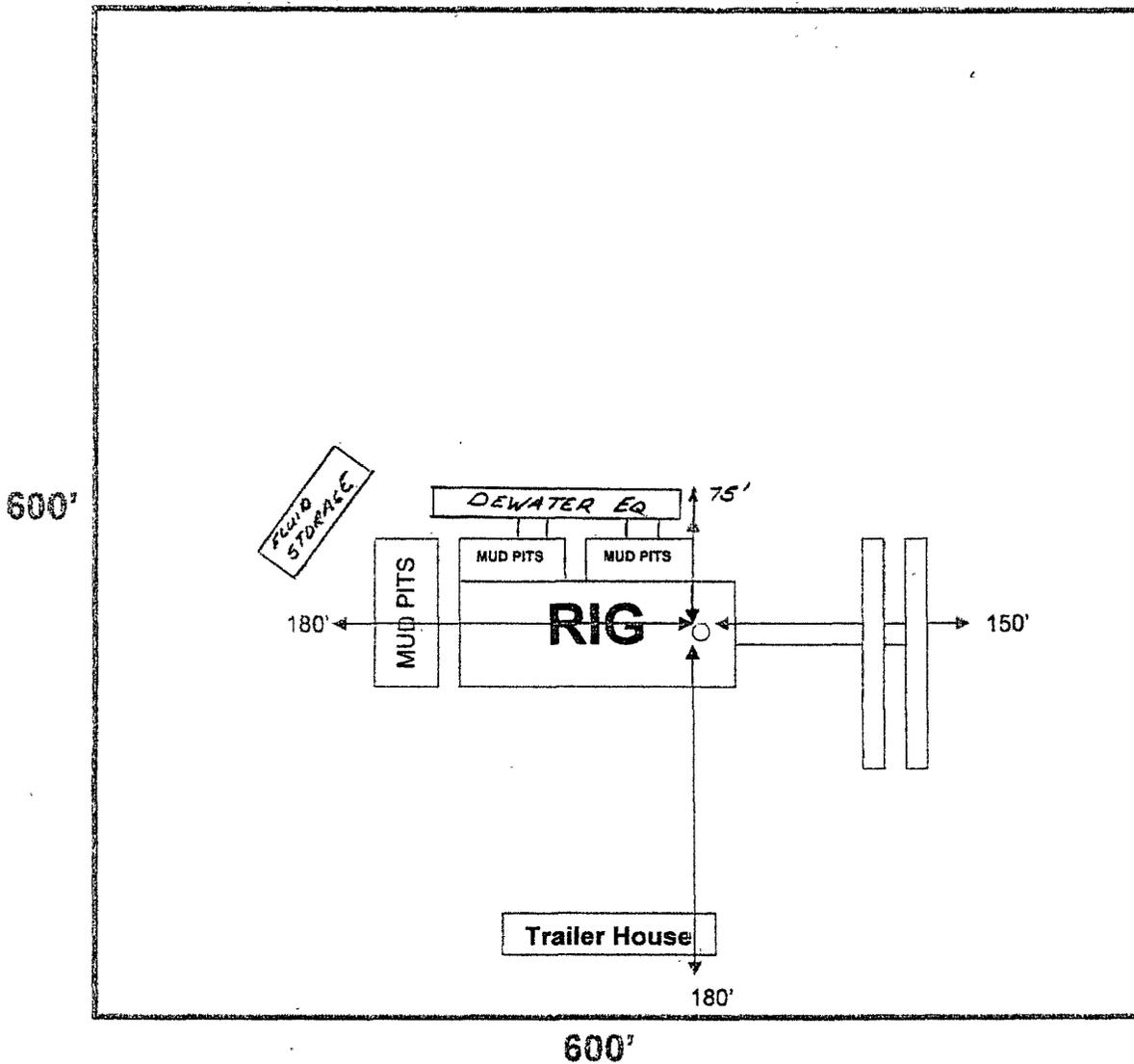
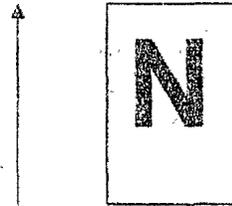
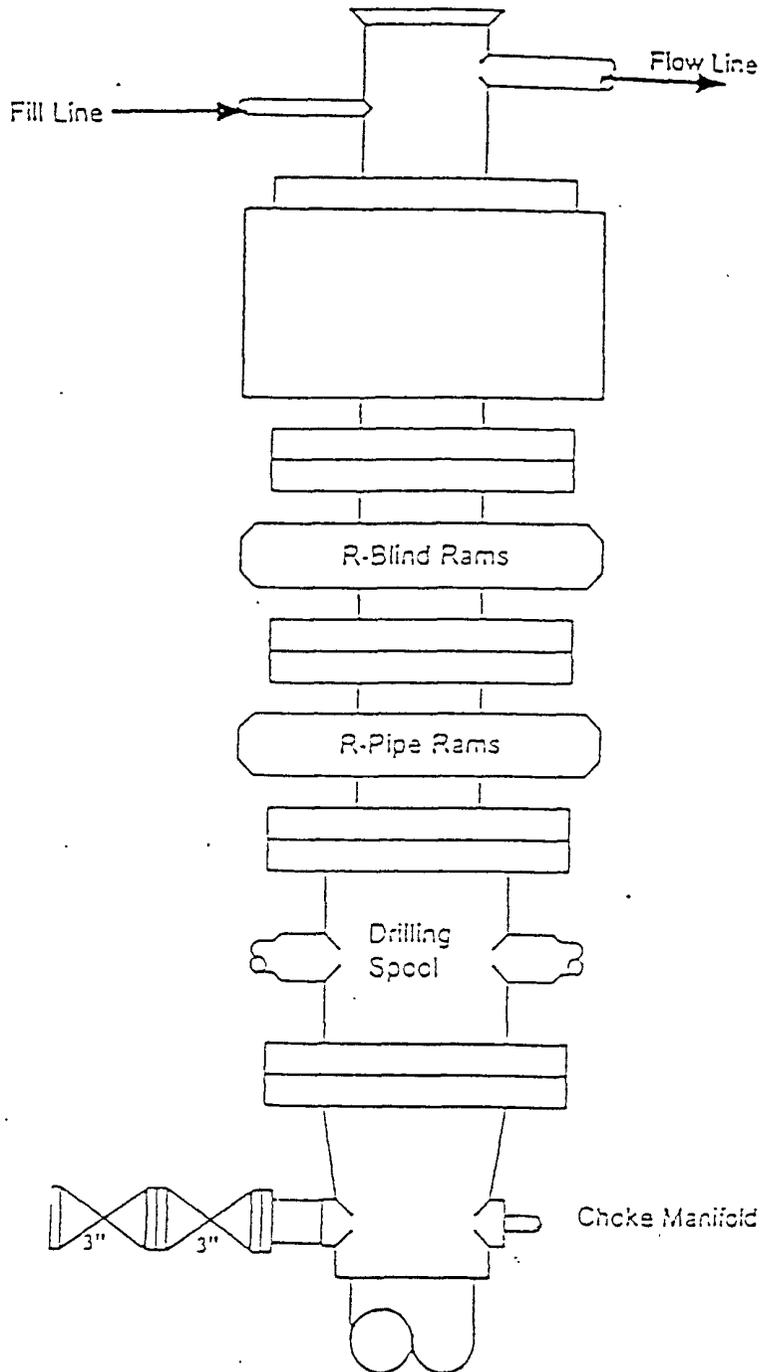


EXHIBIT "D"  
RIG LAY OUT PLAT

OGX RESOURCES, LLC.  
TANKLESS "35" FEDERAL # 1H  
UNIT "D" SECTION 35  
T22S-R31E EDDY CO. NM



Type 900 Series  
3000 psi WP

EXHIBIT "E"  
SKETCH OF B.O.P. TO BE USED ON

OGX RESOURCES, LLC.  
TANKLESS "35" FEDERAL # 1H  
UNIT "D" SECTION 35  
T22S-R31E EDDY CO. NM

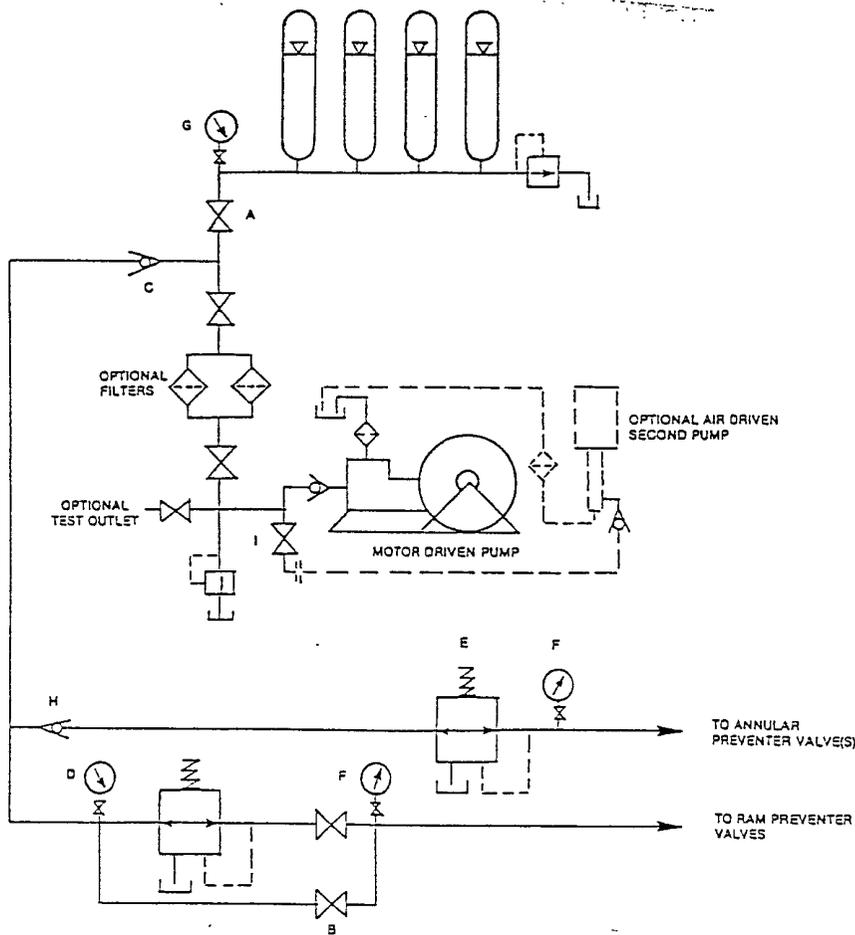


FIGURE K6-1. The schematic sketch of an accumulator system shows required and optional components.

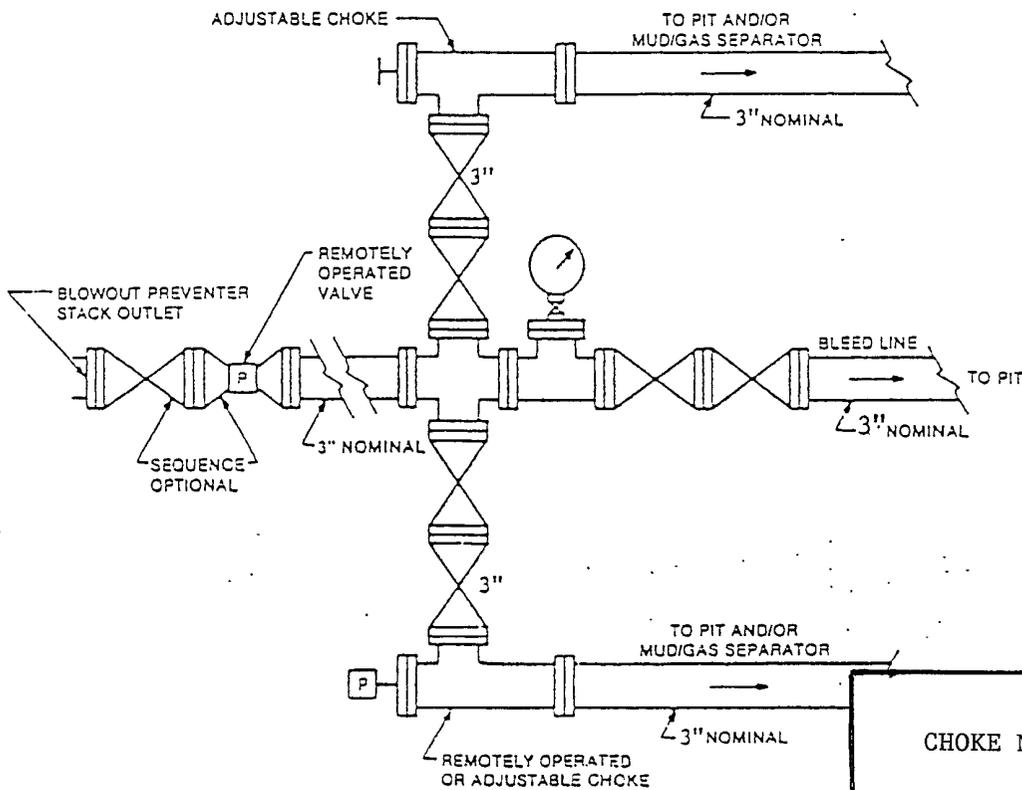


FIGURE K4-2. Typical choke manifold assembly for 5NI rated working pressure service — surface installation.

EXHIBIT "E-1"  
CHOKE MANIFOLD & CLOSING UNIT

OGX RESOURCES, LLC.  
TANKLESS "35" FEDERAL # 1H  
UNIT "D" SECTION 35  
T22S-R31E EDDY CO. NM

## OGX RESOURCES LLC – H<sub>2</sub>S CONTINGENCY PLAN

WHEN WORKING IN AN AREA WHERE H<sub>2</sub>S GAS MIGHT BE ENCOUNTERED, DEFINITE TRAINING REQUIREMENTS MUST BE CARRIED OUT. ALL COMPANIES WILL INSURE THAT ALL PERSONNEL AT THE WELL SITE WILL HAVE HAD ADEQUATE TRAINING IN THE FOLLOWING:

1. HAZARDS AND CHARACTERISTICS OF H<sub>2</sub>S
2. PHYSICAL EFFECTS OF HYDROGEN SULFIDE ON THE HUMAN BODY
3. TOXICITY OF HYDROGEN SULFIDE AND SULFUR DIOXIDE.
4. H<sub>2</sub>S DETECTION.
5. EMERGENCY RESCUE.
6. RESUSCITATORS.
7. FIRST AID AND ARTIFICIAL RESPIRATION.
8. EFFECTS OF H<sub>2</sub>S ON METALS.
9. LOCATION SAFETY.

### SERVICE COMPANY AND VISITING PERSONNEL

- A. EACH SERVICE COMPANY THAT WILL BE ON THIS WELL WILL BE NOTIFIED IF THE ZONE CONTAINS H<sub>2</sub>S.
- B. EACH SERVICE COMPANY MUST PROVIDE FOR THE TRAINING AND EQUIPMENT OF THEIR EMPLOYEES BEFORE THEY ARRIVE AT THE WELLSITE.
- C. EACH SERVICE COMPANY WILL BE EXPECTED TO ATTEND A SITE BRIEFING.

### EMERGENCY EQUIPMENT REQUIREMENTS

1. SIGNS

- A. ONE SIGN LOCATED AT LOCATION ENTRANCE WITH THE FOLLOWING:

**(LEASE NAME & WELL NO.)  
CAUTION – POTENTIAL POISON GAS  
HYDROGEN SULFIDE  
NO ADMITTANCE WITHOUT AUTHORIZATION**

2. WIND SOCK – WIND STREAMERS

- A. ONE 36" WIND SOCK LOCATED AT PROTECTION CENTER, AT A  
VISIBLE HEIGHT ABOVE THE RIG FLOOR.  
B. ONE 36" WIND SOCK LOCATED AT VISIBLE HEIGHT FROM PIT AREAS.

3. HYDROGEN SULFIDED DETECTOR AND ALARMS

- A. H<sub>2</sub>S MONITORS WITH ALARMS WILL BE LOCATED ON THE RIG FLOOR,  
AT THE BELL NIPPLE, AND AT THE FLOE LINE. THESE MONITORS WILL  
SET FOR VISUAL AT 10 PPM WITH RED LIGHT AND AUIBLE AT 15 PPM.  
B. HAND OPERATED DETECTORS WITH TUBES.  
C. H<sub>2</sub>S MONITOR TESTER.

4. CONDITION FLAGS

- A. ONE EACH OF GREEN, YELLOW, AND RED CONDITION FLAGS TO BE  
DISPLAYED TO DENOTE CONDITIONS.

**GREEN - NORMAL CONDITIONS**

**YELLOW - POTENTIAL DANGER**

**RED - DANGER, H<sub>2</sub>S PRESENT**

- B. CONDITION FLAG SHALL BE POSTED AT LOCATION SIGN ENTRANCE.

5. AUXILIARY EQUIPMENT

- A. STRETCHER  
B. 100' LENGTH OF NYLON ROPE

EMERGENCY EQUIPMENT REQUIREMENTS

6. MUD INSPECTION DEVICES

GARRETT GAS TRAN OR HACH TESTER FOR INSPECTION OF SULFIDE CONCENTRATION IN MUD SYSTEM.

7. FIRE EXTINGUISHER

8. BLOW-OUT PREVENTION EQUIPMENT

THE WELL SHALL HAVE HYDRAULIC BOP EQUIPMENT FOR THE ANTICIPATED BHP OF 1500 PSI. EQUIPMENT IS TO BE TESTED ON INSTALLATION.

9. COMBUSTIBLE GAS DETECTOR

THERE SHALL BE ONE COMBUSTIBLE GAS DETECTOR ON LOCATION AT ALL TIMES.

10. BOP TESTING

BOP, CHOKE LINE, AND KILL LINE WILL BE TESTED.

11. AUDIO SYSTEM

RADIO COMMUNICATION EQUIPMENT

- A. RIG FLOOR OR TRAILER
- B. VEHICLE

12. SPECIAL CONTROL EQUIPMENT

- A. HYDRAULIC BOP EQUIPMENT WITH REMOTE CONTROL ON GROUND.
- B. ROTATING HEAD.

13. EVACUATION PLAN

EVACUATION ROUTES SHOULD BE ESTABLISHED PRIOR TO SPUDDING EACH WELL AND DISCUSSED WITH ALL RIG PERSONNEL.

14. DESIGNATED AREA

**PERFORM EACH TOUR:**

1. CHECK FIRE EXTINGUISHERS FOR PROPER CHARGE.
2. CHECK BREATHING EQUIPMENT
3. CHECK OPERATION OF H<sub>2</sub>S DETECTION SYSTEM.

---

**PERFORM EACH WEEK:**

1. CHECK EACH PIECE OF BREATHING EQUIPMENT FOR DEMAND REGULATOR FUNCTION. THIS REQUIRES THAT THE BOTTLE BE OPENED AND THE MASK ASSY BE PUT ON TIGHT ENOUGH SO THAT WHEN YOU INHALE, YOU RECEIVE AIR.
2. BLOW OUT PREVENTOR SKILLS
3. CHECK SUPPLY PRESSURE ON BOP ACCUMULATOR STAND BY SOURCE.
4. CHECK ALL SKA-PAC UNITS FOR OPERATION: DEMAND REGULATOR, ESCAPE BOTTLE AIR VOLUMES, SUPPLY BOTTLE AIR VOLUMES.
5. CHECK BREATHING EQUIPMENT MASK ASSY TO SEE THAT STRAPS ARE LOOSEMED AND TURNED BACK, READY FOR DON.
6. CHECK PRESSURE ON BREATHING EQUIPMENT AIR BOTTLES FOR FULL CHARGE.
7. CONFIRM PRESSURE ON ALL SUPPLY AIR BOTTLES.
8. PERFORM BREATHING EQUIPMENT DRILLS WITH ON-SITE PERSONNEL.
9. CHECK THE FOLLOWING SUPPLIES FOR AVAILABILITY:
  - A. EMERGENCY TELEPHONE LIST
  - B. HAND OPERATED H<sub>2</sub>S DETECTORS AND TUBES.

GENERAL EVACUATION PLAN

OGX RESOURCES LLC – H<sub>2</sub>S CONTINGENCY PLAN

WELL BLOWOUT – IF EMERGENCY

1. EVACUATE ALL PERSONNEL IF POSSIBLE.
2. IF SOUR GAS – EVACUATE RIG PERSONNEL.
3. IF SOUR GAS – EVACUATE PUBLIC WITHIN 3000 FT RADIUS OF EXPOSURE.
4. DON SCBA AND RESCUE.
5. CALL 911 EMERGENCY HELP (FIRE AND AMBULANCE) AND NOTIFY SR. DRILLING FOREMAN AND DISTRICT FOREMAN.
6. GIVE FIRST AID.

PERSON DOWN LOCATION/FACILITY

1. IF IMMEDIATELY POSSIBLE, CONTACT 911. GIVE LOCATION AND WAIT FOR CONFIRMATION.
2. DON SCBA AND RESCUE.

EMERGENCY PHONE LIST

GOVERNMENT AGENCIES

<u>EDDY COUNTY SHERIFF'S OFFICE</u>	911
NON- EMERGENCY .....	<sup>575</sup> <del>505</del> -746-9888
<u>FIRE DEPARTMENT</u>	911
CARLSBAD – NON EMERGENCY .....	<sup>575</sup> <del>505</del> -885-2111
<u>BLM</u>	
CARLSBAD .....	<sup>575</sup> <del>505</del> -361-2822
<u>STATE POLICE DEPARTMENT</u>	911
NON-EMERGENCY .....	<sup>575</sup> <del>505</del> -437-1313
<u>CITY OF CARLSBAD</u>	
.....	<sup>575</sup> <del>505</del> -885-2111
<u>AMBULANCE</u>	
CARLSBAD – NON EMERGENCY .....	<sup>575</sup> <del>505</del> -885-2111
<u>HOSPITALS</u>	
CARLSBAD .....	<sup>575</sup> <del>505</del> -887-4100
<u>AREOCARE</u> .....	806-747-8923
<u>CHEMTREC</u> .....	800-424-9300
<u>OSHA</u>	
LUBBOCK, TX.....	800-692-4204

EMERGENCY CONTACT LIST

OGX RESOURCES LLC – H<sub>2</sub>S CONTINGENCY PLAN

OGX RESOURCES	OFFICES	432-685-1287
DONNY LEEK	CONSULTANT	432-634-4862
JEFF BIRKELBACH	OGX OPERATIONS	432-553-0391 cell
STEVE DOUGLAS	OGX OPERATIONS	432-934-6800 cell
KIP AGAR	OGX PRESIDENT	432-631-1736 cell

OGX RESOURCES, LLC

TOXIC EFFECTS OF HYDROGEN SULFIDE

HYDROGEN SULFIDE IS EXTREMELY TOXIC. THE ACCEPTABLE CEILING CONCENTRATION FOR EIGHT-HOUR EXPOSURE IS 10 PPM, WHICH IS .001% BY VOLUME. HYDROGEN SULFIDE IS HEAVIER THAN AIR (SPECIFIC GRAVITY – 1.192) AND COLORLESS. IT FORMS AN EXPLOSIVE MIXTURE WITH AIR BETWEEN 4.3 & 46% BY VOLUME. HYDROGEN SULFIDE IS ALMOST AS TOXIC AS HYDROGEN CYANIDE AND IS BETWEEN FIVE & SIX TIMES MORE TOXIC AS CARBON MONOXIDE. TOXICITY DATA FOR HYDROGEN SULFIDE AND VARIOUS OTHER GASES ARE COMPARED IN TABLE I. PHYSICAL EFFECTS AT VARIOUS HYDROGEN SULFIDE EXPOSURE LEVELS ARE SHOWN IN TABLE II.

TABLE I.

TOXICITY OF VARIOUS GASES

Common Name	Chem Sym	SpGr	Threshold Lm	Hazardous Lm	Lethal Lm
Hydrogen Cyanide	HCN	0.94	10 PPM	150 PPM/Hr	300 PPM
Hydrogen Sulfide	H <sub>2</sub> S	1.18	10 PPM	250 PPM/Hr	600 PPM
Sulfur Dioxide	SO <sub>2</sub>	2.21	5 PPM		1000 PPM
Chlorine	CL <sub>2</sub>	2.45	1 PPM	4 PPM/Hr	1000 PPM
Carbon Monoxide	CO	0.97	50 PPM	400 PPM/Hr	1000 PPM
Carbon Dioxide	CO	1.52	5000 PPM	5%	10%
Methane	CH <sub>4</sub>	0.55	90,000 PPM	Combustible Above 5% in Air	

1. THRESHOLD LIMIT – CONCENTRATION AT WHICH IT IS BELIEVED THAT ALL WORKERS MAY BE REPEATEDLY EXPOSED DAY AFTER DAY WITHOUT ADVERSE EFFECTS.
2. HAZARDOUS LIMIT – CONCENTRATION THAT WILL CAUSE DEATH WITH SHORT TERM EXPOSURE.
3. LETHAL CONCENTRATION – CONCENTRATION THAT WILL CAUSE DEATH WITH SHORT – TERM EXPOSURE.

TOXIC EFFECTS OF HYDROGEN SULFIDE

TABLE II

PHYSICAL EFFECTS OF HYDROGEN SULFIDE

<u>PERCENT</u>	<u>PPM</u>	<u>Concentration Grains</u>	<u>Physical Effects</u>
0.001	<10	0.65	Obvious and unpleasant odor
0.002	10	1.30	Safe for 8 hours of exposure
0.010	100	6.48	Kills sense of smell in 3-15 minutes. May sting eyes & throat.
0.020	200	12.96	Kills sense of smell; stings eyes & throat
0.050	500	32.96	Dizziness, Breathing ceases in a few minutes, Needs prompt artificial respiration.
0.070	700	45.36	Unconscious quickly, Death will result if not rescued promptly
0.100	1000	64.3	Unconscious at once, followed by death within minutes

USE OF SELF-CONTAINED BREATHING EQUIPMENT

1. WRITTEN PROCEDURES SHALL BE PREPARED COVERING SAFE USE OF SCBA'S IN DANGEROUS ATMOSPHERE, WHICH MIGHT BE ENCOUNTERED IN NORMAL OPERATIONS OR IN EMERGENCIES. PERSONNEL SHALL BE FAMILIAR WITH THESE PROCEDURES AND THE AVAILABLE SCBA.
2. SCBA'S SHALL BE INSPECTED FREQUENTLY AT RAMDON TO INSURE THAT THEY ARE PROPERLY USED, CLEANED, AND MAINTAINED.
3. ANYONE WHO MAY USE THE SCBA'S SHALL BE TRAINED IN HOW TO INSURE PROPER FACE-PIECE TO FACE SEAL. THEY SHALL WEAR SCBA'S IN NORMAL AIR AND THEN WEAR THEM IN A TEST ATMOSPHERE. BEARD AND/OR SIDEBURNS AND EYGLASSES WILL NOT ALLOE A PROPER SEAL. ANYONE THAT MAY BE REASONABLY EXPECTED TO WEAR SCBA'S SHOULD HAVE THESE ITEMS REMOVED BEFORE ENTERING A TOXIC ATMOSPHERE. A SPECIAL MASK MUST BE OBTAINED FOR ANYONE WHO MUST WAER EYGLASSES OR CONTACT LENSES.
4. MAINTENANCE AND CARE OF SCBA'S:
  - A. A PROGRAM FOR MAINTENANCE AND CARE OF SCBA'S SHALL INCLUDE THE FOLLOWING:
    1. INSPECTIO FOR DEFECTS, INCLUDING LEAK CHECKS
    2. CLEANING AND DISINFECTING
    3. REPAIR
    4. STORAGE
  - B. INSPECTION; SELF-CONTAINED BREATHING APPARATUS FOR EMERGENCY USE SHALL BE INSPECTED MONTHLY AND THE FOLLOWING PERMANENT RECORDS KEPT OF THESE INSPECTIONS.
    1. FULLY CHARGED CYLINDERS
    2. REGULATOR AND WARNING DEVICE OPERATION.
    3. CONDITION OF FACE PIECE AND CONNECTIONS.
    4. ELASTOMER OR RUBBER PARTS SHALL BE STRETCHED OR MASSAGED TO KEEP THEM PLIABLE AND PREVENT DETERIORATION.
  - C. ROUTINELY USED SCBA'S SHALL BE COLLECTED, CLEANED AND DISINFECTED AS FREQUENTLY AS NECESSARY TO INSURE PROPER PROTECTION IS PROVIDED.

OGX RESOURCES LLC – H<sub>2</sub>S CONTINGENCY PLAN

5. PERSONS ASSIGNED TASKS THAT REQUIRES USE OF SELF- CONTAINED BREATHING EQUIPMENT SHALL BE CERTIFIED PHYSICALLY FIT FOR BREATHING EQUIPMENT USAGE BY THE LOCAL COMPANY PHYSICIAN AT LEAST ANNUALLY.
  
6. SCABA'S SHOULD BE WORN WHEN:
  - A. ANY EMPLOYEE WORKS NEAR THE TOP OR ON TOP OF ANY TANK UNLESS TEST REVEALS LESS THAN 10 PPM OF H<sub>2</sub>S.
  - B. WHEN BREAKING OUT ANY LINE WHERE H<sub>2</sub>S CAN REASONABLY BE EXPECTED.
  - C. WHEN SAMPLING AIR IN AREAS TO DETERMINE IF TOXIC CONCENTRATIONS OF H<sub>2</sub>S EXISTS.
  - D. WHEN WORKING IN AREAS WHERE OVER 10 PPM H<sub>2</sub>S HAS BEEN DETECTED.
  - E. AT ANY TIME THERE IS A DOUBT AS TO THE H<sub>2</sub>S LEVEL IN THE AREA TO BE ENTERED.

RESCUE

FIRST AID FOR H<sub>2</sub>S POISONING

DO NOT PANIC!

REMAIN CALM – THINK

1. HOLD YOUR BREATH (DO NOT INHALE FIRST)
2. PUT ON BREATHING APPARATUS.
3. REMOVE VICTIMS TO FRESH AIR AS QUICKLY AS POSSIBLE. GO UP WIND.
4. BRIEFLY APPLY CHEST PRESSURE – ARM LIFT METHOD OF ARTIFICIAL RESPIRATION TO CLEAN THE VICTIM'S LUNGS AND TO AVOID INHALING ANY TOXIC GAS DIRECTLY FROM THE VICTIM'S LUNGS.
5. PROVIDE FOR PROMPT TRANSPORTATION TO THE HOSPITAL, AND CONTINUE GIVING ARTIFICIAL RESPIRATION IF NEEDED.
6. HOSPITALS OR MEDICAL FACILITIES NEED TO BE INFORMED BEFORE-HAND OF THE POSSIBILITY OF H<sub>2</sub>S GAS POISONING – NO MATTER HOW REMOTE THE POSSIBILITY.
7. NOTIFY EMERGENCY ROOM PERSONNEL THAT THE VICTIMS HAVE BEEN EXPOSED TO H<sub>2</sub>S GAS.

BESIDES BASIC FIRST AID, EVERYONE ON LOCATION SHOULD HAVE A GOOD WORKING KNOWLEDGE OF ARTIFICIAL RESPIRATION, AS WELL AS FIRST AID FOR EYES AND SKIN CONTACT WITH LIQUID H<sub>2</sub>S. EVERYONE NEEDS TO MASTER THESE NECESSARY SKILLS.

SURFACE USE PLAN

OGX RESOURCES, LLC.  
TANKLESS "35" FEDERAL # 1H  
UNIT "D" SECTION 35  
T22S-R31E EDDY CO. NM

1. EXISTING AND PROPOSED ROADS:

- A. Exhibit "B" is a reproduction of a County General Hi-way map showing existing roads. Exhibit "C" is a reproduction of a USGS topographic map showing existing roads and proposed roads. All existing roads will be maintained in a condition equal to or better than current conditions. All new roads will be constructed to BLM specifications.
- B. Exhibit "A" shows the proposed well site as staked.
- C. Directions to location: From Hobbs New Mexico take U. S. Hi-way 62-180 West toward Carlsbad, New Mexico, go 38± miles to CR-29 turn Left (South) go 14± miles to Mills Ranch Road, turn Right (West) go 1 mile to location on the North side of road.
- D. Exhibit "C" shows a topographic map with existing roads and proposed roads or flowline routes and powerline routes, if they are required.

2. PLANNED ACCESS ROADS: No new roads will be required.

- A. The access roads will be crowned and sitched to a 14' wide travel surface, within a 30' R-O-W.
- B. Gradient of all roads will be less than 5%.
- C. Turn-outs will be constructed where necessary.
- D. If require new access roads will be surface with a minimum of 4-6" of caliche. this material will be obtained from a local source.
- E. Center line for new roads will be flagged, road construction will be done as field conditions require.
- F. Culverts will be placed in the access road as drainage conditions require. Roads will be constructed to use low water crossings for drainage as required by the topographic conditions.

3. LOCATION OF EXISTING WELLS WITHIN A ONE MILE RADIUS: EXHIBIT "A-1"

- A. Water wells - None within 2 miles of location.
- B. Disposal wells - None known
- C. Drilling wells - None known
- D. Producing wells - As shown on Exhibit "A-1"
- E. Abandoned wells - As shown on Exhibit "A-1"

SURFACE USE PLAN

OGX RESOURCES, LLC.  
TANKLESS "35" FEDERAL # 1H  
UNIT "D" SECTION 35  
T22S-R31E EDDY CO. NM

4. If on completion this well is a producer the operator will lay pipelines and construct powerlines along existing road R-O-W's or other existing R-O-W's. Exhibit "C" shows proposed roads , flowlines and powerlines.

5. LOCATION & TYPE OF WATER SUPPLY:

Water will be purchased locally from a commercial source and trucked over the location access roads or piped to location in flexible lines laid on top of the ground.

6. SOURCE OF CONSTRUCTION MATERIAL:

If possible construction material will be obtained from the excavation of the drill site, if additional material is required it will be obtained from a local source and transported over the location access roads as shown on Exhibit "C".

7. METHODS OF HANDLING WASTE:

- A. All trash, junk and other waste material will be contained in trash cages or trash bins in order to prevent scattering. When the job is completed all contents will be removed and disposed of in an approved sanitary land fill.
- B. Sewage from living quarters will be drained into holding tanks and will be cleaned out periodically. A Porta-John will be provided for the rig crews. This equipment will be properly maintained during the drilling operations and removed upon completion of well.
- C. Where a closed loop mud system is used to drill a well the drilling fluid that remains after the drilling and casing is run or the well is Plugged and abandoned will be removed from the location and in some cases may be used on another well or transported to a State approve disposal site. The drilling cuttings that result from drilling the well will likewise be transported to a State approved disposal site.
- D. All water produced while completing this well and completion fluids will be treated in the same procedure as the drilling fluids.
- E. Any remaining salts or mud additive that was not used will be removed by the supplier, this includes all broken sacks and containers.

8. ANCILLARY FACILITIES:

- A. No camps or air strips will be constructed on this location.

SURFACE USE PLAN

OGX RESOURCES, LLC.  
TANKLESS "35" FEDERAL # 1H  
UNIT "D" SECTION 35  
T22S-R31E EDDY CO. NM

9. WELL SITE LAYOUT:

- A. Exhibit "D" shows the proposed well site layout.
- B. This Exhibit shows the location of reserve pit, sump pits, and living facilities.
- C. Mud pits in the active circulating system will be steel pits and the reserve pits will be unlined unless subsurface conditions encountered during pit construction indicate that a plastic liner is required to contain lateral migration.
- D. If needed the reserve pits will be lined with polyethelene. The pit liner will be no less than 21 mils thick and the liner will be extended at least 3 feet over the top of the dikes and secured in place to keep edge of liner in place.
- E. The reserve pit will be fenced on three sides and fenced with four strands of barbed wire during drilling and completion phases. The 4th side will be fenced after drilling operations are complete and the drilling rig has moved out. If the well is a producer the mud pits will remain fenced in until the mud has dried up enough to break out the pits and reclaimed according to BLM requirements.

10. PLANS FOR RESTORATION OF SURFACE:

Rehabilitation of the location and reserve pits will be allowed to dry properly, fluids may be moved and disposed of in accordance with article 7-E as previously noted. The pit area will then be leveled and contoured to conform to the original and surrounding area. Drainage systems, if any will be reshaped to the original configuration with provisions made to alleviate future erosion. In case of the well completed as a producer the drilling pad will be necessary to construct production facilities. After the area has been shaped and contoured top soil from the spoil pile will be placed over the disturbed area to the extent possible so that revegetation procedures can be accomplished to comply with the BLM specifications.

If the well is a dry hole the pad and road area will be contoured to match the existing terrain. Top soil will be spread to the extent possible and revegetation will be carried out according to the BLM specifications.

Should the well be a producer the previously noted procedures will apply to those areas which are not required for production facilities.

SURFACE USE PLAN

OGX RESOURCES, LLC.  
TANKLESS "35" FEDERAL # 1H  
UNIT "D" SECTION 35  
T22S-R31E EDDY CO. NM

11. OTHER INFORMATION:

- A. The topographic map shows low lying sand dunes with a slight dip to the Southwest. Soils consists of loose tan to red sands. Vegetation consists of desert shrub, mesquite, yucca and native grasses.
- B. The surface and the minerals are owned by The U. S. Department of Interior and is administered by the Bureau of Land Management. The surface is leased to ranchers and us used to graze livestock, and oil and gas companies use the surface to drill and product oil and gas.
- C. An archaeological survey will be performed and the findings will be filed with The Bureau of Land Management in the Carlsbad Field office in Carlsbad New Mexico.
- D. There are no dwellings within two miles of this location.

CERTIFICATION

I HEREBY CERTIFY THAT I OR PERSONS UNDER MY DIRECT SUPERVISION HAVE INSPECTED THE PROPOSED DRILL SITE AND THE ACCESS ROAD ROUTES, THAT I AM FAMILIAR WITH THE CONDITIONS THAT CURRENTLY EXIST , AND THAT THE STATEMENTS MADE IN THIS PLAN ARE TO THE BEST OF MY KNOWLEDGE ARE TRUE AND CORRECT , AND THAT THE WORK ASSOCIATED WITH THE OPERATIONS PROPOSED HERE IN WILL BE PERFORMED BY OGX RESOURCES, LLC. ITS CONTRACTORS AND/OR IT'S SUB-CONTRACTORS AND IS IN CONFORMANCE WITH THIS PLAN AND THE TERMS AND THE CONDITIONS UNDER WHICH IT IS APPROVED. THIS STATEMENT IS SUBJECT TO THE PROVISIONS OF U.S.C. 1001 FOR FILING OF A FALSE REPORT.

OPERATOR'S REPRESENTATIVES

BEFORE CONSTRUCTION

TIERRA EXPLORATION, INC  
P. O. BOX 2188  
HOBS, NEW MEXICO 88241  
JOE JANICA 575-391-8503  
CELL 575-390-1598

DURING & AFTER CONSTRUCTION

OGX RESOURCES, LLC.  
P. O. BOX 2064  
MIDLAND, TEXAS 77902  
JEFF BIRKELBACH  
OFFICE 432-685-1287  
CELL 432-553-0391

NAME Joe T. Janica

TITLE Permit Eng.

DATE 09/16/08



# PECOS DISTRICT CONDITIONS OF APPROVAL

OPERATOR'S NAME:	OGX Resources LLC
LEASE NO.:	NM101601
WELL NAME & NO.:	Tankless 35 Federal # 1
SURFACE HOLE FOOTAGE:	770' FNL & 730' FWL
BOTTOM HOLE FOOTAGE:	660' FNL & 350' FEL
LOCATION:	Section 35, T. 22 S., R 31 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**
  - Lesser Prairie Chicken
- Construction**
  - Notification
  - Topsoil
  - Closed Loop System
  - Federal Mineral Material Pits
  - Well Pads
  - Roads
- Road Section Diagram**
- Drilling**
- Production (Post Drilling)**
  - Well Structures & Facilities
  - Pipelines
  - Electric Lines
- Reseeding Procedure/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)

Timing Limitation Stipulation/Condition of Approval for Lesser Prairie-Chicken: Oil and gas activities including 3-D geophysical exploration, and drilling will not be allowed in lesser prairie-chicken habitat during the period from March 1 through June 15 annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, geophysical exploration other than 3-D operations, and pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Additionally, no new drilling will be allowed within up to 200 meters of leks known at the time of permitting. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 ft. from the source of the noise.

## **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 (505) 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. CLOSED LOOP SYSTEM**

Although this is a closed loop system and no reserve pits will be utilized, the v-door will be on the northeast side of the proposed location.

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 (505) 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**

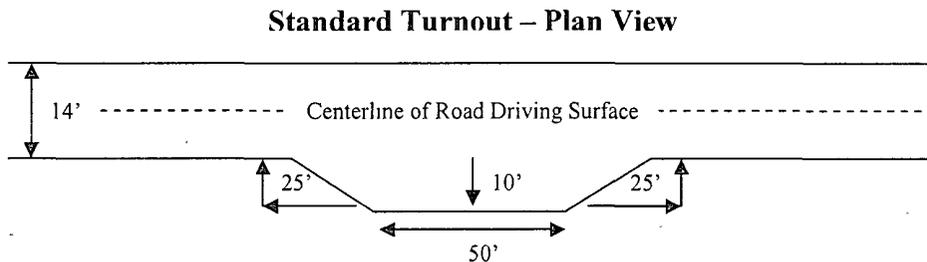
Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

**Ditching**

Ditching shall be required on both sides of the road.

**Turnouts**

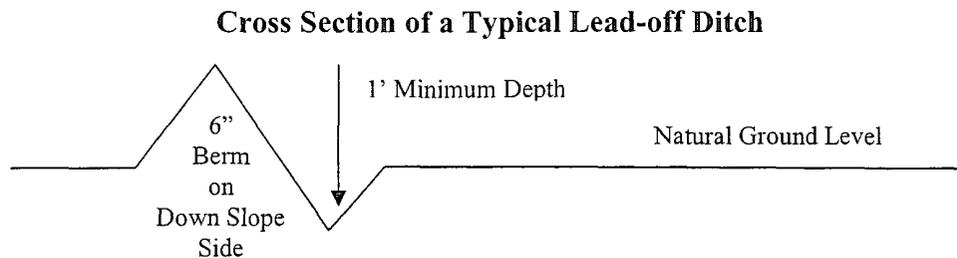
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall be constructed on all blind curves. Turnouts shall conform to the following diagram:



## 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**

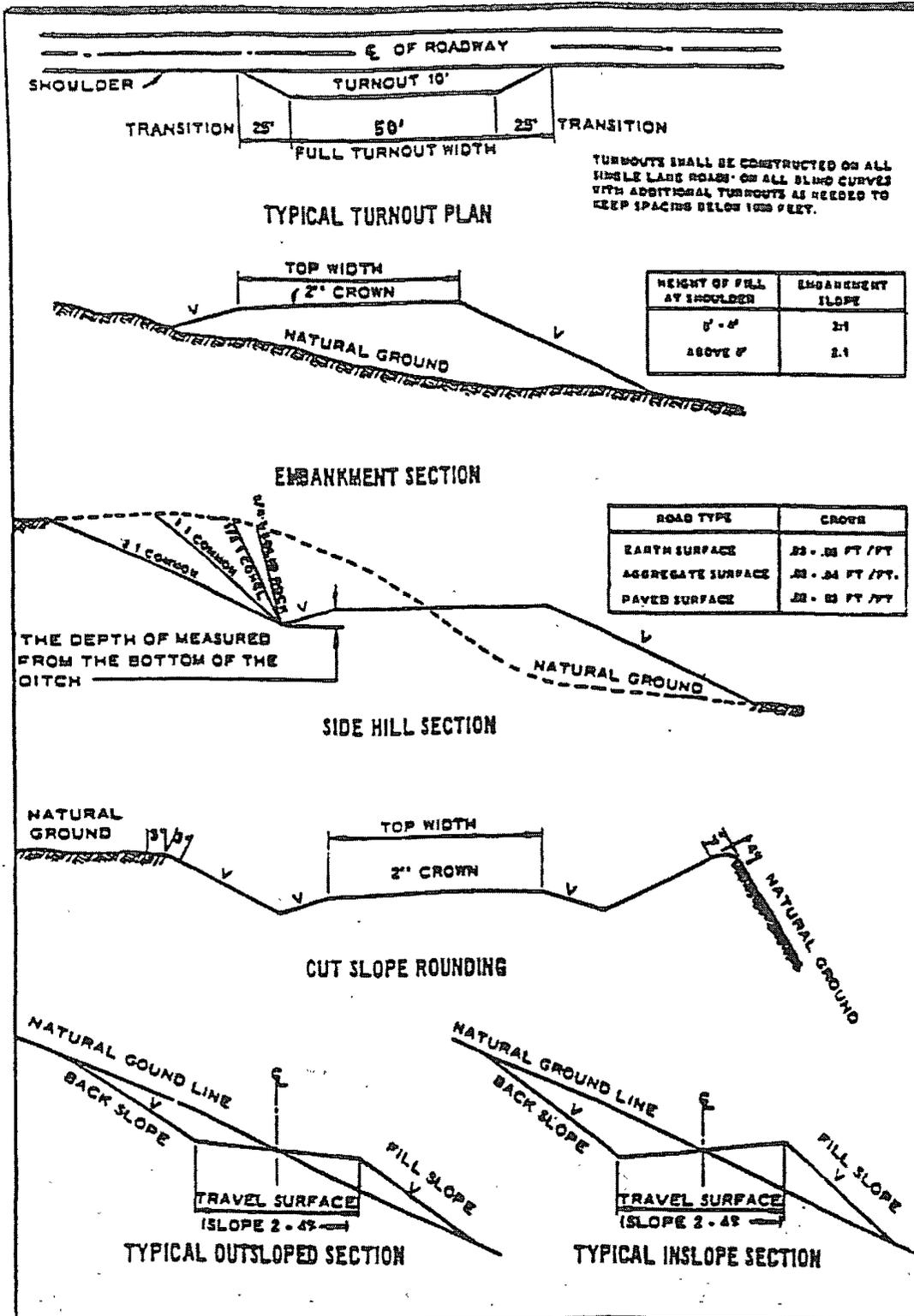
Where entry is required across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting.

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. BOPE tests

**Eddy County**

Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220,  
(575) 361-2822

1. **Although Hydrogen Sulfide has not been reported in this section, it is always a potential hazard. 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.

### 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 per Onshore Order 2.III.B.1.f.**

**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 for all casing strings. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. See individual casing strings for details regarding lead cement slurry requirements.**

No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.

**Possible brine flows in the Salado Group and Castile formation.**

**Possible lost circulation and water flows in the Delaware and Bone Spring formations.**

1. The 13-3/8 inch surface casing shall be set **at approximately 700 feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt)** and cemented to the surface.
  - 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 a 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 is to include the lead cement slurry.**
  - 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.

**Brine water mud to be used below surface casing.**

2. The minimum required fill of cement behind the 9-5/8 inch intermediate casing is:
  - Cement to surface. If cement does not circulate see B.1.a, c-d above. **Casing to be set in the Lamar Limestone at approximately 4350'. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to Secretary's Potash. Additional cement will be required to bring cement to surface.**

**Pilot hole to have 185' plug at bottom of hole. If a solid plug is not set to kick off point, the plug at the bottom is to be tagged and must be witnessed by BLM.**

**Centralizers required on horizontal leg, must be type for horizontal service and minimum of one every other joint.**

3. The minimum required fill of cement behind the **5-1/2** inch production casing is:
  - Cement should tie-back at least **500 feet** into previous casing string **due to being in Secretary's Potash. Additional cement will be required to achieve the 500' tie-back.** Operator shall provide method of verification.
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.

#### **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. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **3000 (3M) psi**.
3. 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.

#### **D. DRILL STEM TEST**

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

**E. WIPP Requirements**

The proposed well is located outside of the 330' of the WIPP Land Withdrawal Area boundary. OGX Resources, LLC. is requested, but not required, to submit daily logs and deviation survey information to the Department of Energy per requirements of the Joint Powers Agreement. Information from this well will be included in the Quarterly Drilling Report. Information will also be provided to the New Mexico Oil Conservation Division after drilling activities have been completed. Any future entry into the well for purposes of completing additional drilling will require supplemental information.

OGX Resources, LLC. can email the required information to Ms. Miriam Whatley at [Miriam.whatley@wipp.ws](mailto:Miriam.whatley@wipp.ws) or fax to her attention at 575-234-6003.

WWI 102508

## **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

## **IX. INTERIM RECLAMATION & RESEEDING PROCEDURE**

### **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.

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.

### **B. RESEEDING PROCEDURE**

At the point when drilling and completion procedures are completed and all trash removed, reseed the location and surrounding area as follows:

## Seed Mixture for LPC Sand/Shinnery 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>
Plains Bristlegrass	5lbs/A
Sand Bluestem	5lbs/A
Little Bluestem	3lbs/A
Big Bluestem	6lbs/A
Plains Coreopsis	2lbs/A
Sand Dropseed	1lbs/A

\*\*Four-winged Saltbush 5lbs/A

\* This can be used around well pads and other areas where caliche cannot be removed.

\*Pounds of pure live seed:

Pounds of seed x percent purity x percent germination = pounds pure live seed

## **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.