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

HOBBS OCD
MAR 03 2020
RECEIVED

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.
NMNM069376

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.
TACO CAT 27-34 FEDERAL COM
22H (321612)

2. Name of Operator
OXY USA INCORPORATED

9. API Well No.
30025-46933

3a. Address
5 Greenway Plaza, Suite 110 Houston TX 77046

3b. Phone No. *(include area code)*
(713)366-5716

10. Field and Pool, or Exploratory
51683
~~COTTON DRAW~~ BONE SPRING ~~/ COTT~~

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*
At surface NENW / 520 FNL / 1880 FWL / LAT 32.3685077 / LONG -103.6650239
At proposed prod. zone SESW / 20 FSL / 1380 FWL / LAT 32.34095 / LONG -103.6666173

11. Sec., T. R. M. or Blk. and Survey or Area
SEC 27 / T22S / R32E / NMP

14. Distance in miles and direction from nearest town or post office*
26 miles

12. County or Parish
LEA

13. State
NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)
20 feet

16. No of acres in lease
320

17. Spacing Unit dedicated to this well
640

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.
35 feet

19. Proposed Depth
10672 feet / 21561 feet

20. BLM/BIA Bond No. in file
FED: ESB000226

21. Elevations (Show whether DF, KDB, RT, GL, etc.)
3636 feet

22. Approximate date work will start*
12/01/2019

23. Estimated duration
40 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)	Leslie Reeves / Ph: (713)497-2492	02/05/2019

Title
Advisor Regulatory

Approved by *(Signature)*	Name *(Printed/Typed)*	Date
(Electronic Submission)	Cody Layton / Ph: (575)234-5959	02/28/2020
Title	Office	
Assistant Field Manager Lands & Minerals	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.

GCP Rec 03/03/2020

KZ 03/05/2020

SL

APPROVED WITH CONDITIONS

Approval Date: 02/28/2020

(Continued on page 2)

*(Instructions on page 2)

PECOS DISTRICT
DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Oxy USA Incorporated
LEASE NO.:	NMNM081272
WELL NAME & NO.:	Taco Cat 27-34 Federal Com 22H
SURFACE HOLE FOOTAGE:	520'/N &1880'/W
BOTTOM HOLE FOOTAGE	20'/S & 1380/'W
LOCATION:	Section 27, T.22 S., R.32 E., NMPM
COUNTY:	Lea County, New Mexico

COA

H2S	○ Yes	◉ No	
Potash	◉ None	○ Secretary	○ R-111-P
Cave/Karst Potential	◉ Low	○ Medium	○ High
Cave/Karst Potential	○ Critical		
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

Casing Design:

1. The **10-3/4** inch surface casing shall be set at approximately **890** feet (a minimum of **25 feet (Lea 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 **8 hours** 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.

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

2. The **7-5/8** inch intermediate casing shall be set at approximately **6200** feet. The minimum required fill of cement behind the **7-5/8** 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.

Operator has proposed to pump down 10-3/4" X 7-5/8" annulus. Operator must run a CBL or ECHO-METER from TD of the 7-5/8" casing to surface. Submit results to BLM.

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

Option 1 (Single Stage):

- Cement should tie-back at least **200 feet** into previous casing string. Operator shall provide method of verification.

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 should tie-back at least **200 feet** into previous casing string. Operator shall provide method of verification.

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 **5000 (5M)** psi.

b. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the intermediate casing shoe shall be **5000 (5M)** 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 **5000 (5M)** 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: The flex line must meet the requirements of API 16C. 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.

NMK02102020

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

Operator Certification Data Report

03/02/2020

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: Leslie Reeves **Signed on:** 08/01/2019

Title: Advisor Regulatory

Street Address: 5 Greenway Plaza, Suite 110

City: Houston **State:** TX **Zip:** 77046

Phone: (713)497-2492

Email address: Leslie_Reeves@oxy.com

Field Representative

Representative Name:

Street Address: 6001 Deauville

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

Phone: (575)631-2442

Email address: jim_wilson@oxy.com

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

Application Data Report

03/02/2020

APD ID: 10400038807 **Submission Date:** 02/05/2019

Operator Name: OXY USA INCORPORATED

Well Name: TACO CAT 27-34 FEDERAL COM **Well Number:** 22H

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

[redacted]

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Section 1 - General

APD ID: 10400038807 **Tie to previous NOS?** N **Submission Date:** 02/05/2019

BLM Office: CARLSBAD **User:** Leslie Reeves **Title:** Advisor Regulatory

Federal/Indian APD: FED **Is the first lease penetrated for production Federal or Indian?** FED

Lease number: NMNM069376 **Lease Acres:** 320

Surface access agreement in place? **Allotted?** **Reservation:**

Agreement in place? NO **Federal or Indian agreement:**

Agreement number:

Agreement name:

Keep application confidential? YES

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: TACO CAT 27-34 FEDERAL COM **Well Number:** 22H **Well API Number:**

Field/Pool or Exploratory? Field and Pool **Field Name:** COTTON DRAW BONE SPRING **Pool Name:** COTTON DRAW BONE SPRING

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

Operator Name: OXY USA INCORPORATED

Well Name: TACO CAT 27-34 FEDERAL COM **Well Number:** 22H

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

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:** TACO CAT 27-34 FED COM **Number:** 22H, 23H, 32H, 33H

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

Reservoir well spacing assigned acres Measurement: 640 Acres

Well plat: TacoCat27_34FdCom22H_C102_20190205085717.pdf

TacoCat27_34FdCom22H_SitePlan_20190205085827.pdf

Well work start Date: 12/01/2019 **Duration:** 40 DAYS

Section 3 - Well Location Table

Survey Type: RECTANGULAR

Describe Survey Type:

Datum: NAD83 **Vertical Datum:** NAVD88

Survey number: **Reference Datum:**

Wellbore	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	Will this well produce from this lease?
SHL Leg #1	520	[redacted]	1880	FWL	22S	32E	[redacted]	Aliquot NENW	32.3685077	-103.6650239	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 069376	3636	0	0	
KOP Leg #1	50	[redacted]	1380	FWL	22S	32E	[redacted]	Aliquot NENW	32.3697918	-103.6666447	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 069376	-7036	11119	10672	

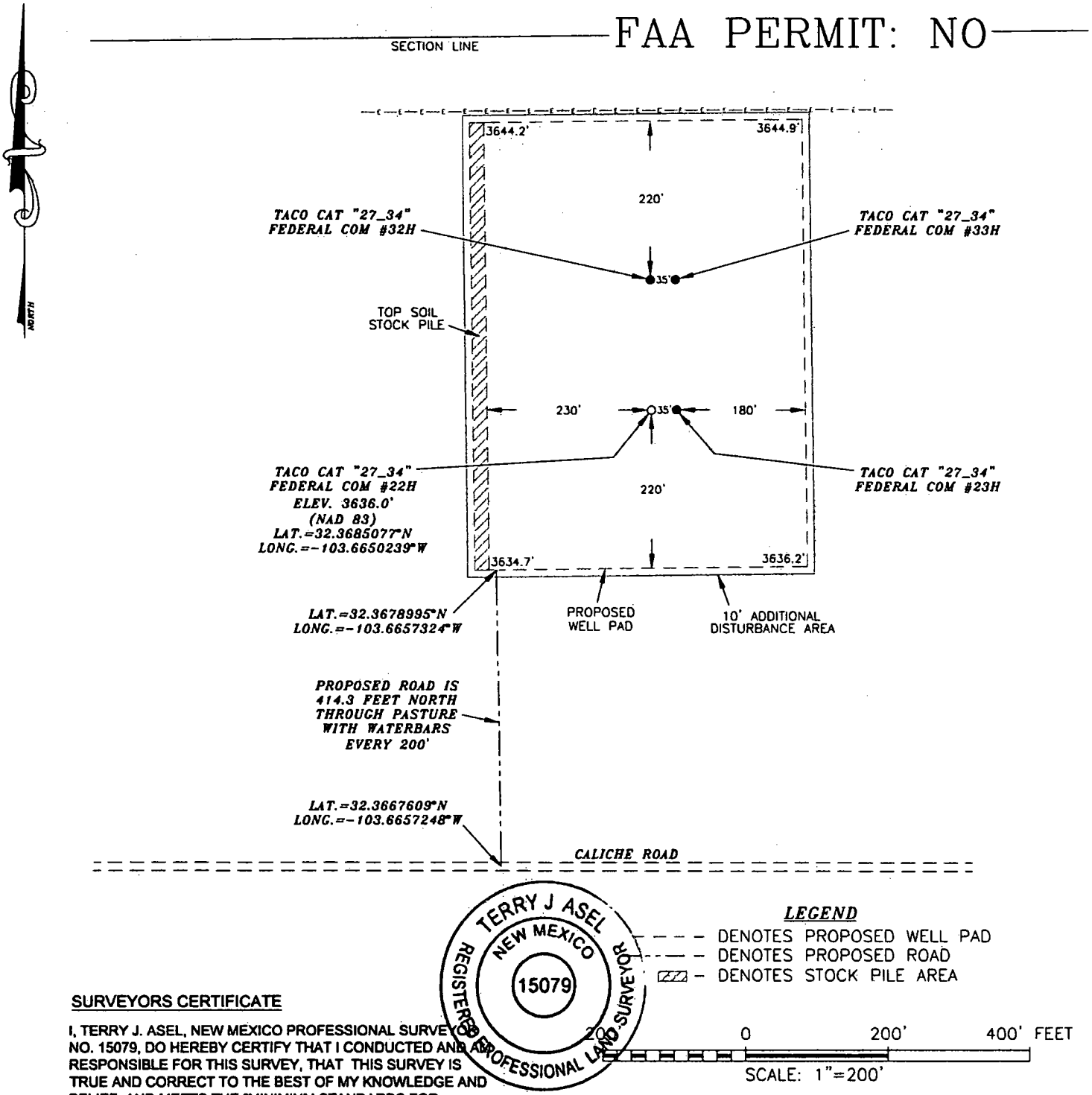
Operator Name: OXY USA INCORPORATED

Well Name: TACO CAT 27-34 FEDERAL COM **Well Number:** 22H

Wellbore	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	Will this well produce from this lease?
PPP Leg #1-1	7	FNL	1380	FWL	22S	32E	34	Aliquot NENW	32.355427	-103.666631	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 077060	-7036	16294	10672	
PPP Leg #1-2	100	FNL	1380	FWL	22S	32E	27	Aliquot NENW	32.3696544	-103.6666446	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 069376	-7036	11107	10672	
EXIT Leg #1	100	FSL	1380	FWL	22S	32E	34	Aliquot SESW	32.3411699	-103.6666175	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 077060	-7036	21461	10672	
BHL Leg #1	20	FSL	1380	FWL	22S	32E	34	Aliquot SESW	32.34095	-103.6666173	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 077060	-7036	21561	10672	

OXY USA INC.
TACO CAT "27_34" FEDERAL COM #22H
SITE PLAN

FAA PERMIT: NO



TERRY J ASEL NEW MEXICO 15079 REGISTERED PROFESSIONAL LAND SURVEYOR

LEGEND

- – – – DENOTES PROPOSED WELL PAD
- ——— DENOTES PROPOSED ROAD
- ▨ – DENOTES STOCK PILE AREA

0 200' 400' FEET

SCALE: 1"=200'

SURVEYORS CERTIFICATE

I, TERRY J. ASEL, NEW MEXICO PROFESSIONAL SURVEYOR NO. 15079, DO HEREBY CERTIFY THAT I CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND MEETS THE "MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO" AS ADOPTED BY THE NEW MEXICO STATE BOARD OF REGISTRATION FOR PROFESSIONAL ENGINEERS AND SURVEYORS.

Terry J. Asel 11/21/2018

Terry J. Asel N.M. R.P.L.S. No. 15079

Asel Surveying

P.O. BOX 393 - 310 W. TAYLOR
HOBBS, NEW MEXICO - 575-393-9146

OXY USA INC.

TACO CAT "27_34" FEDERAL COM #22H
LOCATED AT 520' FNL & 1880' FWL IN
SECTION 27, TOWNSHIP 22 SOUTH, RANGE 32
EAST, N.M.P.M., LEA COUNTY, NEW MEXICO

Survey Date: 05/16/18	Sheet 1 of 1 Sheets	
W.O. Number: 180516WL-a	Drawn By: KA	Rev:
Date: 11/19/18	180516WL-a	Scale:1"=200'

AFMSS

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

Drilling Plan Data Report

03/02/2020

APD ID: 10400038807 **Submission Date:** 02/05/2019

Operator Name: OXY USA INCORPORATED

Well Name: TACO CAT 27-34 FEDERAL COM **Well Number:** 22H

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

[redacted]

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Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
390302	RUSTLER	3636	840	840	ANHYDRITE, DOLOMITE, SHALE	USEABLE WATER	N
390303	SALADO	2320	1316	1316	ANHYDRITE, DOLOMITE, HALITE, SHALE	OTHER : SALT	N
390300	CASTILE	541	3095	3095	ANHYDRITE	OTHER : salt	N
390304	LAMAR	-1047	4683	4697	LIMESTONE, SANDSTONE, SILTSTONE	NATURAL GAS, OIL, OTHER : BRINE	N
390305	BELL CANYON	-1083	4719	4734	SANDSTONE, SILTSTONE	NATURAL GAS, OIL, OTHER, URANIUM, USEABLE WATER : BRINE	N
390306	CHERRY CANYON	-1976	5612	5647	SANDSTONE, SILTSTONE	NATURAL GAS, OIL, OTHER : BRINE	N
390307	BRUSHY CANYON	-3233	6869	6932	LIMESTONE, SANDSTONE, SILTSTONE	NATURAL GAS, OIL, OTHER : BRINE	N
390301	BONE SPRING	-4901	8537	8637	LIMESTONE, SANDSTONE, SILTSTONE	NATURAL GAS, OIL	N
390297	BONE SPRING 1ST	-6040	9676	9793	LIMESTONE, SANDSTONE, SILTSTONE	NATURAL GAS, OIL	Y
390308	BONE SPRING 2ND	-6331	9967	10085	LIMESTONE, SANDSTONE, SILTSTONE	NATURAL GAS, OIL	Y

Section 2 - Blowout Prevention

Pressure Rating (PSI): 5M **Rating Depth:** 10672

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.

[redacted]

Operator Name: OXY USA INCORPORATED

Well Name: TACO CAT 27-34 FEDERAL COM **Well Number:** 22H

[redacted]

Choke Diagram Attachment:

TacoCat27_34FdCom22H_ChokeManifold_20190205094636.pdf

BOP Diagram Attachment:

TacoCat27_34FdCom22H_FlexHoseCert_20190205094653.pdf

TacoCat27_34FdCom22H_BOP_5M_20190205094814.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	14.75	10.75	NEW	API	N	0	1256	0	1256			1256	J-55	40.5	BUTT	1.125	1.2	BUOY	1.4	BUOY	1.4
2	INTERMEDIATE	9.875	7.625	NEW	API	N	0	10238	0	10119			10238	L-80	26.4	BUTT	1.125	1.2	BUOY	1.4	BUOY	1.4
3	PRODUCTION	6.75	5.5	NEW	API	N	0	21561	0	10672			21561	P-110	20	OTHER - DQX/SFTORQ	1.125	1.2	BUOY	1.4	BUOY	1.4

Casing Attachments

Operator Name: OXY USA INCORPORATED

Well Name: TACO CAT 27-34 FEDERAL COM **Well Number:** 22H

Casing Attachments

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

TacoCat27_34FdCom22H_CsgCriteria_20190205100150.pdf

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

TacoCat27_34FdCom22H_CsgCriteria_20190205100412.pdf

Casing ID: 3 **String Type:** PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

TacoCat27_34FdCom22H_CsgCriteria_20190205100524.pdf

TacoCat27_34FdCom22H_5.500in_x_20.00__P110_HC_TMK_UP_SF_TORQ_20190205100534.pdf

TacoCat27_34FdCom22H_5.500in_x_20.00__P_110_TMK_UP_DQX_20190205100542.pdf

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Operator Name: OXY USA INCORPORATED

Well Name: TACO CAT 27-34 FEDERAL COM **Well Number:** 22H

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					1.33					
INTERMEDIATE	Lead					1.65					
INTERMEDIATE	Tail										
PRODUCTION	Lead					1.38					

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
10238	21561	OTHER : Water-Based and/or	8	9.6							

Operator Name: OXY USA INCORPORATED

Well Name: TACO CAT 27-34 FEDERAL COM **Well Number:** 22H

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
1256	10238	OTHER : Saturated Brine Based Mud or Oil-Based Mud	8	10							
0	1256	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.

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 5327 **Anticipated Surface Pressure:** 2979.16

Anticipated Bottom Hole Temperature(F): 166

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:

TacoCat27_34FdCom22H_H2S1_20190205101659.pdf

TacoCat27_34FdCom22H_H2S2_20190205101707.pdf

TacoCat27_34FdCom22H_H2SEmergCont_20190205101715.pdf

Operator Name: OXY USA INCORPORATED

Well Name: TACO CAT 27-34 FEDERAL COM **Well Number:** 22H

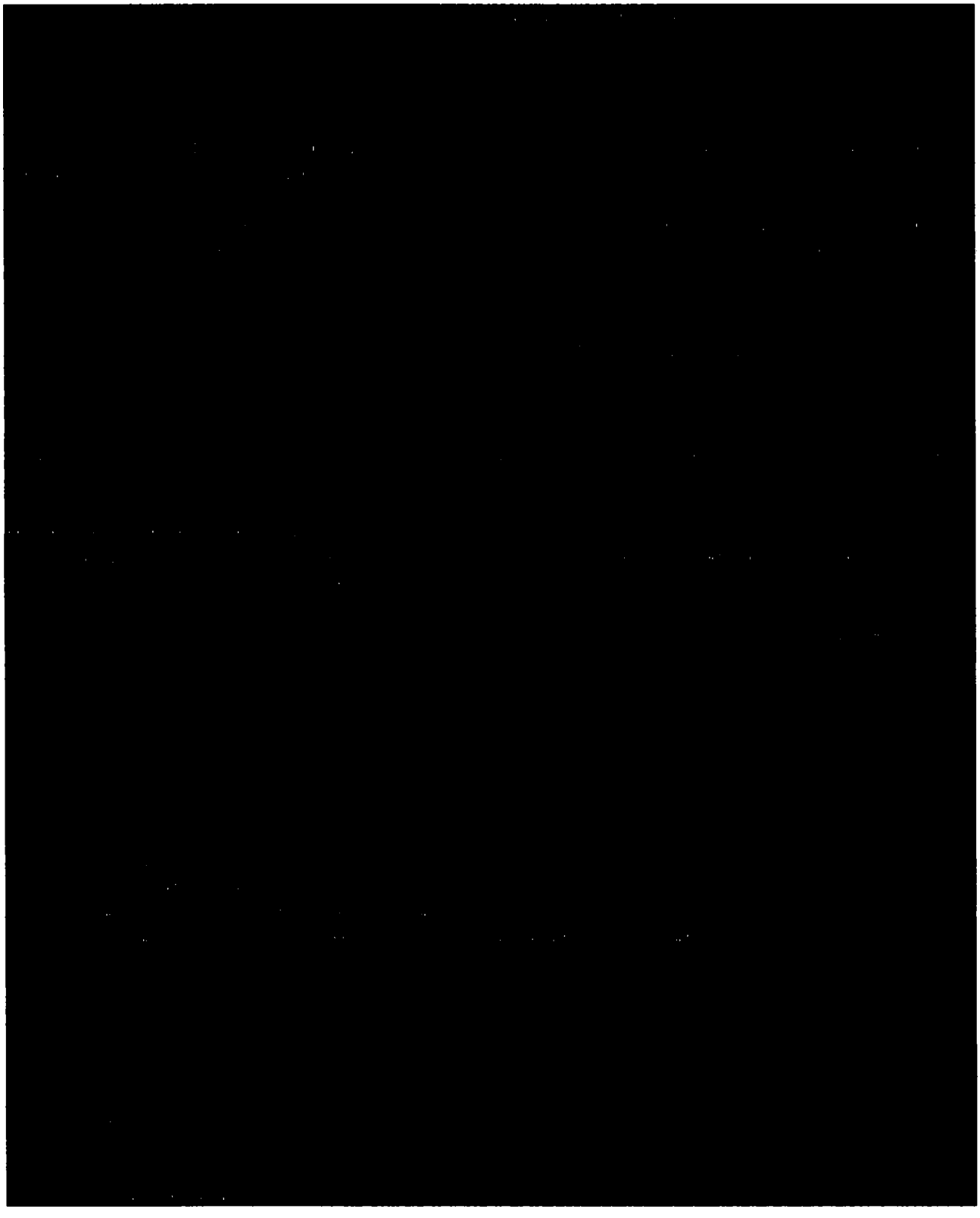
Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

TacoCat27_34FdCom22H_DirectPlan_20190205101732.pdf

TacoCat27_34FdCom22H_DirectPlot_20190205101739.pdf

Other proposed operations facets description:



Operator Name: OXY USA INCORPORATED

Well Name: TACO CAT 27-34 FEDERAL COM **Well Number:** 22H

[redacted]

Other proposed operations facets attachment:

TacoCat27_34FdCom22H_SpudRigData_20190205101825.pdf

TacoCat27_34FdCom22H_GasCapturePlan_20190205101838.pdf

TacoCat27_34FdCom22H_DrillPlan_10_DayLtrREVISION_20190801141759.pdf

Other Variance attachment:

Permian Drilling
Hydrogen Sulfide Drilling Operations Plan
Taco Cat 27_34 Fed Com 22H

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

1. Escape

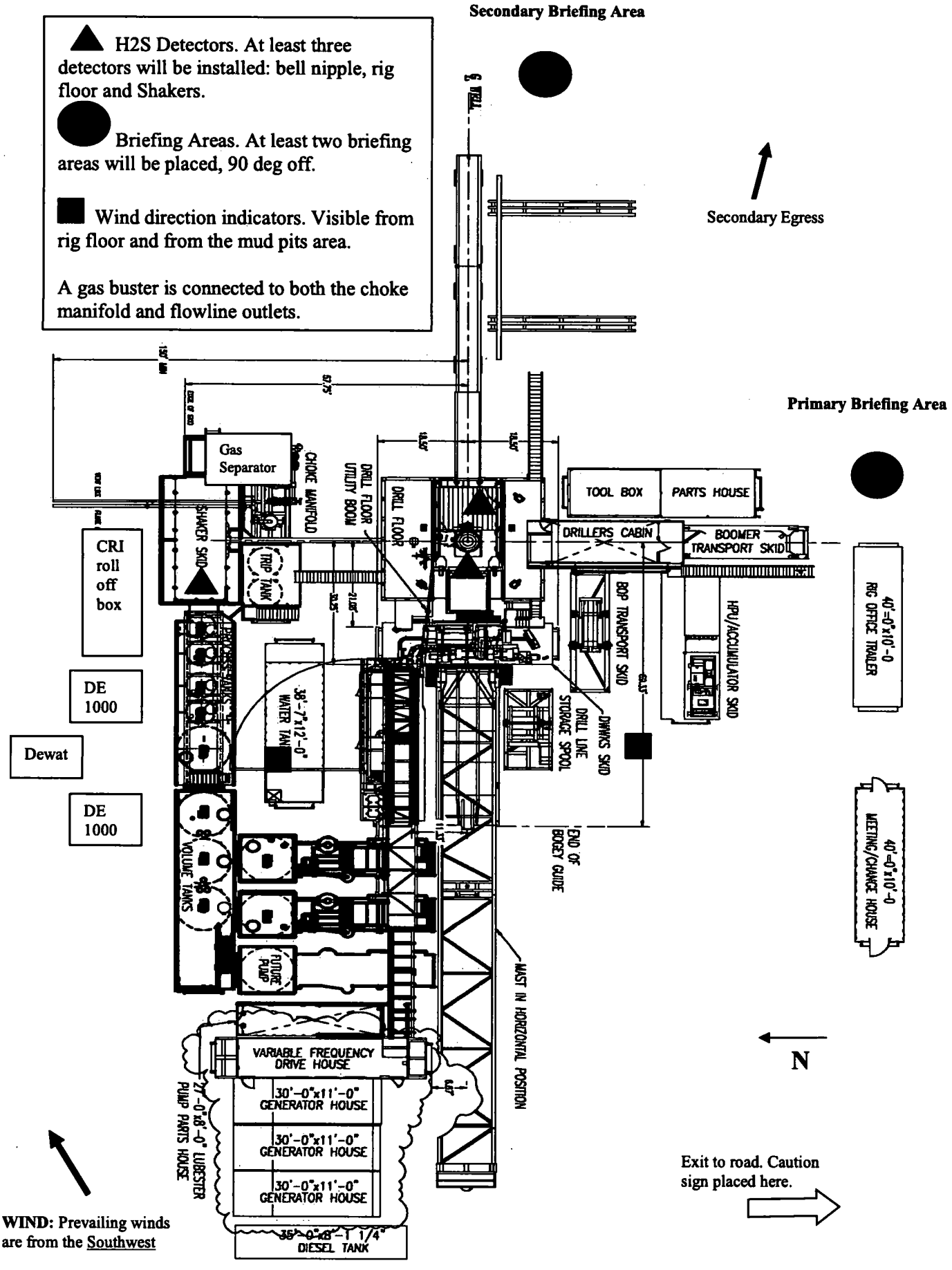
   Personnel shall escape upwind of wellbore in the event of an emergency gas release. Escape can take place through the lease road on the Southeast side of the location. Personnel need to move to a safe distance and block the entrance to location. If the primary route is not an option due to the wind direction,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

Emergency actions

Well blowout – if emergency

1. Evacuate all personnel to "Safe Briefing / Muster Areas" or off location if needed.
2. If sour gas – evacuate rig personnel.
3. If sour gas – evacuate public within 3000 ft radius of exposure.
4. Don SCBA and shut well in if possible using the buddy system.
5. Notify Drilling Superintendent and call 911 for emergency help (fire dept and ambulance) if needed.
6. Implement the Blowout Contingency Plan, and Drilling Emergency Action Plan.
6. Give first aid as needed.

Person down location/facility

1. If immediately possible, contact 911. Give location and wait for confirmation.
2. Don SCBA and perform rescue operation using buddy system.

Toxic effects of hydrogen sulfide

Hydrogen sulfide is extremely toxic. The acceptable ceiling concentration for eight-hour exposure is 10 ppm, which is .001% by volume. Hydrogen sulfide is heavier than air (specific gravity – 1.192) and colorless. It forms an explosive mixture with air between 4.3 and 46.0 percent by volume. Hydrogen sulfide is almost as toxic as hydrogen cyanide and is between five and six times more toxic than carbon monoxide. Toxicity data for hydrogen sulfide and various other gases are compared in table i. Physical effects at various hydrogen sulfide exposure levels are shown in table ii.

Table i
Toxicity of various gases

Common name	Chemical formula	Specific gravity (sc=1)	Threshold limit (1)	Hazardous limit (2)	Lethal concentration (3)
Hydrogen Cyanide	Hcn	0.94	10 ppm	150 ppm/hr	300 ppm
Hydrogen Sulfide	H2S	1.18	10 ppm	250 ppm/hr	600 ppm
Sulfur Dioxide	So2	2.21	5 ppm	-	1000 ppm
Chlorine	Cl2	2.45	1 ppm	4 ppm/hr	1000 ppm
Carbon Monoxide	Co	0.97	50 ppm	400 ppm/hr	1000 ppm
Carbon Dioxide	Co2	1.52	5000 ppm	5%	10%
Methane	Ch4	0.55	90,000 ppm	Combustible above 5% in air	

1) threshold limit – concentration at which it is believed that all workers may be repeatedly exposed day after day without adverse effects.

2) hazardous limit – concentration that will cause death with short-term exposure.

3) lethal concentration – concentration that will cause death with short-term exposure.

Toxic effects of hydrogen sulfide

Table ii
Physical effects of hydrogen sulfide

Concentration			Physical effects
Percent (%)	Ppm	Grains 100 std. Ft3*	
0.001	<10	00.65	Obvious and unpleasant odor.

0.002	10	01.30	Safe for 8 hours of exposure.
0.010	100	06.48	Kill smell in 3 – 15 minutes. May sting eyes and throat.
0.020	200	12.96	Kills smell shortly; stings eyes and throat.
0.050	500	32.96	Dizziness; breathing ceases in a few minutes; needs prompt artificial respiration.
0.070	700	45.36	Unconscious quickly; death will result if not rescued promptly.
0.100	1000	64.30	Unconscious at once; followed by death within minutes.

*at 15.00 psia and 60'f.

Use of self-contained breathing equipment (SCBA)

1. Written procedures shall be prepared covering safe use of SCBA's in dangerous atmosphere, which might be encountered in normal operations or in emergencies. Personnel shall be familiar with these procedures and the available SCBA.

2 SCBA's shall be inspected frequently at random to insure that they are properly used, cleaned, and maintained.

3. Anyone who may use the SCBA's shall be trained in how to insure proper face-piece to face seal. They shall wear SCBA's in normal air and then wear them in a test atmosphere. (note: such items as facial hair {beard or sideburns} and eyeglasses will not allow proper seal.) Anyone that may be reasonably expected to wear SCBA's should have these items removed before entering a toxic atmosphere. A special mask must be obtained for anyone who must wear eyeglasses or contact lenses.

4. Maintenance and care of SCBA's:

   a. A program for maintenance and care of SCBA's shall include the following:
      1. Inspection for defects, including leak checks.
      2. Cleaning and disinfecting.
      3. Repair.
      4. Storage.

   b. Inspection, self-contained breathing apparatus for emergency use shall be inspected monthly.
      1. Fully charged cylinders.
      2. Regulator and warning device operation.
      3. Condition of face piece and connections.
      4. Rubber parts shall be maintained to keep them pliable and prevent deterioration.

   c. Routinely used SCBA's shall be collected, cleaned and disinfected as frequently as necessary to insure proper protection is provided.

5. Persons assigned tasks that requires use of self-contained breathing equipment shall be certified physically fit (medically cleared) for breathing equipment usage at least annually.

6. SCBA's should be worn when:

   A. Any employee works near the top or on top of any tank unless test reveals less than 10 ppm of H2S.

B. When breaking out any line where H2S can reasonably be expected.

C. When sampling air in areas to determine if toxic concentrations of H2S exists.

D. When working in areas where over 10 ppm H2S has been detected.

E. At any time there is a doubt as to the H2S level in the area to be entered.

Rescue
First aid for H2S poisoning

Do not panic!

Remain calm – think!

1. Don SCBA breathing equipment.

2. Remove victim(s) utilizing buddy system to fresh air as quickly as possible. (go up-wind from source or at right angle to the wind. Not down wind.)

3. Briefly apply chest pressure – arm lift method of artificial respiration to clean the victim's lungs and to avoid inhaling any toxic gas directly from the victim's lungs.

4. Provide for prompt transportation to the hospital, and continue giving artificial respiration if needed.

5. Hospital(s) or medical facilities need to be informed, before-hand, of the possibility of H2S gas poisoning – no matter how remote the possibility is.

6. Notify emergency room personnel that the victim(s) has been exposed to H2S gas.

Besides basic first aid, everyone on location should have a good working knowledge of artificial respiration.

Revised CM 6/27/2012

OXY Permian Delaware NM Basin Drilling & Completions Incident Reporting

OXY Permian Crisis Team Hotline Notification

Person	Location	Office Phone	Cell/Mobile Phone	Home Phone	Pager Number
Drilling & Completions Department					
Drilling & Completions Manager: John Willis	Houston	(713) 366-5556	(713) 259-1417		
Drilling Superintendent: Simon Benavides	Houston	(713) 215-7403	(832) 528-3547		
Completions Superintendent: Chris Winter	Houston	(713) 366-5212	(806) 239-8774		
Drilling Eng. Supervisor: Diego Tellez	Houston	(713) 350-4602	(713) 303-4932		
Drilling Eng. Supervisor: Randy Neel	Houston	(713) 215-7987	(713) 517-5544		
Completions Eng. Supervisor: Evan Hinkel	Houston	(713) 366-5436	(281) 236-6153		
Drilling & Completions HES Lead. Ryan Green	Houston	713-336-5753	281-520-5216		
Drilling & Completions HES Advisor:Kenny Williams	Carlsbad	(432) 686-1434	(337) 208-0911		
Drilling & Completions HES Advisor:Kyle Holden	Carlsbad	(432) 686-1435	(661) 369-5328		
Drilling & Completions HES Advisor Sr:Dave Schmidt	Carlsbad		(559) 310-8572		
Drilling & Completions HES Advisor. :Seth Doyle	Carlsbad		(337) 499-0756		
HES / Enviromental & Regulatory Department	Location	Office	Cell Phone		
Jon Hamil-HES Manager	Houston	(713) 497-2494	(832) 537-9885		
Mark Birk-HES Manager	Houston	(713) 350-4615	(949) 413-3127		
Austin Tramell	Midland	(432) 699-4208	(575) 499-4919		
Rico Munoz	Midland	(432) 699-8366	(432) 803-4116		
Amber DuckWorth	Midland		(832) 966-1879		
Kelley Montgomery- Regulatory Manager	Houston	(713) 366-5716	(832) 454-8137		
Sandra Musallam -Regulatory Lead	Houston	+1 (713) 366-5106	+1 (713) 504-8577		
Bishop, Steve-DOT Pipeline Coordinator	Midland	432-685-5614			
Wilson, Dusty-Safety Advisor	Midland	432-685-5771	(432) 254-2336		
John W Dittrich Enviromental Advisor	Midland		(575) 390-2828		
William (Jack) Calhoun-Environmental Lead	Houston	+713 (350) 4906	(281) 917-8571		
Robert Barrow-Risk Engineer Manager	Houston	(713) 366-5611	(832) 867-5336		
Sarah Holmes-HSE Cordinator	Midland	432-685-5758			
Administrative	Location	Office			
Sarah Holmes	Midland	432-685-5830			
Robertson, Debbie	Midland	432-685-5812			
Laci Hollaway	Midland	(432) 685-5716	(432) 631-6341		
Administrative	Location	Office			
Rosalinda Escajeda	Midland	432-685-5831			
Moreno, Leslie (contract)	Hobbs	575-397-8247			
Sehon, Angela (contractor)	Levelland	806-894-8347			
Vasquez, Claudia (contractor)	North Cowden	432-385-3120			
XstremeMD	Location	Office			
Medical Case Management	Orla, TX	(337) 205-9314			
Axiom Medical Consulting	Location	Office			
Medical Case Management		(877) 502-9466			
Regulatory Agencies					
Bureau of Land Management	Carlsbad, NM	(505) 887-6544			
Bureau of Land Management	Hobbs, NM	(505) 393-3612			
Bureau of Land Management	Roswell, NM	(505) 393-3612			
Bureau of Land Management	Santa Fe, NM	(505) 988-6030			

DOT Juisdictional Pipelines-Incident Reporting New Mexico Public Regulaion Commission	Santa Fe, NM	(505) 827-3549 (505) 490-2375			
DOT Juisdictional Pipelines-Incident Reporting Texas Railroad Commission	Austin, TX	(512) 463-6788			
EPA Hot Line	Dallas, Texas	(214) 665-6444			
Federal OSHA, Area Office	Lubbock, Texas	(806) 472-7681			
National Response Center	Washington, D. C.	(800) 424-8802			
National Infrastructure Coordinator Center		(202) 282-9201			
New Mexico Air Quality Bureau	Santa Fe, NM	(505) 827-1494			
New Mexico Oil Conservation Division	Artesia, NM	(505) 748-1283	After Hours (505) 370-7545		
New Mexico Oil Conservation Division	Hobbs, NM	(505) 393-6161			
New Mexico Oil Conservation Division	Santa Fe, NM	(505) 471-1068			
New Mexico OCD Environmental Bureau	Santa Fe, NM	(505) 476-3470			
New Mexico Environmental Department	Hobbs, NM	(505) 827-9329			
NM State Emergency Response Center	Santa Fe, NM	(505) 827-9222			
Railroad Commission of TX	District 1 San Antonio,	(210) 227-1313			
Railroad Commission of TX	District 7C San Angelo	(325) 657-7450			
Railroad Commission of TX	District 8, 8A Midland	(432) 684-5581			
Texas Emergency Response Center	Austin, TX	(512) 463-7727			
TCEQ Air	Region 2 Lubbock, TX	(806) 796-3494			
TCEQ Water/Waste/Air	Region 3 Abilene, TX	(325) 698-9674			
TCEQ Water/Waste/Air	Region 7 Midland, TX	(432) 570-1359			
TCEQ Water/Waste/Air	Region 9 San Antonio,	(512) 734-7981			
TCEQ Water/Waste/Air	Region 8 San Angelo	(325) 655-9479			
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(Andr	(432) 523-5545			
Crane Cty Sheriff's Department	Crane, County (Crane)	(432) 558-3571			
Crockett Cty Sheriff's Department	Crockett County (Ozor	(325) 392-2661			
Dawson Cty Sheriff's Department	Dawson County (Lame	(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			
Gaines Cty Sheriff's Department	Gaines County (Semin	(432) 758-9871			
Hockley Cty Sheriff's Department	Hockley County(Level	(806) 894-3126			
Kent Cty (Jayton City Sheriff's Dept.)	Kent County(Jayton)	(806) 237-3801			
Lubbock Cty Sheriff's Department	Lubbock Cty (Abernat	(806) 296-2724			
Midland Cty Sheriff's Department	Midland County (Midl	(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 (Brownfi	(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 (Monaha	(432) 943-3254			
Yoakum City Sheriff's Department	Yoakum Co. (Denever	(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			
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	Eunice, 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	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			
[illegible]	[illegible]	[illegible]			
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	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	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	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)
TACO CAT 27-34 FED COM
TACO CAT 27_34 FED COM 22H

Wellbore #1

Plan: Permitting Plan

Standard Planning Report

20 November, 2018

Oxy

Planning Report

Database:	HOPSPP	**Local Co-ordinate Reference:**	Well TACO CAT 27_34 FED COM 22H
Company:	ENGINEERING DESIGNS	**TVD Reference:**	RKB=26.5' @ 3662.50ft
Project:	PRD NM DIRECTIONAL PLANS (NAD 1983)	**MD Reference:**	RKB=26.5' @ 3662.50ft
Site:	TACO CAT 27-34 FED COM	**North Reference:**	Grid
Well:	TACO CAT 27_34 FED COM 22H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
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	TACO CAT 27-34 FED COM				
Site Position:		**Northing:**	498,686.80 usft	**Latitude:**	32° 22' 9.142705 N
From:	Map	**Easting:**	746,647.78 usft	**Longitude:**	103° 40' 6.040188 W
Position Uncertainty:	50.00 ft	**Slot Radius:**	13.200 in	**Grid Convergence:**	0.36 °

Well	TACO CAT 27_34 FED COM 22H				
Well Position	**+N/-S**	-247.76 ft	**Northing:**	498,439.05 usft	**Latitude:**	32° 22' 6.627884 N
	+E/-W	1,026.86 ft	**Easting:**	747,674.59 usft	**Longitude:**	103° 39' 54.086111 W
Position Uncertainty		0.00 ft	**Wellhead Elevation:**	0.00 ft	**Ground Level:**	3,636.00 ft

Wellbore	Wellbore #1			
Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	HDGM	11/20/2018	6.75	60.12	48,106

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	182.45

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	
3,647.00	0.00	0.00	3,647.00	0.00	0.00	0.00	0.00	0.00	0.00	
4,246.91	12.00	335.16	4,242.54	56.79	-26.29	2.00	2.00	0.00	335.16	
9,166.51	12.00	335.16	9,054.66	984.88	-455.90	0.00	0.00	0.00	0.00	
10,338.85	12.00	179.60	10,217.67	973.43	-506.94	2.00	0.00	-13.27	-167.52	
11,118.85	90.00	179.60	10,671.50	413.01	-503.00	10.00	10.00	0.00	0.00	FTP (Taco Cat
21,561.14	90.00	179.60	10,671.50	-10,029.02	-429.55	0.00	0.00	0.00	0.00	PBHL (Taco Cat

Database:	HOPSPP	**Local Co-ordinate Reference:**	Well TACO CAT 27_34 FED COM 22H
Company:	ENGINEERING DESIGNS	**TVD Reference:**	RKB=26.5' @ 3662.50ft
Project:	PRD NM DIRECTIONAL PLANS (NAD 1983)	**MD Reference:**	RKB=26.5' @ 3662.50ft
Site:	TACO CAT 27-34 FED COM	**North Reference:**	Grid
Well:	TACO CAT 27_34 FED COM 22H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
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
3,647.00	0.00	0.00	3,647.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	1.06	335.16	3,700.00	0.44	-0.21	-0.44	2.00	2.00	0.00
3,800.00	3.06	335.16	3,799.93	3.71	-1.72	-3.63	2.00	2.00	0.00
3,900.00	5.06	335.16	3,899.67	10.13	-4.69	-9.92	2.00	2.00	0.00
4,000.00	7.06	335.16	3,999.11	19.71	-9.12	-19.30	2.00	2.00	0.00
4,100.00	9.06	335.16	4,098.11	32.43	-15.01	-31.76	2.00	2.00	0.00
4,200.00	11.06	335.16	4,196.57	48.29	-22.35	-47.29	2.00	2.00	0.00
4,246.91	12.00	335.16	4,242.54	56.79	-26.29	-55.62	2.00	2.00	0.00
4,300.00	12.00	335.16	4,294.47	66.81	-30.93	-65.43	0.00	0.00	0.00
4,400.00	12.00	335.16	4,392.28	85.67	-39.66	-83.90	0.00	0.00	0.00
4,500.00	12.00	335.16	4,490.10	104.54	-48.39	-102.37	0.00	0.00	0.00
4,600.00	12.00	335.16	4,587.91	123.40	-57.12	-120.85	0.00	0.00	0.00
4,700.00	12.00	335.16	4,685.73	142.27	-65.86	-139.32	0.00	0.00	0.00
4,800.00	12.00	335.16	4,783.54	161.13	-74.59	-157.80	0.00	0.00	0.00
4,900.00	12.00	335.16	4,881.36	180.00	-83.32	-176.27	0.00	0.00	0.00
5,000.00	12.00	335.16	4,979.17	198.86	-92.05	-194.74	0.00	0.00	0.00
5,100.00	12.00	335.16	5,076.99	217.73	-100.79	-213.22	0.00	0.00	0.00

Database:	HOPSPP	**Local Co-ordinate Reference:**	Well TACO CAT 27_34 FED COM 22H
Company:	ENGINEERING DESIGNS	**TVD Reference:**	RKB=26.5' @ 3662.50ft
Project:	PRD NM DIRECTIONAL PLANS (NAD 1983)	**MD Reference:**	RKB=26.5' @ 3662.50ft
Site:	TACO CAT 27-34 FED COM	**North Reference:**	Grid
Well:	TACO CAT 27_34 FED COM 22H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
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)
5,200.00	12.00	335.16	5,174.80	236.59	-109.52	-231.69	0.00	0.00	0.00
5,300.00	12.00	335.16	5,272.62	255.46	-118.25	-250.17	0.00	0.00	0.00
5,400.00	12.00	335.16	5,370.43	274.33	-126.98	-268.64	0.00	0.00	0.00
5,500.00	12.00	335.16	5,468.25	293.19	-135.72	-287.11	0.00	0.00	0.00
5,600.00	12.00	335.16	5,566.07	312.06	-144.45	-305.59	0.00	0.00	0.00
5,700.00	12.00	335.16	5,663.88	330.92	-153.18	-324.06	0.00	0.00	0.00
5,800.00	12.00	335.16	5,761.70	349.79	-161.92	-342.54	0.00	0.00	0.00
5,900.00	12.00	335.16	5,859.51	368.65	-170.65	-361.01	0.00	0.00	0.00
6,000.00	12.00	335.16	5,957.33	387.52	-179.38	-379.48	0.00	0.00	0.00
6,100.00	12.00	335.16	6,055.14	406.38	-188.11	-397.96	0.00	0.00	0.00
6,200.00	12.00	335.16	6,152.96	425.25	-196.85	-416.43	0.00	0.00	0.00
6,300.00	12.00	335.16	6,250.77	444.11	-205.58	-434.91	0.00	0.00	0.00
6,400.00	12.00	335.16	6,348.59	462.98	-214.31	-453.38	0.00	0.00	0.00
6,500.00	12.00	335.16	6,446.40	481.84	-223.04	-471.85	0.00	0.00	0.00
6,600.00	12.00	335.16	6,544.22	500.71	-231.78	-490.33	0.00	0.00	0.00
6,700.00	12.00	335.16	6,642.03	519.57	-240.51	-508.80	0.00	0.00	0.00
6,800.00	12.00	335.16	6,739.85	538.44	-249.24	-527.28	0.00	0.00	0.00
6,900.00	12.00	335.16	6,837.67	557.30	-257.97	-545.75	0.00	0.00	0.00
7,000.00	12.00	335.16	6,935.48	576.17	-266.71	-564.23	0.00	0.00	0.00
7,100.00	12.00	335.16	7,033.30	595.03	-275.44	-582.70	0.00	0.00	0.00
7,200.00	12.00	335.16	7,131.11	613.90	-284.17	-601.17	0.00	0.00	0.00
7,300.00	12.00	335.16	7,228.93	632.76	-292.90	-619.65	0.00	0.00	0.00
7,400.00	12.00	335.16	7,326.74	651.63	-301.64	-638.12	0.00	0.00	0.00
7,500.00	12.00	335.16	7,424.56	670.49	-310.37	-656.60	0.00	0.00	0.00
7,600.00	12.00	335.16	7,522.37	689.36	-319.10	-675.07	0.00	0.00	0.00
7,700.00	12.00	335.16	7,620.19	708.22	-327.83	-693.54	0.00	0.00	0.00
7,800.00	12.00	335.16	7,718.00	727.09	-336.57	-712.02	0.00	0.00	0.00
7,900.00	12.00	335.16	7,815.82	745.95	-345.30	-730.49	0.00	0.00	0.00
8,000.00	12.00	335.16	7,913.64	764.82	-354.03	-748.97	0.00	0.00	0.00
8,100.00	12.00	335.16	8,011.45	783.68	-362.77	-767.44	0.00	0.00	0.00
8,200.00	12.00	335.16	8,109.27	802.55	-371.50	-785.91	0.00	0.00	0.00
8,300.00	12.00	335.16	8,207.08	821.41	-380.23	-804.39	0.00	0.00	0.00
8,400.00	12.00	335.16	8,304.90	840.28	-388.96	-822.86	0.00	0.00	0.00
8,500.00	12.00	335.16	8,402.71	859.14	-397.70	-841.34	0.00	0.00	0.00
8,600.00	12.00	335.16	8,500.53	878.01	-406.43	-859.81	0.00	0.00	0.00
8,700.00	12.00	335.16	8,598.34	896.87	-415.16	-878.28	0.00	0.00	0.00
8,800.00	12.00	335.16	8,696.16	915.74	-423.89	-896.76	0.00	0.00	0.00
8,900.00	12.00	335.16	8,793.97	934.60	-432.63	-915.23	0.00	0.00	0.00
9,000.00	12.00	335.16	8,891.79	953.47	-441.36	-933.71	0.00	0.00	0.00
9,100.00	12.00	335.16	8,989.60	972.33	-450.09	-952.18	0.00	0.00	0.00
9,166.51	12.00	335.16	9,054.66	984.88	-455.90	-964.47	0.00	0.00	0.00
9,200.00	11.35	334.42	9,087.46	991.01	-458.78	-970.47	2.00	-1.95	-2.20
9,300.00	9.41	331.63	9,185.82	1,007.08	-466.91	-986.17	2.00	-1.94	-2.80
9,400.00	7.51	327.42	9,284.73	1,019.77	-474.32	-998.54	2.00	-1.90	-4.21
9,500.00	5.67	320.44	9,384.07	1,029.09	-480.98	-1,007.56	2.00	-1.84	-6.98
9,600.00	3.99	307.26	9,483.71	1,035.00	-486.90	-1,013.22	2.00	-1.68	-13.18
9,700.00	2.78	279.62	9,583.54	1,037.52	-492.06	-1,015.51	2.00	-1.21	-27.64
9,800.00	2.74	237.18	9,683.43	1,036.63	-496.47	-1,014.43	2.00	-0.04	-42.44
9,900.00	3.91	208.49	9,783.27	1,032.33	-500.11	-1,009.98	2.00	1.17	-28.68
10,000.00	5.58	194.81	9,882.93	1,024.63	-502.98	-1,002.17	2.00	1.66	-13.68
10,100.00	7.41	187.62	9,982.28	1,013.54	-505.08	-991.00	2.00	1.83	-7.19
10,200.00	9.31	183.31	10,081.22	999.08	-506.40	-976.50	2.00	1.90	-4.31
10,300.00	11.24	180.46	10,179.61	981.26	-506.94	-958.67	2.00	1.93	-2.85
10,338.85	12.00	179.60	10,217.67	973.43	-506.94	-950.85	2.00	1.95	-2.22

Database:	HOPSPP	**Local Co-ordinate Reference:**	Well TACO CAT 27_34 FED COM 22H
Company:	ENGINEERING DESIGNS	**TVD Reference:**	RKB=26.5' @ 3662.50ft
Project:	PRD NM DIRECTIONAL PLANS (NAD 1983)	**MD Reference:**	RKB=26.5' @ 3662.50ft
Site:	TACO CAT 27-34 FED COM	**North Reference:**	Grid
Well:	TACO CAT 27_34 FED COM 22H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
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)
10,400.00	18.11	179.60	10,276.69	957.56	-506.83	-934.99	10.00	10.00	0.00
10,500.00	28.11	179.60	10,368.54	918.35	-506.56	-895.83	10.00	10.00	0.00
10,600.00	38.11	179.60	10,452.19	863.79	-506.17	-841.34	10.00	10.00	0.00
10,700.00	48.11	179.60	10,525.10	795.53	-505.69	-773.16	10.00	10.00	0.00
10,800.00	58.11	179.60	10,585.04	715.65	-505.13	-693.38	10.00	10.00	0.00
10,900.00	68.11	179.60	10,630.21	626.57	-504.50	-604.41	10.00	10.00	0.00
11,000.00	78.11	179.60	10,659.22	531.01	-503.83	-508.96	10.00	10.00	0.00
11,100.00	88.11	179.60	10,671.19	431.86	-503.13	-409.93	10.00	10.00	0.00
11,118.85	90.00	179.60	10,671.50	413.01	-503.00	-391.11	10.00	10.00	0.00
11,200.00	90.00	179.60	10,671.50	331.86	-502.43	-310.06	0.00	0.00	0.00
11,300.00	90.00	179.60	10,671.50	231.87	-501.73	-210.19	0.00	0.00	0.00
11,400.00	90.00	179.60	10,671.50	131.87	-501.02	-110.31	0.00	0.00	0.00
11,500.00	90.00	179.60	10,671.50	31.87	-500.32	-10.43	0.00	0.00	0.00
11,600.00	90.00	179.60	10,671.50	-68.13	-499.62	89.44	0.00	0.00	0.00
11,700.00	90.00	179.60	10,671.50	-168.12	-498.91	189.32	0.00	0.00	0.00
11,800.00	90.00	179.60	10,671.50	-268.12	-498.21	289.19	0.00	0.00	0.00
11,900.00	90.00	179.60	10,671.50	-368.12	-497.51	389.07	0.00	0.00	0.00
12,000.00	90.00	179.60	10,671.50	-468.12	-496.80	488.95	0.00	0.00	0.00
12,100.00	90.00	179.60	10,671.50	-568.11	-496.10	588.82	0.00	0.00	0.00
12,200.00	90.00	179.60	10,671.50	-668.11	-495.40	688.70	0.00	0.00	0.00
12,300.00	90.00	179.60	10,671.50	-768.11	-494.69	788.57	0.00	0.00	0.00
12,400.00	90.00	179.60	10,671.50	-868.11	-493.99	888.45	0.00	0.00	0.00
12,500.00	90.00	179.60	10,671.50	-968.10	-493.29	988.32	0.00	0.00	0.00
12,600.00	90.00	179.60	10,671.50	-1,068.10	-492.58	1,088.20	0.00	0.00	0.00
12,700.00	90.00	179.60	10,671.50	-1,168.10	-491.88	1,188.08	0.00	0.00	0.00
12,800.00	90.00	179.60	10,671.50	-1,268.10	-491.18	1,287.95	0.00	0.00	0.00
12,900.00	90.00	179.60	10,671.50	-1,368.09	-490.47	1,387.83	0.00	0.00	0.00
13,000.00	90.00	179.60	10,671.50	-1,468.09	-489.77	1,487.70	0.00	0.00	0.00
13,100.00	90.00	179.60	10,671.50	-1,568.09	-489.07	1,587.58	0.00	0.00	0.00
13,200.00	90.00	179.60	10,671.50	-1,668.09	-488.36	1,687.46	0.00	0.00	0.00
13,300.00	90.00	179.60	10,671.50	-1,768.08	-487.66	1,787.33	0.00	0.00	0.00
13,400.00	90.00	179.60	10,671.50	-1,868.08	-486.96	1,887.21	0.00	0.00	0.00
13,500.00	90.00	179.60	10,671.50	-1,968.08	-486.25	1,987.08	0.00	0.00	0.00
13,600.00	90.00	179.60	10,671.50	-2,068.08	-485.55	2,086.96	0.00	0.00	0.00
13,700.00	90.00	179.60	10,671.50	-2,168.07	-484.85	2,186.83	0.00	0.00	0.00
13,800.00	90.00	179.60	10,671.50	-2,268.07	-484.14	2,286.71	0.00	0.00	0.00
13,900.00	90.00	179.60	10,671.50	-2,368.07	-483.44	2,386.59	0.00	0.00	0.00
14,000.00	90.00	179.60	10,671.50	-2,468.07	-482.74	2,486.46	0.00	0.00	0.00
14,100.00	90.00	179.60	10,671.50	-2,568.06	-482.03	2,586.34	0.00	0.00	0.00
14,200.00	90.00	179.60	10,671.50	-2,668.06	-481.33	2,686.21	0.00	0.00	0.00
14,300.00	90.00	179.60	10,671.50	-2,768.06	-480.63	2,786.09	0.00	0.00	0.00
14,400.00	90.00	179.60	10,671.50	-2,868.06	-479.92	2,885.97	0.00	0.00	0.00
14,500.00	90.00	179.60	10,671.50	-2,968.05	-479.22	2,985.84	0.00	0.00	0.00
14,600.00	90.00	179.60	10,671.50	-3,068.05	-478.52	3,085.72	0.00	0.00	0.00
14,700.00	90.00	179.60	10,671.50	-3,168.05	-477.81	3,185.59	0.00	0.00	0.00
14,800.00	90.00	179.60	10,671.50	-3,268.05	-477.11	3,285.47	0.00	0.00	0.00
14,900.00	90.00	179.60	10,671.50	-3,368.04	-476.40	3,385.34	0.00	0.00	0.00
15,000.00	90.00	179.60	10,671.50	-3,468.04	-475.70	3,485.22	0.00	0.00	0.00
15,100.00	90.00	179.60	10,671.50	-3,568.04	-475.00	3,585.10	0.00	0.00	0.00
15,200.00	90.00	179.60	10,671.50	-3,668.04	-474.29	3,684.97	0.00	0.00	0.00
15,300.00	90.00	179.60	10,671.50	-3,768.03	-473.59	3,784.85	0.00	0.00	0.00
15,400.00	90.00	179.60	10,671.50	-3,868.03	-472.89	3,884.72	0.00	0.00	0.00
15,500.00	90.00	179.60	10,671.50	-3,968.03	-472.18	3,984.60	0.00	0.00	0.00
15,600.00	90.00	179.60	10,671.50	-4,068.03	-471.48	4,084.48	0.00	0.00	0.00

Database:	HOPSPP	**Local Co-ordinate Reference:**	Well TACO CAT 27_34 FED COM 22H
Company:	ENGINEERING DESIGNS	**TVD Reference:**	RKB=26.5' @ 3662.50ft
Project:	PRD NM DIRECTIONAL PLANS (NAD 1983)	**MD Reference:**	RKB=26.5' @ 3662.50ft
Site:	TACO CAT 27-34 FED COM	**North Reference:**	Grid
Well:	TACO CAT 27_34 FED COM 22H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
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	90.00	179.60	10,671.50	-4,168.02	-470.78	4,184.35	0.00	0.00	0.00
15,800.00	90.00	179.60	10,671.50	-4,268.02	-470.07	4,284.23	0.00	0.00	0.00
15,900.00	90.00	179.60	10,671.50	-4,368.02	-469.37	4,384.10	0.00	0.00	0.00
16,000.00	90.00	179.60	10,671.50	-4,468.02	-468.67	4,483.98	0.00	0.00	0.00
16,100.00	90.00	179.60	10,671.50	-4,568.01	-467.96	4,583.85	0.00	0.00	0.00
16,200.00	90.00	179.60	10,671.50	-4,668.01	-467.26	4,683.73	0.00	0.00	0.00
16,300.00	90.00	179.60	10,671.50	-4,768.01	-466.56	4,783.61	0.00	0.00	0.00
16,400.00	90.00	179.60	10,671.50	-4,868.01	-465.85	4,883.48	0.00	0.00	0.00
16,500.00	90.00	179.60	10,671.50	-4,968.00	-465.15	4,983.36	0.00	0.00	0.00
16,600.00	90.00	179.60	10,671.50	-5,068.00	-464.45	5,083.23	0.00	0.00	0.00
16,700.00	90.00	179.60	10,671.50	-5,168.00	-463.74	5,183.11	0.00	0.00	0.00
16,800.00	90.00	179.60	10,671.50	-5,268.00	-463.04	5,282.99	0.00	0.00	0.00
16,900.00	90.00	179.60	10,671.50	-5,367.99	-462.34	5,382.86	0.00	0.00	0.00
17,000.00	90.00	179.60	10,671.50	-5,467.99	-461.63	5,482.74	0.00	0.00	0.00
17,100.00	90.00	179.60	10,671.50	-5,567.99	-460.93	5,582.61	0.00	0.00	0.00
17,200.00	90.00	179.60	10,671.50	-5,667.99	-460.23	5,682.49	0.00	0.00	0.00
17,300.00	90.00	179.60	10,671.50	-5,767.98	-459.52	5,782.36	0.00	0.00	0.00
17,400.00	90.00	179.60	10,671.50	-5,867.98	-458.82	5,882.24	0.00	0.00	0.00
17,500.00	90.00	179.60	10,671.50	-5,967.98	-458.12	5,982.12	0.00	0.00	0.00
17,600.00	90.00	179.60	10,671.50	-6,067.98	-457.41	6,081.99	0.00	0.00	0.00
17,700.00	90.00	179.60	10,671.50	-6,167.97	-456.71	6,181.87	0.00	0.00	0.00
17,800.00	90.00	179.60	10,671.50	-6,267.97	-456.01	6,281.74	0.00	0.00	0.00
17,900.00	90.00	179.60	10,671.50	-6,367.97	-455.30	6,381.62	0.00	0.00	0.00
18,000.00	90.00	179.60	10,671.50	-6,467.97	-454.60	6,481.50	0.00	0.00	0.00
18,100.00	90.00	179.60	10,671.50	-6,567.96	-453.90	6,581.37	0.00	0.00	0.00
18,200.00	90.00	179.60	10,671.50	-6,667.96	-453.19	6,681.25	0.00	0.00	0.00
18,300.00	90.00	179.60	10,671.50	-6,767.96	-452.49	6,781.12	0.00	0.00	0.00
18,400.00	90.00	179.60	10,671.50	-6,867.96	-451.79	6,881.00	0.00	0.00	0.00
18,500.00	90.00	179.60	10,671.50	-6,967.95	-451.08	6,980.87	0.00	0.00	0.00
18,600.00	90.00	179.60	10,671.50	-7,067.95	-450.38	7,080.75	0.00	0.00	0.00
18,700.00	90.00	179.60	10,671.50	-7,167.95	-449.67	7,180.63	0.00	0.00	0.00
18,800.00	90.00	179.60	10,671.50	-7,267.95	-448.97	7,280.50	0.00	0.00	0.00
18,900.00	90.00	179.60	10,671.50	-7,367.94	-448.27	7,380.38	0.00	0.00	0.00
19,000.00	90.00	179.60	10,671.50	-7,467.94	-447.56	7,480.25	0.00	0.00	0.00
19,100.00	90.00	179.60	10,671.50	-7,567.94	-446.86	7,580.13	0.00	0.00	0.00
19,200.00	90.00	179.60	10,671.50	-7,667.94	-446.16	7,680.01	0.00	0.00	0.00
19,300.00	90.00	179.60	10,671.50	-7,767.93	-445.45	7,779.88	0.00	0.00	0.00
19,400.00	90.00	179.60	10,671.50	-7,867.93	-444.75	7,879.76	0.00	0.00	0.00
19,500.00	90.00	179.60	10,671.50	-7,967.93	-444.05	7,979.63	0.00	0.00	0.00
19,600.00	90.00	179.60	10,671.50	-8,067.93	-443.34	8,079.51	0.00	0.00	0.00
19,700.00	90.00	179.60	10,671.50	-8,167.92	-442.64	8,179.38	0.00	0.00	0.00
19,800.00	90.00	179.60	10,671.50	-8,267.92	-441.94	8,279.26	0.00	0.00	0.00
19,900.00	90.00	179.60	10,671.50	-8,367.92	-441.23	8,379.14	0.00	0.00	0.00
20,000.00	90.00	179.60	10,671.50	-8,467.92	-440.53	8,479.01	0.00	0.00	0.00
20,100.00	90.00	179.60	10,671.50	-8,567.92	-439.83	8,578.89	0.00	0.00	0.00
20,200.00	90.00	179.60	10,671.50	-8,667.91	-439.12	8,678.76	0.00	0.00	0.00
20,300.00	90.00	179.60	10,671.50	-8,767.91	-438.42	8,778.64	0.00	0.00	0.00
20,400.00	90.00	179.60	10,671.50	-8,867.91	-437.72	8,878.52	0.00	0.00	0.00
20,500.00	90.00	179.60	10,671.50	-8,967.91	-437.01	8,978.39	0.00	0.00	0.00
20,600.00	90.00	179.60	10,671.50	-9,067.90	-436.31	9,078.27	0.00	0.00	0.00
20,700.00	90.00	179.60	10,671.50	-9,167.90	-435.61	9,178.14	0.00	0.00	0.00
20,800.00	90.00	179.60	10,671.50	-9,267.90	-434.90	9,278.02	0.00	0.00	0.00
20,900.00	90.00	179.60	10,671.50	-9,367.90	-434.20	9,377.89	0.00	0.00	0.00
21,000.00	90.00	179.60	10,671.50	-9,467.89	-433.50	9,477.77	0.00	0.00	0.00

Database:	HOPSPP	**Local Co-ordinate Reference:**	Well TACO CAT 27_34 FED COM 22H
Company:	ENGINEERING DESIGNS	**TVD Reference:**	RKB=26.5' @ 3662.50ft
Project:	PRD NM DIRECTIONAL PLANS (NAD 1983)	**MD Reference:**	RKB=26.5' @ 3662.50ft
Site:	TACO CAT 27-34 FED COM	**North Reference:**	Grid
Well:	TACO CAT 27_34 FED COM 22H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
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	90.00	179.60	10,671.50	-9,567.89	-432.79	9,577.65	0.00	0.00	0.00
21,200.00	90.00	179.60	10,671.50	-9,667.89	-432.09	9,677.52	0.00	0.00	0.00
21,300.00	90.00	179.60	10,671.50	-9,767.89	-431.39	9,777.40	0.00	0.00	0.00
21,400.00	90.00	179.60	10,671.50	-9,867.88	-430.68	9,877.27	0.00	0.00	0.00
21,500.00	90.00	179.60	10,671.50	-9,967.88	-429.98	9,977.15	0.00	0.00	0.00
21,561.14	90.00	179.60	10,671.50	-10,029.02	-429.55	10,038.22	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 (Taco Cat - plan hits target center - Point	0.00	0.00	10,671.50	-10,029.02	-429.55	488,410.47	747,245.06	32° 20' 27.419719 N	103° 39' 59.822367
FTP (Taco Cat 27_34 - plan hits target center - Point	0.00	0.00	10,671.50	413.01	-503.00	498,852.04	747,171.61	32° 22' 10.745531 N	103° 39' 59.920575

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
3,647.00	3,647.00	0.00	0.00	Build 2.00°/100'
4,246.91	4,242.54	56.79	-26.29	Hold 12.00° Tangent
9,166.51	9,054.66	984.88	-455.90	Turn 2.00°/100'
10,338.85	10,217.67	973.43	-506.94	Build 10.00°/100'
11,118.85	10,671.50	413.01	-503.00	Landing Point
21,561.14	10,671.50	-10,029.02	-429.55	TD at 21561.14' MD

Project:	PRD NM DIRECTIONAL PLANS (NAD 1983)
Site:	TACO CAT 27-34 FED COM
Well:	TACO CAT 27_34 FED COM 22H
Wellbore:	Wellbore #1
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

T G M

Azimuths to Grid North
True North: -0.36°
Magnetic North: 6.39°

Magnetic Field
Strength: 48105.8snT
Dip Angle: 60.12°
Date: 11/20/2018
Model: HDGM

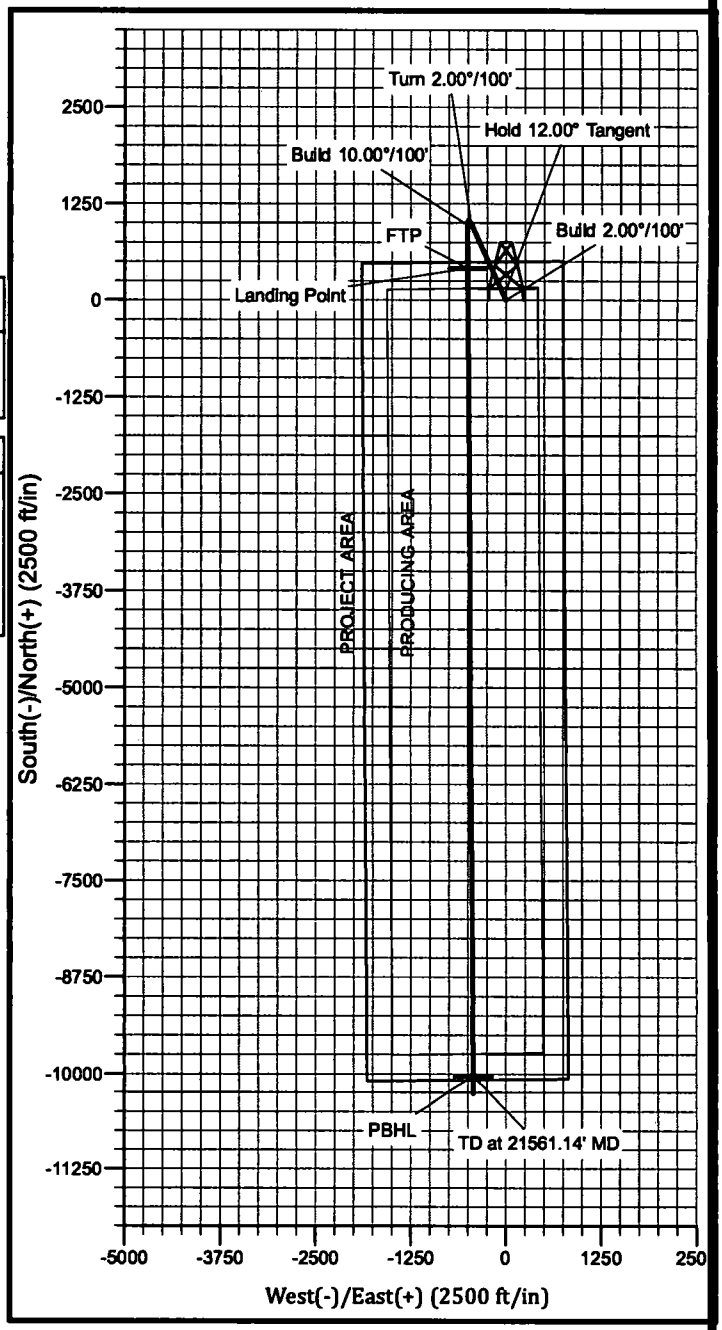
WELL DETAILS: TACO CAT 27_34 FED COM 22H

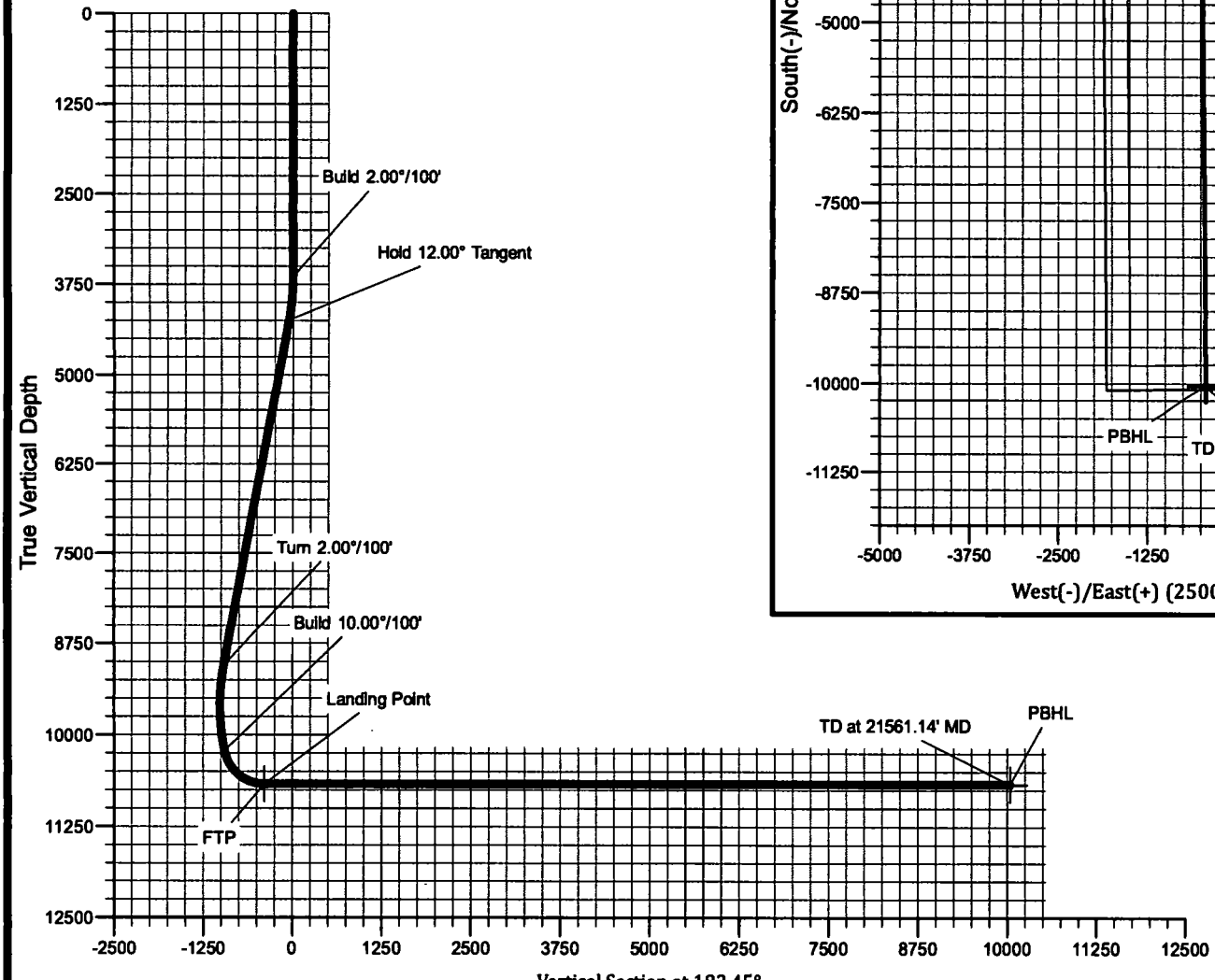
Ground Level: 3636.00

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	498439.05	747674.59	32° 22' 6.627884 N	103° 39' 54.088111 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	
3647.00	0.00	0.00	3647.00	0.00	0.00	0.00	0.00	0.00	Build 2.00°/100'
4248.91	12.00	335.16	4242.54	56.79	-26.29	2.00	335.16	-55.62	Hold 12.00° Tangent
9166.51	12.00	335.16	9054.66	984.88	-455.90	0.00	0.00	-964.47	Turn 2.00°/100'
10338.85	12.00	179.60	10217.67	973.43	-506.94	2.00	-167.52	-950.85	Build 10.00°/100'
11118.85	90.00	179.60	10871.50	413.01	-503.00	10.00	0.00	-391.11	Landing Point
21561.14	90.00	179.60	10871.50	-10029.02	-429.55	0.00	0.00	10038.22	TD at 21561.14' MD





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.

AFMSS

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

PWD Data Report

03/02/2020

APD ID: 10400038807 **Submission Date:** 02/05/2019

Operator Name: OXY USA INCORPORATED

Well Name: TACO CAT 27-34 FEDERAL COM **Well Number:** 22H

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: TACO CAT 27-34 FEDERAL COM **Well Number:** 22H

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: TACO CAT 27-34 FEDERAL COM **Well Number:** 22H

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):**

Operator Name: OXY USA INCORPORATED

Well Name: TACO CAT 27-34 FEDERAL COM **Well Number:** 22H

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

03/02/2020

APD ID: 10400038807

Submission Date: 02/05/2019

Operator Name: OXY USA INCORPORATED

Well Name: TACO CAT 27-34 FEDERAL COM

Well Number: 22H

Show Final Text

Well Type: OIL WELL

Well Work Type: Drill

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: