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DISTRICT IV  
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State of New Mexico  
Energy, Minerals & Natural Resources Department  
OIL CONSERVATION DIVISION  
1220 South St. Francis Dr.  
Santa Fe, New Mexico 87505

Form C-102  
Revised August 1, 2011  
Submit one copy to appropriate  
District Office

AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-05-41173	Pool Code 96830	Pool Name Artesia; G Lorieta-Yeso
Property Code 309602	Property Name PIGLET 21 STATE	Well Number 23
OGRID No. 192463	Operator Name OXY U.S.A. WTP LP	Elevation 3635'

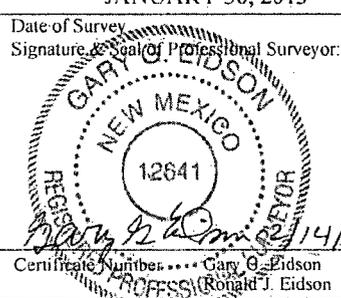
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
0	21	17-S	28-E		1112	SOUTH	1600	EAST	EDDY

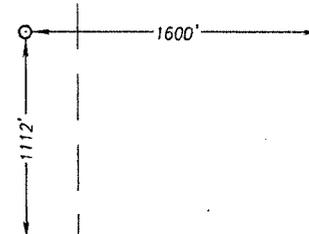
Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

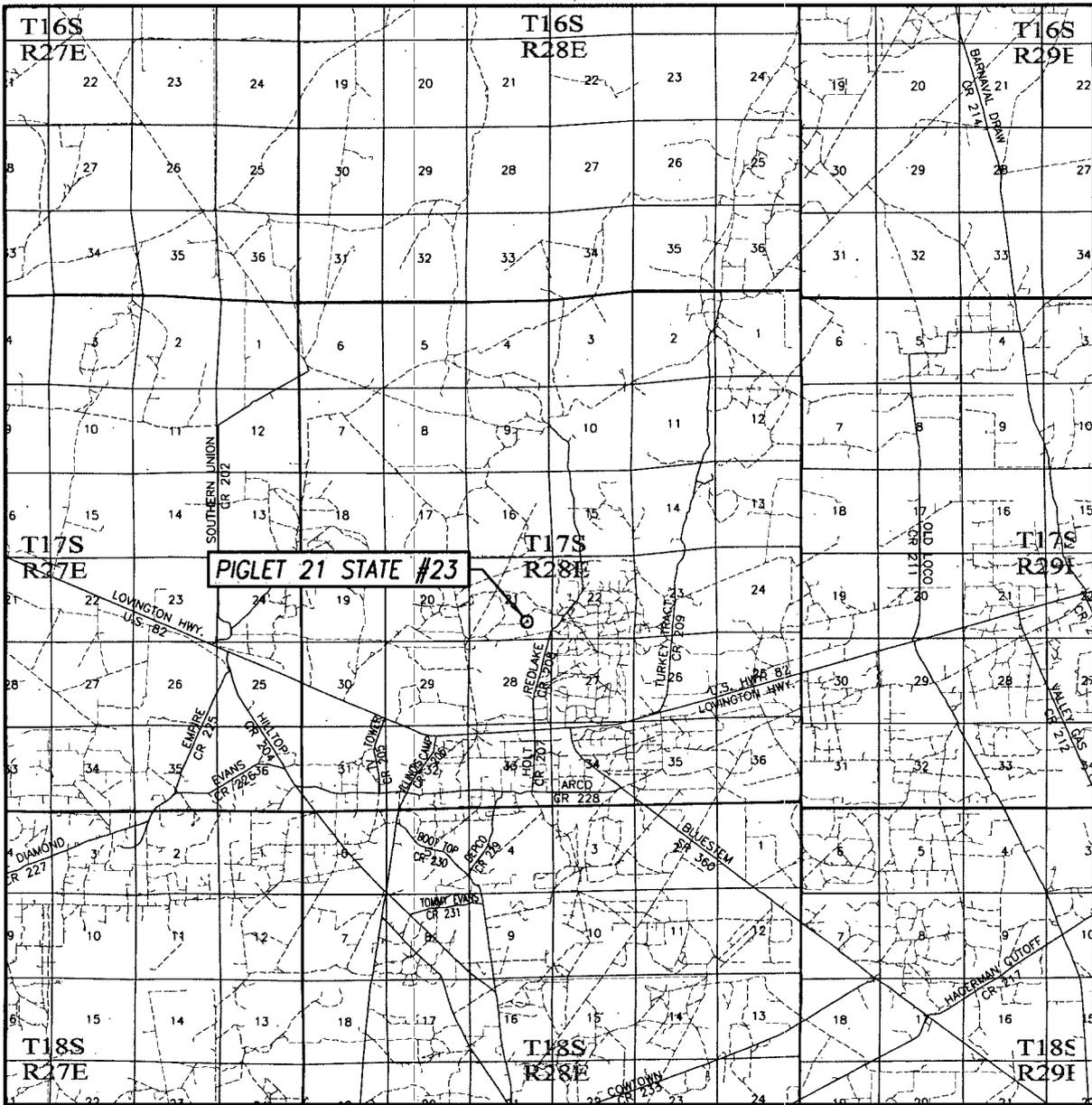
Dedicated Acres 40	Joint or Infill	Consolidation Code	Order No.
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NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

<p>GEODETIC COORDINATES NAD 27 NME</p> <p>SURFACE LOCATION Y=660457.4 N X=548028.1 E</p> <p>LAT.=32.815588° N LONG.=104.177002° W</p>	<p>OPERATOR CERTIFICATION</p> <p><i>I hereby certify that the information 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 mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.</i></p> <p><i>Jennifer Duarte</i> 3/04/13 Signature Date</p> <p>Jennifer Duarte Printed Name</p> <p>jennifer.duarte@oxy.com E-mail Address</p>	
	<p>SURVEYOR CERTIFICATION</p> <p><i>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.</i></p> <p>JANUARY 30, 2013 Date of Survey</p> <p>Signature of Professional Surveyor: GARY G. EIDSON</p>	
		
	<p>Certificate Number: Gary G. Eidson 12641 Ronald J. Eidson 3239</p> <p>AF JWSC W.O.: 13.11.0131</p>	



# VICINITY MAP

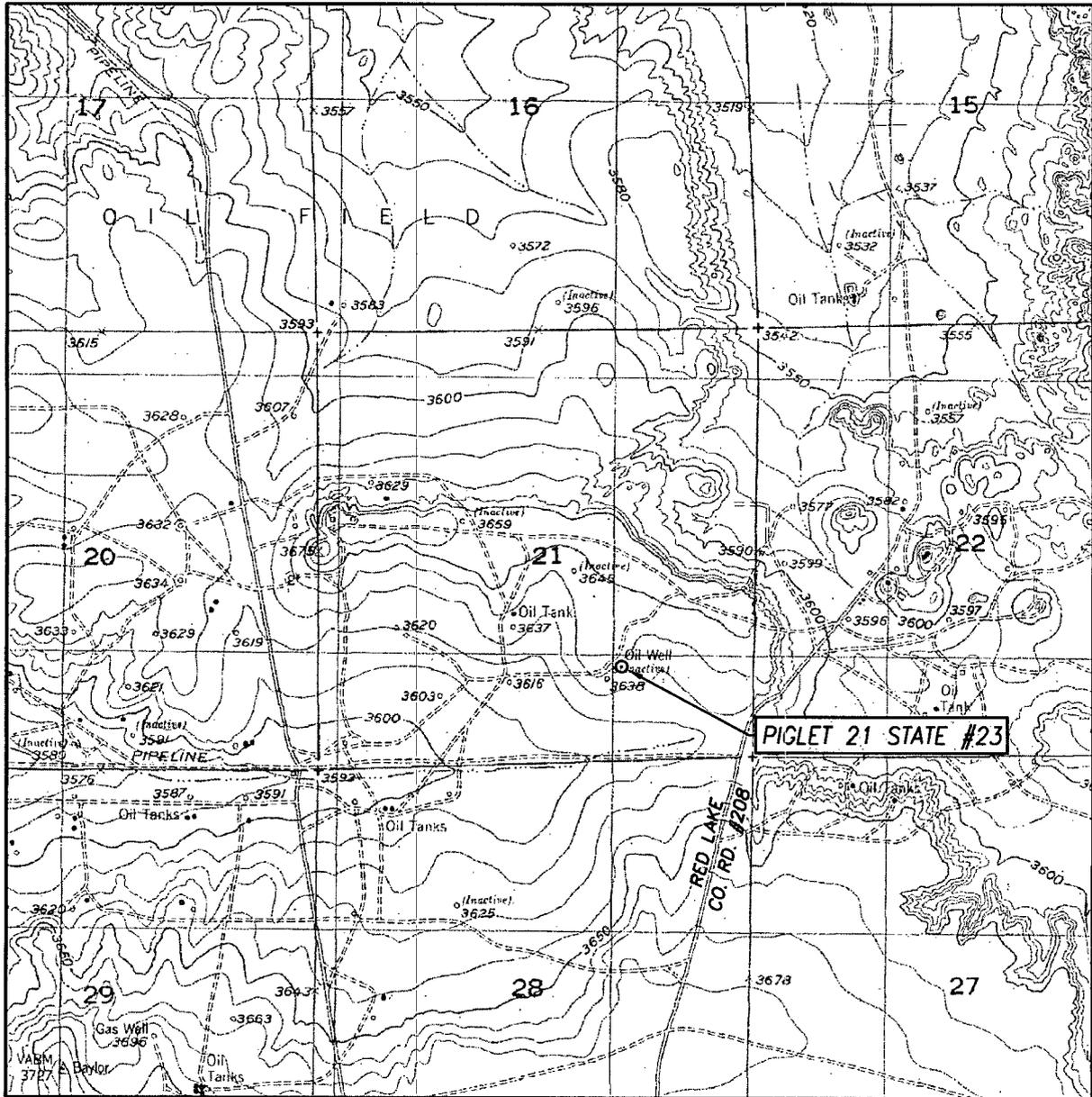


SCALE: 1" = 2 MILES

SEC. 21 TWP. 17-S RGE. 28-E  
 SURVEY N.M.P.M.  
 COUNTY EDDY STATE NEW MEXICO  
 DESCRIPTION 1112' FSL & 1600' FEL  
 ELEVATION 3635'  
 OPERATOR OXY U.S.A. WTP LP  
 LEASE PIGLET 21 STATE

PROVIDING SURVEYING SERVICES  
 SINCE 1946  
**JOHN WEST SURVEYING COMPANY**  
 412 N. DAL PASO  
 HOBBS, N.M. 88240  
 (575) 393-3117 www.jwsc.biz

# LOCATION VERIFICATION MAP



SCALE: 1" = 2000'

CONTOUR INTERVAL:  
RED LAKE, N.M. - 10'

SEC. 21 TWP. 17-S RGE. 28-E

SURVEY N.M.P.M.

COUNTY EDDY STATE NEW MEXICO

DESCRIPTION 1112' FSL & 1600' FEL

ELEVATION 3635'

OPERATOR OXY U.S.A. WTP LP

LEASE PIGLET 21 STATE

U.S.G.S. TOPOGRAPHIC MAP

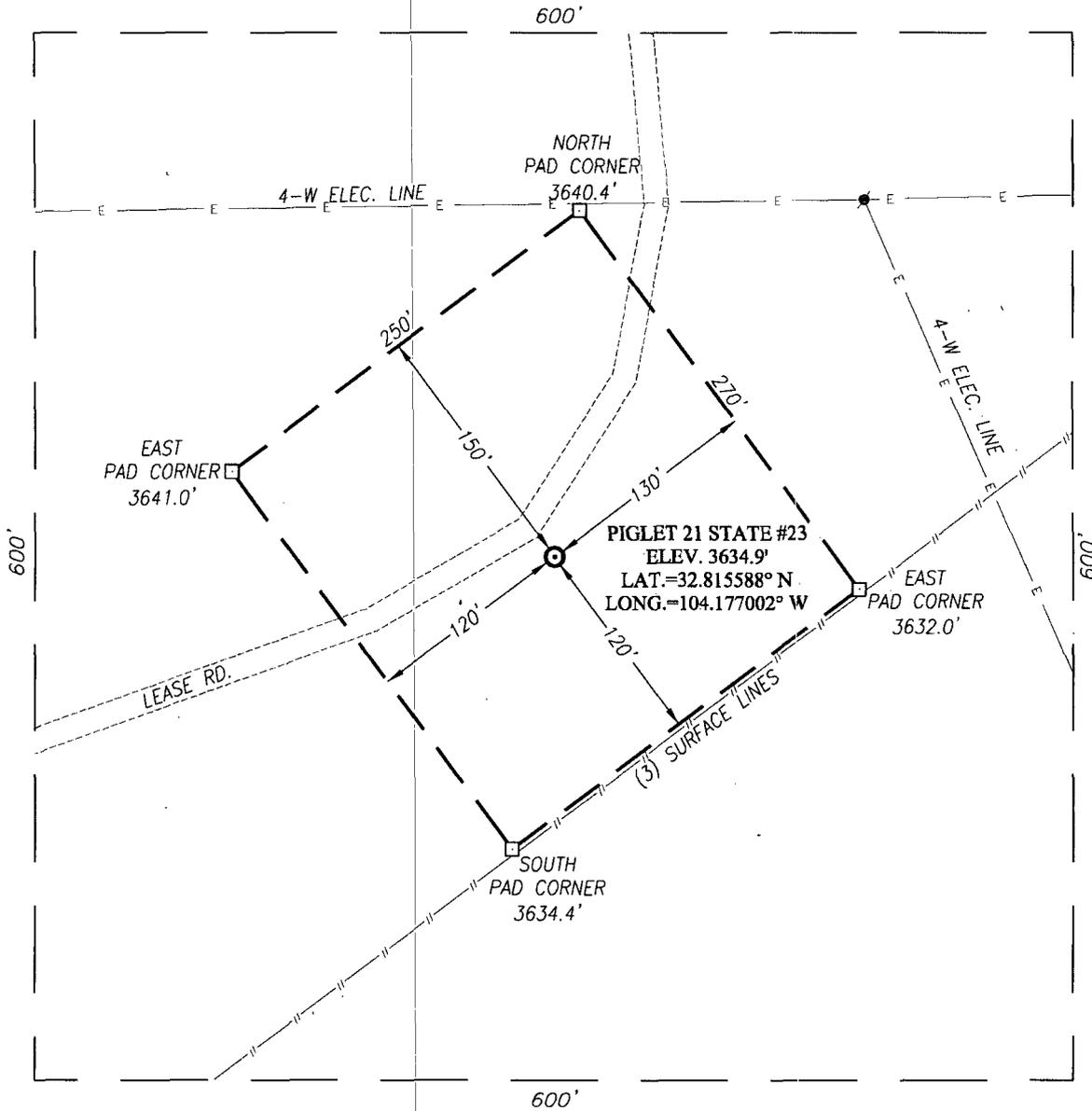
RED LAKE, N.M.

PROVIDING SURVEYING SERVICES  
SINCE 1946

**JOHN WEST SURVEYING COMPANY**

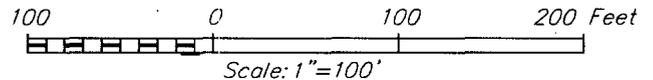
412 N. DAL PASO  
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(575) 393-3117 [www.jwsc.biz](http://www.jwsc.biz)

**SECTION 21, TOWNSHIP 17 SOUTH, RANGE 28 EAST, N.M.P.M.**  
**EDDY COUNTY** **NEW MEXICO**



**DIRECTIONS TO LOCATION**

FROM THE INTERSECTION OF U.S. HWY. #82 AND CO. RD. #208 (RED LAKE) GO NORTH ON CO. RD. #208 APPROX. 1.5 MILES. TURN LEFT AND GO WEST NORTHWEST APPROX. 0.3 MILES. TURN LEFT AND GO SOUTH SOUTHWEST APPROX. 0.2 MILES TO THIS LOCATION.



**OXY U.S.A. WTP LP**

**PIGLET 21 STATE #23 WELL**  
**LOCATED 1112 FEET FROM THE SOUTH LINE**  
**AND 1600 FEET FROM THE EAST LINE OF SECTION 21,**  
**TOWNSHIP 17 SOUTH, RANGE 28 EAST, N.M.P.M.,**  
**EDDY COUNTY, NEW MEXICO**

PROVIDING SURVEYING SERVICES  
 SINCE 1946  
**JOHN WEST SURVEYING COMPANY**  
 412 N. DAL PASO  
 HOBBS, N.M. 88240  
 (575) 393-3117 www.jwsc.biz

Survey Date: 1/30/13	CAD Date: 2/12/13	Drawn By: AF
W.O. No.: 13110131	Rev. :	Rel. W.O.:
		Sheet 1 of 1

# APD DATA - DRILLING PLAN -

**OPERATOR NAME / NUMBER:** OXY USA WTP LP

**LEASE NAME / NUMBER:** Piglet 21 State 23

**STATE:** NM                      **COUNTY:** Eddy

**SURFACE LOCATION:** 1112' FSL & 1600' FEL, Sec 21, T 17S, R 28E

**C-102 PLAT APPROX GR ELEV:** 3635'

**EST KB ELEV:** 3649' (14' KB)

**1. GEOLOGIC NAME OF SURFACE FORMATION**

a. Permian

**2. ESTIMATED TOPS OF GEOLOGICAL MARKERS & DEPTHS OF ANTICIPATED FRESH WATER, OIL OR GAS**

Formation	TV Depth Top	Expected Fluids
Rustler	Surface Outcropping	Fresh Water
Yates	410	-
Seven Rivers	604	-
Queen	1170	-
Grayburg	1640	Oil
San Andres	1749	Oil/Water
Glorietta	3350	Oil
Paddock	3440	Oil
Blinberry	3900	Oil
Tubb - Base of Yeso	4820	Oil
TD	5100	TD

A. Based on the State Engineer Website, there no known nearby water wells drilled in the area.

B. The 16" conductor pipe will be set at 80' prior to spud.

**GREATEST PROJECTED TD 5100' MD / 5100' TVD      OBJECTIVE:** Yeso

**3. CASING PROGRAM**

Surface Casing: 8.625" casing set at ± 400' MD/ 400' TVD in a 11" hole filled with 8.4 ppg mud

Interval	Length	Wt	Gr	Condition	Cplg	Coll Rating (psi)	Burst Rating (psi)	Jt Str (M-lbs)	ID (in)	Drift (in)	SF Coll	SF Burst	SF Ten
0'- 400'	400'	24	J-55	New	ST&C	1370	2950	381	8.097	7.972	10.17	1.72	45.54

Production Casing: 5.5" casing set at ± 5100' MD / 5100' TVD in a 7.875" hole filled 9.6 ppg mud

Interval	Length	Wt	Gr	Condition	Cplg	Coll Rating (psi)	Burst Rating (psi)	Jt Str (M-lbs)	ID (in)	Drift (in)	SF Coll	SF Burst	SF Ten
0'- 5100'	5100'	17	L-80	New	LT&C	6290	7740	338	4.892	4.767	2.47	3.80	4.57

Collapse and burst loads calculated using Stress Check with actual anticipated loads.

#### 4. CEMENT PROGRAM:

##### Surface Interval

Interval	Amount sx	Ft of Fill	Type	Gal/Sk	PPG	Ft <sup>3</sup> /sk	24 Hr Comp
<b>Surface (TOC: 0' - 400')</b>							
<b>Lead:</b> 0' - 400' (125% Excess)	190	400'	Premium Plus Cement: 1 % Calcium Chloride - Flake	6.36	14.8	1.34	1608 psi

##### Production Interval

Interval	Amount sx	Ft of Fill	Type	Gal/Sk	PPG	Ft <sup>3</sup> /sk	24 Hr Comp
<b>Production (TOC: 0' - 5100')</b>							
<b>Lead:</b> 0' - 3200' (98 % Excess)	420	3200'	Interfill C: 0.4% HR-800, 0.25% D-AIR 5000	14.34	11.9	2.48	327 psi
<b>Tail:</b> 3200' - 5100' (98 % Excess)	440	1900'	Premium Plus Cement: 0.5% Halad @-344, 0.2% WellLife 734, 5 lbm/sk Microbond, 0.3% Econolite, 0.3% CFR-3	7.72	14.2	1.55	1914 psi

**Description of Cement Additives:** Calcium Chloride – Flake (Accelerator), HR-800 (Retarder), D-Air 5000 (Defoamer), Halad @-344 (Low Fluid Loss Control), WellLife 734 (Cement Enhancer), Microbond (Expander), Econolite (Light Weight Additive), CFR-3 (Dispersant)

If a caliper log is run, cement volumes will be adjusted to caliper volume + 35% excess for the production hole.

#### 5. PRESSURE CONTROL EQUIPMENT

**Surface: 0 - 400'** None.

**Production: 0 - 5100'** the minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required to drill below the surface casing shoe shall be 3000 (3M) psi. Operator will be using an 11" 3M two ram stack with 3M annular preventer, & 3M Choke Manifold.

- a. The 11" 3000 psi blowout prevention equipment will be installed and operational after setting the 8 5/8" surface casing and the 8 5/8" SOW x 11" 3K conventional wellhead; the rotating head body will be installed but the rubber will be installed when it becomes operationally necessary.
- b. The BOP and ancillary BOPE will be tested by a third party upon installation to the 8 5/8" surface casing. All equipment will be tested to 250/3000 psi for 10 minutes and charted, except the annular, which will be tested to 70% of working pressure. This is to be in compliance with the Onshore Order # 2 which states the BOPE shall be tested to 70 % of the yield of the casing when the BOP and casing are not isolated.
- c. The pipe rams will be functionally tested during each 24 hour period; the blind rams will be functionally tested on each trip out of the hole. These functional tests will be documented on the Daily Driller's Log. Other accessory equipment (BOPE) will include a safety valve and subs as needed to fit all drill strings, and a 2" kill line and 3" choke line having a 3000 psi WP rating. Oxy requests that the system be tested at 3,000 psi.

- d. Oxy requests a variance if Savanna 415 is used to drill this well to use a co-flex line between the BOP and choke manifold. See attached schematic.  
 Manufacturer: Hebei Ouya Ltd.  
 Serial Number: 1642343-04  
 Length: 39' Size: 3" Ends: flanges  
 WP rating: 3000 psi Anchors required by manufacturer: No
- e. See attached BOP & Choke manifold diagrams.

## 6. MUD PROGRAM:

Depth	Mud Wt ppg	Vis Sec	Fluid Loss	Type System
0 - 400'	8.4 - 8.8	27 - 38	NC	Fresh Water / Spud Mud
400' - TD	9.6 - 10	28 - 40	10 - 20	Brine Water / Salt Gel

Remarks: Pump high viscosity sweeps as needed for hole cleaning. The mud system will be monitored visually/manually as well as with an electronic PVT. The necessary mud products for additional weight and fluid loss control will be on location at all times.

- A. Appropriately weighted mud will be used to isolate potential gas, oil, and water zones until such time as casing can be cemented into place for zonal isolation.

## 7. AUXILIARY WELL CONTROL AND MONITORING EQUIPMENT

- a. A Kelly cock will be in the drill string at all times.
- b. A full opening drill pipe stabbing valve having the appropriate connections will be on the rig floor unobstructed and readily accessible at all times.
- c. Hydrogen Sulfide detection equipment will be in operation after drilling out the surface casing shoe until the production casing is cemented. Breathing equipment will be on location upon drilling the surface casing shoe until total depth is reached. **If Hydrogen Sulfide is encountered, measured amounts and formations will be reported to the BLM**

## 8. LOGGING / CORING AND TESTING PROGRAM:

- A. Mud Logger: Log from 3000' to TD.
- B. DST's: None.
- C. Cased Hole Logs as follows: Gamma Ray / Neutron from surface casing to TD.

## 9. POTENTIAL HAZARDS:

- A. H2S detection equipment will be in operation after drilling out the surface casing shoe until the production casing has been cemented. Breathing equipment will be on location from drilling out the surface shoe until production casing is cemented. If H2S is encountered the operator will comply with Onshore Order #6.
- B. The bottomhole pressure is anticipated to be **2545 psi**.
- C. No abnormal temperatures or pressures are anticipated. **The highest anticipated pressure gradient is 0.50 psi/ft.** All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well. Adequate flare lines will be installed off the mud/gas separator where gas may be flared safely.

## 10. ANTICIPATED STARTING DATE AND DURATION OF OPERATIONS

Road and location construction will begin after the BLM has approved the APD. Anticipated spud date will be as soon as possible after BLM approval and as soon as a rig will be available. Move in operations and drilling is expected to take 15 days. If production casing is run, then an additional 30 days will be needed to complete the well and construct surface facilities and/or lay flow lines in order to place well on production.

## 11. COMPANY PERSONNEL:

<b>Name</b>	<b>Title</b>	<b>Office Phone</b>
Anthony Tschacher	Drilling Engineer	713-985-6949
Sebastian Millan	Drilling Engineer Supervisor	713-350-4950
Roger Allen	Drilling Superintendent	713- 215-7617
Douglas Chester	Drilling Manager	713-366-5194