

**RECEIVED**  
**JUN 21 2010**  
**NMOC D ARTESIA****OCD-ARTESIA**FORM APPROVED  
OMB No. 1004-0137  
Expires March 31, 2007

AT5-10-428

EA-10-751

RM

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

## APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. NM-14778
1b. Type of Well: <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other <input checked="" type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		6. If Indian, Allottee or Tribe Name -----
2. Name of Operator OGX RESOURCES, LLC. (217955) (Jeff Birkelbach 432-685-1287)		7. If Unit or CA Agreement, Name and No. -----
3a. Address P. O. BOX 2064 MIDLAND, TEXAS 79702		8. Lease Name and Well No. MESCAL "22" FEDERAL #2H
3b. Phone No. (include area code) 432-685-1287		9. API Well No. 30-015-39949
4. Location of Well (Report location clearly and in accordance with any State requirements.) At surface 880' FSL & 560' FEL SECTION 22 T25S-R29E EDDY CO. NM At proposed prod. zone 660' FSL & 330' FWL SECTION 22 T25S-R29E Unit m		10. Field and Pool, or Exploratory CORRAL DRAW-BONE SPRINGS WILLOW LAKE SE
14. Distance in miles and direction from nearest town or post office* Approximately 15 miles Southeast of Malaga New Mexico		11. Sec., T. R. M. or Blk. and Survey or Area SECTION 22 T25S-R29E
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 550'	16. No. of acres in lease 1280	12. County or Parish EDDY CO.
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. NA	19. Proposed Depth TVD-7500' MD-11,725'	13. State NM
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3071' GL	22. Approximate date work will start* WHEN APPROVED	17. Spacing Unit-dedicated to this well. 160
20. BLM/BIA Bond No. on file NMB-000244		
23. Estimated duration 27 days		

## 24. Attachments

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

- |   |  |
|---|--|
| 1. Well plat certified by a registered surveyor.  | 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).    |
| 2. A Drilling Plan.   | 5. Operator certification  |
| 3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO shall be filed with the appropriate Forest Service Office). | 6. Such other site specific information and/or plans as may be required by the authorized officer. |

25. Signature <i>Joe T. Janica</i>	Name (Printed/Typed) Joe T. Janica	Date 05/05/10
---------------------------------------	---------------------------------------	------------------

Title  
Permit Eng.

Approved by (Signature) /s/ Don Peterson	Name (Printed/Typed) /s/ Don Peterson	Date JUN 16 2010
Title FIELD MANAGER	Office CARLSBAD FIELD OFFICE	

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

APPROVAL FOR TWO YEARS

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

\*(Instructions on page 2)

Carlsbad Controlled Water Basin

SEE ATTACHED FOR  
CONDITIONS OF APPROVAL

KZ

Approval 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 15, 2009

Submit one copy to appropriate  
District Office

## OIL CONSERVATION DIVISION

1220 South St. Francis Dr.  
Santa Fe, New Mexico 87505

## WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number <b>30-015-37949</b>	Pool Code <b>96238 96217</b>	Pool Name <b>WILLOW LAKE CORRAL DRAW-BONE SPRING, SOUTHEAST</b>
Property Code <b>38217</b>	Property Name <b>MESCAL "22" FEDERAL</b>	Well Number <b>2H</b>
OGRID No. <b>217955</b>	Operator Name <b>OGX RESOURCES, LLC</b>	Elevation <b>3071'</b>

## Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	22	25 S	29 E		880	SOUTH	560	EAST	EDDY

## Bottom Hole Location If Different From Surface

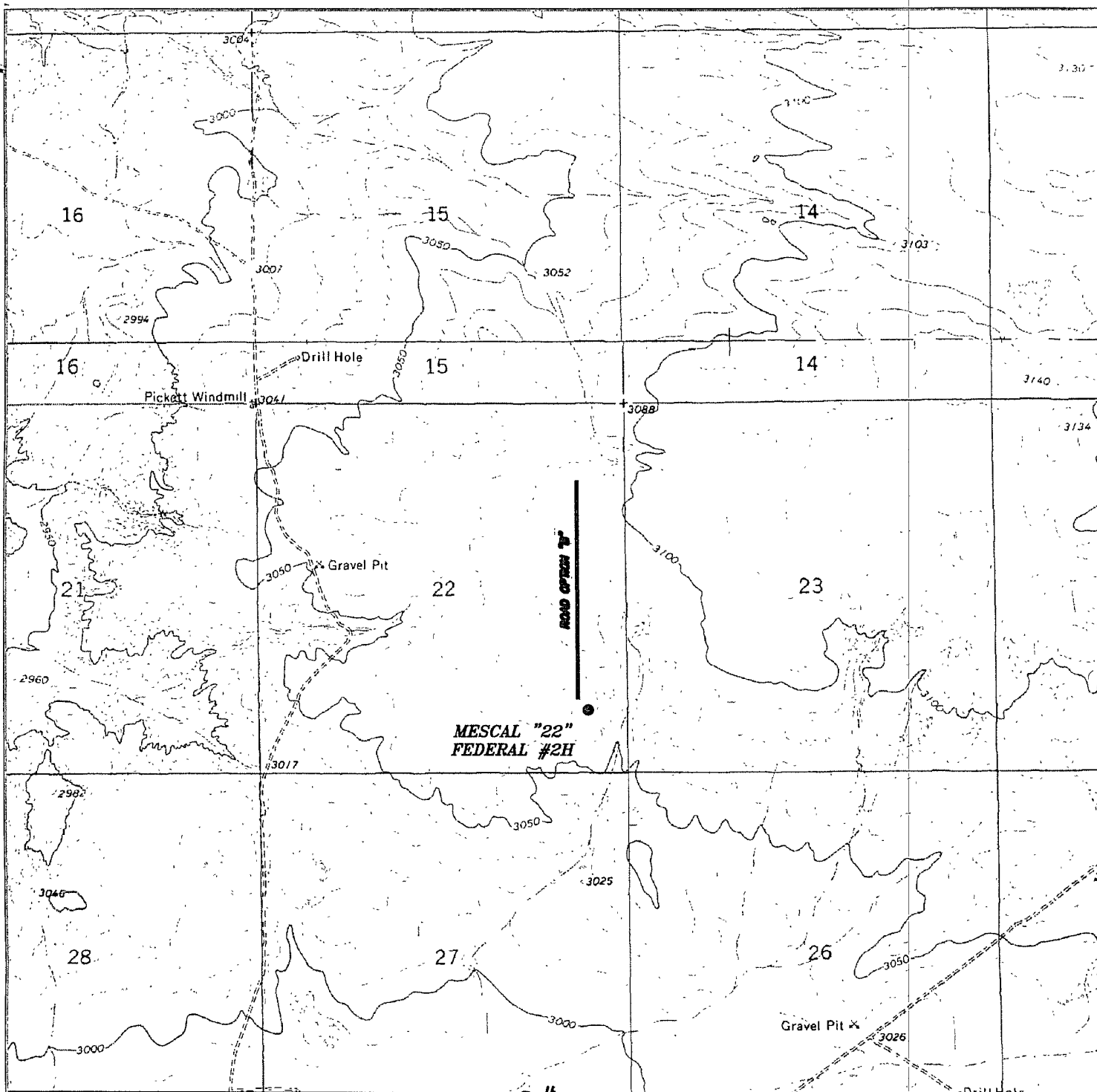
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	22	25 S	29 E		660	SOUTH	330	WEST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
160			

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

<p><b>PROPOSED BOTTOM HOLE LOCATION</b>  Lat - N 32°06'35.96"  Long - W 103°58'47.23"  NMSPCE- N 403930.319  E 650801.890  (NAD-83)</p> <p><b>SURFACE LOCATION</b>  Lat - N 32°06'38.24"  Long - W 103°57'55.89"  NMSPCE- N 404175.302  E 655217.178  (NAD-83)</p> <p>PROJECT AREA  PRODUCING AREA  868' POE ESL &amp; 770' FEL  NM-14778  330' B.H.  3081.1' 3073.2'  3072.1' 3065.5'  4423.1'  360'  880'</p>	<p><b>OPERATOR CERTIFICATION</b></p> <p>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 or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.</p> <p><i>Joe T. Janica</i>  Signature Date  Joe T. Janica 05/05/10  Printed Name</p> <p><b>SURVEYOR CERTIFICATION</b></p> <p>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.</p> <p>APRIL 14, 2010</p> <p>Date Surveyed  Signature &amp; Seal of Professional Surveyor  W.O. No. 22645  Certificate No. Gary L. Jones 7977  BASIN SURVEYS</p>
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EXHIBIT "A"



**MESCAL "22" FEDERAL #2H**  
 Located 880' FSL and 560' FEL  
 Section 22, Township 25 South, Range 29 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

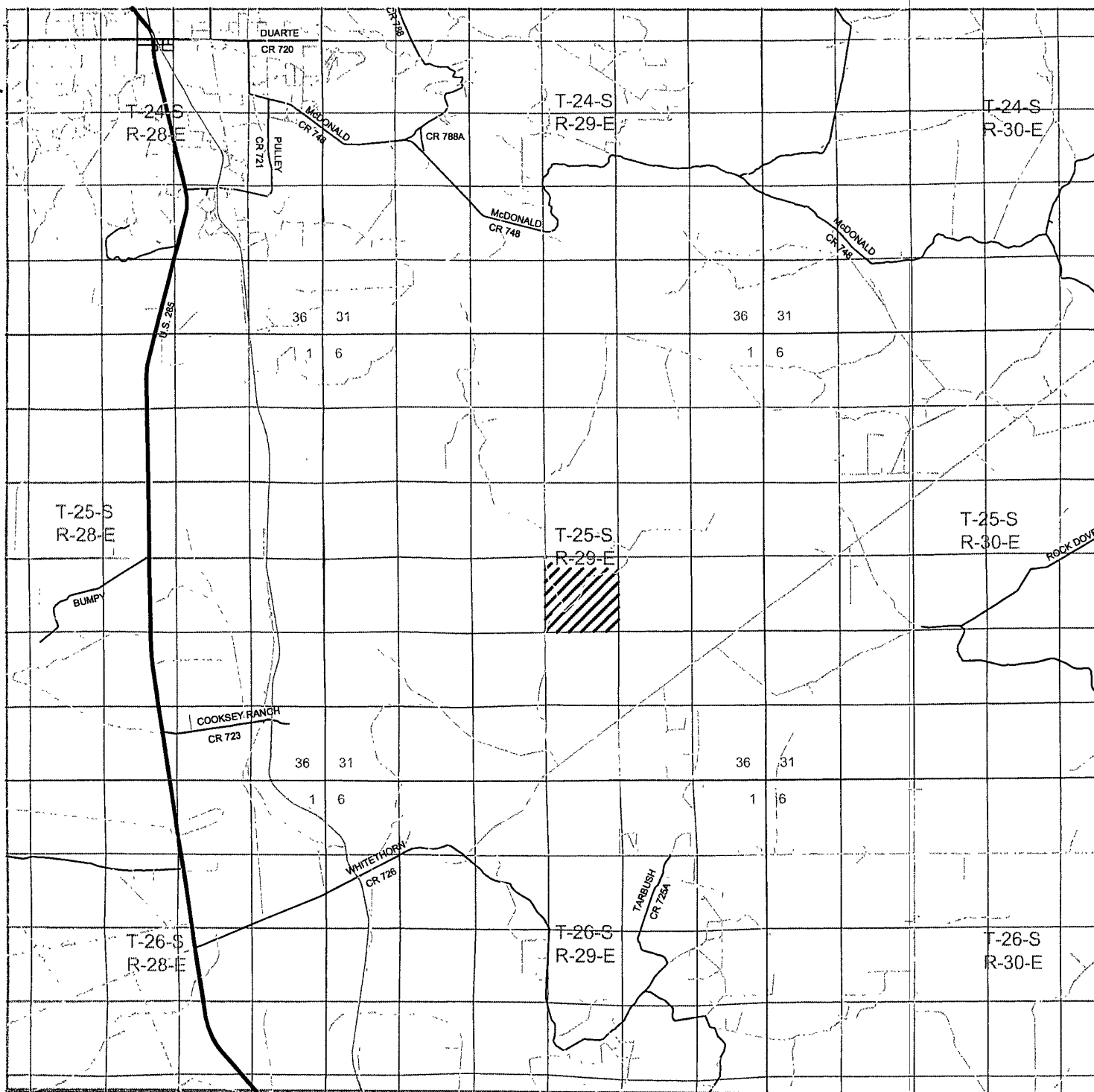
W.O. Number: JMS 22645

Survey Date: 04-14-2010

Scale: 1" = 2000'

Date: 04-15-2010

**OGX  
 RESOURCES,  
 LLC**



MESCAL "22" FEDERAL #2H  
 Located 880' FSL and 560' FEL  
 Section 22, Township 25 South, Range 29 East,  
 N.M.P.M., Eddy County, New Mexico.

**basin**  
**surveys**  
 focused on excellence  
 in the oilfield

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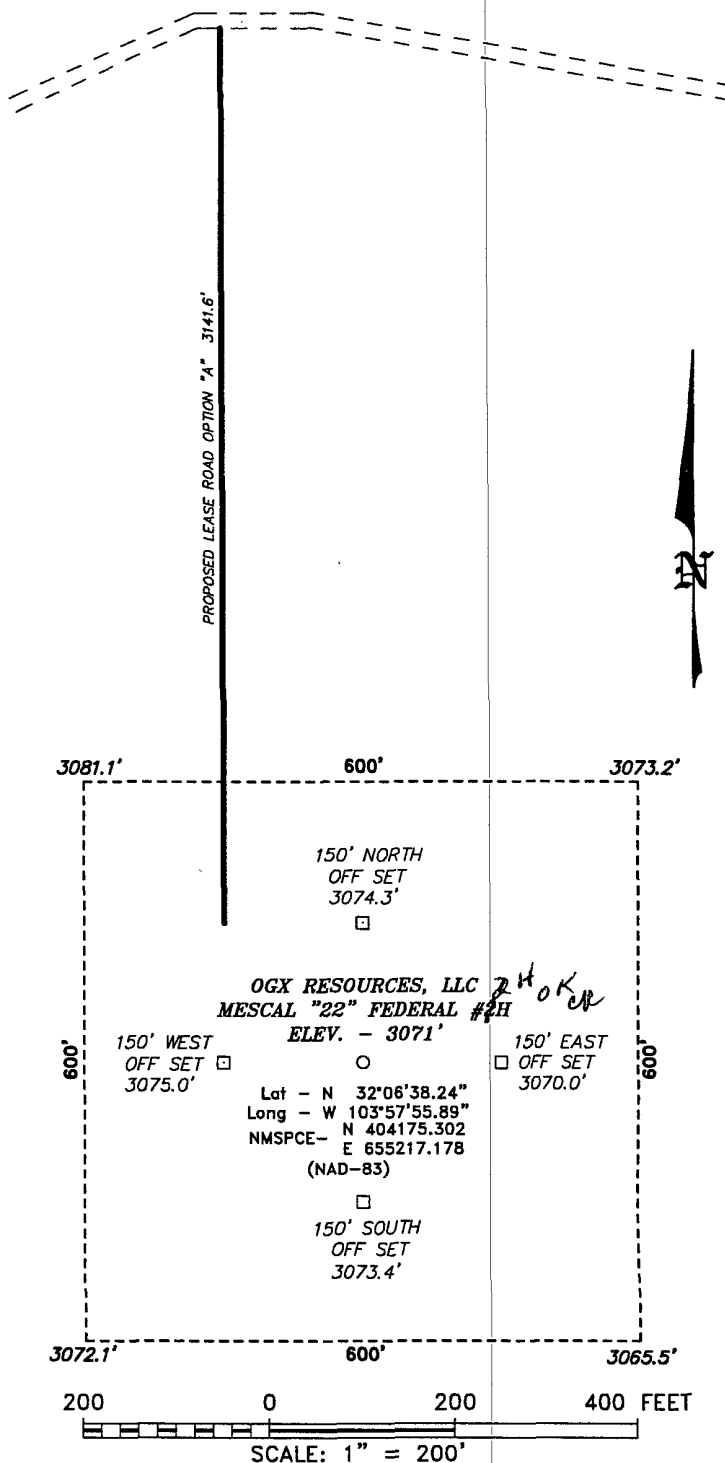
Scale: 1" = 2 Miles

Date: 04-15-2010



**OGX**  
**RESOURCES,**  
**LLC**

SECTION 22, TOWNSHIP 25 SOUTH, RANGE 29 EAST, N.M.P.M.,  
EDDY COUNTY, NEW MEXICO.



Directions to Location:

FROM MILE MARKER 4 OF HWY 285, GO SOUTH 0.25 MILES TO CO. RD. 725, ON LONGHORN GO EAST 4.0 MILES TO LEASE ROAD, ON LEASE ROAD GO NORTH WINDING EAST 1.8 MILES TO LEASE ROAD, ON LEASE ROAD GO NORTH 2.2 MILES TURNING NORTHEASTERLY FOR 0.5 MILES TO PROPOSED LEASE ROAD (OPT A).

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

W.O. Number: 22645 Drawn By: J. SMALL

Date: 04-15-2010 Disk: JMS 22645

**OGX RESOURCES, LLC**

REF: Mescal "22" FEDERAL #2H / WELL PAD TOPO

THE Mescal "22" FEDERAL #2H LOCATED 880'

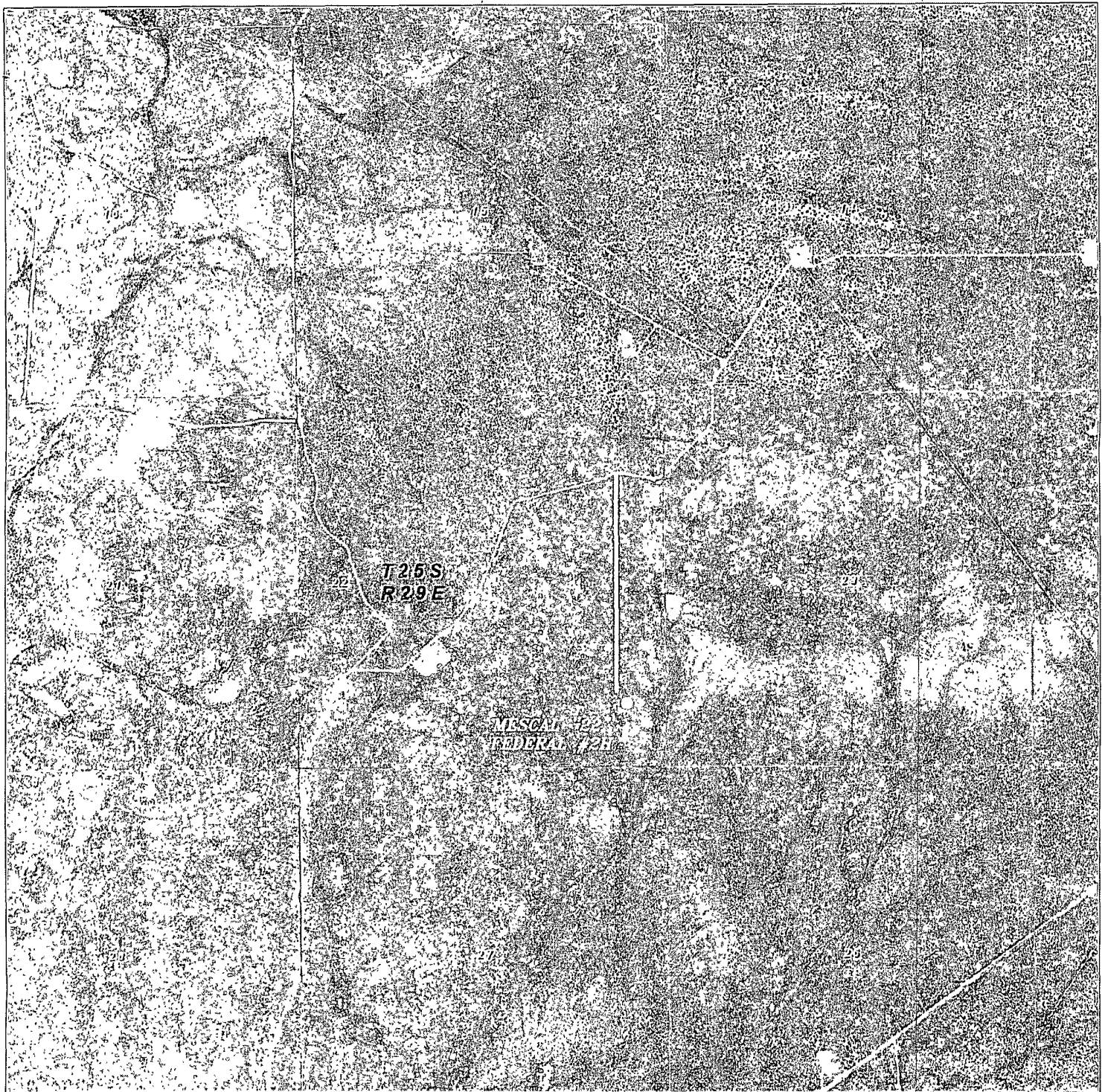
FROM THE SOUTH LINE AND 560' FROM THE EAST LINE OF

SECTION 22, TOWNSHIP 25 SOUTH, RANGE 29 EAST,

N.M.P.M., EDDY COUNTY, NEW MEXICO.

Survey Date: 04-14-2010

Sheet 1 of 1 Sheets



MESCAL "22" FEDERAL #2H  
Located 880' FSL and 560' FEL  
Section 22, Township 25 South, Range 29 East,  
N.M.P.M., Eddy County, New Mexico.

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W.O. Number: JMS 22645

Scale: 1" = 2000'

YELLOW TINT - USA LAND  
BLUE TINT - STATE LAND  
NATURAL COLOR - FEE LAND

OGX  
RESOURCES,  
LLC





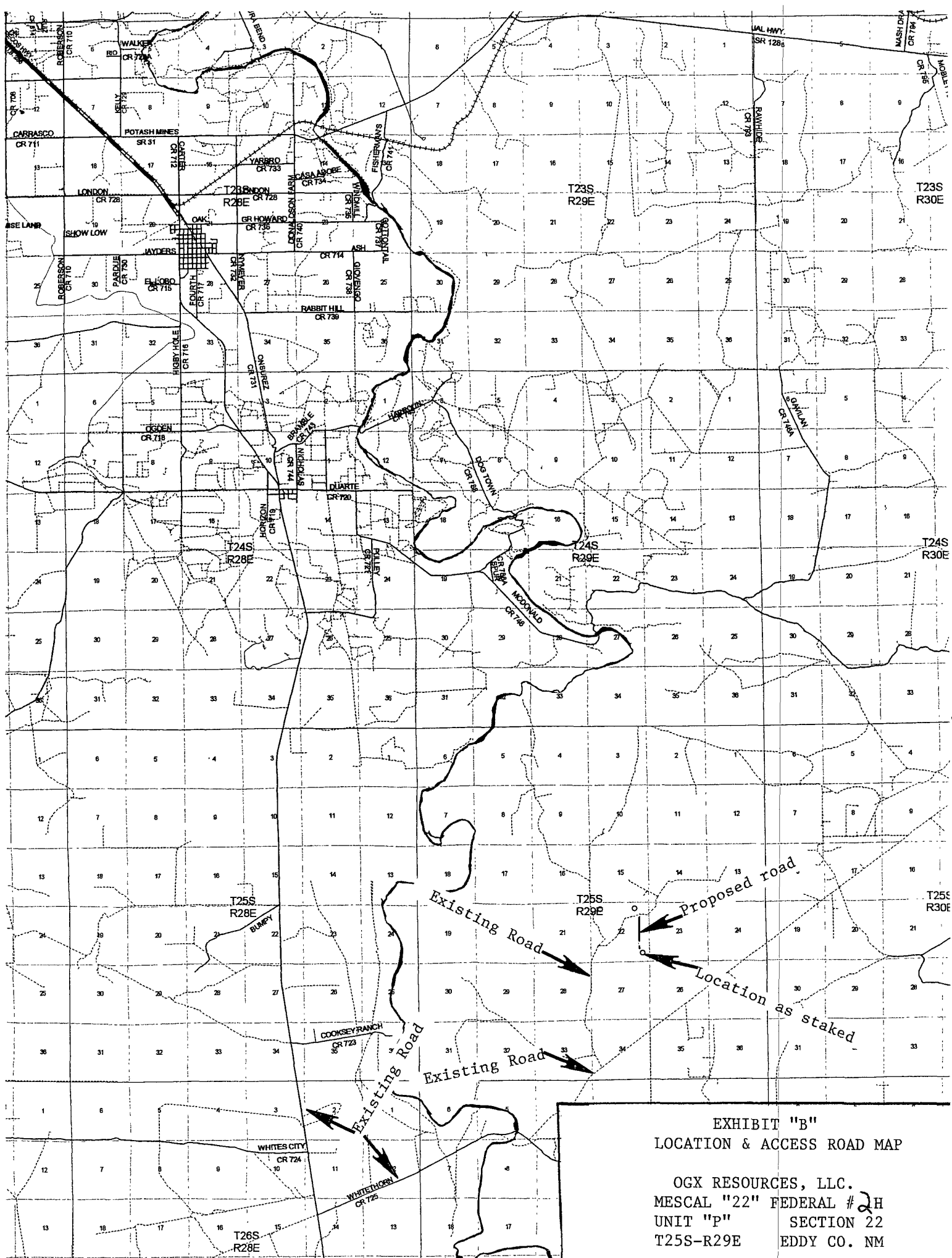
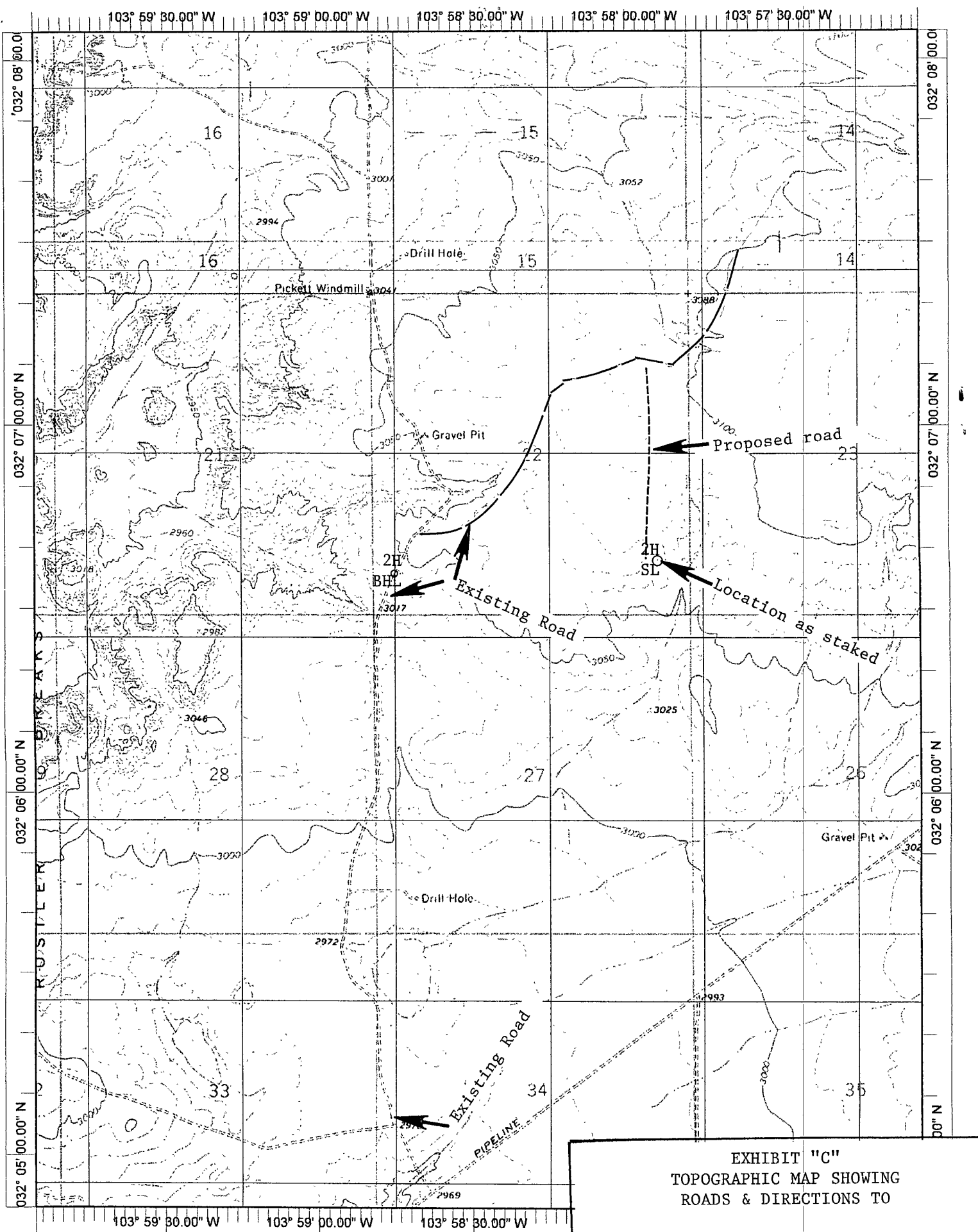


EXHIBIT "B"  
LOCATION & ACCESS ROAD MAP

OGX RESOURCES, LLC.  
MESCAL "22" FEDERAL #2H  
UNIT "P" SECTION 22  
T25S-R29E EDDY CO. NM





Datum: NAD27

Copyright (C) 1999, Maptech, Inc.

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

OGX RESOURCES, LLC.  
 Mescal "22" FEDERAL # 2H  
 UNIT "P" SECTION 22  
 T25S-R29E EDDY CO. NM

## APPLICATION TO DRILL

OGX RESOURCES, LLC.  
 Mescal "22" FEDERAL # 24  
 UNIT "P" SECTION 22  
 T25S-R29E EDDY CO. NM

24 per operator  
 129-24

In response to questions asked under Section II of Bulletin NTL-6, the following information on the above well will be provided.

1. LOCATION: 880' FSL & 560' FEL SECTION 22 T25S-R29E EDDY CO. NM  
 BHL 660' FSL & 330' FWL SECTION 22 T25S-R29E EDDY CO. NM
2. ELEVATION ABOVE SEA LEVEL: 3071' GL.
3. GEOLOGICAL NAME OF SURFACE FORMATION: Quaternary Aeolian Deposits;
4. DRILLING TOOLS AND ASSOCIATED EQUIPMENT: Conventional rotary drilling rig using drilling mud as a circulating medium for the removal of solids from hole.
5. PROPOSED DRILLING DEPTH: TVD.-7500' MD-11,725'

6. ESTIMATED TOPS OF GEOLOGICAL FORMATIONS:

Salado	530'	Cherr Canyon	4100'
Basal Anhydrite	3000'	Brushy Canyon	5350'
Lamar Lime	3240'	Bone Spring	7000'
Bell Canyon	3300'	1st Bone Spring	7950'

7. POSSIBLE MINERAL BEARING FORMATIONS:

Bell Canyon	Oil/Gas	Bone Spring	Oil/Gas
Cherry Canyon	Oil/Gas	1st Bone Spring	Oil/Gas
Brushy Canyon	Oil/Gas		

8. CASING PROGRAM:

HOLE SIZE	INTERVAL	CASING OD	WEIGHT	THREAD	COLLAR	GRADE	CONDITION
26"	0-40'	20"	NA	NA	NA	Conductor	New
17½"	0- <del>525'</del> 725'	13 3/8"	48#	8-R	ST&C	H-40	New
10 5/8"	0- <del>3225'</del> 3225'	8 5/8"	32#	8-R	ST&C	J-55	New
7 7/8"	0-7400'	5½"	17#	8-R	LT&C	P-110	New
7 7/8"	7400-11,725'	5½"	17#	Buttress	BT&C	P-110	New

Safety Design Factors:

Burst	1.00	Collapse	1.125	Body Yield	1.50	Joint Strength	8-R	1.8
							Buttress	1.6

## APPLICATION TO DRILL

OGX RESOURCES, LLC.  
 MESCAL "22" FEDERAL # 14  
 UNIT "P" SECTION 22  
 T25S-R29E EDDY CO. NM

9. CASING SETTING DEPTHS & CEMENTING:

20"	Conductor	Set 40' of 20" conductor pipe and cement to surface with Redi-mix.
13 3/8"	Surface	Run and set <del>525'</del> of 13 3/8" 48# H-40 ST&C casing. Cement with 225 Sx. of 35/65/6 Class "C" Premium Plus POZ cement + 6% Bentonite, + 5% Salt, + 5% MPA-5, + 0.7% Metasilicate, + 5# LCM/Sx, Yield 2.00, tail in with 200 Sx. of Class "C" cement + 2% CaCl, Yield 1.34, circulate cement to surface.
8 5/8"	Intermedicate	Run and set 3225' of 8 5/8" 32# J-55 ST&C casing. Cement with 350 Sx. of Class "C" Premium Plus 35/65 POZ cement + 4% Bentonite, + 5% Salt, + 5% MPA-5, + 0.7% 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 11,725' of 5 1/2" casing as follows: 4325' of 5 1/2" 17# P-110, BT&C, 7400' of 5 1/2" 17# P-110 LT&C casing. Cement with 400 Sx. of Class "C" premium Plus POZ cement + 4% Bentonite + 5% Salt, + 5% MPA-5, + 0.7% Sodium Metasilicate. +5# LCM/Sx. Yield 2.02, tail in with 900 Sx. of Class "C" cement + 2% CaCl Yield 1.34

*See COA*

*See COA*

10. PRESSURE CONTROL EQUIPMENT: Exhibit "E" shows a 900 Series 3000 PSI working pressure B.O.P. consisting of an annular bag type preventor, middle blind rams, and bottom pipe rams. The B.O.P. will be nipped 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. Full opening stabbing valve and upper kelly cock will be available at all times on the derrick floor. Exhibit "E-1" shows a hydraulically operate closing unit and a 5000 PSI working pressure choke manifold with dual adjustable chokes. No abnormal pressures or temperatures are expected while drilling this well.

11. PROPOSED MUD CIRCULATING SYSTEM:

DEPTH	MUD WT.	VISC.	FLUID LOSS	TYPE MUD SYSTEM
<del>40-525'</del>	8.6-8.8	36-38	NC	Fresh water spud mud add paper to control seepage.
<del>525-3225'</del>	10.0-10.1	29-30	NC	Brine water, add paper to control seepage and use high viscosity sweeps to clean hole.
3225-7050'	8.4-9.1	28-29	NC	Fresh water use high viscosity sweeps to clean hole.
7050-11,725'	8.4-9.1	34-36	12-15cc or less	Fresh water use Dynazan/Star HB-411 to control water loss

*See COA*

Sufficient mud materials will be kept on location at all times in order to combat lost circulation, or unexpected kicks. In order to run DST's, open hole logs, and casing the viscosity and/or water loss may have to be adjusted in order to meet these needs.

APPLICATION TO DRILL

OGX RESOURCES, LLC.  
MESCAL "22" FEDERAL # *TH 24*  
UNIT "P" SECTION 22  
T25S-R29E EDDY CO. NM

12. LOGGING, CORING, AND TESTING PROGRAM: *See COA*

- A. Open hole logs: From TVD (7500) log Gamma Ray, Caliper, Dual Laterolog Neutron, Density back to 8 5/8" casing shoe.
- B. Mud logger on hole at 3225' to TD.
- C. No DST's or cores are planned at this time.

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 3457 PSI, and Estimated BHT 120°.

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 27 days. If production casing is run then an additional 20 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.

**Mescal "22" Fed. No.2H  
Willow Lake Bone Spring SE Field  
Eddy County, New Mexico  
Drilling Procedure  
April 2010**

**General Information**

Lease:	Mescal "22"	AFE BCP:	\$
Well No.:	2H	AFE ACP:	
Field:	Willow Lake Bone Spring SE	AFE Total:	
County:	Eddy	AFE NO:	
State:	New Mexico	API No.:	30-015-XXXXX
Section:	22	Permit Date:	
Township:	25S	Permit TVD:	7,500'
Range:	29E	Proposed MD:	11,725'
Surface Section Ties:	880' FSL & 560' FEL	Drilling Days:	27
BHL (target)	660' FSL & 330' FWL		
Ground Level:	3071'	KB:	3088'
Latitude:	32° 06'38.24"N	Longitude	103° 57'55.89"W

**Well Objectives**

The primary objective of this well is to evaluate potential within the Delaware intervals and taken horizontal in the Upper Bone Spring. The well will be drilled to ~ 7,050'; logged and taken horizontal.

**Directions To Well**

33 mi. Wst of Jal on Hwy 128 to Co.Rd. 786; turn Lft for 9 mi. to intersection of 786 & 787; Wst on 787 0.1 mi; Lft (StWst) for 3.2 mi.; Rt (Wst) for 1.5mi.; Rt. (Nth) for 1 mi.; Lft for 1.6 mi.; Sth 2 mi. to Location.

Alternate: From the junction of US Hwy 285 & Co.Rd. 725 (mile marker 4) / Est on 725 for 4 mi cross Pecos River take the first Left for 6.9 mi on pipeline/lease rd. to arrow sign. Lft 1.9 mi (Nth); Lft (Wst) @ intersection 2.1 mi; Rt ¼ mi. to location.

**Special Drilling Considerations**

1. No hunting for game is permitted. No fire arms are to be taken to the location. Keep trash picked up on location and road.
2. Do not run hard-banded or hard-faced drill pipe in casing without consulting OGX.
3. Cement must be circulated on surface and intermediate. If cement does not circulate, run a temperature survey and contact the BLM and Operations Engineer for remedial instructions.
4. BOP equipment will be NU on the 13-3/8" surface casing. All safety and well control equipment should be rigged up and operational prior to drilling out the 13-3/8" casing shoe.

**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>
Salado	530'	8.4 ppge	Water
Basal Anhydrite	3000'	10 ppge	Drig fluid must be saturated salt water
Lamar	3240'	8.4 ppge	Base of Salt
Bell Canyon	3300'	8.4 ppge	Oil / Gas / Formation water / Poss. H <sub>2</sub> S
Cherry Canyon	4100'	8.4 ppge	Oil / Gas / Formation water
Brushy Canyon	5350'	8.4 ppge	Oil / Gas / Formation water
Bone Spring	7000'	8.4 ppge	Oil / Gas / Formation water
1 <sup>st</sup> Bone Spring	7950'	8.4 ppge	Oil / Gas / Formation water

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 525' and circulating cement back to surface. Potash/ fresh water sands will be protected by setting 9 5/8" casing at 3240' and circulating cement to the surface. 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.

**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- <del>525'</del>	13 3/8"	48	STC	H40	New
10 5/8"	0- <del>3225'</del>	8 5/8"	32	STC	J55	New
7 7/8"	0-7400'	5 1/2"	17	LTC	P110	New
7 7/8"	7400-11725'	5 1/2"	17	BTC	P110	New

[\*\*Casing weight and grades are minimum – higher weights & better grades may be substituted\*\*]

(8 5/8" 32# will be special drift to 7.921)  
(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- <del>525'</del>	13 3/8"	48	1.65 1.52 12+
0- <del>3225'</del>	8 5/8"	32	1.23 1.50 3.58
0-11725'	5 1/2"	17	1.82 1.73 2.24

\*\* The Intermediate hole will never be evacuated\*\*

(5 1/2 Burst & Collapse Calculated @ 7500' TVD)

**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)	225	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	

**8 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)	350	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	surface	



*see  
DPA*  
**5 1/2" Production**

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

**Cement Properties**

	<u>Lead</u>	<u>Tail</u>
Est Volume (sacks)	400	900
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	surface	

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

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

No Plug Required

**MUD PROPERTIES SUMMARY:**

*See COA*

Depth (feet)	Weight (ppg)	Viscosity (sec/1000cc)	Fluid Loss (cc/30min)	PV (cps)	YP (lb/100ft <sup>2</sup> )	Mud Type
0' – 525' Set 13-3/8" Casing	8.6 – 8.8	36 – 38	N/C	6 – 10	6 – 20	Spud Mud
525' – 3,225' Set 8-5/8" Casing	10.0 – 10.1	29 – 30	N/C	0 – 1	0 – 1	Brine
3,225' – 7,050'	8.4 – 9.1	28 – 29	N/C	0 – 1	0 – 1	Fresh Water
7,050' – 11,725' MD Set 5-1/2"	8.4 – 9.10	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 out the 13 3/8" casing shoe until the 5 1/2" csg is cemented.

**LOGGING, CORING, AND TESTING** *See COA*

No logs at surface.

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

The Vertical @ KO pt. (Production) hole will be logged: Gyro (Thru DP) & GR / Dual Laterolog / Neutron-Density / Caliper

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 3457 psi. & BHT is 120° F.

**Anticipated Starting Date & Duration:**

Road and location construction will begin after the BLM has approved the APD. Anticipated spud date will be ASAP subsequent to APD approval. Move in and drilling operations will take 27 days with an additional 20 days to complete the well and construct production facilities.

# OGX Resources



Azimuths to Grid North  
True North: -0.20°  
Magnetic North: 7.69°

Magnetic Field  
Strength: 48655.3snT  
Dip Angle: 60.06°  
Date: 04/15/2010  
Model: IGRF200510



Project: Eddy County (NAD 83)  
Site: Mescal "22" Federal  
Well: Mescal "22" Federal #2H  
Wellbore: OH  
Plan: Plan #1 (Mescal "22" Federal #2H/OH)

## WELL DETAILS Mescal "22" Federal #2H

Ground Elevation: 3071.00  
RKB Elevation: WELL @ 3071.00ft (Original Well Elev)  
Rig Name: Original Well Elev

+N-S	+E-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	404175.302	655217.178	32° 6' 38.243 N	103° 57' 55.887 W	

## WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N-S	+E-W	Northing	Easting	Shape Point
MescalFed#2H_PBHL	-244.98	-4415.29		403930.319	650801.890	

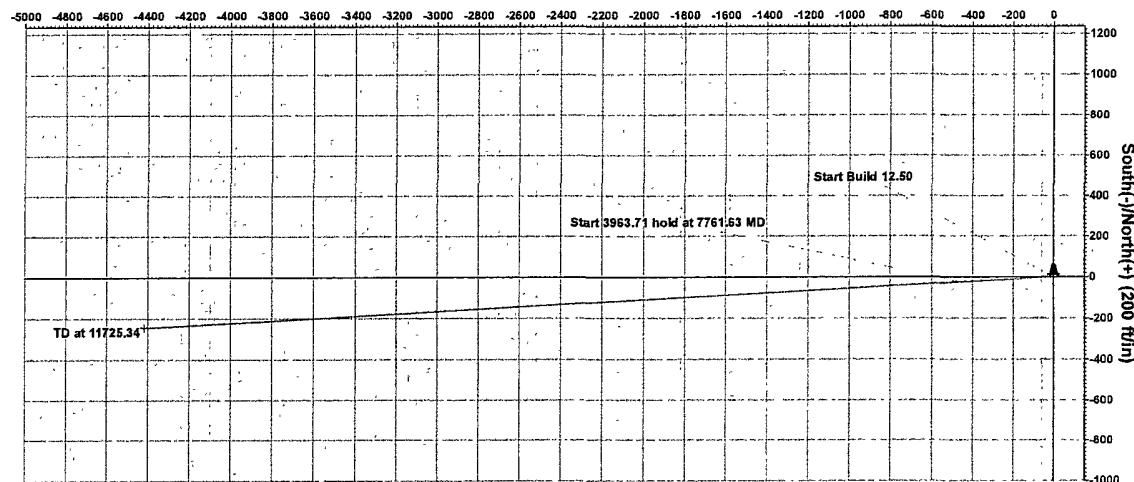
## SECTION DETAILS

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	
2	7041.63	0.00	0.00	7041.63	0.00	0.00	0.00	0.00	0.00	
3	7761.63	90.00	266.82	7500.00	-25.39	-467.66	12.50	266.82	458.37	MescalFed#2H_PBHL
4	11725.34	90.00	266.82	7500.00	-244.98	-4415.29	0.00	0.00	4422.08	MescalFed#2H_PBHL

## FORMATION TOP DETAILS

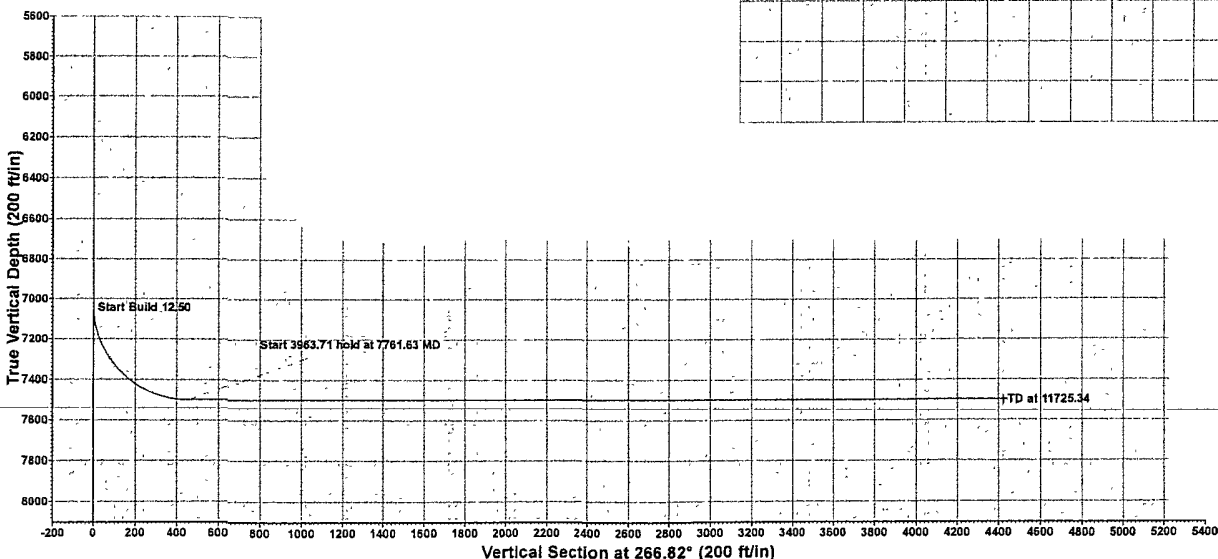
No formation data is available

West(-)/East(+) (200 ft/in)



330' Hardline

Leaes Line



PROJECT DETAILS: Eddy County (NAD 83)  
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

Plan Plan #1 (Mescal "22" Federal #2H/OH)

Created By: Aaron Pullin Date: 17.14, April 16 2010  
Checked: \_\_\_\_\_ Date: \_\_\_\_\_



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## **OGX Resources**

**Eddy County (NAD 83)**

**Mescal "22" Federal**

**Mescal "22" Federal #2H**

**OH**

**Plan: Plan #1**

## **Pathfinder X & Y Planning Report**

**15 April, 2010**

The logo for Pathfinder, with the word 'PATH' in a bold, sans-serif font, followed by 'FINDER' in a larger, bold, sans-serif font. A stylized, thick line curves under the 'FINDER' part of the logo.



**Pathfinder**  
Pathfinder X & Y Planning Report



<b>Company:</b>	OGX Resources	<b>Local Co-ordinate Reference:</b>	Well Mescal "22" Federal #2H
<b>Project:</b>	Eddy County (NAD 83)	<b>TVD Reference:</b>	WELL @ 3071.00ft (Original Well Elev)
<b>Site:</b>	Mescal "22" Federal	<b>MD Reference:</b>	WELL @ 3071.00ft (Original Well Elev)
<b>Well:</b>	Mescal "22" Federal #2H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Plan #1	<b>Database:</b>	Midland Database

<b>Project</b>	Eddy County (NAD 83)		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	New Mexico Eastern Zone		

<b>Site</b>	Mescal "22" Federal		
<b>Site Position:</b>		<b>Northing:</b>	404,175.302 ft
<b>From:</b>	Map	<b>Easting:</b>	655,217.178 ft
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	"
		<b>Latitude:</b>	32° 6' 38.243 N
		<b>Longitude:</b>	103° 57' 55.887 W
		<b>Grid Convergence:</b>	0.20 °

<b>Well</b>	Mescal "22" Federal #2H		
<b>Well Position</b>	+N/-S	0.00 ft	<b>Northing:</b> 404,175.302 ft
	+E/-W	0.00 ft	<b>Easting:</b> 655,217.178 ft
<b>Position Uncertainty</b>		0.00 ft	<b>Wellhead Elevation:</b> ft
			<b>Latitude:</b> 32° 6' 38.243 N
			<b>Longitude:</b> 103° 57' 55.887 W
			<b>Ground Level:</b> 3,071.00 ft

<b>Wellbore</b>	OH		
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<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF200510	04/15/2010	7.89	60.06	48,655

<b>Design</b>	Plan #1		
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<b>Audit Notes:</b>				
<b>Version:</b>		<b>Phase:</b>	PLAN	<b>Tie On Depth:</b> 0.00

<b>Vertical Section:</b>	<b>Depth From (TVD)</b>	<b>+N/-S</b>	<b>+E/-W</b>	<b>Direction</b>
	(ft)	(ft)	(ft)	(°)
	0.00	0.00	0.00	266.82

Survey Tool Program		Date 04/15/2010		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	11,725.34	Plan #1 (OH)	MWD	MWD - Standard



Pathfinder  
Pathfinder X & Y Planning Report



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Well:	Mescal "22" Federal #2H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	Midland Database

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	-3,071.00	0.00	0.00	0.00	0.00	404,175.30	655,217.18	
100.00	0.00	0.00	100.00	-2,971.00	0.00	0.00	0.00	0.00	404,175.30	655,217.18	
200.00	0.00	0.00	200.00	-2,871.00	0.00	0.00	0.00	0.00	404,175.30	655,217.18	
300.00	0.00	0.00	300.00	-2,771.00	0.00	0.00	0.00	0.00	404,175.30	655,217.18	
400.00	0.00	0.00	400.00	-2,671.00	0.00	0.00	0.00	0.00	404,175.30	655,217.18	
500.00	0.00	0.00	500.00	-2,571.00	0.00	0.00	0.00	0.00	404,175.30	655,217.18	
600.00	0.00	0.00	600.00	-2,471.00	0.00	0.00	0.00	0.00	404,175.30	655,217.18	
700.00	0.00	0.00	700.00	-2,371.00	0.00	0.00	0.00	0.00	404,175.30	655,217.18	
800.00	0.00	0.00	800.00	-2,271.00	0.00	0.00	0.00	0.00	404,175.30	655,217.18	
900.00	0.00	0.00	900.00	-2,171.00	0.00	0.00	0.00	0.00	404,175.30	655,217.18	
1,000.00	0.00	0.00	1,000.00	-2,071.00	0.00	0.00	0.00	0.00	404,175.30	655,217.18	
1,100.00	0.00	0.00	1,100.00	-1,971.00	0.00	0.00	0.00	0.00	404,175.30	655,217.18	
1,200.00	0.00	0.00	1,200.00	-1,871.00	0.00	0.00	0.00	0.00	404,175.30	655,217.18	
1,300.00	0.00	0.00	1,300.00	-1,771.00	0.00	0.00	0.00	0.00	404,175.30	655,217.18	
1,400.00	0.00	0.00	1,400.00	-1,671.00	0.00	0.00	0.00	0.00	404,175.30	655,217.18	
1,500.00	0.00	0.00	1,500.00	-1,571.00	0.00	0.00	0.00	0.00	404,175.30	655,217.18	
1,600.00	0.00	0.00	1,600.00	-1,471.00	0.00	0.00	0.00	0.00	404,175.30	655,217.18	
1,700.00	0.00	0.00	1,700.00	-1,371.00	0.00	0.00	0.00	0.00	404,175.30	655,217.18	
1,800.00	0.00	0.00	1,800.00	-1,271.00	0.00	0.00	0.00	0.00	404,175.30	655,217.18	
1,900.00	0.00	0.00	1,900.00	-1,171.00	0.00	0.00	0.00	0.00	404,175.30	655,217.18	
2,000.00	0.00	0.00	2,000.00	-1,071.00	0.00	0.00	0.00	0.00	404,175.30	655,217.18	
2,100.00	0.00	0.00	2,100.00	-971.00	0.00	0.00	0.00	0.00	404,175.30	655,217.18	
2,200.00	0.00	0.00	2,200.00	-871.00	0.00	0.00	0.00	0.00	404,175.30	655,217.18	
2,300.00	0.00	0.00	2,300.00	-771.00	0.00	0.00	0.00	0.00	404,175.30	655,217.18	
2,400.00	0.00	0.00	2,400.00	-671.00	0.00	0.00	0.00	0.00	404,175.30	655,217.18	
2,500.00	0.00	0.00	2,500.00	-571.00	0.00	0.00	0.00	0.00	404,175.30	655,217.18	
2,600.00	0.00	0.00	2,600.00	-471.00	0.00	0.00	0.00	0.00	404,175.30	655,217.18	





Pathfinder  
Pathfinder X & Y Planning Report



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Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	Midland Database

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)
2,700.00	0.00	0.00	2,700.00	-371.00	0.00	0.00	0.00	0.00	404,175.30	655,217.18
2,800.00	0.00	0.00	2,800.00	-271.00	0.00	0.00	0.00	0.00	404,175.30	655,217.18
2,900.00	0.00	0.00	2,900.00	-171.00	0.00	0.00	0.00	0.00	404,175.30	655,217.18
3,000.00	0.00	0.00	3,000.00	-71.00	0.00	0.00	0.00	0.00	404,175.30	655,217.18
3,100.00	0.00	0.00	3,100.00	29.00	0.00	0.00	0.00	0.00	404,175.30	655,217.18
3,200.00	0.00	0.00	3,200.00	129.00	0.00	0.00	0.00	0.00	404,175.30	655,217.18
3,300.00	0.00	0.00	3,300.00	229.00	0.00	0.00	0.00	0.00	404,175.30	655,217.18
3,400.00	0.00	0.00	3,400.00	329.00	0.00	0.00	0.00	0.00	404,175.30	655,217.18
3,500.00	0.00	0.00	3,500.00	429.00	0.00	0.00	0.00	0.00	404,175.30	655,217.18
3,600.00	0.00	0.00	3,600.00	529.00	0.00	0.00	0.00	0.00	404,175.30	655,217.18
3,700.00	0.00	0.00	3,700.00	629.00	0.00	0.00	0.00	0.00	404,175.30	655,217.18
3,800.00	0.00	0.00	3,800.00	729.00	0.00	0.00	0.00	0.00	404,175.30	655,217.18
3,900.00	0.00	0.00	3,900.00	829.00	0.00	0.00	0.00	0.00	404,175.30	655,217.18
4,000.00	0.00	0.00	4,000.00	929.00	0.00	0.00	0.00	0.00	404,175.30	655,217.18
4,100.00	0.00	0.00	4,100.00	1,029.00	0.00	0.00	0.00	0.00	404,175.30	655,217.18
4,200.00	0.00	0.00	4,200.00	1,129.00	0.00	0.00	0.00	0.00	404,175.30	655,217.18
4,300.00	0.00	0.00	4,300.00	1,229.00	0.00	0.00	0.00	0.00	404,175.30	655,217.18
4,400.00	0.00	0.00	4,400.00	1,329.00	0.00	0.00	0.00	0.00	404,175.30	655,217.18
4,500.00	0.00	0.00	4,500.00	1,429.00	0.00	0.00	0.00	0.00	404,175.30	655,217.18
4,600.00	0.00	0.00	4,600.00	1,529.00	0.00	0.00	0.00	0.00	404,175.30	655,217.18
4,700.00	0.00	0.00	4,700.00	1,629.00	0.00	0.00	0.00	0.00	404,175.30	655,217.18
4,800.00	0.00	0.00	4,800.00	1,729.00	0.00	0.00	0.00	0.00	404,175.30	655,217.18
4,900.00	0.00	0.00	4,900.00	1,829.00	0.00	0.00	0.00	0.00	404,175.30	655,217.18
5,000.00	0.00	0.00	5,000.00	1,929.00	0.00	0.00	0.00	0.00	404,175.30	655,217.18
5,100.00	0.00	0.00	5,100.00	2,029.00	0.00	0.00	0.00	0.00	404,175.30	655,217.18
5,200.00	0.00	0.00	5,200.00	2,129.00	0.00	0.00	0.00	0.00	404,175.30	655,217.18
5,300.00	0.00	0.00	5,300.00	2,229.00	0.00	0.00	0.00	0.00	404,175.30	655,217.18



Pathfinder  
Pathfinder X & Y Planning Report



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Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	Midland Database

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)
5,400.00	0.00	0.00	5,400.00	2,329.00	0.00	0.00	0.00	0.00	404,175.30	655,217.18
5,500.00	0.00	0.00	5,500.00	2,429.00	0.00	0.00	0.00	0.00	404,175.30	655,217.18
5,600.00	0.00	0.00	5,600.00	2,529.00	0.00	0.00	0.00	0.00	404,175.30	655,217.18
5,700.00	0.00	0.00	5,700.00	2,629.00	0.00	0.00	0.00	0.00	404,175.30	655,217.18
5,800.00	0.00	0.00	5,800.00	2,729.00	0.00	0.00	0.00	0.00	404,175.30	655,217.18
5,900.00	0.00	0.00	5,900.00	2,829.00	0.00	0.00	0.00	0.00	404,175.30	655,217.18
6,000.00	0.00	0.00	6,000.00	2,929.00	0.00	0.00	0.00	0.00	404,175.30	655,217.18
6,100.00	0.00	0.00	6,100.00	3,029.00	0.00	0.00	0.00	0.00	404,175.30	655,217.18
6,200.00	0.00	0.00	6,200.00	3,129.00	0.00	0.00	0.00	0.00	404,175.30	655,217.18
6,300.00	0.00	0.00	6,300.00	3,229.00	0.00	0.00	0.00	0.00	404,175.30	655,217.18
6,400.00	0.00	0.00	6,400.00	3,329.00	0.00	0.00	0.00	0.00	404,175.30	655,217.18
6,500.00	0.00	0.00	6,500.00	3,429.00	0.00	0.00	0.00	0.00	404,175.30	655,217.18
6,600.00	0.00	0.00	6,600.00	3,529.00	0.00	0.00	0.00	0.00	404,175.30	655,217.18
6,700.00	0.00	0.00	6,700.00	3,629.00	0.00	0.00	0.00	0.00	404,175.30	655,217.18
6,800.00	0.00	0.00	6,800.00	3,729.00	0.00	0.00	0.00	0.00	404,175.30	655,217.18
6,900.00	0.00	0.00	6,900.00	3,829.00	0.00	0.00	0.00	0.00	404,175.30	655,217.18
7,000.00	0.00	0.00	7,000.00	3,929.00	0.00	0.00	0.00	0.00	404,175.30	655,217.18
7,041.63	0.00	0.00	7,041.63	3,970.63	0.00	0.00	0.00	0.00	404,175.30	655,217.18
7,050.00	1.05	266.82	7,050.00	3,979.00	0.00	-0.08	0.08	12.50	404,175.30	655,217.10
7,075.00	4.17	266.82	7,074.97	4,003.97	-0.07	-1.21	1.21	12.50	404,175.23	655,215.97
7,100.00	7.30	266.82	7,099.84	4,028.84	-0.21	-3.71	3.71	12.50	404,175.10	655,213.47
7,125.00	10.42	266.82	7,124.54	4,053.54	-0.42	-7.55	7.56	12.50	404,174.88	655,209.63
7,150.00	13.55	266.82	7,148.99	4,077.99	-0.71	-12.73	12.75	12.50	404,174.60	655,204.45
7,175.00	16.67	266.82	7,173.13	4,102.13	-1.07	-19.24	19.27	12.50	404,174.23	655,197.94
7,200.00	19.80	266.82	7,196.87	4,125.87	-1.50	-27.05	27.09	12.50	404,173.80	655,190.13
7,225.00	22.92	266.82	7,220.15	4,149.15	-2.01	-36.14	36.19	12.50	404,173.30	655,181.04
7,250.00	26.05	266.82	7,242.90	4,171.90	-2.58	-46.48	46.55	12.50	404,172.72	655,170.70



# Pathfinder

Pathfinder X & Y Planning Report



<b>Company:</b>	OGX Resources	<b>Local Co-ordinate Reference:</b>	Well Mescal "22" Federal #2H
<b>Project:</b>	Eddy County (NAD 83)	<b>TVD Reference:</b>	WELL @ 3071.00ft (Original Well Elev)
<b>Site:</b>	Mescal "22" Federal	<b>MD Reference:</b>	WELL @ 3071.00ft (Original Well Elev)
<b>Well:</b>	Mescal "22" Federal #2H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Plan #1	<b>Database:</b>	Midland Database

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)
7,275.00	29.17	266.82	7,265.05	4,194.05	-3.22	-58.05	58.14	12.50	404,172.08	655,159.13
7,300.00	32.30	266.82	7,286.53	4,215.53	-3.93	-70.80	70.91	12.50	404,171.37	655,146.38
7,325.00	35.42	266.82	7,307.29	4,236.29	-4.70	-84.71	84.84	12.50	404,170.60	655,132.47
7,350.00	38.55	266.82	7,327.26	4,256.26	-5.53	-99.72	99.88	12.50	404,169.77	655,117.46
7,375.00	41.67	266.82	7,346.38	4,275.38	-6.43	-115.80	115.98	12.50	404,168.88	655,101.38
7,400.00	44.80	266.82	7,364.59	4,293.59	-7.37	-132.90	133.10	12.50	404,167.93	655,084.28
7,425.00	47.92	266.82	7,381.84	4,310.84	-8.38	-150.96	151.19	12.50	404,166.93	655,066.22
7,450.00	51.05	266.82	7,398.08	4,327.08	-9.43	-169.93	170.19	12.50	404,165.87	655,047.24
7,475.00	54.17	266.82	7,413.26	4,342.26	-10.53	-189.76	190.05	12.50	404,164.77	655,027.42
7,500.00	57.30	266.82	7,427.33	4,356.33	-11.67	-210.39	210.71	12.50	404,163.63	655,006.79
7,525.00	60.42	266.82	7,440.26	4,369.26	-12.86	-231.75	232.11	12.50	404,162.44	654,985.43
7,550.00	63.55	266.82	7,452.00	4,381.00	-14.08	-253.79	254.18	12.50	404,161.22	654,963.39
7,575.00	66.67	266.82	7,462.52	4,391.52	-15.34	-276.43	276.85	12.50	404,159.96	654,940.75
7,600.00	69.80	266.82	7,471.79	4,400.79	-16.62	-299.60	300.07	12.50	404,158.68	654,917.57
7,625.00	72.92	266.82	7,479.78	4,408.78	-17.94	-323.25	323.75	12.50	404,157.37	654,893.92
7,650.00	76.05	266.82	7,486.47	4,415.47	-19.27	-347.30	347.84	12.50	404,156.03	654,869.88
7,675.00	79.17	266.82	7,491.83	4,420.83	-20.62	-371.68	372.25	12.50	404,154.68	654,845.50
7,700.00	82.30	266.82	7,495.86	4,424.86	-21.99	-396.31	396.92	12.50	404,153.31	654,820.87
7,725.00	85.42	266.82	7,498.53	4,427.53	-23.37	-421.13	421.78	12.50	404,151.94	654,796.05
7,750.00	88.55	266.82	7,499.85	4,428.85	-24.75	-446.05	446.74	12.50	404,150.55	654,771.13
7,761.63	90.00	266.82	7,500.00	4,429.00	-25.39	-457.66	458.37	12.50	404,149.91	654,759.52
7,800.00	90.00	266.82	7,500.00	4,429.00	-27.52	-495.97	496.74	0.00	404,147.78	654,721.20
7,900.00	90.00	266.82	7,500.00	4,429.00	-33.06	-595.82	596.74	0.00	404,142.24	654,621.36
8,000.00	90.00	266.82	7,500.00	4,429.00	-38.60	-695.67	696.74	0.00	404,136.70	654,521.51
8,100.00	90.00	266.82	7,500.00	4,429.00	-44.14	-795.51	796.74	0.00	404,131.16	654,421.67
8,200.00	90.00	266.82	7,500.00	4,429.00	-49.68	-895.36	896.74	0.00	404,125.62	654,321.82
8,300.00	90.00	266.82	7,500.00	4,429.00	-55.22	-995.21	996.74	0.00	404,120.08	654,221.97



**Pathfinder**  
Pathfinder X & Y Planning Report



<b>Company:</b>	OGX Resources	<b>Local Co-ordinate Reference:</b>	Well Mescal "22" Federal #2H
<b>Project:</b>	Eddy County (NAD 83)	<b>TVD Reference:</b>	WELL @ 3071.00ft (Original Well Elev)
<b>Site:</b>	Mescal "22" Federal	<b>MD Reference:</b>	WELL @ 3071.00ft (Original Well Elev)
<b>Well:</b>	Mescal "22" Federal #2H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Plan #1	<b>Database:</b>	Midland Database

**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)
8,400.00	90.00	266.82	7,500.00	4,429.00	-60.76	-1,095.05	1,096.74	0.00	404,114.54	654,122.13
8,500.00	90.00	266.82	7,500.00	4,429.00	-66.30	-1,194.90	1,196.74	0.00	404,109.00	654,022.28
8,600.00	90.00	266.82	7,500.00	4,429.00	-71.84	-1,294.74	1,296.74	0.00	404,103.46	653,922.43
8,700.00	90.00	266.82	7,500.00	4,429.00	-77.38	-1,394.59	1,396.74	0.00	404,097.92	653,822.59
8,800.00	90.00	266.82	7,500.00	4,429.00	-82.92	-1,494.44	1,496.74	0.00	404,092.38	653,722.74
8,900.00	90.00	266.82	7,500.00	4,429.00	-88.46	-1,594.28	1,596.74	0.00	404,086.84	653,622.89
9,000.00	90.00	266.82	7,500.00	4,429.00	-94.00	-1,694.13	1,696.74	0.00	404,081.30	653,523.05
9,100.00	90.00	266.82	7,500.00	4,429.00	-99.54	-1,793.98	1,796.74	0.00	404,075.76	653,423.20
9,200.00	90.00	266.82	7,500.00	4,429.00	-105.08	-1,893.82	1,896.74	0.00	404,070.22	653,323.35
9,300.00	90.00	266.82	7,500.00	4,429.00	-110.62	-1,993.67	1,996.74	0.00	404,064.68	653,223.51
9,400.00	90.00	266.82	7,500.00	4,429.00	-116.16	-2,093.52	2,096.74	0.00	404,059.14	653,123.66
9,500.00	90.00	266.82	7,500.00	4,429.00	-121.70	-2,193.36	2,196.74	0.00	404,053.60	653,023.82
9,600.00	90.00	266.82	7,500.00	4,429.00	-127.24	-2,293.21	2,296.74	0.00	404,048.06	652,923.97
9,700.00	90.00	266.82	7,500.00	4,429.00	-132.78	-2,393.06	2,396.74	0.00	404,042.52	652,824.12
9,800.00	90.00	266.82	7,500.00	4,429.00	-138.32	-2,492.90	2,496.74	0.00	404,036.98	652,724.28
9,900.00	90.00	266.82	7,500.00	4,429.00	-143.86	-2,592.75	2,596.74	0.00	404,031.44	652,624.43
10,000.00	90.00	266.82	7,500.00	4,429.00	-149.40	-2,692.59	2,696.74	0.00	404,025.90	652,524.58
10,100.00	90.00	266.82	7,500.00	4,429.00	-154.94	-2,792.44	2,796.74	0.00	404,020.36	652,424.74
10,200.00	90.00	266.82	7,500.00	4,429.00	-160.48	-2,892.29	2,896.74	0.00	404,014.82	652,324.89
10,300.00	90.00	266.82	7,500.00	4,429.00	-166.02	-2,992.13	2,996.74	0.00	404,009.28	652,225.04
10,400.00	90.00	266.82	7,500.00	4,429.00	-171.56	-3,091.98	3,096.74	0.00	404,003.74	652,125.20
10,500.00	90.00	266.82	7,500.00	4,429.00	-177.10	-3,191.83	3,196.74	0.00	403,998.20	652,025.35
10,600.00	90.00	266.82	7,500.00	4,429.00	-182.64	-3,291.67	3,296.74	0.00	403,992.66	651,925.50
10,700.00	90.00	266.82	7,500.00	4,429.00	-188.18	-3,391.52	3,396.74	0.00	403,987.12	651,825.66
10,800.00	90.00	266.82	7,500.00	4,429.00	-193.72	-3,491.37	3,496.74	0.00	403,981.58	651,725.81
10,900.00	90.00	266.82	7,500.00	4,429.00	-199.26	-3,591.21	3,596.74	0.00	403,976.04	651,625.97
11,000.00	90.00	266.82	7,500.00	4,429.00	-204.80	-3,691.06	3,696.74	0.00	403,970.50	651,526.12



Pathfinder  
Pathfinder X & Y Planning Report



Company: OGX Resources  
Project: Eddy County (NAD 83)  
Site: Mescal "22" Federal  
Well: Mescal "22" Federal #2H  
Wellbore: OH  
Design: Plan #1

Local Co-ordinate Reference: Well Mescal "22" Federal #2H  
TVD Reference: WELL @ 3071.00ft (Original Well Elev)  
MD Reference: WELL @ 3071.00ft (Original Well Elev)  
North Reference: Grid  
Survey Calculation Method: Minimum Curvature  
Database: Midland Database

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)
11,100.00	90.00	266.82	7,500.00	4,429.00	-210.34	-3,790.91	3,796.74	0.00	403,964.96	651,426.27
11,200.00	90.00	266.82	7,500.00	4,429.00	-215.88	-3,890.75	3,896.74	0.00	403,959.42	651,326.43
11,300.00	90.00	266.82	7,500.00	4,429.00	-221.42	-3,990.60	3,996.74	0.00	403,953.88	651,226.58
11,400.00	90.00	266.82	7,500.00	4,429.00	-226.96	-4,090.44	4,096.74	0.00	403,948.34	651,126.73
11,500.00	90.00	266.82	7,500.00	4,429.00	-232.50	-4,190.29	4,196.74	0.00	403,942.80	651,026.89
11,600.00	90.00	266.82	7,500.00	4,429.00	-238.04	-4,290.14	4,296.74	0.00	403,937.26	650,927.04
11,700.00	90.00	266.82	7,500.00	4,429.00	-243.58	-4,389.98	4,396.74	0.00	403,931.72	650,827.19
11,725.34	90.00	266.82	7,500.00	4,429.00	-244.98	-4,415.29	4,422.08	0.00	403,930.32	650,801.89

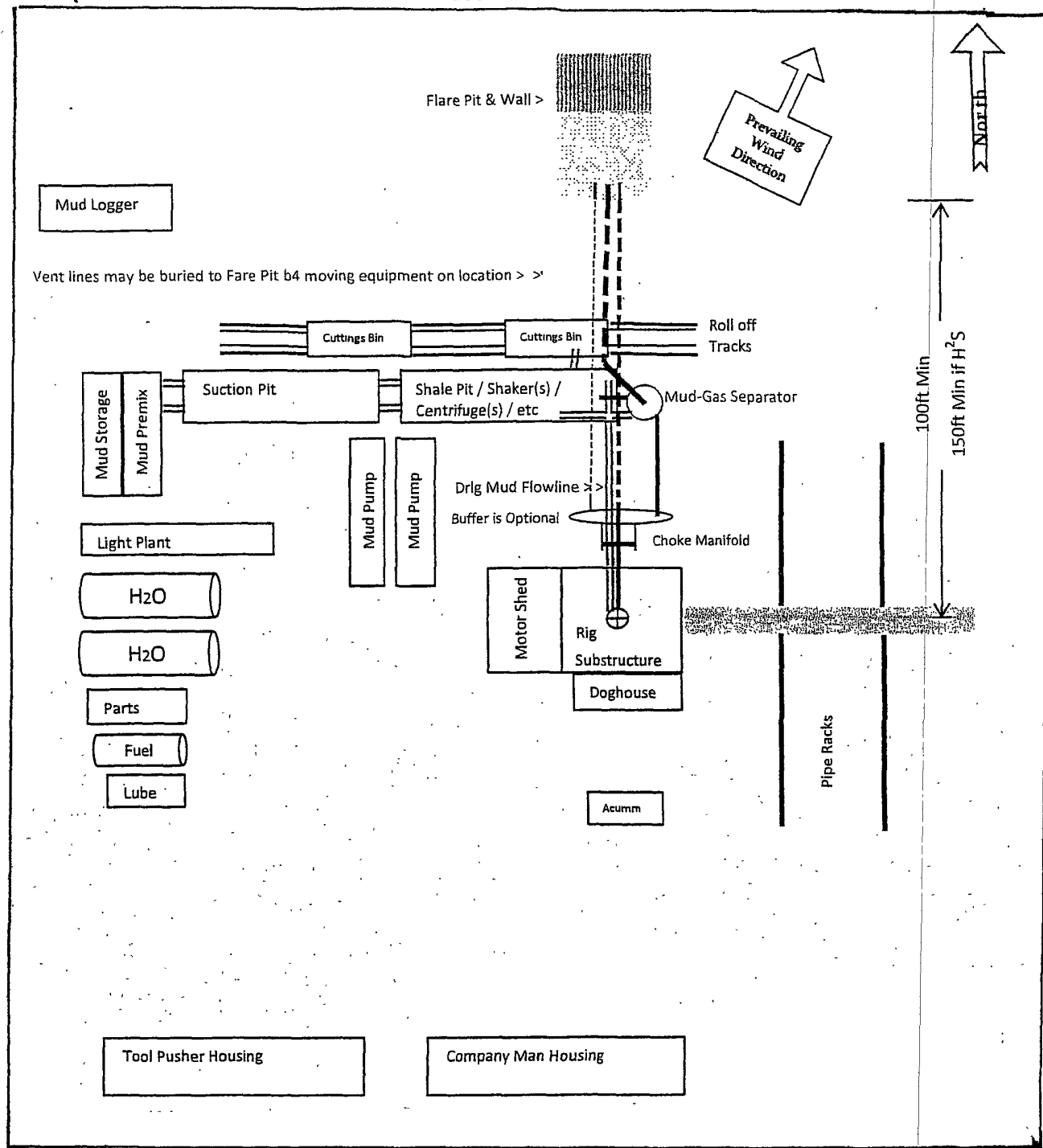
MescalFed#2H\_PBHL - MescalFed#2H\_PBHL

Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
MescalFed#2H_PBHL - hit/miss target - Shape - plan hits target center - Point	0.00	0.00	7,500.00	-244.98	-4,415.29	403,930.319	650,801.890	32° 6' 35.965 N	103° 58' 47.233 W

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

300'

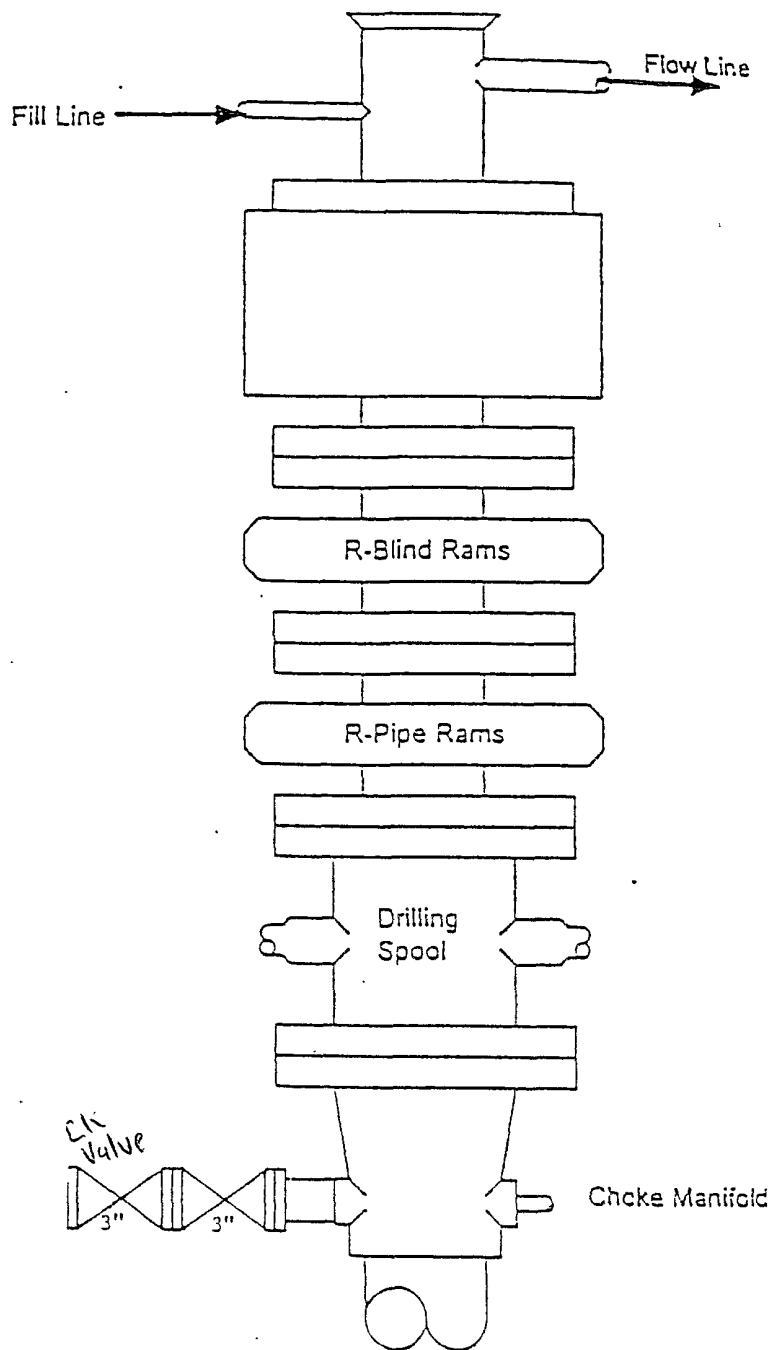


Preplanning reasonable spacing accommodations for a useable "Closed Loop" drillsite layout is challenging. Particular site specific conflicts need to be resolved. This generic APD plat was prepared to demonstrate several necessary elements. The plat should include: a north arrow, prevailing wind direction, spacing access for truck removal of cutting bins, flare pit location, and piping provision to vent all combustible gas to the flare pit. Include the choke manifold and mud-gas separator location and their connection routing.

Generic Drill Site  
Layout

EXHIBIT "D"  
RIG LAY OUT PLAT

OGX RESOURCES, LLC.  
MESCAL "22" FEDERAL # 2H  
UNIT "P" SECTION 22  
T25S-R29E EDDY CO. NM



Type 900 Series  
3000 psi WP

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

OGX RESOURCES, LLC.  
MESCAL "22" FEDERAL # 10-2H  
UNIT "P" SECTION 22  
T25S-R29E EDDY CO. NM



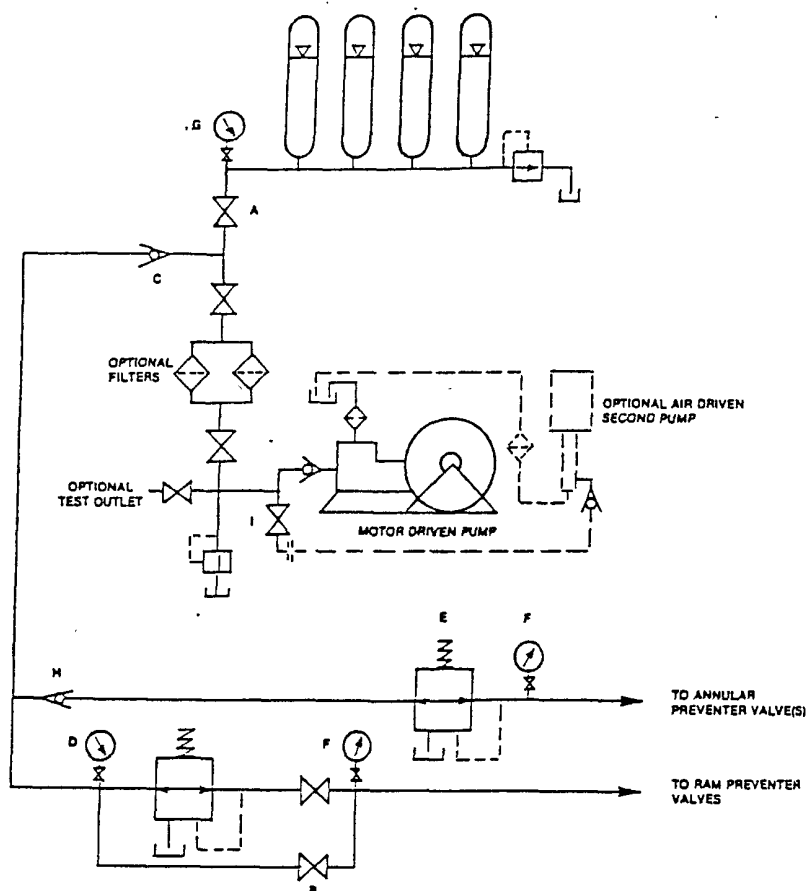


FIGURE K6-1. The schematic sketch of an accumulator system shows required and optional components.

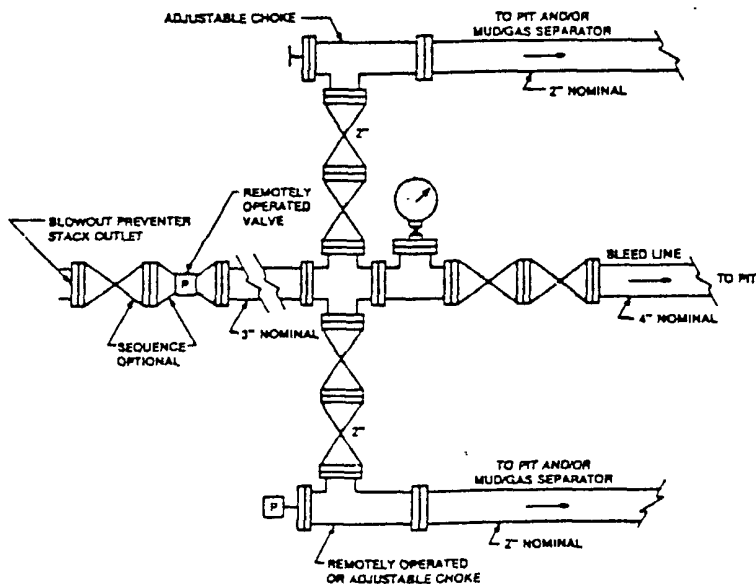


FIGURE K4-2. Typical choke manifold assembly for 5M rated work pressure service — surface installation.

EXHIBIT "E-1"  
CHOKE MANIFOLD & CLOSING UNIT

OGX RESOURCES, LLC.  
MESCAL "22" FEDERAL # 2H  
UNIT "P" SECTION 22  
T25S-R29E EDDY CO. NM

SURFACE USE PLAN

OGX RESOURCES, LLC.  
MESCAL "22" FEDERAL # 2H  
UNIT "P" SECTION 22  
T25S-R29E 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 Malaga New Mexico take U. S. Hi-way 285 South 12.5 miles to CR-725 (White horn road), turn Left (East) go 3.8 miles cross river, continue .2 miles, bear Left (Northeast) go 1.8 miles. turn Left (North) go .25 miles, bear Left follow lease road 2.2 miles (North) bear Right North-East follow lease road 1± mile, turn Right (South) go .6 miles to location on the East side of road.
- D. Exhibit "C" shows existing roads and proposed roads. Tank Battery and production facilities will be constructed on location.

2. PLANNED ACCESS ROADS: Approximately .6 miles of new road will be constructed.

- 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 - One approximately 1 mile Northwest of location.
- B. Disposal wells - One approximately .6 mi West Northwest of location.
- 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.  
MESCAL "22" FEDERAL # 2H  
UNIT "P" SECTION 22  
T25S-R29E 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.  
MESCAL "22" FEDERAL #2H  
UNIT "P" SECTION 22  
T25S-R29E EDDY CO. NM

9. WELL SITE LAYOUT:

- A. Exhibit "D" shows a generic well site for a well drilled using a closed mud system.

10. PLANS FOR RESTORATION OF SURFACE:

Rehabilitation of the surface will start after the well has been completed, if the well is completed as a producer production facilities will be constructed on the location. What area is not required for the operation of this project will be reclaimed and restored as near as possible to the original grade and vegetation.

If in case this well is unsuccessful and is a dry hole the drilling pad and the access roads will be reclaimed according to specifications provided by The Bureau of Land Management. Caliche or other road material will be removed for the possible use in another location or deposited in an approved reclamation site.

Drill cuttings and mud used to drill this well will be removed and disposed of at an approved disposal site. All trash and any other debris will be collected disposed of as the above.

11. ADDITIONAL INFORMATION:

- A. Topography consists of low lying sand dunes with an occasional blowout, soils consists of sand gravel tan in color. There is a slight dip to the West toward the Pecos River. Canyons are present towards the West that drain into the Pecos.
- B. The vegetation that is present is mesquite, prickly pear, Snake weed, and native grasses. The surface is used to graze livestock and for the production of oil & gas. The surface and minerals are owned by The U. S. Department of Interior.
- C. There are no dwellings within 3 miles of location.
- D. The Permian Basin MOA will be used instead of an archaeological survey.

## 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, 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 HEREIN WILL BE PERFORMED BY OGX RESOURCES, LLC. ITS CONTRACTORS AND/OR ITS SUB-CONTRACTORS AND IS IN CONFORMANCE WITH THIS PLANS AND TERMS AND THE CONDITIONS UNDER WHICH IT IS APPROVED. THIS STATEMENT IS SUBJECT TO THE PROVISIONS OF U.S.C. FOR FILING A FALSE REPORT.

### OPERATOR'S REPRESENTATIVES:

#### BEFORE CONSTRUCTION

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

#### DURING & AFTER CONSTRUCTION

OGX RESOURCES, LLC.  
P. O. BOX 2064  
MIDLAND, TEXAS 79701  
JEFF BIRKELBACH 432-685-1287  
CELL 432-553-0391

NAME

*Joe Janica*

TITLE

Permit Eng

DATE

05/05/10

## PECOS DISTRICT CONDITIONS OF APPROVAL

OPERATOR'S NAME:	OGX RESOURCES, LLC
LEASE NO.:	NM14778
WELL NAME & NO.:	MESCAL 22 FEDERAL # 2H
SURFACE HOLE FOOTAGE:	880' FSL & 560' FEL
BOTTOM HOLE FOOTAGE	660' FSL & 330' FWL
LOCATION:	Section 22, T. 25S S., R 29 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**

Tank Battery

Erosion Control

Interim Reclamation

- ☐ **Construction**
  - Notification
  - V-Door Direction
  - Topsoil
  - Closed Loop System
  - Federal Mineral Material Pits
  - Well Pads
  - Roads

- ☐ **Road Section Diagram**

- ☒ **Drilling**
  - Medium Cave Potential
  - Casing Depth Change
  - Logging Requirements

- ☐ **Production (Post Drilling)**
  - Well Structures & Facilities
  - Pipelines
  - Electric Lines

- ☒ **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)**

### **Tank Battery**

- The Tank Battery shall be constructed on the north side of the pad in order to allow the drainage crossing the southwest corner of the pad to be re-contoured during interim reclamation.
- Tank battery locations will be lined and bermed. A 20 mil permanent liner will be installed with a 4 oz. felt backing to prevent tears or punctures. The tank battery berms must be large enough to contain 1 ½ times the content of the largest tank.
- Automatic shut off, check valves, or similar systems will be installed for tanks to minimize the effects of catastrophic line failures used in production or drilling.

### **Erosion Control**

The new access road shall be constructed with adequate rainwater leadouts in order to prevent runoff from entering the well pad. Erosion that occurs as a result of the construction of the road and well pad shall be mitigated as determined by the authorized officer.

### **Interim Reclamation**

Interim reclamation shall take place on the south and west sides of the pad. The drainage crossing the southwest corner of the well pad shall be recontoured.

## **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 (575) 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. V-DOOR DIRECTION: south**

### **C. TOPSOIL**

The operator shall stockpile the topsoil in a low profile manner in order to prevent wind/water erosion of the topsoil. The topsoil to be stripped is approximately 6 inches in depth. The topsoil will be used for interim and final reclamation.

#### **D. CLOSED LOOP SYSTEM**

Tanks are required for drilling operations: No Pits.

The operator shall properly dispose of drilling contents at an authorized disposal site.

#### **E. FEDERAL MINERAL MATERIALS PIT**

Payment shall be made to the BLM prior to removal of any federal mineral materials. Call the Carlsbad Field Office at (575) 234-5972.

#### **F. 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.

#### **G. 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**

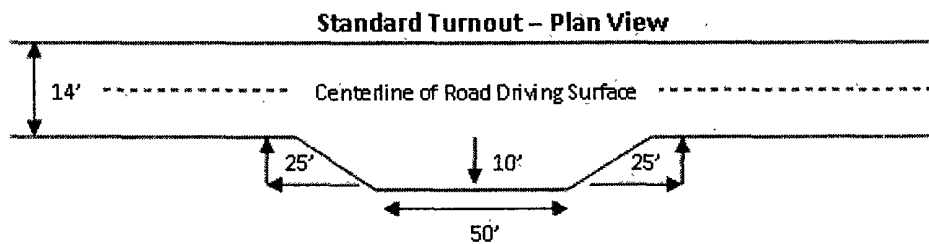
Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

### **Ditching**

Ditching shall be required on both sides of the road.

### **Turnouts**

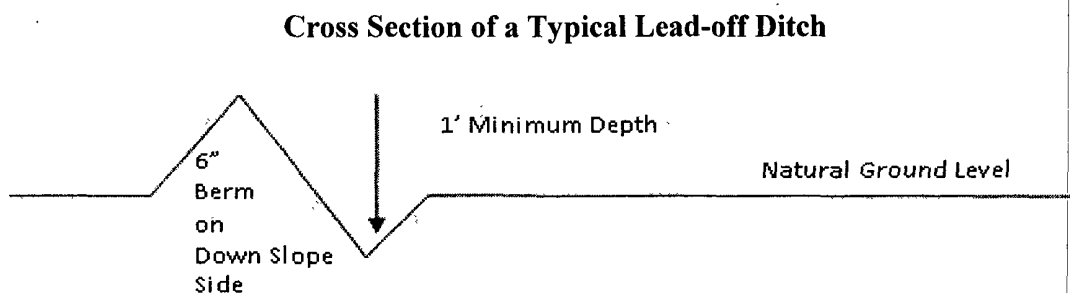
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall be constructed on all blind curves. Turnouts shall conform to the following diagram:



### **Drainage**

Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outslowing 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**

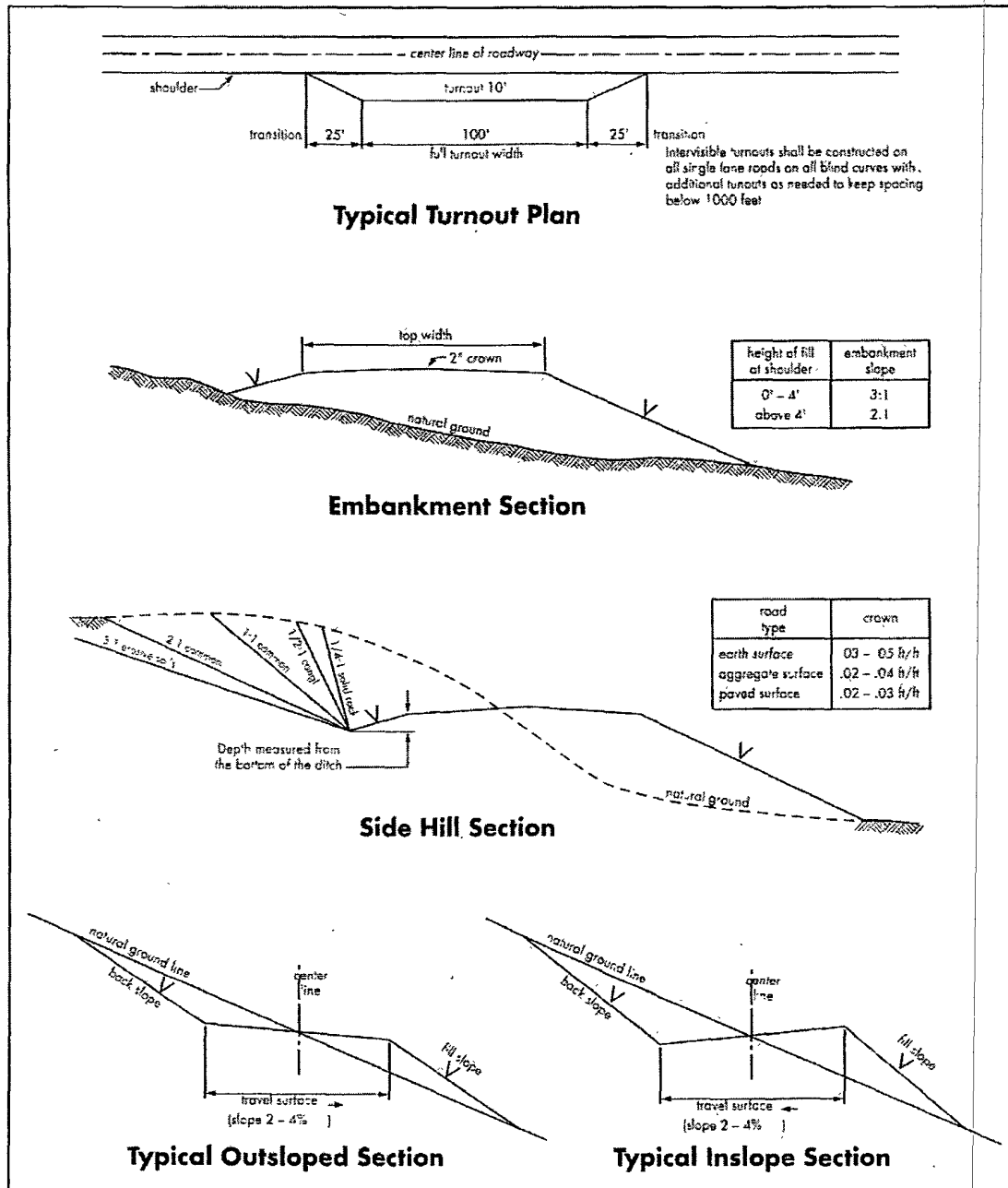
Where entry is required across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting.

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 the area, 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. **If the drilling rig is removed without approval – an Incident of Non-Compliance will be written and will be a “Major” violation.**
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.
4. **The record of the drilling rate along with the CAL/GR/N well log run from TD to surface will be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.**

### 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.

**Medium cave potential.**

**Possible water and brine flows in the Salado and Delaware Mountain Groups.**

**Possible lost circulation in the Delaware Mountain Group.**

1. The 13-3/8 inch surface casing shall be set at **approximately 725 feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt)** and cemented to the surface. **Fresh water mud to be used to setting depth.**
  - 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 surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
  - 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.
2. The minimum required fill of cement behind the 8-5/8 inch intermediate casing is:
  - ☒ Cement to surface. If cement does not circulate see B.1.a, c-d above. **Set this casing at approximately 3080' within the Fletcher Anhydrite. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst. Additional cement may be required as the excess calculates to be 14%.**

**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 to surface. If cement does not circulate, contact the appropriate BLM office. **Additional cement may be required as the excess calculates to be negative 2%.**

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. Casing cut-off and BOP installation will not be initiated until the cement has had a minimum of 8 hours setup time for a water basin. The casing shall remain stationary and under pressure for at least eight hours after the operator places the cement. In the potash area, the minimum time is 12 hours and the casing shall remain stationary and under pressure during this time period. Casing shall be under pressure if the operator uses some acceptable means of holding pressure or if the operator employs one or more float valves to hold the cement in place. Testing the BOP/BOPE against a plug can commence after meeting the above conditions plus the BOP installation time.
  - b. The tests shall be done by an independent service company utilizing a test plug.
  - c. The results of the test shall be reported to the appropriate BLM office.
  - d. 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.**
  - e. 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.

**CRW 060310**

### **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

#### **B. PIPELINES**

#### **C. ELECTRIC LINES**

### **IX. 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.

Within six (6) months of well completion, operators should work with BLM surface management specialists (Jim Amos: 575-234-5909) to devise the best strategies to reduce the size of the location. Interim reclamation 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 that is free of contaminants 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.

All disturbed areas after they have been satisfactorily prepared need to be reseeded with the seed mixture provided below.

Upon completion of interim reclamation, the operator shall submit a Sundry Notices and Reports on Wells, Subsequent Report of Reclamation (Form 3160-5).

## **X. FINAL ABANDONMENT & RECLAMATION**

At final abandonment, well locations, production facilities, and access roads must undergo "final" reclamation so that the character and productivity of the land are restored.

Earthwork for final reclamation must be completed within six (6) months of well plugging. All pads, pits, facility locations and roads must be reclaimed to a satisfactory revegetated, safe, and stable condition, unless an agreement is made with the landowner or BLM to keep the road and/or pad intact.

After all disturbed areas have been satisfactorily prepared; these areas need to be revegetated with the seed mixture provided below. Seeding should be accomplished by drilling on the contour whenever practical or by other approved methods. Seeding may need to be repeated until revegetation is successful, as determined by the BLM.

Operators shall contact a BLM surface protection specialist prior to surface abandonment operations for site specific objectives (Jim Amos: 575-234-5909).

### Seed Mixture 1, for Loamy 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 regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (small/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 lovegrass ( <i>Eragrostis intermedia</i> )	0.5
Sand dropseed ( <i>Sporobolus cryptandrus</i> )	1.0
Sideoats grama ( <i>Bouteloua curtipendula</i> )	5.0

\*Pounds of pure live seed:

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