NM OIL CONSERVATION
ARTESIA DISTRICT
OCT 10 2019
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Form 3160-3
(June 2015)

FORM APPROVED
OMB No. 1004-0137
Expires: January 31, 2018

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.
NMNM021640

6. If Indian, Allotee or Tribe Name

1a. Type of work: ☑ DRILL ☐ REENTER

1b. Type of Well: ☑ Oil Well ☐ Gas Well ☐ Other

1c. Type of Completion: ☐ Hydraulic Fracturing ☐ Single Zone ☑ Multiple Zone

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

8. Lease Name and Well No.
PRECIOUS 30-18 FEDERAL COM
7H
326187

2. Name of Operator
OXY USA INCORPORATED

9. API Well No.
30-015-46372

3a. Address	3b. Phone No. *(include area code)*	10. Field and Pool, or Exploratory
5 Greenway Plaza, Suite 110 Houston TX 77046	(713)366-5716	~~WILDCAT~~ / ~~WOLFCAMP~~ 33740 Ingle Wells BSPG

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*
At surface NWNW / 570 FNL / 620 FWL / LAT 32.266607 / LONG -103.823635
At proposed prod. zone SWNW / 2621 FSL / 330 FWL / LAT 32.30442 / LONG -103.824561

11. Sec., T. R. M. or Blk. and Survey or Area
SEC 31 / T23S / R31E / NMP

14. Distance in miles and direction from nearest town or post office*	12. County or Parish	13. State
8 miles	EDDY	NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)	16. No of acres in lease	17. Spacing Unit dedicated to this well
20 feet	323.59	800

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	19. Proposed Depth	20. BLM/BIA Bond No. in file
35 feet	9808 feet / 22792 feet	FED: ESB000226

21. Elevations (Show whether DF, KDB, RT, GL, etc.)	22. Approximate date work will start*	23. Estimated duration
3348 feet	11/04/2019	20 days

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, and the Hydraulic Fracturing rule per 43 CFR 3162.3-3 (as applicable)

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 requested by the BLM.

25. Signature	Name *(Printed/Typed)*	Date
(Electronic Submission)	Sarah Chapman / Ph: (575)631-2442	01/29/2019

Title
Regulatory Specialist

Approved by *(Signature)*	Name *(Printed/Typed)*	Date
(Electronic Submission)	Christopher Walls / Ph: (575)234-2234	10/08/2019

Title	Office
Petroleum Engineer	CARLSBAD

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.

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.

APPROVED WITH CONDITIONS

(Continued on page 2)

Approval Date: 10/08/2019

*(Instructions on page 2)

RWP 10-11-19.

Additional Operator Remarks

Location of Well

1. SHL: NWNW / 570 FNL / 620 FWL / TWSP: 23S / RANGE: 31E / SECTION: 31 / LAT: 32.266607 / LONG: -103.823635 (TVD: 0 feet, MD: 0 feet)
   PPP: SWSW / 100 FSL / 1260 FWL / TWSP: 23S / RANGE: 31E / SECTION: 30 / LAT: 32.26845 / LONG: -103.821565 (TVD: 9874 feet, MD: 10258 feet)
   PPP: SWNW / 2640 FSL / 1260 FWL / TWSP: 23S / RANGE: 31E / SECTION: 30 / LAT: 32.275431 / LONG: -103.821561 (TVD: 9872 feet, MD: 12900 feet)
   PPP: NWSW / 1322 FSL / 1261 FWL / TWSP: 23S / RANGE: 31E / SECTION: 19 / LAT: 32.286327 / LONG: -103.821557 (TVD: 9869 feet, MD: 16700 feet)
   PPP: NWSW / 1324 FNL / 1261 FWL / TWSP: 23S / RANGE: 31E / SECTION: 18 / LAT: 32.3000856 / LONG: -103.821552 (TVD: 9865 feet, MD: 22000 feet)
   BHL: SWNW / 2621 FSL / 330 FWL / TWSP: 23S / RANGE: 31E / SECTION: 18 / LAT: 32.30442 / LONG: -103.824561 (TVD: 9808 feet, MD: 22792 feet)

BLM Point of Contact

Name: Deborah Ham
Title: Legal Landlaw Examiner
Phone: 5752345965
Email: dham@blm.gov

Approval Date: 10/08/2019

Review and Appeal Rights

A person contesting a decision shall request a State Director review. This request must be filed within 20 working days of receipt of the Notice with the appropriate State Director (see 43 CFR 3165.3). The State Director review decision may be appealed to the Interior Board of Land Appeals, 801 North Quincy Street, Suite 300, Arlington, VA 22203 (see 43 CFR 3165.4). Contact the above listed Bureau of Land Management office for further information.

PECOS DISTRICT
DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Oxy USA Incorporated
LEASE NO.:	NMNM021640
WELL NAME & NO.:	7H – PRECIOUS 30-18 FEDERAL COM
SURFACE HOLE FOOTAGE:	570'/N & 620'/W
BOTTOM HOLE FOOTAGE	2620'/S & 1260'/W
LOCATION:	SECTION 31, T23S, R31E, NMPM
COUNTY:	EDDY

COA

H2S	○ Yes	○ No	
Potash	○ None	○ Secretary	◉ R-111-P
Cave/Karst Potential	◉ Low	○ Medium	○ High
Variance	○ None	◉ Flex Hose	○ Other
Wellhead	○ Conventional	○ Multibowl	◉ Both
Other	☐ 4 String Area	☐ Capitan Reef	☐ WIPP
Other	☑ Fluid Filled	☑ Cement Squeeze	☐ Pilot Hole
Special Requirements	☐ Water Disposal	☑ COM	☐ Unit

Break Testing	○ Yes	◉ No

A. HYDROGEN SULFIDE

Hydrogen Sulfide (H2S) monitors shall be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the Hydrogen Sulfide area shall meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, provide measured values and formations to the BLM.

B. CASING

Primary Casing Design:

1. The **13-3/8** inch surface casing shall be set at approximately **405** feet (a minimum of **70 feet (Eddy County)** 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 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 will be a minimum of **24 hours in the Potash Area** or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)
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 **9-5/8** inch intermediate casing is:

Option 1 (Single Stage):

- Cement to surface. If cement does not circulate see B.1.a, c-d above. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.**

Option 2:

Operator has proposed a DV tool, the depth may be adjusted as long as the cement is changed proportionally. The DV tool may be cancelled if cement circulates to surface on the first stage.

a. First stage to DV tool: Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with second stage cement job.

b. Second stage above DV tool:

- Cement to surface. If cement does not circulate, contact the appropriate BLM office.
  Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.

3. The minimum required fill of cement behind the **5-1/2** inch production casing is:

Option 1 (Single Stage):

- Cement to surface. If cement does not circulate, contact the appropriate BLM office.

Option 2:

Operator has proposed a DV tool, the depth may be adjusted as long as the cement is changed proportionally. The DV tool may be cancelled if cement circulates to surface on the first stage.

a. First stage to DV tool: Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with second stage cement job.

b. Second stage above DV tool:

- Cement to surface. If cement does not circulate, contact the appropriate BLM office.

Operator has proposed to pump down 9-5/8" X 5-1/2" annulus. Operator must run a CBL from TD of the 5-1/2" casing to surface. Submit results to BLM. Excess calculates to 6% - additional cement might be required.

Alternate Casing Design:

2nd Intermediate casing must be kept fluid filled to meet BLM minimum collapse requirement.

3. The minimum required fill of cement behind the **7-5/8** inch 2nd intermediate casing is:

Option 1 (Single Stage):

- Cement to surface. If cement does not circulate see B.1.a, c-d above. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.**

Option 2:

Operator has proposed a DV tool, the depth may be adjusted as long as the cement is changed proportionally. The DV tool may be cancelled if cement circulates to surface on the first stage.

c. First stage to DV tool: Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with second stage cement job.

d. Second stage above DV tool:

- Cement to surface. If cement does not circulate, contact the appropriate BLM office.
  Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.

Operator has proposed to pump down 9-5/8" X 7-5/8" annulus. Operator must run a CBL from TD of the 7-5/8" casing to surface. Submit results to BLM. Excess calculates to 8% - additional cement might be required.

4. The minimum required fill of cement behind the **5-1/2** inch production casing is:

    - Cement should tie-back **500 feet** into the previous casing. Operator shall provide method of verification. **Excess calculates to 20% - additional cement might be required.**

C. PRESSURE CONTROL

1. Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).'

2.

Option 1:

a. 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.

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

Option 2:

1. Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. 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.

    a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
    b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
    c. Manufacturer representative shall install the test plug for the initial BOP test.
    d. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.

e. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.

D. SPECIAL REQUIREMENT (S)

Communitization Agreement

- The operator will submit a Communitization Agreement to the Carlsbad Field Office, 620 E Greene St. Carlsbad, New Mexico 88220, at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees of record), or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.
- If the operator does not comply with this condition of approval, the BLM may take enforcement actions that include, but are not limited to, those specified in 43 CFR 3163.1.
- In addition, the well sign shall include the surface and bottom hole lease numbers. When the Communitization Agreement number is known, it shall also be on the sign.

Offline Cementing

Contact the BLM prior to the commencement of any offline cementing procedure.

BOP Break Testing Variance

- BOP break testing is not permitted on this well pending submittion of break testing sundry.

GENERAL REQUIREMENTS

The BLM is to be notified in advance for a representative to witness:

a. Spudding well (minimum of 24 hours)
b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
c. BOPE tests (minimum of 4 hours)

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

☒ Lea County
Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240, (575) 393-3612

1. 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.

   a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
   b. When the operator proposes to set surface casing with Spudder Rig
      - Notify the BLM when moving in and removing the Spudder Rig.
      - Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
      - BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.

2. 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.

3. The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall 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.

A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.

2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log. The casing intergrity test can be done (prior to the cement setting up) immediately after bumping the plug.

3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. The casing intergrity test can be done (prior to the cement setting up) immediately after bumping the plug.

4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.

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

6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.

7. 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.
8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

B. 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. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.

3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.

4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:

    a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
    b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
    c. Manufacturer representative shall install the test plug for the initial BOP test.
    d. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.
    e. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.

5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.

    a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including

lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).

b. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time, except the casing pressure test can be initiated immediately after bumping the plug (only applies to single stage cement jobs).

c. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (8 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).

d. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.

e. The results of the test shall be reported to the appropriate BLM office.

f. 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.

g. 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. This test shall be performed prior to the test at full stack pressure.

h. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

C. DRILLING MUD

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the Wolfcamp formation, and shall be used until production casing is run and cemented.

D. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

NMK1072019

PECOS DISTRICT
SURFACE USE
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	OXY USA INCORPORATED
LEASE NO.:	
WELL NAME & NO.:	7H – PRECIOUS 30-18 FEDERAL COM
SURFACE HOLE FOOTAGE:	570'/N & 1345'/W
BOTTOM HOLE FOOTAGE	2621'/S & 330'/W
LOCATION:	SECTION 31, T23S, R31E, NMPM
COUNTY:	EDDY

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.

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 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, 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 feet from the source of the noise.

Ground-level Abandoned Well Marker to avoid raptor perching: Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well. For more installation details, contact the Carlsbad Field Office at 575-234-5972.

This authorization is subject to your Certificate of Participation and/or Certificate of Inclusion under the New Mexico Candidate Conservation Agreement. Because it involves surface disturbing activities covered under your Certificate, your Habitat Conservation Fund Account with the Center of Excellence for Hazardous Materials Management (CEHMM) will be debited according to Exhibit B Part 2 of the Certificate of Participation.

Timing Limitation Exceptions:
The Carlsbad Field Office will publish an annual map of where the LPC timing and noise stipulations and conditions of approval (Limitations) will apply for the identified year (between March 1 and June 15) based on the latest survey information. The LPC Timing Area map will identify areas which are Habitat Areas (HA), Isolated Population Area (IPA), and Primary Population Area (PPA). The LPC Timing Area map will also have an area in red crosshatch. The red crosshatch area is the only area where an operator is required to submit a request for exception to the LPC Limitations. If an operator is operating outside the red crosshatch area, the LPC Limitations do not apply for that year and an exception to LPC Limitations is not required.

Cattleguards
Where a permanent cattlegaurd is approved, 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 on one side of the cattleguard and fastened securely to H-braces.

Fence Requirement

Where entry granted across a fence line, the fence must be braced and tied off on both sides of the passageway prior to cutting. Once the work is completed, the fence will be restored to its prior condition, or better. The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fence(s).

Livestock Watering Requirement

Structures that provide water to livestock, such as windmills, pipelines, drinking troughs, and earthen reservoirs, will be avoided by moving the proposed action

Potash Minerals

Measures to minimize impacts to potash mineral reserves have been considered during the BLM's planning process by establishment of the Twin Wells Drill Island. No additional special mitigation or requirements have been identified by the BLM.

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) 234-5909 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 strip the top portion of the soil (root zone) from the entire well pad area and stockpile the topsoil along the edge of the well pad as depicted in the APD. The root zone is typically six (6) inches in depth. All the stockpiled topsoil will be redistributed over the interim reclamation areas. Topsoil shall not be used for berming the pad or facilities. For final reclamation, the topsoil shall be spread over the entire pad area for seeding preparation.

Other subsoil (below six inches) stockpiles must be completely segregated from the topsoil stockpile. Large rocks or subsoil clods (not evident in the surrounding terrain) must be buried within the approved area for interim and final reclamation.

C. CLOSED LOOP SYSTEM

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

Payment shall be made to the BLM prior to removal of any federal mineral materials. Call the Carlsbad Field Office at (575) 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. EXCLOSURE FENCING (CELLARS & PITS)

Exclosure Fencing
The operator will install and maintain exclosure fencing for all open well cellars to prevent access to public, livestock, and large forms of wildlife before and after drilling operations until the pit is free of fluids and the operator initiates backfilling. (For examples of exclosure fencing design, refer to BLM's Oil and Gas Gold Book, Exclosure Fence Illustrations, Figure 1, Page 18.)

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 twenty-five (25) 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.

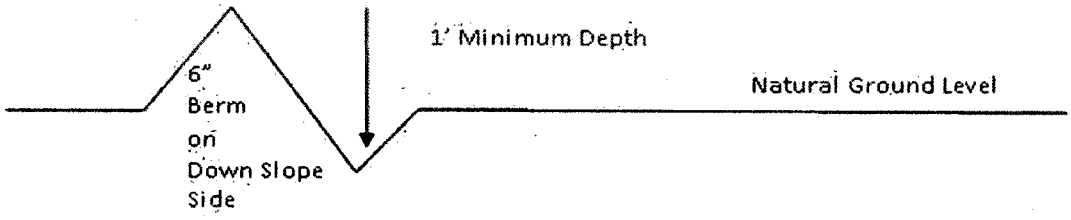
Turnouts
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

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.

Cross Section of a Typical 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 foot road with 4% road slope: $\frac{400'}{4\%} + 100' = 200'$ lead-off ditch interval

Cattle guards

An appropriately sized cattle guard sufficient to carry out the project shall be installed and maintained at fence/road crossings. Any existing cattle guards on the access road route 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 cattle guards that are in place and are utilized during lease operations.

Fence Requirement

Where entry is granted 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 fences.

Public Access

Public access on this road shall not be restricted by the operator without specific written approval granted by the Authorized Officer.

Construction Steps

1. Salvage topsoil
2. Construct road
3. Redistribute topsoil
4. Revegetate slopes

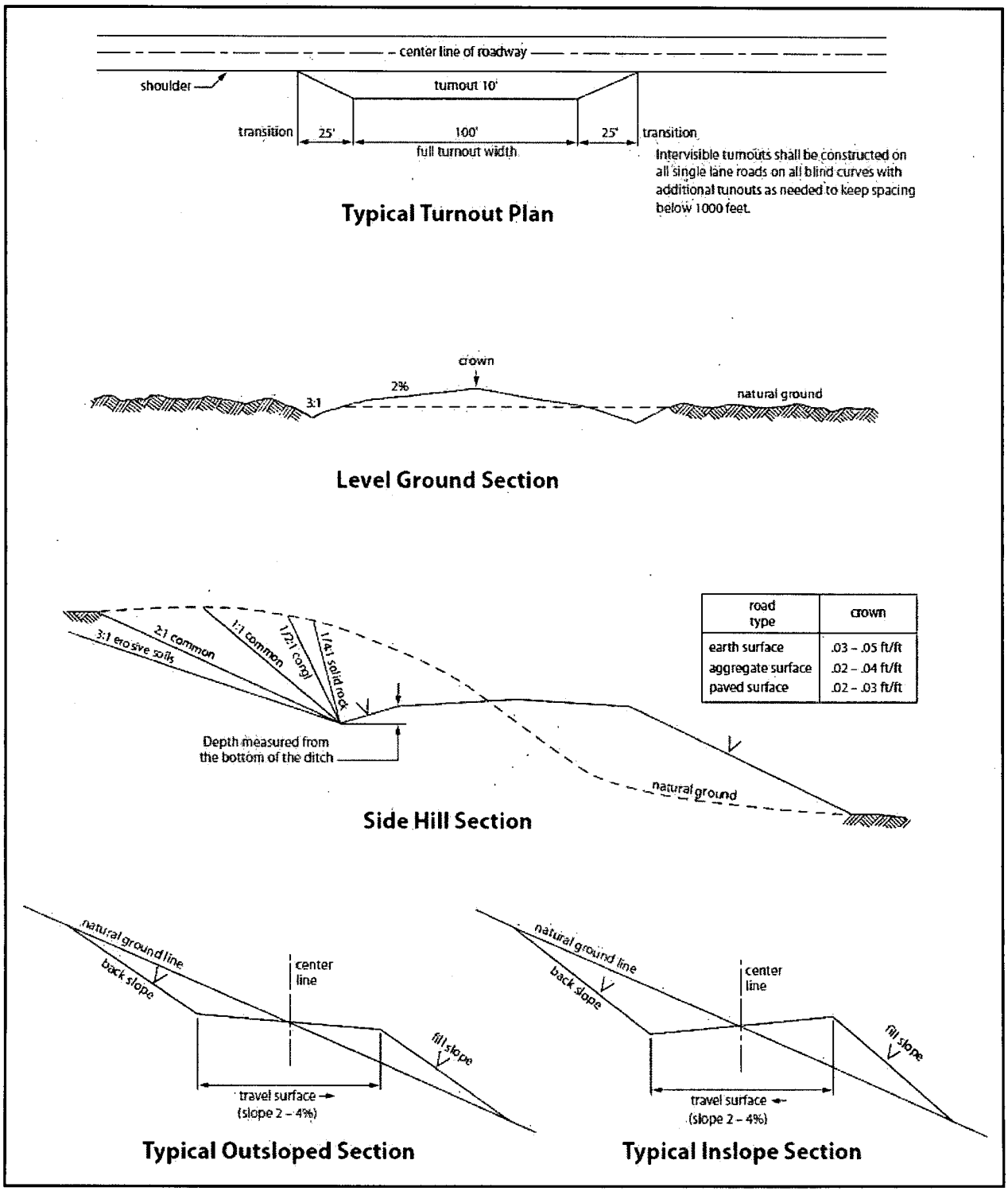


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

Approval Date: 10/08/2019

VII. 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.

Exclosure Netting (Open-top Tanks)
Immediately following active drilling or completion operations, the operator will take actions necessary to prevent wildlife and livestock access, including avian wildlife, to all open-topped tanks that contain or have the potential to contain salinity sufficient to cause harm to wildlife or livestock, hydrocarbons, or Resource Conservation and Recovery Act of 1976-exempt hazardous substances. At a minimum, the operator will net, screen, or cover open-topped tanks to exclude wildlife and livestock and prevent mortality. If the operator uses netting, the operator will cover and secure the open portion of the tank to prevent wildlife entry. The operator will net, screen, or cover the tanks until the operator removes the tanks from the location or the tanks no longer contain substances that could be harmful to wildlife or livestock. Use a maximum netting mesh size of 1 ½ inches. The netting must not be in contact with fluids and must not have holes or gaps.

Chemical and Fuel Secondary Containment and Exclosure Screening
The operator will prevent all hazardous, poisonous, flammable, and toxic substances from coming into contact with soil and water. At a minimum, the operator will install and maintain an impervious secondary containment system for any tank or barrel containing hazardous, poisonous, flammable, or toxic substances sufficient to contain the contents of the tank or barrel and any drips, leaks, and anticipated precipitation. The operator will dispose of fluids within the containment system that do not meet applicable state or U. S. Environmental Protection Agency livestock water standards in accordance with state law; the operator must not drain the fluids to the soil or ground. The operator will design, construct, and maintain all secondary containment systems to prevent wildlife and livestock exposure to harmful substances. At a minimum, the operator will install effective wildlife and livestock exclosure systems such as fencing, netting, expanded metal mesh, lids, and grate covers. Use a maximum netting mesh size of 1 ½ inches.

Open-Vent Exhaust Stack Exclosures
The operator will construct, modify, equip, and maintain all open-vent exhaust stacks on production equipment to prevent birds and bats from entering, and to discourage perching, roosting, and nesting. (*Recommended exclosure structures on open-vent exhaust stacks are in the shape of a cone.*) Production equipment includes, but may not be limited to, tanks, heater-treaters, separators, dehydrators, flare stacks, in-line units, and compressor mufflers.

Containment Structures

Proposed production facilities such as storage tanks and other vessels will have a secondary containment structure that is constructed to hold the capacity of 1.5 times the largest tank, plus freeboard to account for precipitation, unless more stringent protective requirements are deemed necessary.

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** from the BLM Standard Environmental Color Chart (CC-001: June 2008).

B. PIPELINES

BURIED PIPELINE STIPULATIONS

A copy of the application (Grant, APD, or Sundry Notice) and attachments, including conditions of approval, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The Holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.

2. The Holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C.6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. If, during any phase of the construction, operation, maintenance, or termination of the pipeline, any oil or other pollutant should be discharged from the pipeline system, impacting Federal lands, the control and total removal, disposal, and cleaning up of such oil or other pollutant, wherever found, shall be the responsibility of holder, regardless of fault. Upon failure of holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages resulting therefrom, on the Federal lands, the Authorized Officer may take such measures as he deems necessary to control and clean up the discharge and restore the area, including where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of the holder. Such action by the Authorized Officer shall not relieve holder of any responsibility as provided herein.

5. All construction and maintenance activity will be confined to the authorized right-of-way.

6. The pipeline will be buried with a minimum cover of **36** inches between the top of the pipe and ground level.

7. The maximum allowable disturbance for construction in this right-of-way will be **30** feet:

- Blading of vegetation within the right-of-way will be allowed: maximum width of blading operations will not exceed **20** feet. The trench is included in this area. (*Blading is defined as the complete removal of brush and ground vegetation.*)

- Clearing of brush species within the right-of-way will be allowed: maximum width of clearing operations will not exceed **30** feet. The trench and bladed area are included in this area. (*Clearing is defined as the removal of brush while leaving ground vegetation (grasses, weeds, etc.) intact. Clearing is best accomplished by holding the blade 4 to 6 inches above the ground surface.*)

- The remaining area of the right-of-way (if any) shall only be disturbed by compressing the vegetation. (*Compressing can be caused by vehicle tires, placement of equipment, etc.*)

8. The holder shall stockpile an adequate amount of topsoil where blading is allowed. The topsoil to be stripped is approximately 6 inches in depth. The topsoil will be segregated from other spoil piles from trench construction. The topsoil will be evenly distributed over the bladed area for the preparation of seeding.

9. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

10. Vegetation, soil, and rocks left as a result of construction or maintenance activity will be randomly scattered on this right-of-way and will not be left in rows, piles, or berms, unless otherwise approved by the Authorized Officer. The entire right-of-way shall be recontoured to match the surrounding landscape. The backfilled soil shall be compacted and a 6 inch berm will be left over the ditch line to allow for settling back to grade.

11. In those areas where erosion control structures are required to stabilize soil conditions, the holder will install such structures as are suitable for the specific soil conditions being encountered and which are in accordance with sound resource management practices.

12. The holder will reseed all disturbed areas. Seeding will be done according to the attached seeding requirements, using the following seed mix.

( ) seed mixture 1	( ) seed mixture 3
( ) seed mixture 2	( ) seed mixture 4
(X) seed mixture 2/LPC	( ) Aplomado Falcon Mixture

13. All above-ground structures not subject to safety requirements shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be color which simulates "Standard Environmental Colors" – **Shale Green**, Munsell Soil Color No. 5Y 4/2.

14. The pipeline will be identified by signs at the point of origin and completion of the right-of-way and at all road crossings. At a minimum, signs will state the holder's name, BLM serial number, and the product being transported. All signs and information thereon will be posted in a permanent, conspicuous manner, and will be maintained in a legible condition for the life of the pipeline.

15. The holder shall not use the pipeline route as a road for purposes other than routine maintenance as determined necessary by the Authorized Officer in consultation with the holder before maintenance begins. The holder will take whatever steps are necessary to ensure that the pipeline route is not used as a roadway. As determined necessary during the life of the pipeline, the Authorized Officer may ask the holder to construct temporary deterrence structures.

16. Any cultural and/or paleontological resources (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the Authorized Officer. Holder 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 will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

17. 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 associated roads, 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.

18. Escape Ramps - The operator will construct and maintain pipeline/utility trenches that are not otherwise fenced, screened, or netted to prevent livestock, wildlife, and humans from becoming entrapped. At a minimum, the operator will construct and maintain escape ramps, ladders, or other methods of avian and terrestrial wildlife escape in the trenches according to the following criteria:

a. Any trench left open for eight (8) hours or less is not required to have escape ramps; however, before the trench is backfilled, the contractor/operator shall inspect the trench for wildlife, remove all trapped wildlife, and release them at least 100 yards from the trench.
b. For trenches left open for eight (8) hours or more, earthen escape ramps (built at no more than a 30 degree slope and spaced no more than 500 feet apart) shall be placed in the trench.

19. Special Stipulations:

Lesser Prairie-Chicken

Oil and gas activities will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th 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. 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.

Timing Limitation Exceptions:

The Carlsbad Field Office will publish an annual map of where the LPC timing and noise stipulations and conditions of approval (Limitations) will apply for the identified year (between March 1 and June 15) based on the latest survey information. The LPC Timing Area map will identify areas which are Habitat Areas (HA), Isolated Population Area (IPA), and Primary Population Area (PPA). The LPC Timing Area map will also have an area in red crosshatch. The red crosshatch area is the only area where an operator is required to submit a request for exception to the LPC Limitations. If an operator is operating outside the red crosshatch area, the LPC Limitations do not apply for that year and an exception to LPC Limitations is not required.

STANDARD STIPULATIONS FOR SURFACE INSTALLED PIPELINES

A copy of the application (Grant, Sundry Notice, APD) and attachments, including stipulations, survey plat and/or map, will be on location during construction. BLM

personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.

2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to activity of the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. The holder shall be liable for damage or injury to the United States to the extent provided by 43 CFR Sec. 2883.1-4. The holder shall be held to a standard of strict liability for damage or injury to the United States resulting from pipe rupture, fire, or spills caused or substantially aggravated by any of the following within the right-of-way or permit area:

a. Activities of the holder including, but not limited to construction, operation, maintenance, and termination of the facility.
b. Activities of other parties including, but not limited to:
    (1) Land clearing.
    (2) Earth-disturbing and earth-moving work.
    (3) Blasting.
    (4) Vandalism and sabotage.
c. Acts of God.

The maximum limitation for such strict liability damages shall not exceed one million dollars ($1,000,000) for any one event, and any liability in excess of such amount shall be determined by the ordinary rules of negligence of the jurisdiction in which the damage or injury occurred.

This section shall not impose strict liability for damage or injury resulting primarily from an act of war or from the negligent acts or omissions of the United States.

5. If, during any phase of the construction, operation, maintenance, or termination of the pipeline, any oil, salt water, or other pollutant should be discharged from the pipeline system, impacting Federal lands, the control and total removal, disposal, and cleaning up of such oil, salt water, or other pollutant, wherever found, shall be the responsibility of the holder, regardless of fault. Upon failure of the holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages resulting therefrom, on the Federal lands, the Authorized Officer may take such measures as he deems necessary to control and clean up the discharge and restore the area, including, where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of the holder. Such action by the Authorized Officer shall not relieve the holder of any responsibility as provided herein.

6. All construction and maintenance activity will be confined to the authorized right-of-way width of **20** feet. If the pipeline route follows an existing road or buried pipeline right-of-way, the surface pipeline must be installed no farther than 10 feet from the edge of the road or buried pipeline right-of-way. If existing surface pipelines prevent this distance, the proposed surface pipeline must be installed immediately adjacent to the outer surface pipeline. All construction and maintenance activity will be confined to existing roads or right-of-ways.

7. No blading or clearing of any vegetation will be allowed unless approved in writing by the Authorized Officer.

8. The holder shall install the pipeline on the surface in such a manner that will minimize suspension of the pipeline across low areas in the terrain. In hummocky of duney areas, the pipeline will be "snaked" around hummocks and dunes rather then suspended across these features.

9. The pipeline shall be buried with a minimum of **24** inches under all roads, "two-tracks," and trails. Burial of the pipe will continue for 20 feet on each side of each crossing. The condition of the road, upon completion of construction, shall be returned to at least its former state with no bumps or dips remaining in the road surface.

10. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When

necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

11. In those areas where erosion control structures are required to stabilize soil conditions, the holder will install such structures as are suitable for the specific soil conditions being encountered and which are in accordance with sound resource management practices.

12. Excluding the pipe, all above-ground structures not subject to safety requirement shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be a color which simulates "Standard Environmental Colors" – **Shale Green**, Munsell Soil Color No. 5Y 4/2; designated by the Rocky Mountain Five State Interagency Committee.

13. The pipeline will be identified by signs at the point of origin and completion of the right-of-way and at all road crossings. At a minimum, signs will state the holder's name, BLM serial number, and the product being transported. Signs will be maintained in a legible condition for the life of the pipeline.

14. The holder shall not use the pipeline route as a road for purposes other than routine maintenance as determined necessary by the Authorized Officer in consultation with the holder. The holder will take whatever steps are necessary to ensure that the pipeline route is not used as a roadway.

15. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the authorized officer. Holder 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 will be made by the authorized officer to determine appropriate cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the authorized officer after consulting with the holder.

16. 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, powerline 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.

17. Surface pipelines must be less than or equal to 4 inches and a working pressure below 125 psi.

18. Special Stipulations:

a. **Lesser Prairie-Chicken:** Oil and gas activities will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities 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. Normal vehicle use on existing roads will not be restricted.

b. **Timing Limitation Exceptions:**
The Carlsbad Field Office will publish an annual map of where the LPC timing and noise stipulations and conditions of approval (Limitations) will apply for the identified year (between March 1 and June 15) based on the latest survey information. The LPC Timing Area map will identify areas which are Habitat Areas (HA), Isolated Population Area (IPA), and Primary Population Area (PPA). The LPC Timing Area map will also have an area in red crosshatch. The red crosshatch area is the only area where an operator is required to submit a request for exception to the LPC Limitations. If an operator is operating outside the red crosshatch area, the LPC Limitations do not apply for that year and an exception to LPC Limitations is not required.

C. ELECTRIC LINES

STANDARD STIPULATIONS FOR OVERHEAD ELECTRIC DISTRIBUTION LINES

A copy of the grant and attachments, including stipulations, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.

2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as

a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. There will be no clearing or blading of the right-of-way unless otherwise agreed to in writing by the Authorized Officer.

5. Power lines shall be constructed and designed in accordance to standards outlined in "Suggested Practices for Avian Protection on Power lines: The State of the Art in 2006" Edison Electric Institute, APLIC, and the California Energy Commission 2006 . The holder shall assume the burden and expense of proving that pole designs not shown in the above publication deter raptor perching, roosting, and nesting. Such proof shall be provided by a raptor expert approved by the Authorized Officer. The BLM reserves the right to require modification or additions to all powerline structures placed on this right-of-way, should they be necessary to ensure the safety of large perching birds. Such modifications and/or additions shall be made by the holder without liability or expense to the United States.

Raptor deterrence will consist of but not limited to the following: triangle perch discouragers shall be placed on each side of the cross arms and a nonconductive perching deterrence shall be placed on all vertical poles that extend past the cross arms.

6. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

7. The BLM serial number assigned to this authorization shall be posted in a permanent, conspicuous manner where the power line crosses roads and at all serviced facilities. Numbers will be at least two inches high and will be affixed to the pole nearest the road crossing and at the facilities served.

8. Upon cancellation, relinquishment, or expiration of this grant, the holder shall comply with those abandonment procedures as prescribed by the Authorized Officer.

9. All surface structures (poles, lines, transformers, etc.) shall be removed within 180 days of abandonment, relinquishment, or termination of use of the serviced facility or facilities or within 180 days of abandonment, relinquishment, cancellation, or expiration of this grant, whichever comes first. This will not apply where the power line extends service to an active, adjoining facility or facilities.

10. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the Authorized Officer. Holder 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 will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

11. Special Stipulations:
- For reclamation remove poles, lines, transformer, etc. and dispose of properly.
- Fill in any holes from the poles removed.

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 1st through June 15th 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.

Timing Limitation Exceptions:
The Carlsbad Field Office will publish an annual map of where the LPC timing and noise stipulations and conditions of approval (Limitations) will apply for the identified year (between March 1 and June 15) based on the latest survey information. The LPC Timing Area map will identify areas which are Habitat Areas (HA), Isolated Population Area (IPA), and Primary Population Area (PPA). The LPC Timing Area map will also have an area in red crosshatch. The red crosshatch area is the only area where an operator is required to submit a request for exception to the LPC Limitations. If an operator is operating outside the red crosshatch area, the LPC Limitations do not apply for that year and an exception to LPC Limitations is not required.

D. OIL AND GAS RELATED SITES

STANDARD STIPULATIONS FOR OIL AND GAS RELATED SITES

A copy of the application (Grant/Sundry Notice) and attachments, including stipulations and map, will be on location during construction. BLM personnel may request to view a copy of your permit during construction to ensure compliance with all stipulations.

The holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer, BLM.

1. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant and for all response costs, penalties, damages, claims, and other costs arising from the provisions of the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. Chap. 82, Section 6901 et. seq., from the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 U.S.C. Chap. 109, Section 9601 et. seq., and from other applicable environmental statues.

2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976, as amended (15 U.S.C. 2601, et. seq.) with regard to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized by this grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation and Liability Act, Section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the Authorized Officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et. seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et. seq.) on the right-of-way (unless the release or threatened release is wholly unrelated to the right-of-way holder's activity on the right-of-way). This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. If, during any phase of the construction, operation, maintenance, or termination of the site or related pipeline(s), any oil or other pollutant should be discharged from site facilities, the pipeline(s) or from containers or vehicles impacting Federal lands, the control and total removal, disposal, and cleanup of such oil of other pollutant, wherever found, shall be the responsibility of the holder, regardless of fault. Upon failure of the

holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages to Federal lands resulting therefrom, the Authorized Officer may take such measures as deemed necessary to control and cleanup the discharge and restore the area, including, where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of the holder. Such action by the Authorized Officer shall not relieve the holder of any liability or responsibility.

5. Sites shall be maintained in an orderly, sanitary condition at all times. Waste materials, both liquid and solid, shall be disposed of promptly at an appropriate, authorized waste disposal facility in accordance with all applicable State and Federal laws. "Waste" means all discarded matter including, but not limited to, human waste, trash, garbage, refuse, petroleum products, brines, chemicals, oil drums, ashes, and equipment.

6. The operator will notify the Bureau of Land Management (BLM) authorized officer and nearest Fish and Wildlife Service (FWS) Law Enforcement office within 24 hours, if the operator discovers a dead or injured federally protected species (i.e., migratory bird species, bald or golden eagle, or species listed by the FWS as threatened or endangered) in or adjacent to a pit, trench, tank, exhaust stack, or fence. (If the operator is unable to contact the FWS Law Enforcement office, the operator must contact the nearest FWS Ecological Services office.)

7. All above-ground structures not subject to safety requirements shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be a color which simulates "Standard Environmental Colors" designated by the Rocky Mountain Five-State Interagency Committee. The color selected for this project is **Shale Green**, Munsell Soil Color Chart Number 5Y 4/2.

8. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on the holder's behalf, on public or Federal land shall be immediately reported to the Authorized Officer. The holder 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 will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to the proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

9. A sales contract for removal of mineral material (caliche, sand, gravel, fill dirt) from an authorized pit, site, or on location must be obtained from the BLM prior to commencing construction. There are several options available for purchasing mineral material: contact the BLM office (575-234-5972).

10. 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.
11. Once the site is no longer in service or use, the site must undergo final abandonment. At final abandonment, the site 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 the abandonment of the site. All pads and 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. 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).

12. The holder shall stockpile an adequate amount of topsoil where blading occurs. The topsoil to be stripped is approximately ___6___ inches in depth. The topsoil will be segregated from other spoil piles. The topsoil will be used for final reclamation.

13. The holder will reseed all disturbed areas. Seeding will be done according to the attached seeding requirements, using the following seed mix.

( ) seed mixture 1	( ) seed mixture 3
( ) seed mixture 2	( ) seed mixture 4
(X) seed mixture 2/LPC	( ) Aplomado Falcon Mixture

14. In those areas where erosion control structures are required to stabilize soil conditions, the holder shall install such structures as are suitable for the specific soil conditions being encountered and which are in accordance with sound management practices. Any earth work will require prior approval by the Authorized Officer.

15. Open-topped Tanks - The operator will take actions necessary to prevent wildlife and livestock access, including avian wildlife, to all open-topped tanks that contain or have the potential to contain salinity sufficient to cause harm to wildlife or livestock, hydrocarbons, or Resource Conservation and Recovery Act of 1976-exempt hazardous substances. At a minimum, the operator will net, screen, or cover open-topped tanks to exclude wildlife and livestock and prevent mortality. If the operator uses netting, the operator will cover and secure the open portion of the tank to prevent wildlife entry. The operator will net, screen, or cover the tanks until the operator removes the tanks from the

location or the tanks no longer contain substances that could be harmful to wildlife or livestock. Use a maximum netting mesh size of 1 ½ inches. The netting must not be in contact with fluids and must not have holes or gaps

16. The operator will prevent all hazardous, poisonous, flammable, and toxic substances from coming into contact with soil and water. At a minimum, the operator will install and maintain an

impervious secondary containment system for any tank or barrel containing hazardous, poisonous, flammable, or toxic substances sufficient to contain the contents of the tank or barrel and any drips, leaks, and anticipated precipitation. The operator will dispose of fluids within the containment system that do not meet applicable state or U. S. Environmental Protection Agency livestock water standards in accordance with state law; the operator must not drain the fluids to the soil or ground. The operator will design, construct, and maintain all secondary containment systems to prevent wildlife and livestock exposure to harmful substances. At a minimum, the operator will install effective wildlife and livestock exclosure systems such as fencing, netting, expanded metal mesh, lids, and grate covers. Use a maximum netting mesh size of 1 ½ inches.

17. Open-Vent Exhaust Stack Exclosures – The operator will construct, modify, equip, and maintain all open-vent exhaust stacks on production equipment to prevent birds and bats from entering, and to discourage perching, roosting, and nesting. (Recommended exclosure structures on open-vent exhaust stacks are in the shape of a cone.) Production equipment includes, but may not be limited to, tanks, heater-treaters, separators, dehydrators, flare stacks, in-line units, and compressor mufflers.

18. Containment Structures - Proposed production facilities such as storage tanks and other vessels will have a secondary containment structure that is constructed to hold the capacity of 1.5 times the largest tank, plus freeboard to account for precipitation, unless more stringent protective requirements are deemed necessary.

19. Special Stipulations:

- The entire well pad will be bermed to prevent oil, salt, and other chemical contaminants from leaving the well pad. Topsoil shall not be used to construct the berm. No water flow from the uphill side(s) of the pad shall be allowed to enter the well pad. The berm shall be maintained through the life of the well and after interim reclamation has been completed.
- Any water erosion that may occur due to the construction of the well pad during the life of the well will be corrected within two weeks and proper measures will be taken to prevent future erosion.

Lesser Prairie-Chicken

Oil and gas activities will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th 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. Normal vehicle use on existing roads will not be restricted. Exhaust noise from permanent engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 ft. from the source of the noise.

Timing Limitation Exceptions:
The Carlsbad Field Office will publish an annual map of where the LPC timing and noise stipulations and conditions of approval (Limitations) will apply for the identified year (between March 1 and June 15) based on the latest survey information. The LPC Timing Area map will identify areas which are Habitat Areas (HA), Isolated Population Area (IPA), and Primary Population Area (PPA). The LPC Timing Area map will also have an area in red crosshatch. The red crosshatch area is the only area where an operator is required to submit a request for exception to the LPC Limitations. If an operator is operating outside the red crosshatch area, the LPC Limitations do not apply for that year and an exception to LPC Limitations is not required.

VIII. 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).

IX. 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).

Ground-level Abandoned Well Marker to avoid raptor perching: Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well.

Seed Mixture for LPC Sand/Shinnery Sites

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 shall be done in accordance with State law(s) and within nine (9) months prior to purchase. Commercial seed shall be either certified or registered seed. The seed container shall 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). 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. Seeding shall be repeated until a satisfactory stand is established as determined by the Authorized Officer. Evaluation of growth may 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:

Species	lb/acre
Plains Bristlegrass	5lbs/A
Sand Bluestem	5lbs/A
Little Bluestem	3lbs/A
Big Bluestem	6lbs/A
Plains Coreopsis	2lbs/A
Sand Dropseed	1lbs/A

*Pounds of pure live seed:

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

AFMSS

U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

Operator Certification Data Report

10/09/2019

Operator Certification

I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions which currently exist; that I have full knowledge of state and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.

NAME: Sarah Chapman **Signed on:** 12/19/2018

Title: Regulatory Specialist

Street Address:

City: **State:** **Zip:**

Phone: (575)631-2442

Email address: sarah_chapman@oxy.com

Field Representative

Representative Name: Jim Wilson

Street Address: 6001 Deauville

City: Midland **State:** TX **Zip:** 79706

Phone: (575)631-2442

Email address: jim_wilson@oxy.com

AFMSS

U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

Application Data Report

10/09/2019

APD ID: 10400038597
Submission Date: 01/29/2019
Operator Name: OXY USA INCORPORATED
Well Name: PRECIOUS 30-18 FEDERAL COM
Well Number: 7H
Well Type: OIL WELL
Well Work Type: Drill

Highlighted data reflects the most recent changes

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Section 1 - General

APD ID: 10400038597
Tie to previous NOS?
Submission Date: 01/29/2019
BLM Office: CARLSBAD
User: Sarah Chapman
Title: Regulatory Specialist
Federal/Indian APD: FED
Is the first lease penetrated for production Federal or Indian? FED
Lease number: NMNM021640
Lease Acres: 323.59
Surface access agreement in place?
Allotted?
Reservation:
Agreement in place? NO
Federal or Indian agreement:
Agreement number:
Agreement name:
Keep application confidential? NO
Permitting Agent? NO
APD Operator: OXY USA INCORPORATED
Operator letter of designation:

Operator Info

Operator Organization Name: OXY USA INCORPORATED
Operator Address: 5 Greenway Plaza, Suite 110
Zip: 77046
Operator PO Box:
Operator City: Houston
State: TX
Operator Phone: (713)366-5716
Operator Internet Address:

Section 2 - Well Information

Well in Master Development Plan? NO
Master Development Plan name:
Well in Master SUPO? NO
Master SUPO name:
Well in Master Drilling Plan? NO
Master Drilling Plan name:
Well Name: PRECIOUS 30-18 FEDERAL COM
Well Number: 7H
Well API Number:
Field/Pool or Exploratory? Field and Pool
Field Name: WILDCAT
Pool Name: WOLFCAMP
Is the proposed well in an area containing other mineral resources? POTASH

Operator Name: OXY USA INCORPORATED

Well Name: PRECIOUS 30-18 FEDERAL COM **Well Number:** 7H

Is the proposed well in an area containing other mineral resources? POTASH

Is the proposed well in a Helium production area? N **Use Existing Well Pad?** NO **New surface disturbance?**

Type of Well Pad: MULTIPLE WELL **Multiple Well Pad Name:** PRECIOUS 30-18 FED COM **Number:** 1H

Well Class: HORIZONTAL **Number of Legs:**

Well Work Type: Drill

Well Type: OIL WELL

Describe Well Type:

Well sub-Type: INFILL

Describe sub-type:

Distance to town: 8 Miles **Distance to nearest well:** 35 FT **Distance to lease line:** 20 FT

Reservoir well spacing assigned acres Measurement: 800 Acres

Well plat: Precious30_18FdCom7H_SitePlan_20190829075141.pdf

Precious30_18FdCom7H_c_102Supplemental_20190829075140.pdf

Well work start Date: 11/04/2019 **Duration:** 20 DAYS

Section 3 - Well Location Table

Survey Type: RECTANGULAR

Describe Survey Type:

Datum: NAD83 **Vertical Datum:** NAVD88

Survey number: 17777 **Reference Datum:**

	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD
SHL Leg #1	570	FNL	620	FWL	23S	31E	31	Aliquot NWNW	32.266607	-103.823635	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 054673 2A	3348	0	0
KOP Leg #1	50	FSL	1260	FWL	23S	31E	30	Aliquot SWSW	32.268313	-103.821565	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 021640	-6052	9457	9400
PPP Leg #1	100	FSL	1260	FWL	23S	31E	30	Aliquot SWSW	32.26845	-103.821565	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 021640	-6526	10258	9874

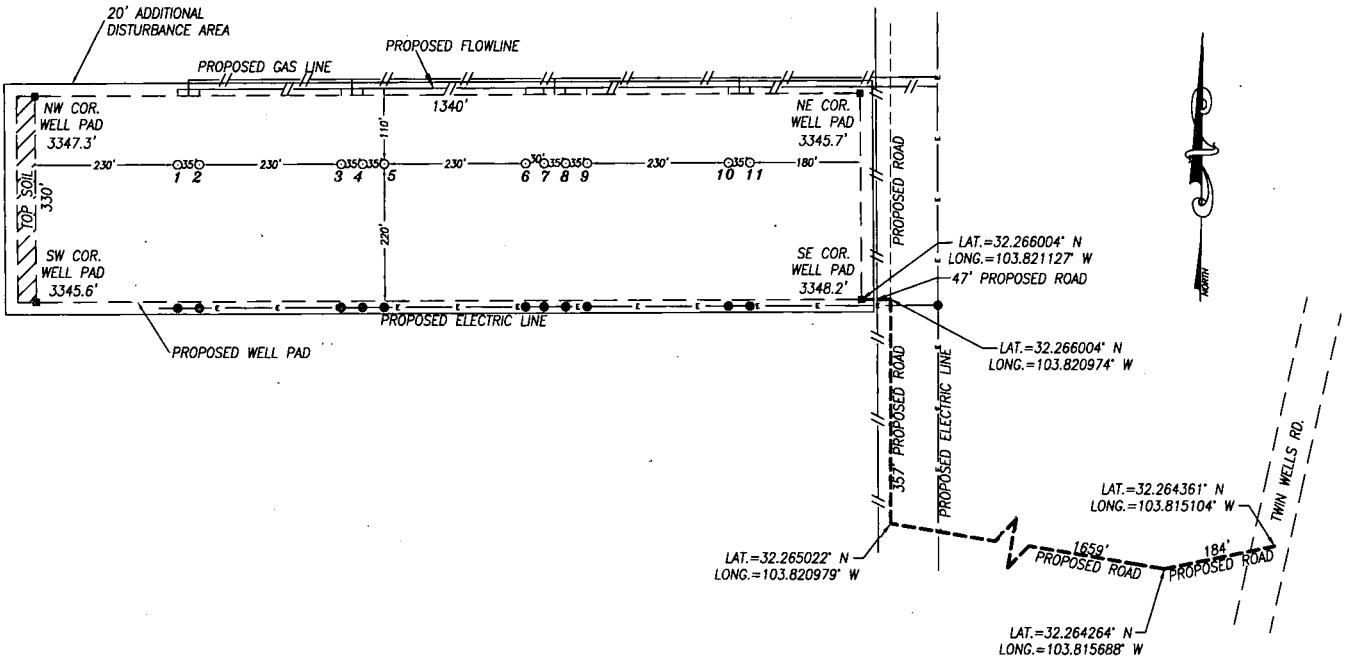
Operator Name: OXY USA INCORPORATED

Well Name: PRECIOUS 30-18 FEDERAL COM **Well Number:** 7H

	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD
PPP Leg #1	2640	FSL	1260	FWL	23S	31E	30	Aliquot SWNW	32.275431	-103.821561	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 0533177	-6524	12900	9872
PPP Leg #1	1324	FNL	1261	FWL	23S	31E	18	Aliquot NWSW	32.300056	-103.821552	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 0546732	-6517	22000	9865
PPP Leg #1	1322	FSL	1261	FWL	23S	31E	19	Aliquot NWSW	32.286327	-103.821557	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 021639	-6521	16700	9869
EXIT Leg #1	2540	FSL	1260	FWL	23S	31E	18	Aliquot SWNW	32.3042	-103.821551	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 0546732	-6516	23264	9864
BHL Leg #1	2621	FSL	330	FWL	23S	31E	18	Aliquot SWNW	32.30442	-103.824561	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 0546732	-6460	22792	9808

OXY USA INC.

SITE PLAN
SNDDNS 3103
FAA PERMIT: NO



NO.	WELL	FOOTAGE	LAT.	LONG.	ELEV.	ID#
1	PRECIOUS 30_18 FED COM #21H	570' FNL & 285' FWL	32.266606° N	103.824719° W	3344.8'	N/A
2	PRECIOUS 30_18 FED COM #22H	570' FNL & 320' FWL	32.266606° N	103.824606° W	3346.2'	IP-SMS-2419
3	PRECIOUS 30_18 FED COM #1H	570' FNL & 550' FWL	32.266607° N	103.823862° W	3346.8'	N/A
4	PRECIOUS 30_18 FED COM #2H	570' FNL & 585' FWL	32.266607° N	103.823748° W	3347.7'	IP-SMS-2422
5	PRECIOUS 30_18 FED COM #7H	570' FNL & 620' FWL	32.266607° N	103.823635° W	3347.9'	IP-SMS-2431
6	PRECIOUS 30_18 FED COM #31H	570' FNL & 850' FWL	32.266608° N	103.822891° W	3351.3'	IP-SMS-2433
7	PRECIOUS 30_18 FED COM #171H	570' FNL & 880' FWL	32.266608° N	103.822794° W	3350.8'	IP-SMS-2417
8	PRECIOUS 30_18 FED COM #172H	570' FNL & 915' FWL	32.266608° N	103.822681° W	3349.5'	IP-SMS-2418
9	PRECIOUS 30_18 FED COM #32H	570' FNL & 950' FWL	32.266608° N	103.822568° W	3349.2'	IP-SMS-2434
10	PRECIOUS 30_18 FED COM #41H	570' FNL & 1180' FWL	32.266608° N	103.821824° W	3346.3'	IP-SMS-2424
11	PRECIOUS 30_18 FED COM #42H	570' FNL & 1215' FWL	32.266608° N	103.821710° W	3348.0'	IP-SMS-2425

NOTES:

1) LATS & LONGS SHOWN HEREON ARE MERCATOR GRID AND CONFORM TO THE NEW MEXICO COORDINATE SYSTEM "NEW MEXICO EAST ZONE" NORTH AMERICAN DATUM 1983.

2) DISTANCES ARE GRID VALUES.

3) ALL FEATURES ARE EXISTING UNLESS OTHERWISE NOTED

CERTIFICATION
I, CHAD HARCROW, A NEW MEXICO REGISTERED PROFESSIONAL SURVEYOR CERTIFY THAT I DIRECTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

CHAD HARCROW NEW MEXICO 17777 LICENSED PROFESSIONAL SURVEYOR

Chad Harcrow — 7/25/19

CHAD HARCROW N.M.P.S. NO. 17777 — DATE

HARCROW SURVEYING, LLC
2316 W. MAIN ST, ARTESIA, N.M. 88210
PH: (575) 746-2158
c.harcrow@harcrowsurveying.com

300 0 300 600 Feet

Scale: 1"=300'

OXY USA INC.	
SURVEY DATE: JULY 10, 2019	SITE PLAN
DRAFTING DATE: JULY 23, 2019	PAGE: 1 OF 1
APPROVED BY: CH / DRAWN BY: AM	FILE: 19-1289

Drilling Plan Data Report

10/09/2019

APD ID: 10400038597 **Submission Date:** 01/29/2019

Operator Name: OXY USA INCORPORATED

Well Name: PRECIOUS 30-18 FEDERAL COM **Well Number:** 7H

Well Type: OIL WELL **Well Work Type:** Drill

Highlighted data reflects the most recent changes

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Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
1	RUSTLER	3348	355	355	ANHYDRITE,SHALE,DOLOMITE	USEABLE WATER	N
2	SALADO	2677	671	671	HALITE,ANHYDRITE,SHALE,DOLOMITE	OTHER : SALT	N
3	CASTILE	749	2599	2599	ANHYDRITE	OTHER : SALT	N
4	LAMAR	-683	4031	4031	LIMESTONE,SILTSTONE,SANDSTONE	OTHER,NATURAL GAS,OIL : BRINE	N
5	BELL CANYON	-716	4064	4064	SILTSTONE,SANDSTONE	USEABLE WATER,OTHER,NATURAL GAS,OIL : BRINE	N
6	CHERRY CANYON	-1615	4963	4963	SILTSTONE,SANDSTONE	OTHER,NATURAL GAS,OIL : BRINE	N
7	BRUSHY CANYON	-2906	6254	6254	LIMESTONE,SILTSTONE,SANDSTONE	OTHER,NATURAL GAS,OIL : BRINE	N
8	BONE SPRING	-4587	7935	8000	LIMESTONE,SILTSTONE,SANDSTONE	NATURAL GAS,OIL	N
9	BONE SPRING 1ST	-5618	8966	9000	LIMESTONE,SILTSTONE,SANDSTONE	NATURAL GAS,OIL	Y
10	BONE SPRING 2ND	-6260	9608	9700	LIMESTONE,SILTSTONE,SANDSTONE	NATURAL GAS,OIL	Y

Section 2 - Blowout Prevention

Pressure Rating (PSI): 5M **Rating Depth:** 9836

Equipment: 13-5/8" 5M Annular, Blind Ram, Double Ram

Requesting Variance? YES

Variance request: Request for the use of a flexible choke line from the BOP to Choke Manifold.

Testing Procedure: BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all the components installed will be functional and tested. Pipe rams will be operationally checked each 24 hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. Other accessories to the BOP equipment will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold. A multibowl wellhead or a unionized multibowl wellhead system will be employed. The wellhead and connection to the BOPE will meet all API 6A requirements. The BOP will be tested per Onshore Order #2 after installation on the surface casing which will cover testing requirements for a

maximum of 30 days. If any seal subject to test pressure is broken the system will be tested. We will test the flange connection of the wellhead with a test port that is directly in the flange. BOP Break Testing Request - As per the agreement reached in the OXY/BLM meeting on Feb 22, 2018, OXY requests permission to allow BOP Break Testing under the following conditions: 1. After a full BOP test is conducted on the first well on the pad. 2.When skidding to drill an intermediate section that the casing point is either shallower than the 3rd Bone Spring or 10000' TVD. 3. Full BOP test will be required prior to drilling any production section.

Choke Diagram Attachment:

Precious30_18FedCom7H_ChkManifold_20190129131649.pdf

BOP Diagram Attachment:

Precious30_18FedCom7H_FlexHoseCert_20190129131705.pdf

Precious30_18FedCom7H_BOP_5M__20190129131720.pdf

Section 3 - Casing

Casing ID	String Type	Hole Size	Csg Size	Condition	Standard	Tapered String	Top Set MD	Bottom Set MD	Top Set TVD	Bottom Set TVD	Top Set MSL	Bottom Set MSL	Calculated casing length MD	Grade	Weight	Joint Type	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF
1	SURFACE	17.5	13.375	NEW	API	N	0	405	0	405			405	J-55	54.5	BUTT	1.125	1.2	BUOY	1.4	BUOY	1.4
2	INTERMEDIATE	12.25	9.625	NEW	API	N	0	4081	0	4081			4081	L-80	40	BUTT	1.125	1.2	BUOY	1.4	BUOY	1.4
3	INTERMEDIATE	8.5	7.625	NEW	API	N	0	9400	0	9357			9400	HCL-80	26.4	OTHER - SF/FJ	1.125	1.2	BUOY	1.4	BUOY	1.4
4	PRODUCTION	6.75	5.5	NEW	API	N	0	23344	0	9864			23344	P-110	20	OTHER - DQX/SFTORQ/DQWTORQ	1.125	1.2	BUOY	1.4	BUOY	1.4

Casing Attachments

Operator Name: OXY USA INCORPORATED

Well Name: PRECIOUS 30-18 FEDERAL COM **Well Number:** 7H

Casing Attachments

Casing ID: 1 **String Type:** SURFACE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Precious30_18FedCom7H_CsgCriteria_20190129131805.pdf

Casing ID: 2 **String Type:** INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Precious30_18FedCom7H_CsgCriteria_20190129131828.pdf

Casing ID: 3 **String Type:** INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Precious30_18FedCom7H_CsgCriteria_20190129131957.pdf

Precious30_18FedCom7H_7.625_26.4_HCL80_TMKUPFJ_20190129132108.pdf

Precious30_18FedCom7H_7.625_26.4_HCL80_TMKUPSF_20190129132215.pdf

---

Operator Name: OXY USA INCORPORATED

Well Name: PRECIOUS 30-18 FEDERAL COM **Well Number:** 7H

Casing Attachments

Casing ID: 4 **String Type:** PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Precious30_18FedCom7H_5.5_20_P110_DQX_20190129132456.pdf

Precious30_18FedCom7H_5.5_20_P110HC_TMKUPSFTORQ_20190129132505.pdf

Precious30_18FedCom7H_CsgCriteria_20190129132541.pdf

Precious30_18FdCom7H_5.5_20_P110CY_TMKUPDQWTORQ_20190702092026.pdf

Section 4 - Cement

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	405	434	1.33	14.8	577	100	CI C	Accelerator
INTERMEDIATE	Lead		0	3581	948	1.73	12.9	1640	50	POZZOLAN	RETARDER
INTERMEDIATE	Tail		3581	4081	155	1.33	14.8	206	20	CI C	ACCELERATOR
INTERMEDIATE	Lead		7917	9448	76	1.65	13.2	125	5	CL C	RETARDER, DISPERSANT SALT
INTERMEDIATE	Tail		0	7917	413	1.92	12.9	792	25	CL C	ACCELERATOR
PRODUCTION	Lead		7935	23344	2694	1.38	13.2	3717	20	CI H	RETARDER, DISPERSANT, SALT

Operator Name: OXY USA INCORPORATED

Well Name: PRECIOUS 30-18 FEDERAL COM **Well Number:** 7H

Section 5 - Circulating Medium

Mud System Type: Closed

Will an air or gas system be Used? NO

Description of the equipment for the circulating system in accordance with Onshore Order #2:

Diagram of the equipment for the circulating system in accordance with Onshore Order #2:

Describe what will be on location to control well or mitigate other conditions: Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements. The following is a general list of products: Barite, Bentonite, Gypsum, Lime, Soda Ash, Caustic Soda, Nut Plug, Cedar Fiber, Cotton Seed Hulls, Drilling Paper, Salt Water Clay, CaCl2.

Describe the mud monitoring system utilized: PVT/MD Totco/Visual Monitoring

Circulating Medium Table

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
405	4081	OTHER : Saturated Brine Based Mud	9.8	10							
4081	23344	OTHER : Water-Based and/or Oil-Based Mud	8	9.6							
0	405	WATER-BASED MUD	8.6	8.8							

Section 6 - Test, Logging, Coring

List of production tests including testing procedures, equipment and safety measures:

GR from TD to surface (horizontal well – vertical portion of hole). Mud Log from intermediate shoe to TD.

List of open and cased hole logs run in the well:

GR,MUDLOG

Coring operation description for the well:

No coring is planned at this time.

Operator Name: OXY USA INCORPORATED

Well Name: PRECIOUS 30-18 FEDERAL COM **Well Number:** 7H

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 4930 **Anticipated Surface Pressure:** 2757.72

Anticipated Bottom Hole Temperature(F): 159

Anticipated abnormal pressures, temperatures, or potential geologic hazards? NO

Describe:

Contingency Plans geoharzards description:

Contingency Plans geohazards attachment:

Hydrogen Sulfide drilling operations plan required? YES

Hydrogen sulfide drilling operations plan:

Precious30_18FedCom7H_H2S1_20190129134216.pdf

Precious30_18FedCom7H_H2S2_20190129134226.pdf

Precious30_18FedCom7H_EmergencyContacts_20190129134238.pdf

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

Precious30_18FdCom7H_DirectPlan_20190829083059.pdf

Precious30_18FdCom7H_DirectPlot_20190829083100.pdf

Other proposed operations facets description:

OXY respectfully requests a variance to cement the 9-5/8" and/or the 7-5/8" intermediate casing strings offline.

OXY requests the option to set casing shallower yet still below the salts if losses or hole conditions require this. Cement volumes may be adjusted if casing is set shallower and a DV tool will be run in case a contingency second stage is required for cement to reach surface. If cement circulated to surface during first stage we will drop a cancelation cone and not pump the second stage.

OXY requests the option to run production casing with DQX, SF TORQ, and/or DQW TORQ connections to accommodate hole conditions or drilling operations.

OXY requests to pump a two stage cement job on the intermediate II casing string with the first stage being pumped conventionally with the calculated TOC @ the Bone Spring and the second stage performed as a bradenhead squeeze with planned cement from the Bone Spring to surface.

Annular Clearance Variance Request - As per the agreement reached in the Oxy/BLM meeting on Feb 22, 2018, Oxy requests permission to allow deviation from the 0.422" annular clearance requirement from Onshore Order #2 under the following conditions:
1. Annular clearance to meet or exceed 0.422" between intermediate casing ID and production casing coupling only on the first 500' overlap between both casings.
2. Annular clearance less than 0.422" is acceptable for the curve and lateral portions of the production open hole section.

Well will be drilled with a walking/skidding operation. Plan to drill the multiple well pad in batch by section: all surface sections, intermediate sections and production sections. The wellhead will be secured with a night cap whenever the rig is not over the well.

OXY requests the option to contract a Surface Rig to drill, set surface casing, and cement for this well. If the timing between rigs is such that OXY would not be able to preset surface, the Primary Rig will MIRU and drill the well in its entirety per the APD. Please see the attached document for information on the spudder rig.

Other proposed operations facets attachment:

Precious30_18FedCom7H_SpudRigData_20190129134405.pdf

Precious30_18FdCom7H_DrillPlan_20190829083124.pdf

Precious30_18FdCom7H_GasCapPlan_20190829083125.pdf

Precious30_18FdCom7H_StakeForm_20190829083125.pdf

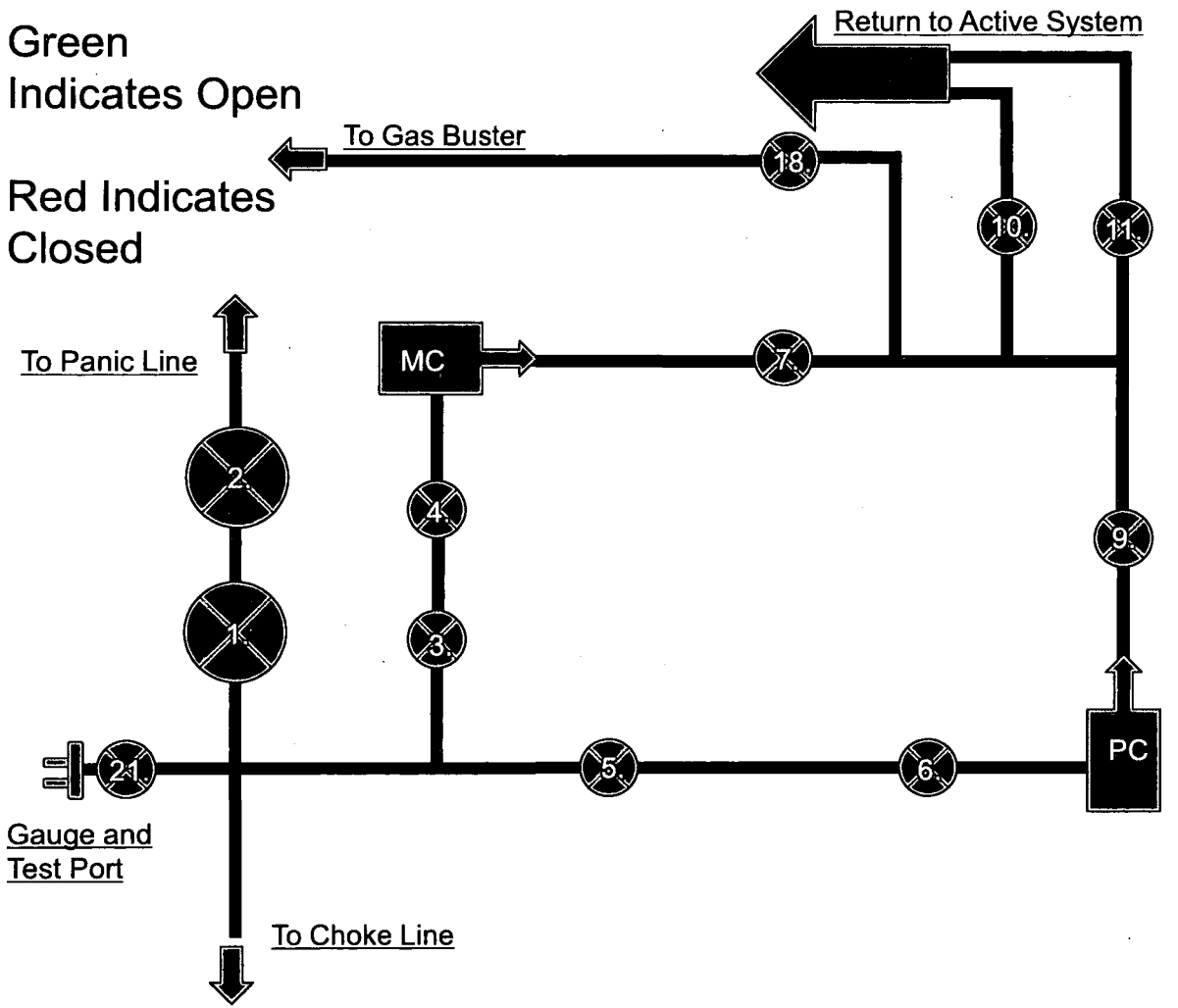
Other Variance attachment:

Precious30_18FdCom7H_OfflineCmtgDetail_20190702092100.pdf

5M Choke Panel

Green
Indicates Open

Red Indicates
Closed



1. 4" Choke Manifold Valve
2. 4" Choke Manifold Valve
3. 3" Choke Manifold Valve
4. 3" Choke Manifold Valve
5. 3" Choke Manifold Valve
6. 3" Choke Manifold Valve
7. 3" Choke Manifold Valve
8. PC – Power Choke
9. 3" Choke Manifold Valve
10. 3" Choke Manifold Valve
11. Choke Manifold Valve
12. MC – Manual Choke

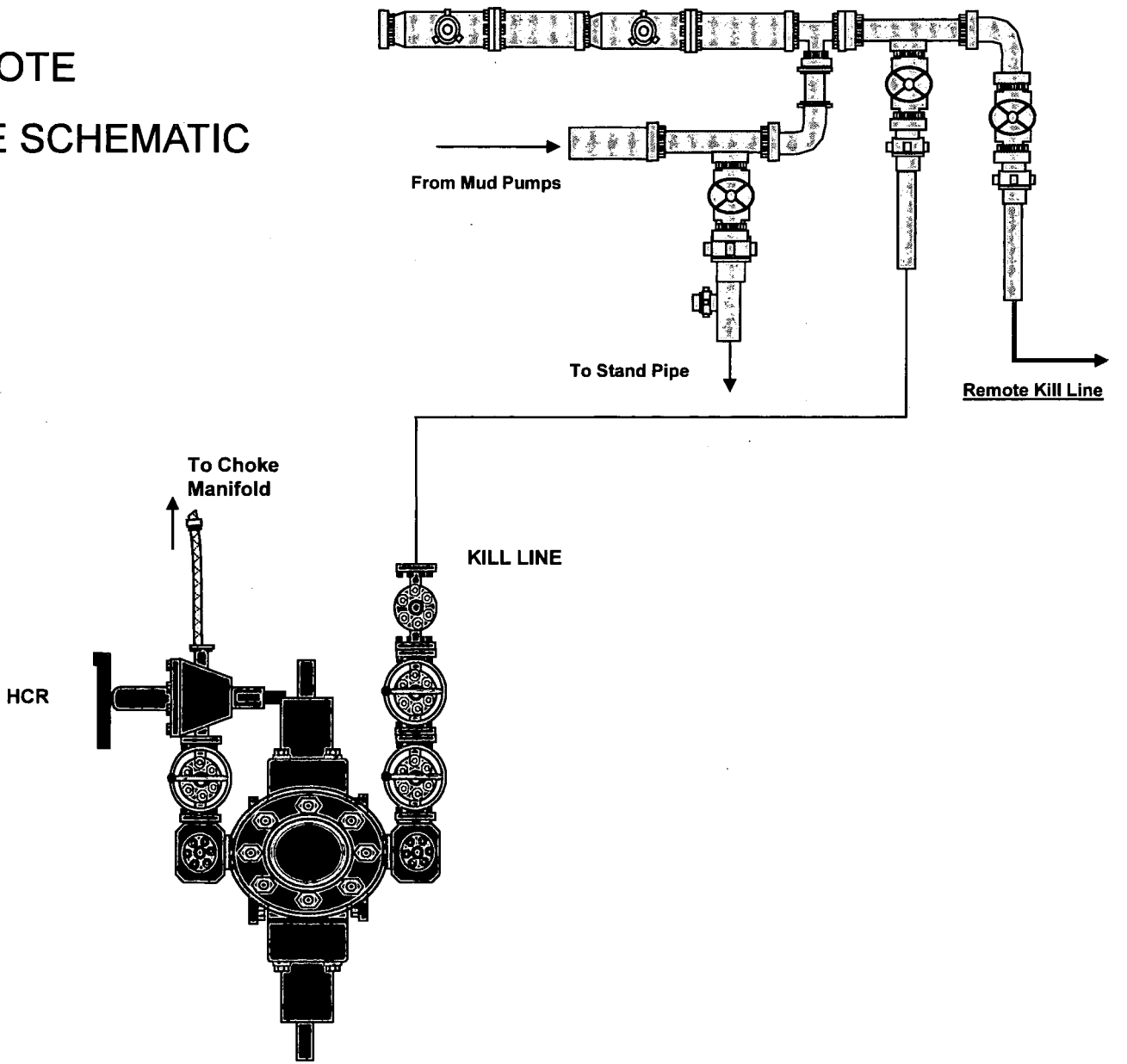
18. Choke Manifold Valve

21. Vertical Choke Manifold Valve

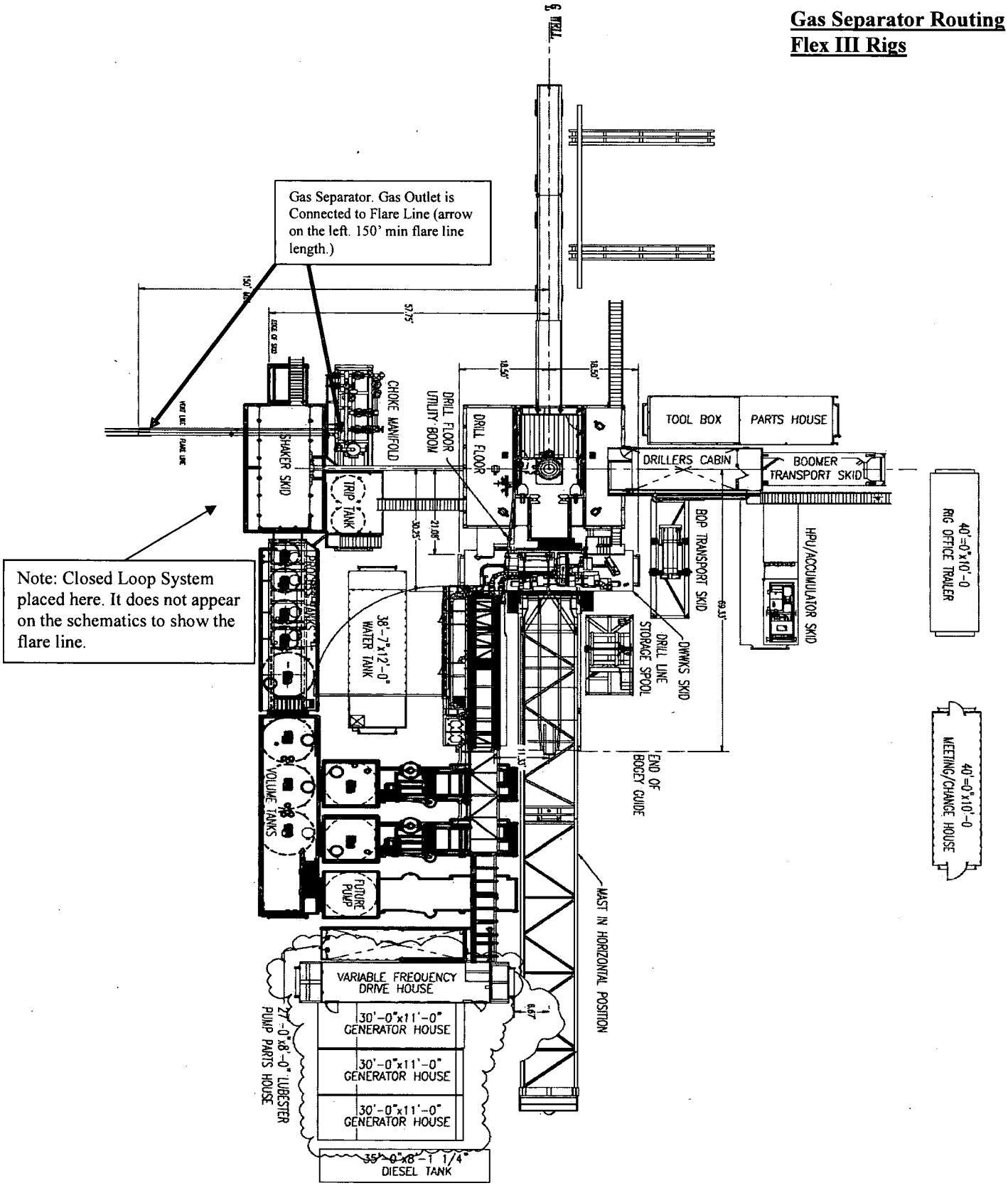
***All Valves 3" minimum**

10M REMOTE

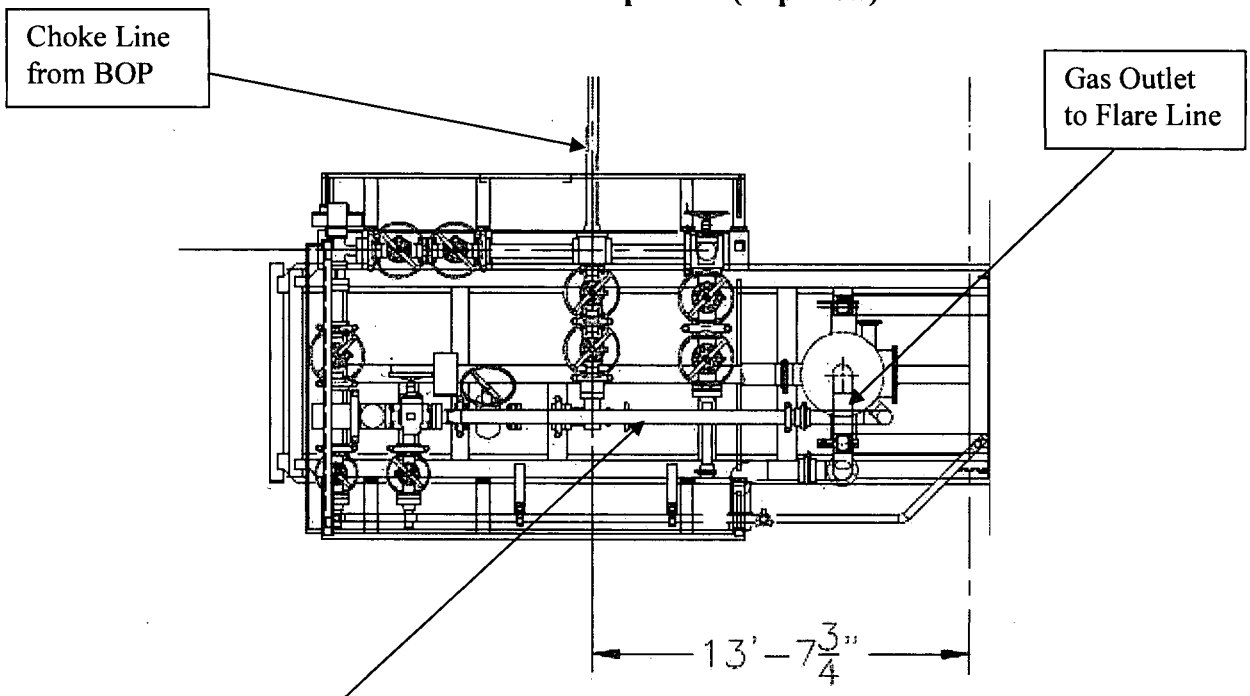
KILL LINE SCHEMATIC



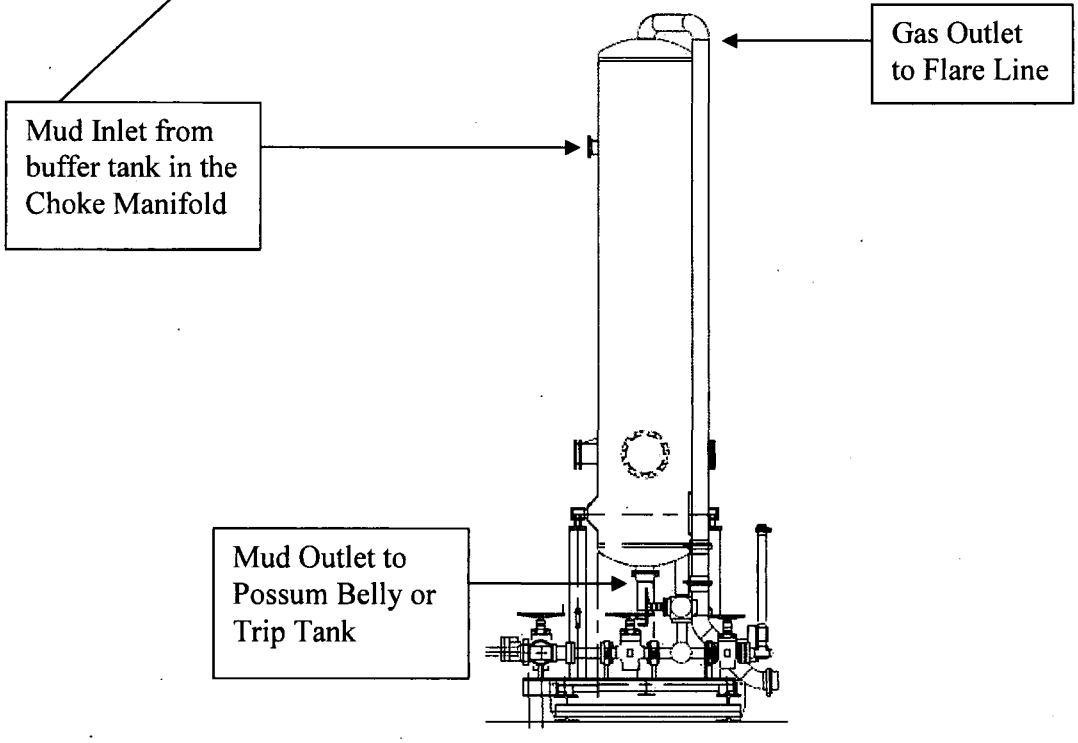
Gas Separator Routing
Flex III Rigs



Choke Manifold – Gas Separator (Top View)



Choke Manifold – Gas Separator (Side View)



Coflex Hose Certification

Continental CONTITECH

Fluid Technology

Quality Document

CERTIFICATE OF CONFORMITY

Supplier : CONTITECH RUBBER INDUSTRIAL KFT.
Equipment : 6 pcs. Choke and Kill Hose with installed couplings
Type : **3" x 10,67 m WP: 10000 psi**
Supplier File Number : 412638
Date of Shipment : April. 2008
Customer : Phoenix Beattie Co.
Customer P.o. : 002491
Referenced Standards / Codes / Specifications : API Spec 16 C
Serial No.: 52754,52755,52776,52777,52778,52782

STATEMENT OF CONFORMITY

We hereby certify that the above items/equipment supplied by us are in conformity with the terms, conditions and specifications of the above Purchaser Order and that these items/equipment were fabricated inspected and tested in accordance with the referenced standards, codes and specifications and meet the relevant acceptance criteria and design requirements.

COUNTRY OF ORIGIN HUNGARY/EU

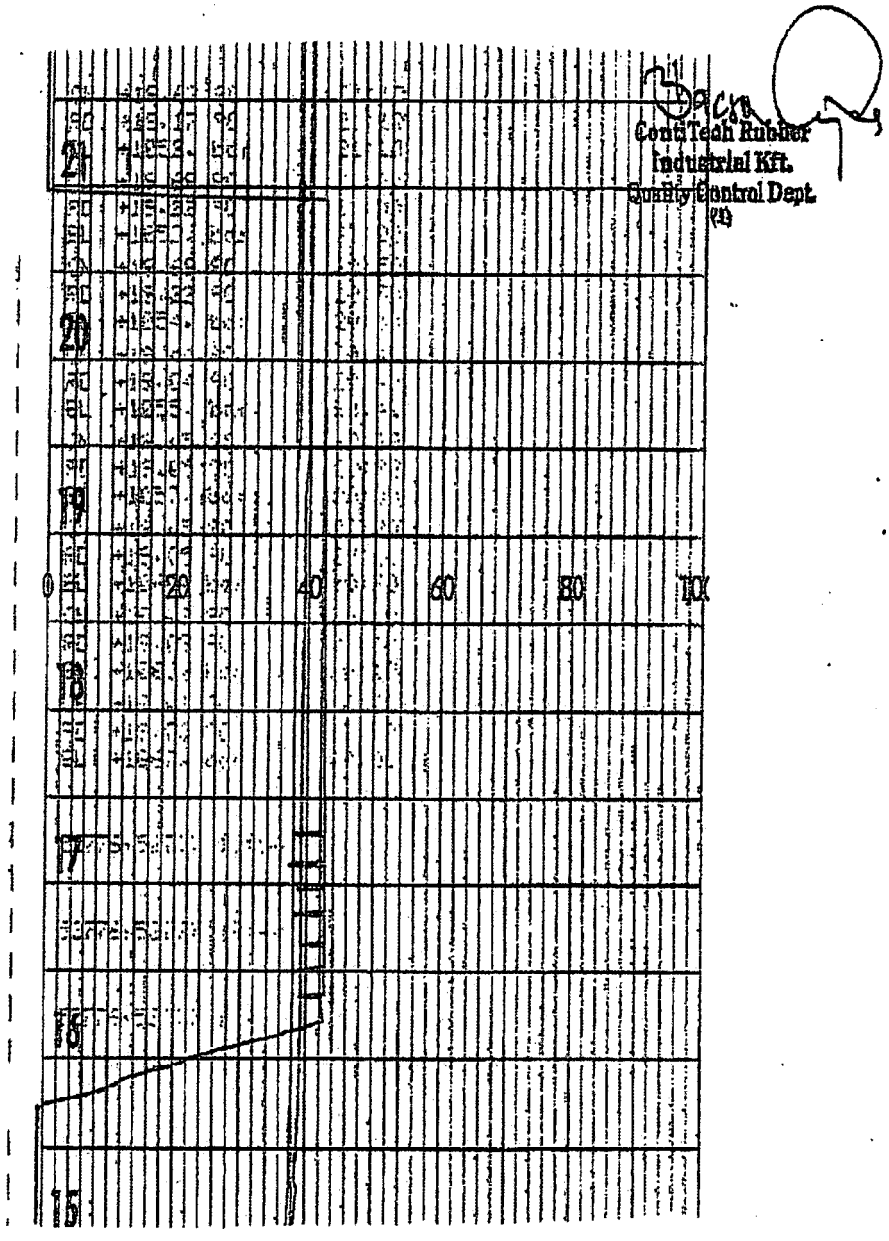
Signed : .....

ContiTech Rubber Industrial Kft. Quality Control Dept. (1)

Date: 04. April. 2008

Position: Q.C. Manager

Coflex Hose Certification



PHOENIX Beattie

Material Identification Certificate

PA No	006330	Client	HELMERICH & PAYNE INT'L DRILLING	Client Ref	370-369-001	Page	1

Part No	Description	Material Desc	Material Spec	Qty	WO No	Batch No	Test Cert No	Bin No	Drg No	Issue No
HP10CK3A-35-4F1	3" 10K 16C C&K HOSE x 35ft OAL			1	2491	52777/H884		WATER		
SECK3-HPF3	LIFTING & SAFETY EQUIPMENT TO			1	2440	002440		N/STK		
SC725-200CS	SAFETY CLAMP 200MM 7.25T	CARBON STEEL		1	2519	H665		22C		
SC725-132CS	SAFETY CLAMP 132MM 7.25T	CARBON STEEL		1	2242	H139		22		

We hereby certify that these goods have been inspected by our Quality Management System, and to the best of our knowledge are found to conform to relevant industry standards within the requirements of the purchase order as issued to Phoenix Beattie Corporation.

05/13/08

Coflex Hose Certification

Coflex Hose Certification

Form No 100/12

PHOENIX Beattie

Phoenix Beattie Corp
11535 Brittsmoore Park Drive
Houston, TX 77041
Tel: (832) 327-0141
Fax: (832) 327-0148
E-mail mail@phoenixbeattie.com
www.phoenixbeattie.com

Delivery Note

Customer Order Number	370-369-001	Delivery Note Number	003078	Page	1

Customer / Invoice Address
HELMERICH & PAYNE INT'L DRILLING CO
1437 SOUTH BOULDER
TULSA, OK
74119

Delivery / Address
HELMERICH & PAYNE IDC
ATTN: JOE STEPHENSON - RIG 370
13609 INDUSTRIAL ROAD
HOUSTON, TX
77015

Customer Acc No	Phoenix Beattie Contract Manager	Phoenix Beattie Reference	Date
H01	JJL	006330	05/23/2008

Item No	Beattie Part Number / Description	Qty Ordered	Qty Sent	Qty To Follow
1	HP10CK3A-35-4F1 3" 10K 16C C&K HOSE x 35ft OAL CW 4.1/16" API SPEC FLANGE E/ End 1: 4.1/16" 10Kpsi API Spec 6A Type 6BX Flange End 2: 4.1/16" 10Kpsi API Spec 6A Type 6BX Flange c/w BX155 Standard ring groove at each end Suitable for H2S Service Working pressure: 10,000psi Test pressure: 15,000psi Standard: API 16C Full specification Armor Guarding: Included Fire Rating: Not Included Temperature rating: -20 Deg C to +100 Deg C	1	1	0
2	SECK3-HPF3 LIFTING & SAFETY EQUIPMENT TO SUIT HP10CK3-35-F1 2 x 160mm ID Safety Clamps 2 x 244mm ID Lifting Collars & element C's 2 x 7ft Stainless Steel wire rope 3/4" OD 4 x 7.75t Shackles	1	1	0
3	SC725-200CS SAFETY CLAMP 200MM 7.25T C/S GALVANISED	1	1	0

Continued...

Coflex Hose Certification

Continental CONTITECH

Fluid Technology

Quality Document

QUALITY CONTROL INSPECTION AND TEST CERTIFICATE				CERT. N°: 746
PURCHASER: Phoenix Beattie Co.				P.O. N°: 002491
CONTITECH ORDER N°: 412638		HOSE TYPE: 3" ID		Choke and Kill Hose
HOSE SERIAL N°: 52777		NOMINAL / ACTUAL LENGTH:		10,67 m
W.P. 68,96 MPa	10000 psi	T.P. 103,4 MPa	15000 psi	Duration: 60 ~ min.

Pressure test with water at ambient temperature

See attachment. (1 page)

↑ 10 mm = 10 Min.

→ 10 mm = 25 MPa

COUPLINGS

Type	Serial N°	Quality	Heat N°
3" coupling with	917 913	AISI 4130	T7998A
4 1/16" Flange end		AISI 4130	26984

INFOCHIP INSTALLED

API Spec 16 C
Temperature rate:"B"

All metal parts are flawless

WE CERTIFY THAT THE ABOVE HOSE HAS BEEN MANUFACTURED IN ACCORDANCE WITH THE TERMS OF THE ORDER AND PRESSURE TESTED AS ABOVE WITH SATISFACTORY RESULT.

Date:	Inspector	Quality Control
04. April. 2008		ContiTech Rubber Industrial Kft. Quality Control Dept. (1)

Coflex Hose Certification

Form No 100/12

PHOENIX Beattie

Phoenix Beattie Corp
11535 Brittmoore Park Drive
Houston, TX 77041
Tel: (832) 327-0141
Fax: (832) 327-0148
E-mail mail@phoenixbeattie.com
www.phoenixbeattie.com

Delivery Note

Customer Order Number	370-369-001	Delivery Note Number	003078	Page	2

Customer / Invoice Address	Delivery / Address
HELMERICH & PAYNE INT'L DRILLING CO 1437 SOUTH BOULDER TULSA, OK 74119	HELMERICH & PAYNE IDC ATTN: JOE STEPHENSON - RIG 370 13609 INDUSTRIAL ROAD HOUSTON, TX 77015

Customer Acc No	Phoenix Beattie Contract Manager	Phoenix Beattie Reference	Date
H01	JJL	006330	05/23/2008

Item No	Beattie Part Number / Description	Qty Ordered	Qty Sent	Qty To Follow
4	SC725-132CS SAFETY CLAMP 132MM 7.25T C/S GALVANIZED C/W BOLTS	1	1	0
5	00CERT-HYDRO HYDROSTATIC PRESSURE TEST CERTIFICATE	1	1	0
6	00CERT-LOAD LOAD TEST CERTIFICATES	1	1	0
7	00FREIGHT INBOUND / OUTBOUND FREIGHT PRE-PAY & ADD TO FINAL INVOICE NOTE: MATERIAL MUST BE ACCOMPANIED BY PAPERWORK INCLUDING THE PURCHASE ORDER, RIG NUMBER TO ENSURE PROPER PAYMENT	1	1	0

Phoenix Beattie Inspection Signature : _____

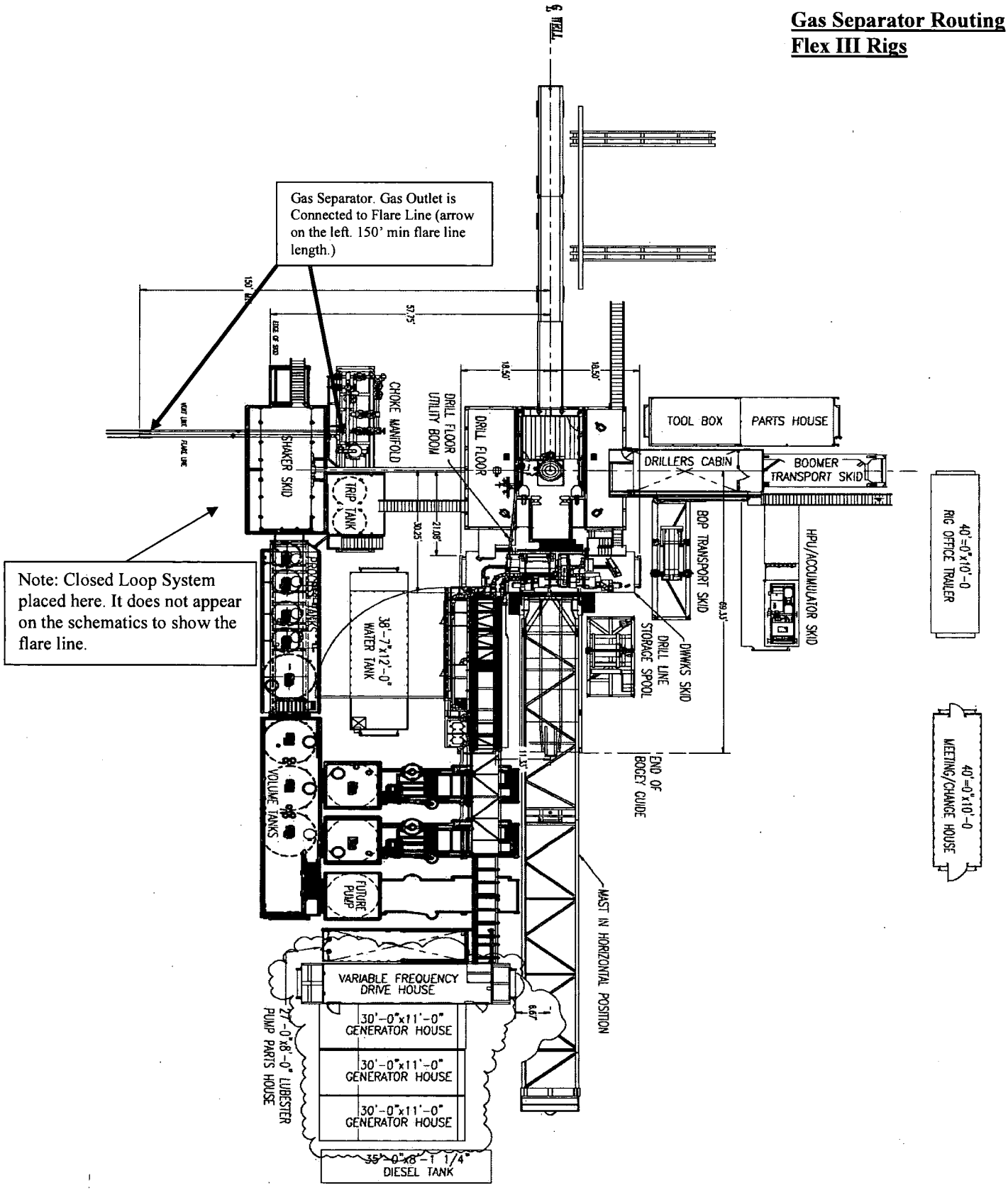
Received In Good Condition : Signature _____

Print Name _____

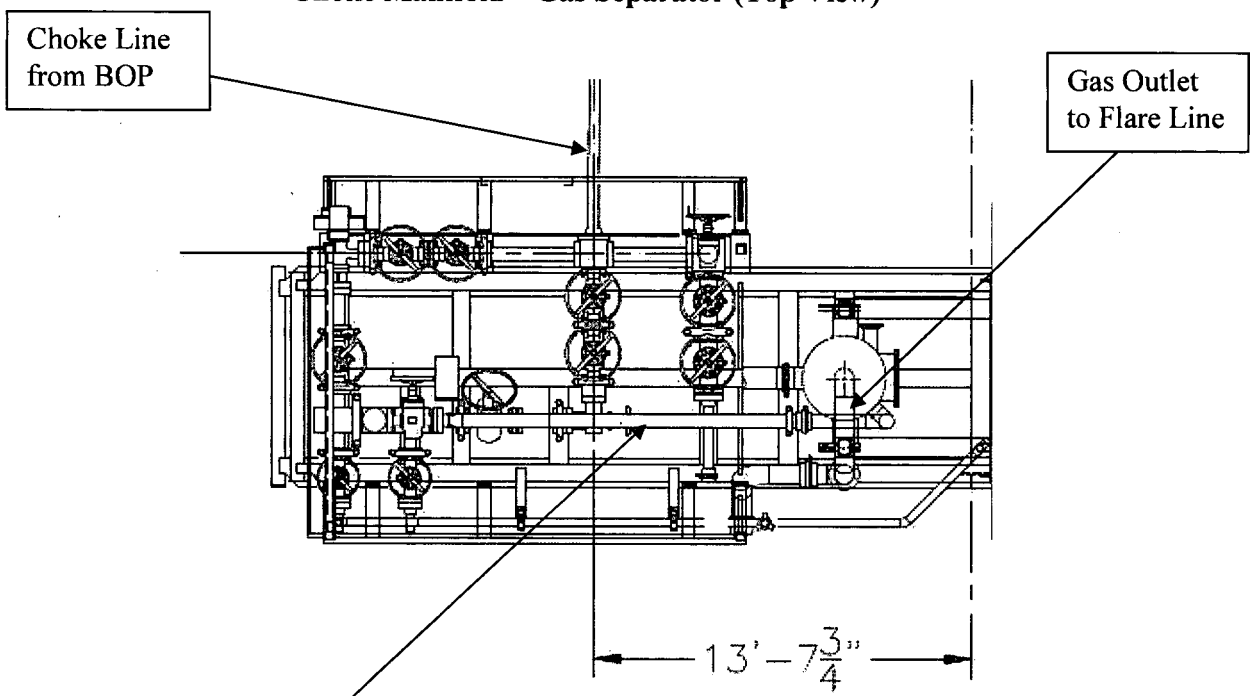
Date _____

All goods remain the property of Phoenix Beattie until paid for in full. Any damage or shortage on this delivery must be advised within 5 days. Returns may be subject to a handling charge.

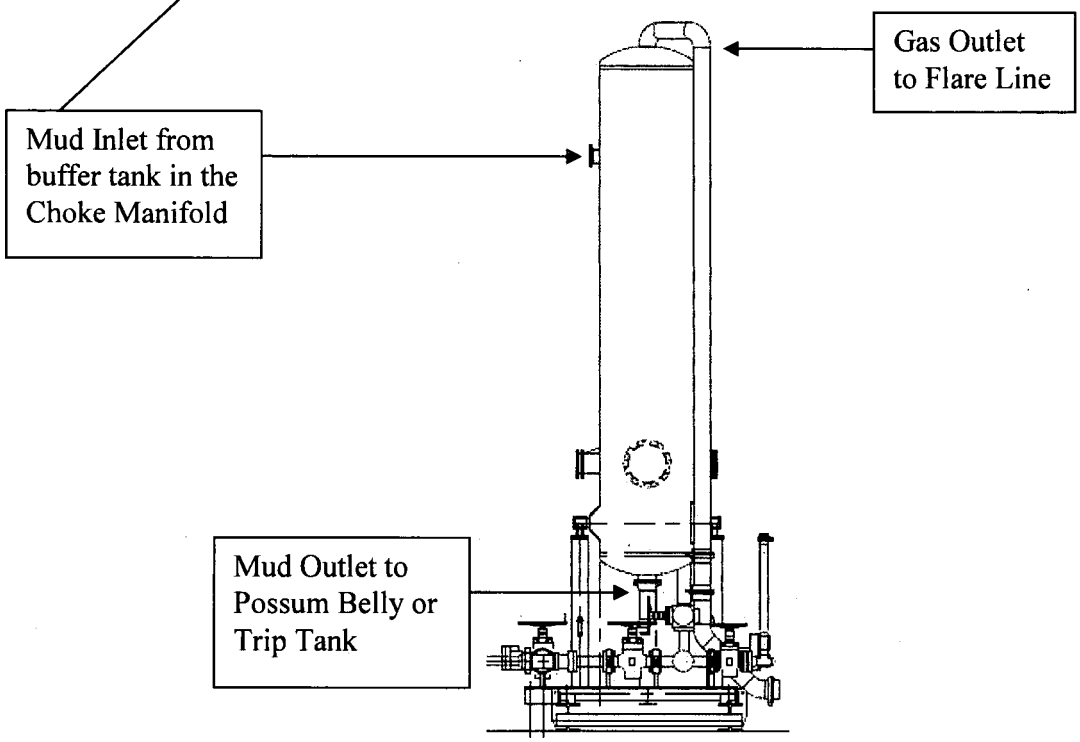
Gas Separator Routing
Flex III Rigs



Choke Manifold – Gas Separator (Top View)



Choke Manifold – Gas Separator (Side View)

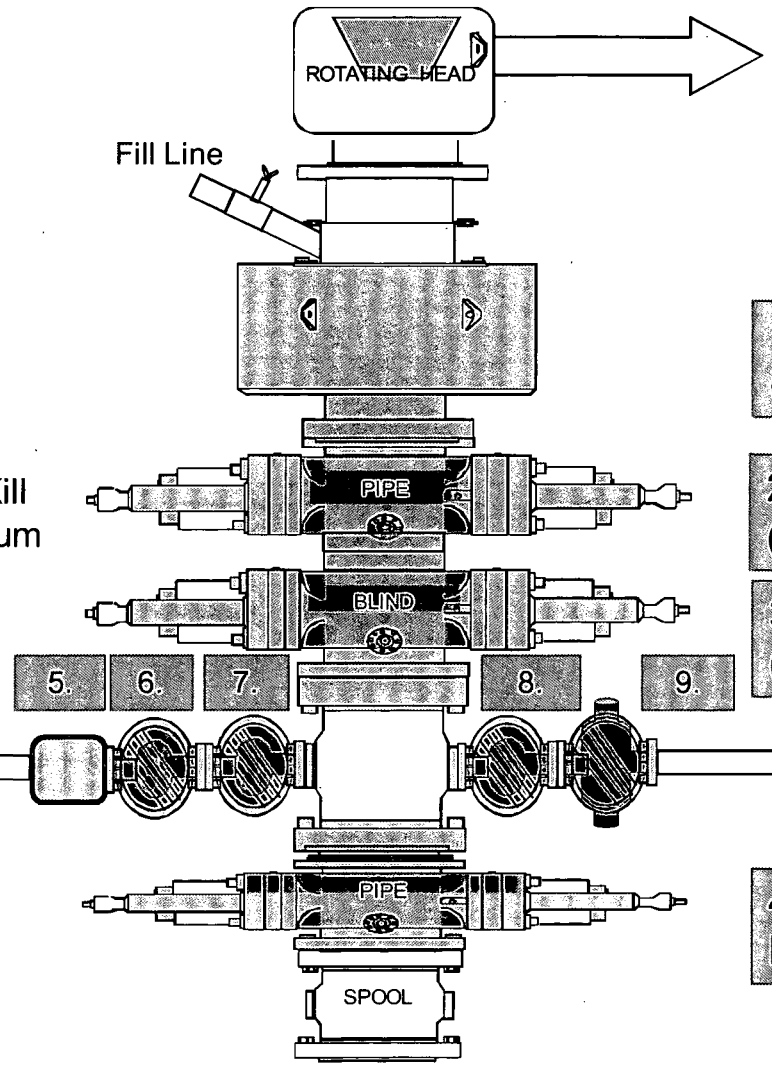


5M BOP Stack

Mud Cross Valves:

5. 5M Check Valve
6. Outside 5M Kill Line Valve
7. Inside 5M Kill Line
8. Outside 5M Kill Line Valve
9. 5M HCR Valve

*Minimum ID = 2-1/16" on Kill Line side and 3" minimum ID on choke line side



To Kill Line

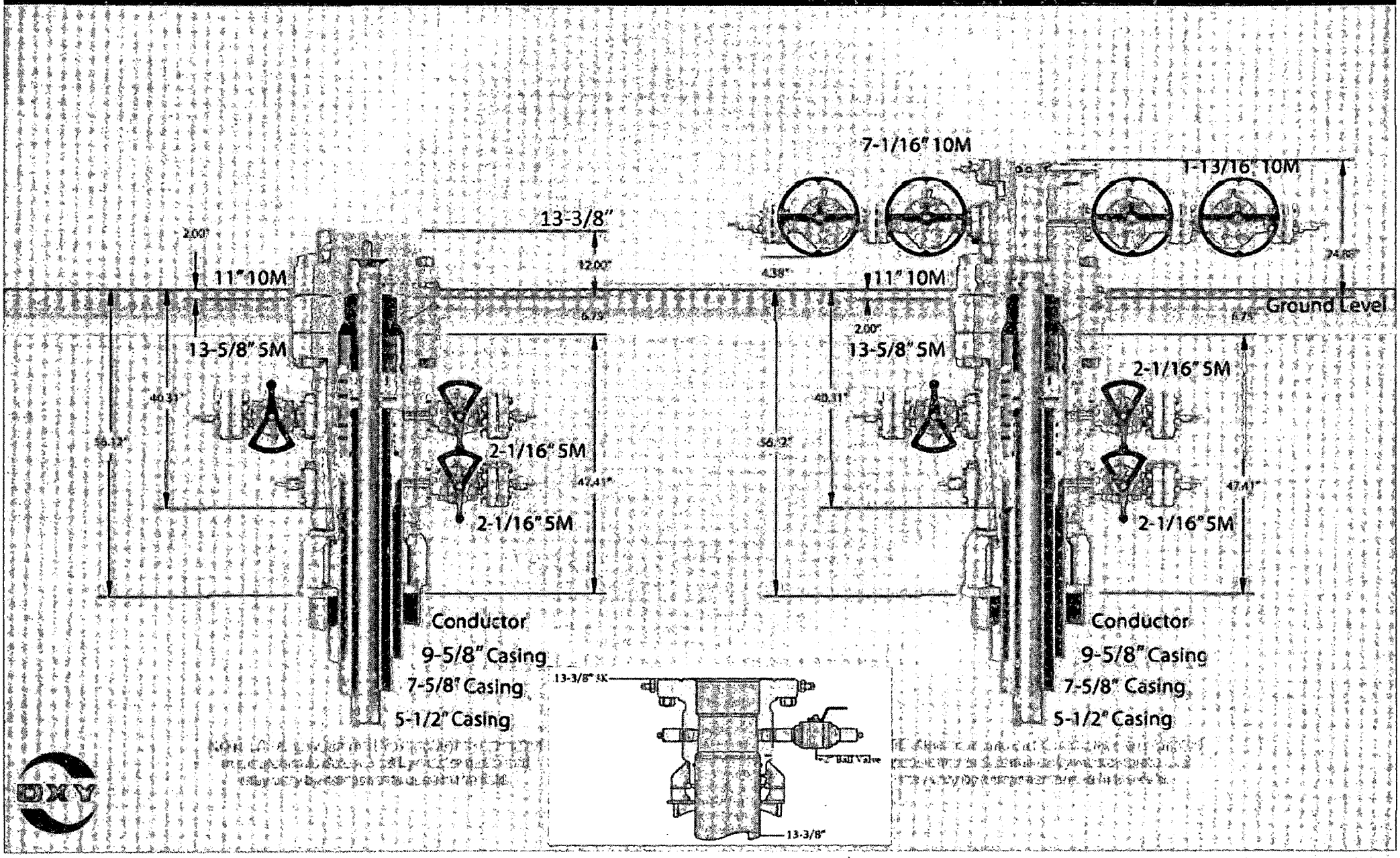
To Co-Flex and Choke Manifold

1. 5000 psi Annular (13-5/8" ID)
2. 5,000 psi Upper Pipe Ram (13-5/8" ID)
3. 5,000 psi Blind Ram (13-5/8" ID)
4. 5,000 psi Lower Pipe Ram (13-5/8" ID)

CAMERON
A Schlumberger Company

13-5/8" 5M MN-DS Wellhead System

Slips



OXY's Minimum Design Criteria

Burst, Collapse, and Tensile SF are calculated using Landmark's Stress Check (Casing Design) software. A sundry will be requested if any lesser grade or different size casing is substituted.

1) Casing Design Assumptions

a) Burst Loads

CSG Test (Surface)

- Internal: Displacement fluid + pressure required to comply with regulatory casing test pressures. This will comply with both Onshore Oil and Gas Order No. 2 and 19.15.16 of the OCD Rules.
- External: Pore pressure in open hole.

CSG Test (Intermediate)

- Internal: Displacement fluid + pressure required to comply with regulatory casing test pressures. This will comply with both Onshore Oil and Gas Order No. 2 and 19.15.16 of the OCD Rules.
- External: Mud Weight to TOC, cement mix water gradient (8.4 ppg) below TOC, and pore pressure in open hole.

CSG Test (Production)

- Internal:
  - For Drilling: Displacement fluid + pressure required to comply with regulatory casing test pressures. This will comply with both Onshore Oil and Gas Order No. 2 and 19.15.16 of the OCD Rules.
  - For Production: The design pressure test should be the greater of (1) the planned test pressure prior to stimulation down the casing. (2) the regulatory test pressure, and (3) the expected gas lift system pressure. The design test fluid should be the fluid associated with pressure test having the greatest pressure.
- External:
  - For Drilling: Mud Weight to TOC, cement mix water gradient (8.4 ppg) below TOC, and pore pressure in open hole.
  - For Production: Mud base-fluid density to TOC, cement mix water gradient (8.4 ppg) below TOC, and pore pressure in open hole.

Gas Column (Surface)

- Internal: Assumes a full column of gas in the casing with a Gas/Oil Gradient of 0.1 psi/ft in the absence of better information. It is limited to the controlling pressure based on the fracture pressure at the shoe or the maximum expected pore pressure within the next drilling interval, whichever results in a lower surface pressure.
- External: Fluid gradient below TOC, pore pressure from the TOC to the Intermediate CSG shoe (if applicable), and MW of the drilling mud that was in the hole when the CSG was run from Intermediate CSG shoe to surface.

Bullheading (Surface / Intermediate)

- Internal: The string must be designed to withstand a pressure profile based on the fracture pressure at the casing shoe with a column of water above the shoe plus an additional surface pressure (in psi) of 0.02 X MD of the shoe to account for pumping friction pressure.
- External: Mud weight to TOC, cement mix water gradient (8.4 ppg) below TOC, and pore pressure in open hole.

Gas Kick (Intermediate)

- The string must be designed to at least a gas kick load case unless the rig is unable to detect a kick. For the gas kick load case, the internal pressure profile must be based on a minimum volume of 50 bbl or the minimum kick detection capability of the rig, whichever is greater, and a kick intensity of 2.0 ppg for Class 1, 1.0 ppg of Class 2, and 0.5 ppg for Class 3 and 4 wells.
- Internal: Influx depth of the maximum pore pressure of 0.55 "gas kick gravity" of gas to surface while drilling the next hole section.
- External: Mud weight to the TOC, cement mix water gradient below TOC, and pore pressure in open hole.

Tubing Leak Near Surface While Producing (Production)

- Internal: SITP plus a packer fluid gradient to the shoe or top of packer.
- External: Mud base-fluid density to TOC, cement mix water gradient (8.4 ppg) below TOC, and pore pressure in open hole.

Tubing Leak Near Surface While Stimulating (Production)

- Internal: Surface pressure or pressure-relief system pressure, whichever is lower plus packer fluid gradient.
- External: Mud base-fluid density to TOC, cement mix water gradient (8.4 ppg) below TOC, and pore pressure in open hole.

Injection / Stimulation Down Casing (Production)

- Internal: Surface pressure plus injection fluid gradient.
- External: Mud base-fluid density to TOC, cement mix water gradient (8.4 ppg) below TOC, and pore pressure in open hole.

b) Collapse Loads

Lost Circulation (Surface / Intermediate)

- Internal: Lost circulation at the TD of the next hole section, and the fluid level falls to a depth where the hydrostatic of the mud equals pore pressure at the depth of the lost circulation zone.
- External: MW of the drilling mud that was in the hole when the casing was run.

Cementing (Surface / Intermediate / Production)

- Internal: Displacement fluid density.
- External: Mud weight from TOC to surface and cement slurry weight from TOC to casing shoe.

Full Evacuation (Production)

- Internal: Full void pipe.
- External: MW of drilling mud in the hole when the casing was run.

c) Tension Loads

Running Casing (Surface / Intermediate / Production)

- Axial: Buoyant weight of the string plus the lesser of 100,000 lb or the string weight in air.

Green Cement (Surface / Intermediate / Production)

- Axial: Buoyant weight of the string plus cement plug bump pressure load.

OXY's Minimum Design Criteria

Burst, Collapse, and Tensile SF are calculated using Landmark's Stress Check (Casing Design) software. A sundry will be requested if any lesser grade or different size casing is substituted.

1) Casing Design Assumptions

a) Burst Loads

CSG Test (Surface)

- Internal: Displacement fluid + pressure required to comply with regulatory casing test pressures. This will comply with both Onshore Oil and Gas Order No. 2 and 19.15.16 of the OCD Rules.
- External: Pore pressure in open hole.

CSG Test (Intermediate)

- Internal: Displacement fluid + pressure required to comply with regulatory casing test pressures. This will comply with both Onshore Oil and Gas Order No. 2 and 19.15.16 of the OCD Rules.
- External: Mud Weight to TOC, cement mix water gradient (8.4 ppg) below TOC, and pore pressure in open hole.

CSG Test (Production)

- Internal:
  - For Drilling: Displacement fluid + pressure required to comply with regulatory casing test pressures. This will comply with both Onshore Oil and Gas Order No. 2 and 19.15.16 of the OCD Rules.
  - For Production: The design pressure test should be the greater of (1) the planned test pressure prior to stimulation down the casing. (2) the regulatory test pressure, and (3) the expected gas lift system pressure. The design test fluid should be the fluid associated with pressure test having the greatest pressure.
- External:
  - For Drilling: Mud Weight to TOC, cement mix water gradient (8.4 ppg) below TOC, and pore pressure in open hole.
  - For Production: Mud base-fluid density to TOC, cement mix water gradient (8.4 ppg) below TOC, and pore pressure in open hole.

Gas Column (Surface)

- Internal: Assumes a full column of gas in the casing with a Gas/Oil Gradient of 0.1 psi/ft in the absence of better information. It is limited to the controlling pressure based on the fracture pressure at the shoe or the maximum expected pore pressure within the next drilling interval, whichever results in a lower surface pressure.
- External: Fluid gradient below TOC, pore pressure from the TOC to the Intermediate CSG shoe (if applicable), and MW of the drilling mud that was in the hole when the CSG was run from Intermediate CSG shoe to surface.

Bullheading (Surface / Intermediate)

- Internal: The string must be designed to withstand a pressure profile based on the fracture pressure at the casing shoe with a column of water above the shoe plus an additional surface pressure (in psi) of 0.02 X MD of the shoe to account for pumping friction pressure.
- External: Mud weight to TOC, cement mix water gradient (8.4 ppg) below TOC, and pore pressure in open hole.

Gas Kick (Intermediate)

- The string must be designed to at least a gas kick load case unless the rig is unable to detect a kick. For the gas kick load case, the internal pressure profile must be based on a minimum volume of 50 bbl or the minimum kick detection capability of the rig, whichever is greater, and a kick intensity of 2.0 ppg for Class 1, 1.0 ppg of Class 2, and 0.5 ppg for Class 3 and 4 wells.
- Internal: Influx depth of the maximum pore pressure of 0.55 "gas kick gravity" of gas to surface while drilling the next hole section.
- External: Mud weight to the TOC, cement mix water gradient below TOC, and pore pressure in open hole.

Tubing Leak Near Surface While Producing (Production)

- Internal: SITP plus a packer fluid gradient to the shoe or top of packer.
- External: Mud base-fluid density to TOC, cement mix water gradient (8.4 ppg) below TOC, and pore pressure in open hole.

Tubing Leak Near Surface While Stimulating (Production)

- Internal: Surface pressure or pressure-relief system pressure, whichever is lower plus packer fluid gradient.
- External: Mud base-fluid density to TOC, cement mix water gradient (8.4 ppg) below TOC, and pore pressure in open hole.

Injection / Stimulation Down Casing (Production)

- Internal: Surface pressure plus injection fluid gradient.
- External: Mud base-fluid density to TOC, cement mix water gradient (8.4 ppg) below TOC, and pore pressure in open hole.

b) Collapse Loads

Lost Circulation (Surface / Intermediate)

- Internal: Lost circulation at the TD of the next hole section, and the fluid level falls to a depth where the hydrostatic of the mud equals pore pressure at the depth of the lost circulation zone.
- External: MW of the drilling mud that was in the hole when the casing was run.

Cementing (Surface / Intermediate / Production)

- Internal: Displacement fluid density.
- External: Mud weight from TOC to surface and cement slurry weight from TOC to casing shoe.

Full Evacuation (Production)

- Internal: Full void pipe.
- External: MW of drilling mud in the hole when the casing was run.

c) Tension Loads

Running Casing (Surface / Intermediate / Production)

- Axial: Buoyant weight of the string plus the lesser of 100,000 lb or the string weight in air.

Green Cement (Surface / Intermediate / Production)

- Axial: Buoyant weight of the string plus cement plug bump pressure load.

OXY's Minimum Design Criteria

Burst, Collapse, and Tensile SF are calculated using Landmark's Stress Check (Casing Design) software. A sundry will be requested if any lesser grade or different size casing is substituted.

1) Casing Design Assumptions

a) Burst Loads

CSG Test (Surface)

- Internal: Displacement fluid + pressure required to comply with regulatory casing test pressures. This will comply with both Onshore Oil and Gas Order No. 2 and 19.15.16 of the OCD Rules.
- External: Pore pressure in open hole.

CSG Test (Intermediate)

- Internal: Displacement fluid + pressure required to comply with regulatory casing test pressures. This will comply with both Onshore Oil and Gas Order No. 2 and 19.15.16 of the OCD Rules.
- External: Mud Weight to TOC, cement mix water gradient (8.4 ppg) below TOC, and pore pressure in open hole.

CSG Test (Production)

- Internal:
  - For Drilling: Displacement fluid + pressure required to comply with regulatory casing test pressures. This will comply with both Onshore Oil and Gas Order No. 2 and 19.15.16 of the OCD Rules.
  - For Production: The design pressure test should be the greater of (1) the planned test pressure prior to stimulation down the casing. (2) the regulatory test pressure, and (3) the expected gas lift system pressure. The design test fluid should be the fluid associated with pressure test having the greatest pressure.
- External:
  - For Drilling: Mud Weight to TOC, cement mix water gradient (8.4 ppg) below TOC, and pore pressure in open hole.
  - For Production: Mud base-fluid density to TOC, cement mix water gradient (8.4 ppg) below TOC, and pore pressure in open hole.

Gas Column (Surface)

- Internal: Assumes a full column of gas in the casing with a Gas/Oil Gradient of 0.1 psi/ft in the absence of better information. It is limited to the controlling pressure based on the fracture pressure at the shoe or the maximum expected pore pressure within the next drilling interval, whichever results in a lower surface pressure.
- External: Fluid gradient below TOC, pore pressure from the TOC to the Intermediate CSG shoe (if applicable), and MW of the drilling mud that was in the hole when the CSG was run from Intermediate CSG shoe to surface.

Bullheading (Surface / Intermediate)

- Internal: The string must be designed to withstand a pressure profile based on the fracture pressure at the casing shoe with a column of water above the shoe plus an additional surface pressure (in psi) of 0.02 X MD of the shoe to account for pumping friction pressure.
- External: Mud weight to TOC, cement mix water gradient (8.4 ppg) below TOC, and pore pressure in open hole.

Gas Kick (Intermediate)

- The string must be designed to at least a gas kick load case unless the rig is unable to detect a kick. For the gas kick load case, the internal pressure profile must be based on a minimum volume of 50 bbl or the minimum kick detection capability of the rig, whichever is greater, and a kick intensity of 2.0 ppg for Class 1, 1.0 ppg of Class 2, and 0.5 ppg for Class 3 and 4 wells.
- Internal: Influx depth of the maximum pore pressure of 0.55 "gas kick gravity" of gas to surface while drilling the next hole section.
- External: Mud weight to the TOC, cement mix water gradient below TOC, and pore pressure in open hole.

Tubing Leak Near Surface While Producing (Production)

- Internal: SITP plus a packer fluid gradient to the shoe or top of packer.
- External: Mud base-fluid density to TOC, cement mix water gradient (8.4 ppg) below TOC, and pore pressure in open hole.

Tubing Leak Near Surface While Stimulating (Production)

- Internal: Surface pressure or pressure-relief system pressure, whichever is lower plus packer fluid gradient.
- External: Mud base-fluid density to TOC, cement mix water gradient (8.4 ppg) below TOC, and pore pressure in open hole.

Injection / Stimulation Down Casing (Production)

- Internal: Surface pressure plus injection fluid gradient.
- External: Mud base-fluid density to TOC, cement mix water gradient (8.4 ppg) below TOC, and pore pressure in open hole.

b) Collapse Loads

Lost Circulation (Surface / Intermediate)

- Internal: Lost circulation at the TD of the next hole section, and the fluid level falls to a depth where the hydrostatic of the mud equals pore pressure at the depth of the lost circulation zone.
- External: MW of the drilling mud that was in the hole when the casing was run.

Cementing (Surface / Intermediate / Production)

- Internal: Displacement fluid density.
- External: Mud weight from TOC to surface and cement slurry weight from TOC to casing shoe.

Full Evacuation (Production)

- Internal: Full void pipe.
- External: MW of drilling mud in the hole when the casing was run.

c) Tension Loads

Running Casing (Surface / Intermediate / Production)

- Axial: Buoyant weight of the string plus the lesser of 100,000 lb or the string weight in air.

Green Cement (Surface / Intermediate / Production)

- Axial: Buoyant weight of the string plus cement plug bump pressure load.

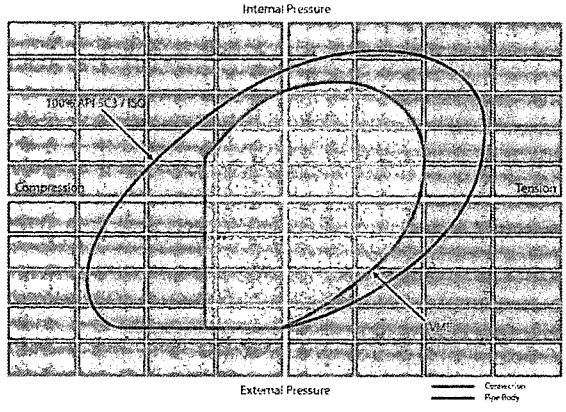
TECHNICAL DATA SHEET TMK UP FJ 7.625 X 26.4 L80 HC

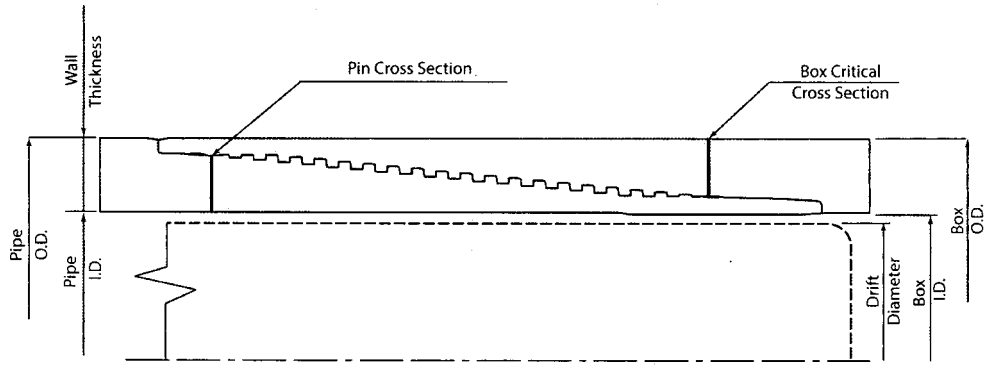
TUBULAR PARAMETERS	
Nominal OD, (inch)	7.625
Wall Thickness, (inch)	0.328
Pipe Grade	L80 HC
Drift	Standard

CONNECTION PARAMETERS	
Connection OD (inch)	7.63
Connection ID, (inch)	6.975
Make-Up Loss, (inch)	4.165
Connection Critical Area, (sq inch)	2.520
Yield Strength in Tension, (klbs)	347
Yeld Strength in Compression, (klbs)	347
Tension Efficiency	58%
Compression Efficiency	58%
Min. Internal Yield Pressure, (psi)	6 020
Collapse Pressure, (psi)	3 910
Uniaxial Bending (deg/100ft)	28.0

MAKE-UP TORQUES	
Yield Torque, (ft-lb)	22 200
Minimum Make-Up Torque, (ft-lb)	12 500
Optimum Make-Up Torque, (ft-lb)	13 900
Maximum Make-Up Torque, (ft-lb)	15 300

PIPE BODY PROPERTIES	
PE Weight, (lbs/ft)	25.56
Nominal Weight, (lbs/ft)	26.40
Nominal ID, (inch)	6.969
Drift Diameter, (inch)	6.844
Nominal Pipe Body Area, (sq inch)	7.519
Yield Strength in Tension, (klbs)	601
Min. Internal Yield Pressure, (psi)	6 020
Collapse Pressure, (psi)	3 910





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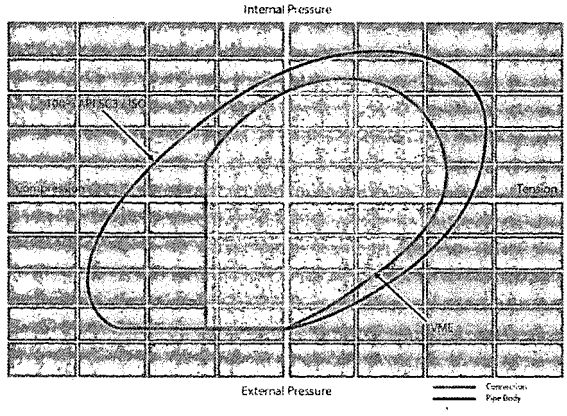
TECHNICAL DATA SHEET TMK UP SF 7.625 X 26.4 L80 HC

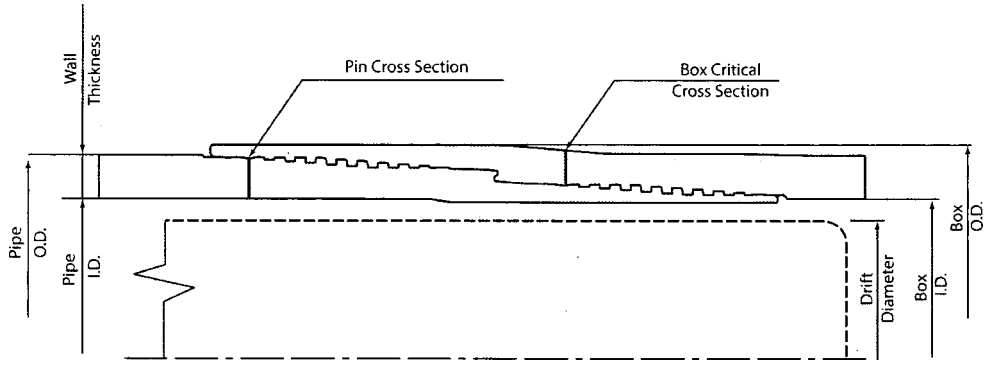
TUBULAR PARAMETERS	
Nominal OD, (inch)	7.625
Wall Thickness, (inch)	0.328
Pipe Grade	L80 HC
Drift	Standard

CONNECTION PARAMETERS	
Connection OD (inch)	7.79
Connection ID, (inch)	6.938
Make-Up Loss, (inch)	6.029
Connection Critical Area, (sq inch)	5.948
Yield Strength in Tension, (klbs)	533
Yeld Strength in Compression, (klbs)	533
Tension Efficiency	89%
Compression Efficiency	89%
Min. Internal Yield Pressure, (psi)	6 020
Collapse Pressure, (psi)	3 910
Uniaxial Bending (deg/100ft)	42.7

MAKE-UP TORQUES	
Yield Torque, (ft-lb)	22 600
Minimum Make-Up Torque, (ft-lb)	15 000
Optimum Make-Up Torque, (ft-lb)	16 500
Maximum Make-Up Torque, (ft-lb)	18 200

PIPE BODY PROPERTIES	
PE Weight, (lbs/ft)	25.56
Nominal Weight, (lbs/ft)	26.40
Nominal ID, (inch)	6.969
Drift Diameter, (inch)	6.844
Nominal Pipe Body Area, (sq inch)	7.519
Yield Strength in Tension, (klbs)	601
Min. Internal Yield Pressure, (psi)	6 020
Collapse Pressure, (psi)	3 910





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OXY's Minimum Design Criteria

Burst, Collapse, and Tensile SF are calculated using Landmark's Stress Check (Casing Design) software. A sundry will be requested if any lesser grade or different size casing is substituted.

1) Casing Design Assumptions

a) Burst Loads

CSG Test (Surface)

- Internal: Displacement fluid + pressure required to comply with regulatory casing test pressures. This will comply with both Onshore Oil and Gas Order No. 2 and 19.15.16 of the OCD Rules.
- External: Pore pressure in open hole.

CSG Test (Intermediate)

- Internal: Displacement fluid + pressure required to comply with regulatory casing test pressures. This will comply with both Onshore Oil and Gas Order No. 2 and 19.15.16 of the OCD Rules.
- External: Mud Weight to TOC, cement mix water gradient (8.4 ppg) below TOC, and pore pressure in open hole.

CSG Test (Production)

- Internal:
  - For Drilling: Displacement fluid + pressure required to comply with regulatory casing test pressures. This will comply with both Onshore Oil and Gas Order No. 2 and 19.15.16 of the OCD Rules.
  - For Production: The design pressure test should be the greater of (1) the planned test pressure prior to stimulation down the casing. (2) the regulatory test pressure, and (3) the expected gas lift system pressure. The design test fluid should be the fluid associated with pressure test having the greatest pressure.
- External:
  - For Drilling: Mud Weight to TOC, cement mix water gradient (8.4 ppg) below TOC, and pore pressure in open hole.
  - For Production: Mud base-fluid density to TOC, cement mix water gradient (8.4 ppg) below TOC, and pore pressure in open hole.

Gas Column (Surface)

- Internal: Assumes a full column of gas in the casing with a Gas/Oil Gradient of 0.1 psi/ft in the absence of better information. It is limited to the controlling pressure based on the fracture pressure at the shoe or the maximum expected pore pressure within the next drilling interval, whichever results in a lower surface pressure.
- External: Fluid gradient below TOC, pore pressure from the TOC to the Intermediate CSG shoe (if applicable), and MW of the drilling mud that was in the hole when the CSG was run from Intermediate CSG shoe to surface.

Bullheading (Surface / Intermediate)

- Internal: The string must be designed to withstand a pressure profile based on the fracture pressure at the casing shoe with a column of water above the shoe plus an additional surface pressure (in psi) of 0.02 X MD of the shoe to account for pumping friction pressure.
- External: Mud weight to TOC, cement mix water gradient (8.4 ppg) below TOC, and pore pressure in open hole.

Gas Kick (Intermediate)

- The string must be designed to at least a gas kick load case unless the rig is unable to detect a kick. For the gas kick load case, the internal pressure profile must be based on a minimum volume of 50 bbl or the minimum kick detection capability of the rig, whichever is greater, and a kick intensity of 2.0 ppg for Class 1, 1.0 ppg of Class 2, and 0.5 ppg for Class 3 and 4 wells.
- Internal: Influx depth of the maximum pore pressure of 0.55 "gas kick gravity" of gas to surface while drilling the next hole section.
- External: Mud weight to the TOC, cement mix water gradient below TOC, and pore pressure in open hole.

Tubing Leak Near Surface While Producing (Production)

- Internal: SITP plus a packer fluid gradient to the shoe or top of packer.
- External: Mud base-fluid density to TOC, cement mix water gradient (8.4 ppg) below TOC, and pore pressure in open hole.

Tubing Leak Near Surface While Stimulating (Production)

- Internal: Surface pressure or pressure-relief system pressure, whichever is lower plus packer fluid gradient.
- External: Mud base-fluid density to TOC, cement mix water gradient (8.4 ppg) below TOC, and pore pressure in open hole.

Injection / Stimulation Down Casing (Production)

- Internal: Surface pressure plus injection fluid gradient.
- External: Mud base-fluid density to TOC, cement mix water gradient (8.4 ppg) below TOC, and pore pressure in open hole.

b) Collapse Loads

Lost Circulation (Surface / Intermediate)

- Internal: Lost circulation at the TD of the next hole section, and the fluid level falls to a depth where the hydrostatic of the mud equals pore pressure at the depth of the lost circulation zone.
- External: MW of the drilling mud that was in the hole when the casing was run.

Cementing (Surface / Intermediate / Production)

- Internal: Displacement fluid density.
- External: Mud weight from TOC to surface and cement slurry weight from TOC to casing shoe.

Full Evacuation (Production)

- Internal: Full void pipe.
- External: MW of drilling mud in the hole when the casing was run.

c) Tension Loads

Running Casing (Surface / Intermediate / Production)

- Axial: Buoyant weight of the string plus the lesser of 100,000 lb or the string weight in air.

Green Cement (Surface / Intermediate / Production)

- Axial: Buoyant weight of the string plus cement plug bump pressure load.

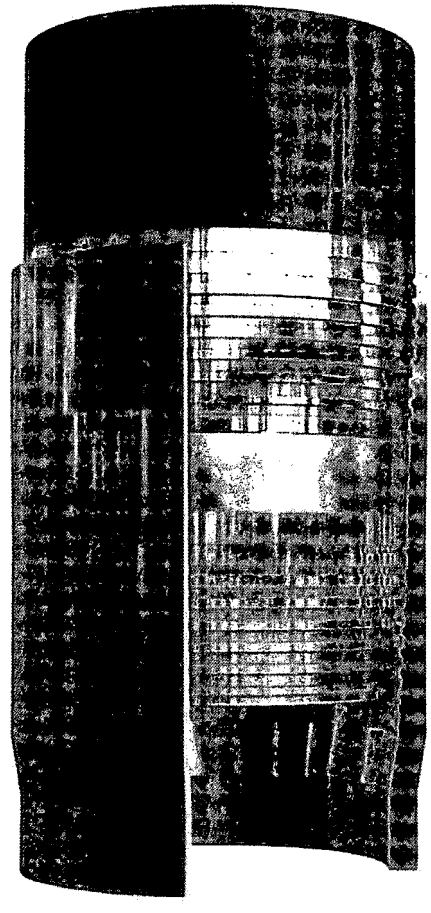
PERFORMANCE DATA

TMK UP SF TORQ™ **5.500 in** **20.00 lbs/ft** **P110 HC**

Technical Data Sheet

Tubular Parameters

Size	5.500	in	Minimum Yield	110,000	psi
Nominal Weight	20.00	lbs/ft	Minimum Tensile	125,000	psi
Grade	P110 HC		Yield Load	641,000	lbs
PE Weight	19.81	lbs/ft	Tensile Load	728,000	lbs
Wall Thickness	0.361	in	Min. Internal Yield Pressure	12,640	psi
Nominal ID	4.778	in	Collapse Pressure	12,780	psi
Drift Diameter	4.653	in			
Nom. Pipe Body Area	5.828	in²			



Connection Parameters

Connection OD	5.777	in
Connection ID	4.734	in
Make-Up Loss	5.823	in
Critical Section Area	5.875	in²
Tension Efficiency	90.0	%
Compression Efficiency	90.0	%
Yield Load In Tension	576,000	lbs
Min. Internal Yield Pressure	12,640	psi
Collapse Pressure	12,780	psi
Uniaxial Bending	83	°/ 100 ft

Make-Up Torques

Min. Make-Up Torque	15,700	ft-lbs
Opt. Make-Up Torque	19,600	ft-lbs
Max. Make-Up Torque	21,600	ft-lbs
Operating Torque	29,000	ft-lbs
Yield Torque	36,000	ft-lbs

Printed on: February-22-2018

TMK IPSCO

OXY's Minimum Design Criteria

Burst, Collapse, and Tensile SF are calculated using Landmark's Stress Check (Casing Design) software. A sundry will be requested if any lesser grade or different size casing is substituted.

1) Casing Design Assumptions

a) Burst Loads

CSG Test (Surface)

- Internal: Displacement fluid + pressure required to comply with regulatory casing test pressures. This will comply with both Onshore Oil and Gas Order No. 2 and 19.15.16 of the OCD Rules.
- External: Pore pressure in open hole.

CSG Test (Intermediate)

- Internal: Displacement fluid + pressure required to comply with regulatory casing test pressures. This will comply with both Onshore Oil and Gas Order No. 2 and 19.15.16 of the OCD Rules.
- External: Mud Weight to TOC, cement mix water gradient (8.4 ppg) below TOC, and pore pressure in open hole.

CSG Test (Production)

- Internal:
  - For Drilling: Displacement fluid + pressure required to comply with regulatory casing test pressures. This will comply with both Onshore Oil and Gas Order No. 2 and 19.15.16 of the OCD Rules.
  - For Production: The design pressure test should be the greater of (1) the planned test pressure prior to stimulation down the casing. (2) the regulatory test pressure, and (3) the expected gas lift system pressure. The design test fluid should be the fluid associated with pressure test having the greatest pressure.
- External:
  - For Drilling: Mud Weight to TOC, cement mix water gradient (8.4 ppg) below TOC, and pore pressure in open hole.
  - For Production: Mud base-fluid density to TOC, cement mix water gradient (8.4 ppg) below TOC, and pore pressure in open hole.

Gas Column (Surface)

- Internal: Assumes a full column of gas in the casing with a Gas/Oil Gradient of 0.1 psi/ft in the absence of better information. It is limited to the controlling pressure based on the fracture pressure at the shoe or the maximum expected pore pressure within the next drilling interval, whichever results in a lower surface pressure.
- External: Fluid gradient below TOC, pore pressure from the TOC to the Intermediate CSG shoe (if applicable), and MW of the drilling mud that was in the hole when the CSG was run from Intermediate CSG shoe to surface.

Bullheading (Surface / Intermediate)

- Internal: The string must be designed to withstand a pressure profile based on the fracture pressure at the casing shoe with a column of water above the shoe plus an additional surface pressure (in psi) of 0.02 X MD of the shoe to account for pumping friction pressure.
- External: Mud weight to TOC, cement mix water gradient (8.4 ppg) below TOC, and pore pressure in open hole.

Gas Kick (Intermediate)

- The string must be designed to at least a gas kick load case unless the rig is unable to detect a kick. For the gas kick load case, the internal pressure profile must be based on a minimum volume of 50 bbl or the minimum kick detection capability of the rig, whichever is greater, and a kick intensity of 2.0 ppg for Class 1, 1.0 ppg of Class 2, and 0.5 ppg for Class 3 and 4 wells.
- Internal: Influx depth of the maximum pore pressure of 0.55 "gas kick gravity" of gas to surface while drilling the next hole section.
- External: Mud weight to the TOC, cement mix water gradient below TOC, and pore pressure in open hole.

Tubing Leak Near Surface While Producing (Production)

- Internal: SITP plus a packer fluid gradient to the shoe or top of packer.
- External: Mud base-fluid density to TOC, cement mix water gradient (8.4 ppg) below TOC, and pore pressure in open hole.

Tubing Leak Near Surface While Stimulating (Production)

- Internal: Surface pressure or pressure-relief system pressure, whichever is lower plus packer fluid gradient.
- External: Mud base-fluid density to TOC, cement mix water gradient (8.4 ppg) below TOC, and pore pressure in open hole.

Injection / Stimulation Down Casing (Production)

- Internal: Surface pressure plus injection fluid gradient.
- External: Mud base-fluid density to TOC, cement mix water gradient (8.4 ppg) below TOC, and pore pressure in open hole.

b) Collapse Loads

Lost Circulation (Surface / Intermediate)

- Internal: Lost circulation at the TD of the next hole section, and the fluid level falls to a depth where the hydrostatic of the mud equals pore pressure at the depth of the lost circulation zone.
- External: MW of the drilling mud that was in the hole when the casing was run.

Cementing (Surface / Intermediate / Production)

- Internal: Displacement fluid density.
- External: Mud weight from TOC to surface and cement slurry weight from TOC to casing shoe.

Full Evacuation (Production)

- Internal: Full void pipe.
- External: MW of drilling mud in the hole when the casing was run.

c) Tension Loads

Running Casing (Surface / Intermediate / Production)

- Axial: Buoyant weight of the string plus the lesser of 100,000 lb or the string weight in air.

Green Cement (Surface / Intermediate / Production)

- Axial: Buoyant weight of the string plus cement plug bump pressure load.

PERFORMANCE DATA

TMK UP DQX **5.500 in** **20.00 lbs/ft** **P-110**
Technical Data Sheet

Tubular Parameters

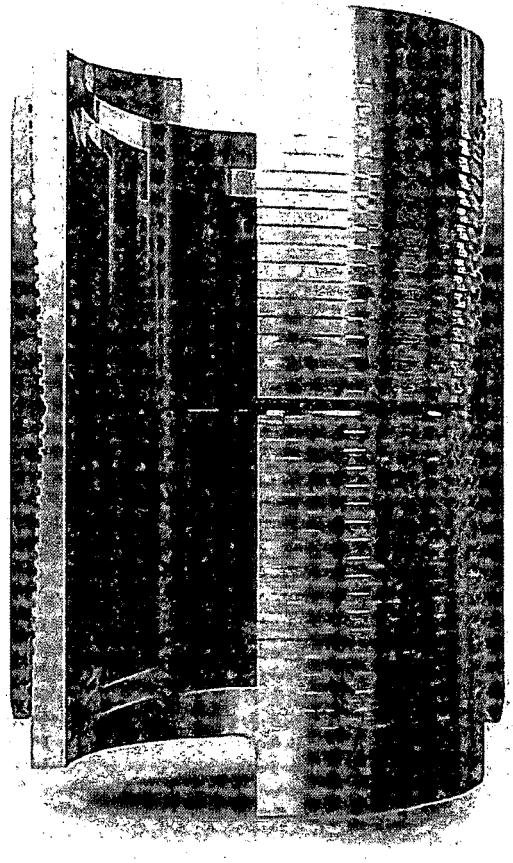
Size	5.500	in	Minimum Yield	110,000	psi
Nominal Weight	20.00	lbs/ft	Minimum Tensile	125,000	psi
Grade	P-110		Yield Load	641,000	lbs
PE Weight	19.81	lbs/ft	Tensile Load	729,000	lbs
Wall Thickness	0.361	in	Min. Internal Yield Pressure	12,600	psi
Nominal ID	4.778	in	Collapse Pressure	11,100	psi
Drift Diameter	4.653	in			
Nom. Pipe Body Area	5.828	in²			

Connection Parameters

Connection OD	6.050	in
Connection ID	4.778	in
Make-Up Loss	4.122	in
Critical Section Area	5.828	in²
Tension Efficiency	100.0	%
Compression Efficiency	100.0	%
Yield Load In Tension	641,000	lbs
Min. Internal Yield Pressure	12,600	psi
Collapse Pressure	11,100	psi

Make-Up Torques

Min. Make-Up Torque	11,600	ft-lbs
Opt. Make-Up Torque	12,900	ft-lbs
Max. Make-Up Torque	14,100	ft-lbs
Yield Torque	20,600	ft-lbs



Printed on: July-29-2014

TMK IPSCO

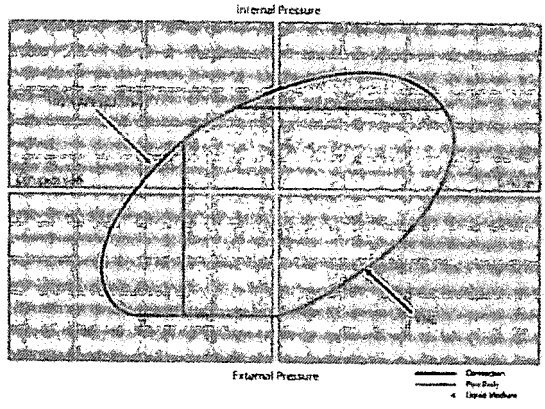
TECHNICAL DATA SHEET TMK UP DQX 5.5 X 20 P110

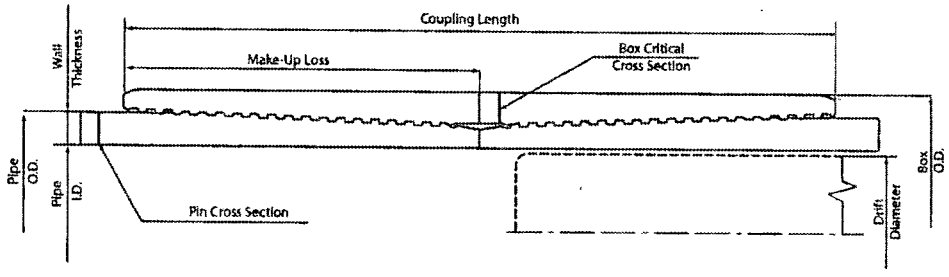
TUBULAR PARAMETERS	
Nominal OD, (inch)	5.500
Wall Thickness, (inch)	0.361
Pipe Grade	P110
Coupling	Regular
Coupling Grade	P110
Drift	Standard

CONNECTION PARAMETERS	
Connection OD (inch)	6.05
Connection ID, (inch)	4.778
Make-Up Loss, (inch)	4.122
Connection Critical Area, (sq inch)	5.828
Yield Strength in Tension, (klbs)	641
Yeld Strength in Compression, (klbs)	641
Tension Efficiency	100%
Compression Efficiency	100%
Min. Internal Yield Pressure, (psi)	12 640
Collapse Pressure, (psi)	11 110
Uniaxial Bending (deg/100ft)	91.7

MAKE-UP TORQUES	
Yield Torque, (ft-lb)	20 600
Minimum Make-Up Torque, (ft-lb)	11 600
Optimum Make-Up Torque, (ft-lb)	12 900
Maximum Make-Up Torque, (ft-lb)	14 100

PIPE BODY PROPERTIES	
PE Weight, (lbs/ft)	19.81
Nominal Weight, (lbs/ft)	20.00
Nominal ID, (inch)	4.778
Drift Diameter, (inch)	4.653
Nominal Pipe Body Area, (sq inch)	5.828
Yield Strength in Tension, (klbs)	641
Min. Internal Yield Pressure, (psi)	12 640
Collapse Pressure, (psi)	11 110





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PERFORMANCE DATA

TMK UP DQX **5.500 in** **20.00 lbs/ft** **P-110**
Technical Data Sheet

Tubular Parameters

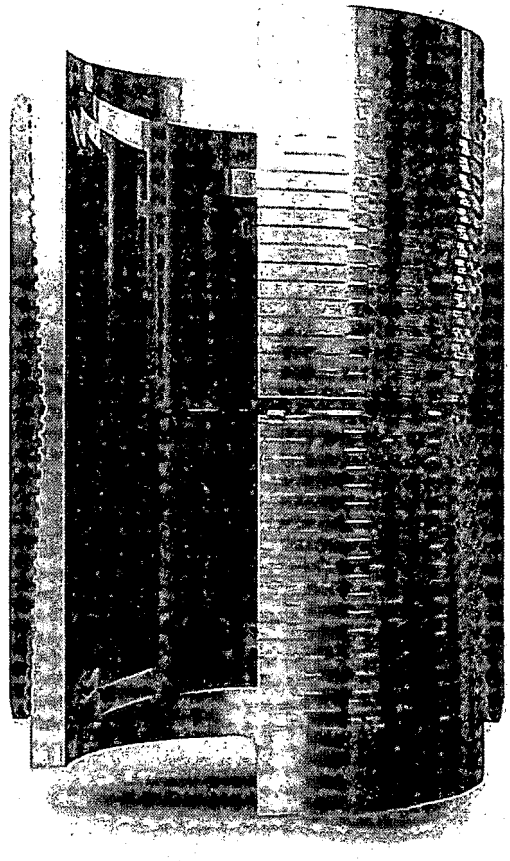
Size	5.500	in	Minimum Yield	110,000	psi
Nominal Weight	20.00	lbs/ft	Minimum Tensile	125,000	psi
Grade	P-110		Yield Load	641,000	lbs
PE Weight	19.81	lbs/ft	Tensile Load	729,000	lbs
Wall Thickness	0.361	in	Min. Internal Yield Pressure	12,600	psi
Nominal ID	4.778	in	Collapse Pressure	11,100	psi
Drift Diameter	4.653	in			
Nom. Pipe Body Area	5.828	in²			

Connection Parameters

Connection OD	6.050	in
Connection ID	4.778	in
Make-Up Loss	4.122	in
Critical Section Area	5.828	in²
Tension Efficiency	100.0	%
Compression Efficiency	100.0	%
Yield Load In Tension	641,000	lbs
Min. Internal Yield Pressure	12,600	psi
Collapse Pressure	11,100	psi

Make-Up Torques

Min. Make-Up Torque	11,600	ft-lbs
Opt. Make-Up Torque	12,900	ft-lbs
Max. Make-Up Torque	14,100	ft-lbs
Yield Torque	20,600	ft-lbs



Printed on: July-29-2014

TMK IPSCO

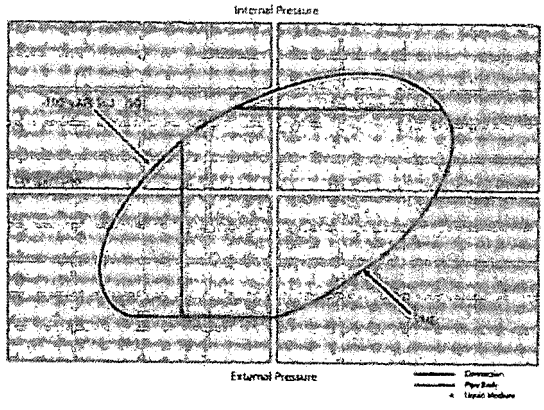
TECHNICAL DATA SHEET TMK UP DQX 5.5 X 20 P110

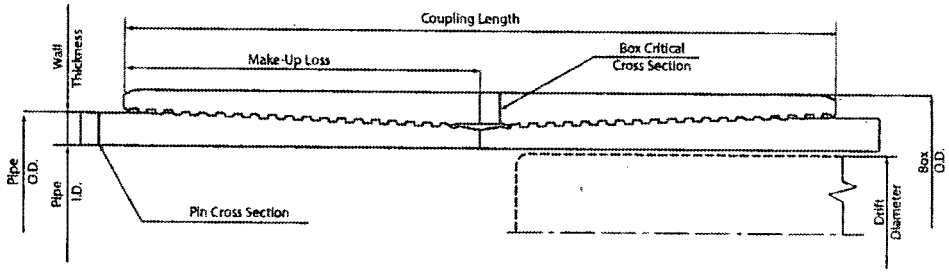
TUBULAR PARAMETERS	
Nominal OD, (inch)	5.500
Wall Thickness, (inch)	0.361
Pipe Grade	P110
Coupling	Regular
Coupling Grade	P110
Drift	Standard

CONNECTION PARAMETERS	
Connection OD (inch)	6.05
Connection ID, (inch)	4.778
Make-Up Loss, (inch)	4.122
Connection Critical Area, (sq inch)	5.828
Yield Strength in Tension, (klbs)	641
Yeld Strength in Compression, (klbs)	641
Tension Efficiency	100%
Compression Efficiency	100%
Min. Internal Yield Pressure, (psi)	12 640
Collapse Pressure, (psi)	11 110
Uniaxial Bending (deg/100ft)	91.7

MAKE-UP TORQUES	
Yield Torque, (ft-lb)	20 600
Minimum Make-Up Torque, (ft-lb)	11 600
Optimum Make-Up Torque, (ft-lb)	12 900
Maximum Make-Up Torque, (ft-lb)	14 100

PIPE BODY PROPERTIES	
PE Weight, (lbs/ft)	19.81
Nominal Weight, (lbs/ft)	20.00
Nominal ID, (inch)	4.778
Drift Diameter, (inch)	4.653
Nominal Pipe Body Area, (sq inch)	5.828
Yield Strength in Tension, (klbs)	641
Min. Internal Yield Pressure, (psi)	12 640
Collapse Pressure, (psi)	11 110





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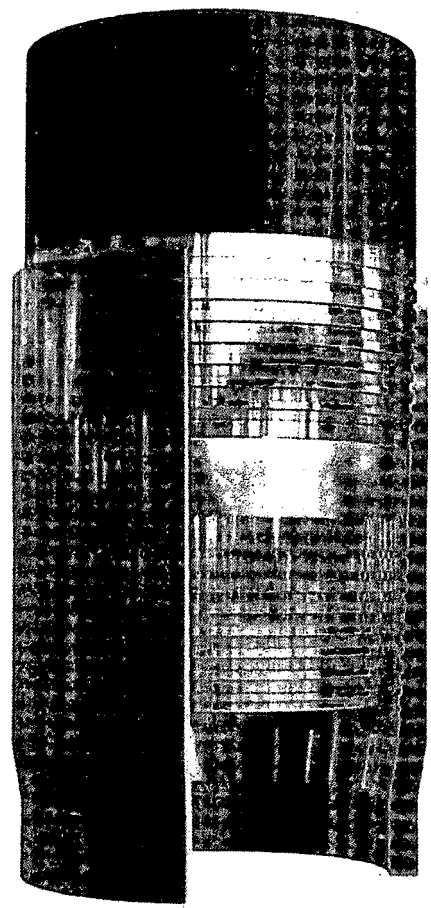
PERFORMANCE DATA

TMK UP SF TORQ™ **5.500 in** **20.00 lbs/ft** **P110 HC**
Technical Data Sheet

Tubular Parameters

Size	5.500	in	Minimum Yield	110,000	psi
Nominal Weight	20.00	lbs/ft	Minimum Tensile	125,000	psi
Grade	P110 HC		Yield Load	641,000	lbs
PE Weight	19.81	lbs/ft	Tensile Load	728,000	lbs
Wall Thickness	0.361	in	Min. Internal Yield Pressure	12,640	psi
Nominal ID	4.778	in	Collapse Pressure	12,780	psi
Drift Diameter	4.653	in			
Nom. Pipe Body Area	5.828	in²			



Connection Parameters

Connection OD	5.777	in
Connection ID	4.734	in
Make-Up Loss	5.823	in
Critical Section Area	5.875	in²
Tension Efficiency	90.0	%
Compression Efficiency	90.0	%
Yield Load In Tension	576,000	lbs
Min. Internal Yield Pressure	12,640	psi
Collapse Pressure	12,780	psi
Uniaxial Bending	83	°/ 100 ft

Make-Up Torques

Min. Make-Up Torque	15,700	ft-lbs
Opt. Make-Up Torque	19,600	ft-lbs
Max. Make-Up Torque	21,600	ft-lbs
Operating Torque	29,000	ft-lbs
Yield Torque	36,000	ft-lbs

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TMK IPSCO

OXY's Minimum Design Criteria

Burst, Collapse, and Tensile SF are calculated using Landmark's Stress Check (Casing Design) software. A sundry will be requested if any lesser grade or different size casing is substituted.

1) Casing Design Assumptions

a) Burst Loads

CSG Test (Surface)

- Internal: Displacement fluid + pressure required to comply with regulatory casing test pressures. This will comply with both Onshore Oil and Gas Order No. 2 and 19.15.16 of the OCD Rules.
- External: Pore pressure in open hole.

CSG Test (Intermediate)

- Internal: Displacement fluid + pressure required to comply with regulatory casing test pressures. This will comply with both Onshore Oil and Gas Order No. 2 and 19.15.16 of the OCD Rules.
- External: Mud Weight to TOC, cement mix water gradient (8.4 ppg) below TOC, and pore pressure in open hole.

CSG Test (Production)

- Internal:
  - For Drilling: Displacement fluid + pressure required to comply with regulatory casing test pressures. This will comply with both Onshore Oil and Gas Order No. 2 and 19.15.16 of the OCD Rules.
  - For Production: The design pressure test should be the greater of (1) the planned test pressure prior to stimulation down the casing. (2) the regulatory test pressure, and (3) the expected gas lift system pressure. The design test fluid should be the fluid associated with pressure test having the greatest pressure.
- External:
  - For Drilling: Mud Weight to TOC, cement mix water gradient (8.4 ppg) below TOC, and pore pressure in open hole.
  - For Production: Mud base-fluid density to TOC, cement mix water gradient (8.4 ppg) below TOC, and pore pressure in open hole.

Gas Column (Surface)

- Internal: Assumes a full column of gas in the casing with a Gas/Oil Gradient of 0.1 psi/ft in the absence of better information. It is limited to the controlling pressure based on the fracture pressure at the shoe or the maximum expected pore pressure within the next drilling interval, whichever results in a lower surface pressure.
- External: Fluid gradient below TOC, pore pressure from the TOC to the Intermediate CSG shoe (if applicable), and MW of the drilling mud that was in the hole when the CSG was run from Intermediate CSG shoe to surface.

Bullheading (Surface / Intermediate)

- Internal: The string must be designed to withstand a pressure profile based on the fracture pressure at the casing shoe with a column of water above the shoe plus an additional surface pressure (in psi) of 0.02 X MD of the shoe to account for pumping friction pressure.
- External: Mud weight to TOC, cement mix water gradient (8.4 ppg) below TOC, and pore pressure in open hole.

Gas Kick (Intermediate)

- The string must be designed to at least a gas kick load case unless the rig is unable to detect a kick. For the gas kick load case, the internal pressure profile must be based on a minimum volume of 50 bbl or the minimum kick detection capability of the rig, whichever is greater, and a kick intensity of 2.0 ppg for Class 1, 1.0 ppg of Class 2, and 0.5 ppg for Class 3 and 4 wells.
- Internal: Influx depth of the maximum pore pressure of 0.55 "gas kick gravity" of gas to surface while drilling the next hole section.
- External: Mud weight to the TOC, cement mix water gradient below TOC, and pore pressure in open hole.

Tubing Leak Near Surface While Producing (Production)

- Internal: SITP plus a packer fluid gradient to the shoe or top of packer.
- External: Mud base-fluid density to TOC, cement mix water gradient (8.4 ppg) below TOC, and pore pressure in open hole.

Tubing Leak Near Surface While Stimulating (Production)

- Internal: Surface pressure or pressure-relief system pressure, whichever is lower plus packer fluid gradient.
- External: Mud base-fluid density to TOC, cement mix water gradient (8.4 ppg) below TOC, and pore pressure in open hole.

Injection / Stimulation Down Casing (Production)

- Internal: Surface pressure plus injection fluid gradient.
- External: Mud base-fluid density to TOC, cement mix water gradient (8.4 ppg) below TOC, and pore pressure in open hole.

b) Collapse Loads

Lost Circulation (Surface / Intermediate)

- Internal: Lost circulation at the TD of the next hole section, and the fluid level falls to a depth where the hydrostatic of the mud equals pore pressure at the depth of the lost circulation zone.
- External: MW of the drilling mud that was in the hole when the casing was run.

Cementing (Surface / Intermediate / Production)

- Internal: Displacement fluid density.
- External: Mud weight from TOC to surface and cement slurry weight from TOC to casing shoe.

Full Evacuation (Production)

- Internal: Full void pipe.
- External: MW of drilling mud in the hole when the casing was run.

c) Tension Loads

Running Casing (Surface / Intermediate / Production)

- Axial: Buoyant weight of the string plus the lesser of 100,000 lb or the string weight in air.

Green Cement (Surface / Intermediate / Production)

- Axial: Buoyant weight of the string plus cement plug bump pressure load.

PERFORMANCE DATA

TMK UP TORQ™ DQW **5.500 in** **20.00 lbs/ft** **P110 CY**

Technical Data Sheet

Tubular Parameters

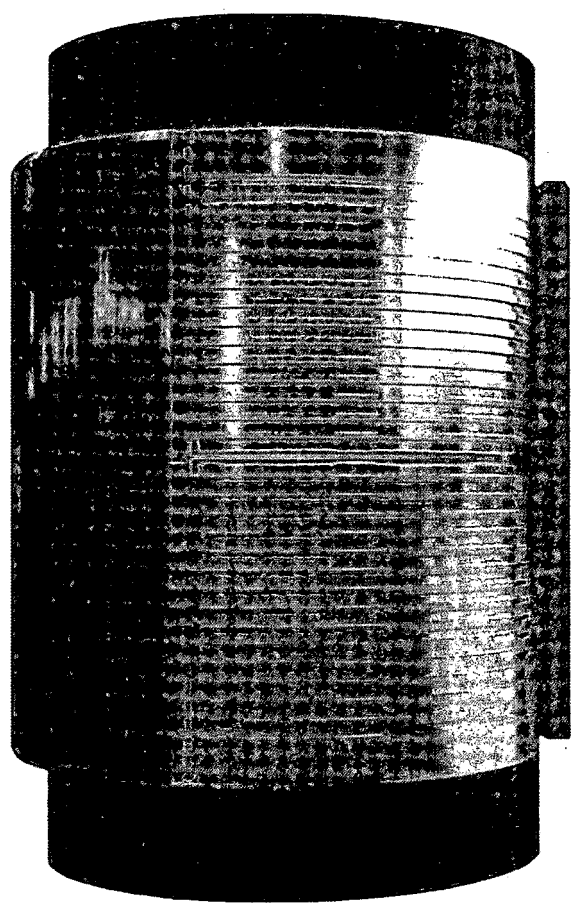
Size	5.500	in	Minimum Yield	110,000	psi
Nominal Weight	20.00	lbs/ft	Minimum Tensile	125,000	psi
Grade	P110 CY		Yield Load	641,000	lbs
PE Weight	19.81	lbs/ft	Tensile Load	729,000	lbs
Wall Thickness	0.361	in	Min. Internal Yield Pressure	12,640	psi
Nominal ID	4.778	in	Collapse Pressure	11,110	psi
Drift Diameter	4.653	in			
Nom. Pipe Body Area	5.828	in²			

Connection Parameters

Connection OD	6.050	in
Connection ID	4.778	in
Make-Up Loss	4.324	in
Critical Section Area	5.828	in²
Tension Efficiency	100.0	%
Compression Efficiency	100.0	%
Yield Load In Tension	641,000	lbs
Min. Internal Yield Pressure	12,640	psi
Collapse Pressure	11,110	psi
Uniaxial Bending	92	°/ 100 ft

Make-Up Torques

Min. Make-Up Torque	14,000	ft-lbs
Opt. Make-Up Torque	16,000	ft-lbs
Max. Make-Up Torque	18,000	ft-lbs
Operating Torque	36,800	ft-lbs
Yield Torque	46,000	ft-lbs



Printed on: March-05-2019

TMK IPSCO

Permian Drilling
Hydrogen Sulfide Drilling Operations Plan
Precious 30_18 Fed Com 7H

Open drill site. No homes or buildings are near the proposed location.

1. Escape

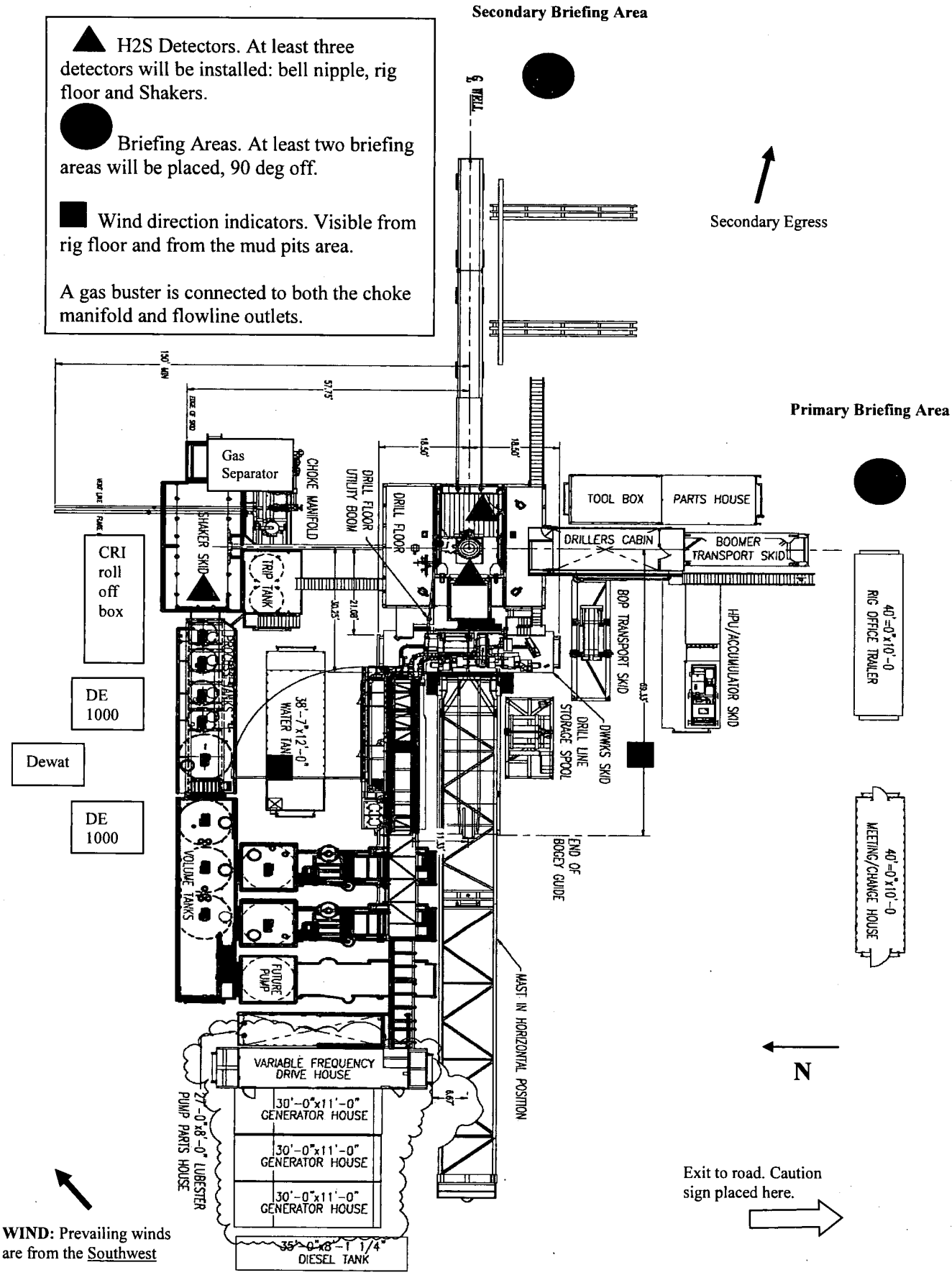
   Personnel shall escape upwind of wellbore in the event of an emergency gas release. Escape can take place through the lease road on the Southeast side of the location. Personnel need to move to a safe distance and block the entrance to location. If the primary route is not an option due to the wind direction, then a secondary egress route should be taken.

▲ H2S Detectors. At least three detectors will be installed: bell nipple, rig floor and Shakers.

● Briefing Areas. At least two briefing areas will be placed, 90 deg off.

■ Wind direction indicators. Visible from rig floor and from the mud pits area.

A gas buster is connected to both the choke manifold and flowline outlets.



Permian Drilling
Hydrogen Sulfide Drilling Operations Plan
New Mexico

Scope

This contingency plan establishes guidelines for the public, all company employees, and contract employees who's work activities may involve exposure to hydrogen sulfide (H2S) gas.
While drilling this well, it is possible to encounter H2S bearing formations. At all times, the first barrier to control H2S emissions will be the drilling fluid, which will have a density high enough to control influx.

Objective

1. Provide an immediate and predetermined response plan to any condition when H2S is detected. All H2S detections in excess of 10 parts per million (ppm) concentration are considered an Emergency.

2. Prevent any and all accidents, and prevent the uncontrolled release of hydrogen sulfide into the atmosphere.

3. Provide proper evacuation procedures to cope with emergencies.

4. Provide immediate and adequate medical attention should an injury occur.

Discussion

Implementation:	This plan with all details is to be fully implemented before drilling to commence.
Emergency response Procedure:	This section outlines the conditions and denotes steps to be taken in the event of an emergency.
Emergency equipment Procedure:	This section outlines the safety and emergency equipment that will be required for the drilling of this well.
Training provisions:	This section outlines the training provisions that must be adhered to prior to drilling.
Drilling emergency call lists:	Included are the telephone numbers of all persons to be contacted should an emergency exist.
Briefing:	This section deals with the briefing of all people involved in the drilling operation.
Public safety:	Public safety personnel will be made aware of any potential evacuation and any additional support needed.
Check lists:	Status check lists and procedural check lists have been included to insure adherence to the plan.
General information:	A general information section has been included to supply support information.

Hydrogen Sulfide Training

All personnel, whether regularly assigned, contracted, or employed on an unscheduled basis, will receive training from a qualified instructor in the following areas prior to commencing drilling operations on the well:

1. The hazards and characteristics of H2S.
2. Proper use and maintenance of personal protective equipment and life support systems.
3. H2S detection.
4. Proper use of H2S detectors, alarms, warning systems, briefing areas, evacuation procedures and prevailing winds.
5. Proper techniques for first aid and rescue procedures.
6. Physical effects of hydrogen sulfide on the human body.
7. Toxicity of hydrogen sulfide and sulfur dioxide.
8. Use of SCBA and supplied air equipment.
9. First aid and artificial respiration.
10. Emergency rescue.

In addition, supervisory personnel will be trained in the following areas:

1. The effects of H2S on metal components. If high tensile strength tubular is to be used, personnel will be trained in their special maintenance requirements.
2. Corrective action and shut-in procedures when drilling a well, blowout prevention and well control procedures.
3. The contents and requirements of the H2S Drilling Operations Plan.

H2S training refresher must have been taken within one year prior to drilling the well. Specifics on the well to be drilled will be discussed during the pre-spud meeting. H2S and well control (choke) drills will be performed while drilling the well, at least on a weekly basis. This plan shall be available in the well site. All personnel will be required to carry the documentation proving that the H2S training has been taken.

Service company and visiting personnel

A. Each service company that will be on this well will be notified if the zone contains H2S.

B. Each service company must provide for the training and equipment of their employees before they arrive at the well site.

C. Each service company will be expected to attend a well site briefing

Emergency Equipment Requirements

1. Well control equipment

The well shall have hydraulic BOP equipment for the anticipated pressures. Equipment is to be tested on installation and follow Oxy Well Control standard, as well as BLM Onshore Order #2.

Special control equipment:

A. Hydraulic BOP equipment with remote control on ground. Remotely operated choke.
B. Rotating head
C. Gas buster equipment shall be installed before drilling out of surface pipe.

2. Protective equipment for personnel

A. Four (4) 30-minute positive pressure air packs (2 at each briefing area) on location.

B. Adequate fire extinguishers shall be located at strategic locations.

C. Radio / cell telephone communication will be available at the rig.

- Rig floor and trailers.
- Vehicle.

3. Hydrogen sulfide sensors and alarms

A. H2S sensor with alarms will be located on the rig floor, at the bell nipple, and at the flow line. These monitors will be set to alarm at 10 ppm with strobe light, and audible alarm.
B. Hand operated detectors with tubes.
C. H2S monitor tester (to be provided by contract Safety Company.)
D. There shall be one combustible gas detector on location at all times.

4. Visual Warning Systems

A. One sign located at each location entrance with the following language:

Caution – potential poison gas
Hydrogen sulfide
No admittance without authorization

Wind sock – wind streamers:

A. One 36" (in length) wind sock located at protection center, at height visible from rig floor.
B. One 36" (in length) wind sock located at height visible from pit areas.

Condition flags

A. One each condition flag to be displayed to denote conditions.

green – normal conditions
yellow – potential danger
red – danger, H2S present

B. Condition flag shall be posted at each location sign entrance.

5. Mud Program

The mud program is designed to minimize the risk of having H2S and other formation fluids at surface. Proper mud weight and safe drilling practices will be applied. H2S scavengers will be used to minimize the hazards while drilling. Below is a summary of the drilling program.

Mud inspection devices:

Garrett gas train or hatch tester for inspection of sulfide concentration in mud system.

6. Metallurgy

A. Drill string, casing, tubing, wellhead, blowout preventers, drilling spools or adapters, kill lines, choke manifold, lines and valves shall be suitable for the H2S service.
B. All the elastomers, packing, seals and ring gaskets shall be suitable for H2S service.

7. Well Testing

No drill stem test will be performed on this well.

8. Evacuation plan

Evacuation routes should be established prior to well spud for each well and discussed with all rig personnel.

9. Designated area

A. Parking and visitor area: all vehicles are to be parked at a predetermined safe distance from the wellhead.
B. There will be a designated smoking area.
C. Two briefing areas on either side of the location at the maximum allowable distance from the well bore so they offset prevailing winds perpendicularly, or at a 45-degree angle if wind direction tends to shift in the area.

Emergency procedures

A. In the event of any evidence of H2S level above 10 ppm, take the following steps:

1. The Driller will pick up off bottom, shut down the pumps, slow down the pipe rotation.

2. Secure and don escape breathing equipment, report to the upwind designated safe briefing / muster area.

3. All personnel on location will be accounted for and emergency search should begin for any missing, the Buddy System will be implemented.

4. Order non-essential personnel to leave the well site, order all essential personnel out of the danger zone and upwind to the nearest designated safe briefing / muster area.

5. Entrance to the location will be secured to a higher level than our usual "Meet and Greet" requirement, and the proper condition flag will be displayed at the entrance to the location.

6. Take steps to determine if the H2S level can be corrected or suppressed and, if so, proceed as required.

B. If uncontrollable conditions occur:

1. Take steps to protect and/or remove any public in the down-wind area from the rig – partial evacuation and isolation. Notify necessary public safety personnel and appropriate regulatory entities (i.e. BLM) of the situation.

2. Remove all personnel to the nearest upwind designated safe briefing / muster area or off location.

3. Notify public safety personnel of safe briefing / muster area.

4. An assigned crew member will blockade the entrance to the location. No unauthorized personnel will be allowed entry to the location.

5. Proceed with best plan (at the time) to regain control of the well. Maintain tight security and safety procedures.

C. Responsibility:

1. Designated personnel.

a. Shall be responsible for the total implementation of this plan.
b. Shall be in complete command during any emergency.
c. Shall designate a back-up.

All personnel:

1. On alarm, don escape unit and report to the nearest upwind designated safe briefing / muster area upw
2. Check status of personnel (buddy system).
3. Secure breathing equipment.
4. Await orders from supervisor.

Drill site manager:

1. Don escape unit if necessary and report to nearest upwind designated safe briefing / muster area.
2. Coordinate preparations of individuals to return to point of release with tool pusher and driller (using the buddy system).
3. Determine H2S concentrations.
4. Assess situation and take control measures.

Tool pusher:

1. Don escape unit Report to up nearest upwind designated safe briefing / muster area.
2. Coordinate preparation of individuals to return to point of release with tool pusher drill site manager (using the buddy system).
3. Determine H2S concentration.
4. Assess situation and take control measures.

Driller:

1. Don escape unit, shut down pumps, continue

		rotating DP.
	2.	Check monitor for point of release.
	3.	Report to nearest upwind designated safe briefing / muster area.
	4.	Check status of personnel (in an attempt to rescue, use the buddy system).
	5.	Assigns least essential person to notify Drill Site Manager and tool pusher by quickest means in case of their absence.
	6.	Assumes the responsibilities of the Drill Site Manager and tool pusher until they arrive should they be absent.
Derrick man Floor man #1 Floor man #2	1.	Will remain in briefing / muster area until instructed by supervisor.
Mud engineer:	1.	Report to nearest upwind designated safe briefing / muster area.
	2.	When instructed, begin check of mud for ph and H2S level. (Garett gas train.)
Safety personnel:	1.	Mask up and check status of all personnel and secure operations as instructed by drill site manager.

Taking a kick

When taking a kick during an H2S emergency, all personnel will follow standard Well control procedures after reporting to briefing area and masking up.

Open-hole logging

All unnecessary personnel off floor. Drill Site Manager and safety personnel should monitor condition, advise status and determine need for use of air equipment.

Running casing or plugging

Following the same "tripping" procedure as above. Drill Site Manager and safety personnel should determine if all personnel have access to protective equipment.

Ignition procedures

The decision to ignite the well is the responsibility of the operator (Oxy Drilling Management). The decision should be made only as a last resort and in a situation where it is clear that:

1. Human life and property are endangered.
2. There is no hope controlling the blowout under the prevailing conditions at the well.

Instructions for igniting the well

1. Two people are required for the actual igniting operation. They must wear self-contained breathing units and have a safety rope attached. One man (tool pusher or safety engineer) will check the atmosphere for explosive gases with the gas monitor. The other man is responsible for igniting the well.
2. Primary method to ignite: 25 mm flare gun with range of approximately 500 feet.
3. Ignite upwind and do not approach any closer than is warranted.
4. Select the ignition site best for protection, and which offers an easy escape route.
5. Before firing, check for presence of combustible gas.
6. After lighting, continue emergency action and procedure as before.
7. All unassigned personnel will remain in briefing area until instructed by supervisor or directed by the Drill Site Manager.

Remember: After well is ignited, burning hydrogen sulfide will convert to sulfur dioxide, which is also highly toxic. **Do not assume the area is safe after the well is ignited.**

Status check list

Note: All items on this list must be completed before drilling to production casing point.

1. H2S sign at location entrance.
2. Two (2) wind socks located as required.
3. Four (4) 30-minute positive pressure air packs (2 at each Briefing area) on location for all rig personnel and mud loggers.
4. Air packs inspected and ready for use.
5. Cascade system and hose line hook-up as needed.
6. Cascade system for refilling air bottles as needed.
7. Condition flag on location and ready for use.
8. H2S detection system hooked up and tested.
9. H2S alarm system hooked up and tested.
10. Hand operated H2S detector with tubes on location.
11. 1 – 100' length of nylon rope on location.
12. All rig crew and supervisors trained as required.
13. All outside service contractors advised of potential H2S hazard on well.
14. No smoking sign posted and a designated smoking area identified.
15. Calibration of all H2S equipment shall be noted on the IADC report.

Checked by:_____ Date:_____

Procedural check list during H2S events

Perform each tour:

1. Check fire extinguishers to see that they have the proper charge.

2. Check breathing equipment to ensure that it in proper working order.

3. Make sure all the H2S detection system is operative.

Perform each week:

1. Check each piece of breathing equipment to make sure that demand or forced air regulator is working. This requires that the bottle be opened and the mask assembly be put on tight enough so that when you inhale, you receive air or feel air flow.

2. BOP skills (well control drills).

3. Check supply pressure on BOP accumulator stand by source.

4. Check breathing equipment mask assembly to see that straps are loosened and turned back, ready to put on.

5. Check pressure on breathing equipment air bottles to make sure they are charged to full volume. (Air quality checked for proper air grade "D" before bringing to location)

6. Confirm pressure on all supply air bottles.

7. Perform breathing equipment drills with on-site personnel.

8. Check the following supplies for availability.

   A. Emergency telephone list.
   B. Hand operated H2S detectors and tubes.

General evacuation plan

1. When the company approved supervisor (Drill Site Manager, consultant, rig pusher, or driller) determines the H2S gas cannot be limited to the well location and the public will be involved, he will activate the evacuation plan.

2. Drill Site Manager or designee will notify local government agency that a hazardous condition exists and evacuation needs to be implemented.

3. Company or contractor safety personnel that have been trained in the use of H2S detection equipment and self-contained breathing equipment will monitor H2S concentrations, wind directions, and area of exposure. They will delineate the outer perimeter of the hazardous gas area. Extension to the evacuation area will be determined from information gathered.

4. Law enforcement personnel (state police, police dept., fire dept., and sheriff's dept.) Will be called to aid in setting up and maintaining road blocks. Also, they will aid in evacuation of the public if necessary.

5. After the discharge of gas has been controlled, company safety personnel will determine when the area is safe for re-entry.

Important: Law enforcement personnel will not be asked to come into a contaminated area. Their assistance will be limited to uncontaminated areas. Constant radio contact will be maintained with them.

Medical Facilities					
Abernathy Medical Clinic	Abernathy, TX	(806) 298-2524			
Alliance Hospital	Odessa, TX	(432) 550-1000			
Artesia General Hospital	Artesia, NM	(505) 748-3333			
Brownfield Regional Medical Center	Brownfield, TX	(806) 637-3551			
Cogdell Memorial Hospital	Snyder, TX	(325) 573-6374			
Covenant Hospital Levelland	Levelland, TX	(806) 894-4963			
Covenant Medical Center	Lubbock, TX	(806) 725-1011			
Covenant Medical Center Lakeside	Lubbock, TX	(806) 725-6000			
Covenant Family Health	Synder, TX	(325) 573-1300			
Crockett County Hospital	Ozona, TX	(325) 392-2671			
Guadalupe Medical Center	Carlsbad, NM	(505) 887-6633			
Lea Regional Hospital	Hobbs, NM	(505) 492-5000			
McCamey Hospital	McCamey, TX	(432) 652-8626			
Medical Arts Hospital	Lamesa, TX	(806) 872-2183			
Medical Center Hospital	Odessa, TX	(432) 640-4000			
Medi Center Hospital	San Angelo, TX	(325) 653-6741			
Memorial Hospital	Ft. Stockton	(432) 336-2241			
Memorial Hospital	Seminole, TX	(432) 758-5811			
Midland Memorial Hospital	Midland, TX	(432) 685-1111			
Nor-Lea General Hospital	Lovington, NM	(505) 396-6611			
Odessa Regional Hospital	Odessa, TX	(432) 334-8200			
Permian General Hospital	Andrews, TX	(432) 523-2200			
Reagan County Hospital	Big Lake, TX	(325) 884-2561			
Reeves County Hospital	Pecos, TX	(432) 447-3551			
Shannon Medical Center	San Angelo, TX	(325) 653-6741			
Union County General Hospital	Clayton, NM	(505) 374-2585			
University Medical Center	Lubbock, TX	(806) 725-8200			
Val Verde Regional Medical Center	Del Rio, TX	(830) 775-8566			
Ward Memorial Hospital	Monahans, TX	(432) 943-2511			
Yoakum County Hospital	Denver City, TX	(806) 592-5484			
Law Enforcement - Sheriff					
Andrews Cty Sheriff's Department	Andrews County(Andrews)	(432) 523-5545			
Crane Cty Sheriff's Department	Crane, County (Crane)	(432) 558-3571			
Crockett Cty Sheriff's Department	Crockett County (Ozona)	(325) 392-2661			
Dawson Cty Sheriff's Department	Dawson County (Lamesa)	(806) 872-7560			
Ector Cty Sheriff's Department	Ector County (Odessa)	(432) 335-3050			
Eddy Cty Sheriff's Department	Eddy County (Artesia)	(505) 746-2704			
Eddy Cty Sheriff's Department	Eddy County (Carlsbad)	(505) 887-7551			
Gaines Cty Sheriff's Department	Gaines County (Seminole)	(432) 758-9871			
Hockley Cty Sheriff's Department	Hockley County(Levelland)	(806) 894-3126			
Kent Cty (Jayton City Sheriff's Dept.)	Kent County(Jayton)	(806) 237-3801			
Lea Cty Sheriff's Department	Lea County (Eunice)	(505) 384-2020			
Lea Cty Sheriff's Department	Lea County (Hobbs)	(505) 393-2515			
Lea Cty Sheriff's Department	Lea County (Lovington)	(505) 396-3611			
Lubbock Cty Sheriff's Department	Lubbock Cty (Abernathy)	(806) 296-2724			
Midland Cty Sheriff's Department	Midland County (Midland)	(432) 688-1277			
Pecos Cty Sheriff's Department	Pecos County (Iraan)	(432) 639-2251			
Reeves Cty Sheriff's Department	Reeves County (Pecos)	(432) 445-4901			
Scurry Cty Sheriff's Department	Scurry County (Snyder)	(325) 573-3551			
Terry Cty Sheriff's Department	Terry County (Brownfield)	(806) 637-2212			
Union Cty Sheriff's Department	Union County (Clayton)	(505) 374-2583			
Upton Cty Sheriff's Department	Upton County (Rankin)	(432) 693-2422			
Ward Cty Sheriff's Department	Ward County (Monahans)	(432) 943-3254			
Yoakum City Sheriff's Department	Yoakum Co. (Denever City)	(806) 456-2377			

Law Enforcement - Police					
Abernathy City Police	Abernathy, TX	(806) 298-2545			
Andrews City Police	Andrews, TX	(432) 523-5675			
Artesia City Police	Artesia, NM	(505) 746-2704			
Brownfield City Police	Brownfield, TX	(806) 637-2544			
Carlsbad City Police	Carlsbad, NM	(505) 885-2111			
Clayton City Police	Clayton, NM	(505) 374-2504			
Denver City Police	Denver City, TX	(806) 592-3516			
Eunice City Police	Eunice, NM	(505) 394-2112			
Hobbs City Police	Hobbs, NM	(505) 397-9265 (505) 393-2677			
Jal City Police	Jal, NM	(505) 395-2501			
Jayton City Police	Jayton, TX	(806) 237-3801			
Lamesa City Police	Lamesa, TX	(806) 872-2121			
Levelland City Police	Levelland, TX	(806) 894-6164			
Lovington City Police	Lovington, NM	(505) 396-2811			
Midland City Police	Midland, TX	(432) 685-7113			
Monahans City Police	Monahans, TX	(432) 943-3254			
Odessa City Police	Odessa, TX	(432) 335-3378			
Seminole City Police	Seminole, TX	(432) 758-9871			
Snyder City Police	Snyder, TX	(325) 573-2611			
Sundown City Police	Sundown, TX	(806) 229-8241			
Law Enforcement - FBI					
FBI	Alburqueque, NM	(505) 224-2000			
FBI	Midland, TX	(432) 570-0255			
Law Enforcement - DPS					
NM State Police	Artesia, NM	(505) 746-2704			
NM State Police	Carlsbad, NM	(505) 885-3137			
NM State Police	Eunice, NM	(505) 392-5588			
NM State Police	Hobbs, NM	(505) 392-5588			
NM State Police	Clayton, NM	(505) 374-2473; 911			
TX Dept of Public Safety	Andrews, TX	(432) 524-1443			
TX Dept of Public Safety	Big Lake, TX	(325) 884-2301			
TX Dept of Public Safety	Brownfield, TX	(806) 637-2312			
TX Dept of Public Safety	Iraan, TX	(432) 639-3232			
TX Dept of Public Safety	Lamesa, TX	(806) 872-8675			
TX Dept of Public Safety	Levelland, TX	(806) 894-4385			
TX Dept of Public Safety	Lubbock, TX	(806) 747-4491			
TX Dept of Public Safety	Midland, TX	(432) 697-2211			
TX Dept of Public Safety	Monahans, TX	(432) 943-5857			
TX Dept of Public Safety	Odessa, TX	(432) 332-6100			
TX Dept of Public Safety	Ozona, TX	(325) 392-2621			
TX Dept of Public Safety	Pecos, TX	(432) 447-3533			
TX Dept of Public Safety	Seminole, TX	(432) 758-4041			
TX Dept of Public Safety	Snyder, TX	(325) 573-0113			
TX Dept of Public Safety	Terry County TX	(806) 637-8913			
TX Dept of Public Safety	Yoakum County TX	(806) 456-2377			

Firefighting & Rescue					
Abernathy	Abernathy, TX	(806) 298-2022			
Amistad/Rosebud	Amistad/Rosebud, NM	(505) 633-9113			
Andrews	Andrews, TX	(432) 523-4820 (432) 523-3111			
Artesia	Artesia, NM	(505) 746-5051			
Big Lake	Big Lake, TX	(325) 884-3650			
Brownfield-Administrative & other calls	Brownfield, TX	(816) 637-4547			
Brownfield emergency only	Brownfield, TX	911			
Carlsbad	Carlsbad, NM	(505) 885-3125			
Clayton	Clayton, NM	(505) 374-2435			
Cotton Center	Cotton Center, TX	(806) 879-2157			
Crane	Crane, TX	(432) 558-2361			
Del Rio	Del Rio, TX	(830) 774-8650			
Denver City	Denver City, TX	(806) 592-3516			
Eldorado	Eldorado, TX	(325) 853-2691			
Eunice	Eunice, NM	(505) 394-2111			
Garden City	Garden City, TX	(432) 354-2404			
Goldsmith	Goldsmith, TX	(432) 827-3445			
Hale Center	Hale Center, TX	(806) 839-2411			
Halfway	Halfway, TX				
Hobbs	Hobbs, NM	(505) 397-9308			
Jal	Jal, NM	(505) 395-2221			
Jayton	Jayton, TX	(806) 237-3801			
Kermit	Kermit, TX	(432) 586-3468			
Lamesa	Lamesa, TX	(806) 872-4352			
Levelland	Levelland, TX	(806) 894-3154			
Lovington	Lovington, NM	(505) 396-2359			
Maljamar	Maljamar, NM	(505) 676-4100			
McCamey	McCamey, TX	(432) 652-8232			
Midland	Midland, TX	(432) 685-7346			
Monahans	Monahans, TX	(432) 943-4343			
Nara Visa	Nara Visa, NM	(505) 461-3300			
Notrees	Notress, TX	(432) 827-3445			
Odessa	Odessa, TX	(432) 335-4659			
Ozona	Ozona, TX	(325) 392-2626			
Pecos	Pecos, TX	(432) 445-2421			
Petersburg	Petersburg, TX	(806) 667-3461			
Plains	Plains, TX	(806) 456-8067			
Plainview	Plainview, TX	(806) 296-1170			
Rankin	Rankin, TX	(432) 693-2252			
San Angelo	San Angelo, TX	(325) 657-4355			
Sanderson	Sanderson, TX	(432) 345-2525			
Seminole	Seminole, TX	(432) 758-3676 (432) 758-9871			
Smyer	Smyer, TX	(806) 234-3861			
Snyder	Snyder, TX	(325) 573-6215			
Sundown	Sundown, TX	911			
Tucumcari	Tucumcari, NM	911			
West Odessa	Odessa, TX	(432) 381-3033			

Ambulance					
Abernathy Ambulance	Abernathy, TX	(806) 298-2241			
Amistad/Rosebud	Amistad/Rosebud, NM	(505) 633-9113			
Andrews Ambulance	Andrews, TX	(432) 523-5675			
Artesia Ambulance	Artesia, NM	(505) 746-2701			
Big Lake Ambulance	Big Lake, TX	(325) 884-2423			
Big Spring Ambulance	Big Spring, TX	(432) 264-2550			
Brownfield Ambulance	Brownfield, TX	(806) 637-2511			
Carlsbad Ambulance	Carlsbad, NM	(505) 885-2111; 911			
Clayton, NM	Clayton, NM	(505) 374-2501			
Denver City Ambulance	Denver City, TX	(806) 592-3516			
Eldorado Ambulance	Eldorado, TX	(325) 853-3456			
Eunice Ambulance	Eunice, NM	(505) 394-3258			
Goldsmith Ambulance	Goldsmith, TX	(432) 827-3445			
Hobbs, NM	Hobbs, NM	(505) 397-9308			
Jal, NM	Jal, NM	(505) 395-2501			
Jayton Ambulance	Jayton, TX	(806) 237-3801			
Lamesa Ambulance	Lamesa, TX	(806) 872-3464			
Levelland Ambulance	Levelland, TX	(806) 894-8855			
Lovington Ambulance	Lovington, NM	(505) 396-2811			
McCamey Hospital	McCamey, TX	(432) 652-8626			
Midland Ambulance	Midland, TX	(432) 685-7499			
Monahans Ambulance	Monahans, TX	(432) 943-3385 or 3731			
Nara Visa, NM	Nara Visa, NM	(505) 461-3300			
Odessa Ambulance	Odessa, TX	(432) 335-3378			
Ozona Ambulance	Ozona, TX	(325) 392-2671			
Pecos Ambulance	Pecos, TX	(432) 445-4444			
Rankin Ambulance	Rankin, TX	(432) 693-2443			
San Angelo Ambulance	San Angelo, TX	(325) 657-4357			
Seminole Ambulance	Seminole, TX	(432) 758-8816 (432) 758-9871			
Snyder Ambulance	Snyder, TX	(325) 573-1911			
Stanton Ambulance	Stanton, TX	(432) 756-2211			
Sundown Ambulance	Sundown, TX	911			
Tucumcari, NM	Tucumcari, NM	911			
Medical Air Ambulance Service					
AEROCARE - Methodist Hospital	Lubbock, TX	(800) 627-2376			
San Angelo Med-Vac Air Ambulance	San Angelo, TX	(800) 277-4354			
Southwest Air Ambulance Service	Stanford, TX	(800) 242-6199			
Southwest MediVac	Snyder, TX	(800) 242-6199			
Southwest MediVac	Hobbs, NM	(800) 242-6199			
Odessa Care Star	Odessa, TX	(888) 624-3571			
NWTH Medivac	Amarillo, TX	(800) 692-1331			

OXY

PRD NM DIRECTIONAL PLANS (NAD 1983)
Precious 30_18
Precious 30_18 Federal Com 7H

WB00

Plan: Permitting Plan

Standard Planning Report

22 August, 2019

Oxy Inc.

Planning Report

Database:	HOPSPP	**Local Co-ordinate Reference:**	Well Precious 30_18 Federal Com 7H
Company:	ENGINEERING DESIGNS	**TVD Reference:**	RKB=26.5' @ 3374.40ft
Project:	PRD NM DIRECTIONAL PLANS (NAD 1983)	**MD Reference:**	RKB=26.5' @ 3374.40ft
Site:	Precious 30_18	**North Reference:**	Grid
Well:	Precious 30_18 Federal Com 7H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	WB00		
Design:	Permitting Plan		

Project PRD NM DIRECTIONAL PLANS (NAD 1983)

Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		Using geodetic scale factor

Site Precious 30_18

Site Position:		**Northing:**	461,098.38 usft	**Latitude:**	32° 15' 59.784416 N
From:	Map	**Easting:**	698,809.83 usft	**Longitude:**	103° 49' 25.902124 W
Position Uncertainty:	0.00 ft	**Slot Radius:**	13.200 in	**Grid Convergence:**	0.27 °

Well Precious 30_18 Federal Com 7H

Well Position	**+N/-S**	0.32 ft	**Northing:**	461,098.70 usft	**Latitude:**	32° 15' 59.784295 N
	+E/-W	69.97 ft	**Easting:**	698,879.80 usft	**Longitude:**	103° 49' 25.087185 W
Position Uncertainty		2.00 ft	**Wellhead Elevation:**	0.00 ft	**Ground Level:**	3,347.90 ft

Wellbore WB00

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM_FILE	11/12/2018	6.88	60.00	48,011.10000000

Design Permitting Plan

Audit Notes:

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

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	358.54

Plan Survey Tool Program Date 8/22/2019

	Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	23,344.48	Permitting Plan (WB00)	B001Mb_MWD+HRGM	
				OWSG MWD + HRGM	

Plan Sections

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,175.00	0.00	0.00	5,175.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,674.84	10.00	85.54	5,672.31	3.38	43.36	2.00	2.00	0.00	85.54	
8,779.03	10.00	85.54	8,729.37	45.25	580.60	0.00	0.00	0.00	0.00	
9,457.76	10.00	359.75	9,400.94	109.06	639.35	2.00	0.00	-12.64	-132.45	
10,258.20	90.04	359.75	9,874.40	673.74	636.84	10.00	10.00	0.00	0.00	FTP (Precious
23,344.48	90.04	359.75	9,864.40	13,759.89	578.74	0.00	0.00	0.00	0.00	PBHL (Precious

Database:	HOPSPP	**Local Co-ordinate Reference:**	Well Precious 30_18 Federal Com 7H
Company:	ENGINEERING DESIGNS	**TVD Reference:**	RKB=26.5' @ 3374.40ft
Project:	PRD NM DIRECTIONAL PLANS (NAD 1983)	**MD Reference:**	RKB=26.5' @ 3374.40ft
Site:	Precious 30_18	**North Reference:**	Grid
Well:	Precious 30_18 Federal Com 7H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	WB00		
Design:	Permitting Plan		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00
4,600.00	0.00	0.00	4,600.00	0.00	0.00	0.00	0.00	0.00	0.00
4,700.00	0.00	0.00	4,700.00	0.00	0.00	0.00	0.00	0.00	0.00
4,800.00	0.00	0.00	4,800.00	0.00	0.00	0.00	0.00	0.00	0.00
4,900.00	0.00	0.00	4,900.00	0.00	0.00	0.00	0.00	0.00	0.00
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00
5,100.00	0.00	0.00	5,100.00	0.00	0.00	0.00	0.00	0.00	0.00
5,175.00	0.00	0.00	5,175.00	0.00	0.00	0.00	0.00	0.00	0.00
5,200.00	0.50	85.54	5,200.00	0.01	0.11	0.01	2.00	2.00	0.00

Database:	HOPSPP	**Local Co-ordinate Reference:**	Well Precious 30_18 Federal Com 7H
Company:	ENGINEERING DESIGNS	**TVD Reference:**	RKB=26.5' @ 3374.40ft
Project:	PRD NM DIRECTIONAL PLANS (NAD 1983)	**MD Reference:**	RKB=26.5' @ 3374.40ft
Site:	Precious 30_18	**North Reference:**	Grid
Well:	Precious 30_18 Federal Com 7H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	WB00		
Design:	Permitting Plan		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
5,300.00	2.50	85.54	5,299.96	0.21	2.72	0.14	2.00	2.00	0.00
5,400.00	4.50	85.54	5,399.77	0.69	8.80	0.46	2.00	2.00	0.00
5,500.00	6.50	85.54	5,499.30	1.43	18.36	0.96	2.00	2.00	0.00
5,600.00	8.50	85.54	5,598.44	2.45	31.37	1.65	2.00	2.00	0.00
5,674.84	10.00	85.54	5,672.31	3.38	43.36	2.28	2.00	2.00	0.00
5,700.00	10.00	85.54	5,697.09	3.72	47.72	2.50	0.00	0.00	0.00
5,800.00	10.00	85.54	5,795.57	5.07	65.02	3.41	0.00	0.00	0.00
5,900.00	10.00	85.54	5,894.05	6.42	82.33	4.32	0.00	0.00	0.00
6,000.00	10.00	85.54	5,992.53	7.77	99.64	5.23	0.00	0.00	0.00
6,100.00	10.00	85.54	6,091.01	9.11	116.95	6.14	0.00	0.00	0.00
6,200.00	10.00	85.54	6,189.49	10.46	134.25	7.04	0.00	0.00	0.00
6,300.00	10.00	85.54	6,287.98	11.81	151.56	7.95	0.00	0.00	0.00
6,400.00	10.00	85.54	6,386.46	13.16	168.87	8.86	0.00	0.00	0.00
6,500.00	10.00	85.54	6,484.94	14.51	186.17	9.77	0.00	0.00	0.00
6,600.00	10.00	85.54	6,583.42	15.86	203.48	10.68	0.00	0.00	0.00
6,700.00	10.00	85.54	6,681.90	17.21	220.79	11.58	0.00	0.00	0.00
6,800.00	10.00	85.54	6,780.39	18.56	238.09	12.49	0.00	0.00	0.00
6,900.00	10.00	85.54	6,878.87	19.91	255.40	13.40	0.00	0.00	0.00
7,000.00	10.00	85.54	6,977.35	21.25	272.71	14.31	0.00	0.00	0.00
7,100.00	10.00	85.54	7,075.83	22.60	290.01	15.22	0.00	0.00	0.00
7,200.00	10.00	85.54	7,174.31	23.95	307.32	16.12	0.00	0.00	0.00
7,300.00	10.00	85.54	7,272.79	25.30	324.63	17.03	0.00	0.00	0.00
7,400.00	10.00	85.54	7,371.28	26.65	341.93	17.94	0.00	0.00	0.00
7,500.00	10.00	85.54	7,469.76	28.00	359.24	18.85	0.00	0.00	0.00
7,600.00	10.00	85.54	7,568.24	29.35	376.55	19.76	0.00	0.00	0.00
7,700.00	10.00	85.54	7,666.72	30.70	393.85	20.67	0.00	0.00	0.00
7,800.00	10.00	85.54	7,765.20	32.05	411.16	21.57	0.00	0.00	0.00
7,900.00	10.00	85.54	7,863.68	33.39	428.47	22.48	0.00	0.00	0.00
8,000.00	10.00	85.54	7,962.17	34.74	445.78	23.39	0.00	0.00	0.00
8,100.00	10.00	85.54	8,060.65	36.09	463.08	24.30	0.00	0.00	0.00
8,200.00	10.00	85.54	8,159.13	37.44	480.39	25.21	0.00	0.00	0.00
8,300.00	10.00	85.54	8,257.61	38.79	497.70	26.11	0.00	0.00	0.00
8,400.00	10.00	85.54	8,356.09	40.14	515.00	27.02	0.00	0.00	0.00
8,500.00	10.00	85.54	8,454.57	41.49	532.31	27.93	0.00	0.00	0.00
8,600.00	10.00	85.54	8,553.06	42.84	549.62	28.84	0.00	0.00	0.00
8,700.00	10.00	85.54	8,651.54	44.19	566.92	29.75	0.00	0.00	0.00
8,779.03	10.00	85.54	8,729.37	45.25	580.60	30.46	0.00	0.00	0.00
8,800.00	9.72	83.71	8,750.03	45.59	584.17	30.71	2.00	-1.33	-8.74
8,900.00	8.55	73.45	8,848.77	48.63	599.69	33.36	2.00	-1.17	-10.26
9,000.00	7.73	60.53	8,947.77	54.06	612.67	38.45	2.00	-0.82	-12.92
9,100.00	7.37	45.51	9,046.91	61.86	623.10	45.98	2.00	-0.36	-15.02
9,200.00	7.54	30.10	9,146.07	72.03	630.96	55.95	2.00	0.17	-15.41
9,300.00	8.20	16.28	9,245.14	84.55	636.25	68.33	2.00	0.67	-13.82
9,400.00	9.26	5.05	9,343.99	99.41	638.96	83.12	2.00	1.06	-11.23
9,457.76	10.00	359.75	9,400.94	109.06	639.35	92.75	2.00	1.28	-9.18
9,500.00	14.22	359.75	9,442.22	117.92	639.31	101.61	10.00	10.00	0.00
9,600.00	24.22	359.75	9,536.53	150.80	639.16	134.49	10.00	10.00	0.00
9,700.00	34.22	359.75	9,623.69	199.56	638.95	183.24	10.00	10.00	0.00
9,800.00	44.22	359.75	9,701.06	262.72	638.67	246.38	10.00	10.00	0.00
9,900.00	54.22	359.75	9,766.29	338.35	638.33	322.00	10.00	10.00	0.00
10,000.00	64.22	359.75	9,817.39	424.15	637.95	407.78	10.00	10.00	0.00
10,100.00	74.22	359.75	9,852.82	517.53	637.54	501.14	10.00	10.00	0.00
10,200.00	84.22	359.75	9,871.49	615.64	637.10	599.23	10.00	10.00	0.00
10,258.20	90.04	359.75	9,874.40	673.74	636.84	657.32	10.00	10.00	0.00

Database:	HOPSPP	**Local Co-ordinate Reference:**	Well Precious 30_18 Federal Com 7H
Company:	ENGINEERING DESIGNS	**TVD Reference:**	RKB=26.5' @ 3374.40ft
Project:	PRD NM DIRECTIONAL PLANS (NAD 1983)	**MD Reference:**	RKB=26.5' @ 3374.40ft
Site:	Precious 30_18	**North Reference:**	Grid
Well:	Precious 30_18 Federal Com 7H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	WB00		
Design:	Permitting Plan		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
10,300.00	90.04	359.75	9,874.37	715.54	636.66	699.11	0.00	0.00	0.00
10,400.00	90.04	359.75	9,874.29	815.54	636.21	799.09	0.00	0.00	0.00
10,500.00	90.04	359.75	9,874.22	915.54	635.77	899.07	0.00	0.00	0.00
10,600.00	90.04	359.75	9,874.14	1,015.54	635.32	999.05	0.00	0.00	0.00
10,700.00	90.04	359.75	9,874.06	1,115.54	634.88	1,099.02	0.00	0.00	0.00
10,800.00	90.04	359.75	9,873.99	1,215.54	634.44	1,199.00	0.00	0.00	0.00
10,900.00	90.04	359.75	9,873.91	1,315.54	633.99	1,298.98	0.00	0.00	0.00
11,000.00	90.04	359.75	9,873.83	1,415.54	633.55	1,398.96	0.00	0.00	0.00
11,100.00	90.04	359.75	9,873.76	1,515.54	633.10	1,498.94	0.00	0.00	0.00
11,200.00	90.04	359.75	9,873.68	1,615.53	632.66	1,598.91	0.00	0.00	0.00
11,300.00	90.04	359.75	9,873.60	1,715.53	632.22	1,698.89	0.00	0.00	0.00
11,400.00	90.04	359.75	9,873.53	1,815.53	631.77	1,798.87	0.00	0.00	0.00
11,500.00	90.04	359.75	9,873.45	1,915.53	631.33	1,898.85	0.00	0.00	0.00
11,600.00	90.04	359.75	9,873.37	2,015.53	630.88	1,998.83	0.00	0.00	0.00
11,700.00	90.04	359.75	9,873.30	2,115.53	630.44	2,098.80	0.00	0.00	0.00
11,800.00	90.04	359.75	9,873.22	2,215.53	630.00	2,198.78	0.00	0.00	0.00
11,900.00	90.04	359.75	9,873.15	2,315.53	629.55	2,298.76	0.00	0.00	0.00
12,000.00	90.04	359.75	9,873.07	2,415.53	629.11	2,398.74	0.00	0.00	0.00
12,100.00	90.04	359.75	9,872.99	2,515.53	628.66	2,498.72	0.00	0.00	0.00
12,200.00	90.04	359.75	9,872.92	2,615.52	628.22	2,598.69	0.00	0.00	0.00
12,300.00	90.04	359.75	9,872.84	2,715.52	627.78	2,698.67	0.00	0.00	0.00
12,400.00	90.04	359.75	9,872.76	2,815.52	627.33	2,798.65	0.00	0.00	0.00
12,500.00	90.04	359.75	9,872.69	2,915.52	626.89	2,898.63	0.00	0.00	0.00
12,600.00	90.04	359.75	9,872.61	3,015.52	626.44	2,998.60	0.00	0.00	0.00
12,700.00	90.04	359.75	9,872.53	3,115.52	626.00	3,098.58	0.00	0.00	0.00
12,800.00	90.04	359.75	9,872.46	3,215.52	625.56	3,198.56	0.00	0.00	0.00
12,900.00	90.04	359.75	9,872.38	3,315.52	625.11	3,298.54	0.00	0.00	0.00
13,000.00	90.04	359.75	9,872.31	3,415.52	624.67	3,398.52	0.00	0.00	0.00
13,100.00	90.04	359.75	9,872.23	3,515.52	624.22	3,498.49	0.00	0.00	0.00
13,200.00	90.04	359.75	9,872.15	3,615.51	623.78	3,598.47	0.00	0.00	0.00
13,300.00	90.04	359.75	9,872.08	3,715.51	623.34	3,698.45	0.00	0.00	0.00
13,400.00	90.04	359.75	9,872.00	3,815.51	622.89	3,798.43	0.00	0.00	0.00
13,500.00	90.04	359.75	9,871.92	3,915.51	622.45	3,898.41	0.00	0.00	0.00
13,600.00	90.04	359.75	9,871.85	4,015.51	622.00	3,998.38	0.00	0.00	0.00
13,700.00	90.04	359.75	9,871.77	4,115.51	621.56	4,098.36	0.00	0.00	0.00
13,800.00	90.04	359.75	9,871.69	4,215.51	621.12	4,198.34	0.00	0.00	0.00
13,900.00	90.04	359.75	9,871.62	4,315.51	620.67	4,298.32	0.00	0.00	0.00
14,000.00	90.04	359.75	9,871.54	4,415.51	620.23	4,398.30	0.00	0.00	0.00
14,100.00	90.04	359.75	9,871.46	4,515.51	619.78	4,498.27	0.00	0.00	0.00
14,200.00	90.04	359.75	9,871.39	4,615.50	619.34	4,598.25	0.00	0.00	0.00
14,300.00	90.04	359.75	9,871.31	4,715.50	618.90	4,698.23	0.00	0.00	0.00
14,400.00	90.04	359.75	9,871.24	4,815.50	618.45	4,798.21	0.00	0.00	0.00
14,500.00	90.04	359.75	9,871.16	4,915.50	618.01	4,898.19	0.00	0.00	0.00
14,600.00	90.04	359.75	9,871.08	5,015.50	617.56	4,998.16	0.00	0.00	0.00
14,700.00	90.04	359.75	9,871.01	5,115.50	617.12	5,098.14	0.00	0.00	0.00
14,800.00	90.04	359.75	9,870.93	5,215.50	616.68	5,198.12	0.00	0.00	0.00
14,900.00	90.04	359.75	9,870.85	5,315.50	616.23	5,298.10	0.00	0.00	0.00
15,000.00	90.04	359.75	9,870.78	5,415.50	615.79	5,398.07	0.00	0.00	0.00
15,100.00	90.04	359.75	9,870.70	5,515.50	615.34	5,498.05	0.00	0.00	0.00
15,200.00	90.04	359.75	9,870.62	5,615.49	614.90	5,598.03	0.00	0.00	0.00
15,300.00	90.04	359.75	9,870.55	5,715.49	614.46	5,698.01	0.00	0.00	0.00
15,400.00	90.04	359.75	9,870.47	5,815.49	614.01	5,797.99	0.00	0.00	0.00
15,500.00	90.04	359.75	9,870.39	5,915.49	613.57	5,897.96	0.00	0.00	0.00
15,600.00	90.04	359.75	9,870.32	6,015.49	613.12	5,997.94	0.00	0.00	0.00

Database:	HOPSPP	**Local Co-ordinate Reference:**	Well Precious 30_18 Federal Com 7H
Company:	ENGINEERING DESIGNS	**TVD Reference:**	RKB=26.5' @ 3374.40ft
Project:	PRD NM DIRECTIONAL PLANS (NAD 1983)	**MD Reference:**	RKB=26.5' @ 3374.40ft
Site:	Precious 30_18	**North Reference:**	Grid
Well:	Precious 30_18 Federal Com 7H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	WB00		
Design:	Permitting Plan		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
15,700.00	90.04	359.75	9,870.24	6,115.49	612.68	6,097.92	0.00	0.00	0.00
15,800.00	90.04	359.75	9,870.17	6,215.49	612.24	6,197.90	0.00	0.00	0.00
15,900.00	90.04	359.75	9,870.09	6,315.49	611.79	6,297.88	0.00	0.00	0.00
16,000.00	90.04	359.75	9,870.01	6,415.49	611.35	6,397.85	0.00	0.00	0.00
16,100.00	90.04	359.75	9,869.94	6,515.49	610.90	6,497.83	0.00	0.00	0.00
16,200.00	90.04	359.75	9,869.86	6,615.48	610.46	6,597.81	0.00	0.00	0.00
16,300.00	90.04	359.75	9,869.78	6,715.48	610.02	6,697.79	0.00	0.00	0.00
16,400.00	90.04	359.75	9,869.71	6,815.48	609.57	6,797.77	0.00	0.00	0.00
16,500.00	90.04	359.75	9,869.63	6,915.48	609.13	6,897.74	0.00	0.00	0.00
16,600.00	90.04	359.75	9,869.55	7,015.48	608.68	6,997.72	0.00	0.00	0.00
16,700.00	90.04	359.75	9,869.48	7,115.48	608.24	7,097.70	0.00	0.00	0.00
16,800.00	90.04	359.75	9,869.40	7,215.48	607.80	7,197.68	0.00	0.00	0.00
16,900.00	90.04	359.75	9,869.32	7,315.48	607.35	7,297.65	0.00	0.00	0.00
17,000.00	90.04	359.75	9,869.25	7,415.48	606.91	7,397.63	0.00	0.00	0.00
17,100.00	90.04	359.75	9,869.17	7,515.48	606.46	7,497.61	0.00	0.00	0.00
17,200.00	90.04	359.75	9,869.10	7,615.47	606.02	7,597.59	0.00	0.00	0.00
17,300.00	90.04	359.75	9,869.02	7,715.47	605.58	7,697.57	0.00	0.00	0.00
17,400.00	90.04	359.75	9,868.94	7,815.47	605.13	7,797.54	0.00	0.00	0.00
17,500.00	90.04	359.75	9,868.87	7,915.47	604.69	7,897.52	0.00	0.00	0.00
17,600.00	90.04	359.75	9,868.79	8,015.47	604.24	7,997.50	0.00	0.00	0.00
17,700.00	90.04	359.75	9,868.71	8,115.47	603.80	8,097.48	0.00	0.00	0.00
17,800.00	90.04	359.75	9,868.64	8,215.47	603.36	8,197.46	0.00	0.00	0.00
17,900.00	90.04	359.75	9,868.56	8,315.47	602.91	8,297.43	0.00	0.00	0.00
18,000.00	90.04	359.75	9,868.48	8,415.47	602.47	8,397.41	0.00	0.00	0.00
18,100.00	90.04	359.75	9,868.41	8,515.47	602.02	8,497.39	0.00	0.00	0.00
18,200.00	90.04	359.75	9,868.33	8,615.46	601.58	8,597.37	0.00	0.00	0.00
18,300.00	90.04	359.75	9,868.26	8,715.46	601.14	8,697.35	0.00	0.00	0.00
18,400.00	90.04	359.75	9,868.18	8,815.46	600.69	8,797.32	0.00	0.00	0.00
18,500.00	90.04	359.75	9,868.10	8,915.46	600.25	8,897.30	0.00	0.00	0.00
18,600.00	90.04	359.75	9,868.03	9,015.46	599.80	8,997.28	0.00	0.00	0.00
18,700.00	90.04	359.75	9,867.95	9,115.46	599.36	9,097.26	0.00	0.00	0.00
18,800.00	90.04	359.75	9,867.87	9,215.46	598.92	9,197.24	0.00	0.00	0.00
18,900.00	90.04	359.75	9,867.80	9,315.46	598.47	9,297.21	0.00	0.00	0.00
19,000.00	90.04	359.75	9,867.72	9,415.46	598.03	9,397.19	0.00	0.00	0.00
19,100.00	90.04	359.75	9,867.64	9,515.45	597.58	9,497.17	0.00	0.00	0.00
19,200.00	90.04	359.75	9,867.57	9,615.45	597.14	9,597.15	0.00	0.00	0.00
19,300.00	90.04	359.75	9,867.49	9,715.45	596.70	9,697.12	0.00	0.00	0.00
19,400.00	90.04	359.75	9,867.41	9,815.45	596.25	9,797.10	0.00	0.00	0.00
19,500.00	90.04	359.75	9,867.34	9,915.45	595.81	9,897.08	0.00	0.00	0.00
19,600.00	90.04	359.75	9,867.26	10,015.45	595.36	9,997.06	0.00	0.00	0.00
19,700.00	90.04	359.75	9,867.19	10,115.45	594.92	10,097.04	0.00	0.00	0.00
19,800.00	90.04	359.75	9,867.11	10,215.45	594.47	10,197.01	0.00	0.00	0.00
19,900.00	90.04	359.75	9,867.03	10,315.45	594.03	10,296.99	0.00	0.00	0.00
20,000.00	90.04	359.75	9,866.96	10,415.45	593.59	10,396.97	0.00	0.00	0.00
20,100.00	90.04	359.75	9,866.88	10,515.44	593.14	10,496.95	0.00	0.00	0.00
20,200.00	90.04	359.75	9,866.80	10,615.44	592.70	10,596.93	0.00	0.00	0.00
20,300.00	90.04	359.75	9,866.73	10,715.44	592.25	10,696.90	0.00	0.00	0.00
20,400.00	90.04	359.75	9,866.65	10,815.44	591.81	10,796.88	0.00	0.00	0.00
20,500.00	90.04	359.75	9,866.57	10,915.44	591.37	10,896.86	0.00	0.00	0.00
20,600.00	90.04	359.75	9,866.50	11,015.44	590.92	10,996.84	0.00	0.00	0.00
20,700.00	90.04	359.75	9,866.42	11,115.44	590.48	11,096.82	0.00	0.00	0.00
20,800.00	90.04	359.75	9,866.34	11,215.44	590.03	11,196.79	0.00	0.00	0.00
20,900.00	90.04	359.75	9,866.27	11,315.44	589.59	11,296.77	0.00	0.00	0.00
21,000.00	90.04	359.75	9,866.19	11,415.44	589.15	11,396.75	0.00	0.00	0.00

Database:	HOPSPP	**Local Co-ordinate Reference:**	Well Precious 30_18 Federal Com 7H
Company:	ENGINEERING DESIGNS	**TVD Reference:**	RKB=26.5' @ 3374.40ft
Project:	PRD NM DIRECTIONAL PLANS (NAD 1983)	**MD Reference:**	RKB=26.5' @ 3374.40ft
Site:	Precious 30_18	**North Reference:**	Grid
Well:	Precious 30_18 Federal Com 7H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	WB00		
Design:	Permitting Plan		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
21,100.00	90.04	359.75	9,866.12	11,515.43	588.70	11,496.73	0.00	0.00	0.00
21,200.00	90.04	359.75	9,866.04	11,615.43	588.26	11,596.71	0.00	0.00	0.00
21,300.00	90.04	359.75	9,865.96	11,715.43	587.81	11,696.68	0.00	0.00	0.00
21,400.00	90.04	359.75	9,865.89	11,815.43	587.37	11,796.66	0.00	0.00	0.00
21,500.00	90.04	359.75	9,865.81	11,915.43	586.93	11,896.64	0.00	0.00	0.00
21,600.00	90.04	359.75	9,865.73	12,015.43	586.48	11,996.62	0.00	0.00	0.00
21,700.00	90.04	359.75	9,865.66	12,115.43	586.04	12,096.59	0.00	0.00	0.00
21,800.00	90.04	359.75	9,865.58	12,215.43	585.59	12,196.57	0.00	0.00	0.00
21,900.00	90.04	359.75	9,865.50	12,315.43	585.15	12,296.55	0.00	0.00	0.00
22,000.00	90.04	359.75	9,865.43	12,415.43	584.71	12,396.53	0.00	0.00	0.00
22,100.00	90.04	359.75	9,865.35	12,515.42	584.26	12,496.51	0.00	0.00	0.00
22,200.00	90.04	359.75	9,865.27	12,615.42	583.82	12,596.48	0.00	0.00	0.00
22,300.00	90.04	359.75	9,865.20	12,715.42	583.37	12,696.46	0.00	0.00	0.00
22,400.00	90.04	359.75	9,865.12	12,815.42	582.93	12,796.44	0.00	0.00	0.00
22,500.00	90.04	359.75	9,865.05	12,915.42	582.49	12,896.42	0.00	0.00	0.00
22,600.00	90.04	359.75	9,864.97	13,015.42	582.04	12,996.40	0.00	0.00	0.00
22,700.00	90.04	359.75	9,864.89	13,115.42	581.60	13,096.37	0.00	0.00	0.00
22,800.00	90.04	359.75	9,864.82	13,215.42	581.15	13,196.35	0.00	0.00	0.00
22,900.00	90.04	359.75	9,864.74	13,315.42	580.71	13,296.33	0.00	0.00	0.00
23,000.00	90.04	359.75	9,864.66	13,415.42	580.27	13,396.31	0.00	0.00	0.00
23,100.00	90.04	359.75	9,864.59	13,515.41	579.82	13,496.29	0.00	0.00	0.00
23,200.00	90.04	359.75	9,864.51	13,615.41	579.38	13,596.26	0.00	0.00	0.00
23,300.00	90.04	359.75	9,864.43	13,715.41	578.93	13,696.24	0.00	0.00	0.00
23,344.48	90.04	359.75	9,864.40	13,759.89	578.74	13,740.71	0.00	0.00	0.00

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
PBHL (Precious 30_18 - plan hits target center - Point	0.00	0.00	9,864.40	13,759.89	578.74	474,857.70	699,458.50	32° 18' 15.910233 N	103° 49' 17.582660
FTP (Precious 30_18 - plan hits target center - Point	0.00	0.00	9,874.40	673.74	636.84	461,772.40	699,516.60	32° 16' 6.420973 N	103° 49' 17.633141

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
5,175.00	5,175.00	0.00	0.00	Build 2.00°/100'
5,674.84	5,672.31	3.38	43.36	Hold 10.00° Tangent
8,779.03	8,729.37	45.25	580.60	Turn 2.00°/100'
9,457.76	9,400.94	109.06	639.35	KOP, Build 10.00°/100'
10,258.20	9,874.40	673.74	636.84	Landing Point
23,344.48	9,864.40	13,759.89	578.74	TD at 23344.48' MD

Project: PRD NM DIRECTIONAL PLANS (NAD 1983)
Site: Precious 30_18
Well: Precious 30_18 Federal Com 7H
Wellbore: WB00
Design: Permitting Plan

PROJECT DETAILS: NM DIRECTIONAL PLANS (NAD 1983)

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone

System Datum: Mean Sea Level

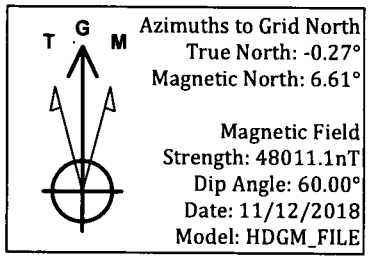
WELL DETAILS: Precious 30_18 Federal Com 7H

Ground Level: 3347.90

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	461098.70	698879.80	32° 15' 59.784295 N	103° 49' 25.087185 W

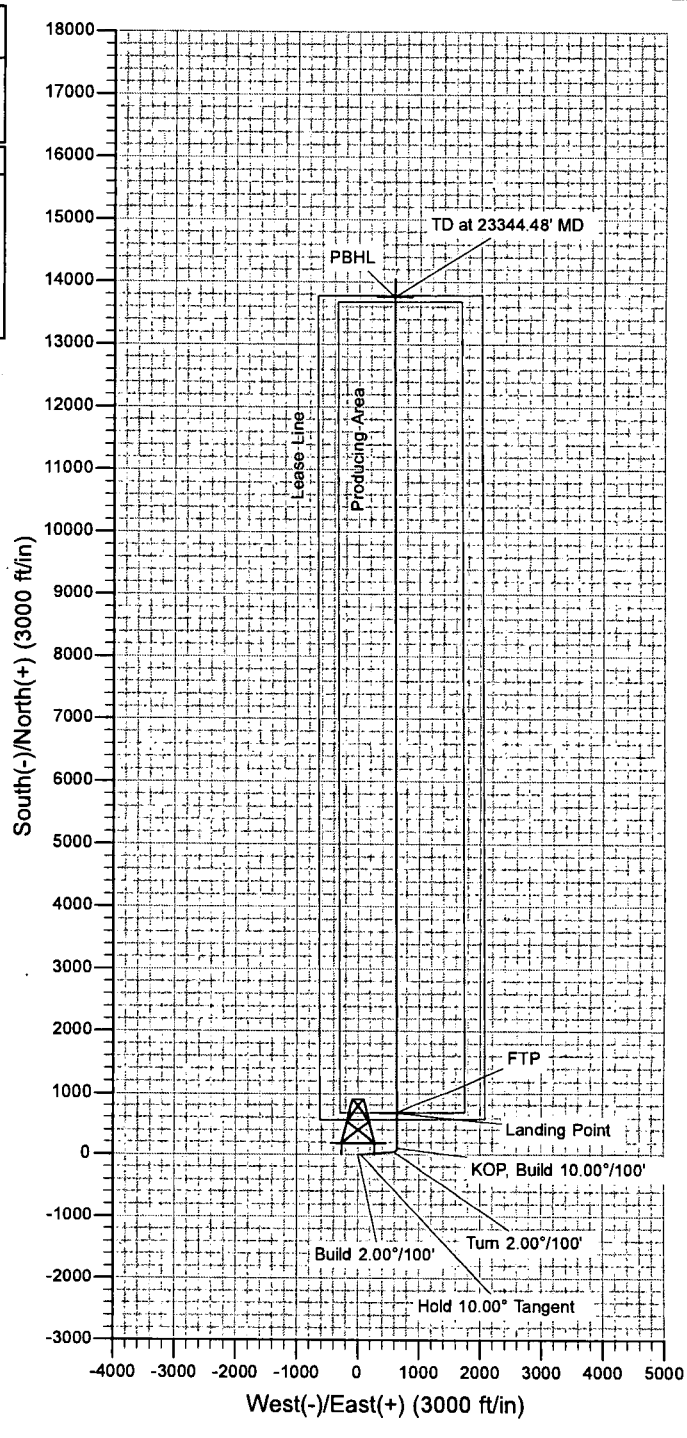
SECTION DETAILS

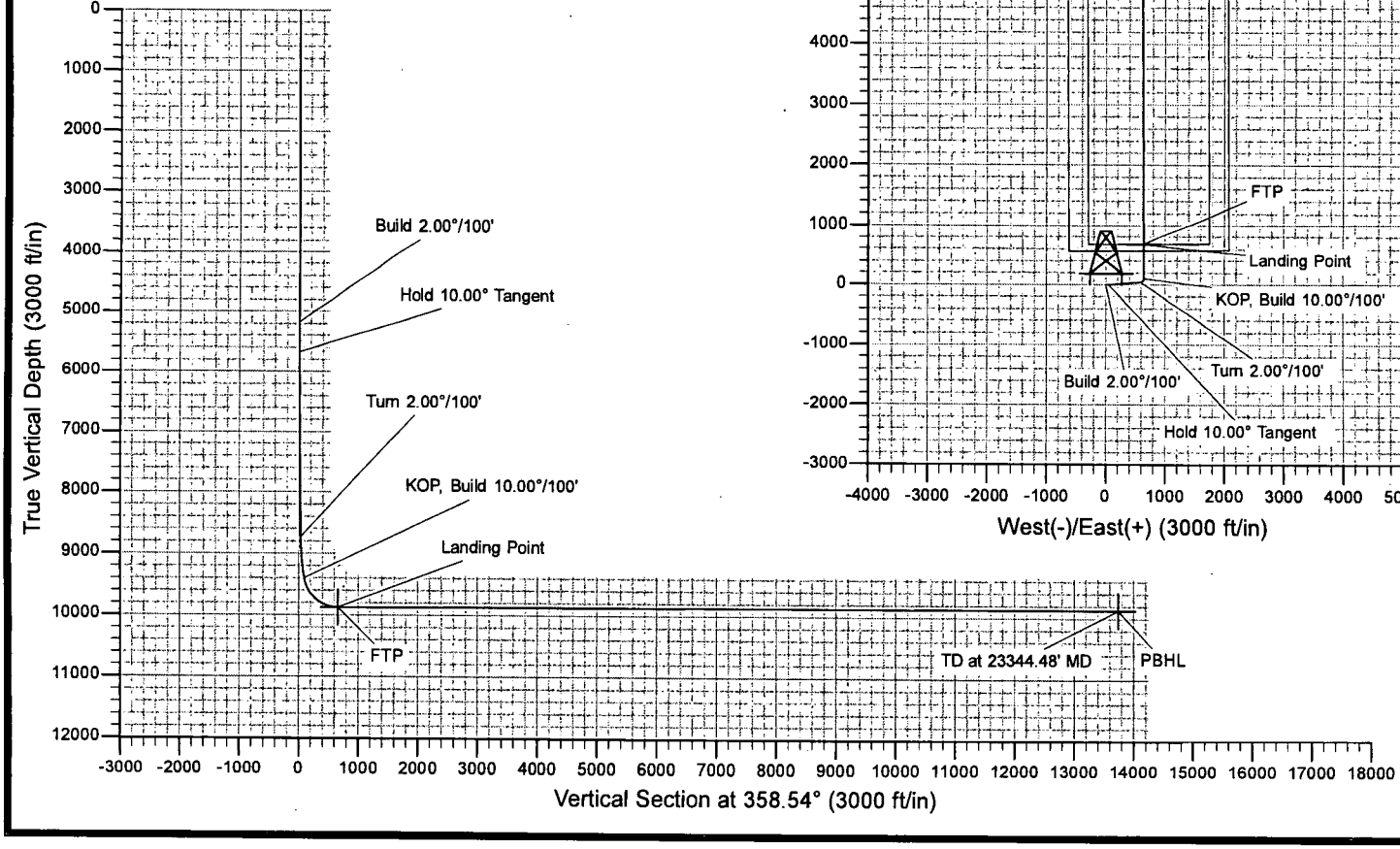
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
5175.00	0.00	0.00	5175.00	0.00	0.00	0.00	0.00	0.00	Build 2.00°/100'
5674.84	10.00	85.54	5672.31	3.38	43.36	2.00	85.54	2.28	Hold 10.00° Tangent
8779.03	10.00	85.54	8729.37	45.25	580.60	0.00	0.00	30.46	Turn 2.00°/100'
9457.76	10.00	359.75	9400.94	109.06	639.35	2.00	-132.45	92.75	KOP, Build 10.00°/100'
10258.20	90.04	359.75	9874.40	673.74	636.84	10.00	0.00	657.32	Landing Point
23344.48	90.04	359.75	9864.40	13759.89	578.74	0.00	0.00	13740.71	TD at 23344.48' MD



Azimuths to Grid North
True North: -0.27°
Magnetic North: 6.61°

Magnetic Field
Strength: 48011.1nT
Dip Angle: 60.00°
Date: 11/12/2018
Model: HDGM_FILE





OXY USA Inc
APD ATTACHMENT: SPUDDER RIG DATA

OPERATOR NAME / NUMBER: OXY USA Inc

1. SUMMARY OF REQUEST:

Oxy USA respectfully requests approval for the following operations for the surface hole in the drill plan:

1. Utilize a spudder rig to pre-set surface casing for time and cost savings.

2. Description of Operations

1. Spudder rig will move in to drill the surface hole and pre-set surface casing on the well.
    a. After drilling the surface hole section, the spudder rig will run casing and cement following all of the applicable rules and regulations (OnShore Order 2, all COAs and NMOCD regulations).
    b. The spudder rig will utilize fresh water-based mud to drill the surface hole to TD. Solids control will be handled entirely on a closed loop basis. No earth pits will be used.
2. The wellhead will be installed and tested as soon as the surface casing is cut off and the WOC time has been reached.
3. A blind flange at the same pressure rating as the wellhead will be installed to seal the wellbore. Pressure will be monitored with needle valves installed on two wingvalves.
    a. A means for intervention will be maintained while the drilling rig is not over the well.
4. Spudder rig operations are expected to take 2-3 days per well on the pad.
5. The BLM will be contacted and notified 24 hours prior to commencing spudder rig operations.
6. Drilling operations will begin with a larger rig and a BOP stack equal to or greater than the pressure rating that was permitted will be nippled up and tested on the wellhead before drilling operations resume on each well.
    a. The larger rig will move back onto the location within 90 days from the point at which the wells are secured and the spudder rig is moved off location.
    b. The BLM will be contacted / notified 24 hours before the larger rig moves back on the pre-set locations.
7. Oxy will have supervision on the rig to ensure compliance with all BLM and NMOCD regulations and to oversee operations.
8. Once the rig is removed, Oxy will secure the wellhead area by placing a guard rail around the cellar area.

Spudder Rig Layout

Oxy USA Inc. - Precious 30-18 Federal Com 7H

1. Geologic Formations

TVD of target	9874'	Pilot Hole Depth	N/A
MD at TD:	23344'	Deepest Expected fresh water:	355'

Delaware Basin

Formation	TVD - RKB	Expected Fluids
Rustler	355	
Salado	671	Brine
Castile	2,599	Brine
Lamar/Delaware	4,031	Brine
Bell Canyon	4,064	Oil/Gas
Cherry Canyon	4,963	Oil/Gas
Brushy Canyon	6,254	Losses
Bone Spring	7,935	Oil/Gas
1st Bone Spring	8,966	Oil/Gas
2nd Bone Spring	**9,608**	**Oil/Gas**

*H2S, water flows, loss of circulation, abnormal pressures, etc.

2. Casing Program

Primary Plan:

Hole Size (in)	Casing Interval		Csg. Size (in)	Weight (lbs)	Grade	Conn.	SF		Buoyant Body SF	Buoyant Joint SF
	From (ft)	To (ft)					Collapse	SF Burst	Tension	Tension
17.5	0	405	13.375	54.5	J-55	BTC	1.125	1.2	1.4	1.4
12.25	0	4081	9.625	40	L-80	BTC	1.125	1.2	1.4	1.4
8.5	0	23344	5.5	20	P-110	DQX	1.125	1.2	1.4	1.4
							SF Values will meet or Exceed			

Contingency Plan:

Hole Size (in)	Casing Interval		Csg. Size (in)	Weight (lbs)	Grade	Conn.	SF		Buoyant Body SF	Buoyant Joint SF
	From (ft)	To (ft)					Collapse	SF Burst	Tension	Tension
17.5	0	405	13.375	54.5	J-55	BTC	1.125	1.2	1.4	1.4
12.25	0	4081	9.625	40	L-80	BTC	1.125	1.2	1.4	1.4
8.5	0	9357	7.625	26.4	L-80 HC	SF (0 ft to 4000 ft) FJ (4000 ft to 9357 ft)	1.125	1.2	1.4	1.4
6.75	0	23344	5.5	20	P-110	DQX	1.125	1.2	1.4	1.4
							SF Values will meet or Exceed			

All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h

*Oxy requests the option to run the 7.625" Intermediate II as a contingency string to be run only if severe hole conditions dictate an additional casing string necessary.

*Oxy requests the option to run production casing with DQX and/or SF TORQ connections to accommodate hole conditions or drilling operations.

Annular Clearance Variance Request

As per the agreement reached in the Oxy/BLM face-to-face meeting on Feb 22, 2018, Oxy requests permission to allow deviation from the 0.422" annular clearance requirement from Onshore Order #2 under the following conditions:

1. Annular clearance to meet or exceed 0.422" between intermediate casing ID and production casing coupling only on the first 500' overlap between both casings.
2. Annular clearance less than 0.422" is acceptable for the curve and lateral portions of the production open hole section.

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
Does casing meet API specifications? If no, attach casing specification sheet.	Y
Is premium or uncommon casing planned? If yes attach casing specification sheet.	Y
Does the above casing design meet or exceed BLM's minimum standards? If not provide justification (loading assumptions, casing design criteria).	Y
Will the intermediate pipe be kept at a minimum 1/3 fluid filled to avoid approaching the collapse pressure rating of the casing?	Y
Is well located within Capitan Reef?	N
If yes, does production casing cement tie back a minimum of 50' above the Reef?	
Is well within the designated 4 string boundary.	
Is well located in SOPA but not in R-111-P?	N
If yes, are the first 2 strings cemented to surface and 3rd string cement tied back 500' into previous casing?	
Is well located in R-111-P and SOPA?	Y
If yes, are the first three strings cemented to surface?	Y
Is 2nd string set 100' to 600' below the base of salt?	Y
Is well located in high Cave/Karst?	N
If yes, are there two strings cemented to surface?	
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	

3. Cementing Program

Primary Plan:

Casing String	# Sks	Wt. (lb/gal)	Yld (ft3/sack)	H20 (gal/sk)	500# Comp. Strength (hours)	Slurry Description
Surface (Lead)	N/A	N/A	N/A	N/A	N/A	N/A
Surface (Tail)	434	14.8	1.33	6.365	5:26	Class C Cement, Accelerator
Intermediate (Lead)	948	12.9	1.73	8.784	15:26	Pozzolan Cement, Retarder
Intermediate (Tail)	155	14.8	1.33	6.368	7:11	Class C Cement, Accelerator
Production 1st Stage (Lead)	250	13.2	1.38	6.692	17:50	Class H Cement, Retarder, Dispersant, Salt
Production 1st Stage (Tail)	2694	13.2	1.38	6.686	3:49	Class H Cement, Retarder, Dispersant, Salt
2nd Stage Production Lead Slurry to be pumped as Bradenhead Squeeze from surface, down the Production annulus.						
Production 2nd Stage (Tail)	940	12.9	1.872	10.11	21:54	Class C Cement, Accelerator

Casing String	Top (ft)	Bottom (ft)	% Excess
Surface (Lead)	N/A	N/A	N/A
Surface (Tail)	0	405	100%
Intermediate (Lead)	0	3581	50%
Intermediate (Tail)	3581	4081	20%
Production 1st Stage (Lead)	6504	7935	5%
Production 1st Stage (Tail)	7935	23344	5%
Production 2nd Stage (Tail)	0	6504	25%

Contingency Plan:

Casing String	# Sks	Wt. (lb/gal)	Yld (ft3/sack)	H20 (gal/sk)	500# Comp. Strength (hours)	Slurry Description
Surface (Lead)	N/A	N/A	N/A	N/A	N/A	N/A
Surface (Tail)	434	14.8	1.33	6.365	5:26	Class C Cement, Accelerator
Intermediate (Lead)	872	12.9	1.88	10.130	14:22	Pozzolan Cement, Retarder
Intermediate (Tail)	155	14.8	1.33	6.370	12:45	Class C Cement, Accelerator
Intermediate II 1st Stage (Lead)	N/A	N/A	N/A	N/A	N/A	N/A
Intermediate II 1st Stage (Tail)	140	13.2	1.65	8.640	11:54	Class H Cement, Retarder, Dispersant, Salt
Intermediate II 2nd Stage (Tail Slurry) to be pumped as Bradenhead Squeeze from surface, down the Intermediate annulus						
Intermediate II 2nd Stage (Lead)	N/A	N/A	N/A	N/A	N/A	N/A
Intermediate II 2nd Stage (Tail)	359	12.9	1.92	10.410	23:10	Class C Cement, Accelerator
Production (Lead)	N/A	N/A	N/A	N/A	N/A	N/A
Production (Tail)	1060	13.2	1.38	6.686	3:49	Class H Cement, Retarder, Dispersant, Salt

Casing String	Top (ft)	Bottom (ft)	% Excess
Surface (Lead)	N/A	N/A	N/A
Surface (Tail)	0	405	100%
Intermediate (Lead)	0	3581	50%
Intermediate (Tail)	3581	4081	20%
Intermediate II 1st Stage (Lead)	N/A	N/A	N/A
Intermediate II 1st Stage (Tail)	6504	9357	5%
Intermediate II 2nd Stage (Lead)	N/A	N/A	N/A
Intermediate II 2nd Stage (Tail)	0	6504	25%
Production (Lead)	N/A	N/A	N/A
Production (Tail)	8857	23344	20%

*Contingency design will only be employed if Oxy elects to run 7.625" Intermediate II string.

Offline Cementing

Oxy requests a variance to cement the 9.625" and/or 7.625" intermediate casing strings offline in accordance to the approved variance, EC Tran 461365.

The summarized operational sequence will be as follows:

1. Run casing as per normal operations. While running casing, conduct negative pressure test and confirm integrity of the float equipment (float collar and shoe).
2. Land casing.
3. Fill pipe with kill weight fluid, and confirm well is static.
    a. If well is not static notify BLM and kill well.
    b. Once well is static notify BLM with intent to proceed with nipple down and offline cementing.
4. Set and pressure test annular packoff.
5. After confirmation of both annular barriers and internal barriers, nipple down BOP and install cap flange. If any barrier fails to test, the BOP stack will not be nippled down until after the cement job is completed.
6. Skid rig to next well on pad.
7. Confirm well is static before removing cap flange.
8. If well is not static notify BLM and kill well prior to cementing or nippling up for further remediation.
9. Install offline cement tool.
10. Rig up cement equipment.
    a. Notify BLM prior to cement job.
11. Perform cement job.
12. Confirm well is static and floats are holding after cement job.
13. Remove cement equipment, offline cement tools and install night cap with pressure gauge for monitoring.

4. Pressure Control Equipment

BOP installed and tested before drilling which hole?	Size?	Min. Required WP	Type	✓	Tested to:
12.25" Hole	13-5/8"	3M	Annular	✓	70% of working pressure
		3M	Blind Ram	✓	250 psi / 3000 psi
			Pipe Ram		
			Double Ram	✓	
			Other*		
8.5" Hole	13-5/8"	3M	Annular	✓	70% of working pressure
		3M	Blind Ram	✓	250 psi / 3000 psi
			Pipe Ram		
			Double Ram	✓	
			Other*		
6.75" Hole	13-5/8"	3M	Annular	✓	70% of working pressure
		3M	Blind Ram	✓	250 psi / 3000 psi
			Pipe Ram		
			Double Ram	✓	
			Other*		

*Specify if additional ram is utilized.

BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all the components installed will be functional and tested.

Pipe rams will be operationally checked each 24 hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. Other accessories to the BOP equipment will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold. See attached schematics.

	Formation integrity test will be performed per Onshore Order #2. On Exploratory wells or on that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.i.
	A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold. See attached for specs and hydrostatic test chart.
	Y Are anchors required by manufacturer?
	A multibowl or a unionized multibowl wellhead system will be employed. The wellhead and connection to the BOPE will meet all API 6A requirements. The BOP will be tested per Onshore Order #2 after installation on the surface casing which will cover testing requirements for a maximum of 30 days. If any seal subject to test pressure is broken the system must be tested. We will test the flange connection of the wellhead with a test port that is directly in the flange. We are proposing that we will run the wellhead through the rotary prior to cementing surface casing as discussed with the BLM on October 8, 2015. See attached schematics.

BOP Break Testing Request

As per the agreement reached in the Oxy/BLM face-to-face meeting on Feb 22, 2018, Oxy requests permission to allow BOP Break Testing under the following conditions:

- After a full BOP test is conducted on the first well on the pad.
- When skidding to drill an intermediate section that the casing point is either shallower than the 3rd Bone Spring or 10000 TVD.
- Full BOP test will be required prior to drilling any production hole.

5. Mud Program

Depth		Type	Weight (ppg)	Viscosity	Water Loss
From (ft)	To (ft)				
0	405	Water-Based Mud	8.6-8.8	40-60	N/C
405	4081	Saturated Brine-Based Mud	9.8-10.0	35-45	N/C
4081	23344	Water-Based or Oil-Based Mud	8.0-9.6	38-50	N/C

Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept on location at all times. The following is a general list of products: Barite, Bentonite, Gypsum, Lime, Soda Ash, Caustic Soda, Nut Plug, Cedar Fiber, Cotton Seed Hulls, Drilling Paper, Salt Water Clay, CACL2. Oxy will use a closed mud system.

What will be used to monitor the loss or gain of fluid?	PVT/MD Totco/Visual Monitoring

6. Logging and Testing Procedures

Logging, Coring and Testing.	
Yes	Will run GR from TD to surface (horizontal well – vertical portion of hole). Stated logs run will be in the Completion Report and submitted to the BLM.
No	Logs are planned based on well control or offset log information.
No	Drill stem test? If yes, explain
No	Coring? If yes, explain

Additional logs planned		Interval
No	Resistivity	
No	Density	
No	CBL	
Yes	Mud log	ICP - TD
No	PEX	

7. Drilling Conditions

Condition	Specify what type and where?
BH Pressure at deepest TVD	4930 psi
Abnormal Temperature	No
BH Temperature at deepest TVD	159°F

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. 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.

Hydrogen Sulfide (H2S) monitors will be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the operator will comply with the provisions of Onshore Oil and Gas Order #6. If Hydrogen Sulfide is encountered, measured values and formations will be provided to the BLM.	
N	H2S is present
Y	H2S Plan attached

8. Other facets of operation

	Yes/No
Will the well be drilled with a walking/skidding operation? If yes, describe. • We plan to drill the three well pad in batch by section: all surface sections, intermediate sections and production sections. The wellhead will be secured with a night cap whenever the rig is not over the well.	Yes
Will more than one drilling rig be used for drilling operations? If yes, describe. • Oxy requests the option to contract a Surface Rig to drill, set surface casing, and cement for this well. If the timing between rigs is such that Oxy would not be able to preset surface, the Primary Rig will MIRU and drill the well in its entirety per the APD. Please see the attached document for information on the spudder rig.	Yes

Total estimated cuttings volume: 2008.4 bbls.

Attachments
_x__ Directional Plan
_x__ H2S Contingency Plan
_x__ Flex III Attachments
_x__ Spudder Rig Attachment
_x__ Premium Connection Specs

9. Company Personnel

Name	Title	Office Phone	Mobile Phone
Linsay Earle	Drilling Engineer	713-350-4921	832-596-5507
Margaret Giltner	Drilling Engineer Supervisor	713-366-5026	210-683-8480
Simon Benavides	Drilling Superintendent	713-522-8652	281-684-6897
Diego Tellez	Drilling Manager	713-350-4602	713-303-4932

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources Department

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

Submit Original to Appropriate District Office

GAS CAPTURE PLAN

Date: 8-28-2019

☒ Original
☐ Amended - Reason for Amendment:

Operator & OGRID No.: OXY USA INC. - 16696

This Gas Capture Plan outlines actions to be taken by the Operator to reduce well/production facility flaring/venting for new completion (new drill, recomplete to new zone, re-frac) activity.

Note: Form C-129 must be submitted and approved prior to exceeding 60 days allowed by Rule (Subsection A of 19.15.18.12 NMAC).

Well(s)/Production Facility – Name of facility

The well(s) that will be located at the production facility are shown in the table below.

Well Name	API	Well Location (ULSTR)	Footages	Expected MCF/D	Flared or Vented	Comments
Arkenstone 31 Federal 1H	Pending	D-1-31-23S-31E	130 FNL 895 FWL	2300	0	
Arkenstone 31 Federal 2H	Pending	D-1-31-23S-31E	130 FNL 930 FWL	2300	0	
Arkenstone 31 Federal 3H	Pending	B-31-23S-31E	130 FNL 2613 FEL	2300	0	
Arkenstone 31 Federal 4H	Pending	B-31-23S-31E	130 FNL 2578 FEL	2300	0	
Arkenstone 31 Federal 7H	Pending	C-31-23S-31E	130 FNL 965 FWL	2300	0	
Arkenstone 31 Federal 171H	Pending	D-1-31-23S-31E	130 FNL 1195 FWL	2700	0	
Arkenstone 31 Federal 172H	Pending	D-1-31-23S-31E	130 FNL 1230 FWL	2700	0	
Arkenstone 31 Federal 173H	Pending	C-31-23S-31E	130 FNL 2465 FWL	2700	0	
Arkenstone 31 Federal 174H	Pending	C-31-23S-31E	130 FNL 2500 FWL	2700	0	
Arkenstone 31 Federal Com 5H	Pending	A-31-23S-31E	130 FNL 865 FEL	2300	0	
Arkenstone 31 Federal Com 6H	Pending	A-31-23S-31E	100 FNL 830 FEL	2300	0	
Arkenstone 31 Federal Com 9H	Pending	C-31-23S-31E	130 FNL 2648 FEL	2300	0	
Arkenstone 31 Federal Com 10H	Pending	A-31-23S-31E	100 FNL 795 FEL	2300	0	
Precious 30_18 Federal Com 1H	Pending	D-1-31-23S-31E	570 FNL 550 FWL	3900	0	
Precious 30_18 Federal Com 2H	Pending	D-1-31-23S-31E	570 FNL 585 FWL	3900	0	
Precious 30_18 Federal Com 3H	Pending	B-31-23S-31E	570 FNL 2635 FEL	3900	0	
Precious 30_18 Federal Com 4H	Pending	B-31-23S-31E	570 FNL 2600 FEL	3900	0	
Precious 30_18 Federal Com 5H	Pending	A-31-23S-31E	520 FNL 800 FEL	3900	0	
Precious 30_18 Federal Com 6H	Pending	A-31-23S-31E	520 FNL 765 FEL	3900	0	
Precious 30_18 Federal Com 7H	Pending	D-1-31-23S-31E	570 FNL 620 FWL	3900	0	
Precious 30_18 Federal Com 9H	Pending	C-31-23S-31E	520 FNL 2670 FEL	3900	0	
Precious 30_18 Federal Com 10H	Pending	A-31-23S-31E	520 FNL 730 FEL	3900	0	
Precious 30_18 Federal Com 11H	Pending	C-31-23S-31E	130 FNL 1935 FWL	1800	0	
Precious 30_18 Federal Com 12H	Pending	C-31-23S-31E	130 FNL 1970 FWL	1800	0	
Precious 30_18 Federal Com 13H	Pending	B-31-23S-31E	100 FNL 1395 FEL	1800	0	
Precious 30_18 Federal Com 14H	Pending	B-31-23S-31E	100 FNL 1360 FEL	1800	0	
Precious 30_18 Federal Com 21H	Pending	D-1-31-23S-31E	570 FNL 285 FWL	3000	0	
Precious 30_18 Federal Com 22H	Pending	D-1-31-23S-31E	570 FNL 320 FWL	3000	0	
Precious 30_18 Federal Com 23H	Pending	C-31-23S-31E	130 FNL 2200 FWL	3000	0	
Precious 30_18 Federal Com 24H	Pending	C-31-23S-31E	130 FNL 2235 FWL	3000	0	
Precious 30_18 Federal Com 25H	Pending	A-31-23S-31E	100 FNL 1130 FEL	3000	0	
Precious 30_18 Federal Com 26H	Pending	A-31-23S-31E	100 FNL 1095 FEL	3000	0	
Precious 30-18 Federal Com 31H	Pending	D-1-31-23S-31E	570 FNL 850 FWL	2600	0	
Precious 30-18 Federal Com 32H	Pending	D-1-31-23S-31E	570 FNL 950 FWL	2600	0	

Well Name	API	Well Location (ULSTR)	Footages	Expected MCF/D	Flared or Vented	Comments
Precious 30-18 Federal Com 33H	Pending	B-31-23S-31E	280 FNL 2150 FEL	2600	0	
Precious 30-18 Federal Com 34H	Pending	B-31-23S-31E	315 FNL 2150 FEL	2600	0	
Precious 30_18 Federal Com 41H	Pending	D-1-31-23S-31E	570 FNL 1180 FWL	4000	0	
Precious 30_18 Federal Com 42H	Pending	D-1-31-23S-31E	570 FNL 1215 FWL	4000	0	
Precious 30_18 Federal Com 43H	Pending	C-31-23S-31E	570 FNL 2178 FWL	4000	0	
Precious 30_18 Federal Com 44H	Pending	C-31-23S-31E	570 FNL 2213 FWL	4000	0	
Precious 30_18 Federal Com 45H	Pending	B-31-23S-31E	520 FNL 1330 FEL	4000	0	
Precious 30_18 Federal Com 46H	Pending	A-31-23S-31E	520 FNL 1295 FEL	4000	0	
Precious 30_18 Federal Com 171H	Pending	D-1-31-23S-31E	570 FNL 880 FWL	3100	0	
Precious 30_18 Federal Com 172H	Pending	D-1-31-23S-31E	570 FNL 915 FWL	3100	0	
Precious 30_18 Federal Com 173H	Pending	C-31-23S-31E	570 FNL 2443 FWL	3100	0	
Precious 30_18 Federal Com 174H	Pending	C-31-23S-31E	570 FNL 2478 FWL	3100	0	
Precious 30_18 Federal Com 175H	Pending	A-31-23S-31E	520 FNL 1065 FEL	3100	0	
Precious 30_18 Federal Com 176H	Pending	A-31-23S-31E	520 FNL 1030 FEL	3100	0	

Gathering System and Pipeline Notification

Well(s) will be connected to a production facility after flowback operations are complete, where a gas transporter system is in place. The gas produced from production facility is dedicated to Enterprise Field Services, LLC ("Enterprise") and is connected to Enterprise low/high pressure gathering system located in Eddy County, New Mexico. OXY USA INC. ("OXY") provides (periodically) to Enterprise a drilling, completion and estimated first production date for wells that are scheduled to be drilled in the foreseeable future. In addition, OXY and Enterprise have periodic conference calls to discuss changes to drilling and completion schedules. Gas from these wells will be processed at Enterprise's Processing Plant located in Sec. 36, Twn. 24S, Rng. 30E, Eddy County, New Mexico. The actual flow of the gas will be based on compression operating parameters and gathering system pressures.

Flowback Strategy

After the fracture treatment/completion operations, well(s) will be produced to temporary production tanks and gas will be flared or vented. During flowback, the fluids and sand content will be monitored. When the produced fluids contain minimal sand, the wells will be turned to production facilities. Gas sales should start as soon as the wells start flowing through the production facilities, unless there are operational issues on Enterprise system at that time. Based on current information, it is OXY's belief the system can take this gas upon completion of the well(s).

Safety requirements during cleanout operations from the use of underbalanced air cleanout systems may necessitate that sand and non-pipeline quality gas be vented and/or flared rather than sold on a temporary basis.

Alternatives to Reduce Flaring

Below are alternatives considered from a conceptual standpoint to reduce the amount of gas flared.

- Power Generation – On lease
  - Only a portion of gas is consumed operating the generator, remainder of gas will be flared
- Compressed Natural Gas – On lease
  - Gas flared would be minimal, but might be uneconomical to operate when gas volume declines
- NGL Removal – On lease
  - Plants are expensive, residue gas is still flared, and uneconomical to operate when gas volume declines

Pad 3103

1340' x 330'

OXY U.S.A. INC.

NEW MEXICO STAKING FORM

Date Staked: 9-11-18

Lease / Well Name: Precious 30-18 Fed Com #7H

Legal Description: 570' FNL 620' FWL Sec 31 T23S R31E

Latitude: 32° 15' 59.78" NAD 83

Longitude: -103° 49' 25.09" NAD 83

X: 698879.79 NAD 83

Y: 461098.73 NAD 83

Elevation: 3347.92 NAD 83

Move information:

County: Eddy

Surface Owner BLM

Nearest Residence: ?

Nearest Water Well:

V-Door: EAST

Top soil: West

Road Description: SE Cor From SoUTH

New Road:

Upgrade Existing Road:

Interim Reclamation: 50' NorTH

Source of Caliche:

Onsite Attendees: Jesse Bassett - BLM, Jim Wilson - OXY, SWCA, Asel Survey

DATE 2-22-18

OXY USA Inc.
APD Attachment
Offline Cementing

OXY respectfully requests a variance to cement the 9-5/8" and/or 7-5/8" intermediate casing strings offline.

The summarized operational sequence will be as follows:

1. Run casing as per normal operations. While running casing, conduct negative pressure test and confirm integrity of the float equipment (float collar and shoe).
2. Land casing.
3. Fill pipe with kill weight fluid, and confirm well is static.
    a. If well is not static notify BLM and kill well.
    b. Once well is static notify BLM with intent to proceed with nipple down and offline cementing.
4. Set and pressure test annular packoff.
5. After confirmation of both annular barriers and internal barriers, nipple down BOP and install cap flange. If any barrier fails to test, the BOP stack will not be nippled down until after the cement job is completed.
6. Skid rig to next well on pad.
7. Confirm well is static before removing cap flange.
8. If well is not static notify BLM and kill well prior to cementing or nippling up for further remediation.
9. Install offline cement tool.
10. Rig up cement equipment.
    a. Notify BLM prior to cement job.
11. Perform cement job.
12. Confirm well is static and floats are holding after cement job.
13. Remove cement equipment, offline cement tools and install night cap with pressure gauge for monitoring.

APD ID: 10400038597 **Submission Date:** 01/29/2019

Operator Name: OXY USA INCORPORATED

Well Name: PRECIOUS 30-18 FEDERAL COM **Well Number:** 7H

Well Type: OIL WELL **Well Work Type:** Drill

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - Existing Roads

Will existing roads be used? YES

Existing Road Map:

Precious30_18FedCom7H_ExistRoads_20190129134420.pdf

Existing Road Purpose: FLUID TRANSPORT **Row(s) Exist?** NO

ROW ID(s)

ID:

Do the existing roads need to be improved? NO

Existing Road Improvement Description:

Existing Road Improvement Attachment:

Section 2 - New or Reconstructed Access Roads

Will new roads be needed? YES

New Road Map:

Precious30_18FedCom7H_NewRoad_20190129134436.pdf

New road type: LOCAL

Length: 2117 Feet **Width (ft.):** 25

Max slope (%): 0 **Max grade (%):** 0

Army Corp of Engineers (ACOE) permit required? NO

ACOE Permit Number(s):

New road travel width: 14

New road access erosion control: Watershed Diversion every 200' if needed.

New road access plan or profile prepared? YES

New road access plan attachment:

Precious30_18FedCom7H_NewRoad_20190129134502.pdf

Access road engineering design? NO

Access road engineering design attachment:

Turnout? N

Access surfacing type: OTHER

Access topsoil source: ONSITE

Access surfacing type description: Caliche

Access onsite topsoil source depth: 0

Offsite topsoil source description:

Onsite topsoil removal process: If available

Access other construction information: None

Access miscellaneous information: The access road will run from Caliche Road and run north for 36' into the southwest corner of the pad.

Number of access turnouts: **Access turnout map:**

Drainage Control

New road drainage crossing: CULVERT

Drainage Control comments: Watershed Diversion every 200' if needed.

Road Drainage Control Structures (DCS) description: Watershed Diversion every 200' if needed.

Road Drainage Control Structures (DCS) attachment:

Access Additional Attachments

Section 3 - Location of Existing Wells

Existing Wells Map? YES

Attach Well map:

Precious30_18FedCom7H_ExistWells_20190129134516.pdf

Section 4 - Location of Existing and/or Proposed Production Facilities

Submit or defer a Proposed Production Facilities plan? SUBMIT

Production Facilities description: a. In the event the well is found productive, the Precious Central Tank Battery and the Little Precious Central Tank Battery will be utilized and the necessary production equipment will be installed at the well site. See proposed facilities layout diagram. b. All flow lines will adhere to API standards. They will consist of three – 4" composite flowlines operating 75% MAWP, surface to follow surveyed route. Survey nine strips of land 30' wide and 13877.1' in length crossing USA land in Sections 30 & 31 T23S R31E, Eddy County, NM and being 15' left and 15' right of the centerline surveys. Two–20" steel gas lift lines operating 75% MAWP from Precious CTB to Little Precious CTB. Two-8" steel gas suction lines operating at 75% MAWP to Compressor Pad. All well pads have two-6" buried steel gas injection lines operating at 75% MAWP from the two-8" gas injection trunk lines to the wells. Survey eight strips of land 30' wide and 16863.3' in length crossing Sections 30 & 31 T23S R31E, Eddy County, NM and being 15' left and 15' right of the centerline survey and a survey of a strip of land 50' wide and 3830.1' in length crossing USA Land in Sections 29 & 30 T23S R31E, NMPM, Eddy

County, NM and being 15' left and 15' right of the centerline survey. see attached. c. Electric line will follow a route approved by the BLM. Survey of a strip of land 30' wide and 11040.6 in length crossing USA land in Sections 30 & 31 T23S R31E NMPM, Eddy County, NM and being 15' left and 15' right of the centerline survey, see attached. d. See attached for additional information on the Sand Dunes Precious/Arkenstone

Production Facilities map:

Precious30_18FdCom7H_FacilityPLEL_20190829083158.pdf

Precious30_18FdCom7H_LeaseFacilityInfo_20190829083158.pdf

Section 5 - Location and Types of Water Supply

Water Source Table

Water source type: GW WELL

Water source use type: SURFACE CASING

INTERMEDIATE/PRODUCTION CASING

OTHER **Describe use type:** Drilling

Source latitude: **Source longitude:**

Source datum:

Water source permit type: WATER WELL

Water source transport method: TRUCKING

PIPELINE

Source land ownership: COMMERCIAL

Source transportation land ownership: COMMERCIAL

Water source volume (barrels): 2000 **Source volume (acre-feet):** 0.25778618

Source volume (gal): 84000

Water source and transportation map:

Precious30_18FedCom7H_GRRWtrSrc_20190129134552.pdf

Precious30_18FedCom7H_MesqWtrSrc_20190129134606.pdf

Water source comments: This well will be drilled using a combination of water mud systems. It will be obtained from commercial water stations (Gregory Rockhouse, Mesquite) in the area and will be hauled to location by transport truck using existing and proposed roads.

New water well? NO

New Water Well Info

Well latitude: **Well Longitude:** **Well datum:**

Well target aquifer:

Est. depth to top of aquifer(ft): **Est thickness of aquifer:**

Aquifer comments:

Aquifer documentation:

Well depth (ft): **Well casing type:**

Well casing outside diameter (in.): **Well casing inside diameter (in.):**

New water well casing? **Used casing source:**

Drilling method: **Drill material:**

Grout material: **Grout depth:**

Casing length (ft.): **Casing top depth (ft.):**

Well Production type: **Completion Method:**

Water well additional information:

State appropriation permit:

Additional information attachment:

Section 6 - Construction Materials

Using any construction materials: YES

Construction Materials description: Primary - All caliche utilized for the drilling pad and proposed access road will be obtained from an existing BLM/State/Fee approved pit or from prevailing deposits found on the location. Will use BLM recommended extra caliche from other locations close by for roads, if available. Secondary - The secondary way of obtaining caliche to build locations and roads will be by "turning over" the location. This means, caliche will be obtained from the actual well site. A caliche permit will be obtained from BLM prior to pushing up any caliche. 2400 cubic yards is max amount of caliche needed for pad and roads. Amount will vary for each pad. The procedure below has been approved by BLM personnel: a. The top 6" of topsoil is pushed off and stockpiled along the side of the location. b. An approximate 120' X 120' area is used within the proposed well site to remove caliche. c. Subsoil is removed and piled alongside the 120' X 120' within the pad site. d. When caliche is found, material will be stockpiled within the pad site to build the location and road. e. Then subsoil is pushed back in the hole and caliche is spread accordingly across entire location and road. f. Once the well is drilled the stockpiled top soil will be used for interim reclamation and spread along areas where caliche is picked up and the location size is reduced. Neither caliche nor subsoil will be stockpiled outside of the well pad. Topsoil will be stockpiled along the edge of the pad. Caliche will be provided from a pit located in Section 7 T24S R31E. Water will be provided from a frac pond located in Sections 7 T24S R31E.

Construction Materials source location attachment:

Section 7 - Methods for Handling Waste

Waste type: DRILLING

Waste content description: Water-Based Cuttings, Water-Based Mud, Oil-Based Cuttings, Oil-Based Mud, Produced Water

Amount of waste: 2008.4 barrels

Waste disposal frequency : Daily

Safe containment description: Haul-Off Bins

Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL **Disposal location ownership:** COMMERCIAL

FACILITY

Disposal type description:

Disposal location description: An approved facility that can process drill cuttings, drill fluids, flowback water, produced water, contaminated soils, and other non-hazardous wastes.

Reserve Pit

Reserve Pit being used? NO

Temporary disposal of produced water into reserve pit?

Reserve pit length (ft.) **Reserve pit width (ft.)**

Reserve pit depth (ft.) **Reserve pit volume (cu. yd.)**

Is at least 50% of the reserve pit in cut?

Reserve pit liner

Reserve pit liner specifications and installation description

Cuttings Area

Cuttings Area being used? NO

Are you storing cuttings on location? YES

Description of cuttings location A closed loop system will be utilized consisting of above ground steel tanks and haul-off bins. Disposal of liquids, drilling fluids and cuttings will be disposed of at an approved facility.

Cuttings area length (ft.) **Cuttings area width (ft.)**

Cuttings area depth (ft.) **Cuttings area volume (cu. yd.)**

Is at least 50% of the cuttings area in cut?

WCuttings area liner

Cuttings area liner specifications and installation description

Section 8 - Ancillary Facilities

Are you requesting any Ancillary Facilities?: NO

Ancillary Facilities attachment:

Comments:

Operator Name: OXY USA INCORPORATED

Well Name: PRECIOUS 30-18 FEDERAL COM **Well Number:** 7H

Section 9 - Well Site Layout

Well Site Layout Diagram:

Precious30_18FdCom7H_WellSiteCL_20190829083403.pdf

Comments: V-Door-East - CL Tanks-North - 330' X 1340' – 11 Well Pad

Section 10 - Plans for Surface Reclamation

Type of disturbance: New Surface Disturbance

Multiple Well Pad Name: PRECIOUS 30-18 FED COM

Multiple Well Pad Number: 1H

Recontouring attachment:

Drainage/Erosion control construction: Reclamation to be wind rowed as needed to control erosion

Drainage/Erosion control reclamation: Reclamation to be wind rowed as needed to control erosion

Well pad proposed disturbance (acres): 11.4	**Well pad interim reclamation (acres):** 7.37	**Well pad long term disturbance (acres):** 4.04
Road proposed disturbance (acres): 1.46	**Road interim reclamation (acres):** 0.68	**Road long term disturbance (acres):** 0.78
Powerline proposed disturbance (acres): 7.6	**Powerline interim reclamation (acres):** 0	**Powerline long term disturbance (acres):** 7.6
Pipeline proposed disturbance (acres): 9.56	**Pipeline interim reclamation (acres):** 6.37	**Pipeline long term disturbance (acres):** 3.19
Other proposed disturbance (acres): 0	**Other interim reclamation (acres):** 0.33	**Other long term disturbance (acres):** 0
Total proposed disturbance: 30.02	**Total interim reclamation:** 14.75	**Total long term disturbance:** 15.61

Disturbance Comments: See Below

Reconstruction method: If the well is deemed commercially productive, caliche from the areas of the pad site not required for operations will be reclaimed. The original topsoil will be returned to the area of the drill pad not necessary to operate the well. These unused areas of the drill pad will be contoured, as close as possible, to match the original topography, and the area will be seeded with an approved BLM mixture to re-establish vegetation. After concluding the drilling and/or completion operations, if the well is found non-commercial, the caliche will be removed from the pad and transported to the original caliche pit or used for other drilling locations. The road will be reclaimed as directed by the BLM. The original topsoil will again be returned to the pad and contoured, as close as possible, to the original topography, and the area will be seeded with an approved BLM mixture to re-establish vegetation.

Topsoil redistribution: The original topsoil will be returned to the area of the drill pad not necessary to operate the well.

Soil treatment: To be determined by the BLM.

Existing Vegetation at the well pad: To be determined by the BLM at Onsite.

Existing Vegetation at the well pad attachment:

Existing Vegetation Community at the road: To be determined by the BLM at Onsite.

Existing Vegetation Community at the road attachment:

Existing Vegetation Community at the pipeline: To be determined by the BLM at Onsite.

Existing Vegetation Community at the pipeline attachment:

Existing Vegetation Community at other disturbances: To be determined by the BLM at Onsite.

Existing Vegetation Community at other disturbances attachment:

Non native seed used? NO

Non native seed description:

Seedling transplant description:

Will seedlings be transplanted for this project? NO

Seedling transplant description attachment:

Will seed be harvested for use in site reclamation? NO

Seed harvest description:

Seed harvest description attachment:

Seed Management

Seed Table

Seed type:

Seed source:

Seed name:

Source name:

Source address:

Source phone:

Seed cultivar:

Seed use location:

PLS pounds per acre:

Proposed seeding season:

Seed Summary	
Seed Type	**Pounds/Acre**

Total pounds/Acre:

Seed reclamation attachment:

Operator Contact/Responsible Official Contact Info

First Name: JIM

Last Name: WILSON

Phone: (575)631-2442

Email: jim_wilson@oxy.com

Seedbed prep:

Seed BMP:

Seed method:

Existing invasive species? NO

Existing invasive species treatment description:

Existing invasive species treatment attachment:

Weed treatment plan description: To be determined by the BLM.

Weed treatment plan attachment:

Monitoring plan description: To be determined by the BLM.

Monitoring plan attachment:

Success standards: To be determined by the BLM.

Pit closure description: NA

Pit closure attachment:

Section 11 - Surface Ownership

Disturbance type: WELL PAD

Describe:

Surface Owner: BUREAU OF LAND MANAGEMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland: **USFS Ranger District:**

Disturbance type: PIPELINE

Describe:

Surface Owner: BUREAU OF LAND MANAGEMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland: **USFS Ranger District:**

Disturbance type: OTHER

Describe: Electric Line

Surface Owner: BUREAU OF LAND MANAGEMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland: **USFS Ranger District:**

Operator Name: OXY USA INCORPORATED

Well Name: PRECIOUS 30-18 FEDERAL COM **Well Number:** 7H

Disturbance type: NEW ACCESS ROAD

Describe:

Surface Owner: BUREAU OF LAND MANAGEMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland: **USFS Ranger District:**

Section 12 - Other Information

Right of Way needed? YES **Use APD as ROW?** YES

ROW Type(s): 281001 ROW - ROADS,285003 ROW – POWER TRANS,288100 ROW – O&G Pipeline,288101 ROW – O&G Facility Sites,289001 ROW- O&G Well Pad

ROW Applications

SUPO Additional Information: Permian Basin MOA - To be submitted after APD acceptance. GIS Shapefiles available for BLM download from shared FTP site after APD submittal.
Use a previously conducted onsite? NO

Previous Onsite information:

Other SUPO Attachment

Precious30_18FedCom7H_SUPO_20190129134752.pdf

Precious30_18FdCom7H_GasCapPlan_20190829083455.pdf

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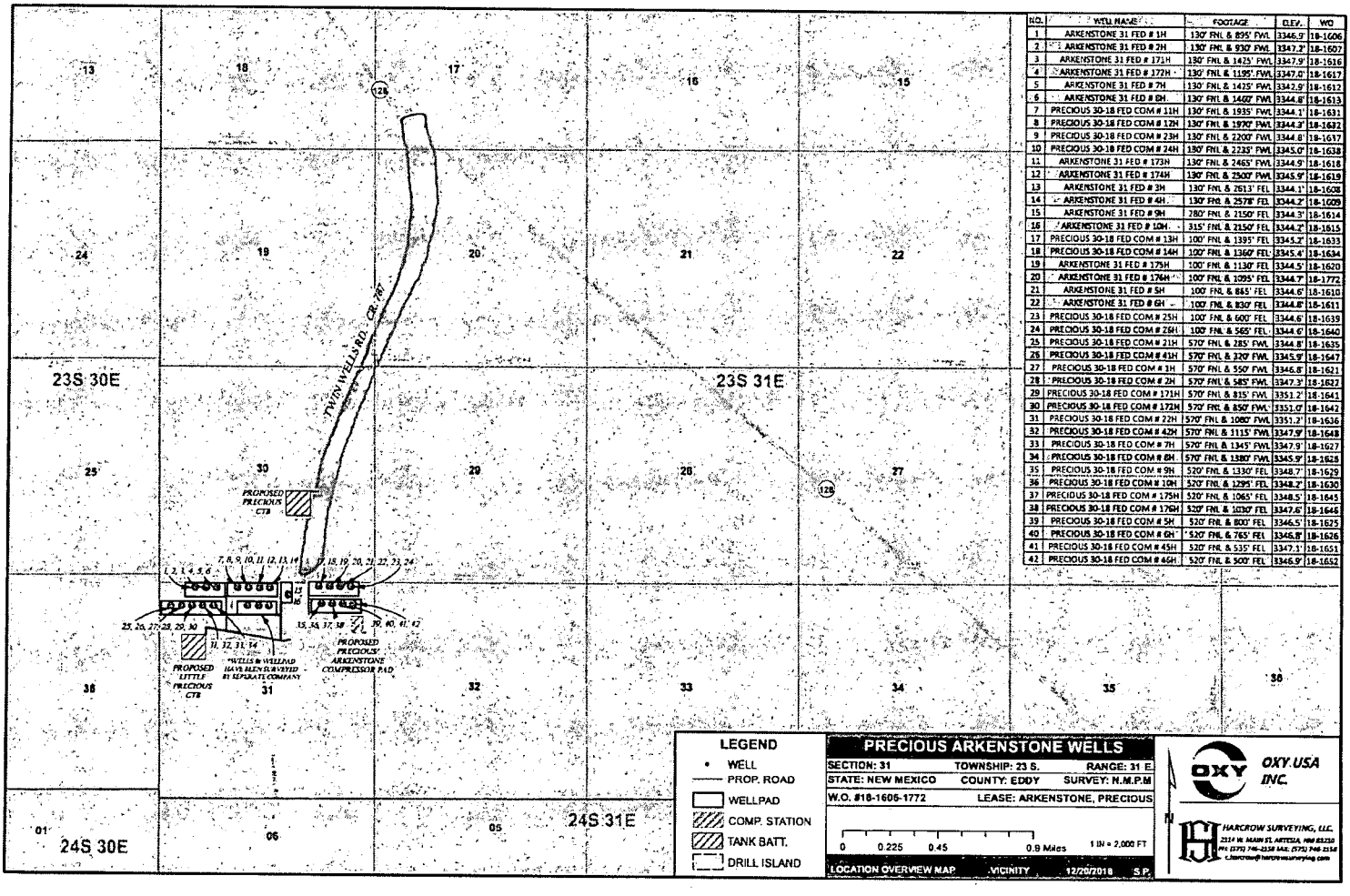


NO.	WELL NAME	FOOTAGE	ELEV.	WO
1	ARKENSTONE 31 FED # 1H	130' FNL & 895' FWL	3346.9'	18-1606
2	ARKENSTONE 31 FED # 2H	130' FNL & 930' FWL	3347.3'	18-1607
3	ARKENSTONE 31 FED # 171H	130' FNL & 1475' FWL	3347.9'	18-1616
4	ARKENSTONE 31 FED # 172H	130' FNL & 1195' FWL	3347.0'	18-1617
5	ARKENSTONE 31 FED # 7H	130' FNL & 1425' FWL	3342.9'	18-1612
6	ARKENSTONE 31 FED # 8H	130' FNL & 1460' FWL	3344.8'	18-1613
7	PRECIOUS 30-18 FED COM # 11H	130' FNL & 1935' FWL	3344.1'	18-1631
8	PRECIOUS 30-18 FED COM # 12H	130' FNL & 1970' FWL	3344.3'	18-1632
9	PRECIOUS 30-18 FED COM # 23H	130' FNL & 2200' FWL	3344.8'	18-1617
10	PRECIOUS 30-18 FED COM # 24H	130' FNL & 2235' FWL	3345.0'	18-1638
11	ARKENSTONE 31 FED # 173H	130' FNL & 2465' FWL	3344.9'	18-1618
12	ARKENSTONE 31 FED # 174H	130' FNL & 2500' FWL	3345.9'	18-1619
13	ARKENSTONE 31 FED # 3H	130' FNL & 2613' FEL	3344.1'	18-1608
14	ARKENSTONE 31 FED # 4H	130' FNL & 2578' FEL	3344.2'	18-1609
15	ARKENSTONE 31 FED # 9H	780' FNL & 2150' FEL	3344.3'	18-1614
16	ARKENSTONE 31 FED # 10H	315' FNL & 2150' FEL	3344.2'	18-1615
17	PRECIOUS 30-18 FED COM # 13H	100' FNL & 1395' FEL	3345.2'	18-1633
18	PRECIOUS 30-18 FED COM # 14H	100' FNL & 1360' FEL	3345.4'	18-1634
19	ARKENSTONE 31 FED # 175H	100' FNL & 1130' FEL	3344.5'	18-1620
20	ARKENSTONE 31 FED # 176H	100' FNL & 1095' FEL	3344.7'	18-1772
21	ARKENSTONE 31 FED # 5H	100' FNL & 865' FEL	3344.6'	18-1610
22	ARKENSTONE 31 FED # 6H	100' FNL & 830' FEL	3344.8'	18-1611
23	PRECIOUS 30-18 FED COM # 25H	100' FNL & 600' FEL	3344.6'	18-1639
24	PRECIOUS 30-18 FED COM # 26H	100' FNL & 565' FEL	3344.6'	18-1640
25	PRECIOUS 30-18 FED COM # 21H	570' FNL & 285' FWL	3344.8'	18-1635
26	PRECIOUS 30-18 FED COM # 41H	570' FNL & 320' FWL	3345.9'	18-1647
27	PRECIOUS 30-18 FED COM # 1H	570' FNL & 550' FWL	3346.8'	18-1621
28	PRECIOUS 30-18 FED COM # 2H	570' FNL & 585' FWL	3347.3'	18-1622
29	PRECIOUS 30-18 FED COM # 171H	570' FNL & 815' FWL	3351.2'	18-1641
30	PRECIOUS 30-18 FED COM # 172H	570' FNL & 850' FWL	3351.0'	18-1642
31	PRECIOUS 30-18 FED COM # 22H	570' FNL & 1080' FWL	3351.2'	18-1636
32	PRECIOUS 30-18 FED COM # 42H	570' FNL & 1115' FWL	3347.9'	18-1648
33	PRECIOUS 30-18 FED COM # 7H	570' FNL & 1345' FWL	3347.9'	18-1627
34	PRECIOUS 30-18 FED COM # 8H	570' FNL & 1380' FWL	3345.9'	18-1628
35	PRECIOUS 30-18 FED COM # 9H	520' FNL & 1330' FEL	3348.7'	18-1629
36	PRECIOUS 30-18 FED COM # 10H	520' FNL & 1295' FEL	3348.2'	18-1630
37	PRECIOUS 30-18 FED COM # 175H	520' FNL & 1065' FEL	3348.5'	18-1645
38	PRECIOUS 30-18 FED COM # 176H	520' FNL & 1030' FEL	3347.6'	18-1646
39	PRECIOUS 30-18 FED COM # 5H	520' FNL & 800' FEL	3346.5'	18-1625
40	PRECIOUS 30-18 FED COM # 6H	520' FNL & 765' FEL	3346.8'	18-1626
41	PRECIOUS 30-18 FED COM # 45H	520' FNL & 535' FEL	3347.1'	18-1651
42	PRECIOUS 30-18 FED COM # 46H	520' FNL & 500' FEL	3346.9'	18-1652

PRECIOUS ARKENSTONE WELLS

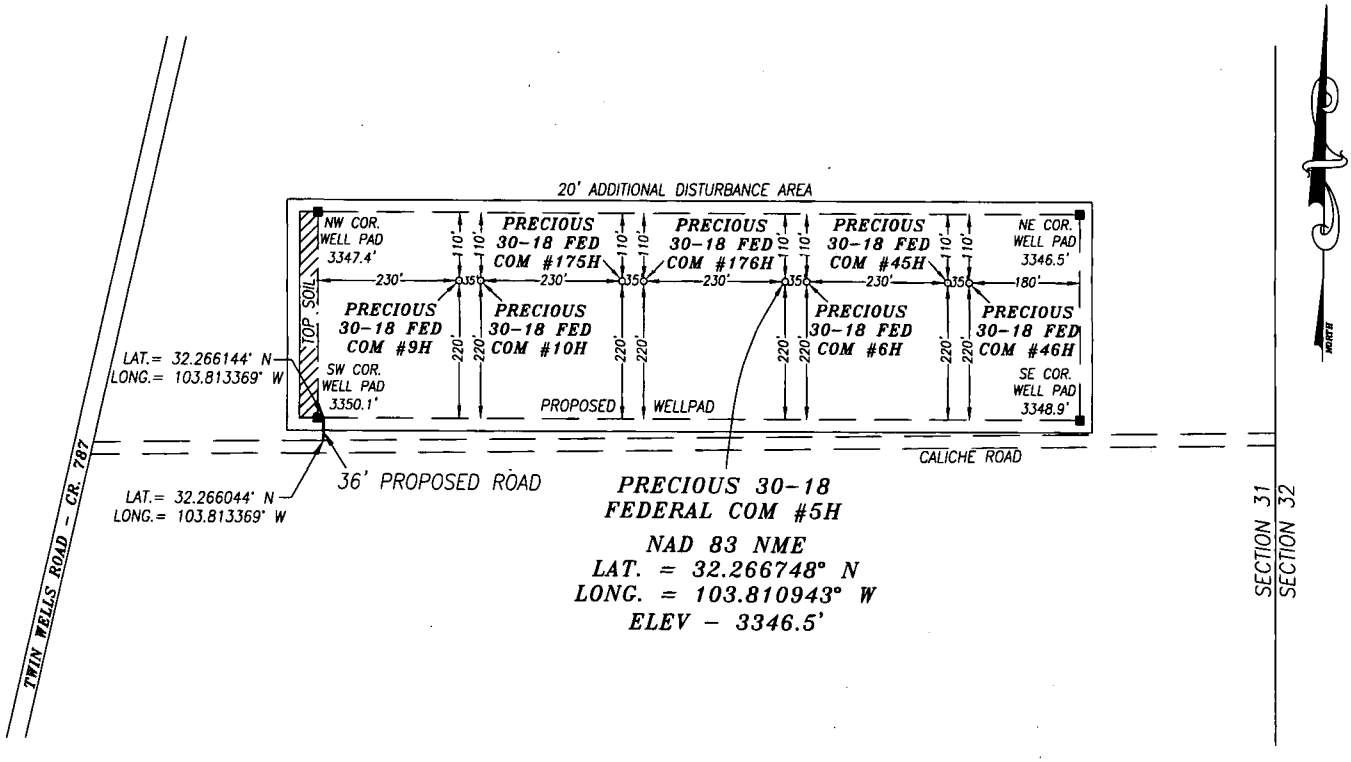
SECTION: 31 TOWNSHIP: 23 S. RANGE: 31 E.
STATE: NEW MEXICO COUNTY: EDDY SURVEY: N.M.P.M
W.O. #18-1606-1772 LEASE: ARKENSTONE, PRECIOUS

LOCATION OVERVIEW MAP VICINITY 12/20/2018 S.P.

OXY USA INC.

HARCROW SURVEYING, LLC.
2514 W. MAIN ST. ARTESIA, NM 88210
PH: (575) 746-2158 FAX: (575) 746-2158

OXY USA INC.
PRECIOUS 30-18 FEDERAL COM #5H
SITE PLAN
FAA PERMIT: NO



NOTES:

1) LATS & LONGS SHOWN HEREON ARE MERCATOR GRID AND CONFORM TO THE NEW MEXICO COORDINATE SYSTEM "NEW MEXICO EAST ZONE" NORTH AMERICAN DATUM 1983.

2) DISTANCES ARE GRID VALUES.

3) ALL FEATURES ARE EXISTING UNLESS OTHERWISE NOTED

CERTIFICATION
I, CHAD HARCROW, A NEW MEXICO REGISTERED PROFESSIONAL SURVEYOR CERTIFY THAT I DIRECTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

CHAD HARCROW NEW MEXICO 17777 LICENSED PROFESSIONAL SURVEYOR

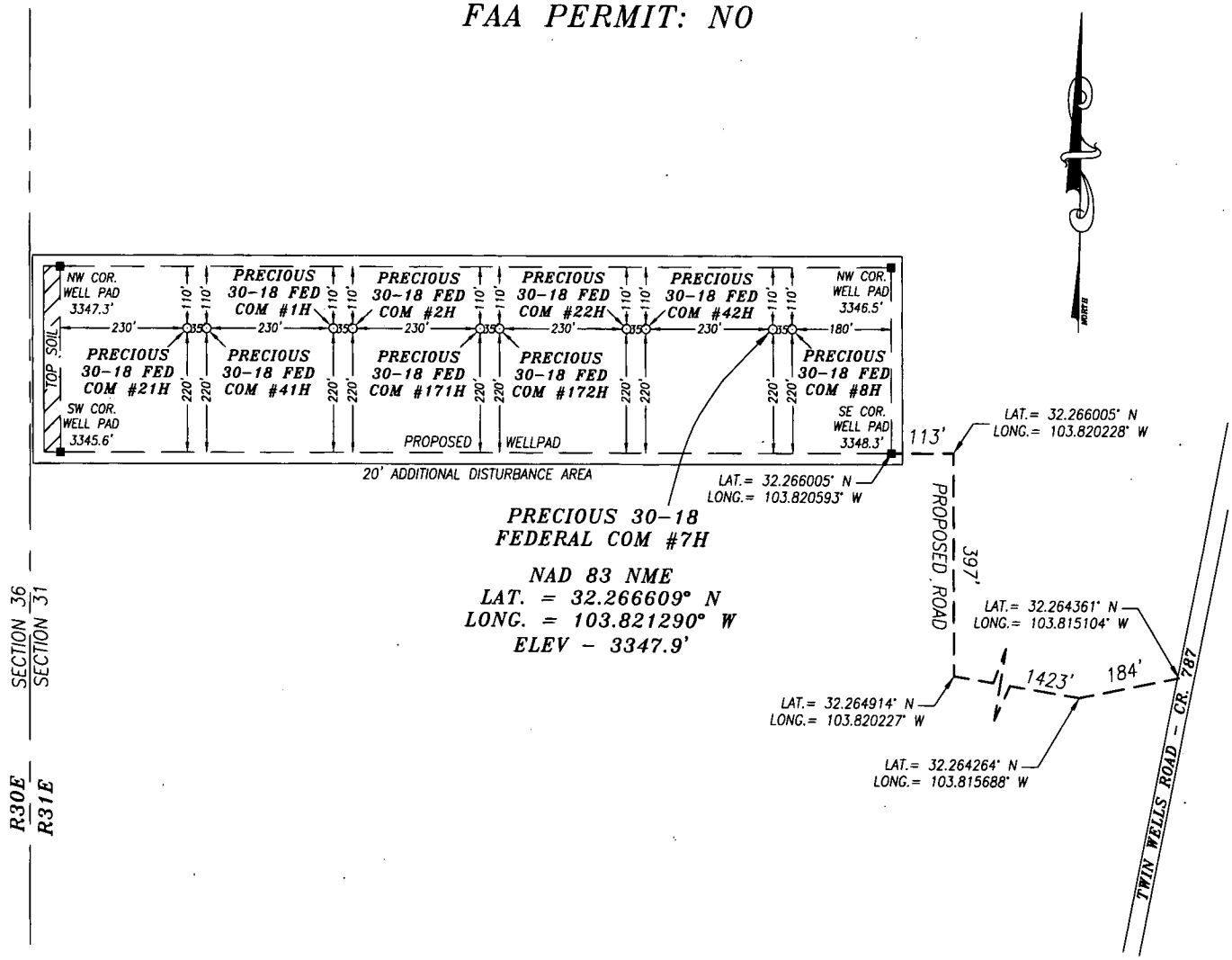
Chad Harcrow 01/03/19
CHAD HARCROW N.M.P.S. NO. 17777 DATE

HARCROW SURVEYING, LLC
2314 W. MAIN ST, ARTESIA, N.M. 88210
PH: (575) 746-2158
c.harcrow@harcrowsurveying.com

300 0 300 600 Feet
Scale: 1"=300'

OXY USA INC.		
PRECIOUS 30-18 FEDERAL COM #5H LOCATED 520 FEET FROM THE NORTH LINE AND 800 FEET FROM THE EAST LINE OF SECTION 31, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO		
SURVEY DATE: SEPTEMBER 18, 2018		SITE PLAN
DRAFTING DATE: DECEMBER 26, 2018		PAGE: 1 OF 1
APPROVED BY: CH	DRAWN BY: SP	FILE: 18-1625

OXY USA INC.
PRECIOUS 30-18 FEDERAL COM #7H
SITE PLAN
FAA PERMIT: NO



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CERTIFICATION
I, CHAD HARCROW, A NEW MEXICO REGISTERED PROFESSIONAL SURVEYOR CERTIFY THAT I DIRECTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

CHAD HARCROW NEW MEXICO 17777 LICENSED PROFESSIONAL SURVEYOR

Chad Harcrow — 01/03/19

CHAD HARCROW N.M.P.S. NO. 17777 — *DATE*

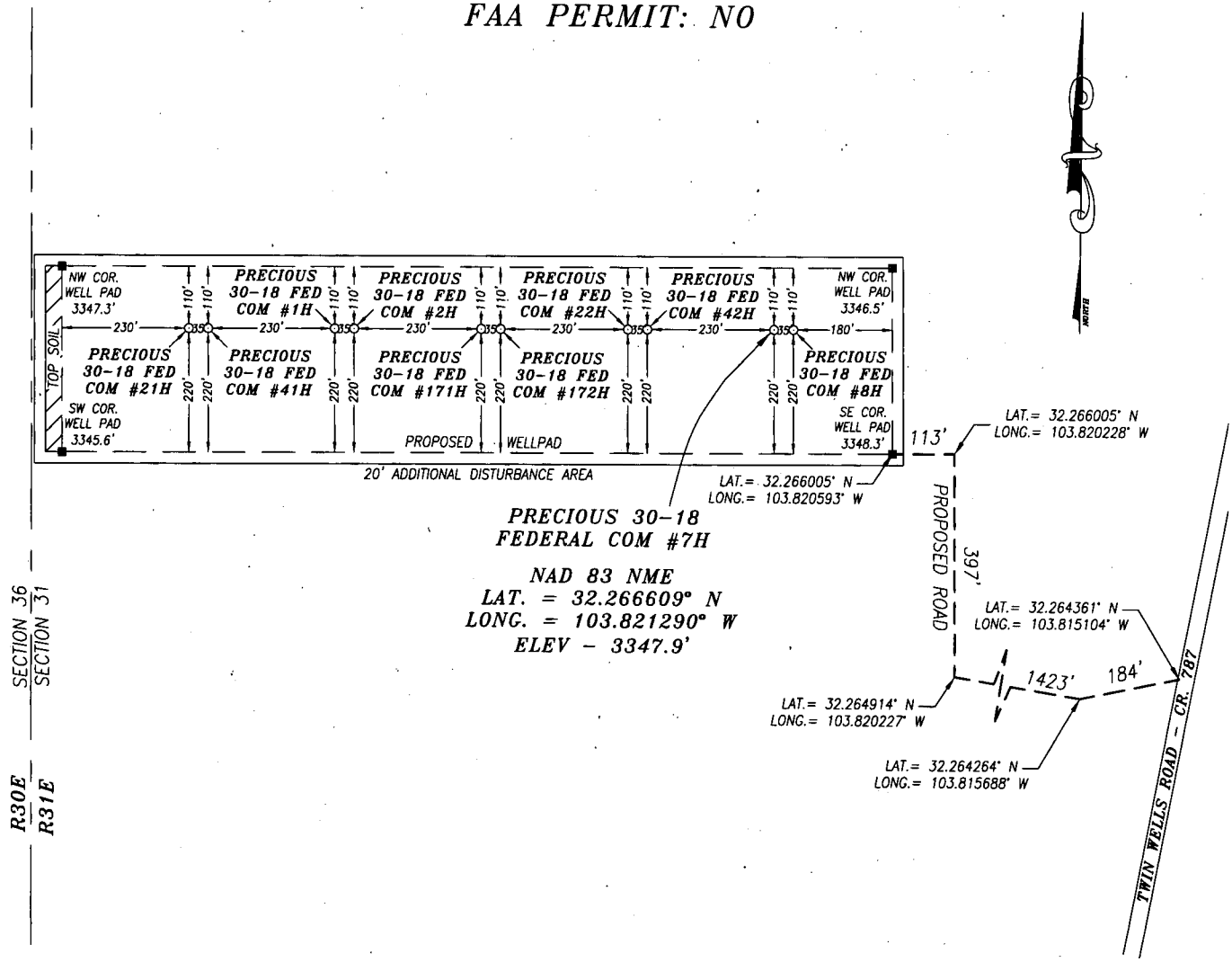
HARCROW SURVEYING, LLC
2314 W. MAIN ST, ARTESIA, N.M. 88210
PH: (575) 746-2158
c.harcrow@harcrowsurveying.com

300 0 300 600 Feet

Scale: 1"=300'

OXY USA INC.	
PRECIOUS 30-18 FEDERAL COM #7H LOCATED 570 FEET FROM THE NORTH LINE AND 1345 FEET FROM THE WEST LINE OF SECTION 31, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO	
SURVEY DATE: SEPTEMBER 18, 2018	SITE PLAN
DRAFTING DATE: DECEMBER 26, 2018	PAGE: 1 OF 1
APPROVED BY: CH / DRAWN BY: SP	FILE: 18-1627

OXY USA INC.
PRECIOUS 30-18 FEDERAL COM #7H
SITE PLAN
FAA PERMIT: NO



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CERTIFICATION
I, CHAD HARCROW, A NEW MEXICO REGISTERED PROFESSIONAL SURVEYOR CERTIFY THAT I DIRECTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

CHAD HARCROW NEW MEXICO 17777 LICENSED PROFESSIONAL SURVEYOR

Chad Harcrow
CHAD HARCROW N.M.P.S. NO. 17777

01/03/19
DATE

HARCROW SURVEYING, LLC
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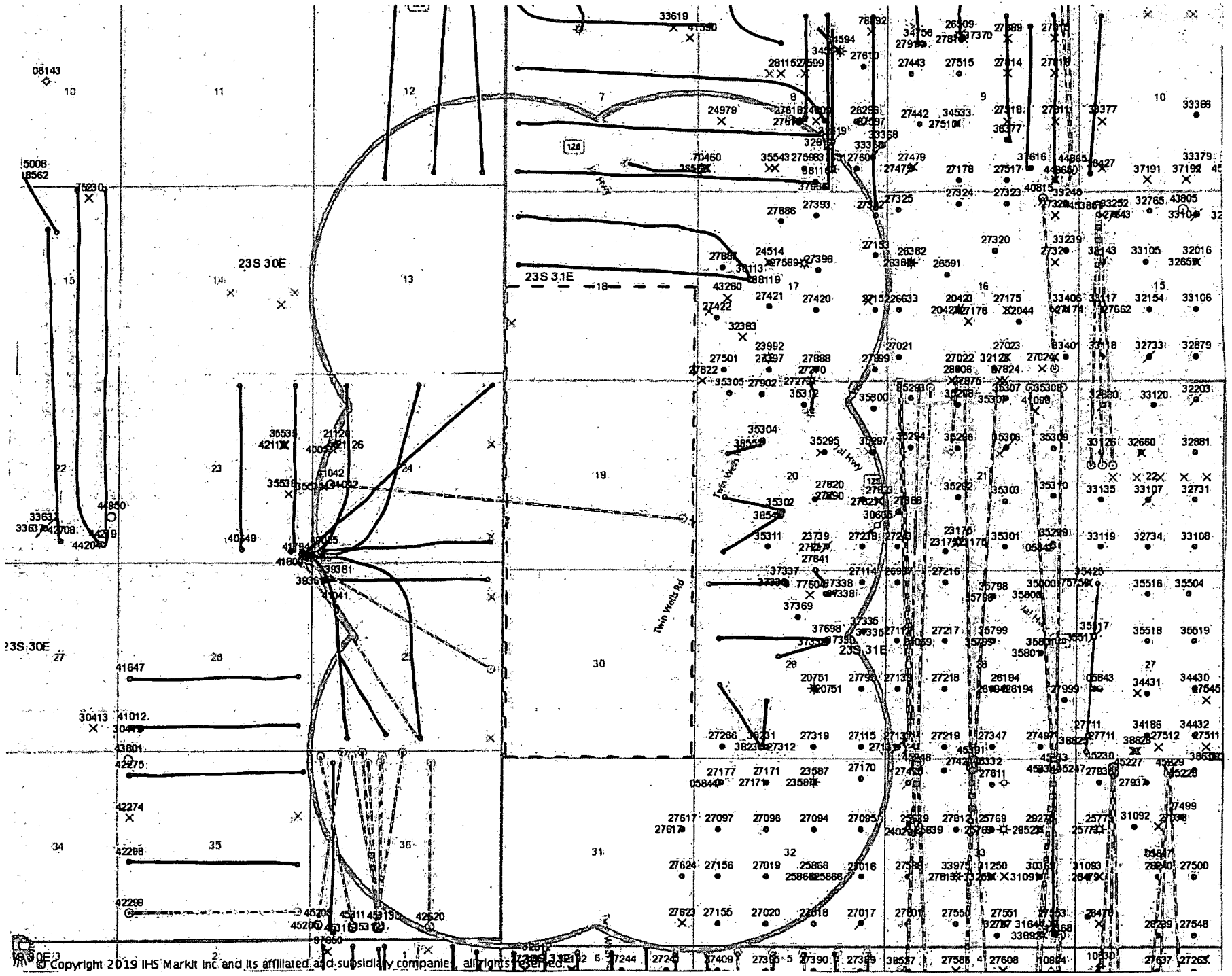
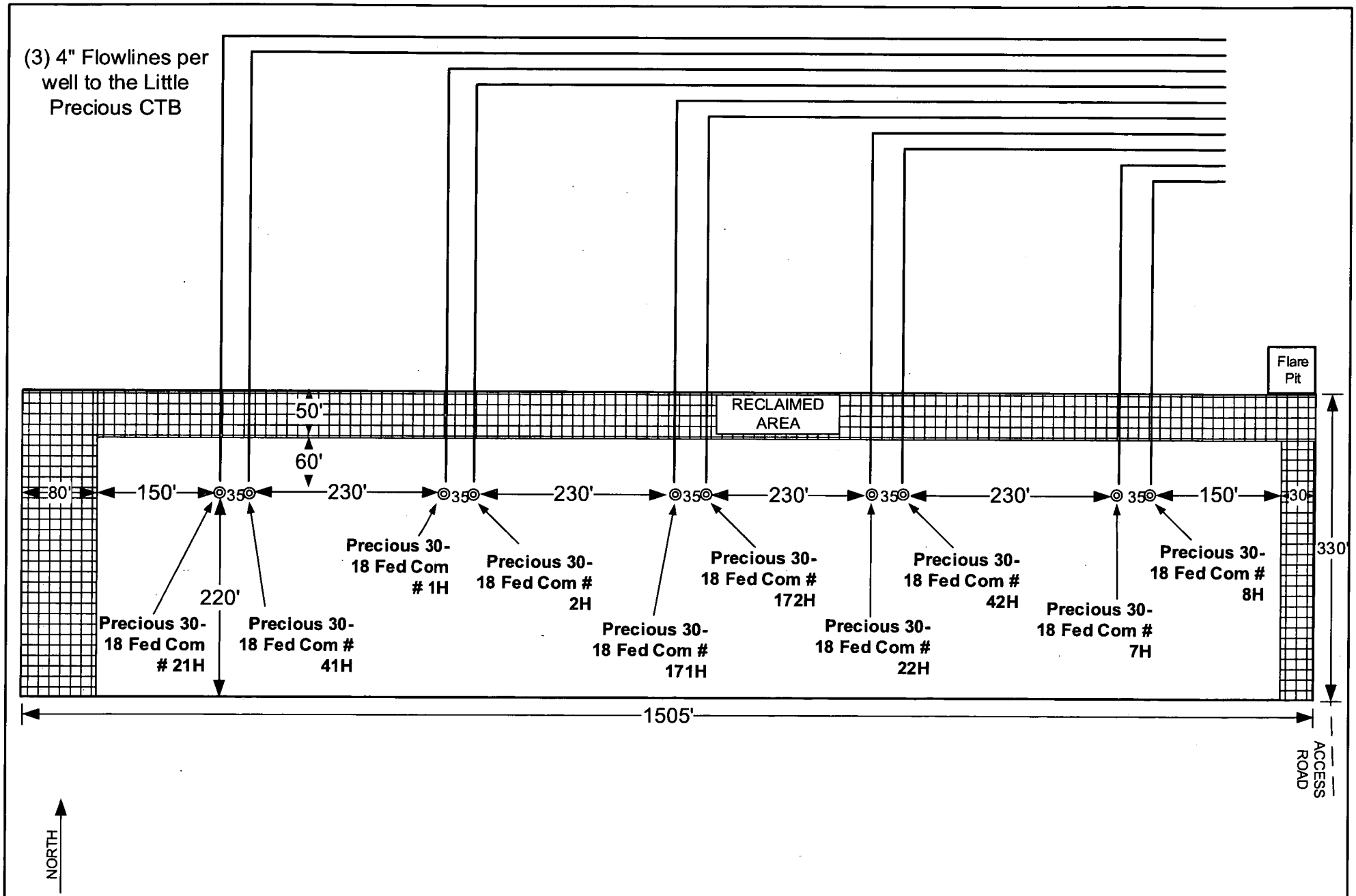
300 0 300 600 Feet
Scale: 1"=300'

OXY USA INC.		
PRECIOUS 30-18 FEDERAL COM #7H LOCATED 570 FEET FROM THE NORTH LINE AND 1345 FEET FROM THE WEST LINE OF SECTION 31, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO		
SURVEY DATE: SEPTEMBER 18, 2018		SITE PLAN
DRAFTING DATE: DECEMBER 26, 2018		PAGE: 1 OF 1
APPROVED BY: CH	DRAWN BY: SP	FILE: 18-1627

Precious 30-18 Federal - 1 Mile AOR





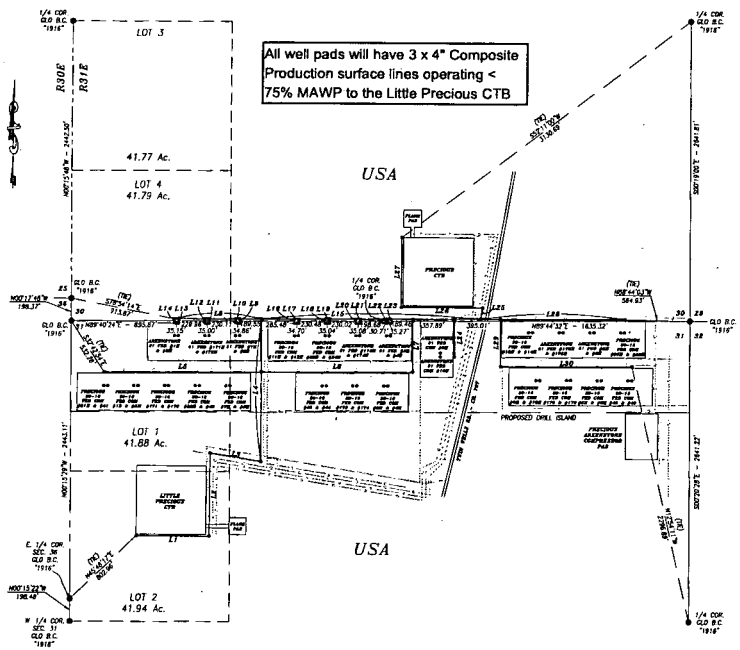
REVISION BLOCK						ENGINEERING RECORD	
NO.	DATE	DESCRIPTION	BY	CHK	APP	BY	DATE

FACILITY LAYOUT DIAGRAM

Precious 30-18 Fed Com # 1H, 2H, 7H, 8H, 21H, 22H, 41H, 42H, 171H, 172H
EDDY COUNTY, NEW MEXICO

FLOWLINE SYSTEM
OXY USA INC.

A PROPOSED FLOWLINE SYSTEM KNOWN AS THE "PRECIOUS/ARKENSTONE FLOWLINE SYSTEM" IN *SECTIONS 30 & 31, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.,* EDDY COUNTY, NEW MEXICO.



LINE #1
A PROPOSED FLOWLINE TO THE "LITTLE PRECIOUS CTB"

LINE	BEARING	DISTANCE
L1	S89°50'51"E	630.8'
L2	N00°00'19"E	731.0'
L3	S82°41'14"E	441.8'
L4	N00°19'09"W	1250.8'

0+00.0 BEGIN SURVEY @ LITTLE PRECIOUS CTB
LAT=32.262940° N
LONG=-103.833777° W
8+30.6 P.I. 91°30'25" LT
7+05.7 S. EDGE PROPOSED FLARE CORRIDOR
7+35.7 N. EDGE PROPOSED FLARE CORRIDOR
12+54.5 PROPOSED GAS LINE QTY
13+29.6 PROPOSED ELECTRIC LINE QTY
13+41.6 P.I. 90°13'26" LT
16+07.4 P.I. 89°33'35" LT
18+58.1 PROPOSED ROAD QTY
22+41.7 PROPOSED ELECTRIC LINE QTY
22+51.4 PROPOSED ROAD QTY
23+31.7 TIE LT. PROPOSED LINE #2
TIE RT. PROPOSED LINE #3
28+06.7 PROPOSED GAS LINE QTY
28+81.5 PROPOSED ELECTRIC LINE QTY
29+91.1 PROPOSED ROAD QTY
30+47.6 31-30 SECTION LINE
30+58.0 END SURVEY @ PRECIOUS CTB
TIE LT. PROPOSED LINE #4
TIE RT. PROPOSED LINE #5
LAT=32.268222° N
LONG=-103.830307° W

LINE #2
A PROPOSED FLOWLINE FROM THE "PRECIOUS 30-18 FED COM #1H, #2H, #7H, #8H, #21H, #22H, #41, #42, #171, #172"

LINE	BEARING	DISTANCE
L5	S89°41'24"E	1385.3'

0+00.0 BEGIN SURVEY @ 25+91.7 OF PROPOSED LINE #1
LAT=32.266940° N
LONG=-103.820301° W
2+70.1 TIE LT. TO PRECIOUS 30-18 FED COM #8H
2+87.6 PROPOSED GAS LINE QTY
3+05.5 TIE LT. TO PRECIOUS 30-18 FED COM #7H
5+33.2 TIE LT. TO PRECIOUS 30-18 FED COM #42
5+52.7 PROPOSED GAS LINE QTY
7+70.3 TIE LT. TO PRECIOUS 30-18 FED COM #22H
8+00.2 TIE LT. TO PRECIOUS 30-18 FED COM #12
8+17.5 PROPOSED GAS LINE QTY
9+25.1 TIE LT. TO PRECIOUS 30-18 FED COM #21H
10+63.3 TIE LT. TO PRECIOUS 30-18 FED COM #2H
10+82.8 PROPOSED GAS LINE QTY
11+00.7 TIE LT. TO PRECIOUS 30-18 FED COM #1H
13+30.3 TIE LT. TO PRECIOUS 30-18 FED COM #41
13+47.7 PROPOSED GAS LINE QTY
13+65.3 END SURVEY/TIE LT. TO PRECIOUS 30-18 FED COM #21H
LAT=32.266530° N
LONG=-103.824717° W

LINE #3
A PROPOSED FLOWLINE FROM THE "PRECIOUS 30-18 FED COM #3H, #4H, #43, #44, #173, #174"

LINE	BEARING	DISTANCE
L6	N89°41'14"E	1304.8'
L7	N00°16'30"W	463.1'

0+00.0 BEGIN SURVEY @ 25+91.7 OF PROPOSED LINE #1
LAT=32.266940° N
LONG=-103.820307° W
0+22.5 PROPOSED ELECTRIC LINE QTY
0+53.2 TIE RT. TO PRECIOUS 30-18 FED COM #43
3+28.3 PROPOSED GAS LINE QTY
5+45.7 PROPOSED GAS LINE QTY
5+82.9 TIE RT. TO PRECIOUS 30-18 FED COM #44
7+93.5 TIE RT. TO PRECIOUS 30-18 FED COM #173
8+10.4 PROPOSED GAS LINE QTY
8+28.1 TIE RT. TO PRECIOUS 30-18 FED COM #174
10+58.6 TIE RT. TO PRECIOUS 30-18 FED COM #3H
10+76.1 PROPOSED GAS LINE QTY
10+83.4 TIE RT. TO PRECIOUS 30-18 FED COM #4H
11+04.6 P.I. 85°58'46" LT
13+18.9 PROPOSED GAS LINE QTY
13+85.0 PROPOSED ELECTRIC LINE QTY
174+54.2 31-30 SECTION LINE
174+89.9 END SURVEY @ 13+04.9 OF PROPOSED LINE #3
LAT=32.268221° N
LONG=-103.816081° W

LINE #4
A PROPOSED FLOWLINE FROM THE "ARKENSTONE 31 FED #1H, #3H, #7H, #8H, #171H, #172H"

LINE	BEARING	DISTANCE
L8	S88°43'39"W	754.6'

0+00.0 BEGIN SURVEY @ 30+58.0 OF PROPOSED LINE #1
LAT=32.266222° N
LONG=-103.820302° W
1+89.8 TIE LT. TO ARKENSTONE 31 FED #8H
2+08.2 PROPOSED GAS LINE QTY
2+24.4 TIE LT. TO ARKENSTONE 31 FED #7H
4+54.5 TIE LT. TO ARKENSTONE 31 FED #172H
44+73.1 PROPOSED GAS LINE QTY
4+89.5 TIE LT. TO ARKENSTONE 31 FED #171H
7+18.5 TIE LT. TO ARKENSTONE 31 FED #3H
7+37.0 PROPOSED GAS LINE QTY
7+54.6 END SURVEY/TIE LT. TO ARKENSTONE 31 FED #1H
LAT=32.266222° N
LONG=-103.822743° W

LINE	BEARING	DISTANCE
L9	S00°19'51"E	38.4'

0+00.0 BEGIN SURVEY @ 1+69.8 OF PROPOSED LINE #4 MAIN LINE
LAT=32.266222° N
LONG=-103.829815° W
0+16.2 30-31 SECTION LINE
0+38.4 END SURVEY @ ARKENSTONE 31 FED #8H
LAT=32.266120° N
LONG=-103.829915° W

LINE	BEARING	DISTANCE
L10	S00°19'51"E	38.4'

0+00.0 BEGIN SURVEY @ 2+24.4 OF PROPOSED LINE #4 MAIN LINE
LAT=32.265737° N
LONG=-103.821028° W
0+16.8 30-31 SECTION LINE
0+38.4 END SURVEY @ ARKENSTONE 31 FED #7H
LAT=32.265620° N
LONG=-103.821028° W

LINE #5
A PROPOSED FLOWLINE FROM THE "PRECIOUS 30-18 FED COM #11H, #12H, #23H, #24H" & "ARKENSTONE 31 FED #3H, #4H, #173H, #174H"

LINE	BEARING	DISTANCE
L13	N89°44'40"E	1665.9'

0+00.0 BEGIN SURVEY @ 30+58.0 OF PROPOSED LINE #1
LAT=32.266222° N
LONG=-101.820302° W
2+65.5 TIE RT. TO PRECIOUS 30-18 FED COM #11H
3+02.7 PROPOSED GAS LINE QTY
3+20.2 TIE RT. TO PRECIOUS 30-18 FED COM #12H
3+50.8 TIE RT. TO PRECIOUS 30-18 FED COM #23H
5+68.1 PROPOSED GAS LINE QTY
5+85.7 TIE RT. TO PRECIOUS 30-18 FED COM #24H
9+13.7 TIE RT. TO ARKENSTONE 31 FED #173H
9+33.4 PROPOSED GAS LINE QTY
9+50.8 TIE RT. TO ARKENSTONE 31 FED #174H
10+80.2 TIE RT. TO ARKENSTONE 31 FED #3H
10+98.8 PROPOSED GAS LINE QTY
11+15.4 TIE RT. TO ARKENSTONE 31 FED #4H
13+04.8 TIE-IN PROPOSED LINE #3
13+29.8 PROPOSED GAS LINE QTY
13+64.4 PROPOSED ELECTRIC LINE QTY
16+62.8 TIE RT. PROPOSED LINE #6
16+72.8 PROPOSED GAS LINE QTY
18+04.4 PROPOSED OIL LINE QTY
18+35.8 PROPOSED WATER LINE QTY
18+65.3 PROPOSED GAS LINE QTY
18+85.9 END SURVEY/TIE LT. PROPOSED LINE #7/ TIE LT. PROPOSED LINE #7 CONTINUE ONWARD PROPOSED LINE #8
LAT=32.268320° N
LONG=-103.814202° W

LINE	BEARING	DISTANCE
L14	S00°19'58"E	38.0'

0+00.0 BEGIN SURVEY @ 3+65.5 OF PROPOSED LINE #5 MAIN LINE
LAT=32.266221° N
LONG=-103.813379° W
0+16.1 30-31 SECTION LINE
0+38.0 END SURVEY @ PRECIOUS 30-18 FED COM #11H
LAT=32.266120° N
LONG=-103.813267° W

LINE	BEARING	DISTANCE
L15	S00°19'58"E	38.0'

0+00.0 BEGIN SURVEY @ 3+20.2 OF PROPOSED LINE #5 MAIN LINE
LAT=32.266221° N
LONG=-103.813268° W
0+16.1 30-31 SECTION LINE
0+38.0 END SURVEY @ PRECIOUS 30-18 FED COM #12H
LAT=32.266120° N
LONG=-103.813268° W

LINE	BEARING	DISTANCE
L16	S00°19'58"E	35.7'

0+00.0 BEGIN SURVEY @ 2+50.5 OF PROPOSED LINE #5 MAIN LINE
LAT=32.266221° N
LONG=-103.813521° W
0+15.8 30-31 SECTION LINE
0+33.7 END SURVEY @ PRECIOUS 30-18 FED COM #23H
LAT=32.266122° N
LONG=-103.813521° W

LINE	BEARING	DISTANCE
L17	S00°19'51"E	36.7'

0+00.0 BEGIN SURVEY @ +436.3 OF PROPOSED LINE #4 MAIN LINE
LAT=32.268222° N
LONG=-103.821772° W
0+17.8 30-31 SECTION LINE
0+36.7 END SURVEY @ ARKENSTONE 31 FED #12H
LAT=32.268121° N
LONG=-103.821772° W

LINE	BEARING	DISTANCE
L18	S00°19'51"E	36.7'

0+00.0 BEGIN SURVEY @ +485.8 OF PROPOSED LINE #4 MAIN LINE
LAT=32.268222° N
LONG=-103.821898° W
0+17.1 30-31 SECTION LINE
0+36.7 END SURVEY @ ARKENSTONE 31 FED #17H
LAT=32.268121° N
LONG=-103.821885° W

LINE	BEARING	DISTANCE
L19	S00°19'51"E	37.0'

0+00.0 BEGIN SURVEY @ 7+19.5 OF PROPOSED LINE #4 MAIN LINE
LAT=32.268222° N
LONG=-103.827830° W
0+17.3 30-31 SECTION LINE
0+37.5 END SURVEY @ ARKENSTONE 31 FED #3H
LAT=32.268120° N
LONG=-103.827829° W

LINE	BEARING	DISTANCE
L20	S00°19'51"E	37.1'

0+00.0 BEGIN SURVEY @ 7+54.8 OF PROPOSED LINE #4 MAIN LINE
LAT=32.268222° N
LONG=-103.827943° W
0+17.4 30-31 SECTION LINE
0+37.1 END SURVEY @ ARKENSTONE 31 FED #11H
LAT=32.268120° N
LONG=-103.827943° W

LINE	BEARING	DISTANCE
L21	S00°19'58"E	35.6'

0+00.0 BEGIN SURVEY @ 5+65.7 OF PROPOSED LINE #5 MAIN LINE
LAT=32.266221° N
LONG=-103.818402° W
0+15.8 30-31 SECTION LINE
0+35.6 END SURVEY @ PRECIOUS 30-18 FED COM #24H
LAT=32.266120° N
LONG=-103.818402° W

LINE	BEARING	DISTANCE
L22	S00°19'58"E	35.3'

0+00.0 BEGIN SURVEY @ 6+15.7 OF PROPOSED LINE #5 MAIN LINE
LAT=32.266221° N
LONG=-103.817556° W
0+14.5 30-31 SECTION LINE
0+35.3 END SURVEY @ ARKENSTONE 31 FED #173H
LAT=32.266120° N
LONG=-103.817464° W

LINE	BEARING	DISTANCE
L23	S00°19'58"E	35.7'

0+00.0 BEGIN SURVEY @ 8+50.8 OF PROPOSED LINE #5 MAIN LINE
LAT=32.266221° N
LONG=-103.815706° W
0+15.9 30-31 SECTION LINE
0+35.7 END SURVEY @ ARKENSTONE 31 FED #174H
LAT=32.266120° N
LONG=-103.815706° W

LINE	BEARING	DISTANCE
L24	S00°19'58"E	35.0'

0+00.0 BEGIN SURVEY @ 10+80.2 OF PROPOSED LINE #5 MAIN LINE
LAT=32.266221° N
LONG=-103.813800° W
0+15.7 30-31 SECTION LINE
0+35.0 END SURVEY @ ARKENSTONE 31 FED #3H
LAT=32.266120° N
LONG=-103.813800° W

LINE	BEARING	DISTANCE
L25	S00°19'58"E	35.0'

0+00.0 BEGIN SURVEY @ 11+15.4 OF PROPOSED LINE #5 MAIN LINE
LAT=32.266222° N
LONG=-103.813684° W
0+15.2 30-31 SECTION LINE
0+35.0 END SURVEY @ ARKENSTONE 31 FED #4H
LAT=32.266122° N
LONG=-103.813684° W

LINE #6
A PROPOSED FLOWLINE FROM THE "ARKENSTONE 31 FED COM #8H & #10H"

LINE	BEARING	DISTANCE
L26	S00°20'00"E	336.7'

0+00.0 BEGIN SURVEY @ 16+62.6 OF PROPOSED LINE #5
LAT=32.266370° N
LONG=-103.811402° W
0+15.2 30-31 SECTION LINE
0+35.0 TIE RT. TO ARKENSTONE 31 FED COM #8H
3+12.8 PROPOSED GAS LINE QTY
3+30.7 END SURVEY/TIE RT. TO ARKENSTONE 31 FED COM #10H
LAT=32.267311° N
LONG=-103.811402° W

LINE #7
A PROPOSED FLOWLINE TO THE "PRECIOUS CTB"

LINE	BEARING	DISTANCE
L25	N00°48'13"E	101.5'
L26	N89°59'16"W	83.8'
L27	N00°00'48"E	815.1'

0+00.0 BEGIN SURVEY @ 18+83.9 OF PROPOSED LINE #5
LAT=32.266370° N
LONG=-103.810202° W
0+41.2 PROPOSED ELECTRIC LINE
1+01.5 P.I. 89°43'11" LT
1+18.9 PROPOSED GAS LINE QTY
1+64.2 PROPOSED WATER LINE QTY
1+77.4 PROPOSED OIL LINE QTY
2+39.4 P.I. 90°00'00" RT
14+14.5 END SURVEY @ PRECIOUS CTB
LAT=32.270194° N
LONG=-103.816392° W

LINE #8
A PROPOSED FLOWLINE FROM THE "PRECIOUS 30-18 FED COM #5H, #6H, #13H, #14H" & "ARKENSTONE 31 FED #5H, #6H, #175H, #176H"

LINE	BEARING	DISTANCE
L28	N89°44'54"E	1242.5'

0+00.0 BEGIN SURVEY @ 16+85.8 OF PROPOSED LINE #5
LAT=32.266324° N
LONG=-103.814202° W
0+37.7 E. EDGE PAVED ROAD
0+52.2 E TRIN WELLS ROAD - CR. 787
0+68.8 E. EDGE PAVED ROAD
1+71.9 TIE RT. TO PROPOSED LINE #9
4+12.8 TIE RT. TO PRECIOUS 30-18 FED COM #13H
44+30.5 PROPOSED GAS LINE QTY
4+47.7 TIE RT. TO PRECIOUS 30-18 FED COM #14H
6+77.5 TIE RT. TO ARKENSTONE 31 FED #175H
6+93.4 PROPOSED GAS LINE QTY
7+12.7 TIE RT. TO ARKENSTONE 31 FED #176H
9+42.7 TIE RT. TO ARKENSTONE 31 FED #5H
9+60.3 PROPOSED GAS LINE QTY
9+77.8 TIE RT. TO ARKENSTONE 31 FED #6H
12+07.8 TIE RT. TO PRECIOUS 30-18 FED COM #25H
12+25.6 PROPOSED GAS LINE QTY
12+42.3 END SURVEY/ TIE RT. TO PRECIOUS 30-18 FED COM #26H
LAT=32.2982°N
LONG=-103.810183° W

LINE #9
A PROPOSED FLOWLINE FROM THE "PRECIOUS 30-18 FED COM #5H, #6H, #9H, #10H, #45, #46, #175, #176"

LINE	BEARING	DISTANCE
L29	S00°13'22"E	415.1'
L30	N89°44'52"E	1138.4'

0+00.0 BEGIN SURVEY @ 14+71.8 OF PROPOSED LINE #9
LAT=32.2789770° N
LONG=-103.813646° W
4+15.1 P.I. 89°13'46" LT
4+35.3 PROPOSED ROAD QTY
7+31.5 TIE RT. TO PRECIOUS 30-18 FED COM #9H
7+39.1 PROPOSED GAS LINE QTY
7+58.5 TIE RT. TO PRECIOUS 30-18 FED COM #10H
9+86.5 TIE RT. TO PRECIOUS 30-18 FED COM #175
10+04.1 PROPOSED GAS LINE QTY
10+21.6 TIE RT. TO PRECIOUS 30-18 FED COM #176
11+51.7 TIE RT. TO PRECIOUS 30-18 FED COM #5H
12+48.4 PROPOSED GAS LINE QTY
12+86.8 TIE RT. TO PRECIOUS 30-18 FED COM #6H
15+18.9 TIE RT. TO PRECIOUS 30-18 FED COM #45
15+34.0 PROPOSED GAS LINE QTY
15+51.5 END SURVEY/ TIE RT. TO PRECIOUS 30-18 FED COM #46
LAT=32.267078° N
LONG=-103.809771° W

DESCRIPTION

NINE STRIPS OF LAND 30.0 FEET WIDE AND TOTALING 13877.1 FEET OR 841.04 RODS OR 2.628 MILES IN LENGTH CROSSING USA LAND IN SECTIONS 30 & 31, TOWNSHIP 23 SOUTH, RANGE 31 EAST, EDDY COUNTY, NEW MEXICO AND BEING 15.0 FEET LEFT AND 15.0 FEET RIGHT OF THE ABOVE PLATTED CENTERLINE SURVEYS.

LEGEND

- ● – MONUMENT FOUND AS NOTED
- ○ – WELL S.H.L.
- ——— – PROPOSED ROAD
- ——4——4—— – WATER LINE
- ——O——O—— – OIL LINE
- ——E——E—— – ELECTRIC LINE

NOTE:
LATS & LONGS SHOWN HEREON ARE GRID VALUES.

BASIS OF BEARING:
BEARINGS SHOWN HEREON ARE MERCATOR GRID AND CONFORM TO THE NEW MEXICO COORDINATE SYSTEM "NEW MEXICO EAST ZONE" NORTH AMERICAN DATUM 1983. DISTANCES ARE SURFACE VALUES.

CERTIFICATION
I, CHAD HARCROW, A NEW MEXICO REGISTERED PROFESSIONAL SURVEYOR CERTIFY THAT I DIRECTED AND AM RESPONSIBLE FOR THIS SURVEY; THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF; AND THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO.

CHAD L. HARCROW NEW MEXICO 17777 LICENSED PROFESSIONAL SURVEYOR

Chad Harcrow 12/21/18
CHAD HARCROW N.M.P.S. NO. 17777 DATE

HARCROW SURVEYING, LLC
3314 W. MAIN ST. ARTESIA, N.M. 88210
PH: (575) 746-3158 FAX: (575) 746-2158

500 0 500 1000 FEET
SCALE: 1"=500'

OXY USA INC.

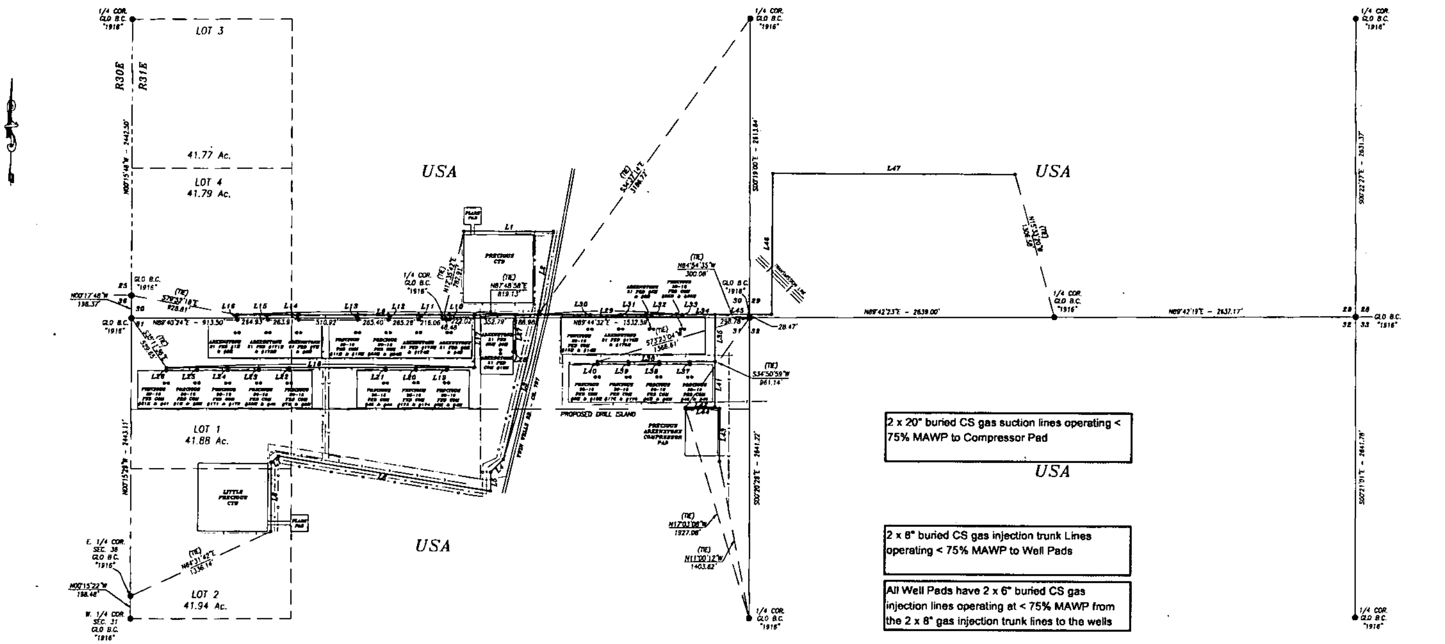
SURVEY OF A PROPOSED FLOWLINE SYSTEM LOCATED IN SECTIONS 30 & 31, TOWNSHIP 23 SOUTH, RANGE 31 EAST, NMPM, EDDY COUNTY, NEW MEXICO

SURVEY DATE: NOVEMBER 2018	PAGE 1 OF 1
DRAWING DATE: DECEMBER 19, 2018	FLOWLINE SYSTEM
APPROVED BY: CH	DRAWN BY: BP

FILES: 18-1576, 18-1579, 18-1582, 18-1583, 18-1586, 18-1587, 18-1590, 18-1591, 18-1594, 18-1595, 18-1598, 18-1599, 18-1602, 18-1603

GAS LINE SYSTEM
OXY USA INC.

A PROPOSED GAS LINE SYSTEM KNOWN AS THE "PRECIOUS/ARKENSTONE GAS LINE SYSTEM" IN
SECTIONS 29, 30, 31, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.,
EDDY COUNTY, NEW MEXICO.



LINES #1 THRU. #8 DESCRIPTION

EIGHT STRIPS OF LAND 30.0 FEET WIDE AND TOTALING 16863.3 FEET OR 1022.02 RODS OR 3.194 MILES IN LENGTH CROSSING USA LAND IN SECTIONS 30 & 31, TOWNSHIP 23 SOUTH, RANGE 31 EAST, EDDY COUNTY, NEW MEXICO AND BEING 15.0 FEET LEFT AND 15.0 FEET RIGHT OF THE ABOVE PLATTED CENTERLINE SURVEYS.

SUCTION LINE DESCRIPTION

A STRIP OF LAND 50.0 FEET WIDE AND BEING 3830.1 FEET OR 232.13 RODS OR 0.725 MILES IN LENGTH CROSSING USA LAND IN SECTIONS 29 & 30, TOWNSHIP 23 SOUTH, RANGE 31 EAST, EDDY COUNTY, NEW MEXICO AND BEING 15.0 FEET LEFT AND 15.0 FEET RIGHT OF THE ABOVE PLATTED CENTERLINE SURVEYS.

LEGEND

- ● - MONUMENT FOUND AS NOTED
- ⊙ - WELL S.H.L.
- PROPOSED ROAD
- PROPOSED WATER LINE
- PROPOSED OIL LINE
- PROPOSED FLOWLINE
- PROPOSED ELECTRIC LINE (UNLESS OTHERWISE NOTED)
- BARBED-WIRE FENCE

LINE #1

A PROPOSED GAS LINE FROM THE "PRECIOUS CTB" TO THE "LITTLE PRECIOUS CTB"

LINE	BEARING	DISTANCE
L1	S89°59'32"E	775.3'
L2	S09°43'04"W	714.7'
L3	S12°48'53"W	1333.0'
L4	S44°28'38"W	157.5'
L5	S00°00'22"E	187.7'
L6	N80°42'43"W	1865.5'
L7	S47°20'09"W	82.3'
L8	S00°00'52"W	606.8'

0+00.0 BEGIN SURVEY @ PRECIOUS CTB
0+60.0 W. EDGE PROP. FLARE CORRIDOR
0+90.0 E. EDGE PROP. FLARE CORRIDOR
7+75.3 P.I. 89°44'36" RT
7+83.9 PROPOSED ELECTRIC LINE OXY
8+15.9 PROPOSED ROAD OXY
14+29.6 PROPOSED FLOWLINE OXY
14+90.0 P.I. 03°03'49" RT
14+90.2 PROPOSED ELECTRIC LINE OXY
15+19.1 TEE RT. PROPOSED LINE #1
TEE LT. PROPOSED LINE #4
15+31.9 PROPOSED FLOWLINE OXY
15+47.4 30-31 SECTION LINE
28+23.0 P.I. 31°38'03" RT
29+80.5 P.I. 44°27'18" LT
30+43.6 PROPOSED ROAD OXY
31+48.2 P.I. 89°17'39" RT
31+83.3 PROPOSED WATER LINE OXY
32+18.1 PROPOSED OIL LINE OXY
50+13.7 P.I. 51°37'08" LT
50+96.0 P.I. 47°19'17" LT
56+14.9 N. EDGE PROP. FLARE CORRIDOR
56+44.9 S. EDGE PROP. FLARE CORRIDOR
57+04.6 END SURVEY @ LITTLE PRECIOUS CTB

LINE #2

A PROPOSED GAS LINE FROM THE PROPOSED MAIN LINE TO THE NORTHWESTERN MOST PRECIOUS/ARKENSTONE WELLPADS

LINE	BEARING	DISTANCE
L9	S89°44'43"W	2605.2'

0+00.0 BEGIN SURVEY @ 15+19.1 OF PROPOSED MAIN LINE
0+30.3 PROPOSED WATER LINE OXY
0+60.9 PROPOSED OIL LINE OXY
1+95.4 TEE LT. PROPOSED LINE #3
5+03.8 PROPOSED ELECTRIC LINE OXY
5+48.2 TEE LT. PROPOSED LINE #2
7+70.2 TEE LT. TO ARKENSTONE 31 FED #3H & #4H
10+34.8 TEE LT. TO ARKENSTONE 31 FED #173H & #174H
13+00.0 TEE LT. TO PRECIOUS 30-18 FED COM #23H & #24H
15+65.4 TEE LT. TO PRECIOUS 30-18 FED COM #11H & #12H
20+76.4 TEE LT. TO ARKENSTONE 31 FED #7H & #8H
23+40.3 TEE LT. TO ARKENSTONE 31 FED #171H & #172H
26+05.2 END SURVEY/TEE LT. TO ARKENSTONE 31 FED #1H & #2H

LINE	BEARING	DISTANCE
L10	S00°19'38"E	47.4'

0+00.0 BEGIN SURVEY @ 7+70.2 OF PROPOSED LINE #1
0+12.5 PROPOSED FLOWLINE OXY
0+27.6 30-31 SECTION LINE
0+47.4 END SURVEY @ ARKENSTONE 31 FED #3H & #4H

LINE	BEARING	DISTANCE
L11	S00°19'38"E	47.7'

0+00.0 BEGIN SURVEY @ 10+34.8 OF PROPOSED LINE #1
0+12.5 PROPOSED FLOWLINE OXY
0+27.8 30-31 SECTION LINE
0+47.7 END SURVEY @ ARKENSTONE 31 FED #173H & #174H

LINE	BEARING	DISTANCE
L12	S00°19'38"E	48.0'

0+00.0 BEGIN SURVEY @ 13+00.0 OF PROPOSED LINE #1
0+12.4 PROPOSED FLOWLINE OXY
0+28.2 30-31 SECTION LINE
0+48.0 END SURVEY @ PRECIOUS 30-18 FED COM #23H & #24H

LINE	BEARING	DISTANCE
L13	S00°19'38"E	48.4'

0+00.0 BEGIN SURVEY @ 15+65.4 OF PROPOSED LINE #1
0+12.4 PROPOSED FLOWLINE OXY
0+28.5 30-31 SECTION LINE
0+48.4 END SURVEY @ PRECIOUS 30-18 FED COM #11H & #12H

LINE	BEARING	DISTANCE
L14	S00°19'51"E	48.8'

0+00.0 BEGIN SURVEY @ 20+76.4 OF PROPOSED LINE #1
0+12.5 PROPOSED FLOWLINE OXY
0+29.2 30-31 SECTION LINE
0+48.8 END SURVEY @ ARKENSTONE 31 FED #7H & #8H

LINE	BEARING	DISTANCE
L15	S00°19'51"E	49.2'

0+00.0 BEGIN SURVEY @ 23+40.3 OF PROPOSED LINE #1
0+12.5 PROPOSED FLOWLINE OXY
0+29.5 30-31 SECTION LINE
0+49.2 END SURVEY @ ARKENSTONE 31 FED #171H & #172H

LINE	BEARING	DISTANCE
L16	S00°19'51"E	49.5'

0+00.0 BEGIN SURVEY @ 26+05.2 OF PROPOSED LINE #1
0+12.5 PROPOSED FLOWLINE OXY
0+29.8 30-31 SECTION LINE
0+49.5 END SURVEY @ ARKENSTONE 31 FED #1H & #2H

LINE #3

A PROPOSED GAS LINE FROM THE PROPOSED LINE #1 TO THE SOUTHWESTERN MOST PRECIOUS WELLPADS

LINE	BEARING	DISTANCE
L17	S00°17'31"E	462.4'
L18	S89°41'08"W	2667.4'

0+00.0 BEGIN SURVEY @ 5+48.2 OF PROPOSED LINE #1
3+87.3 PROPOSED ELECTRIC LINE OXY
4+62.4 P.I. 89°58'39" RT
4+77.3 PROPOSED FLOWLINE OXY
7+06.0 TEE LT. TO PRECIOUS 30-18 FED COM #3H & #4H
9+71.4 TEE LT. TO PRECIOUS 30-18 FED COM #173 & #174
12+36.5 TEE LT. TO PRECIOUS 30-18 FED COM #43 & #44
17+28.9 PROPOSED ELECTRIC LINE OXY
17+59.7 PROPOSED ROAD OXY
17+82.2 PROPOSED FLOWLINE OXY
20+69.7 TEE LT. TO PRECIOUS 30-18 FED COM #7H & #8H
23+34.9 TEE LT. TO PRECIOUS 30-18 FED COM #22H & #42
25+99.6 TEE LT. TO PRECIOUS 30-18 FED COM #171 & #172
28+64.8 TEE LT. TO PRECIOUS 30-18 FED COM #1H & #2H
31+29.8 END SURVEY/TEE LT. TO PRECIOUS 30-18 FED COM #21H & #41

LINE	BEARING	DISTANCE
L19	S00°18'51"E	25.0'

0+00.0 BEGIN SURVEY @ 7+06.0 OF PROPOSED LINE #2
0+15.0 PROPOSED FLOWLINE OXY
0+25.0 END SURVEY @ PRECIOUS 30-18 FED COM #3H & #4H

LINE	BEARING	DISTANCE
L20	S00°18'51"E	25.0'

0+00.0 BEGIN SURVEY @ 9+71.4 OF PROPOSED LINE #2
0+15.0 PROPOSED FLOWLINE OXY
0+25.0 END SURVEY @ PRECIOUS 30-18 FED COM #173 & #174

LINE	BEARING	DISTANCE
L21	S00°18'51"E	25.0'

0+00.0 BEGIN SURVEY @ 12+36.5 OF PROPOSED LINE #2
0+15.0 PROPOSED FLOWLINE OXY
0+25.0 END SURVEY @ PRECIOUS 30-18 FED COM #43 & #44

LINE	BEARING	DISTANCE
L22	S00°19'35"E	25.2'

0+00.0 BEGIN SURVEY @ 20+69.7 OF PROPOSED LINE #2
0+14.9 PROPOSED FLOWLINE OXY
0+25.2 END SURVEY @ PRECIOUS 30-18 FED COM #7H & #8H

LINE	BEARING	DISTANCE
L23	S00°19'35"E	25.2'

0+00.0 BEGIN SURVEY @ 23+34.9 OF PROPOSED LINE #2
0+14.9 PROPOSED FLOWLINE OXY
0+25.2 END SURVEY @ PRECIOUS 30-18 FED COM #22H & #42

LINE	BEARING	DISTANCE
L24	S00°19'35"E	25.3'

0+00.0 BEGIN SURVEY @ 25+99.6 OF PROPOSED LINE #2
0+14.9 PROPOSED FLOWLINE OXY
0+25.3 END SURVEY @ PRECIOUS 30-18 FED COM #171 & #172

LINE	BEARING	DISTANCE
L25	S00°19'35"E	25.4'

0+00.0 BEGIN SURVEY @ 25+64.8 OF PROPOSED LINE #2
0+14.8 PROPOSED FLOWLINE OXY
0+25.4 END SURVEY @ PRECIOUS 30-18 FED COM #1H & #2H

LINE	BEARING	DISTANCE
L26	S00°19'35"E	25.4'

0+00.0 BEGIN SURVEY @ 31+29.8 OF PROPOSED LINE #2
0+14.9 PROPOSED FLOWLINE OXY
0+25.4 END SURVEY @ PRECIOUS 30-18 FED COM #21H & #41

LINE #4

A PROPOSED GAS LINE FROM THE PROPOSED LINE #1 TO THE ARKENSTONE 31 FED COM #9H & #10H

LINE	BEARING	DISTANCE
L27	S00°23'14"E	325.2'
L28	S89°39'38"W	20.3'

0+00.0 BEGIN SURVEY @ 1+95.4 OF PROPOSED LINE #1
0+12.4 PROPOSED FLOWLINE OXY
0+27.5 30-31 SECTION LINE
3+25.2 P.I. 90°02'53" RT
3+35.5 PROPOSED FLOWLINE OXY
3+45.5 END SURVEY @ ARKENSTONE 31 FED COM #9H & #10H

LINE #5

A PROPOSED GAS LINE FROM THE PROPOSED MAIN LINE TO THE NORTHEASTERN MOST PRECIOUS/ARKENSTONE WELLPADS

LINE	BEARING	DISTANCE
L29	N89°44'43"E	1243.4'

0+00.0 BEGIN SURVEY @ 15+19.1 OF PROPOSED MAIN LINE
0+60.9 W. EDGE PAVED ROAD
0+72.4 ℄ TWIN WELLS RD. - CR. 787
0+82.7 E. EDGE PAVED ROAD
4+48.2 TEE RT. TO PRECIOUS 30-18 FED COM #13H & #14H
7+13.0 TEE RT. TO ARKENSTONE 31 FED #175H & #176H
9+78.1 TEE RT. TO ARKENSTONE 31 FED #5H & #6H
12+43.4 END SURVEY/TEE RT. TO PRECIOUS 30-18 FED COM #25H & #26H/ CONTINUE ONWARD PROP. LINE #5

LINE	BEARING	DISTANCE
L30	S00°15'19"E	17.4'

0+00.0 BEGIN SURVEY @ 4+48.2 OF PROPOSED LINE #4
0+12.4 PROPOSED FLOWLINE OXY
0+17.4 END SURVEY @ PRECIOUS 30-18 FED COM #13H & #14H

LINE	BEARING	DISTANCE
L31	S00°15'19"E	17.4'

0+00.0 BEGIN SURVEY @ 7+13.0 OF PROPOSED LINE #4
0+12.4 PROPOSED FLOWLINE OXY
0+17.4 END SURVEY @ ARKENSTONE 31 FED #175H & #176H

LINE	BEARING	DISTANCE
L32	S00°15'19"E	17.4'

0+00.0 BEGIN SURVEY @ 9+78.1 OF PROPOSED LINE #4
0+12.4 PROPOSED FLOWLINE OXY
0+17.4 END SURVEY @ PRECIOUS 31 FED #5H & #6H

LINE	BEARING	DISTANCE
L33	S00°15'19"E	17.4'

0+00.0 BEGIN SURVEY @ 12+43.4 OF PROPOSED LINE #4
0+12.4 PROPOSED FLOWLINE OXY
0+17.4 END SURVEY @ PRECIOUS 30-18 FED COM #25H & #26H

LINE #6

A PROPOSED GAS LINE FROM THE PROPOSED LINE #4 TO THE SOUTHEASTERN MOST PRECIOUS WELLPADS

LINE	BEARING	DISTANCE
L34	N89°38'22"E	282.9'
L35	S00°14'10"E	413.1'
L36	S89°45'24"W	1012.4'

0+00.0 BEGIN SURVEY @ 12+43.4 OF PROPOSED LINE #4
2+82.9 P.I. 90°07'28" RT
CONTINUE ONWARD PROP. SUCTION LINE
3+10.8 30-31 SECTION LINE
6+41.0 PROPOSED ELECTRIC LINE OXY
6+96.0 P.I. 89°59'34" RT
CONTINUE ONWARD PROP. LINE #6
9+13.4 TEE LT. TO PRECIOUS 30-18 FED COM #45 & #46
11+78.0 TEE LT. TO PRECIOUS 30-18 FED COM #5H & #6H
14+43.4 TEE LT. TO PRECIOUS 30-18 FED COM #175 & #176
17+08.4 END SURVEY/TEE LT. TO PRECIOUS 30-18 FED COM #9H & #10H

LINE	BEARING	DISTANCE
L37	S00°14'49"E	25.0'

0+00.0 BEGIN SURVEY @ 9+13.4 OF PROPOSED LINE #5
0+15.0 PROPOSED FLOWLINE OXY
0+25.0 END SURVEY @ PRECIOUS 30-18 FED COM #45 & #46

LINE	BEARING	DISTANCE
L38	S00°14'49"E	25.0'

0+00.0 BEGIN SURVEY @ 11+78.0 OF PROPOSED LINE #5
0+15.0 PROPOSED FLOWLINE OXY
0+25.0 END SURVEY @ PRECIOUS 30-18 FED COM #5H & #6H

LINE	BEARING	DISTANCE
L39	S00°14'49"E	25.1'

0+00.0 BEGIN SURVEY @ 14+43.4 OF PROPOSED LINE #5
0+15.0 PROPOSED FLOWLINE OXY
0+25.1 END SURVEY @ PRECIOUS 30-18 FED COM #175 & #176

LINE	BEARING	DISTANCE
L40	S00°14'49"E	25.1'

0+00.0 BEGIN SURVEY @ 17+08.3 OF PROPOSED LINE #5
0+15.1 PROPOSED FLOWLINE OXY
0+25.1 END SURVEY @ PRECIOUS 30-18 FED COM #9H & #10H

LINE #7

A PROPOSED GAS LINE FROM THE PROPOSED LINE #5 TO THE PRECIOUS/ARKENSTONE COMPRESSOR PAD

LINE	BEARING	DISTANCE
L41	S00°14'48"E	401.2'
L42	S89°45'37"W	253.8'

0+00.0 BEGIN SURVEY @ 6+96.0 OF PROPOSED LINE #5
3+55.8 PROPOSED ELECTRIC LINE OXY
4+01.2 P.I. 90°00'25" RT
6+55.0 END SURVEY @ PRECIOUS/ARKENSTONE COMPRESSOR PAD

LINE #8

A PROPOSED GAS LINE FROM A PROPOSED GAS LINE TIE-IN TO THE PRECIOUS/ARKENSTONE COMPRESSOR PAD

LINE	BEARING	DISTANCE
L43	N00°15'17"W	465.8'
L44	S89°45'04"W	295.1'

0+00.0 BEGIN SURVEY @ PROPOSED GAS LINE TIE-IN
0+50.7 PROPOSED ROAD OXY
4+65.8 P.I. 89°59'39" LT
7+60.9 END SURVEY @ PRECIOUS/ARKENSTONE COMPRESSOR STATION

SUCTION LINE

A PROPOSED GAS SUCTION LINE FROM THE PROPOSED LINE #5 TO A PROPOSED GAS LINE TIE-IN

LINE	BEARING	DISTANCE
L45	N89°38'44"E	488.8'
L46	N00°00'06"E	1242.6'
L47	N89°59'59"E	2098.7'

0+00.0 BEGIN SURVEY @ PROPOSED LINE #5
2+93.0 4-STRAND BWFNC
2+98.7 30-29 SECTION LINE
4+88.8 P.I. 89°38'38" LT
8+31.8 8-WIRE TRANS. LINE
8+67.5 8-WIRE TRANS. LINE
9+03.5 8-WIRE TRANS. LINE
17+31.4 P.I. 89°59'53" RT
38+30.1 END SURVEY @ PROPOSED GAS LINE TIE-IN

BASIS OF BEARING:
BEARINGS SHOWN HEREON ARE MERCATOR GRID AND CONFORM TO THE NEW MEXICO COORDINATE SYSTEM "NEW MEXICO EAST ZONE" NORTH AMERICAN DATUM 1983. DISTANCES ARE SURFACE VALUES.

CERTIFICATION
I, CHAD HARCROW, A NEW MEXICO REGISTERED PROFESSIONAL SURVEYOR CERTIFY THAT I DIRECTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO.

CHAD L. HARCROW NEW MEXICO 17777 LICENSED PROFESSIONAL SURVEYOR

Chad Harcrow 12/19/18
CHAD HARCROW N.M.P.S. NO. 17777 DATE

HARCROW SURVEYING, LLC
2314 W. MAIN ST, ARTESIA, N.M 88210
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c.harcrow@harcrowsurveying.com

600 0 500 1000 FEET
SCALE: 1" = 500'

OXY USA INC.

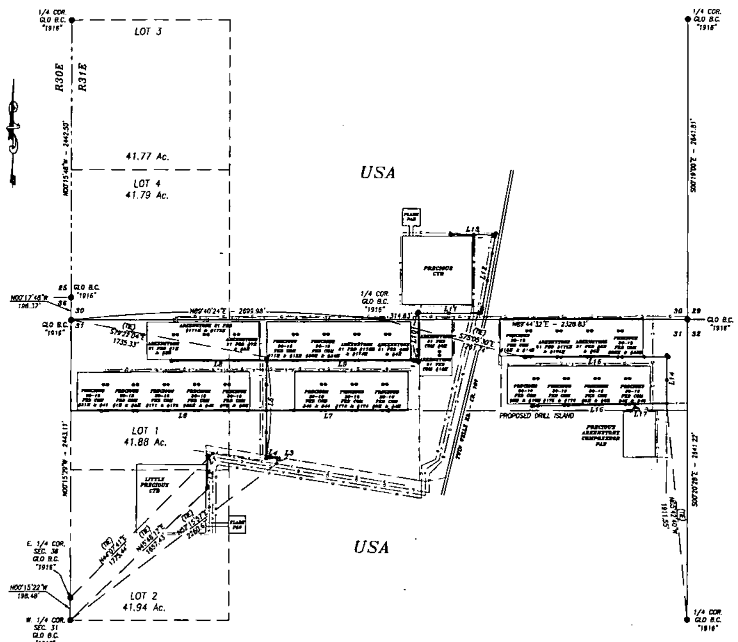
SURVEY OF A PROPOSED GAS LINE SYSTEM LOCATED IN SECTIONS 29, 30, 31, TOWNSHIP 23 SOUTH, RANGE 31 EAST, NMPM, EDDY COUNTY, NEW MEXICO

SURVEY DATE: NOVEMBER 2018	PAGE 1 OF 1
DRAFTING DATE: DECEMBER 13, 2018	GAS LINE SYSTEM
APPROVED BY: CH / DRAWN BY: SP	

FILES: 18-1571, 18-1575, 18-1580, 18-1584, 18-1588, 18-1592, 18-1596, 18-1600, 18-1604

ELECTRIC LINE SYSTEM
OXY USA INC.

A PROPOSED ELECTRIC LINE SYSTEM KNOWN AS THE "PRECIOUS/ARKENSTONE ELECTRIC LINE SYSTEM" IN
SECTIONS 30 & 31, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.,
EDDY COUNTY, NEW MEXICO.



LINE #1
A PROPOSED ELECTRIC LINE TO THE "LITTLE PRECIOUS CTB"

LINE	BEARING	DISTANCE
L1	S52°30'58"W	60.0'
L2	S00°00'49"W	280.2'

0+00.0	BEGIN SURVEY @ EXIST. POLE LAT=32.264944° N LONG=103.821625° W
0+37.5	PROPOSED FLOWLINE OXY
0+60.0	P.I. 52°30'09" LT; POLE #1 SET ANCHOR 30' N. LAT=32.264844° N LONG=103.821779° W
3+10.2	POLE #2; TEE POLE TO LITTLE PRECIOUS CTB
3+40.2	END SURVEY @ ANCHOR LAT=32.264074° N LONG=103.821784° W

LINE #2
A PROPOSED ELECTRIC LINE CONNECTING THE "PRECIOUS/ARKENSTONE" WELLS TO AN EXISTING ELECTRIC LINE

LINE	BEARING	DISTANCE
L3	N03°41'32"E	50.1'
L4	N80°36'25"W	94.0'
L5	N00°18'43"W	872.6'

0+00.0	BEGIN SURVEY @ EXIST. POLE LAT=32.264691° N LONG=103.819839° W
0+50.1	P.I. 84°17'57" LT; POLE #1 SET ANCHOR 30' E. LAT=32.264829° N LONG=103.819828° W
0+94.1	POLE #2
1+24.1	SET ANCHOR
1+44.1	P.I. 80°17'42" RT; POLE #3 SET ANCHOR 30' S. LAT=32.2648272° N LONG=103.820127° W
1+54.1	PROPOSED ROAD OXY
3+54.6	POLE #4
5+46.6	POLE #5 TEE LT. PROPOSED LINE #3 TEE RT. PROPOSED LINE #4
5+56.4	PROPOSED ROAD OXY
7+75.8	POLE #6
8+98.6	PROPOSED FLOWLINE OXY
9+11.6	PROPOSED GAS LINE OXY
9+88.5	POLE #7 TEE LT. PROPOSED LINE #5 TEE RT. PROPOSED LINE #6
9+96.7	PROPOSED ROAD OXY
10+16.7	END SURVEY @ ANCHOR LAT=32.267270° N LONG=103.820129° W

LINE #3
A PROPOSED ELECTRIC LINE TO THE "PRECIOUS 30-18 FED COM #1H, #2H, #7H, #8H, #21H, #22H, #41, #42, #171, #172"

LINE	BEARING	DISTANCE
L6	S89°39'40"W	1450.5'

0+00.0	BEGIN SURVEY @ POLE #5 OF PROPOSED LINE #2 LAT=32.265978° N LONG=103.820128° W
0+30.8	PROPOSED ROAD OXY
0+53.2	PROPOSED FLOWLINE OXY
1+62.8	POLE #1
3+25.3	POLE #2; TEE POLE TO PRECIOUS 30-18 FED COM #8H
3+60.3	POLE #3; TEE POLE TO PRECIOUS 30-18 FED COM #7H
5+90.2	POLE #4; TEE POLE TO PRECIOUS 30-18 FED COM #42
6+25.4	POLE #5; TEE POLE TO PRECIOUS 30-18 FED COM #22H
8+55.5	POLE #6; TEE POLE TO PRECIOUS 30-18 FED COM #172
8+90.2	POLE #7; TEE POLE TO PRECIOUS 30-18 FED COM #171
11+20.4	POLE #8; TEE POLE TO PRECIOUS 30-18 FED COM #2H
11+55.4	POLE #9; TEE POLE TO PRECIOUS 30-18 FED COM #1H
13+85.4	POLE #10; TEE POLE TO PRECIOUS 30-18 FED COM #41
14+20.5	POLE #11; TEE POLE TO PRECIOUS 30-18 FED COM #21H
14+50.5	END SURVEY @ ANCHOR LAT=32.265974° N LONG=103.824820° W

LINE #4
A PROPOSED ELECTRIC LINE TO THE "PRECIOUS 30-18 FED COM #3H, #4H, #43, #44, #173, #174"

LINE	BEARING	DISTANCE
L7	N89°41'06"E	1068.3'

0+00.0	BEGIN SURVEY @ POLE #5 OF PROPOSED LINE #2 LAT=32.265978° N LONG=103.820128° W
2+36.8	POLE #1
4+72.8	POLE #2; TEE POLE TO PRECIOUS 30-18 FED COM #43
5+08.1	POLE #3; TEE POLE TO PRECIOUS 30-18 FED COM #44
7+38.0	POLE #4; TEE POLE TO PRECIOUS 30-18 FED COM #173
7+73.0	POLE #5; TEE POLE TO PRECIOUS 30-18 FED COM #174
10+03.5	POLE #6; TEE POLE TO PRECIOUS 30-18 FED COM #3H
10+38.3	POLE #7; TEE POLE TO PRECIOUS 30-18 FED COM #4H
10+68.3	END SURVEY @ ANCHOR LAT=32.265980° N LONG=103.816673° W

LINE #5
A PROPOSED ELECTRIC LINE TO THE "ARKENSTONE 31 FED #1H, #2H, #7H, #8H, #171H, #172H"

LINE	BEARING	DISTANCE
L8	S89°40'43"W	840.1'

0+00.0	BEGIN SURVEY @ POLE #7 OF PROPOSED LINE #2 LAT=32.267187° N LONG=103.820129° W
0+30.7	PROPOSED ROAD OXY
0+53.2	PROPOSED FLOWLINE OXY
2+44.9	POLE #1; TEE POLE TO ARKENSTONE 31 FED #8H
2+79.8	POLE #2; TEE POLE TO ARKENSTONE 31 FED #7H
5+09.8	POLE #3; TEE POLE TO ARKENSTONE 31 FED #172H
5+44.8	POLE #4; TEE POLE TO ARKENSTONE 31 FED #171H
7+74.8	POLE #5; TEE POLE TO ARKENSTONE 31 FED #2H
8+09.9	POLE #6; TEE POLE TO ARKENSTONE 31 FED #1H
8+40.1	END SURVEY @ ANCHOR LAT=32.267185° N LONG=103.822846° W

LINE #6
A PROPOSED ELECTRIC LINE TO THE "PRECIOUS 30-18 FED COM #11H, #12H, #23H, #24H" & "ARKENSTONE 31 FED #3H, #4H, #173H, #174H"

LINE	BEARING	DISTANCE
L9	N89°40'43"E	1309.4'

0+00.0	BEGIN SURVEY @ POLE #7 OF PROPOSED LINE #2 LAT=32.267187° N LONG=103.820129° W
2+30.2	POLE #1; TEE POLE TO PRECIOUS 30-18 FED COM #11H
2+64.9	POLE #2; TEE POLE TO PRECIOUS 30-18 FED COM #12H
4+95.4	POLE #3; TEE POLE TO PRECIOUS 30-18 FED COM #23H
5+30.3	POLE #4; TEE POLE TO PRECIOUS 30-18 FED COM #24H
7+60.4	POLE #5; TEE POLE TO ARKENSTONE 31 FED #173H
7+95.6	POLE #6; TEE POLE TO ARKENSTONE 31 FED #174H
10+25.2	POLE #7; TEE POLE TO ARKENSTONE 31 FED #3H
10+60.2	POLE #8; TEE POLE TO ARKENSTONE 31 FED #4H
12+51.6	PROPOSED FLOWLINE OXY
12+59.4	POLE #9 (ANCHOR POLE)
12+66.6	PROPOSED GAS LINE OXY
12+89.4	SET ANCHOR
13+09.4	END SURVEY @ POLE #10 TEE LT. PROPOSED LINE #7 LAT=32.267190° N LONG=103.815894° W

LINE #7
A PROPOSED ELECTRIC LINE TO THE "ARKENSTONE 31 FED COM #9H & #10H"

LINE	BEARING	DISTANCE
L10	N00°03'04"W	474.6'

0+00.0	BEGIN SURVEY @ ANCHOR LAT=32.267108° N LONG=103.815894° W
0+30.0	TIE-IN POLE #10 OF PROPOSED LINE #6
0+75.5	POLE #1; TEE POLE TO ARKENSTONE 31 FED COM #10H
1+10.3	POLE #2 (ANCHOR POLE); TEE POLE TO ARKENSTONE 31 FED COM #9H
1+40.4	SET ANCHOR
2+77.5	POLE #3
3+89.7	31-30 SECTION LINE
4+04.9	PROPOSED FLOWLINE OXY
4+17.3	PROPOSED GAS LINE OXY
4+44.5	POLE #4; TEE RT. PROPOSED LINE #8
4+74.6	END SURVEY @ ANCHOR LAT=32.268412° N LONG=103.815868° W

LINE #8
A PROPOSED ELECTRIC LINE TO THE "PRECIOUS CTB"

LINE	BEARING	DISTANCE
L11	N89°38'59"E	570.8'
L12	N09°44'36"E	895.8'
L13	N89°25'43"W	402.4'

0+00.0	BEGIN SURVEY @ ANCHOR LAT=32.268329° N LONG=103.815988° W
0+30.0	TIE-IN POLE #4 OF PROPOSED LINE #7
2+88.4	POLE #1
4+79.3	PROPOSED OIL LINE OXY
5+06.2	PROPOSED WATER LINE OXY
5+40.2	PROPOSED GAS LINE OXY
5+45.8	POLE #2 (ANCHOR POLE)
5+60.0	PROPOSED FLOWLINE OXY
5+65.9	SET ANCHOR
5+70.8	P.I. 79°54'23" LT; POLE #3 LAT=32.268331° N LONG=103.814139° W
5+90.8	SET ANCHOR
8+20.8	POLE #4
8+61.0	POLE #5
11+01.0	POLE #6
12+45.0	PROPOSED ROAD OXY
12+66.6	P.I. 99°10'19" LT; POLE #7 SET ANCHOR 30' N. LAT=32.270214° N LONG=103.813748° W
12+71.7	SET ANCHOR
12+91.8	POLE #8 (ANCHOR POLE)
12+97.1	PROPOSED GAS LINE OXY
14+53.4	POLE #9
16+38.2	POLE #10; TEE POLE TO PRECIOUS CTB
16+69.0	END SURVEY @ ANCHOR LAT=32.270231° N LONG=103.815048° W

LINE #9
A PROPOSED ELECTRIC LINE TO THE "PRECIOUS 30-18 FED COM #13H, #14H, #25H, #26H" & "ARKENSTONE 31 FED #5H, #6H, #175H, #176H"

LINE	BEARING	DISTANCE
L14	N00°14'10"W	408.1'
L15	S89°44'45"W	1248.2'

0+00.0	BEGIN SURVEY @ EXIST. POLE LAT=32.266148° N LONG=103.808933° W
2+04.0	POLE #1
4+08.1	P.I. 90°01'05" LT; POLE #2 SET ANCHOR 30' N. & E. LAT=32.267269° N LONG=103.808932° W
5+29.4	PROPOSED GAS LINE OXY
6+02.5	POLE #3
7+96.5	POLE #4; TEE POLE TO PRECIOUS 30-18 FED COM #26H
8+31.2	POLE #5; TEE POLE TO PRECIOUS 30-18 FED COM #25H
10+61.6	POLE #6; TEE POLE TO ARKENSTONE 31 FED #6H
10+96.6	POLE #7; TEE POLE TO ARKENSTONE 31 FED #5H
13+26.5	POLE #8; TEE POLE TO ARKENSTONE 31 FED #176H
13+61.6	POLE #9; TEE POLE TO ARKENSTONE 31 FED #175H
15+91.4	POLE #10; TEE POLE TO PRECIOUS 30-18 FED COM #14H
16+26.3	POLE #11; TEE POLE TO PRECIOUS 30-18 FED COM #13H
16+56.3	END SURVEY @ ANCHOR LAT=32.267271° N LONG=103.812969° W

LINE #10
A PROPOSED ELECTRIC LINE TO THE "PRECIOUS 30-18 FED COM #5H, #6H, #9H, #10H, #45, #46, #175, #176"

LINE	BEARING	DISTANCE
L16	S88°35'35"W	1183.0'

0+00.0	BEGIN SURVEY @ EXIST. POLE LAT=32.266148° N LONG=103.808933° W
1+21.2	PROPOSED GAS LINE OXY
1+60.2	POLE #1
2+78.2	POLE #2; TEE LT. PROPOSED LINE #11
3+22.6	POLE #3; TEE POLE TO PRECIOUS 30-18 FED COM #46
3+57.6	POLE #4; TEE POLE TO PRECIOUS 30-18 FED COM #45
5+87.7	POLE #5; TEE POLE TO PRECIOUS 30-18 FED COM #6H
6+22.7	POLE #6; TEE POLE TO PRECIOUS 30-18 FED COM #5H
8+52.8	POLE #7; TEE POLE TO PRECIOUS 30-18 FED COM #176
8+87.9	POLE #8; TEE POLE TO PRECIOUS 30-18 FED COM #175
11+18.0	POLE #9; TEE POLE TO PRECIOUS 30-18 FED COM #10H
11+53.0	POLE #10; TEE POLE TO PRECIOUS 30-18 FED COM #9H
11+83.0	END SURVEY @ ANCHOR LAT=32.266084° N LONG=103.812758° W

LINE #11
A PROPOSED ELECTRIC LINE TO THE "PRECIOUS/ARKENSTONE COMPRESSOR PAD"

LINE	BEARING	DISTANCE
L17	S00°10'44"E	32.4'

0+00.0	BEGIN SURVEY @ POLE #2 OF PROPOSED LINE #10 LAT=32.266133° N LONG=103.809832° W
0+32.4	POLE #1; TEE POLE TO PRECIOUS/ARKENSTONE COMPRESSOR PAD LAT=32.266044° N LONG=103.809832° W

NOTE:
LATS & LONGS SHOWN HEREON ARE GRID VALUES.

DESCRIPTION

ELEVEN STRIPS OF LAND 30.0 FEET WIDE AND TOTALING 11040.6 FEET OR 669.13 RODS OR 2.091 MILES IN LENGTH CROSSING USA LAND IN SECTIONS 30 & 31, TOWNSHIP 23 SOUTH, RANGE 31 EAST, EDDY COUNTY, NEW MEXICO AND BEING 15.0 FEET LEFT AND 15.0 FEET RIGHT OF THE ABOVE PLATTED CENTERLINE SURVEYS.

LEGEND

- ● - MONUMENT FOUND AS NOTED
- ⊕ - WELL S.H.L.
- PROPOSED ROAD
- PROPOSED WATER LINE
- PROPOSED OIL LINE
- PROPOSED FLOWLINE
- EXISTING ELECTRIC LINE

BASIS OF BEARING:
BEARINGS SHOWN HEREON ARE MERCATOR GRID AND CONFORM TO THE NEW MEXICO COORDINATE SYSTEM "NEW MEXICO EAST ZONE" NORTH AMERICAN DATUM 1983. DISTANCES ARE SURFACE VALUES.

HARCROW SURVEYING, LLC
2314 W. MAIN ST, ARTESIA, N.M. 88210
PH: (575) 746-2158 FAX: (575) 746-2158

500 0 500 1000 FEET
SCALE: 1"=500'

CERTIFICATION
I, CHAD HARCROW, A NEW MEXICO REGISTERED PROFESSIONAL SURVEYOR CERTIFY THAT I DIRECTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO.

CHAD L. HARCROW NEW MEXICO 17777 LICENSED PROFESSIONAL SURVEYOR

Chad Harcrow 00/00/18
CHAD HARCROW N.M.P.S. NO. 17777 DATE

OXY USA INC.	
SURVEY OF A PROPOSED ELECTRIC LINE SYSTEM LOCATED IN SECTIONS 30 & 31, TOWNSHIP 23 SOUTH, RANGE 31 EAST, NMPM, EDDY COUNTY, NEW MEXICO	
SURVEY DATE: NOVEMBER 2018	PAGE 1 OF 1
DRAFTING DATE: DECEMBER 17, 2018	ELECTRIC LINE SYSTEM
APPROVED BY: CH / DRAWN BY: SP	
FILES: 18-1575, 18-1576, 18-1661, 18-1686, 18-1689, 18-1693, 18-1597, 18-1601, 18-1605	

Sand Dunes Precious/Arkenstone Development – Surface Production Facilities – Amended 2

CTB/Satellite Site

Two new Central Tank Batteries in SE section 30 and in NW section 31 are required which will be composed of (3) tracts each with the following dimensions: 600'x600', 200'x30', and 150'x150' and access roads. These will be called the Precious CTB and Little Precious CTB respectively.

Reference plats:

(1) John West Surveying Company W.O. No: 18110359 Survey: 3/26/18 CAD: 4/11/18
(1) Harcrow Surveying, LLC File No: 19-1406 Site Easement Survey: 7/10/19 CAD: 7/29/19
(1) Harcrow Surveying, LLC File No: 19-1273 Access Road Survey: 7/19 CAD: 7/25/19

Production Flowlines

Each well will have (3) surface laid flowlines operating at less than 75% of the MAWP of the flowline per the survey plats from the well site to the CTB following access roads. The flowlines will be routed to both CTBs and have the potential to be scrubbed of gas initially at the Precious CTB and the fluid may be transferred to the Little Precious CTB via two (2) 16" buried HDPE lines operating at < 300 PSIG for further liquid separation.

Reference plats per well APD package

(1) Harcrow Surveying, LLC File No: No: 19-1273 Water line System Survey: 7/19 CAD: 7/26/19
(2) Harcrow Surveying, LLC File No: No: 19-1273 Flowline System Survey: 7/19 CAD: 7/25/19

Gas Lift

A new Centralized Gas Lift Station will be required in NE section 31 with two (2) 20" CS buried suction lines operating at < 250 PSIG and two (2) 8" CS buried gas lift injection trunk lines operating at < 1500 PSIG. Each well pad will have two (2) 6" CS buried gas lift supply lines operating at < 1500 PSIG branching off the 2 common 8" CS main lines.

Reference plats per well APD package

(1) Harcrow Surveying, LLC File No: 19-1273 Gas Line System Survey: 7/19 CAD: 7/26/19
(1) Harcrow Surveying, LLC File No: 19-46 Survey: 11/18 CAD: 1/9/19

Gas Sales

The Precious CTB in Section 30 and the Little Precious CTB in Section 31 will require gas sales pipelines to existing 3rd party compression. Gas will flow into two (2) 20" CS buried sales line operating at < 250 PSIG.

Reference plats:

(1) John West Surveying Company W.O. No: 18110384 Survey: 3/29/18 CAD: 4/11/18

Oil Sales

The Little Precious CTB will require an oil sales pipeline. Oil will be pumped into two (2) 12" buried pipelines operating less than 750 PSIG and will be sold via pipeline through a 3rd Party Processor.

Reference plats:

(1) John West Surveying Company W.O. No: 18110384 Survey: 3/29/18 CAD: 4/11/18

Water Disposal

The Precious CTB and Little Precious CTB will require a Water Disposal pipeline to the existing water disposal system. Water will be pumped through two (2) 16" HDPE buried lines operating at less than 300 PSIG.

Reference plats:

(1) John West Surveying Company W.O. No: 18110360 Survey: 3/28/18 CAD: 4/11/18
(1) Harcrow Surveying, LLC File No: 19-1273 Water Line Survey: 7/19 CAD: 7/26/19

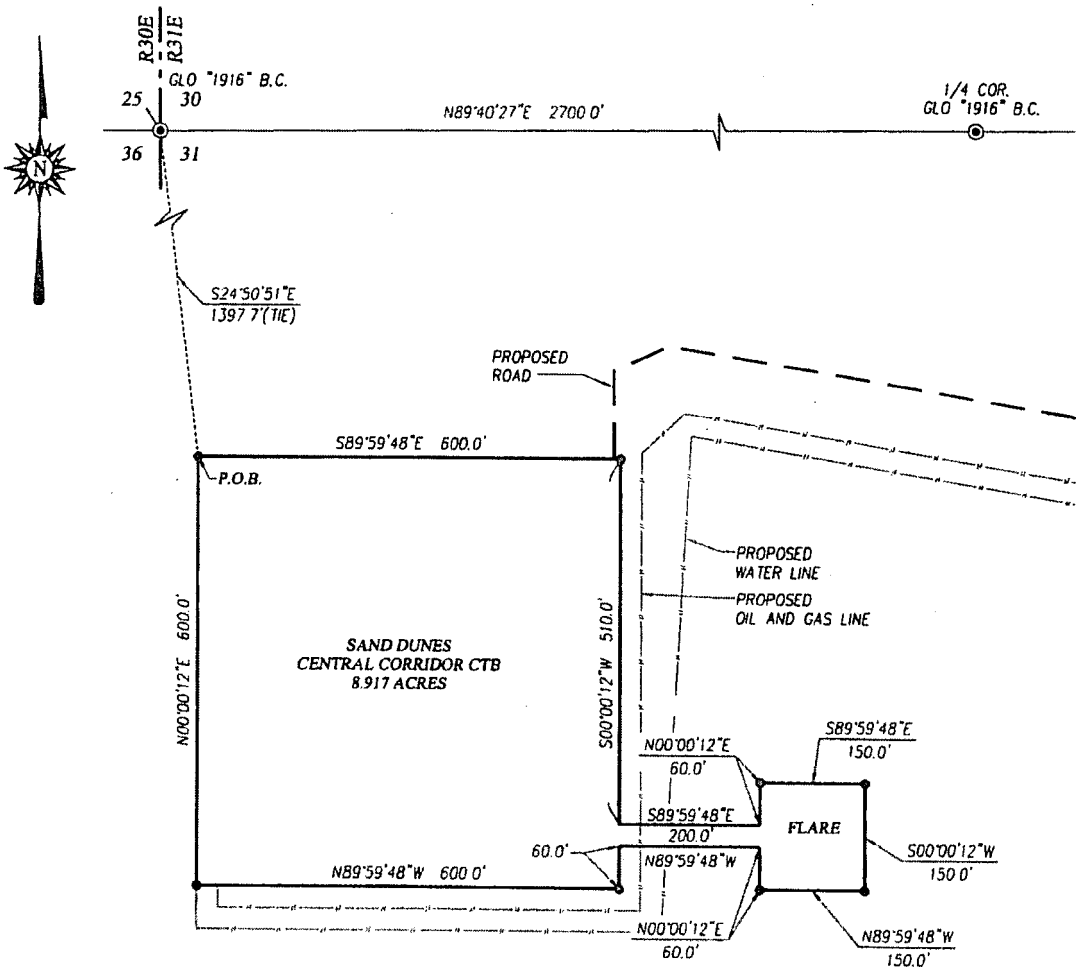
Electrical Systems

The new Precious CTB and Little Precious CTB will require electricity for site lighting, PLC, pumps, etc. Overhead electrical will be taken from the main electrical lines. Electrical overhead connections are required from the existing electrical infrastructure to connect to each individual well pad.

Reference plats:

(1) Harcrow Surveying, LLC File No: 19-1273 Electrical System Survey: 7/19 CAD: 7/26/19

CTB-1



DESCRIPTION:

SURVEY OF A TRACT IN THE NORTHWEST QUARTER OF SECTION 31, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE NORTHWEST CORNER OF THIS TRACT WHICH LIES S24°50'51"E 1397.7 FEET FROM THE NORTHWEST CORNER; THEN S89°59'48"E 600.0 FEET; THEN S00°00'12"W 510.0 FEET; THEN S89°59'48"E 200.0 FEET; THEN N00°00'12"E 60.0 FEET; THEN S89°59'48"E 150.0 FEET; THEN S00°00'12"W 150.0 FEET; THEN N89°59'48"W 150.0 FEET; N00°00'12"E 60.0 FEET; THEN N89°59'48"W 200.0 FEET; THEN S00°00'12"W 60.0 FEET; THEN N89°59'48"W 600.0 FEET; THEN N00°00'12"E 600.0 FEET TO THE POINT OF BEGINNING AND CONTAINING 8.917 ACRES MORE OR LESS.

NOTE

BEARINGS SHOWN HEREON ARE MERCATOR GRID AND CONFORM TO THE NEW MEXICO COORDINATE SYSTEM "NEW MEXICO EAST ZONE" NORTH AMERICAN DATUM 1983. DISTANCES ARE SURFACE VALUES.

I, RONALD J. EIDSON, NEW MEXICO PROFESSIONAL SURVEYOR No. 3239, DO HEREBY CERTIFY THAT THIS SURVEY PLAT AND THE ACTUAL SURVEY ON THE GROUND UPON WHICH IT IS BASED WERE PERFORMED BY ME OR UNDER MY DIRECT SUPERVISION; THAT I AM RESPONSIBLE FOR THIS SURVEY; THAT THIS SURVEY MEETS THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO; AND THAT IT IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

RONALD J. EIDSON

DATE: 4/13/2018

LEGEND

- ◉ DENOTES FOUND CORNER AS NOTED
- ● DENOTES SPIKE NAIL

200 0 200 400 Feet

Scale: 1"=200'

PROVIDING SURVEYING SERVICES SINCE 1946

JOHN WEST SURVEYING COMPANY

412 N. DAL PASO HOBBS, N.M. 88240

(575) 393-3117 www.jwsc.biz

TBPLS# 10021000

OXY U.S.A. INC.

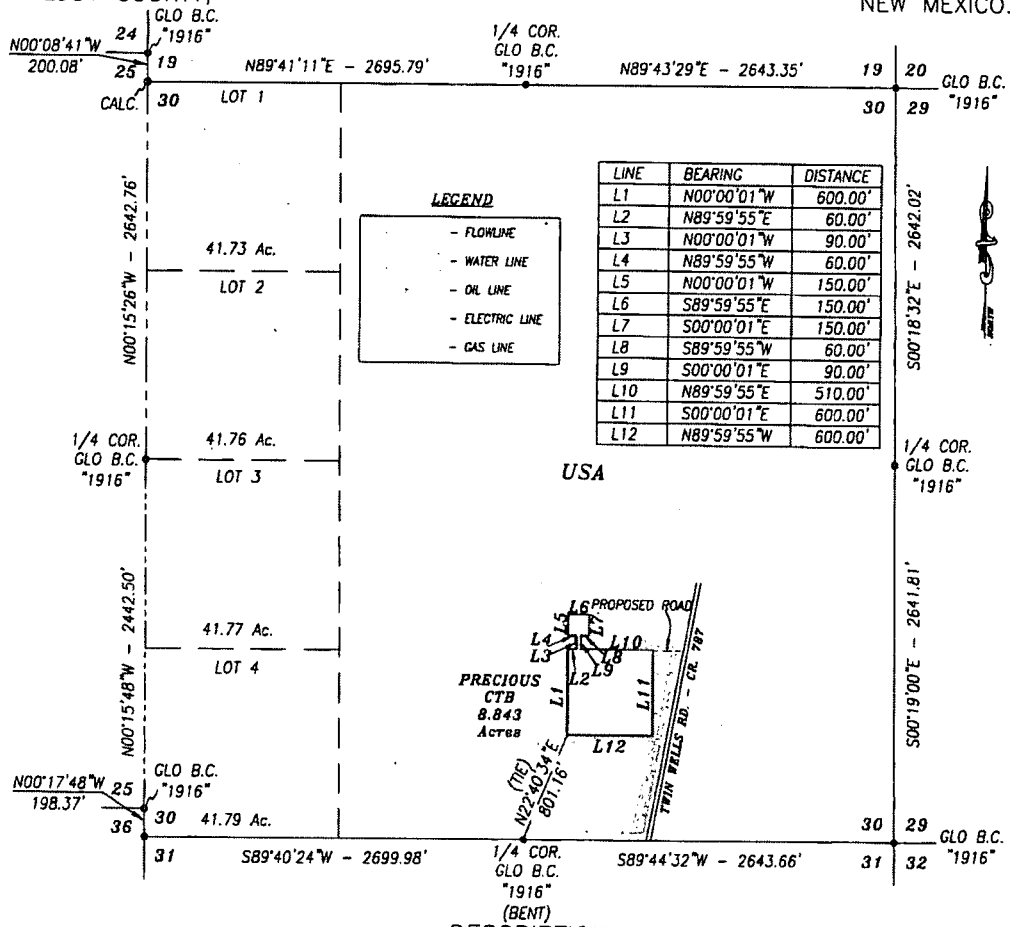
SURVEY FOR THE SAND DUNES CENTRAL CORRIDOR CTB AND FLARE PAD SITUATED IN THE NW/4 OF SECTION 31, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. EDDY COUNTY, NEW MEXICO

Survey Date: 03/26/18	CAD Date: 04/12/18	Drawn By: LSL
W.O. No.: 18110359	Rev:	Rel. W.O.:	Sheet 1 of 1

CTB-2

SURFACE SITE EASEMENT
OXY USA INC.

A SURFACE SITE EASEMENT FOR THE PROPOSED "PRECIOUS CENTRAL TANK BATTERY" & ATTACHED PROPOSED FLARE PAD IN SECTION 30, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO.



LINE	BEARING	DISTANCE
L1	N00°00'01"W	600.00'
L2	N89°59'55"E	60.00'
L3	N00°00'01"W	90.00'
L4	N89°59'55"W	60.00'
L5	N00°00'01"W	150.00'
L6	S89°59'55"E	150.00'
L7	S00°00'01"E	150.00'
L8	S89°59'55"W	60.00'
L9	S00°00'01"E	90.00'
L10	N89°59'55"E	510.00'
L11	S00°00'01"E	600.00'
L12	N89°59'55"W	600.00'

DESCRIPTION

A PROPOSED CENTRAL TANK BATTERY & FLARE PAD LYING WITHIN USA LAND IN SECTION 30, TOWNSHIP 23 SOUTH, RANGE 31 EAST, NMPM, EDDY COUNTY, NEW MEXICO AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE SOUTHWEST CORNER OF SAID CENTRAL TANK BATTERY, WHICH LIES N22°40'34"E 801.16 FEET FROM THE SOUTH QUARTER CORNER OF SAID SECTION; THEN N00°00'01"W 600.00 FEET; THEN N89°59'55" 60.00 FEET; THEN N00°00'01"W 90.00 FEET; THEN N89°59'55"W 60.00 FEET; THEN N00°00'01"W 150.00 FEET; THEN SS89°59'55"E 150.00 FEET; THEN S00°00'01"E 150.00 FEET; THEN S89°59'55" 60.00 FEET; THEN S00°00'01"E 90.00 FEET; THEN N89°59'55"E 510.00 FEET; THEN S00°00'01"E 600.00 FEET; THEN N89°59'55"W 600.00 FEET TO THE POINT OF BEGINNING.

SAID CENTRAL TANK BATTERY & FLARE PAD CONTAINS 8.847 ACRES.

BASIS OF BEARING:
BEARINGS SHOWN HEREON ARE MERCATOR GRID AND CONFORM TO THE NEW MEXICO COORDINATE SYSTEM "NEW MEXICO EAST ZONE" NORTH AMERICAN DATUM 1983. DISTANCES ARE SURFACE VALUES.

CERTIFICATION
I, CHAD HARCROW, A NEW MEXICO REGISTERED PROFESSIONAL SURVEYOR CERTIFY THAT I DIRECTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO.

CHAD L. HARCROW NEW MEXICO 17777 LICENSED PROFESSIONAL SURVEYOR

Chad Harcrow 7/29/19
CHAD HARCROW N.M.P.S. NO. 17777 DATE

HARCROW SURVEYING, LLC
2316 W. MAIN ST, ARTESIA, N.M. 88210
PH: (575) 746-2158
c.harcrow@harcrowsurveying.com

1000 0 1000 2000 FEET
SCALE: 1"=1000'

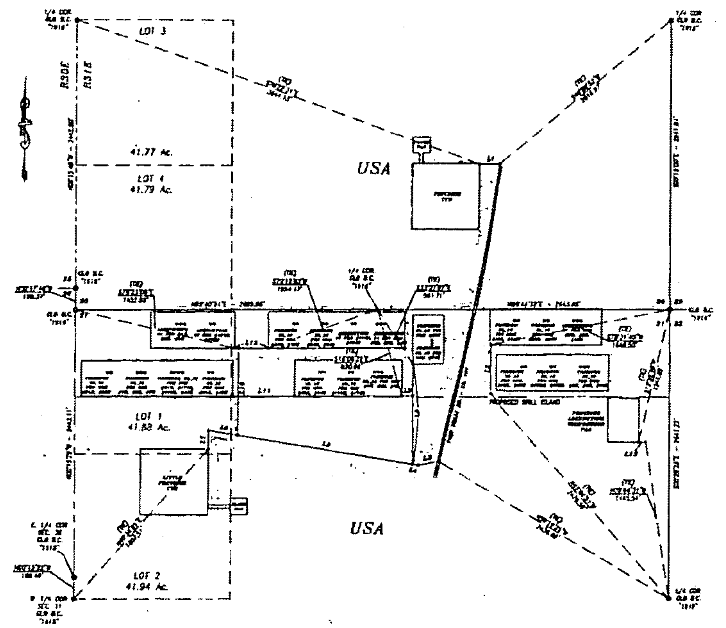
OXY USA INC.

SURVEY OF A PROPOSED CENTRAL TANK BATTERY LOCATED IN SECTION 30, TOWNSHIP 23 SOUTH, RANGE 31 EAST, NMPM, EDDY COUNTY, NEW MEXICO

SURVEY DATE: JULY 10, 2019	SITE EASEMENT
DRAFTING DATE: JULY 29, 2019	PAGE 1 OF 1
APPROVED BY: CH / DRAWN BY: AM	FILE: 19-1406

ACCESS ROAD SYSTEM
OXY USA INC.

A PROPOSED ACCESS ROAD SYSTEM KNOWN AS THE "PRECIOUS/ARKENSTONE ACCESS ROAD SYSTEM" IN
SECTIONS 30 & 31, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.,
EDDY COUNTY, NEW MEXICO.



ROAD #1

A PROPOSED ACCESS ROAD SERVICING THE "PRECIOUS CTB"

LINE	BEARING	DISTANCE
L1	N09°54'55"W	194.8'

0+00.0 BEGIN SURVEY @ TWIN WELLS RD.
0+29.2 PROP OXY POWERLINE
0+59.3 PROP OXY GASLINE
1+74.4 PROP OXY WATERLINE
1+84.4 PROP OXY OIL LINE
1+94.8 END SURVEY @ PRECIOUS CTB

ROAD #2

A PROPOSED ACCESS ROAD SERVICING THE SAND DUNES 3118

LINE	BEARING	DISTANCE
L2	N00°14'41"W	448.9'

0+00.0 BEGIN SURVEY @ EXISTING ROAD
3+87.2 PROP OXY FLOWLINE
3+87.4 PROP OXY GASLINE
4+37.8 PROP OXY POWERLINE
4+48.9 END SURVEY @ SAND DUNES 3118 WELLPAD

ROAD #3

A PROPOSED ACCESS ROAD SERVICING THE "LITTLE PRECIOUS CENTRAL TANKBATTERY"

LINE	BEARING	DISTANCE
L3	S78°35'34"W	183.9'
L4	N80°57'03"W	53.7'
L5	N10°47'02"W	1605.9'
L6	N80°41'17"W	252.8'
L7	S00°00'20"W	111.5'

0+00.0 BEGIN SURVEY @ TWIN WELLS RD
1+49.1 PROP OXY GASLINE
1+83.5 PROP OXY WATERLINE
1+83.9 P.I. 20°27'13" RT
2+18.2 PROP OXY OIL LINE
2+37.0 P.I. 90°15'21" RT
PROP ACCESS ROAD
17+64.4 PROP OXY POWERLINE
18+42.9 P.I. 00°20'45" RT
PROP ACCESS ROAD
18+43.2 PROP OXY FLOWLINE
21+05.5 P.I. 89°16'23" LT
22+77.0 END SURVEY @ LITTLE PRECIOUS CTB

ROAD #4

PROPOSED ACCESS ROAD SERVICING THE SAND DUNES 3105

LINE	BEARING	DISTANCE
L8	N00°19'50"W	820.8'

0+00.0 BEGIN SURVEY @ PROP ACCESS ROAD
LAT=32.264187° N
LONG=103.815857° W
4+26.3 PROP ACCESS ROAD
8+20.8 END SURVEY @ SAND DUNES 3105

ROAD #5

PROPOSED ACCESS ROAD SERVICING THE SAND DUNES 3117

LINE	BEARING	DISTANCE
L9	S89°39'18"W	100.1'

0+00.0 BEGIN SURVEY @ PROP ACCESS ROAD
LAT=32.268009° N
LONG=103.815858° W
1+00.1 END SURVEY @ SAND DUNES 3117

ROAD #6

PROPOSED ACCESS ROAD SERVICING OTHER PROPOSED ACCESS ROADS

LINE	BEARING	DISTANCE
L10	N00°00'00"W	787.8'

0+00.0 BEGIN SURVEY @ PROP ACCESS ROAD
LAT=32.265022° N
LONG=103.820978° W
3+47.6 PROP OXY POWERLINE
3+97.5 PROP ACCESS ROAD
6+86.0 PROP OXY FLOWLINE
7+13.0 PROP OXY GASLINE
7+87.7 PROP OXY POWERLINE
7+87.8 END SURVEY @ PROPOSED ACCESS ROAD
LAT=32.267214° N
LONG=103.820967° W

ROAD #7

PROPOSED ACCESS ROAD SERVICING THE SAND DUNES 3103 WELLPAD & THE SAND DUNES 3117 WELLPAD

LINE	BEARING	DISTANCE
L11	N89°58'27"E	532.7'

0+00.0 BEGIN SURVEY @ SAND DUNES 3103 WELLPAD
LAT=32.268004° N
LONG=103.821127° W
0+25.2 PROP OXY FLOWLINE
0+47.2 PROP OXY ACCESS ROAD
1+24.1 PROP OXY POWERLINE
5+32.7 END SURVEY @ SAND DUNES 3117 WELLPAD
LAT=32.268006° N
LONG=103.819339° W

ROAD #8

PROPOSED ACCESS ROAD SERVICING THE SAND DUNES 3102 WELLPAD & THE SAND DUNES 3113 WELLPAD

LINE	BEARING	DISTANCE
L12	N89°37'17"E	795.1'

0+00.0 BEGIN SURVEY @ SAND DUNES 3102 WELLPAD
0+10.0 PROP OXY FLOWLINE
0+34.5 PROP OXY ACCESS ROAD
1+10.4 PROP OXY POWERLINE
7+95.1 END SURVEY @ SAND DUNES 3113 WELLPAD

ROAD #9

PROPOSED ACCESS ROAD SERVICING THE PRECIOUS/ARKENSTONE COMPRESSOR STATION

LINE	BEARING	DISTANCE
L13	S87°47'33"W	63.5'

0+00.0 BEGIN SURVEY @ EXISTING ROAD
0+48.4 PROP OXY GASLINE
0+63.5 END SURVEY @ PRECIOUS/ARKENSTONE COMPRESSOR STATION

DESCRIPTION

NINE STRIPS OF LAND 30.0 FEET WIDE AND TOTALING 5648.7 FEET OR 342.35 RODS OR 1.070 MILES IN LENGTH CROSSING USA LAND IN SECTIONS 30 & 31, TOWNSHIP 23 SOUTH, RANGE 31 EAST, EDDY COUNTY, NEW MEXICO AND BEING 15.0 FEET LEFT AND 15.0 FEET RIGHT OF THE ABOVE PLATTED CENTERLINE SURVEYS.

LEGEND

- ● - MONUMENT FOUND AS NOTED
- ● - WELL S.H.L.
- - WATER LINE
- - OIL LINE
- - ELECTRIC LINE
- - GAS LINE

NOTE:
LATS & LONGS SHOWN HEREON ARE GRID VALUES

BASIS OF BEARING:
BEARINGS SHOWN HEREON ARE MERCATOR GRID AND CONFORM TO THE NEW MEXICO COORDINATE SYSTEM "NEW MEXICO EAST ZONE" NORTH AMERICAN DATUM 1983. DISTANCES ARE SURFACE VALUES.

CERTIFICATION
I, CHAD HARCROW, A NEW MEXICO REGISTERED PROFESSIONAL SURVEYOR CERTIFY THAT I DIRECTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO.

CHAD HARCROW N.M.P.S. NO. 17777 DATE

CHAD L. HARCROW NEW MEXICO 17777 LICENSED PROFESSIONAL SURVEYOR

HARCROW SURVEYING, LLC

SCALE: 1" = 500'

OXY USA INC.

SURVEY OF A PROPOSED ACCESS ROAD SYSTEM LOCATED IN SECTIONS 30 & 31, TOWNSHIP 23 SOUTH, RANGE 31 EAST, NMPM, EDDY COUNTY, NEW MEXICO

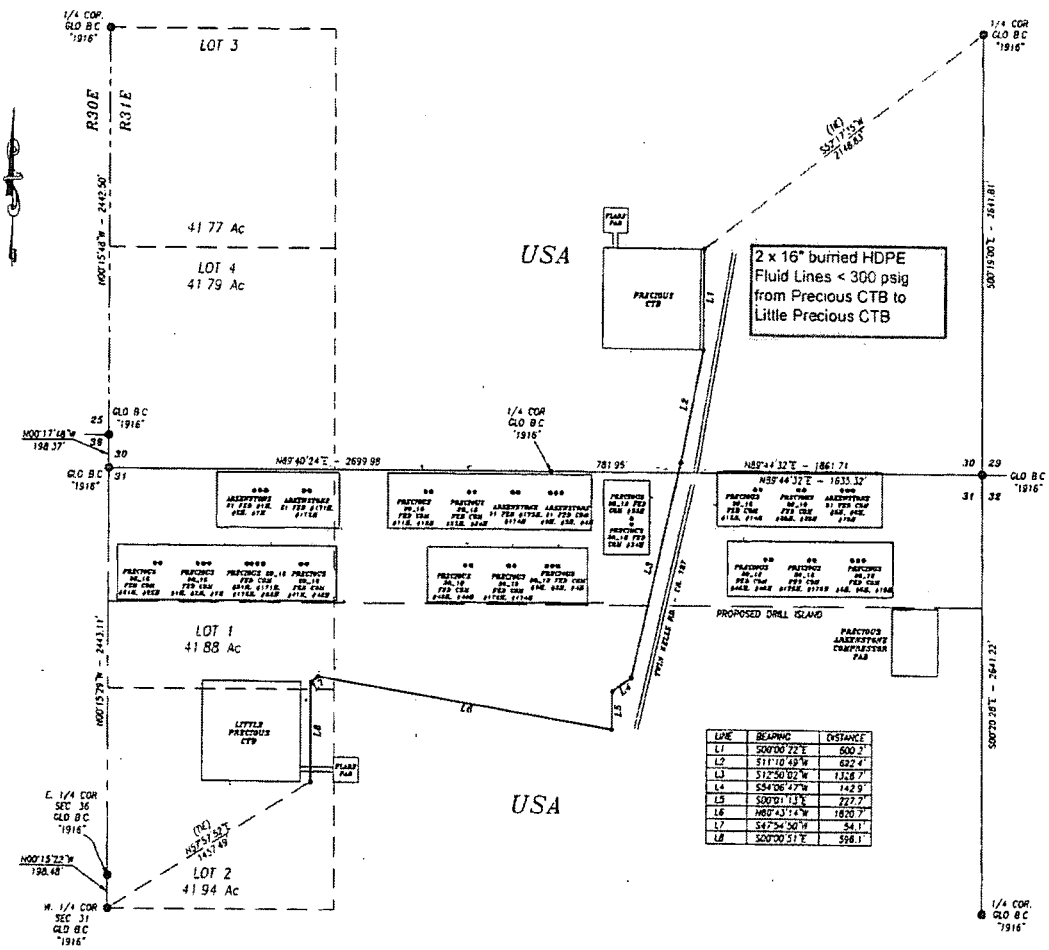
PAGE 1 OF 1

CTB-3

WL-1

WATER LINE EASEMENT
OXY USA INC.

A PROPOSED WATER LINE KNOWN AS THE "PRECIOUS/ARKENSTONE WATER LINE" IN SECTIONS 30 & 31, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO.



LINE	BEARING	DISTANCE
L1	S00°00'22"E	600.2'
L2	S11°10'49"W	622.4'
L3	S12°50'02"W	1326.7'
L4	S54°06'47"W	142.9'
L5	S00°01'13"E	727.7'
L6	N60°43'14"W	1820.7'
L7	S47°54'50"W	54.1'
L8	S00°00'51"E	598.1'

DESCRIPTION

A STRIP OF LAND 30.0 FEET WIDE AND BEING 5460.8 FEET OR 330.96 RODS OR 1.034 MILES IN LENGTH CROSSING USA LAND IN SECTIONS 30 & 31, TOWNSHIP 23 SOUTH, RANGE 31 EAST, EDDY COUNTY, NEW MEXICO AND BEING 15.0 FEET LEFT AND 15.0 FEET RIGHT OF THE ABOVE PLATTED CENTERLINE SURVEY.

STATIONING

0+00.0	BEGIN SURVEY @ PRECIOUS CTB
0+05.0	PROP ACCESS ROAD
5+00.2	P.I. 11°11'11" RT
6+15.5	PROP OXY FLOWLINE
12+52.6	P.I. 01°39'13" RT
13+93.4	PROP OXY POWERLINE
13+22.2	PROP OXY GASLINE
13+14.9	PROP OXY FLOWLINE
13+50.5	SECTION LINE
26+19.3	P.I. 41°16'45" RT
27+62.2	P.I. 54°09'00" LT
28+67.5	PROP ACCESS ROAD
29+59.5	PROP OXY GASLINE
29+89.9	P.I. 99°17'59" RT
30+24.7	PROP OXY OIL LINE
48+10.6	P.I. 51°21'56" LT
48+64.7	P.I. 45°55'41" LT
53+70.9	N EDGE OF FLARE CORRIDOR
54+00.9	S EDGE OF FLARE CORRIDOR
54+60.8	END SURVEY @ LITTLE PRECIOUS CTB

LEGEND

- ● - MONUMENT FOUND AS NOTED
- ⊗ - WELL S.H.L.
- – PROPOSED ROAD
- – FLOWLINE
- – OIL LINE
- – ELECTRIC LINE
- – GAS LINE

BASIS OF BEARING
BEARINGS SHOWN HEREON ARE MERCATOR GRID AND CONFORM TO THE NEW MEXICO COORDINATE SYSTEM "NEW MEXICO EAST ZONE" NORTH AMERICAN DATUM 1983. DISTANCES ARE SURFACE VALUES.

CERTIFICATION
I, CHAD HARCROW, A NEW MEXICO REGISTERED PROFESSIONAL SURVEYOR CERTIFY THAT I DIRECTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO.

CHAD L. HARCROW NEW MEXICO 17777 LICENSED PROFESSIONAL SURVEYOR

Chad Harcrow
CHAD HARCROW NMPS NO 17777

7/26/19
DATE

HARCROW SURVEYING, LLC
2316 W. MAIN ST, ARTESIA, N.M. 88210
PH: (575) 746-2158

500 0 500 1000 FEET
SCALE 1"=500'

OXY USA INC.

SURVEY OF A PROPOSED WATER LINE LOCATED IN SECTIONS 30 & 31, TOWNSHIP 23 SOUTH, RANGE 31 EAST, NMPM, EDDY COUNTY, NEW MEXICO

SURVEY DATE: JULY 2019	WATER LINE
DRAFTING DATE: JULY 26, 2019	PAGE 1 OF 1
APPROVED BY: CH | DRAWN BY: JH	FILE: 19-1273

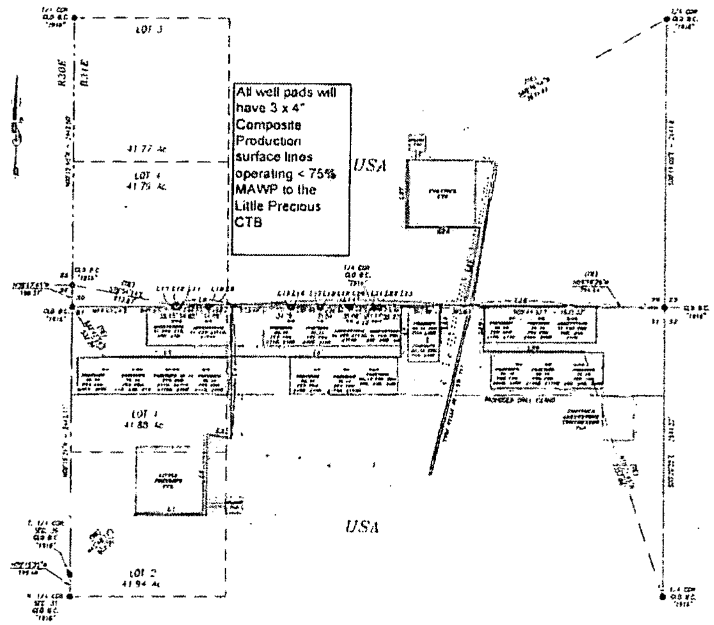
FLOWLINE SYSTEM

OXY USA INC.

A PROPOSED FLOWLINE SYSTEM KNOWN AS THE "PRECIOUS/ARKENSTONE FLOWLINE SYSTEM" IN

SECTIONS 30 & 31, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.,

EDDY COUNTY, NEW MEXICO.



LINE #1

A PROPOSED FLOWLINE SERVING THE "LITTLE PRECIOUS CTB"

LINE #2

LINE #3

LINE #4

LINE #5

LINE #6

LINE #7

LINE #8

LINE #9

DESCRIPTION

NINE STRIPS OF LAND 30.0 FEET WIDE AND TOTALING 13723.6 FEET OR 831.73 RODS OR 2.599 MILES IN LENGTH CROSSING USA LAND IN SECTIONS 30 & 31, TOWNSHIP 23 SOUTH, RANGE 31 EAST, EDDY COUNTY, NEW MEXICO AND BEING 15.0 FEET LEFT AND 15.0 FEET RIGHT OF THE ABOVE PLATTED CENTERLINE SURVEY.

LEGEND

- MONUMENT FOUND AS NOTED
- WELL S.H.L.
- PROPOSED ROAD
- WATER LINE
- OIL LINE
- ELECTRIC LINE
- GAS LINE

NOTE:
LATS & LONGS SHOWN HEREON ARE GRID VALUES

BASIS OF BEARING:

HARCROW SURVEYING, LLC

Chad Harcrow

7/26/19

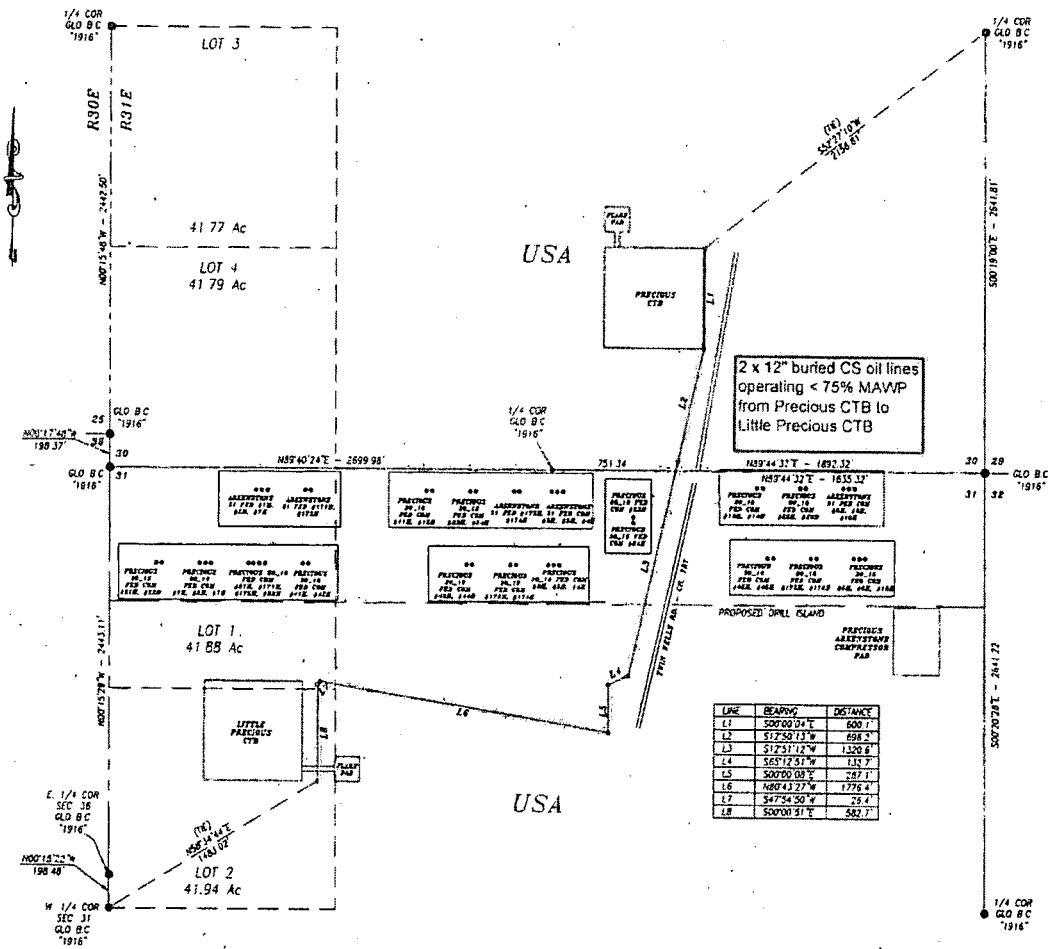
OXY USA INC.

DFL-1

OFL-2

OIL LINE EASEMENT
OXY USA INC.

A PROPOSED OIL LINE KNOWN AS THE "PRECIOUS/ARKENSTONE OIL LINE" IN
SECTIONS 30 & 31, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.,
EDDY COUNTY, NEW MEXICO.



LINE	BEARING	DISTANCE
L1	S00°00'04"E	600.1'
L2	S12°50'13"W	698.2'
L3	S12°51'12"W	1320.6'
L4	S65°12'51"W	133.7'
L5	S00°00'08"E	287.1'
L6	N80°43'27"W	1776.4'
L7	S47°54'50"W	28.4'
L8	S00°00'51"E	582.7'

DESCRIPTION

A STRIP OF LAND 30.0 FEET WIDE AND BEING 5422.2 FEET OR 328.62 RODS OR 1.027 MILES IN LENGTH CROSSING USA LAND IN SECTIONS 30 & 31, TOWNSHIP 23 SOUTH, RANGE 31 EAST, EDDY COUNTY, NEW MEXICO AND BEING 15.0 FEET LEFT AND 15.0 FEET RIGHT OF THE ABOVE PLATTED CENTERLINE SURVEY.

STATIONING

0+00.0	BEGIN SURVEY @ PRECIOUS CTB
0+04.9	PROP. ACCESS ROAD
6+00.1	P.I. 12°50'17" RT
6+15.4	PROP. OXY FLOWLINE
12+96.3	P.I. 00°00'56" RT
12+97.7	PROP. OXY POWERLINE
13+26.5	PROP. OXY GASLINE
13+39.2	PROP. OXY FLOWLINE
13+54.8	SECTION LINE
26+16.9	P.I. 52°21'39" RT
27+49.6	P.I. 65°12'59" LT
28+84.2	PROP. ACCESS ROAD
29+75.9	PROP. OXY GASLINE
30+06.3	PROP. OXY WATERLINE
30+36.7	P.I. 99°16'41" RT
48+13.1	P.I. 51°21'41" LT
48+39.5	P.I. 47°54'41" LT
53+32.1	N. EDGE OF FLARE CORRIDOR
53+62.2	S. EDGE OF FLARE CORRIDOR
54+22.2	END SURVEY @ LITTLE PRECIOUS CTB

LEGEND

- ● – MONUMENT FOUND AS NOTED
- ⊗ – WELL S.H.L.
- – PROPOSED ROAD
- – FLOWLINE
- – WATER LINE
- – ELECTRIC LINE
- – GAS LINE

BASIS OF BEARING:
BEARINGS SHOWN HEREON ARE MERCATOR GRID AND CONFORM TO THE NEW MEXICO COORDINATE SYSTEM "NEW MEXICO EAST ZONE" NORTH AMERICAN DATUM 1983. DISTANCES ARE SURFACE VALUES.

CERTIFICATION
I, CHAD HARCROW, A NEW MEXICO REGISTERED PROFESSIONAL SURVEYOR CERTIFY THAT I DIRECTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO.

CHAD L. HARCROW NEW MEXICO 17777 LICENSED PROFESSIONAL SURVEYOR

Chad Harcrow 7/26/19
CHAD HARCROW N.M.P.S. NO. 17777 DATE

HARCROW SURVEYING, LLC
2315 W. MAIN ST, ARTESIA, N.M. 88210
PH: (575) 746-2158

500 0 500 1000 FEET
SCALE 1"=500'

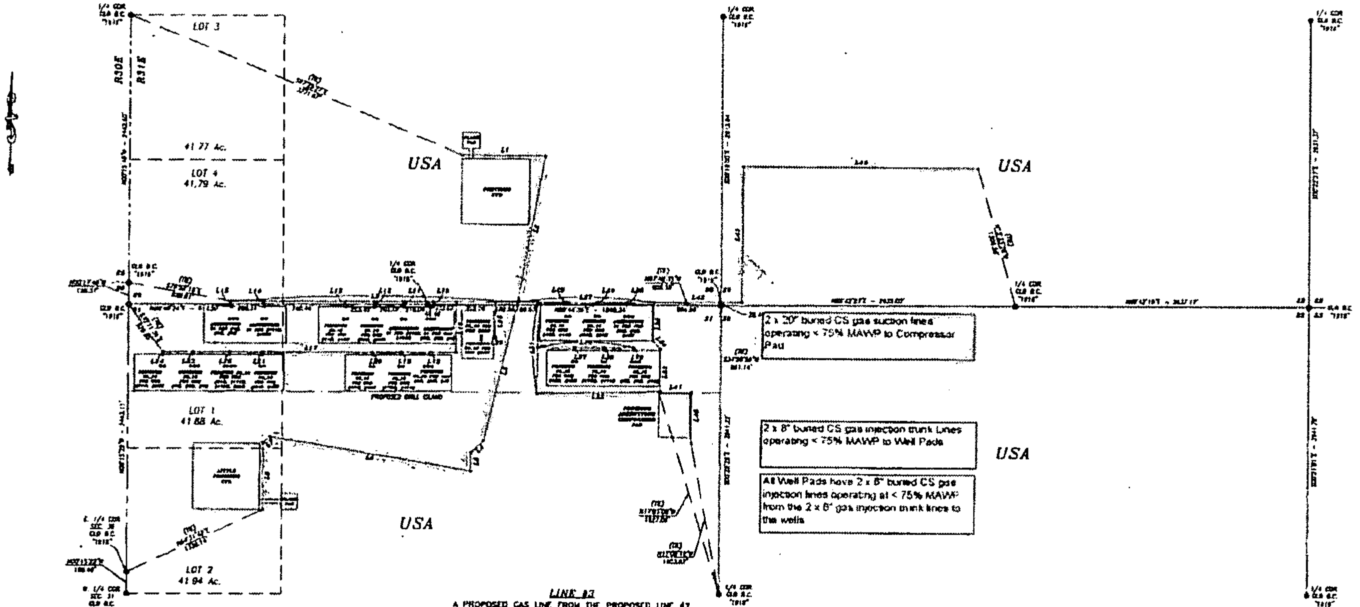
OXY USA INC.

SURVEY OF A PROPOSED OIL LINE SYSTEM LOCATED IN SECTIONS 30 & 31, TOWNSHIP 23 SOUTH, RANGE 31 EAST, NMPM, EDDY COUNTY, NEW MEXICO

SURVEY DATE: JULY 2019	OIL LINE
DRAFTING DATE: JULY 26, 2019	PAGE 1 OF 1
APPROVED BY: CH / DRAWN BY: JH	FILE: 19-1273

GAS LINE SYSTEM
OXY USA INC.

A PROPOSED GAS LINE SYSTEM KNOWN AS THE "PRECIOUS/ARKENSTONE GAS LINE SYSTEM" IN
SECTIONS 29, 30, 31, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.,
EDDY COUNTY, NEW MEXICO



LINES #1 THRU. #7 & LIFT LINE DESCRIPTION

EIGHT STRIPS OF LAND 30.0 FEET WIDE AND TOTALING 18593.3 FEET OR 1126.87 RODS OR 3.521 MILES IN LENGTH CROSSING USA LAND IN SECTIONS 30 & 31, TOWNSHIP 23 SOUTH, RANGE 31 EAST, EDDY COUNTY, NEW MEXICO AND BEING 15.0 FEET LEFT AND 15.0 FEET RIGHT OF THE ABOVE PLATTED CENTERLINE SURVEYS.

SUCTION LINE DESCRIPTION

A STRIP OF LAND 50.0 FEET WIDE AND BEING 4136.3 FEET OR 250.68 RODS OR 0.783 MILES IN LENGTH CROSSING USA LAND IN SECTIONS 29 & 30, TOWNSHIP 23 SOUTH, RANGE 31 EAST, EDDY COUNTY, NEW MEXICO AND BEING 25.0 FEET LEFT AND 25.0 FEET RIGHT OF THE ABOVE PLATTED CENTERLINE SURVEYS.

LEGEND

- MONUMENT FOUND AS NOTED
- WELL SITE
- PROPOSED ROAD
- PROPOSED WATER LINE
- PROPOSED OIL LINE
- PROPOSED FLOWLINE
- PROPOSED ELECTRIC LINE (UNLESS OTHERWISE NOTED)
- BARBED-WIRE FENCE

LINE #1
A PROPOSED GAS LINE FROM THE "PRECIOUS CTB" TO THE "LITTLE PRECIOUS CTB"

[illegible]

LINE #2
A PROPOSED GAS LINE FROM THE PROPOSED MAIN LINE TO THE NORTHWESTERN MOST PRECIOUS/ARKENSTONE WELLPADS

[illegible]

LINE #3
A PROPOSED GAS LINE FROM THE PROPOSED LINE #2 TO THE SOUTHWESTERN MOST PRECIOUS WELLPADS

[illegible]

LINE #4
A PROPOSED GAS LINE FROM THE PROPOSED LINE #2 TO THE "PRECIOUS 30_18 FED COM #33H & #34H"

[illegible]

LINE #5
A PROPOSED GAS LINE FROM THE PROPOSED LINE #1 TO THE NORTHEASTERN MOST PRECIOUS/ARKENSTONE WELLPADS

[illegible]

GAS LIFT LINE
A PROPOSED GAS LIFT LINE SERVICING THE PRECIOUS/ARKENSTONE WELLS

[illegible]

LINE #6
A PROPOSED GAS LINE FROM THE PROPOSED GAS LIFT LINE TO THE SOUTHEASTERN MOST PRECIOUS WELLPADS

[illegible]

LINE #7
A PROPOSED GAS LINE FROM A PROPOSED GAS LINE TIE-IN TO THE PRECIOUS/ARKENSTONE COMPRESSOR PAD

[illegible]

SUCTION LINE
A PROPOSED GAS SUCTION LINE FROM THE PROPOSED LINE #5 TO A PROPOSED GAS LINE TIE-IN

[illegible]

BASIS OF BEARING:

[illegible]

CERTIFICATION

[illegible]

HARCROW SURVEYING, LLC

SCALE 1" = 600'

OXY USA INC.

SURVEY OF A PROPOSED GAS LINE SYSTEM LOCATED IN SECTIONS 30 & 31, TOWNSHIP 23 SOUTH, RANGE 31 EAST, NMPM, EDDY COUNTY, NEW MEXICO

PAGE 1 OF 1

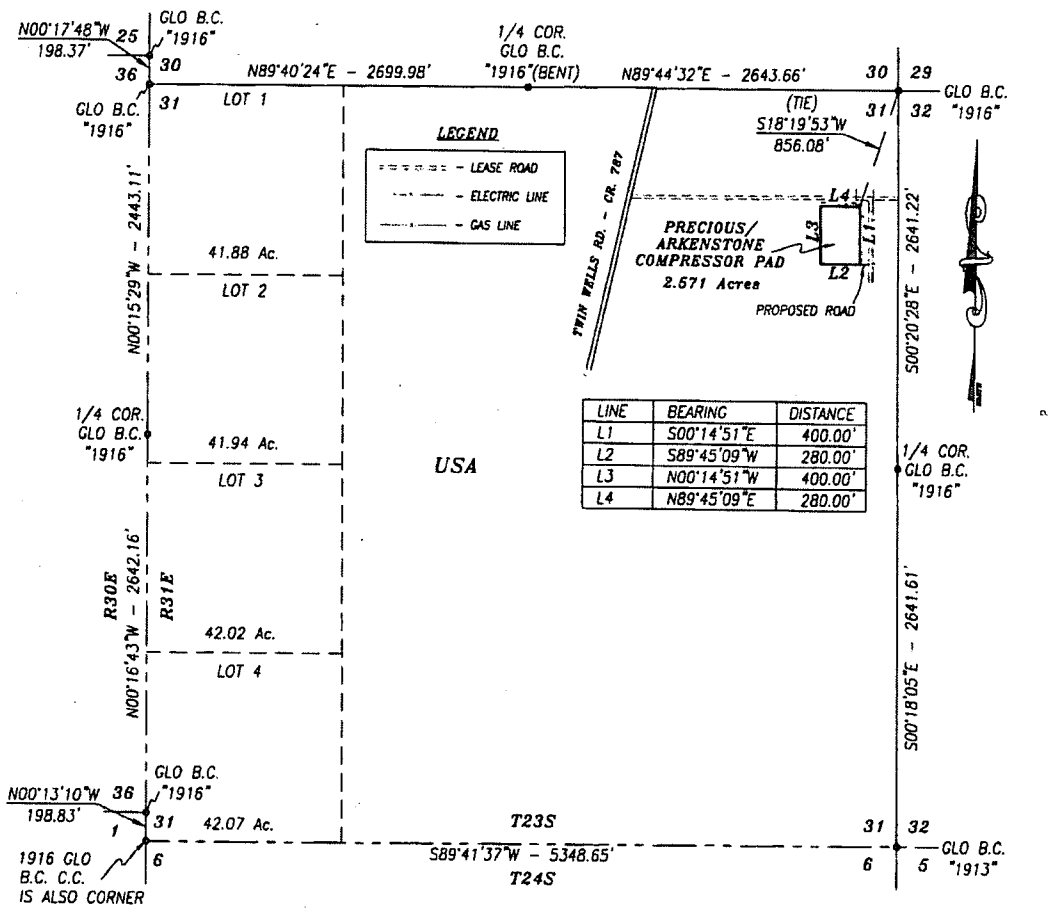
GAS LINE SYSTEM

GL-1

GL-2

SURFACE SITE EASEMENT
OXY USA INC.

A SURFACE SITE EASEMENT FOR THE PROPOSED "PRECIOUS/ARKENSTONE COMPRESSOR PAD" IN SECTION 31, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO.



LINE	BEARING	DISTANCE
L1	S00°14'51"E	400.00'
L2	S89°45'09"W	280.00'
L3	N00°14'51"W	400.00'
L4	N89°45'09"E	280.00'

DESCRIPTION

A PROPOSED COMPRESSOR PAD LYING WITHIN USA LAND IN SECTION 31, TOWNSHIP 23 SOUTH, RANGE 31 EAST, NMPM, EDDY COUNTY, NEW MEXICO AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE NORTHEAST CORNER OF SAID COMPRESSOR PAD, WHICH LIES S18°19'53"W 856.08 FEET FROM THE NORTHEAST CORNER OF SAID SECTION; THEN S00°14'51"E 400.00 FEET; THEN S89°45'09"W 280.00 FEET; THEN N00°14'51"W 400.00 FEET; THEN N89°45'09"E 280.00 FEET TO THE POINT OF BEGINNING.

SAID COMPRESSOR PAD CONTAINS 2.571 ACRES.

BASIS OF BEARING:
BEARINGS SHOWN HEREON ARE MERCATOR GRID AND CONFORM TO THE NEW MEXICO COORDINATE SYSTEM "NEW MEXICO EAST ZONE" NORTH AMERICAN DATUM 1983. DISTANCES ARE SURFACE VALUES.

CERTIFICATION
I, CHAD HARCROW, A NEW MEXICO REGISTERED PROFESSIONAL SURVEYOR CERTIFY THAT I DIRECTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO.

CHAD L. HARCROW NEW MEXICO 17777 LICENSED PROFESSIONAL SURVEYOR

Chad Harcrow — 1/10/19
CHAD HARCROW N.M.P.S. NO. 17777 — DATE

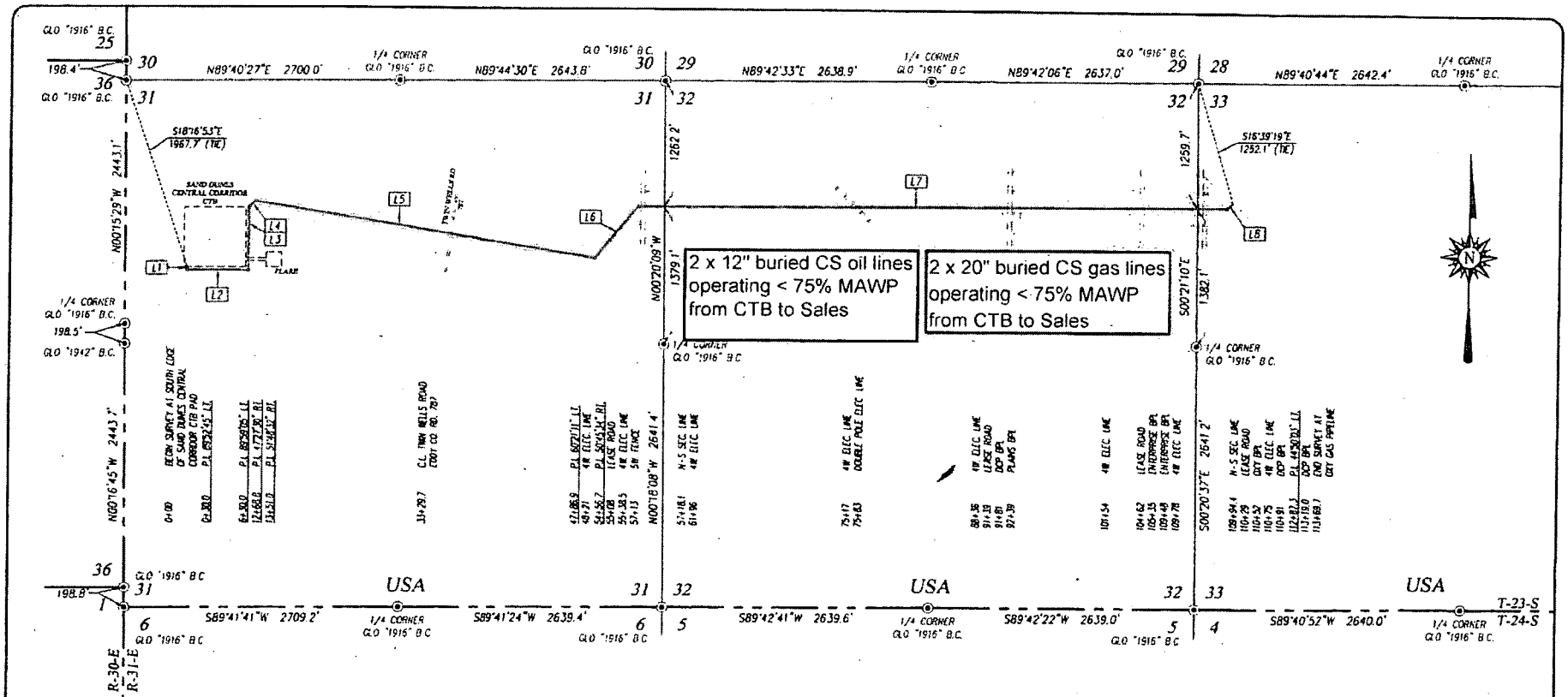
HARCROW SURVEYING, LLC
2314 W. MAIN ST, ARTESIA, N.M. 88210
PH: (575) 746-2158 FAX: (575) 746-2158
c.harcrow@harcrowsurveying.com

1000 0 1000 2000 FEET
SCALE: 1"=1000'

OXY USA INC.

SURVEY OF A PROPOSED COMPRESSOR PAD LOCATED IN SECTION 31, TOWNSHIP 23 SOUTH, RANGE 31 EAST, NMPM, EDDY COUNTY, NEW MEXICO

SURVEY DATE: NOVEMBER 2018	SITE EASEMENT
DRAFTING DATE: JANUARY 9, 2019	PAGE 1 OF 1
APPROVED BY: CH / DRAWN BY: SP	FILE: 19-48



LINE TABLE

LINE	BEARING	DISTANCE
L1	S00°07'54"E	30.0'
L2	N89°59'21"E	600.0'
L3	N00°00'16"E	638.8'
L4	N47°27'46"E	82.2'
L5	S80°43'42"E	3435.9'
L6	N38°55'08"E	669.8'
L7	[illegible]	6830.6'
L8	[illegible]	82.4'

DESCRIPTION

SURVEY FOR A STRIP OF LAND 30.0 FEET WIDE AND 11369.7 FEET OR 2.153 MILES IN LENGTH CROSSING USA LAND IN SECTIONS 31, 32 & 33, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO, AND BEING 25.0 FEET LEFT AND 25.0 FEET RIGHT OF THE ABOVE PLATTED CENTERLINE SURVEY

LEGEND

◉ DENOTES FOUND CORNER AS NOTED

NOTE

BEARINGS SHOWN HEREON ARE MERCATOR GRID AND CONFORM TO THE NEW MEXICO COORDINATE SYSTEM "NEW MEXICO EAST ZONE" NORTH AMERICAN DATUM 1983. DISTANCES ARE SURFACE VALUES.

I, RONALD J. EIDSON, NEW MEXICO PROFESSIONAL SURVEYOR No. 3239, DO HEREBY CERTIFY THAT THIS SURVEY PLAT AND THE ACTUAL SURVEY ON THE GROUND UPON WHICH IT IS BASED WERE PERFORMED BY ME OR UNDER MY DIRECT SUPERVISION; THAT I AM RESPONSIBLE FOR THIS SURVEY; THAT THIS SURVEY MEETS THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO; AND THAT IT IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

RONALD J. EIDSON _____ DATE: 4/13/2018

PROVIDING SURVEYING SERVICES SINCE 1946
JOHN WEST SURVEYING COMPANY
412 N. DAL PASO HOBBS, N.M. 88240
(575) 393-3117 www.jwsc.biz
TBPLS# 10021000

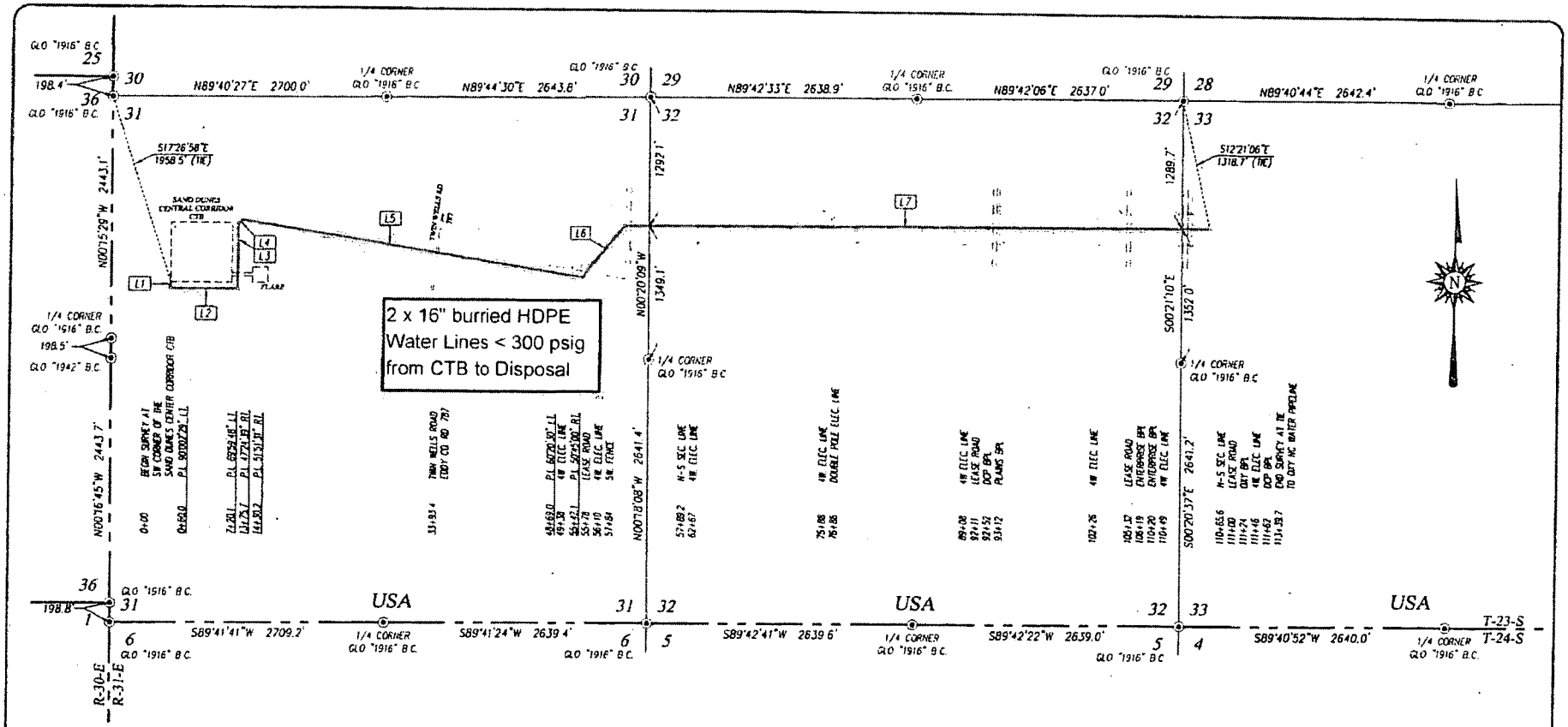
OXY U.S.A. INC.

SURVEY FOR BURIED OIL AND GAS LINE FROM SAND DUNES CENTRAL CORRIDOR CTB TO OXY WATER PIPELINE, CROSSING SECTIONS 31, 32 & 33, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO

Survey Date: 03/29/18	CAD Date: 04/11/18	Drawn By: LSL	
W.O. No.: 18110384	Rev:	Rel. W.O.:	Sheet 1 of 1

© DRAFTING\Lorenza\2018\OXY U.S.A. INC\PIPELINES\18110384 BURIED OIL & GAS TO OXY GAS ROW SEC 33 T23S R31E

GS 1-2



LINE TABLE

LINE	BEARING	DISTANCE
L1	S00°02'21"W	60.0'
L2	N89°59'52"E	660.1'
L3	N00°00'04"E	655.6'
L4	N47°24'43"E	54.4'
L5	S80°43'46"E	3438.8'
L6	N38°55'44"E	673.1'
L7	N89°42'06"E	3797.6'

DESCRIPTION

SURVEY FOR A STRIP OF LAND 30.0 FEET WIDE AND 11339.7 FEET OR 2.148 MILES IN LENGTH CROSSING USA LAND IN SECTIONS 31, 32 & 33, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO, AND BEING 15.0 FEET LEFT AND 15.0 FEET RIGHT OF THE ABOVE PLATTED CENTERLINE SURVEY

LEGEND

⊙ DENOTES FOUND CORNER AS NOTED

1000 0 1000 2000 Feet

Scale: 1"=1000'

NOTE

BEARINGS SHOWN HEREON ARE MERCATOR GRID AND CONFORM TO THE NEW MEXICO COORDINATE SYSTEM "NEW MEXICO EAST ZONE" NORTH AMERICAN DATUM 1983. DISTANCES ARE SURFACE VALUES.

I, RONALD J. EIDSON NEW MEXICO PROFESSIONAL SURVEYOR No. 3239, DO HEREBY CERTIFY THAT THIS SURVEY PLAT AND THIS ACTUAL SURVEY ON THE GROUND UPON WHICH IT IS BASED WERE PERFORMED BY ME OR UNDER MY DIRECT SUPERVISION; THAT I AM RESPONSIBLE FOR THIS SURVEY; THAT THIS SURVEY MEETS THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO; AND THAT IT IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

RONALD J. EIDSON _____ DATE. 4/13/2018

RONALD J. EIDSON NEW MEXICO 3239 PROFESSIONAL SURVEYOR

PROVIDING SURVEYING SERVICES SINCE 1946
JOHN WEST SURVEYING COMPANY
412 N. DAL PASO HOBBS, N.M. 88240
(575) 393-3117 www.jwsc.biz
TBPLS# 10021000

OXY U.S.A. INC.

SURVEY FOR BURIED WATER LINE FROM SAND DUNES CENTRAL CORRIDOR CTB TO OXY WATER PIPELINE. CROSSING SECTIONS 31, 32 & 33, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO

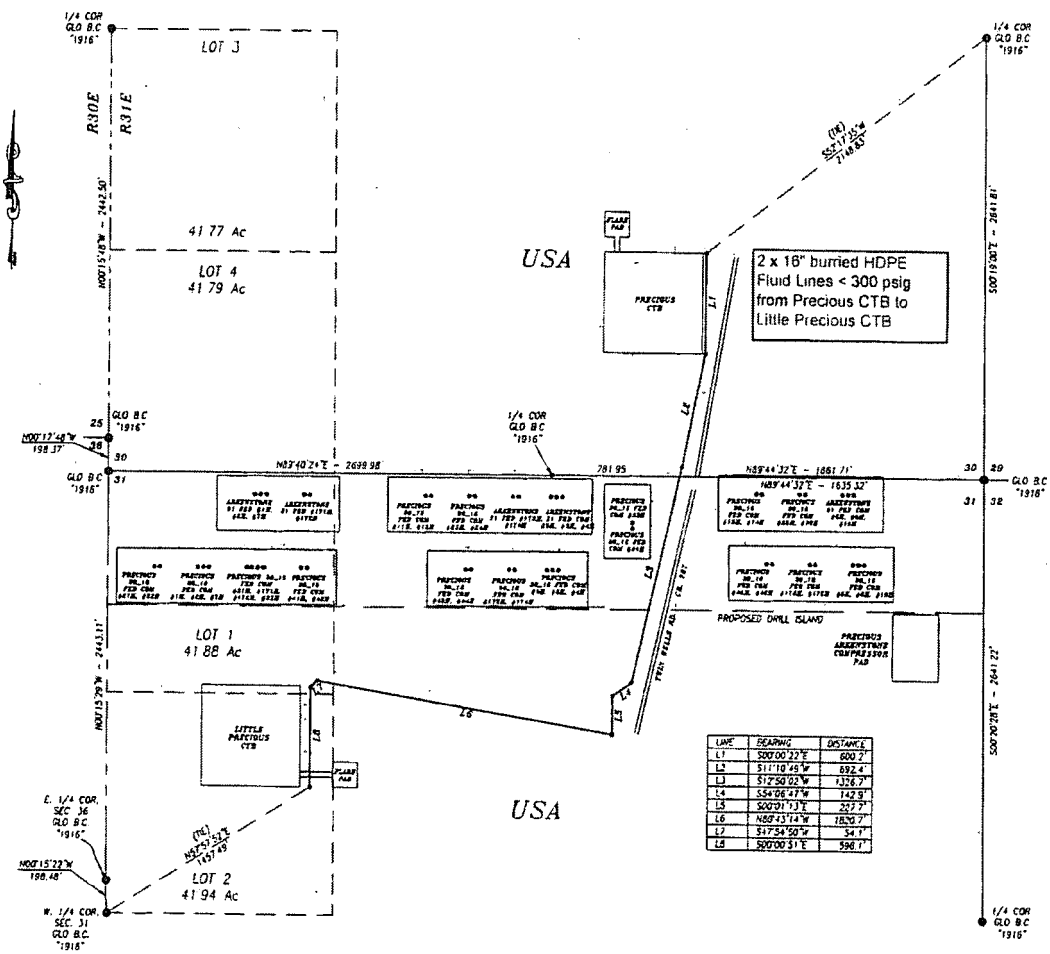
Survey Date: 03/28/18	CAD Date: 04/11/18	Drawn By: LSL	
W.O. No.: 18110360	Rev:	Rel. W.O.:	Sheet 1 of 1

EDDY

WD-2

WATER LINE EASEMENT
OXY USA INC.

A PROPOSED WATER LINE KNOWN AS THE "PRECIOUS/ARKENSTONE WATER LINE" IN SECTIONS 30 & 31, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO



LINE	BEARING	DISTANCE
L1	S00°00'22"E	600.2'
L2	S11°10'45"W	892.4'
L3	S12°50'03"W	1326.7'
L4	S54°06'47"W	142.9'
L5	S00°01'13"E	227.7'
L6	N68°43'14"W	1820.7'
L7	S47°54'50"W	54.1'
L8	S00°00'31"E	596.1'

DESCRIPTION

A STRIP OF LAND 30.0 FEET WIDE AND BEING 5460.8 FEET OR 330.96 RODS OR 1.034 MILES IN LENGTH CROSSING USA LAND IN SECTIONS 30 & 31, TOWNSHIP 23 SOUTH, RANGE 31 EAST, EDDY COUNTY, NEW MEXICO AND BEING 15.0 FEET LEFT AND 15.0 FEET RIGHT OF THE ABOVE PLATTED CENTERLINE SURVEY.

STATIONING

0+00.0	BEGIN SURVEY @ PRECIOUS CTB
0+05.0	PROP ACCESS ROAD
6+00.2	P.I. 11°11'11" RT
6+15.5	PROP OXY FLOWLINE
12+82.6	P.I. 01°39'13" RT
12+93.4	PROP OXY POWERLINE
13+22.2	PROP OXY GASLINE
13+34.8	PROP OXY FLOWLINE
13+50.5	SECTION LINE
26+19.3	P.I. 41°16'45" RT
27+62.2	P.I. 54°08'00" LT
28+67.5	PROP ACCESS ROAD
29+59.5	PROP OXY GASLINE
29+89.9	P.I. 99°17'59" RT
30+24.7	PROP OXY OIL LINE
48+10.6	P.I. 51°21'36" LT
48+54.7	P.I. 45°55'41" LT
53+70.9	N EDGE OF FLARE CORRIDOR
54+00.9	S EDGE OF FLARE CORRIDOR
54+60.8	END SURVEY @ LITTLE PRECIOUS CTB

LEGEND

- ● - MONUMENT FOUND AS NOTED
- ⊗ - WELL S.H.L.
- – PROPOSED ROAD
- – FLOWLINE
- – OIL LINE
- – ELECTRIC LINE
- – GAS LINE

BASIS OF BEARING
BEARINGS SHOWN HEREON ARE MERCATOR GRID AND CONFORM TO THE NEW MEXICO COORDINATE SYSTEM "NEW MEXICO EAST ZONE" NORTH AMERICAN DATUM 1983. DISTANCES ARE SURFACE VALUES

CERTIFICATION
I, CHAD HARCROW, A NEW MEXICO REGISTERED PROFESSIONAL SURVEYOR CERTIFY THAT I DIRECTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO

CHAD L. HARCROW NEW MEXICO 17777 LICENSED PROFESSIONAL SURVEYOR

Chad Harcrow
CHAD HARCROW N.M.P.S. NO. 17777

7/26/19
DATE

HARCROW SURVEYING, LLC
2316 W. MAIN ST, ARTESIA, N.M. 88210
PH: (575) 746-2158

500 0 500 1000 FEET
SCALE: 1"=500'

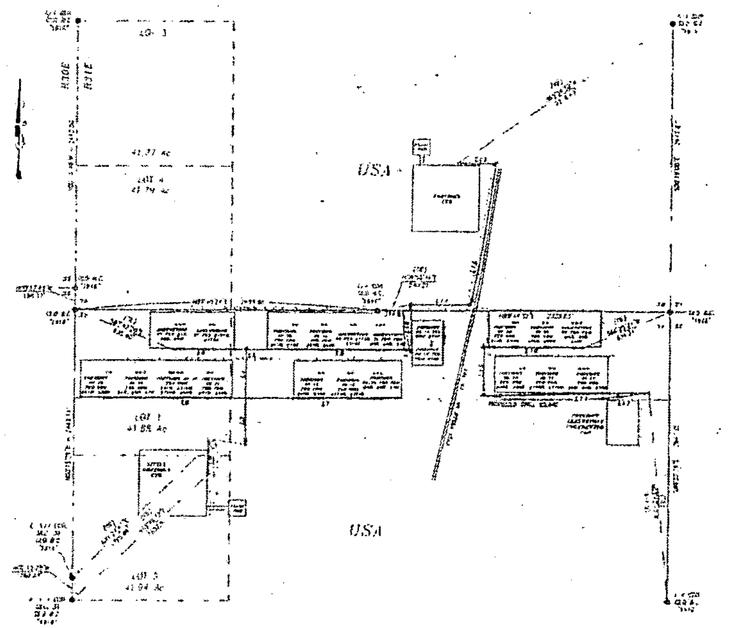
OXY USA INC.

SURVEY OF A PROPOSED WATER LINE LOCATED IN SECTIONS 30 & 31, TOWNSHIP 23 SOUTH, RANGE 31 EAST, NMPM, EDDY COUNTY, NEW MEXICO

SURVEY DATE: JULY 2019	WATER LINE
DRAFTING DATE: JULY 26, 2019	PAGE 1 OF 1
APPROVED BY: CH / DRAWN BY: JH	FILE: 19-1273

ELECTRIC LINE SYSTEM
OXY USA INC.

A PROPOSED ELECTRIC LINE SYSTEM KNOWN AS THE "PRECIOUS/ARKENSTONE ELECTRIC LINE SYSTEM" IN
SECTIONS 30 & 31, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.,
EDDY COUNTY, NEW MEXICO



NOTE
LATS & LONGS SHOWN HEREON ARE GRID VALUES.

DESCRIPTION

TEN STRIPS OF LAND 30.0 FEET WIDE AND TOTALING 11490.5 FEET OR 696.76 RODS OR 2.177 MILES IN LENGTH CROSSING USA LAND IN SECTIONS 30 & 31, TOWNSHIP 23 SOUTH, RANGE 31 EAST, EDDY COUNTY, NEW MEXICO AND BEING 15.0 FEET LEFT AND 15.0 FEET RIGHT OF THE ABOVE PLATTED CENTERLINE SURVEYS

LEGEND

BASIS OF BEARING

CERTIFICATION

HARCROW SURVEYING, LLC

OXY USA INC.

SURVEY OF A PROPOSED ELEC. LINE SYSTEM LOCATED IN SECTIONS 30 & 31, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO

Chad Harcrow 7/16/19

EL-1

Prepared by:
Dave Andersen
GRR Land Department

GRR, INC. WATER SOURCES
FOR OXY CERTAIN POND LOCATIONS

08/26/2016

Pond Name	Water Source1	Water Source2	Water Source3	Water Source4
Cedar Canyon	Mine_Industrial	C-3478	C-2772	C-1360
Corral Fly	C-1360	C-1361	C-3358	C-3836
Cypress	Mine_Industrial	C-3478	C-2772	C-1361
Mesa Verde	C-2571	C-2574	J-27	J-5
Peaches	C-906	C-3200	SP-55 & SP-1279 A	C-100

GRR Inc.

NMOSE WELL NUMBER	WELL COMMON NAME	LAND OWNERSHIP	GPS LOCATION
C-100	Tres Rios - Next to well shack	PRIVATE	32.201921° -104.254317°
C-100-A	Tres Rios - Center of turnaround	PRIVATE	32.201856° -104.254443°
C-272-B	Tres Rios - Northwest	PRIVATE	32.202315° -104.254812°
C-906	Whites City Commercial	PRIVATE	32.176949°-104.374371°
C-1246-AC & C-1246-AC-S	Lackey	PRIVATE	32.266978°-104.271212°
C-1886	1886 Tank	BLM	32.229316° -104.312930°
C-1083	Petska	PRIVATE	32.30904° -104.16979°
C-1142	Winston West	BLM	32.507845-104.177410
C-1360	ENG#1	PRIVATE	32.064922° -103.908818°
C-1361	ENG#2	PRIVATE	32.064908° -103.906266°
C-1573	Cooksey	PRIVATE	32.113463° -104.108092°
C-1575	ROCKHOUSE Ranch Well - Wildcat	BLM	32.493190° -104.444163°
C-2270	CW#1 (Oliver Kiehne)	PRIVATE	32.021440° -103.559208°
C-2242	Walterscheid	PRIVATE	32.39199° -104.17694°
C-2492POD2	Stacy Mills	PRIVATE	32.324203° -103.812472°
C-2569	Paduca well #2	BLM	32.160588 -103.742051
C-2569POD2	Paduca well replacement	BLM	32.160588 -103.742051
C-2570	Paduca (tank) well #4	BLM	32.15668 -103.74114
C-2571	Paduca (road) well	BLM	32.163993° -103.745457°
C-2572	Paduca well #6	BLM	32.163985 -103.7412
C-2573	Paduca (in the bush) well	BLM	32.16229 -103.74363
C-2574	Paduca well (on grid power)	BLM	32.165777° -103.747590°
C-2701	401 Water Station	BLM	32.458767° -104.528097°
C-2772	Mobley Alternate	BLM	32.305220° -103.852360°
C-3011	ROCKY ARROYO - MIDDLE	BLM	32.409046° -104.452045°
C-3060	Max Vasquez	PRIVATE	32.31291° -104.17033°
C-3095	ROCKHOUSE Ranch Well - North of Rockcrusher	PRIVATE	32.486794° -104.426227°
C-3200	Beard East	PRIVATE	32.168720 -104.276600
C-3260	Hayhurst	PRIVATE	32.227110° -104.150925°
C-3350	Winston Barn	PRIVATE	32.511871° -104.139094°
C-3358	Branson	PRIVATE	32.19214° -104.06201°
C-3363	Watts#2	PRIVATE	32.444637° -103.931313°
C-3453	ROCKY ARROYO - FIELD	PRIVATE	32.458657° -104.460804°
C-3478	Mobley Private	PRIVATE	32.294937° -103.888656°
C-3483pod1	ENG#3	BLM	32.065556° -103.894722°
C-3483pod3	ENG#5	BLM	32.06614° -103.89231°
C-3483POD4	CW#4 (Oliver Kiehne)	PRIVATE	32.021803° -103.559030°
C-3483POD5	CW#5 (Oliver Kiehne)	PRIVATE	32.021692° -103.560158°
C-3554	Jesse Baker #1 well	PRIVATE	32.071937° -103.723030°
C-3577	CW#3 (Oliver Kiehne)	PRIVATE	32.021773° -103.559738°
C-3581	ENG#4	BLM	32.066083° -103.895024°
C-3595	Oliver Kiehne house well #2	PRIVATE	32.025484° -103.682529°
C-3596	CW#2 (Oliver Kiehne)	PRIVATE	32.021793° -103.559018°

GRR Inc.

NMOSE WELL NUMBER	WELL COMMON NAME	LAND OWNERSHIP	GPS LOCATION
C-3614	Dale Hood #2 well	PRIVATE	32.449290° -104.214500°
C-3639	Jesse Baker #2 well	PRIVATE	32.073692° -103.727121°
C-3679	McCloy-Batty	PRIVATE	32.215790° -103.537690°
C-3689	Winston Barn_South	PRIVATE	32.511504° -104.139073°
C-3731	Ballard Construction	PRIVATE	32.458551° -104.144219°
C-3764	Watts#4	PRIVATE	32.443360° -103.942890°
C-3795	Beckham#6	BLM	32.023434°-103.321968°
C-3821	Three River Trucking	PRIVATE	32.34636° -104.21355
C-3824	Collins	PRIVATE	32.224053° -104.090129°
C-3829	Jesse Baker #3 well	PRIVATE	32.072545°-103.722258°
C-3830	Paduca	BLM	32.156400° -103.742060°
C-3836	Granger	PRIVATE	32.10073° -104.10284°
C-384	ROCKHOUSE Ranch Well - Rockcrusher	PRIVATE	32.481275° -104.420706°
C-459	Walker	PRIVATE	32.3379° -104.1498°
C-496pod2	Munoz #3 Trash Pit Well	PRIVATE	32.34224° -104.15365°
C-496pod3&4	Munoz #2 Corner of Porter & Derrick	PRIVATE	32.34182° -104.15272°
C-552	Dale Hood #1 well	PRIVATE	32.448720° -104.214330°
C-764	Mike Vasquez	PRIVATE	32.230553° -104.083518°
C-766(old)	Grandi	PRIVATE	32.32352° -104.16941°
C-93-S	Don Kidd well	PRIVATE	32.344876 -104.151793
C-987	ROCKY ARROYO - HOUSE	PRIVATE	32.457049° -104.461506°
C-98-A	Bindel well	PRIVATE	32.335125° -104.187255°
CP-1170POD1	Beckham#1	PRIVATE	32.065889° -103.312583°
CP-1201	Winston Ballard	BLM	32.580380° -104.115980°
CP-1202	Winston Ballard	BLM	32.538178° -104.046024°
CP-1231	Winston Ballard	PRIVATE	32.618968° -104.122690°
CP-1263POD5	Beckham#5	PRIVATE	32.065670° -103.307530°
CP-1414	Crawford #1	PRIVATE	32.238380° -103.260890°
CP-1414 POD 1	RRR	PRIVATE	32.23911° -103.25988°
CP-1414 POD 2	RRR	PRIVATE	32.23914° -103.25981°
CP-519	Bond_Private	PRIVATE	32.485546 -104.117583
CP-556	Jimmy Mills (Stacy)	STATE	32.317170° -103.495080°
CP-626	Ol Loco (W)	STATE	32.692660° -104.068064°
CP-626-S	Beach Exploration/ Ol Loco (E)	STATE	32.694229° -104.064759°
CP-73	Laguna #1	BLM	32.615015°-103.747615°
CP-74	Laguna #2	BLM	32.615255°-103.747688°
CP-741	Jimmy Richardson	BLM	32.61913° -104.06101°
CP-742	Jimmy Richardson	BLM	32.614061° -104.017211°
CP-742	Hidden Well	BLM	32.614061 -104.017211
CP-745	Leaning Tower of Pisa	BLM	32.584619° -104.037179°
CP-75	Laguna #3	BLM	32.615499°-103.747715°
CP-924	Winston Ballard	BLM	32.545888° -104.110114°
CP-926	Winchester well (Winston)	BLM	32.601125° -104.128358°

GRR Inc.

NMOSE WELL NUMBER	WELL COMMON NAME	LAND OWNERSHIP	GPS LOCATION
J-27	Beckham	PRIVATE	32.020403° -103.299333°
J-5	EPNG Jal Well	PRIVATE	32.050232° -103.313117°
J-33	Beckham	PRIVATE	32.016443° -103.297714°
J-34	Beckham	PRIVATE	32.016443° -103.297714°
J-35	Beckham	PRIVATE	32.016443° -103.297714°
L-10167	Angell Ranch well	PRIVATE	32.785847° -103.644705°
L-10613	Northcutt3 (2nd House well)	PRIVATE	32.687922°-103.472452°
L-11281	Northcutt4	PRIVATE	32.687675°-103.471512°
L-12459	Northcutt1 (House well)	PRIVATE	32.689498°-103.472697°
L-12462	Northcutt8 Private Well	PRIVATE	32.686238°-103.435409°
L-13049	EPNG Maljamar well	PRIVATE	32.81274° -103.67730°
L-13129	Pearce State	STATE	32.726305°-103.553172°
L-13179	Pearce Trust	STATE	32.731304°-103.548461°
L-13384	Northcutt7 (State) CAZA	STATE	32.694651°-103.434997°
L-1880S-2	HB Intrepid well #7	PRIVATE	32.842212° -103.621299°
L-1880S-3	HB Intrepid well #8	PRIVATE	32.852415° -103.620405°
L-1881	HB Intrepid well #1	PRIVATE	32.829124° -103.624139°
L-1883	HB Intrepid well #4	PRIVATE	32.828041° -103.607654°
L-3887	Northcutt2 (Tower or Pond well)	PRIVATE	32.689036°-103.472437°
L-5434	Northcutt5 (State)	STATE	32.694074°-103.405111°
L-5434-S	Northcutt6 (State)	STATE	32.693355°-103.407004°
RA-14	Horner Can	PRIVATE	32.89348° -104.37208°
RA-1474	Irvin Smith	PRIVATE	32.705773° -104.393043°
RA-1474-B	NLake WS / Jack Clayton	PRIVATE	32.561221°-104.293095°
RA-9193	Angell Ranch North Hummingbird	PRIVATE	32.885162° -103.676376°
SP-55 & SP-1279-A	Blue Springs Surface POD	PRIVATE	32.181358° -104.294009°
SP-55 & SP-1279 (Bounds)	Bounds Surface POD	PRIVATE	32.203875° -104.247076°
SP-55 & SP-1279 (Wilson)	Wilson Surface POD	PRIVATE	32.243010° -104.052197°
City Treated Effluent	City of Carlsbad Waste Treatment Plant	PRIVATE	32.411122° -104.177030°
Mine Industrial	Mosaic Industrial Water	PRIVATE	32.370286° -103.947839°
Mobley State Well (NO OSE)	Mobley Ranch	STATE	32.308859° -103.891806°
EPNG Industrial	Monument Water Well Pipeline (Oil Center, Eunice)	PRIVATE	32.512943° -103.290300°
MCOX Commercial	Matt Cox Commercial	PRIVATE	32.529431° -104.188017°
AMAX Mine Industrial	Mosaic Industrial Water	N/A	VARIOUS TAPS
WAG Mine Industrial	Mosaic Industrial Water	N/A	VARIOUS TAPS
HB Mine Industrial	Intrepid Industrial Water	N/A	VARIOUS TAPS

Mesquite

Cedar Canyon
Major Source: C464 (McDonald) Sec. 13 T24S R28E
Secondary Source: C-00738 (McDonald/Faulk) Sec. 12 T24S R28E

Corral Fly – South of Cedar Canyon
Major Source: C464 (McDonald) Sec. 13 T24S R28E
Secondary Source: C-00738 (McDonald/Faulk) Sec. 12 T24S R28E

Cypress – North of Cedar Canyon
Major Source: Caviness B: C-501-AS2 Sec 23 T28S R15E
Secondary Source: George Arnis; C-1303

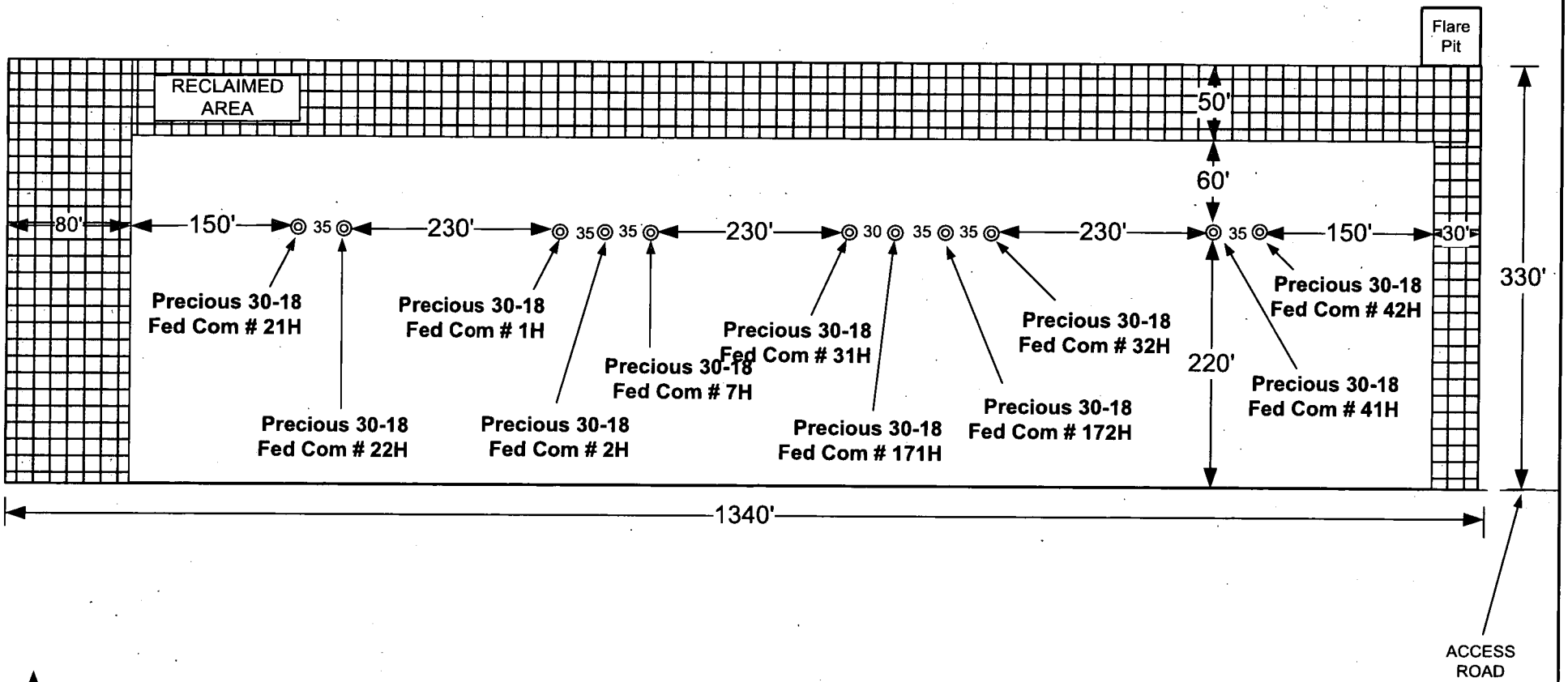
Sand Dunes – new frac pond
Major Source: 128 Fresh Water Pond (Mesquite/Mosaic) – located at MM 4 on 128; 240,000 bbl pond
Secondary Source: George Arnis; C-1303

Mesa Verde – east of Sand Dunes
Major Source: 128 Fresh Water Pond (Mesquite/Mosaic) – located at MM 4 on 128; 240,000 bbl pond
Secondary Source: Unknown at this time; needs coordinates to determine secondary source

Smokey Bits/Ivore/Misty – had posiden tanks before
Major Source: Unknown at this time; need coordinates to determine major source
Secondary Source: Unknown at this time; needs coordinates to determine secondary source

Red Tank/Lost Tank
Major Source: Unknown at this time; need coordinates to determine major source
Secondary Source: Unknown at this time; needs coordinates to determine secondary source

Peaches
Major Source: Unknown at this time; need coordinates to determine major source
Secondary Source: Unknown at this time; needs coordinates to determine secondary source



REVISION BLOCK						ENGINEERING RECORD	
NO.	DATE	DESCRIPTION	BY	CHK	APP	BY	DATE

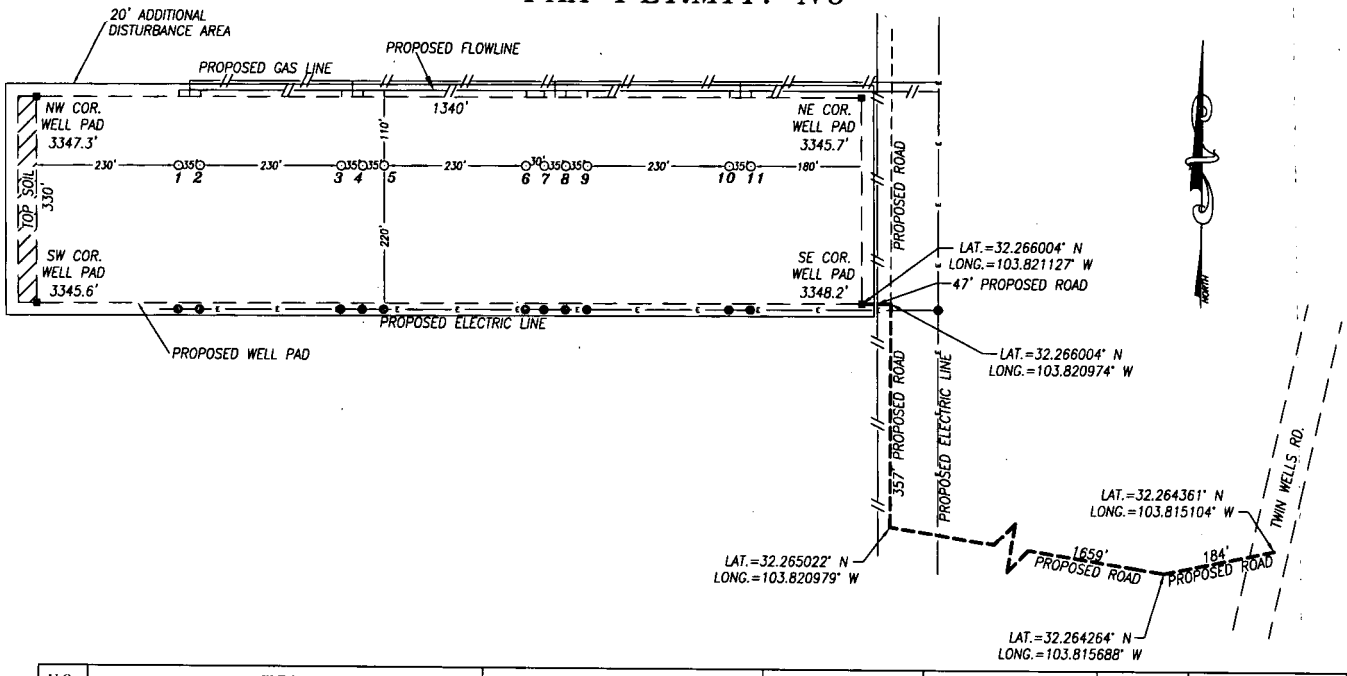
FLEX 3 RIG DIAGRAM

Precious 30-18 Fed Com # 1H, 2H, 7H, 21H, 22H, 31H, 32H, 41H, 42H, 171H, 172H

EDDY COUNTY, NEW MEXICO

OXY USA INC.

SITE PLAN
SNDDNS 3103
FAA PERMIT: NO



NO.	WELL	FOOTAGE	LAT.	LONG.	ELEV.	ID#
1	PRECIOUS 30_18 FED COM #21H	570' FNL & 285' FWL	32.266606° N	103.824719° W	3344.8'	N/A
2	PRECIOUS 30_18 FED COM #22H	570' FNL & 320' FWL	32.266606° N	103.824606° W	3346.2'	IP-SMS-2419
3	PRECIOUS 30_18 FED COM #1H	570' FNL & 550' FWL	32.266607° N	103.823862° W	3346.8'	N/A
4	PRECIOUS 30_18 FED COM #2H	570' FNL & 585' FWL	32.266607° N	103.823748° W	3347.7'	IP-SMS-2422
5	PRECIOUS 30_18 FED COM #7H	570' FNL & 620' FWL	32.266607° N	103.823635° W	3347.9'	IP-SMS-2431
6	PRECIOUS 30_18 FED COM #31H	570' FNL & 850' FWL	32.266608° N	103.822891° W	3351.3'	IP-SMS-2433
7	PRECIOUS 30_18 FED COM #171H	570' FNL & 880' FWL	32.266608° N	103.822794° W	3350.8'	IP-SMS-2417
8	PRECIOUS 30_18 FED COM #172H	570' FNL & 915' FWL	32.266608° N	103.822681° W	3349.5'	IP-SMS-2418
9	PRECIOUS 30_18 FED COM #32H	570' FNL & 950' FWL	32.266608° N	103.822568° W	3349.2'	IP-SMS-2434
10	PRECIOUS 30_18 FED COM #41H	570' FNL & 1180' FWL	32.266608° N	103.821824° W	3346.3'	IP-SMS-2424
11	PRECIOUS 30_18 FED COM #42H	570' FNL & 1215' FWL	32.266608° N	103.821710° W	3348.0'	IP-SMS-2425

NOTES:

1) LATS & LONGS SHOWN HEREON ARE MERCATOR GRID AND CONFORM TO THE NEW MEXICO COORDINATE SYSTEM "NEW MEXICO EAST ZONE" NORTH AMERICAN DATUM 1983.

2) DISTANCES ARE GRID VALUES.

3) ALL FEATURES ARE EXISTING UNLESS OTHERWISE NOTED

CERTIFICATION
I, CHAD HARCROW, A NEW MEXICO REGISTERED PROFESSIONAL SURVEYOR CERTIFY THAT I DIRECTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

CHAD HARCROW NEW MEXICO 17777 LICENSED PROFESSIONAL SURVEYOR

Chad Harcrow — 7/25/19

CHAD HARCROW N.M.P.S. NO. 17777 — DATE

HARCROW SURVEYING, LLC
2316 W. MAIN ST, ARTESIA, N.M. 88210
PH: (575) 746-2158
c.harcrow@harcrowsurveying.com

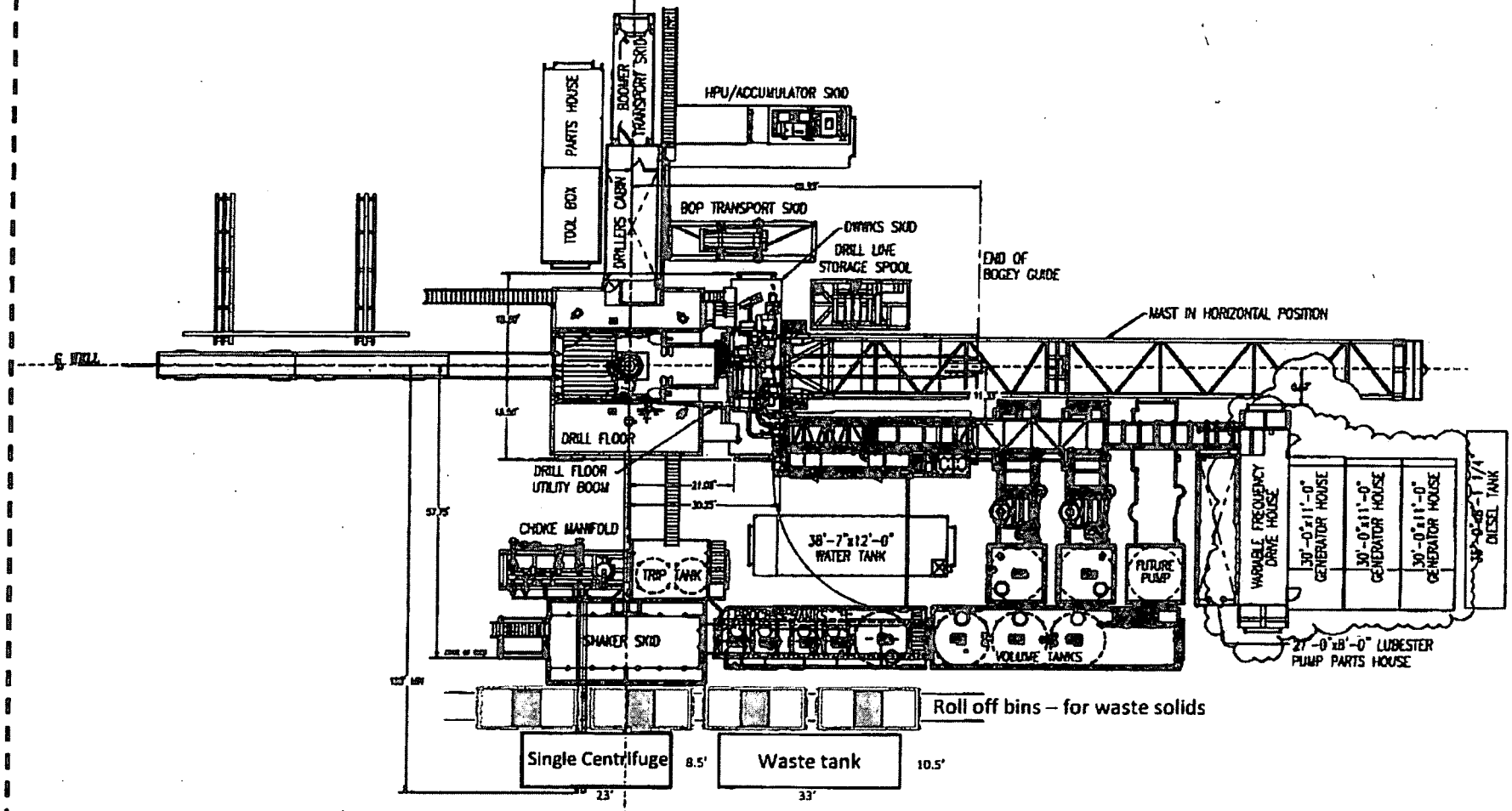
300 0 300 600 Feet

Scale: 1"=300'

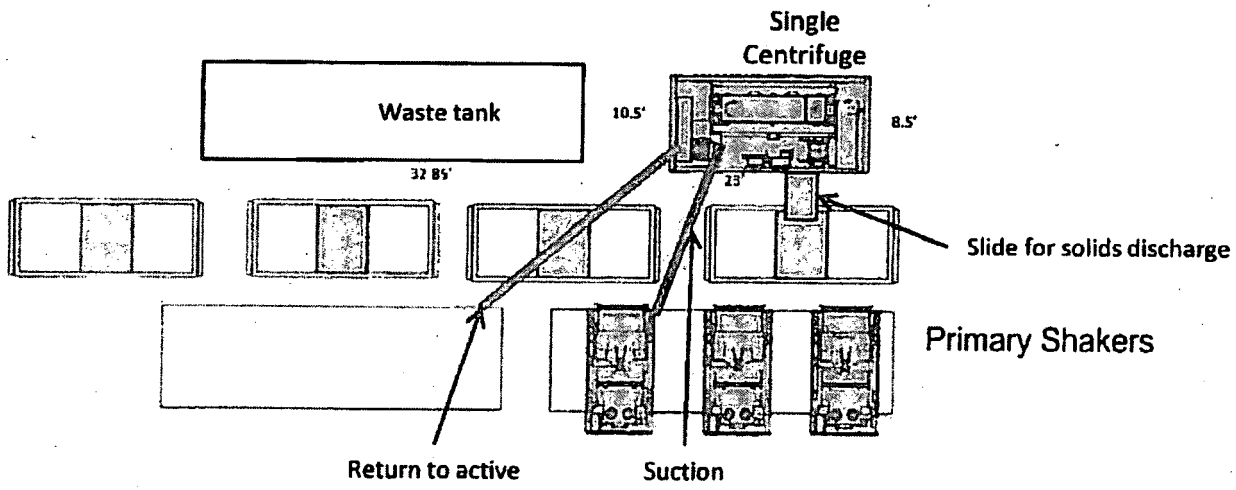
OXY USA INC.		
SURVEY DATE: JULY 10, 2019		SITE PLAN
DRAFTING DATE: JULY 23, 2019		PAGE: 1 OF 1
APPROVED BY: CH	DRAWN BY: AM	FILE: 19-1289

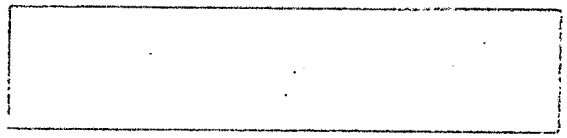
Oxy Single Centrifuge Closed Loop System – New Mexico Flex III

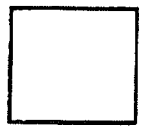
May 28, 2013



Oxy







Oxy Single Centrifuge Closed Loop System – New Mexico Flex III

May 28, 2013

Surface Use Plan of Operations

Operator Name/Number: OXY USA Inc. – 16696
Lease Name/Number: Precious 30-18 Federal Com 7H
Pool Name/Number: Wildcat Bone Spring
Surface Location: 570 FNL 1345 FWL NESW (C) Sec 31 T23S R31E – NMNM0546732A
Bottom Hole Location: 2621 FSL 330 FWL NWSW (L) Sec 18 T23S R31E – NMNM546237

1. Existing Roads

a. A copy of the USGS "Bootleg Ridge, NM" quadrangle map is attached showing the proposed location. The well location is spotted on the map, which shows the existing road system.

b. The well was staked by Terry J. Asel, Certificate No. 15079 on 09/11/18, certified 09/18/18.

c. Directions to Location: Beginning at the intersection of N.M State Hwy #128 and Eddy County Road #787 (Twin Wells Road), go south on Eddy County Road #787 for approx. 2.5 miles; then turn right on proposed road and go southwest for approx. 184', turn right and go northwest for approx. .25 mile, then turn right and go north for approx.1 mile then turn left and go west for approx. 113'; the proposed well lie lies approx. 1034' northwest.

2. New or Reconstructed Access Roads:

a. A new access road will be built. The access road will run from an existing road going 184' southwest, 1423' northwest, 397' north, 113' west through pasture to the southeast corner of the pad.

b. The maximum width of the road will be 14'. It will be crowned up of 6" rolled and compacted caliche. Water will be deflected as necessary, to avoid accumulation and prevent surface erosion.

c. Surface material will be native caliche. This material will be obtained from a BLM approved pit nearest in proximity to the location. The average grade will be approximately 1%.

d. No cattle guards, gates, or fence cuts will be required. Turnouts every 1000' as needed.

e. Blade, water & repair existing caliche road as needed.

f. Water Bars will be incorporated every 200' during the construction of the road.

3. Location of Existing Wells:

Existing wells within a one mile radius of the proposed well are shown on attached plat.

4. Location of Existing and/or Proposed Facilities:

a. In the event the well is found productive, the Precious Central Tank Battery and the Little Precious Central Tank Battery will be utilized and the necessary production equipment will be installed at the well site. See proposed facilities layout diagram.

b. All flow lines will adhere to API standards. They will consist of three – 4" composite flowlines operating < 75% MAWP, surface to follow surveyed route. Survey nine strips of land 30' wide and 13877.1' in length crossing USA land in Sections 30 & 31 T23S R31E, Eddy County, NM and being 15' left and 15' right of the centerline surveys. Two–20" steel gas lift lines operating <75% MAWP from Precious CTB to Little Precious CTB. Two-8" steel gas suction lines operating at <75% MAWP to Compressor Pad. All well pads have two-6" buried steel gas injection lines operating at <75% MAWP from the two-8" gas injection trunk lines to the wells. Survey eight strips of land 30' wide and 16863.3' in length crossing Sections 30 & 31 T23S R31E, Eddy County, NM and being 15' left and 15' right of the centerline survey and a survey of a strip of land 50' wide and 3830.1' in length crossing USA Land in Sections 29 & 30 T23S R31E, NMPM, Eddy County, NM and being 15' left and 15' right of the centerline survey. see attached.

c. Electric line will follow a route approved by the BLM. Survey of a strip of land 30' wide and 11040.6 in length crossing USA land in Sections 30 & 31 T23S R31E NMPM, Eddy County, NM and being 15' left and 15' right of the centerline survey, see attached.

d. See attached for additional information on the Sand Dunes Precious/Arkenstone Central Corridor Surface Production Facilities.

5. Location and types of Water Supply

This well will be drilled using a combination of water mud systems. It will be obtained from commercial water stations in the area and will be hauled to location by transport truck using existing and proposed roads.

6. Construction Materials:

Primary

All caliche utilized for the drilling pad and proposed access road will be obtained from an existing BLM/State/Fee approved pit or from prevailing deposits found on the location. Will use BLM recommended extra caliche from other locations close by for roads, if available.

Secondary

The secondary way of obtaining caliche to build locations and roads will be by "turning over" the location. This means, caliche will be obtained from the actual well site. A caliche permit will be obtained from BLM prior to pushing up any caliche. 2400 cubic yards is max amount of caliche needed for pad and roads. Amount will vary for each pad. The procedure below has been approved by BLM personnel:

a. The top 6" of topsoil is pushed off and stockpiled along the side of the location.
b. An approximate 120' X 120' area is used within the proposed well site to remove caliche.
c. Subsoil is removed and piled alongside the 120' X 120' within the pad site.
d. When caliche is found, material will be stockpiled within the pad site to build the location and road.
e. Then subsoil is pushed back in the hole and caliche is spread accordingly across entire location and road.
f. Once the well is drilled the stockpiled top soil will be used for interim reclamation and spread along areas where caliche is picked up and the location size is reduced. Neither caliche nor subsoil will be stockpiled outside of the well pad. Topsoil will be stockpiled along the edge of the pad as depicted in the attached plat.

7. Methods of Handling Waste Material:

a. A closed loop system will be utilized consisting of above ground steel tanks and haul-off bins. Disposal of liquids, drilling fluids and cuttings will be disposed of at an approved facility. Solids-CRI, Liquids-Laguna

b. All trash, junk and other waste material will be contained in trash cages or bins to prevent scattering. When the job is completed, all contents will be removed and disposed of in an approved sanitary landfill.

c. The supplier, including broken sacks, will pickup slats remaining after completion of well.

d. A Porto-john will be provided for the rig crews. This equipment will be properly maintained during the drilling and completion operations and will be removed when all operations are complete.

e. Disposal of fluids to be transported will be by the following companies. TFH Ltd, Laguna SWD Facility

8. Ancillary Facilities: None needed.

9. Well Site Layout:

The proposed well site layout with dimensions of the pad layout and equipment location.

V-Door – East CL Tanks – North Pad – 330' X 1505' – 10 Well Pad

10. Plans for Surface Reclamation:

a. After concluding the drilling and/or completion operations, if the well is found non-commercial, the caliche will be removed from the pad and transported to the original caliche pit or used for other drilling locations. The road will be reclaimed as directed by the BLM. The original topsoil will again be returned to the pad and contoured, as close as possible, to the original topography, and the area will be seeded with an approved BLM mixture to re-establish vegetation.

b. If the well is deemed commercially productive, caliche from the areas of the pad site not required for operations will be reclaimed. The original topsoil will be returned to the area of the drill pad not necessary to operate the well. These unused areas of the drill pad will be contoured, as close as possible, to match the original topography, and the area will be seeded with an approved BLM mixture to re-establish vegetation.

11. Surface Ownership:

The surface is owned by the U.S. Government and is administered by the BLM. The surface is multiple use with the primary uses of the region for the grazing of livestock and the production of oil and gas. The surface is leased to: Slash 46 Inc., P.O. Box 1358, Loving, NM 88256. They will be notified of our intention to drill prior to any activity.

12. Other Information:

a. The vegetation cover is generally sparse consisting of mesquite, yucca, shinnery oak, sandsage and perennial native range grass. The topsoil is sandy in nature. Wildlife in the area is also sparse consisting of deer, coyotes, rabbits, rodents, reptiles, dove and quail.

b. There is no permanent or live water in the general proximity of the location.

c. There are no dwellings within one mile of the proposed well site.

d. Cultural Resources Examination–This well is located in the Permian Basin PA. Payment to be determined by BLM. This well shares the same pad as the Precious 30-18 Fed Com 21H, Precious 30-18 Fed Com 41H, Precious 30-18 Fed Com 1H, Precious 30-18 Fed Com 171H, Precious 30-18 Fed Com 172H, Precious 30-18 Fed Com 22H Precious 30-18 Fed Com 42H, Precious 30-18 Fed Com 2H and Precious 30-18 Fed Com 8H wells.

e. Copy of this application will be furnished to SWCA Environmental Consultants, 5647 Jefferson St. NE, Albuquerque, NM 87109. No Potash leases within one mile of surface location.

13. Bond Coverage:

Bond coverage is Individual-NMB000862, Nationwide-ESB00226.

14. Operators Representatives:

The OXY Permian representatives responsible for ensuring compliance of the surface use plan are listed below:

Leo Ortega
Operations Superintendent
1502 West Commerce Dr.
Carlsbad, NM 88220
Office – 575-628-4012
Cellular – 575-706-8995

Cuong Q. Phan
Asset Manager
P.O. Box 4294
Houston, TX Carlsbad, NM 88220
Office – 713-513-6645
Cellular – 281-832-0978

Jim Wilson
Operation Specialist
P.O. Box 50250
Midland, TX 79710
Cellular – 575-631-2442

Michael Walton
RMT Lead
P.O. Box 4294
Houston, TX 77210
Office – 713-366-5526
Cellular – 281-814-2971

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources Department
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Submit Original to Appropriate District Office

NM OIL CONSERVATION
ARTESIA DISTRICT
OCT 10 2019

RECEIVED

GAS CAPTURE PLAN

Date: 8-28-2019

☒ Original

Operator & OGRID No.: OXY USA INC. - 16696

☐ Amended - Reason for Amendment: _____

This Gas Capture Plan outlines actions to be taken by the Operator to reduce well/production facility flaring/venting for new completion (new drill, recomplete to new zone, re-frac) activity.

Note: Form C-129 must be submitted and approved prior to exceeding 60 days allowed by Rule (Subsection A of 19.15.18.12 NMAC).

Well(s)/Production Facility – Name of facility

The well(s) that will be located at the production facility are shown in the table below.

Well Name	API	Well Location (ULSTR)	Footages	Expected MCF/D	Flared or Vented	Comments
Arkenstone 31 Federal 1H	Pending	D-1-31-23S-31E	130 FNL 895 FWL	2300	0	
Arkenstone 31 Federal 2H	Pending	D-1-31-23S-31E	130 FNL 930 FWL	2300	0	
Arkenstone 31 Federal 3H	Pending	B-31-23S-31E	130 FNL 2613 FEL	2300	0	
Arkenstone 31 Federal 4H	Pending	B-31-23S-31E	130 FNL 2578 FEL	2300	0	
Arkenstone 31 Federal 7H	Pending	C-31-23S-31E	130 FNL 965 FWL	2300	0	
Arkenstone 31 Federal 171H	Pending	D-1-31-23S-31E	130 FNL 1195 FWL	2700	0	
Arkenstone 31 Federal 172H	Pending	D-1-31-23S-31E	130 FNL 1230 FWL	2700	0	
Arkenstone 31 Federal 173H	Pending	C-31-23S-31E	130 FNL 2465 FWL	2700	0	
Arkenstone 31 Federal 174H	Pending	C-31-23S-31E	130 FNL 2500 FWL	2700	0	
Arkenstone 31 Federal Com 5H	Pending	A-31-23S-31E	130 FNL 865 FEL	2300	0	
Arkenstone 31 Federal Com 6H	Pending	A-31-23S-31E	100 FNL 830 FEL	2300	0	
Arkenstone 31 Federal Com 9H	Pending	C-31-23S-31E	130 FNL 2648 FEL	2300	0	
Arkenstone 31 Federal Com 10H	Pending	A-31-23S-31E	100 FNL 795 FEL	2300	0	
Precious 30_18 Federal Com 1H	Pending	D-1-31-23S-31E	570 FNL 550 FWL	3900	0	
Precious 30_18 Federal Com 2H	Pending	D-1-31-23S-31E	570 FNL 585 FWL	3900	0	
Precious 30_18 Federal Com 3H	Pending	B-31-23S-31E	570 FNL 2635 FEL	3900	0	
Precious 30_18 Federal Com 4H	Pending	B-31-23S-31E	570 FNL 2600 FEL	3900	0	
Precious 30_18 Federal Com 5H	Pending	A-31-23S-31E	520 FNL 800 FEL	3900	0	
Precious 30_18 Federal Com 6H	Pending	A-31-23S-31E	520 FNL 765 FEL	3900	0	
Precious 30_18 Federal Com 7H	Pending	D-1-31-23S-31E	570 FNL 620 FWL	3900	0	
Precious 30_18 Federal Com 9H	Pending	C-31-23S-31E	520 FNL 2670 FEL	3900	0	
Precious 30_18 Federal Com 10H	Pending	A-31-23S-31E	520 FNL 730 FEL	3900	0	
Precious 30_18 Federal Com 11H	Pending	C-31-23S-31E	130 FNL 1935 FWL	1800	0	
Precious 30_18 Federal Com 12H	Pending	C-31-23S-31E	130 FNL 1970 FWL	1800	0	
Precious 30_18 Federal Com 13H	Pending	B-31-23S-31E	100 FNL 1395 FEL	1800	0	
Precious 30_18 Federal Com 14H	Pending	B-31-23S-31E	100 FNL 1360 FEL	1800	0	
Precious 30_18 Federal Com 21H	Pending	D-1-31-23S-31E	570 FNL 285 FWL	3000	0	
Precious 30_18 Federal Com 22H	Pending	D-1-31-23S-31E	570 FNL 320 FWL	3000	0	
Precious 30_18 Federal Com 23H	Pending	C-31-23S-31E	130 FNL 2200 FWL	3000	0	
Precious 30_18 Federal Com 24H	Pending	C-31-23S-31E	130 FNL 2235 FWL	3000	0	
Precious 30_18 Federal Com 25H	Pending	A-31-23S-31E	100 FNL 1130 FEL	3000	0	
Precious 30_18 Federal Com 26H	Pending	A-31-23S-31E	100 FNL 1095 FEL	3000	0	
Precious 30-18 Federal Com 31H	Pending	D-1-31-23S-31E	570 FNL 850 FWL	2600	0	
Precious 30-18 Federal Com 32H	Pending	D-1-31-23S-31E	570 FNL 950 FWL	2600	0	

Well Name	API	Well Location (ULSTR)	Footages	Expected MCF/D	Flared or Vented	Comments
Precious 30-18 Federal Com 33H	Pending	B-31-23S-31E	280 FNL 2150 FEL	2600	0	
Precious 30-18 Federal Com 34H	Pending	B-31-23S-31E	315 FNL 2150 FEL	2600	0	
Precious 30_18 Federal Com 41H	Pending	D-1-31-23S-31E	570 FNL 1180 FWL	4000	0	
Precious 30_18 Federal Com 42H	Pending	D-1-31-23S-31E	570 FNL 1215 FWL	4000	0	
Precious 30_18 Federal Com 43H	Pending	C-31-23S-31E	570 FNL 2178 FWL	4000	0	
Precious 30_18 Federal Com 44H	Pending	C-31-23S-31E	570 FNL 2213 FWL	4000	0	
Precious 30_18 Federal Com 45H	Pending	B-31-23S-31E	520 FNL 1330 FEL	4000	0	
Precious 30_18 Federal Com 46H	Pending	A-31-23S-31E	520 FNL 1295 FEL	4000	0	
Precious 30_18 Federal Com 171H	Pending	D-1-31-23S-31E	570 FNL 880 FWL	3100	0	
Precious 30_18 Federal Com 172H	Pending	D-1-31-23S-31E	570 FNL 915 FWL	3100	0	
Precious 30_18 Federal Com 173H	Pending	C-31-23S-31E	570 FNL 2443 FWL	3100	0	
Precious 30_18 Federal Com 174H	Pending	C-31-23S-31E	570 FNL 2478 FWL	3100	0	
Precious 30_18 Federal Com 175H	Pending	A-31-23S-31E	520 FNL 1065 FEL	3100	0	
Precious 30_18 Federal Com 176H	Pending	A-31-23S-31E	520 FNL 1030 FEL	3100	0	

Gathering System and Pipeline Notification

Well(s) will be connected to a production facility after flowback operations are complete, where a gas transporter system is in place. The gas produced from production facility is dedicated to Enterprise Field Services, LLC ("Enterprise") and is connected to Enterprise low/high pressure gathering system located in Eddy County, New Mexico. OXY USA INC. ("OXY") provides (periodically) to Enterprise a drilling, completion and estimated first production date for wells that are scheduled to be drilled in the foreseeable future. In addition, OXY and Enterprise have periodic conference calls to discuss changes to drilling and completion schedules. Gas from these wells will be processed at Enterprise's Processing Plant located in Sec. 36, Twn. 24S, Rng. 30E, Eddy County, New Mexico. The actual flow of the gas will be based on compression operating parameters and gathering system pressures.

Flowback Strategy

After the fracture treatment/completion operations, well(s) will be produced to temporary production tanks and gas will be flared or vented. During flowback, the fluids and sand content will be monitored. When the produced fluids contain minimal sand, the wells will be turned to production facilities. Gas sales should start as soon as the wells start flowing through the production facilities, unless there are operational issues on Enterprise system at that time. Based on current information, it is OXY's belief the system can take this gas upon completion of the well(s).

Safety requirements during cleanout operations from the use of underbalanced air cleanout systems may necessitate that sand and non-pipeline quality gas be vented and/or flared rather than sold on a temporary basis.

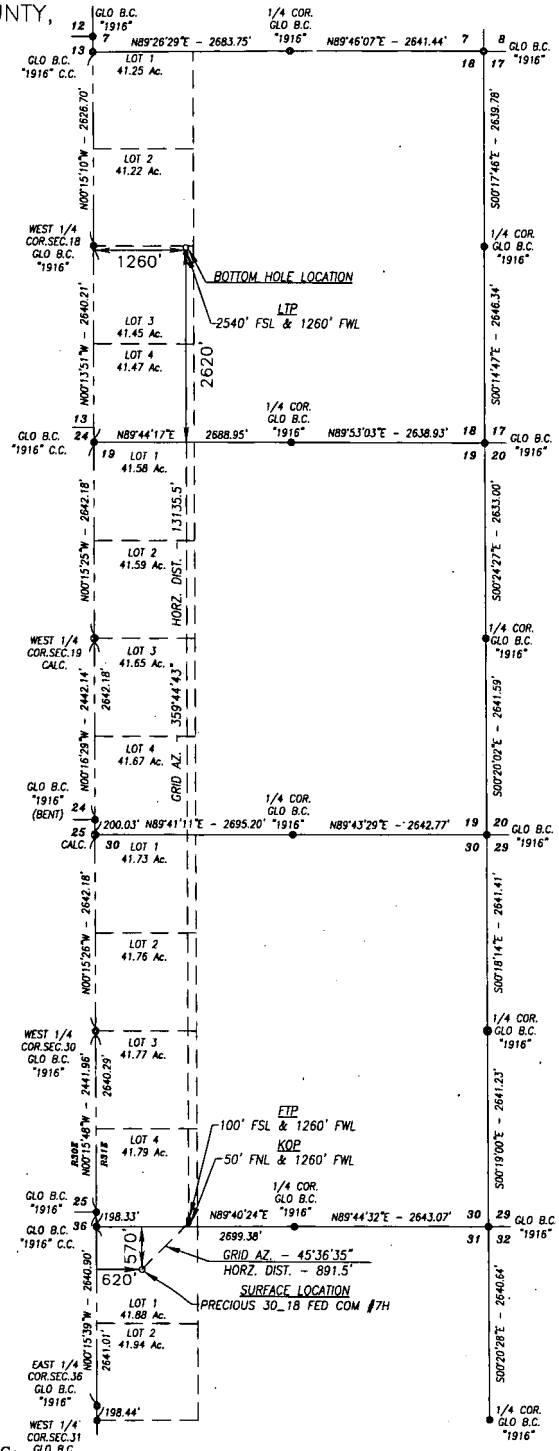
Alternatives to Reduce Flaring

Below are alternatives considered from a conceptual standpoint to reduce the amount of gas flared.

- Power Generation – On lease
  - Only a portion of gas is consumed operating the generator, remainder of gas will be flared
- Compressed Natural Gas – On lease
  - Gas flared would be minimal, but might be uneconomical to operate when gas volume declines
- NGL Removal – On lease
  - Plants are expensive, residue gas is still flared, and uneconomical to operate when gas volume declines

SECTION 31, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.,

EDDY COUNTY, NEW MEXICO.



DIRECTIONS TO LOCATION:
BEGINNING AT THE INTERSECTION OF N.M. STATE HWY. 128 AND EDDY COUNTY ROAD 787 (TWIN WELLS ROAD), GO SOUTH-SOUTHWEST ON EDDY COUNTY ROAD 787 FOR APPROX. 2.5 MILES TO PROPOSED ROAD; TURN RIGHT AT PROPOSED ROAD AND GO WEST-SOUTHWEST APPROX. 184 FEET; BEND RIGHT AND CONTINUE WEST-NORTHWEST APPROX. 0.31 MILES; TURN RIGHT AND GO NORTH APPROX. 357 FEET; TURN LEFT AND GO WEST 47 FEET TO THE SOUTHEAST CORNER PROPOSED PAD. THIS WELL IS WEST-NORTHWEST 806 FEET.

BASIS OF BEARING:
BEARINGS SHOWN HEREON ARE MERCATOR GRID AND CONFORM TO THE NEW MEXICO COORDINATE SYSTEM "NEW MEXICO EAST ZONE" NORTH AMERICAN DATUM 1983. DISTANCES ARE GRID VALUES.

HARCROW SURVEYING, LLC
2316 W. MAIN ST, ARTESIA, N.M. 88210
PH: (575) 746-2158
c.harcrow@harcrowsurveying.com

2000 0 2000 4000 FEET
SCALE: 1"=2000'

CERTIFICATION

I, CHAD HARCROW, A NEW MEXICO REGISTERED PROFESSIONAL SURVEYOR CERTIFY THAT I DIRECTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO.

CHAD L. HARCROW NEW MEXICO 17777 LICENSED PROFESSIONAL SURVEYOR

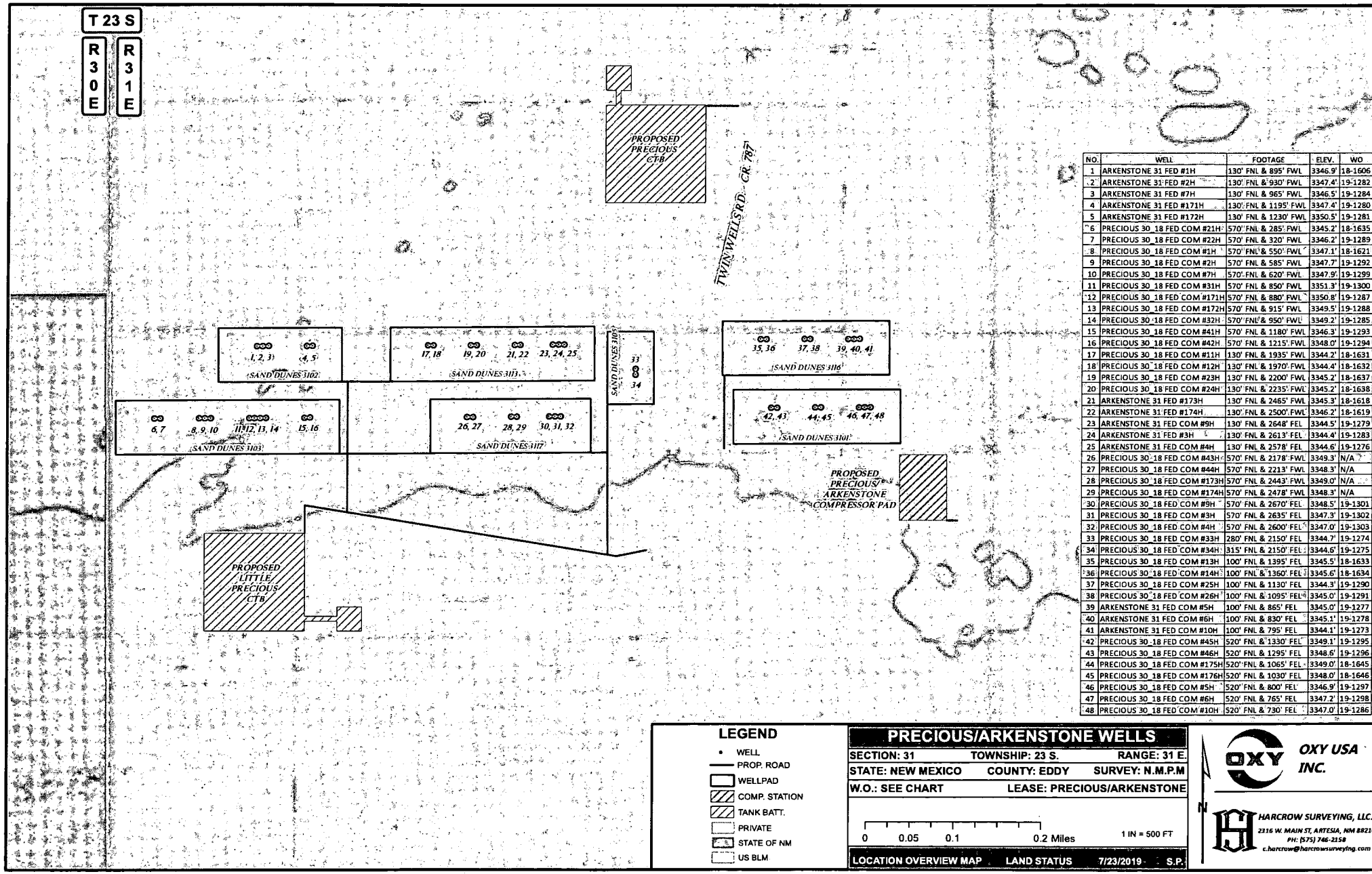
Chad Harcrow 8/9/19

CHAD HARCROW N.M.P.S. NO. 17777 DATE

OXY USA INC.

PRECIOUS 30_18 FEDERAL COM #7H
SECTION 31, TOWNSHIP 23 SOUTH, RANGE 31 EAST, NMPM, EDDY COUNTY, NEW MEXICO

SURVEY DATE: JULY 10, 2019		DRILL PATH
DRAFTING DATE: AUGUST 6, 2019		PAGE 1 OF 1
APPROVED BY: CH	DRAWN BY: CD	FILE: 19-1299



NO.	WELL	FOOTAGE	ELEV.	WO
1	ARKENSTONE 31 FED #1H	130' FNL & 895' FWL	3346.9'	18-1606
2	ARKENSTONE 31 FED #2H	130' FNL & 930' FWL	3347.4'	19-1282
3	ARKENSTONE 31 FED #7H	130' FNL & 965' FWL	3346.5'	19-1284
4	ARKENSTONE 31 FED #171H	130' FNL & 1195' FWL	3347.4'	19-1280
5	ARKENSTONE 31 FED #172H	130' FNL & 1230' FWL	3350.5'	19-1281
6	PRECIOUS 30_18 FED COM #21H	570' FNL & 285' FWL	3345.2'	18-1635
7	PRECIOUS 30_18 FED COM #22H	570' FNL & 320' FWL	3346.2'	19-1289
8	PRECIOUS 30_18 FED COM #1H	570' FNL & 550' FWL	3347.1'	18-1621
9	PRECIOUS 30_18 FED COM #2H	570' FNL & 585' FWL	3347.7'	19-1292
10	PRECIOUS 30_18 FED COM #7H	570' FNL & 620' FWL	3347.9'	19-1299
11	PRECIOUS 30_18 FED COM #31H	570' FNL & 850' FWL	3351.3'	19-1300
12	PRECIOUS 30_18 FED COM #171H	570' FNL & 880' FWL	3350.8'	19-1287
13	PRECIOUS 30_18 FED COM #172H	570' FNL & 915' FWL	3349.5'	19-1288
14	PRECIOUS 30_18 FED COM #32H	570' FNL & 950' FWL	3349.2'	19-1285
15	PRECIOUS 30_18 FED COM #41H	570' FNL & 1180' FWL	3346.3'	19-1293
16	PRECIOUS 30_18 FED COM #42H	570' FNL & 1215' FWL	3348.0'	19-1294
17	PRECIOUS 30_18 FED COM #11H	130' FNL & 1935' FWL	3344.2'	18-1631
18	PRECIOUS 30_18 FED COM #12H	130' FNL & 1970' FWL	3344.4'	18-1632
19	PRECIOUS 30_18 FED COM #23H	130' FNL & 2200' FWL	3345.2'	18-1637
20	PRECIOUS 30_18 FED COM #24H	130' FNL & 2235' FWL	3345.2'	18-1638
21	ARKENSTONE 31 FED #173H	130' FNL & 2465' FWL	3345.3'	18-1618
22	ARKENSTONE 31 FED #174H	130' FNL & 2500' FWL	3346.2'	18-1619
23	ARKENSTONE 31 FED COM #9H	130' FNL & 2648' FEL	3344.5'	19-1279
24	ARKENSTONE 31 FED #3H	130' FNL & 2613' FEL	3344.4'	19-1283
25	ARKENSTONE 31 FED COM #4H	130' FNL & 2578' FEL	3344.6'	19-1276
26	PRECIOUS 30_18 FED COM #43H	570' FNL & 2178' FWL	3349.3'	N/A
27	PRECIOUS 30_18 FED COM #44H	570' FNL & 2213' FWL	3348.3'	N/A
28	PRECIOUS 30_18 FED COM #173H	570' FNL & 2443' FWL	3349.0'	N/A
29	PRECIOUS 30_18 FED COM #174H	570' FNL & 2478' FWL	3348.3'	N/A
30	PRECIOUS 30_18 FED COM #9H	570' FNL & 2670' FEL	3348.5'	19-1301
31	PRECIOUS 30_18 FED COM #3H	570' FNL & 2635' FEL	3347.3'	19-1302
32	PRECIOUS 30_18 FED COM #4H	570' FNL & 2600' FEL	3347.0'	19-1303
33	PRECIOUS 30_18 FED COM #33H	280' FNL & 2150' FEL	3344.7'	19-1274
34	PRECIOUS 30_18 FED COM #34H	315' FNL & 2150' FEL	3344.6'	19-1275
35	PRECIOUS 30_18 FED COM #13H	100' FNL & 1395' FEL	3345.5'	18-1633
36	PRECIOUS 30_18 FED COM #14H	100' FNL & 1360' FEL	3345.6'	18-1634
37	PRECIOUS 30_18 FED COM #25H	100' FNL & 1130' FEL	3344.3'	19-1290
38	PRECIOUS 30_18 FED COM #26H	100' FNL & 1095' FEL	3345.0'	19-1291
39	ARKENSTONE 31 FED COM #5H	100' FNL & 865' FEL	3345.0'	19-1277
40	ARKENSTONE 31 FED COM #6H	100' FNL & 830' FEL	3345.1'	19-1278
41	ARKENSTONE 31 FED COM #10H	100' FNL & 795' FEL	3344.1'	19-1273
42	PRECIOUS 30_18 FED COM #45H	520' FNL & 1330' FEL	3349.1'	19-1295
43	PRECIOUS 30_18 FED COM #46H	520' FNL & 1295' FEL	3348.6'	19-1296
44	PRECIOUS 30_18 FED COM #175H	520' FNL & 1065' FEL	3349.0'	18-1645
45	PRECIOUS 30_18 FED COM #176H	520' FNL & 1030' FEL	3348.0'	18-1646
46	PRECIOUS 30_18 FED COM #5H	520' FNL & 800' FEL	3346.9'	19-1297
47	PRECIOUS 30_18 FED COM #6H	520' FNL & 765' FEL	3347.2'	19-1298
48	PRECIOUS 30_18 FED COM #10H	520' FNL & 730' FEL	3347.0'	19-1286

LEGEND

- WELL
- PROP. ROAD
- WELLPAD
- COMP. STATION
- TANK BATT.
- PRIVATE
- STATE OF NM
- US BLM

PRECIOUS/ARKENSTONE WELLS

SECTION: 31 TOWNSHIP: 23 S. RANGE: 31 E.

STATE: NEW MEXICO COUNTY: EDDY SURVEY: N.M.P.M

W.O.: SEE CHART LEASE: PRECIOUS/ARKENSTONE

0 0.05 0.1 0.2 Miles

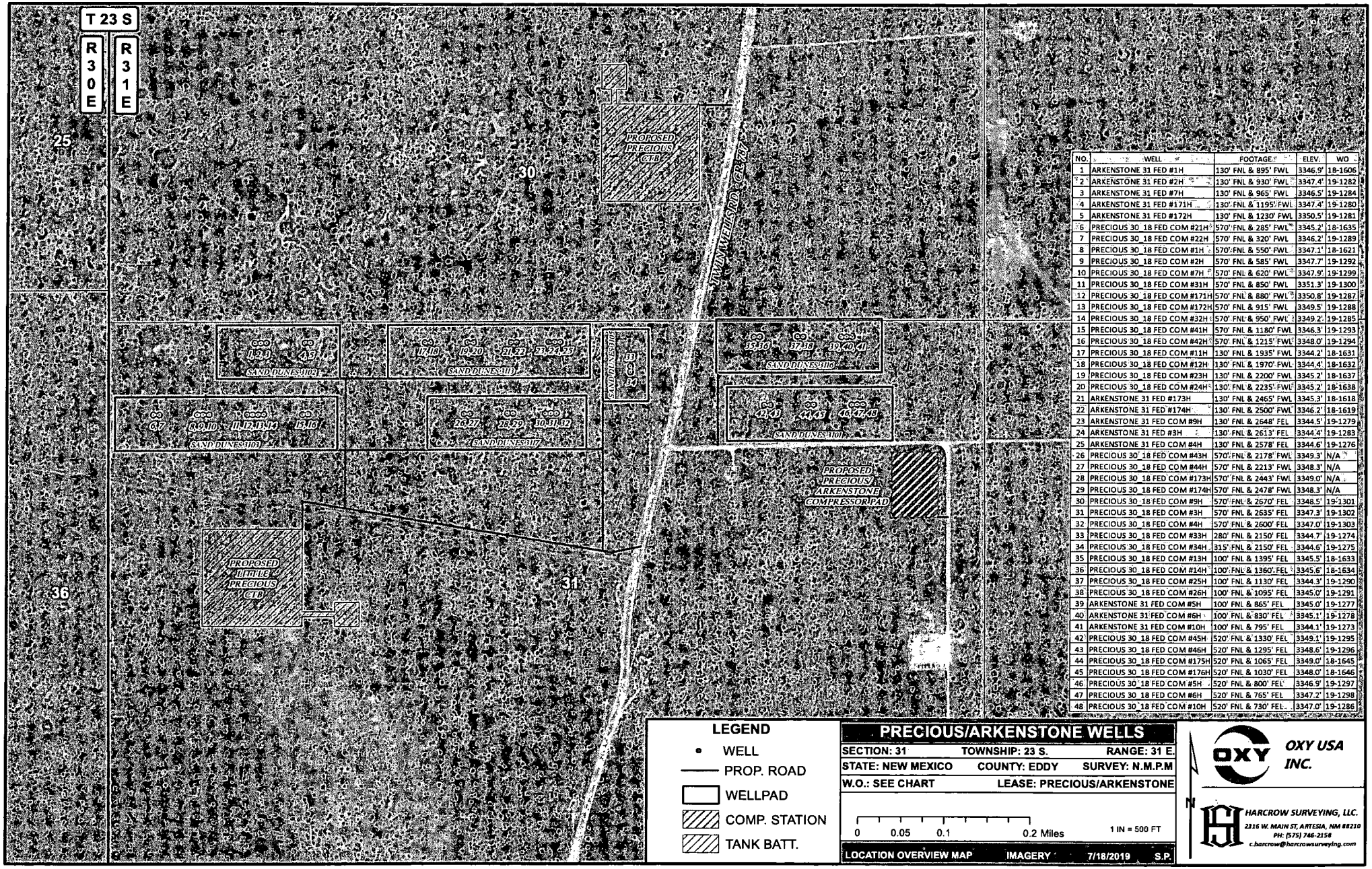
1 IN = 500 FT

LOCATION OVERVIEW MAP LAND STATUS 7/23/2019 S.P.

OXY USA INC.

N

HARCROW SURVEYING, LLC.
2316 W. MAIN ST, ARTESIA, NM 88210
PH: (575) 746-2158
e.harcrow@harcrowsurveying.com



NO.	WELL	FOOTAGE	ELEV.	WO
1	ARKENSTONE 31 FED #1H	130' FNL & 895' FWL	3346.9'	18-1606
2	ARKENSTONE 31 FED #2H	130' FNL & 930' FWL	3347.4'	19-1282
3	ARKENSTONE 31 FED #7H	130' FNL & 965' FWL	3346.5'	19-1284
4	ARKENSTONE 31 FED #171H	130' FNL & 1195' FWL	3347.4'	19-1280
5	ARKENSTONE 31 FED #172H	130' FNL & 1230' FWL	3350.5'	19-1281
6	PRECIOUS 30_18 FED COM #21H	570' FNL & 285' FWL	3345.2'	18-1635
7	PRECIOUS 30_18 FED COM #22H	570' FNL & 320' FWL	3346.2'	19-1289
8	PRECIOUS 30_18 FED COM #1H	570' FNL & 550' FWL	3347.1'	18-1621
9	PRECIOUS 30_18 FED COM #2H	570' FNL & 585' FWL	3347.7'	19-1292
10	PRECIOUS 30_18 FED COM #7H	570' FNL & 620' FWL	3347.9'	19-1299
11	PRECIOUS 30_18 FED COM #31H	570' FNL & 850' FWL	3351.3'	19-1300
12	PRECIOUS 30_18 FED COM #171H	570' FNL & 880' FWL	3350.8'	19-1287
13	PRECIOUS 30_18 FED COM #172H	570' FNL & 915' FWL	3349.5'	19-1288
14	PRECIOUS 30_18 FED COM #32H	570' FNL & 950' FWL	3349.2'	19-1285
15	PRECIOUS 30_18 FED COM #41H	570' FNL & 1180' FWL	3346.3'	19-1293
16	PRECIOUS 30_18 FED COM #42H	570' FNL & 1215' FWL	3348.0'	19-1294
17	PRECIOUS 30_18 FED COM #11H	130' FNL & 1935' FWL	3344.2'	18-1631
18	PRECIOUS 30_18 FED COM #12H	130' FNL & 1970' FWL	3344.4'	18-1632
19	PRECIOUS 30_18 FED COM #23H	130' FNL & 2200' FWL	3345.2'	18-1637
20	PRECIOUS 30_18 FED COM #24H	130' FNL & 2235' FWL	3345.2'	18-1638
21	ARKENSTONE 31 FED #173H	130' FNL & 2465' FWL	3345.3'	18-1618
22	ARKENSTONE 31 FED #174H	130' FNL & 2500' FWL	3346.2'	18-1619
23	ARKENSTONE 31 FED COM #9H	130' FNL & 2648' FEL	3344.5'	19-1279
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28	PRECIOUS 30_18 FED COM #173H	570' FNL & 2443' FWL	3349.0'	N/A
29	PRECIOUS 30_18 FED COM #174H	570' FNL & 2478' FWL	3348.3'	N/A
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33	PRECIOUS 30_18 FED COM #33H	280' FNL & 2150' FEL	3344.7'	19-1274
34	PRECIOUS 30_18 FED COM #34H	315' FNL & 2150' FEL	3344.6'	19-1275
35	PRECIOUS 30_18 FED COM #13H	100' FNL & 1395' FEL	3345.5'	18-1633
36	PRECIOUS 30_18 FED COM #14H	100' FNL & 1360' FEL	3345.6'	18-1634
37	PRECIOUS 30_18 FED COM #25H	100' FNL & 1130' FEL	3344.3'	19-1290
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44	PRECIOUS 30_18 FED COM #175H	520' FNL & 1065' FEL	3349.0'	18-1645
45	PRECIOUS 30_18 FED COM #176H	520' FNL & 1030' FEL	3348.0'	18-1646
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47	PRECIOUS 30_18 FED COM #6H	520' FNL & 765' FEL	3347.2'	19-1298
48	PRECIOUS 30_18 FED COM #10H	520' FNL & 730' FEL	3347.0'	19-1286

LEGEND

- WELL
- PROP. ROAD
- WELLPAD
- COMP. STATION
- TANK BATT.

PRECIOUS/ARKENSTONE WELLS

SECTION: 31 TOWNSHIP: 23 S. RANGE: 31 E.
STATE: NEW MEXICO COUNTY: EDDY SURVEY: N.M.P.M
W.O.: SEE CHART LEASE: PRECIOUS/ARKENSTONE

0 0.05 0.1 0.2 Miles 1 IN = 500 FT

LOCATION OVERVIEW MAP IMAGERY 7/18/2019 S.P.

OXY USA INC.

N

HARCROW SURVEYING, LLC.
2316 W. MAIN ST, ARTESIA, NM 88210
PH: (575) 746-2158
c.harcrow@harcrowsurveying.com

Pad 3103

1340' x 330'

OXY U.S.A. INC.

NEW MEXICO STAKING FORM

Date Staked: 9-11-18

Lease / Well Name: Precious 30-18 Fed Com #7H

Legal Description: 570' FNL 620' FWL Sec 31 T23S R31E

Latitude: 32° 15' 59.78" NAD 83

Longitude: -103° 49' 25.09" NAD 83

X: 698879.79 NAD 83

Y: 461098.73 NAD 83

Elevation: 3347.92 NAD 83

Move information:

County: Eddy

Surface Owner BLM

Nearest Residence: ?

Nearest Water Well:

V-Door: EAST

Top soil: WEST

Road Description: SE Cor From SOUTH

New Road:

Upgrade Existing Road:

Interim Reclamation: 50' NORTH

Source of Caliche:

Onsite Attendees: Jessie Bassett - BLM; Jim Wilson - OXY; SWCA; Asel Survey

DATE 2-22-18

AFMSS

U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

PWD Data Report

10/09/2019

APD ID: 10400038597 **Submission Date:** 01/29/2019

Operator Name: OXY USA INCORPORATED

Well Name: PRECIOUS 30-18 FEDERAL COM **Well Number:** 7H

Well Type: OIL WELL **Well Work Type:** Drill

Section 1 - General

Would you like to address long-term produced water disposal? NO

Section 2 - Lined Pits

Would you like to utilize Lined Pit PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Lined pit PWD on or off channel:

Lined pit PWD discharge volume (bbl/day):

Lined pit specifications:

Pit liner description:

Pit liner manufacturers information:

Precipitated solids disposal:

Decribe precipitated solids disposal:

Precipitated solids disposal permit:

Lined pit precipitated solids disposal schedule:

Lined pit precipitated solids disposal schedule attachment:

Lined pit reclamation description:

Lined pit reclamation attachment:

Leak detection system description:

Leak detection system attachment:

Operator Name: OXY USA INCORPORATED

Well Name: PRECIOUS 30-18 FEDERAL COM **Well Number:** 7H

Lined pit Monitor description:

Lined pit Monitor attachment:

Lined pit: do you have a reclamation bond for the pit?

Is the reclamation bond a rider under the BLM bond?

Lined pit bond number:

Lined pit bond amount:

Additional bond information attachment:

Section 3 - Unlined Pits

Would you like to utilize Unlined Pit PWD options? NO

Produced Water Disposal (PWD) Location:

PWD disturbance (acres): **PWD surface owner:**

Unlined pit PWD on or off channel:

Unlined pit PWD discharge volume (bbl/day):

Unlined pit specifications:

Precipitated solids disposal:

Decribe precipitated solids disposal:

Precipitated solids disposal permit:

Unlined pit precipitated solids disposal schedule:

Unlined pit precipitated solids disposal schedule attachment:

Unlined pit reclamation description:

Unlined pit reclamation attachment:

Unlined pit Monitor description:

Unlined pit Monitor attachment:

Do you propose to put the produced water to beneficial use?

Beneficial use user confirmation:

Estimated depth of the shallowest aquifer (feet):

Does the produced water have an annual average Total Dissolved Solids (TDS) concentration equal to or less than that of the existing water to be protected?

TDS lab results:

Geologic and hydrologic evidence:

State authorization:

Unlined Produced Water Pit Estimated percolation:

Unlined pit: do you have a reclamation bond for the pit?

Operator Name: OXY USA INCORPORATED

Well Name: PRECIOUS 30-18 FEDERAL COM **Well Number:** 7H

Is the reclamation bond a rider under the BLM bond?

Unlined pit bond number:

Unlined pit bond amount:

Additional bond information attachment:

Section 4 - Injection

Would you like to utilize Injection PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Injection PWD discharge volume (bbl/day):

Injection well mineral owner:

Injection well type:

Injection well number: **Injection well name:**

Assigned injection well API number? **Injection well API number:**

Injection well new surface disturbance (acres):

Minerals protection information:

Mineral protection attachment:

Underground Injection Control (UIC) Permit?

UIC Permit attachment:

Section 5 - Surface Discharge

Would you like to utilize Surface Discharge PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Surface discharge PWD discharge volume (bbl/day):

Surface Discharge NPDES Permit?

Surface Discharge NPDES Permit attachment:

Surface Discharge site facilities information:

Surface discharge site facilities map:

Section 6 - Other

Would you like to utilize Other PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Other PWD discharge volume (bbl/day):

Operator Name: OXY USA INCORPORATED

Well Name: PRECIOUS 30-18 FEDERAL COM **Well Number:** 7H

Other PWD type description:

Other PWD type attachment:

Have other regulatory requirements been met?

Other regulatory requirements attachment:

AFMSS

U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

Bond Info Data Report

10/09/2019

APD ID: 10400038597

Submission Date: 01/29/2019

Operator Name: OXY USA INCORPORATED

Well Name: PRECIOUS 30-18 FEDERAL COM

Well Number: 7H

Well Type: OIL WELL

Well Work Type: Drill

Highlighted data reflects the most recent changes

Show Final Text

Bond Information

Federal/Indian APD: FED

BLM Bond number: ESB000226

BIA Bond number:

Do you have a reclamation bond? NO

Is the reclamation bond a rider under the BLM bond?

Is the reclamation bond BLM or Forest Service?

BLM reclamation bond number:

Forest Service reclamation bond number:

Forest Service reclamation bond attachment:

Reclamation bond number:

Reclamation bond amount:

Reclamation bond rider amount:

Additional reclamation bond information attachment: