

Sante Fe Main Office  
Phone: (505) 476-3441

General Information  
Phone: (505) 629-6116

Online Phone Directory  
<https://www.emnrd.nm.gov/ocd/contact-us>

Form C-101  
August 1, 2011

Permit 401762

**State of New Mexico**  
**Energy, Minerals and Natural Resources**  
**Oil Conservation Division**  
**1220 S. St Francis Dr.**  
**Santa Fe, NM 87505**

**APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE**

1. Operator Name and Address OXY USA INC P.O. Box 4294 Houston, TX 772104294									2. OGRID Number 16696
4. Property Code 337839									3. API Number 30-015-57398
5. Property Name CEDAR CANYON 15 16 STATE COM									6. Well No. 071H

**7. Surface Location**

UL - Lot B	Section 17	Township 24S	Range 29E	Lot Idn B	Feet From 890	N/S Line N	Feet From 1411	E/W Line E	County Eddy
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**8. Proposed Bottom Hole Location**

UL - Lot B	Section 15	Township 24S	Range 29E	Lot Idn B	Feet From 825	N/S Line N	Feet From 1430	E/W Line E	County Eddy
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**9. Pool Information**

PIERCE CROSSING, BONE SPRING, EAST	96473
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**Additional Well Information**

11. Work Type New Well	12. Well Type OIL	13. Cable/Rotary	14. Lease Type Private	15. Ground Level Elevation 2927
16. Multiple N	17. Proposed Depth 18753	18. Formation 2nd Bone Spring Sand	19. Contractor	20. Spud Date
Depth to Ground water		Distance from nearest fresh water well		
		Distance to nearest surface water		

We will be using a closed-loop system in lieu of lined pits

**21. Proposed Casing and Cement Program**

Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
Surf	14.75	10.75	40.5	528	442	0
Int1	9.875	7.625	26.4	9685	1409	0
Prod	6.75	5.5	20	18753	542	9185

**Casing/Cement Program: Additional Comments**

**22. Proposed Blowout Prevention Program**

Type	Working Pressure	Test Pressure	Manufacturer
Annular	5000	3500	
Blind	5000	5000	
Double Ram	5000	5000	

23. I hereby certify that the information given above is true and complete to the best of my knowledge and belief. I hereby certify that no additives containing PFAS chemicals will be added to the completion or recompletion of this well. I further certify I have complied with 19.15.14.9 (A) NMAC <input checked="" type="checkbox"/> and/or 19.15.14.9 (B) NMAC <input checked="" type="checkbox"/> , if applicable.	<b>OIL CONSERVATION DIVISION</b>
Signature:	
Printed Name: Electronically filed by Leslie T Reeves	
Title: Advisor	
Email Address: leslie_reeves@oxy.com	
Date: 10/23/2025	
Phone: 713-497-2492	
Approved By: Jeffrey Harrison	
Title: Petroleum Specialist III	
Approved Date: 10/30/2025	
Expiration Date: 10/30/2027	
Conditions of Approval Attached	

C-102

Submit Electronically  
Via OCD PermittingState of New Mexico  
Energy, Minerals, & Natural Resources Department  
OIL CONSERVATION DIVISIONRevised July 9, 2024  
PAGE 1 OF 2Submittal  Initial Submittal  
Submittal  Amended Report  
Type:  As Drilled

## WELL LOCATION INFORMATION

API Number <b>30-015-57398</b>	Pool Code <b>96473</b>	Pool Name <b>PIERCE CROSSING; BONE SPRING, EAST</b>
Property Code <b>337839</b>	Property Name <b>CEDAR CANYON 15_16 STATE COM</b>	Well Number <b>71H</b>
OGRID No. <b>16696</b>	Operator Name <b>OXY USA INC.</b>	Ground Level Elevation <b>2927'</b>
Surface Owner: <input type="checkbox"/> State <input checked="" type="checkbox"/> Fee <input type="checkbox"/> Tribal <input type="checkbox"/> Federal	Mineral Owner: <input checked="" type="checkbox"/> State <input checked="" type="checkbox"/> Fee <input type="checkbox"/> Tribal <input type="checkbox"/> Federal	

## Surface Location

UL B	Section 17	Township 24S	Range 29E	Lot	Ft. from N/S 890' FNL	Ft. from E/W 1411' FEL	Latitude (NAD83) 32.22243955	Longitude (NAD83) -104.00258618	County EDDY
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## Bottom Hole Location

UL B	Section 15	Township 24S	Range 29E	Lot	Ft. from N/S 825' FNL	Ft. from E/W 1430' FEL	Latitude (NAD83) 32.22257223	Longitude (NAD83) -103.96838012	County EDDY
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Dedicated Acres <b>120</b>	Infill or Defining Well <b>DEFINING</b>	Defining Well API	Overlapping Spacing Unit (Y/N) <b>N</b>	Consolidation Code <b>C</b>
Order Numbers: <b>N/A</b>			Well setbacks are under Common Ownership: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	

## Kick Off Point (KOP)

UL D	Section 16	Township 24S	Range 29E	Lot	Ft. from N/S 825' FNL	Ft. from E/W 50' FWL	Latitude (NAD83) 32.22259163	Longitude (NAD83) -103.99786245	County EDDY
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## First Take Point (FTP)

UL D	Section 16	Township 24S	Range 29E	Lot	Ft. from N/S 825' FNL	Ft. from E/W 100' FWL	Latitude (NAD83) 32.22259188	Longitude (NAD83) -103.99770077	County EDDY
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## Last Take Point (LTP)

UL B	Section 15	Township 24S	Range 29E	Lot	Ft. from N/S 825' FNL	Ft. from E/W 1510' FEL	Latitude (NAD83) 32.22257331	Longitude (NAD83) -103.96863882	County EDDY
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Unitized Area or Area of Uniform Interest <b>N/A</b>	Spacing Unit Type: <input checked="" type="checkbox"/> Horizontal <input type="checkbox"/> Vertical	Ground Floor Elevation <b>2927'</b>
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## OPERATOR CERTIFICATIONS

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and, if the well is a vertical or directional well, that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of a working interest or unleased mineral interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

If this well is a horizontal well, I further certify that this organization has received the consent of at least one lessee or owner of a working interest or unleased mineral interest in each tract (in the target pool or formation) in which any part of the well's completed interval will be located or obtained a compulsory pooling order from the division.

Sara Guthrie 10/10/2025  
Signature Date

Sara Guthrie  
Printed Name

sara\_guthrie@oxy.com  
Email Address

## SURVEYOR CERTIFICATIONS

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.



Signature and Seal of Professional Surveyor

Certificate Number <b>21653</b>	Date of Survey <b>JUNE 17, 2025</b>
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Note: No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.



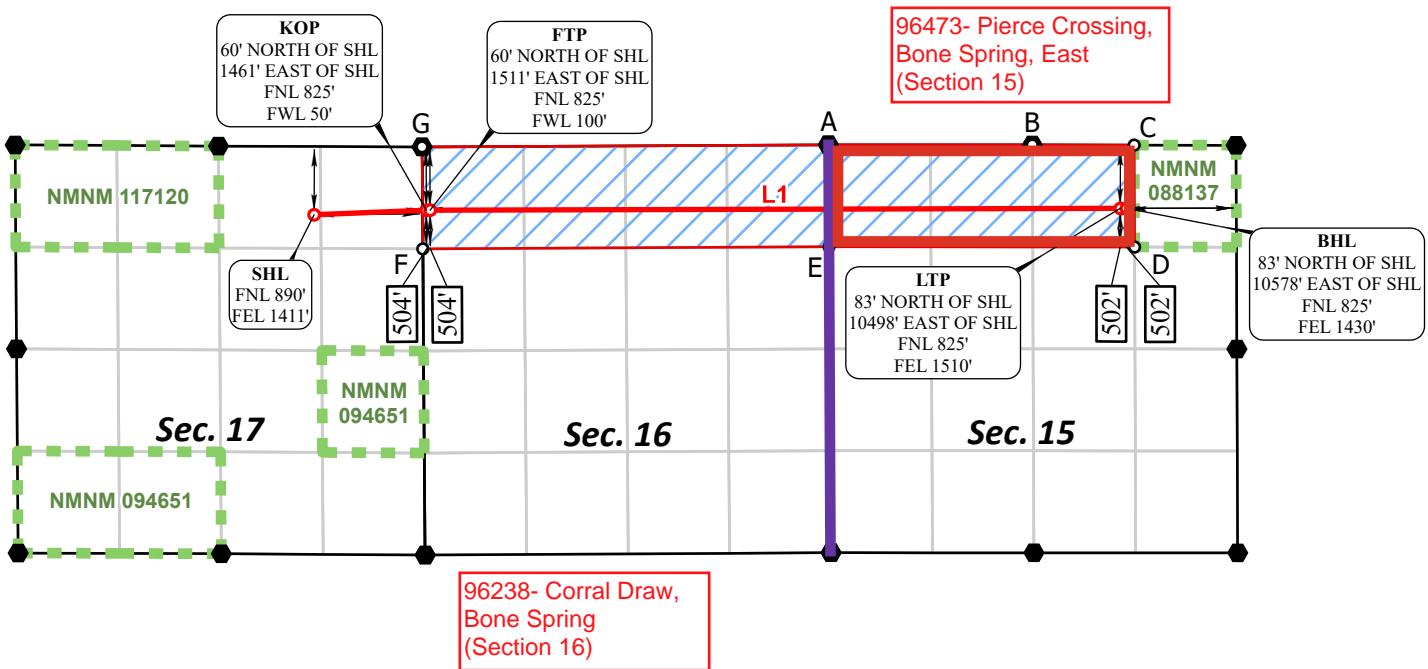
<b>SHL (NAD83)</b> X:643617.12' / Y:444814.77' LAT:32.22243955 / LON:-104.00258618
<b>SHL (NAD27)</b> X:602433.27' / Y:444755.83' LAT:32.22231687 / LON:-104.00209687

<b>KOP (NAD83)</b> X:645077.71' / Y:444874.62' LAT:32.22259163 / LON:-103.99786245
<b>KOP (NAD27)</b> X:603893.85' / Y:444815.68' LAT:32.22246891 / LON:-103.99737329

<b>FTP (NAD83)</b> X:645127.71' / Y:444874.87' LAT:32.22259188 / LON:-103.99770077
<b>FTP (NAD27)</b> X:603943.85' / Y:444815.93' LAT:32.22246917 / LON:-103.99721161

<b>LTP (NAD83)</b> X:654114.83' / Y:444897.40' LAT:32.22257331 / LON:-103.96863882
<b>LTP (NAD27)</b> X:612930.93' / Y:444838.46' LAT:32.22245050 / LON:-103.96815045

<b>BHL (NAD83)</b> X:654194.83' / Y:444897.28' LAT:32.22257223 / LON:-103.96838012
<b>BHL (NAD27)</b> X:613010.93' / Y:444838.34' LAT:32.22244942 / LON:-103.96789175



<b>CORNER COORDINATES</b> NAD 83, SPCS NM EAST
A - X: 650312.09' / Y:445726.24'
B - X: 652967.76' / Y:445724.10'
C - X: 654294.65' / Y:445722.13'
D - X: 654299.98' / Y:444394.98'
E - X: 650321.05' / Y:444398.48'
F - X: 645031.63' / Y:444370.57'
G - X: 645021.30' / Y:445699.33'

<b>CORNER COORDINATES</b> NAD 27, SPCS NM EAST
A - X: 609128.23' / Y:445667.29'
B - X: 611783.88' / Y:445665.15'
C - X: 613110.77' / Y:445663.18'
D - X: 613116.07' / Y:444336.06'
E - X: 609137.15' / Y:444339.55'
F - X: 603847.75' / Y:444311.64'
G - X: 603837.46' / Y:445640.37'

*FTP TO LTP LINE BEARINGS	
LINE	BEARING
L1	N 89°51'23" E ~ 8987.15'



Drill Line Events      Section Corners      Drill Line      Dimension Lines      Federal Leases      HSU      HSU Corners  
All bearings and coordinates refer to New Mexico State Plane Coordinate System, East Zone, U.S. Survey Feet.

JOB No. 20251149\_15484  
REV 0 CCT 5/29/2025

Distances/areas relative to NAD 83 grid measurements. Combined Scale Factor: 0.99978238 and a Convergence Angle: 0.18792022°

C-102

Submit Electronically  
Via OCD PermittingState of New Mexico  
Energy, Minerals, & Natural Resources Department  
OIL CONSERVATION DIVISIONRevised July 9, 2024  
PAGE 1 OF 2Submittal  Initial Submittal  
 Amended Report  
Type:  As Drilled

## WELL LOCATION INFORMATION

API Number <b>30-015-57398</b>	Pool Code <b>96238</b>	Pool Name <b>CORRAL DRAW; BONE SPRING</b>
Property Code <b>337839</b>	Property Name <b>CEDAR CANYON 15_16 STATE COM</b>	Well Number <b>71H</b>
OGRID No. <b>16696</b>	Operator Name <b>OXY USA INC.</b>	Ground Level Elevation <b>2927'</b>
Surface Owner: <input type="checkbox"/> State <input checked="" type="checkbox"/> Fee <input type="checkbox"/> Tribal <input type="checkbox"/> Federal		Mineral Owner: <input checked="" type="checkbox"/> State <input checked="" type="checkbox"/> Fee <input type="checkbox"/> Tribal <input type="checkbox"/> Federal

## Surface Location

UL B	Section 17	Township 24S	Range 29E	Lot	Ft. from N/S 890' FNL	Ft. from E/W 1411' FEL	Latitude (NAD83) 32.22243955	Longitude (NAD83) -104.00258618	County EDDY
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## Bottom Hole Location

UL B	Section 15	Township 24S	Range 29E	Lot	Ft. from N/S 825' FNL	Ft. from E/W 1430' FEL	Latitude (NAD83) 32.22257223	Longitude (NAD83) -103.96838012	County EDDY
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Dedicated Acres <b>160</b>	Infill or Defining Well <b>DEFINING</b>	Defining Well API	Overlapping Spacing Unit (Y/N) <b>N</b>	Consolidation Code <b>C</b>
Order Numbers: <b>N/A</b>			Well setbacks are under Common Ownership: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	

## Kick Off Point (KOP)

UL D	Section 16	Township 24S	Range 29E	Lot	Ft. from N/S 825' FNL	Ft. from E/W 50' FWL	Latitude (NAD83) 32.22259163	Longitude (NAD83) -103.99786245	County EDDY
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Unitized Area or Area of Uniform Interest <b>N/A</b>	Spacing Unit Type: <input checked="" type="checkbox"/> Horizontal <input type="checkbox"/> Vertical	Ground Floor Elevation <b>2927'</b>
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Sara Guthrie

10/10/2025

Signature

Date

Sara Guthrie

Printed Name

sara\_guthrie@oxy.com

Email Address

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Signature and Seal of Professional Surveyor

Certificate Number

21653

Date of Survey

JUNE 17, 2025



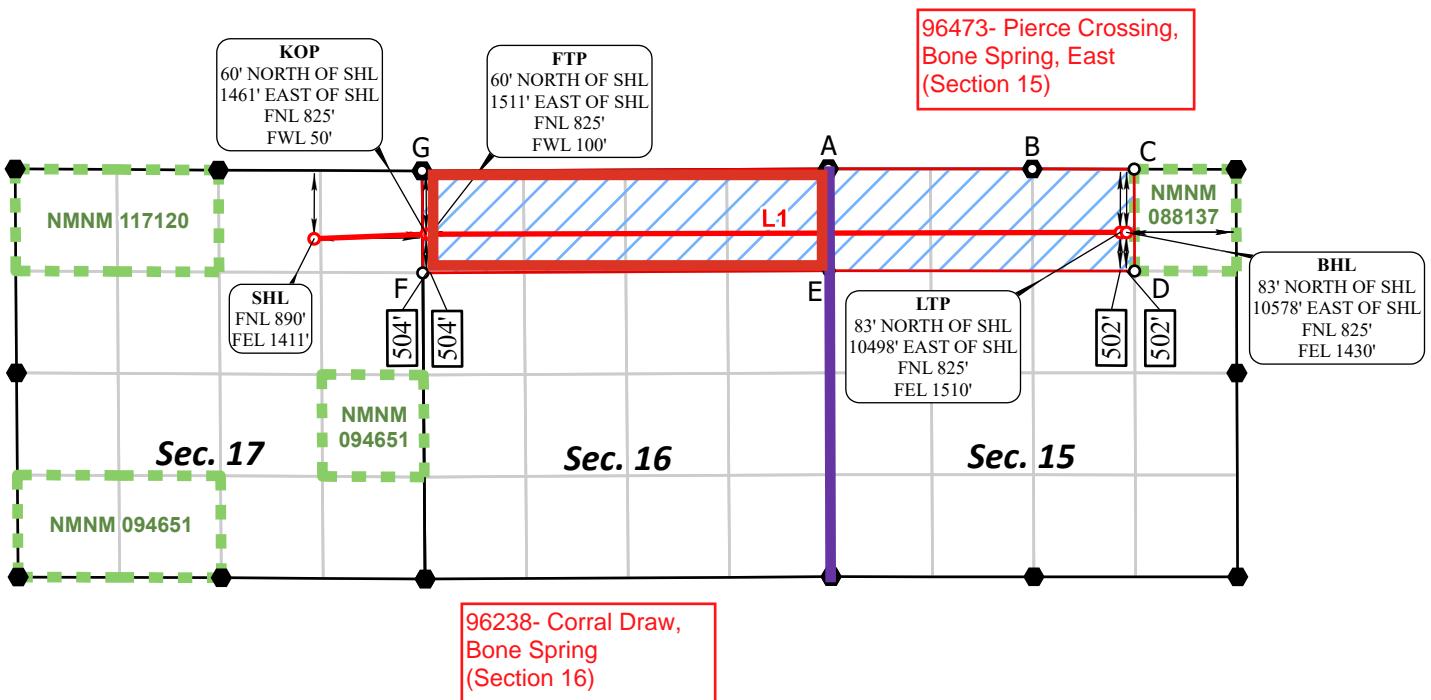
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*FTP TO LTP LINE BEARINGS	
LINE	BEARING
L1	N 89°51'23" E ~ 8987.15'



Drill Line Events      Section Corners      Drill Line      Dimension Lines      Federal Leases      HSU      HSU Corners  
 All bearings and coordinates refer to New Mexico State Plane Coordinate System, East Zone, U.S. Survey Feet.

JOB No. 20251149\_15484  
REV 0 CCT 5/29/2025

Distances/areas relative to NAD 83 grid measurements. Combined Scale Factor: 0.99978238 and a Convergence Angle: 0.18792022°

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**State of New Mexico**  
**Energy, Minerals and Natural Resources**  
**Oil Conservation Division**  
**1220 S. St Francis Dr.**  
**Santa Fe, NM 87505**

Form APD Conditions

Permit 401762

**PERMIT CONDITIONS OF APPROVAL**

Operator Name and Address: OXY USA INC [16696] P.O. Box 4294 Houston, TX 772104294	API Number:
	30-015-57398

OCD Reviewer	Condition
jeffrey.harrison	No additives containing PFAS chemicals will be added to the drilling fluids or completion fluids used during drilling, completions, or recompletions operations.
jeffrey.harrison	All logs run on the well must be submitted to NMOCD.
jeffrey.harrison	Cement is required to circulate on both surface and intermediate1 strings of casing.
jeffrey.harrison	If cement does not circulate on any string, a Cement Bond Log (CBL) is required for that string of casing.
jeffrey.harrison	A [C-103] Sub. Drilling (C-103N) is required within (10) days of spud.
jeffrey.harrison	Notify the OCD 24 hours prior to casing & cement.
jeffrey.harrison	File As Drilled C-102 and a directional Survey with C-104 completion packet.
jeffrey.harrison	Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string.
jeffrey.harrison	Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system.

**OXY**

**PRD NM DIRECTIONAL PLANS (NAD 1983)**

**Cedar Canyon 15\_16**

**Cedar Canyon 15\_16 State Com 71H**

**Wellbore #1**

**Plan: Permitting Plan**

## **Standard Planning Report**

**14 August, 2025**

# OXY

## Planning Report

<b>Database:</b> <b>Company:</b> <b>Project:</b> <b>Site:</b> <b>Well:</b> <b>Wellbore:</b> <b>Design:</b>	HOPSP ENGINEERING DESIGNS PRD NM DIRECTIONAL PLANS (NAD 1983) Cedar Canyon 15_16 Cedar Canyon 15_16 State Com 71H Wellbore #1 Permitting Plan	<b>Local Co-ordinate Reference:</b> <b>TVD Reference:</b> <b>MD Reference:</b> <b>North Reference:</b> <b>Survey Calculation Method:</b>	Well Cedar Canyon 15_16 State Com 71H RKB=25' @ 2952.00ft RKB=25' @ 2952.00ft Grid Minimum Curvature
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<b>Project</b>	PRD NM DIRECTIONAL PLANS (NAD 1983)	
<b>Map System:</b> <b>Geo Datum:</b> <b>Map Zone:</b>	US State Plane 1983 North American Datum 1983 New Mexico Eastern Zone	<b>System Datum:</b>  <b>Mean Sea Level</b>  <b>Using geodetic scale factor</b>

<b>Site</b>	Cedar Canyon 15_16
<b>Site Position:</b> <b>From:</b> <b>Position Uncertainty:</b>	<b>Northing:</b> 444,814.77 usft <b>Easting:</b> 643,617.12 usft <b>Slot Radius:</b> 13.200 in

<b>Well</b>	Cedar Canyon 15_16 State Com 71H
<b>Well Position</b>	<b>+N/S</b> 0.00 ft <b>Northing:</b> 444,814.77 usf <b>Latitude:</b> 32.222440 <b>+E/W</b> 0.00 ft <b>Easting:</b> 643,617.12 usf <b>Longitude:</b> -104.002586
<b>Position Uncertainty</b>	6.00 ft <b>Wellhead Elevation:</b> ft <b>Ground Level:</b> 2,927.00 ft

<b>Wellbore</b>	Wellbore #1
<b>Magnetics</b>	<b>Model Name</b> HDGM_FILE <b>Sample Date</b> 8/14/2025 <b>Declination</b> (°) 6.43 <b>Dip Angle</b> (°) 59.75 <b>Field Strength</b> (nT) 47,207.5000000

<b>Design</b>	Permitting Plan
<b>Audit Notes:</b>	
<b>Version:</b>	
<b>Phase:</b> PROTOTYPE <b>Tie On Depth:</b> 0.00	
<b>Vertical Section:</b>	
<b>Depth From (TVD)</b> (ft)	
0.00	
<b>+N/S</b> (ft)	
0.00	
<b>+E/W</b> (ft)	
0.00	
<b>Direction</b> (°)	
89.55	

<b>Plan Survey Tool Program</b>	<b>Date</b> 8/14/2025
<b>Depth From</b> (ft)	<b>Depth To</b> (ft)

		<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Remarks</b>
1	0.00	18,752.32	Permitting Plan (Wellbore #1)	B005Mc_MWD+HRGM+SA MWD+HRGM+Sag+MSA

<b>Plan Sections</b>											
<b>Measured Depth</b> (ft)	<b>Inclination</b> (°)	<b>Azimuth</b> (°)	<b>Vertical Depth</b> (ft)	<b>+N/S</b> (ft)	<b>+E/W</b> (ft)	<b>Dogleg Rate</b> (°/100ft)	<b>Build Rate</b> (°/100ft)	<b>Turn Rate</b> (°/100ft)	<b>TFO</b> (°)	<b>Target</b>	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,920.00	0.00	0.00	2,920.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,919.71	10.00	86.73	3,914.64	4.96	86.85	1.00	1.00	0.00	86.73		
8,885.75	10.00	86.73	8,805.28	54.16	947.54	0.00	0.00	0.00	0.00		
9,684.83	89.89	89.86	9,278.90	60.10	1,510.71	10.00	10.00	0.39	3.18	FTP (Cedar Canyon PBHL (Cedar	
18,752.73	89.89	89.86	9,296.31	82.52	10,578.57	0.00	0.00	0.00	0.00		

**OXY**  
Planning Report

<b>Database:</b> HOPSPP	<b>Local Co-ordinate Reference:</b>	Well Cedar Canyon 15_16 State Com 71H
<b>Company:</b> ENGINEERING DESIGNS	<b>TVD Reference:</b>	RKB=25' @ 2952.00ft
<b>Project:</b> PRD NM DIRECTIONAL PLANS (NAD 1983)	<b>MD Reference:</b>	RKB=25' @ 2952.00ft
<b>Site:</b> Cedar Canyon 15_16	<b>North Reference:</b>	Grid
<b>Well:</b> Cedar Canyon 15_16 State Com 71H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b> Wellbore #1		
<b>Design:</b> 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	0.00
100.00	0.00	0.00	100.00	0.00	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	0.00
300.00	0.00	0.00	300.00	0.00	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	0.00
500.00	0.00	0.00	500.00	0.00	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	0.00
700.00	0.00	0.00	700.00	0.00	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	0.00
900.00	0.00	0.00	900.00	0.00	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	0.00
1,100.00	0.00	0.00	1,100.00	0.00	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	0.00
1,300.00	0.00	0.00	1,300.00	0.00	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	0.00
1,500.00	0.00	0.00	1,500.00	0.00	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	0.00
1,700.00	0.00	0.00	1,700.00	0.00	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	0.00
1,900.00	0.00	0.00	1,900.00	0.00	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	0.00
2,100.00	0.00	0.00	2,100.00	0.00	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	0.00
2,300.00	0.00	0.00	2,300.00	0.00	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	0.00
2,500.00	0.00	0.00	2,500.00	0.00	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	0.00
2,700.00	0.00	0.00	2,700.00	0.00	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	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,920.00	0.00	0.00	2,920.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Build 1°/100'</b>										
3,000.00	0.80	86.73	3,000.00	0.03	0.56	0.56	1.00	1.00	0.00	
3,100.00	1.80	86.73	3,099.97	0.16	2.82	2.82	1.00	1.00	0.00	
3,200.00	2.80	86.73	3,199.89	0.39	6.83	6.83	1.00	1.00	0.00	
3,300.00	3.80	86.73	3,299.72	0.72	12.58	12.58	1.00	1.00	0.00	
3,400.00	4.80	86.73	3,399.44	1.15	20.06	20.07	1.00	1.00	0.00	
3,500.00	5.80	86.73	3,499.01	1.67	29.28	29.30	1.00	1.00	0.00	
3,600.00	6.80	86.73	3,598.40	2.30	40.24	40.26	1.00	1.00	0.00	
3,700.00	7.80	86.73	3,697.59	3.03	52.92	52.95	1.00	1.00	0.00	
3,800.00	8.80	86.73	3,796.54	3.85	67.34	67.36	1.00	1.00	0.00	
3,900.00	9.80	86.73	3,895.23	4.77	83.47	83.51	1.00	1.00	0.00	
3,919.71	10.00	86.73	3,914.64	4.96	86.85	86.89	1.00	1.00	0.00	
<b>Hold 10° Tangent</b>										
4,000.00	10.00	86.73	3,993.72	5.76	100.77	100.81	0.00	0.00	0.00	
4,100.00	10.00	86.73	4,092.20	6.75	118.10	118.15	0.00	0.00	0.00	
4,200.00	10.00	86.73	4,190.68	7.74	135.43	135.49	0.00	0.00	0.00	
4,300.00	10.00	86.73	4,289.16	8.73	152.76	152.83	0.00	0.00	0.00	
4,400.00	10.00	86.73	4,387.64	9.72	170.09	170.17	0.00	0.00	0.00	
4,500.00	10.00	86.73	4,486.12	10.71	187.43	187.50	0.00	0.00	0.00	
4,600.00	10.00	86.73	4,584.61	11.70	204.76	204.84	0.00	0.00	0.00	
4,700.00	10.00	86.73	4,683.09	12.70	222.09	222.18	0.00	0.00	0.00	
4,800.00	10.00	86.73	4,781.57	13.69	239.42	239.52	0.00	0.00	0.00	
4,900.00	10.00	86.73	4,880.05	14.68	256.75	256.86	0.00	0.00	0.00	
5,000.00	10.00	86.73	4,978.53	15.67	274.08	274.20	0.00	0.00	0.00	

**OXY**  
Planning Report

<b>Database:</b> HOPSSP	<b>Local Co-ordinate Reference:</b>	Well Cedar Canyon 15_16 State Com 71H
<b>Company:</b> ENGINEERING DESIGNS	<b>TVD Reference:</b>	RKB=25' @ 2952.00ft
<b>Project:</b> PRD NM DIRECTIONAL PLANS (NAD 1983)	<b>MD Reference:</b>	RKB=25' @ 2952.00ft
<b>Site:</b> Cedar Canyon 15_16	<b>North Reference:</b>	Grid
<b>Well:</b> Cedar Canyon 15_16 State Com 71H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b> Wellbore #1		
<b>Design:</b> 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)
5,100.00	10.00	86.73	5,077.01	16.66	291.41	291.54	0.00	0.00	0.00
5,200.00	10.00	86.73	5,175.50	17.65	308.75	308.87	0.00	0.00	0.00
5,300.00	10.00	86.73	5,273.98	18.64	326.08	326.21	0.00	0.00	0.00
5,400.00	10.00	86.73	5,372.46	19.63	343.41	343.55	0.00	0.00	0.00
5,500.00	10.00	86.73	5,470.94	20.62	360.74	360.89	0.00	0.00	0.00
5,600.00	10.00	86.73	5,569.42	21.61	378.07	378.23	0.00	0.00	0.00
5,700.00	10.00	86.73	5,667.90	22.60	395.40	395.57	0.00	0.00	0.00
5,800.00	10.00	86.73	5,766.39	23.59	412.74	412.91	0.00	0.00	0.00
5,900.00	10.00	86.73	5,864.87	24.58	430.07	430.25	0.00	0.00	0.00
6,000.00	10.00	86.73	5,963.35	25.57	447.40	447.58	0.00	0.00	0.00
6,100.00	10.00	86.73	6,061.83	26.56	464.73	464.92	0.00	0.00	0.00
6,200.00	10.00	86.73	6,160.31	27.56	482.06	482.26	0.00	0.00	0.00
6,300.00	10.00	86.73	6,258.79	28.55	499.39	499.60	0.00	0.00	0.00
6,400.00	10.00	86.73	6,357.28	29.54	516.72	516.94	0.00	0.00	0.00
6,500.00	10.00	86.73	6,455.76	30.53	534.06	534.28	0.00	0.00	0.00
6,600.00	10.00	86.73	6,554.24	31.52	551.39	551.62	0.00	0.00	0.00
6,700.00	10.00	86.73	6,652.72	32.51	568.72	568.95	0.00	0.00	0.00
6,800.00	10.00	86.73	6,751.20	33.50	586.05	586.29	0.00	0.00	0.00
6,900.00	10.00	86.73	6,849.68	34.49	603.38	603.63	0.00	0.00	0.00
7,000.00	10.00	86.73	6,948.17	35.48	620.71	620.97	0.00	0.00	0.00
7,100.00	10.00	86.73	7,046.65	36.47	638.04	638.31	0.00	0.00	0.00
7,200.00	10.00	86.73	7,145.13	37.46	655.38	655.65	0.00	0.00	0.00
7,300.00	10.00	86.73	7,243.61	38.45	672.71	672.99	0.00	0.00	0.00
7,400.00	10.00	86.73	7,342.09	39.44	690.04	690.33	0.00	0.00	0.00
7,500.00	10.00	86.73	7,440.57	40.43	707.37	707.66	0.00	0.00	0.00
7,600.00	10.00	86.73	7,539.06	41.43	724.70	725.00	0.00	0.00	0.00
7,700.00	10.00	86.73	7,637.54	42.42	742.03	742.34	0.00	0.00	0.00
7,800.00	10.00	86.73	7,736.02	43.41	759.36	759.68	0.00	0.00	0.00
7,900.00	10.00	86.73	7,834.50	44.40	776.70	777.02	0.00	0.00	0.00
8,000.00	10.00	86.73	7,932.98	45.39	794.03	794.36	0.00	0.00	0.00
8,100.00	10.00	86.73	8,031.46	46.38	811.36	811.70	0.00	0.00	0.00
8,200.00	10.00	86.73	8,129.95	47.37	828.69	829.03	0.00	0.00	0.00
8,300.00	10.00	86.73	8,228.43	48.36	846.02	846.37	0.00	0.00	0.00
8,400.00	10.00	86.73	8,326.91	49.35	863.35	863.71	0.00	0.00	0.00
8,500.00	10.00	86.73	8,425.39	50.34	880.68	881.05	0.00	0.00	0.00
8,600.00	10.00	86.73	8,523.87	51.33	898.02	898.39	0.00	0.00	0.00
8,700.00	10.00	86.73	8,622.35	52.32	915.35	915.73	0.00	0.00	0.00
8,800.00	10.00	86.73	8,720.84	53.31	932.68	933.07	0.00	0.00	0.00
8,885.75	10.00	86.73	8,805.28	54.16	947.54	947.93	0.00	0.00	0.00
<b>KOP, Build &amp; Turn 10°/100'</b>									
8,900.00	11.42	87.13	8,819.29	54.30	950.19	950.58	10.00	9.99	2.80
9,000.00	21.41	88.45	8,915.09	55.30	978.39	978.79	10.00	9.99	1.33
9,100.00	31.41	88.96	9,004.54	56.27	1,022.81	1,023.22	10.00	10.00	0.50
9,200.00	41.41	89.23	9,084.91	57.19	1,082.08	1,082.50	10.00	10.00	0.28
9,300.00	51.41	89.42	9,153.77	58.03	1,154.42	1,154.83	10.00	10.00	0.19
9,400.00	61.41	89.56	9,209.03	58.76	1,237.61	1,238.03	10.00	10.00	0.14
9,500.00	71.41	89.67	9,249.00	59.37	1,329.13	1,329.55	10.00	10.00	0.12
9,600.00	81.41	89.78	9,272.47	59.84	1,426.21	1,426.63	10.00	10.00	0.10
9,684.83	89.89	89.86	9,278.90	60.10	1,510.71	1,511.14	10.00	10.00	0.10
<b>Landing Point</b>									
9,700.00	89.89	89.86	9,278.93	60.14	1,525.88	1,526.31	0.00	0.00	0.00
9,800.00	89.89	89.86	9,279.12	60.39	1,625.88	1,626.31	0.00	0.00	0.00
9,900.00	89.89	89.86	9,279.31	60.64	1,725.88	1,726.30	0.00	0.00	0.00
10,000.00	89.89	89.86	9,279.51	60.88	1,825.88	1,826.30	0.00	0.00	0.00
10,100.00	89.89	89.86	9,279.70	61.13	1,925.88	1,926.30	0.00	0.00	0.00

**OXY**  
Planning Report

<b>Database:</b> HOPSPP	<b>Local Co-ordinate Reference:</b>	Well Cedar Canyon 15_16 State Com 71H
<b>Company:</b> ENGINEERING DESIGNS	<b>TVD Reference:</b>	RKB=25' @ 2952.00ft
<b>Project:</b> PRD NM DIRECTIONAL PLANS (NAD 1983)	<b>MD Reference:</b>	RKB=25' @ 2952.00ft
<b>Site:</b> Cedar Canyon 15_16	<b>North Reference:</b>	Grid
<b>Well:</b> Cedar Canyon 15_16 State Com 71H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b> Wellbore #1		
<b>Design:</b> 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)
10,200.00	89.89	89.86	9,279.89	61.38	2,025.88	2,026.30	0.00	0.00	0.00
10,300.00	89.89	89.86	9,280.08	61.63	2,125.88	2,126.30	0.00	0.00	0.00
10,400.00	89.89	89.86	9,280.27	61.87	2,225.88	2,226.30	0.00	0.00	0.00
10,500.00	89.89	89.86	9,280.47	62.12	2,325.88	2,326.29	0.00	0.00	0.00
10,600.00	89.89	89.86	9,280.66	62.37	2,425.88	2,426.29	0.00	0.00	0.00
10,700.00	89.89	89.86	9,280.85	62.61	2,525.88	2,526.29	0.00	0.00	0.00
10,800.00	89.89	89.86	9,281.04	62.86	2,625.88	2,626.29	0.00	0.00	0.00
10,900.00	89.89	89.86	9,281.23	63.11	2,725.88	2,726.29	0.00	0.00	0.00
11,000.00	89.89	89.86	9,281.43	63.36	2,825.88	2,826.29	0.00	0.00	0.00
11,100.00	89.89	89.86	9,281.62	63.60	2,925.88	2,926.28	0.00	0.00	0.00
11,200.00	89.89	89.86	9,281.81	63.85	3,025.88	3,026.28	0.00	0.00	0.00
11,300.00	89.89	89.86	9,282.00	64.10	3,125.88	3,126.28	0.00	0.00	0.00
11,400.00	89.89	89.86	9,282.19	64.34	3,225.88	3,226.28	0.00	0.00	0.00
11,500.00	89.89	89.86	9,282.39	64.59	3,325.88	3,326.28	0.00	0.00	0.00
11,600.00	89.89	89.86	9,282.58	64.84	3,425.87	3,426.28	0.00	0.00	0.00
11,700.00	89.89	89.86	9,282.77	65.09	3,525.87	3,526.27	0.00	0.00	0.00
11,800.00	89.89	89.86	9,282.96	65.33	3,625.87	3,626.27	0.00	0.00	0.00
11,900.00	89.89	89.86	9,283.15	65.58	3,725.87	3,726.27	0.00	0.00	0.00
12,000.00	89.89	89.86	9,283.35	65.83	3,825.87	3,826.27	0.00	0.00	0.00
12,100.00	89.89	89.86	9,283.54	66.07	3,925.87	3,926.27	0.00	0.00	0.00
12,200.00	89.89	89.86	9,283.73	66.32	4,025.87	4,026.27	0.00	0.00	0.00
12,300.00	89.89	89.86	9,283.92	66.57	4,125.87	4,126.27	0.00	0.00	0.00
12,400.00	89.89	89.86	9,284.11	66.82	4,225.87	4,226.26	0.00	0.00	0.00
12,500.00	89.89	89.86	9,284.31	67.06	4,325.87	4,326.26	0.00	0.00	0.00
12,600.00	89.89	89.86	9,284.50	67.31	4,425.87	4,426.26	0.00	0.00	0.00
12,700.00	89.89	89.86	9,284.69	67.56	4,525.87	4,526.26	0.00	0.00	0.00
12,800.00	89.89	89.86	9,284.88	67.80	4,625.87	4,626.26	0.00	0.00	0.00
12,900.00	89.89	89.86	9,285.07	68.05	4,725.87	4,726.26	0.00	0.00	0.00
13,000.00	89.89	89.86	9,285.27	68.30	4,825.87	4,826.25	0.00	0.00	0.00
13,100.00	89.89	89.86	9,285.46	68.55	4,925.87	4,926.25	0.00	0.00	0.00
13,200.00	89.89	89.86	9,285.65	68.79	5,025.87	5,026.25	0.00	0.00	0.00
13,300.00	89.89	89.86	9,285.84	69.04	5,125.87	5,126.25	0.00	0.00	0.00
13,400.00	89.89	89.86	9,286.03	69.29	5,225.87	5,226.25	0.00	0.00	0.00
13,500.00	89.89	89.86	9,286.23	69.53	5,325.87	5,326.25	0.00	0.00	0.00
13,600.00	89.89	89.86	9,286.42	69.78	5,425.87	5,426.24	0.00	0.00	0.00
13,700.00	89.89	89.86	9,286.61	70.03	5,525.86	5,526.24	0.00	0.00	0.00
13,800.00	89.89	89.86	9,286.80	70.28	5,625.86	5,626.24	0.00	0.00	0.00
13,900.00	89.89	89.86	9,286.99	70.52	5,725.86	5,726.24	0.00	0.00	0.00
14,000.00	89.89	89.86	9,287.19	70.77	5,825.86	5,826.24	0.00	0.00	0.00
14,100.00	89.89	89.86	9,287.38	71.02	5,925.86	5,926.24	0.00	0.00	0.00
14,200.00	89.89	89.86	9,287.57	71.26	6,025.86	6,026.23	0.00	0.00	0.00
14,300.00	89.89	89.86	9,287.76	71.51	6,125.86	6,126.23	0.00	0.00	0.00
14,400.00	89.89	89.86	9,287.95	71.76	6,225.86	6,226.23	0.00	0.00	0.00
14,500.00	89.89	89.86	9,288.15	72.01	6,325.86	6,326.23	0.00	0.00	0.00
14,600.00	89.89	89.86	9,288.34	72.25	6,425.86	6,426.23	0.00	0.00	0.00
14,700.00	89.89	89.86	9,288.53	72.50	6,525.86	6,526.23	0.00	0.00	0.00
14,800.00	89.89	89.86	9,288.72	72.75	6,625.86	6,626.23	0.00	0.00	0.00
14,900.00	89.89	89.86	9,288.91	72.99	6,725.86	6,726.22	0.00	0.00	0.00
15,000.00	89.89	89.86	9,289.11	73.24	6,825.86	6,826.22	0.00	0.00	0.00
15,100.00	89.89	89.86	9,289.30	73.49	6,925.86	6,926.22	0.00	0.00	0.00
15,200.00	89.89	89.86	9,289.49	73.74	7,025.86	7,026.22	0.00	0.00	0.00
15,300.00	89.89	89.86	9,289.68	73.98	7,125.86	7,126.22	0.00	0.00	0.00
15,400.00	89.89	89.86	9,289.87	74.23	7,225.86	7,226.22	0.00	0.00	0.00
15,500.00	89.89	89.86	9,290.07	74.48	7,325.86	7,326.21	0.00	0.00	0.00
15,600.00	89.89	89.86	9,290.26	74.72	7,425.86	7,426.21	0.00	0.00	0.00

# OXY

## Planning Report

<b>Database:</b> <b>Company:</b> <b>Project:</b> <b>Site:</b> <b>Well:</b> <b>Wellbore:</b> <b>Design:</b>	HOPSP ENGINEERING DESIGNS PRD NM DIRECTIONAL PLANS (NAD 1983) Cedar Canyon 15_16 Cedar Canyon 15_16 State Com 71H Wellbore #1 Permitting Plan	<b>Local Co-ordinate Reference:</b> <b>TVD Reference:</b> <b>MD Reference:</b> <b>North Reference:</b> <b>Survey Calculation Method:</b>	Well Cedar Canyon 15_16 State Com 71H RKB=25' @ 2952.00ft RKB=25' @ 2952.00ft Grid Minimum Curvature
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**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	89.89	89.86	9,290.45	74.97	7,525.85	7,526.21	0.00	0.00	0.00
15,800.00	89.89	89.86	9,290.64	75.22	7,625.85	7,626.21	0.00	0.00	0.00
15,900.00	89.89	89.86	9,290.83	75.47	7,725.85	7,726.21	0.00	0.00	0.00
16,000.00	89.89	89.86	9,291.03	75.71	7,825.85	7,826.21	0.00	0.00	0.00
16,100.00	89.89	89.86	9,291.22	75.96	7,925.85	7,926.20	0.00	0.00	0.00
16,200.00	89.89	89.86	9,291.41	76.21	8,025.85	8,026.20	0.00	0.00	0.00
16,300.00	89.89	89.86	9,291.60	76.45	8,125.85	8,126.20	0.00	0.00	0.00
16,400.00	89.89	89.86	9,291.79	76.70	8,225.85	8,226.20	0.00	0.00	0.00
16,500.00	89.89	89.86	9,291.99	76.95	8,325.85	8,326.20	0.00	0.00	0.00
16,600.00	89.89	89.86	9,292.18	77.20	8,425.85	8,426.20	0.00	0.00	0.00
16,700.00	89.89	89.86	9,292.37	77.44	8,525.85	8,526.19	0.00	0.00	0.00
16,800.00	89.89	89.86	9,292.56	77.69	8,625.85	8,626.19	0.00	0.00	0.00
16,900.00	89.89	89.86	9,292.75	77.94	8,725.85	8,726.19	0.00	0.00	0.00
17,000.00	89.89	89.86	9,292.95	78.18	8,825.85	8,826.19	0.00	0.00	0.00
17,100.00	89.89	89.86	9,293.14	78.43	8,925.85	8,926.19	0.00	0.00	0.00
17,200.00	89.89	89.86	9,293.33	78.68	9,025.85	9,026.19	0.00	0.00	0.00
17,300.00	89.89	89.86	9,293.52	78.93	9,125.85	9,126.19	0.00	0.00	0.00
17,400.00	89.89	89.86	9,293.71	79.17	9,225.85	9,226.18	0.00	0.00	0.00
17,500.00	89.89	89.86	9,293.91	79.42	9,325.85	9,326.18	0.00	0.00	0.00
17,600.00	89.89	89.86	9,294.10	79.67	9,425.85	9,426.18	0.00	0.00	0.00
17,700.00	89.89	89.86	9,294.29	79.91	9,525.85	9,526.18	0.00	0.00	0.00
17,800.00	89.89	89.86	9,294.48	80.16	9,625.84	9,626.18	0.00	0.00	0.00
17,900.00	89.89	89.86	9,294.67	80.41	9,725.84	9,726.18	0.00	0.00	0.00
18,000.00	89.89	89.86	9,294.87	80.66	9,825.84	9,826.17	0.00	0.00	0.00
18,100.00	89.89	89.86	9,295.06	80.90	9,925.84	9,926.17	0.00	0.00	0.00
18,200.00	89.89	89.86	9,295.25	81.15	10,025.84	10,026.17	0.00	0.00	0.00
18,300.00	89.89	89.86	9,295.44	81.40	10,125.84	10,126.17	0.00	0.00	0.00
18,400.00	89.89	89.86	9,295.63	81.64	10,225.84	10,226.17	0.00	0.00	0.00
18,500.00	89.89	89.86	9,295.83	81.89	10,325.84	10,326.17	0.00	0.00	0.00
18,600.00	89.89	89.86	9,296.02	82.14	10,425.84	10,426.16	0.00	0.00	0.00
18,700.00	89.89	89.86	9,296.21	82.39	10,525.84	10,526.16	0.00	0.00	0.00
18,752.73	89.89	89.86	9,296.31	82.52	10,578.57	10,578.89	0.00	0.00	0.00
<b>TD at 18752.73' MD</b>									

**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
KOP (Cedar Canyon - plan misses target center by 1461.93ft at 0.00ft MD (0.00 TVD, 0.00 N, 0.00 E) - Point	0.00	0.00	0.00	59.85	1,460.71	444,874.62	645,077.71	32.222592	-103.997863
FTP (Cedar Canyon - plan hits target center - Point	0.00	0.00	9,278.90	60.10	1,510.71	444,874.87	645,127.71	32.222592	-103.997701
PBHL (Cedar Canyon - plan hits target center - Point	0.00	0.00	9,296.31	82.52	10,578.57	444,897.28	654,194.83	32.222572	-103.968380

## OXY

## Planning Report

<b>Database:</b> HOPSP	<b>Local Co-ordinate Reference:</b> Well Cedar Canyon 15_16 State Com 71H
<b>Company:</b> ENGINEERING DESIGNS	<b>TVD Reference:</b> RKB=25' @ 2952.00ft
<b>Project:</b> PRD NM DIRECTIONAL PLANS (NAD 1983)	<b>MD Reference:</b> RKB=25' @ 2952.00ft
<b>Site:</b> Cedar Canyon 15_16	<b>North Reference:</b> Grid
<b>Well:</b> Cedar Canyon 15_16 State Com 71H	<b>Survey Calculation Method:</b> Minimum Curvature
<b>Wellbore:</b> Wellbore #1	
<b>Design:</b> Permitting Plan	

## Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
149.00	149.00	RUSTLER			
588.00	588.00	SALADO			
1,280.00	1,280.00	CASTILE			
2,842.00	2,842.00	DELAWARE			
2,906.00	2,906.00	BELL CANYON			
3,760.01	3,757.00	CHERRY CANYON			
5,024.84	5,003.00	BRUSHY CANYON			
6,635.30	6,589.00	BONE SPRING			
7,648.68	7,587.00	BONE SPRING 1ST			
8,462.03	8,388.00	BONE SPRING 2ND			

## Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
2,920.00	2,920.00	0.00	0.00	Build 1°/100'
3,919.71	3,914.64	4.96	86.85	Hold 10° Tangent
8,885.75	8,805.28	54.16	947.54	KOP, Build & Turn 10°/100'
9,684.83	9,278.90	60.10	1,510.71	Landing Point
18,752.73	9,296.31	82.52	10,578.57	TD at 18752.73' MD

# Oxy USA Inc. - Cedar Canyon 15\_16 State Com 71H

## Drill Plan

### 1. Geologic Formations

TVD of Target (ft):	9296	Pilot Hole Depth (ft):	
Total Measured Depth (ft):	18753	Deepest Expected Fresh Water (ft):	149

### Delaware Basin

Formation	MD-RKB (ft)	TVD-RKB (ft)	Expected Fluids
Rustler	149	149	
Salado	588	588	Salt
Marker Bed 126			Salt
Castile	1280	1280	Salt
Delaware	2842	2842	Oil/Gas/Brine
Bell Canyon	2906	2906	Oil/Gas/Brine
Cherry Canyon	3760	3757	Oil/Gas/Brine
Brushy Canyon	5025	5003	Losses
Bone Spring	6635	6589	Oil/Gas
Bone Spring 1st	7649	7587	Oil/Gas
Bone Spring 2nd	8462	8388	Oil/Gas
Bone Spring 3rd			Oil/Gas
Wolfcamp			Oil/Gas
Penn			Oil/Gas
Strawn			Oil/Gas

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

### 2. Casing Program

Section	Hole Size (in)	MD		TVD		Csg. OD (in)	Csg Wt. (ppf)	Grade	Conn.
		From (ft)	To (ft)	From (ft)	To (ft)				
Surface	14.75	0	528	0	528	10.75	40.5	J-55	BTC
Intermediate	9.875	0	9685	0	9279	7.625	26.4	L-80 HC	BTC
Production	6.75	0	18753	0	9296	5.5	20	P-110	DWC/C-HT-IS

All casing strings will be tested in accordance with 43 CFR part 3170 Subpart 3172

All Casing SF Values will meet or exceed those below			
SF Collapse	SF Burst	Body SF Tension	Joint SF Tension
1.00	1.100	1.4	1.4

### Annular Clearance Variance Request

As per the agreement reached in the Oxy/BLM face-to-face meeting on Feb 22, 2018, Oxy requests permission to allow deviation from the 0.422" annular clearance requirement. Please see Annular Clearance Variance attachment for further details.

	Y or N
Is casing new? If used, attach certification as required in 43 CFR 3160	Y
Does casing meet API specifications? If no, attach casing specification sheet.	Y
Is premium or uncommon casing planned? If yes attach casing specification sheet.	Y
Does the above casing design meet or exceed BLM's minimum standards? If not provide justification (loading assumptions, casing design criteria).	Y
Will the intermediate pipe be kept at a minimum 1/3 fluid filled to avoid approaching the collapse pressure rating of the casing?	Y
Is well located within Capitan Reef? If yes, does production casing tie back a minimum of 50' above the Reef? Is well within the designated 4 string boundary.	N
Is well located in SOPA but not in R-111-Q? If yes, are the first 2 strings cemented to surface and 3 <sup>rd</sup> string cement tied back 500' into previous casing?	N
Is well located in R-111-Q and SOPA? If yes, are the first three strings cemented to surface? Is 2 <sup>nd</sup> string set 100' to 600' below the base of salt?	N
Is well located in high Cave/Karst? If yes, are there two strings cemented to surface? (For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	N
Is well located in critical Cave/Karst? If yes, are there three strings cemented to surface?	N

### 3. Cementing Program

Section	Stage	Slurry:	Sacks	Yield (ft <sup>3</sup> /ft)	Density (lb/gal)	Excess:	TOC	Placement	Description
Surface	1	Surface - Tail	442	1.33	14.8	100%	-	Circulate	Class C+Accel.
Int.	1	Intermediate 1S - Tail	592	1.68	13.2	5%	5,275	Circulate	Class C+Ret., Disper.
Int.	2	Intermediate 2S - Tail BH	817	1.71	13.3	25%	-	Bradenhead	Class C+Accel.
Prod.	1	Production - Tail	542	1.84	13.3	25%	9,185	Circulate	Class C+Ret.

#### Offline Cementing Request

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

#### Bradenhead CBL Request

Oxy requests permission to adjust the CBL requirement after bradenhead cement jobs, on 7-5/8" intermediate casings, as per the agreement reached in the OXY/BLM meeting on September 5, 2019. Please see Bradenhead CBL Variance attachment for further details.

#### 4. Pressure Control Equipment

BOP installed and tested before drilling which hole?	Size?	Min. Required WP	Type	✓	Tested to:	Deepest TVD Depth (ft) per Section:	
9.875" Hole	13-5/8"	5M	Annular	✓	70% of working pressure	9279	
		5M	Blind Ram	✓	250 psi / 5000 psi		
			Pipe Ram				
			Double Ram	✓			
		Other*					
6.75" Hole	13-5/8"	5M	Annular	✓	70% of working pressure	9296	
		5M	Blind Ram	✓	250 psi / 5000 psi		
			Pipe Ram				
			Double Ram	✓			
		Other*					

\*Specify if additional ram is utilized

BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per 43 CFR part 3170 Subpart 3172 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all the components installed will be functional and tested.

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

	Formation integrity test will be performed per 43 CFR part 3170 Subpart 3172.
	On Exploratory wells or on that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Will be tested in accordance with 43 CFR part 3170 Subpart 3172.
	A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold. See attached for specs and hydrostatic test chart.
<input checked="" type="checkbox"/>	Are anchors required by manufacturer?

A multibowl or a unionized multibowl wellhead system will be employed. The wellhead and connection to the BOPE will meet all API 6A requirements. The BOP will be tested per 43 CFR part 3170 Subpart 3172 after installation on the surface casing which will cover testing requirements for a maximum of 30 days. If any seal subject to test pressure is broken the system must be tested. We will test the flange connection of the wellhead with a test port that is directly in the flange. We are proposing that we will run the wellhead through the rotary prior to cementing surface casing as discussed with the BLM on October 8, 2015.

See attached schematics.

### BOP Break Testing Request

Oxy requests permission to adjust the BOP break testing (intermediate and production) requirements as per the agreement reached in the OXY/BLM meeting on April 4th, 2025. Please see BOP Break Testing Variance attachment for further details.

**Oxy will use Cameron ADAPT wellhead system that uses an OEC top flange connection. This connection has been fully vetted and verified by API to Spec 6A and carries an API monogram.**

## 5. Mud Program

Section	Depth - MD		Depth - TVD		Type	Weight (ppg)	Viscosity	Water Loss
	From (ft)	To (ft)	From (ft)	To (ft)				
Surface	0	528	0	528	Water-Based Mud	8.6 - 8.8	40-60	N/C
Intermediate	528	9685	528	9279	Saturated Brine-Based or Oil-Based Mud	8.0 - 10.0	35-45	N/C
Production	9685	18753	9279	9296	Water-Based or Oil-Based Mud	9.5 - 12.5	38-50	N/C

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

What will be used to monitor the loss or gain of fluid?	PVT/MD Totco/Visual Monitoring
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## 6. Logging and Testing Procedures

### Logging, Coring and Testing.

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

### Additional logs planned      Interval

No	Resistivity	
No	Density	
Yes	CBL	Production string
Yes	Mud log	Bone Spring – TD
No	PEX	

## 7. Drilling Conditions

Condition	Specify what type and where?
BH Pressure at deepest TVD	6043 psi
Abnormal Temperature	No
BH Temperature at deepest TVD	155°F

Pump high viscosity sweeps as needed for hole cleaning. The mud system will be monitored visually/manually as well as with an electronic PVT. The necessary mud products for additional weight and fluid loss control will be on location at all times. Appropriately weighted mud will be used to isolate potential gas, oil, and water zones until such time as casing can be cemented into place for zonal

Hydrogen Sulfide (H2S) monitors will be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the operator will comply with the provisions of 43 CFR part 3170 Subpart 3172. If Hydrogen Sulfide is encountered, measured values and formations will be provided to the BLM.

N	H2S is present
Y	H2S Plan attached

## 8. Other facets of operation

Will the well be drilled with a walking/skidding operation? If yes, describe.	Yes/No
We plan to drill the 3 well pad in batch by section: all surface sections, intermediate sections and production sections. The wellhead will be secured with a night cap whenever the rig is not over the well.	Yes
Will more than one drilling rig be used for drilling operations? If yes, describe. Oxy requests the option to contract a Surface Rig to drill, set surface casing, and cement for this well. If the timing between rigs is such that Oxy would not be able to preset surface, the Primary Rig will MIRU and drill the well in its entirety per the APD. Please see the attached document for information on the secondary rig.	Yes

**Total Estimated Cuttings Volume:** 1381 bbls



## **Permian Drilling Hydrogen Sulfide Drilling Operations Plan**

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.

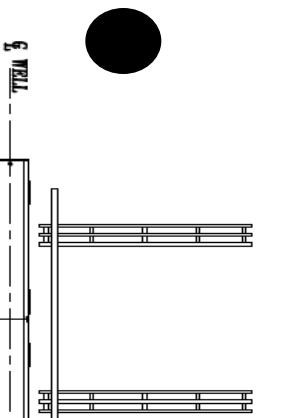
▲ H<sub>2</sub>S Detectors. At least three detectors will be installed: bell nipple, rig floor and Shakers.

● 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.

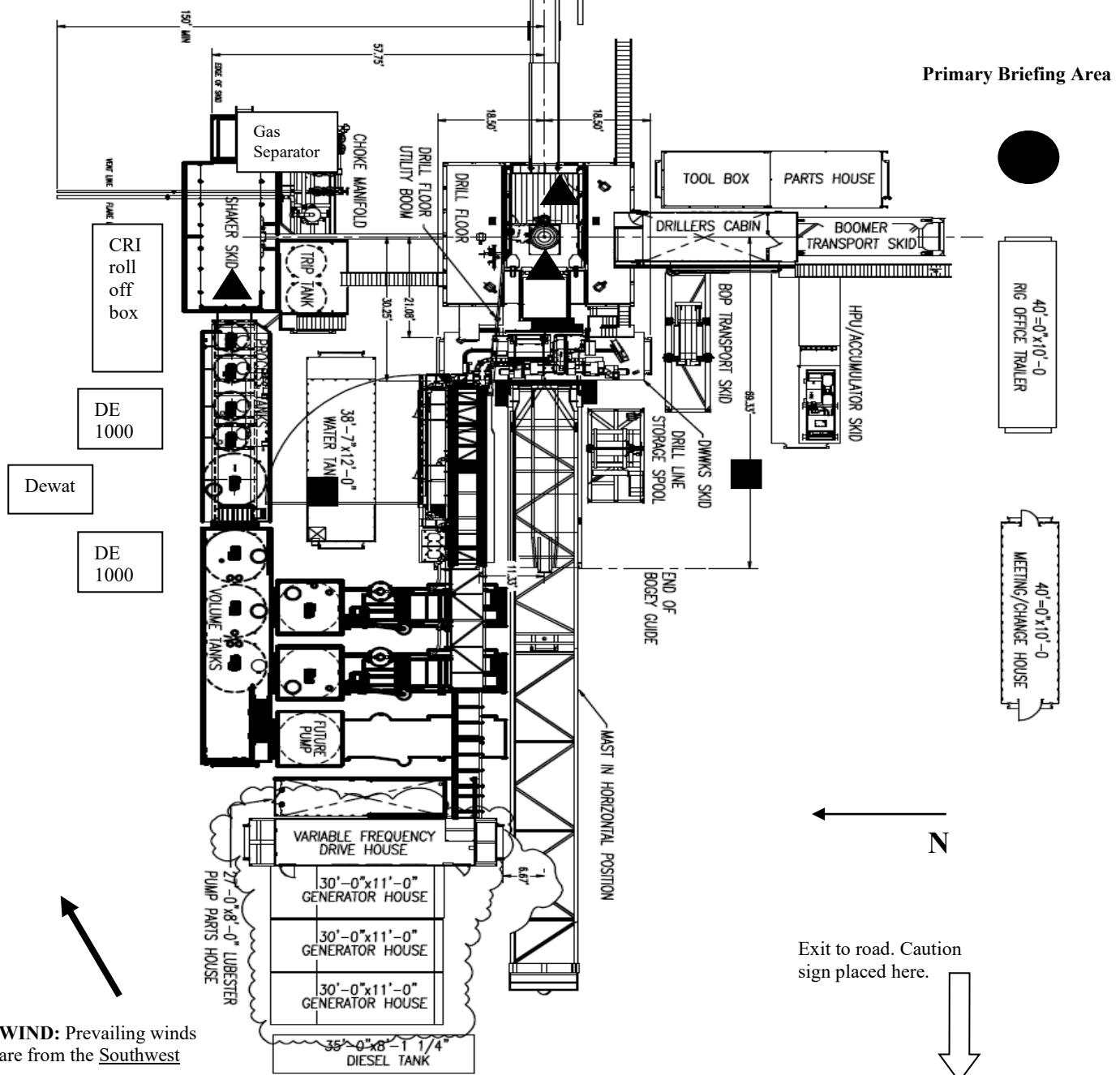
A gas buster is connected to both the choke manifold and flowline outlets.

### Secondary Briefing Area



Secondary Egress

### Primary Briefing Area





# 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 <u>commence</u> .
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 H<sub>2</sub>S.
2. Proper use and maintenance of personal protective equipment and life support systems.
3. H<sub>2</sub>S detection.
4. Proper use of H<sub>2</sub>S 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 H<sub>2</sub>S 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 H<sub>2</sub>S Drilling Operations Plan.

H<sub>2</sub>S 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. H<sub>2</sub>S 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 H<sub>2</sub>S 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 H<sub>2</sub>S.
- 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

## **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 43 CFR part 3170 Subpart 3172.

*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
  
- Mud engineer:
- 1. Will remain in briefing / muster area until instructed by supervisor.
  
- Safety personnel:
- 1. Report to nearest upwind designated safe briefing / muster area.
- 2. When instructed, begin check of mud for pH and H<sub>2</sub>S level. (Garrett gas train.)
  
- 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 H<sub>2</sub>S 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 H<sub>2</sub>S 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 H<sub>2</sub>S detection equipment and self-contained breathing equipment will monitor H<sub>2</sub>S 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

Percent (%)	Ppm	Concentration			Physical effects	
		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 H<sub>2</sub>S.

- B. When breaking out any line where H<sub>2</sub>S can reasonably be expected.
- C. When sampling air in areas to determine if toxic concentrations of H<sub>2</sub>S exists.
- D. When working in areas where over 10 ppm H<sub>2</sub>S has been detected.
- E. At any time there is a doubt as to the H<sub>2</sub>S level in the area to be entered.

**Rescue**  
**First aid for H<sub>2</sub>S poisoning**

**Do not panic!**

Remain calm – think!

- 1. 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 H<sub>2</sub>S gas poisoning – no matter how remote the possibility is.
- 6. Notify emergency room personnel that the victim(s) has been exposed to H<sub>2</sub>S gas.

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

Revised CM 6/27/2012

State of New Mexico  
Energy, Minerals and Natural Resources Department

Submit Electronically  
Via E-permitting

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

## NATURAL GAS MANAGEMENT PLAN

This Natural Gas Management Plan must be submitted with each Application for Permit to Drill (APD) for a new or recompleted well.

### Section 1 – Plan Description Effective May 25, 2021

**I. Operator:** OXY USA INC. **OGRID:** 16696 **Date:** 1 0 / 0 6 / 2 0 2 5

**II. Type:**  Original  Amendment due to  19.15.27.9.D(6)(a) NMAC  19.15.27.9.D(6)(b) NMAC  Other.

If Other, please describe: \_\_\_\_\_

**III. Well(s):** Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

Well Name	API	ULSTR	Footages	Anticipated Oil BBL/D	Anticipated Gas MCF/D	Anticipated Produced Water BBL/D
SEE ATTACHED						

**IV. Central Delivery Point Name:** Whomping Willow CTB [See 19.15.27.9(D)(1) NMAC]

**V. Anticipated Schedule:** Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

Well Name	API	Spud Date	TD Reached Date	Completion Commencement Date	Initial Flow Back Date	First Production Date
SEE ATTACHED						

**VI. Separation Equipment:**  Attach a complete description of how Operator will size separation equipment to optimize gas capture.

**VII. Operational Practices:**  Attach a complete description of the actions Operator will take to comply with the requirements of Subsection A through F of 19.15.27.8 NMAC.

**VIII. Best Management Practices:**  Attach a complete description of Operator's best management practices to minimize venting during active and planned maintenance.

**Section 2 – Enhanced Plan**  
**EFFECTIVE APRIL 1, 2022**

Beginning April 1, 2022, an operator that is not in compliance with its statewide natural gas capture requirement for the applicable reporting area must complete this section.

Operator certifies that it is not required to complete this section because Operator is in compliance with its statewide natural gas capture requirement for the applicable reporting area.

**IX. Anticipated Natural Gas Production:**

Well	API	Anticipated Average Natural Gas Rate MCF/D	Anticipated Volume of Natural Gas for the First Year MCF

**X. Natural Gas Gathering System (NGGS):**

Operator	System	ULSTR of Tie-in	Anticipated Gathering Start Date	Available Maximum Daily Capacity of System Segment Tie-in

**XI. Map.**  Attach an accurate and legible map depicting the location of the well(s), the anticipated pipeline route(s) connecting the production operations to the existing or planned interconnect of the natural gas gathering system(s), and the maximum daily capacity of the segment or portion of the natural gas gathering system(s) to which the well(s) will be connected.

**XII. Line Capacity.** The natural gas gathering system  will  will not have capacity to gather 100% of the anticipated natural gas production volume from the well prior to the date of first production.

**XIII. Line Pressure.** Operator  does  does not anticipate that its existing well(s) connected to the same segment, or portion, of the natural gas gathering system(s) described above will continue to meet anticipated increases in line pressure caused by the new well(s).

Attach Operator's plan to manage production in response to the increased line pressure.

**XIV. Confidentiality:**  Operator asserts confidentiality pursuant to Section 71-2-8 NMSA 1978 for the information provided in Section 2 as provided in Paragraph (2) of Subsection D of 19.15.27.9 NMAC, and attaches a full description of the specific information for which confidentiality is asserted and the basis for such assertion.

## Section 3 - Certifications

Effective May 25, 2021

Operator certifies that, after reasonable inquiry and based on the available information at the time of submittal:

Operator will be able to connect the well(s) to a natural gas gathering system in the general area with sufficient capacity to transport one hundred percent of the anticipated volume of natural gas produced from the well(s) commencing on the date of first production, taking into account the current and anticipated volumes of produced natural gas from other wells connected to the pipeline gathering system; or

Operator will not be able to connect to a natural gas gathering system in the general area with sufficient capacity to transport one hundred percent of the anticipated volume of natural gas produced from the well(s) commencing on the date of first production, taking into account the current and anticipated volumes of produced natural gas from other wells connected to the pipeline gathering system.

***If Operator checks this box, Operator will select one of the following:***

**Well Shut-In.**  Operator will shut-in and not produce the well until it submits the certification required by Paragraph (4) of Subsection D of 19.15.27.9 NMAC; or

**Venting and Flaring Plan.**  Operator has attached a venting and flaring plan that evaluates and selects one or more of the potential alternative beneficial uses for the natural gas until a natural gas gathering system is available, including:

- (a) power generation on lease;
- (b) power generation for grid;
- (c) compression on lease;
- (d) liquids removal on lease;
- (e) reinjection for underground storage;
- (f) reinjection for temporary storage;
- (g) reinjection for enhanced oil recovery;
- (h) fuel cell production; and
- (i) other alternative beneficial uses approved by the division.

## Section 4 - Notices

1. If, at any time after Operator submits this Natural Gas Management Plan and before the well is spud:

(a) Operator becomes aware that the natural gas gathering system it planned to connect the well(s) to has become unavailable or will not have capacity to transport one hundred percent of the production from the well(s), no later than 20 days after becoming aware of such information, Operator shall submit for OCD's approval a new or revised venting and flaring plan containing the information specified in Paragraph (5) of Subsection D of 19.15.27.9 NMAC; or

(b) Operator becomes aware that it has, cumulatively for the year, become out of compliance with its baseline natural gas capture rate or natural gas capture requirement, no later than 20 days after becoming aware of such information, Operator shall submit for OCD's approval a new or revised Natural Gas Management Plan for each well it plans to spud during the next 90 days containing the information specified in Paragraph (2) of Subsection D of 19.15.27.9 NMAC, and shall file an update for each Natural Gas Management Plan until Operator is back in compliance with its baseline natural gas capture rate or natural gas capture requirement.

2. OCD may deny or conditionally approve an APD if Operator does not make a certification, fails to submit an adequate venting and flaring plan which includes alternative beneficial uses for the anticipated volume of natural gas produced, or if OCD determines that Operator will not have adequate natural gas takeaway capacity at the time a well will be spud.

I certify that, after reasonable inquiry, the statements in and attached to this Natural Gas Management Plan are true and correct to the best of my knowledge and acknowledge that a false statement may be subject to civil and criminal penalties under the Oil and Gas Act.

Signature:	<i>Sara Guthrie</i>
Printed Name:	Sara Guthrie
Title:	Regulatory Advisor
E-mail Address:	sara_guthrie@oxy.com
Date:	10/6/2025
Phone:	713-497-2851

**OIL CONSERVATION DIVISION**  
**(Only applicable when submitted as a standalone form)**

Approved By:
Title:
Approval Date:
Conditions of Approval:

## III. Well(s)

Well Name	API	WELL LOCATION (ULSTR)	Footages	ANTICIPATED OIL BBL/D	ANTICIPATED GAS MCF/D	ANTICIPATED PROD WATER BBL/D
CEDAR CANYON 15_16 STATE COM 71H	Pending	B-17-T24S-R29E	890' FNL & 1411' FEL	3100	5500	3000
CEDAR CANYON 15_16 STATE COM 72H	Pending	B-17-T24S-R29E	920' FNL & 1411' FEL	3100	5500	3000
CEDAR CANYON 15_16 STATE COM 73H	Pending	B-17-T24S-R29E	950' FNL & 1411' FEL	3100	5500	3000
CEDAR CANYON 15_16 STATE COM 74H	Pending	I-15-T24S-R29E	1335' FSL & 770' FEL	3100	5500	3000
CEDAR CANYON 15_16 STATE COM 75H	Pending	P-15-T24S-R29E	1305' FSL & 770' FEL	3100	5500	3000
CEDAR CANYON 15_16 STATE COM 76H	Pending	P-15-T24S-R29E	1275' FSL & 770' FEL	3100	5500	3000

**V. Anticipated Schedule**

Well Name	API	Spud Date	TD Reached Date	Completion Commencement Date	Initial Flow Back Date	First Production Date
CEDAR CANYON 15_16 STATE COM 71H	Pending	TBD	TBD	TBD	TBD	TBD
CEDAR CANYON 15_16 STATE COM 72H	Pending	TBD	TBD	TBD	TBD	TBD
CEDAR CANYON 15_16 STATE COM 73H	Pending	TBD	TBD	TBD	TBD	TBD
CEDAR CANYON 15_16 STATE COM 74H	Pending	TBD	TBD	TBD	TBD	TBD
CEDAR CANYON 15_16 STATE COM 75H	Pending	TBD	TBD	TBD	TBD	TBD
CEDAR CANYON 15_16 STATE COM 76H	Pending	TBD	TBD	TBD	TBD	TBD

Central Delivery Point Name : Whomping Willow CTB

#### **Part VI. Separation Equipment**

Operator will size the flowback separator to handle 6,500 Bbls of fluid and 6 MMscfd which is more than the expected peak rates for these wells. Each separator is rated to 1440 psig, and pressure control valves and automated communication will cause the wells to shut in in the event of an upset at the facility, therefore no gas will be flared on pad during an upset. Current Oxy practices avoid use of flare or venting on pad, therefore if there is an upset or emergency condition at the facility, the wells will immediately shut down, and reassume production once the condition has cleared.

## **VII. Operational Practices**

### **Gathering System and Pipeline Notification**

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

### **Flowback Strategy**

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

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

## **VIII. Best Management Practices**

### Alternatives to Reduce Flaring

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

#### Power Generation – On lease

Only a portion of gas is consumed operating the generator, remainder of gas will be flared

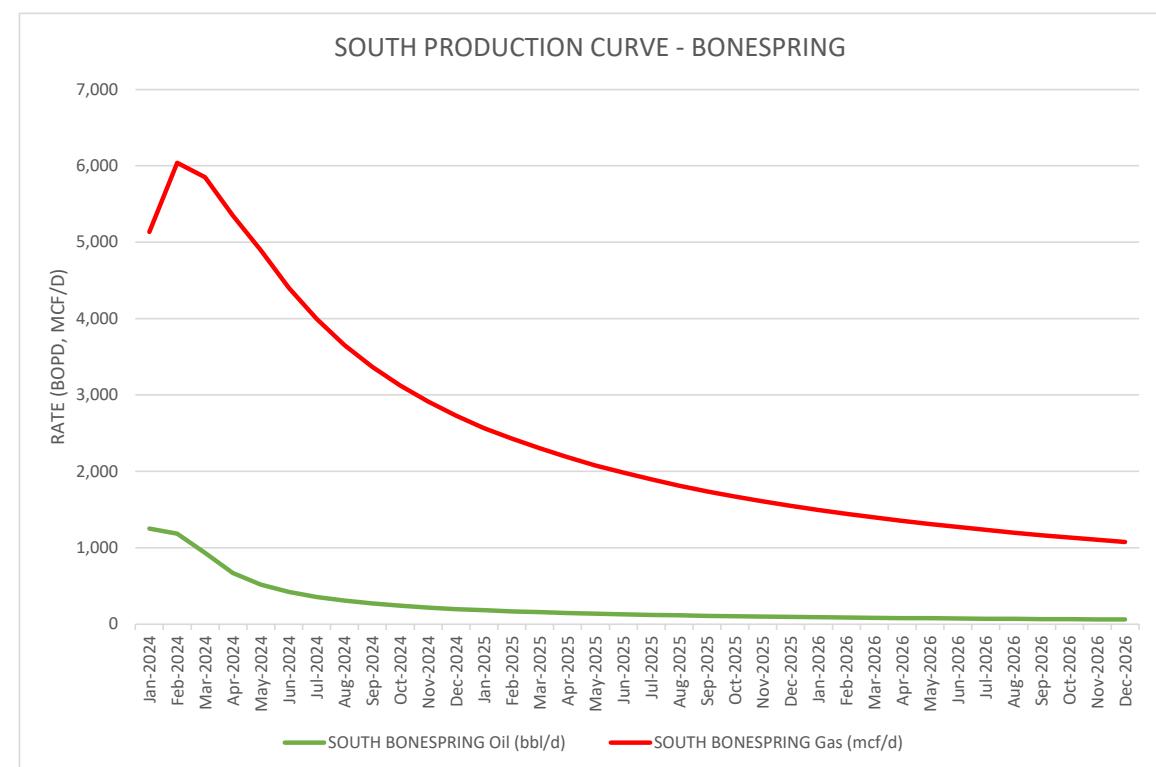
#### Compressed Natural Gas – On lease

Gas flared would be minimal, but might be uneconomical to operate when gas volume declines

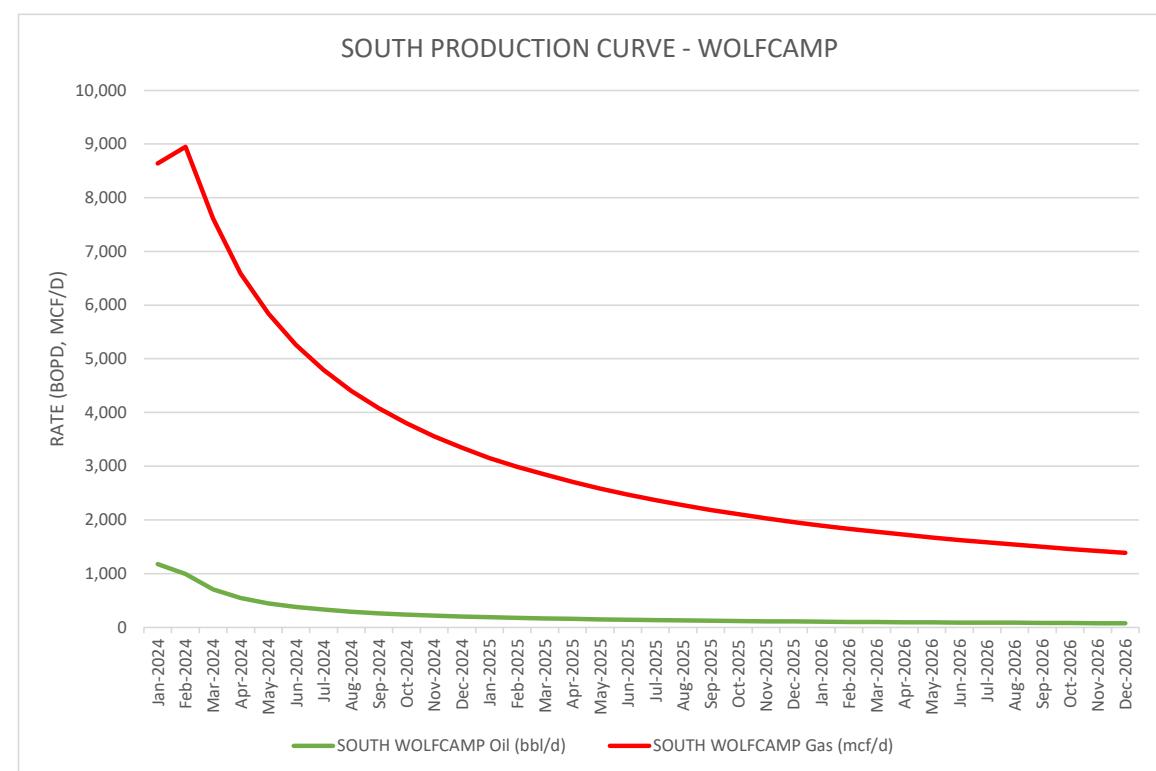
#### NGL Removal – On lease

Plants are expensive, residue gas is still flared, and uneconomical to operate when gas volume declines

SOUTH BONESPRING		
	Oil (bbl/d)	Gas (mcf/d)
Jan-2024	1,250	5,135
Feb-2024	1,184	6,041
Mar-2024	933	5,849
Apr-2024	670	5,349
May-2024	517	4,893
Jun-2024	421	4,401
Jul-2024	355	3,994
Aug-2024	306	3,652
Sep-2024	270	3,368
Oct-2024	240	3,125
Nov-2024	217	2,915
Dec-2024	197	2,731
Jan-2025	181	2,566
Feb-2025	167	2,426
Mar-2025	155	2,301
Apr-2025	145	2,184
May-2025	136	2,078
Jun-2025	127	1,982
Jul-2025	120	1,894
Aug-2025	114	1,812
Sep-2025	108	1,739
Oct-2025	102	1,670
Nov-2025	98	1,607
Dec-2025	93	1,549
Jan-2026	89	1,493
Feb-2026	85	1,444
Mar-2026	82	1,398
Apr-2026	79	1,353
May-2026	76	1,311
Jun-2026	73	1,271
Jul-2026	71	1,234
Aug-2026	68	1,198
Sep-2026	66	1,165
Oct-2026	64	1,133
Nov-2026	62	1,104
Dec-2026	60	1,075



SOUTH WOLFCAMP		
	Oil (bbl/d)	Gas (mcf/d)
Jan-2024	1,178	8,636
Feb-2024	995	8,951
Mar-2024	706	7,614
Apr-2024	544	6,588
May-2024	445	5,841
Jun-2024	377	5,261
Jul-2024	328	4,794
Aug-2024	291	4,402
Sep-2024	261	4,076
Oct-2024	238	3,797
Nov-2024	218	3,555
Dec-2024	201	3,343
Jan-2025	187	3,152
Feb-2025	175	2,990
Mar-2025	165	2,844
Apr-2025	156	2,708
May-2025	148	2,584
Jun-2025	140	2,471
Jul-2025	133	2,368
Aug-2025	127	2,272
Sep-2025	122	2,184
Oct-2025	117	2,104
Nov-2025	112	2,029
Dec-2025	108	1,959
Jan-2026	104	1,893
Feb-2026	101	1,834
Mar-2026	97	1,778
Apr-2026	94	1,725
May-2026	91	1,674
Jun-2026	89	1,626
Jul-2026	86	1,581
Aug-2026	84	1,538
Sep-2026	81	1,498
Oct-2026	79	1,460
Nov-2026	77	1,423
Dec-2026	75	1,389



## BOP Break Testing Request

OXY requests permission to adjust the BOP break testing requirements as per the agreement reached with OXY/BLM on April 4th, 2025.

**BOPE Break Testing is ONLY permitted for 5M BOPE or less (utilizing a 10M BOPE system.)**  
**Annular preventer must be tested to a minimum of 70% of BOPE working pressure and shall be higher than the MASP.**

BOP break test for the **intermediate or production** section under the following conditions:

- After a full BOP test is conducted.
- When skidding to drill an intermediate or production section which does not penetrate the deeper than the Wolf Camp formation (<5M).
- In the event any repairs or replacement of the BOPE is required, the BOPE shall test as per 3 CFR part 3170 Subpart 3172
- While in transfer between wells, the BOPE shall be secured by the hydraulic carrier or cradle.
- In the event break testing is not utilized, then a full BOPE test would be conducted.
- If the kill line is broken prior to skid, two tests will be performed.
  - 1) Wellhead flange, co-flex hose, kill line connections and upper pipe rams
  - 2) Wellhead flange, HCR valve, check valve, upper pipe rams
- If the kill line is not broken prior to skid, only one test will be performed.
  - 1) Wellhead flange, co-flex hose, check valve, upper pipe rams

### **Subject:** Request for a Variance Allowing Break Testing of a Blowout Preventer Stack

OXY USA Inc. (OXY) requests a variance to allow break testing of the Blowout Preventer (BOP) stack when skidding a drilling rig between wells on multi-well pads. This practice entails retesting only the connections of the **BOP** stack that have been disconnected during this operation and not a complete **BOP** test.

### **Background**

43 CFR part 3170 Subpart 3172 states that a **BOP** test must be performed whenever any seal subject to test pressure is broken. The current interpretation of the Bureau of Land Management (BLM) is this requires a complete **BOP** test and not just a test of the affected component. 43 CFR part 3170 Subpart 3172, Section I.D.2. states, "Some situations may exist either on a well-by-well basis or field-wide basis whereby it is commonly accepted practice to vary a particular minimum standard(s) established in this Order. This situation can be resolved by requesting a variance...". OXY feels the practice of break testing the **BOP** stack is such a situation. Therefore, as per 43 CFR part 3170 Subpart 3172, Section IV., OXY submits this request for the variance.

### **Supporting Rationale**

43 CFR part 3170 Subpart 3172 became effective on December 19, 1988, and has remained the standard for regulating BLM onshore drilling operations for almost 30 years. During this time there have been significant changes in drilling technology. **BLM** continues to use the variance request process to allow for the use of modern technology and acceptable engineering practices that have arisen since 43 CFR part 3170 Subpart 3172 was originally released. The drilling rig fleet OXY utilizes in New Mexico was built with many modern upgrades. One of which allows the rigs to skid between wells on multi-well pads. A part of this rig package is

a hydraulic winch system which safely installs and removes the BOP from the wellhead and carries it during skidding operations. This technology has made break testing a safe and reliable procedure.

American Petroleum Institute (API) standards, specifications and recommended practices are considered industry standards and are consistently utilized and referenced by the industry. 43 CFR part 3170 Subpart 3172 recognized API Recommended Practices (RP) 53 in its original development. API Standard 53, *Blowout Prevention Equipment Systems for Drilling Wells* (Fourth Edition, November 2012, Addendum 1, July 2016) recognizes break testing as an acceptable practice. Specifically, API Standard 53, Section 6.5.3.4.1.b states "Pressure tests on the well control equipment shall be conducted after the disconnection or repair of any pressure containment seal in the **BOP** stack, choke line, kill line, choke manifold, or wellhead assembly but limited to the affected component."

The Bureau of Safety and Environmental Enforcement (BSEE), Department of Interior, has also utilized the API standards, specifications and best practices in the development of its offshore oil and gas regulations and incorporates them by reference within its regulations. BSEE issued new offshore regulations under 30 CFR Part 250, *Oil and Gas and Sulphur Operations in the Outer Continental Shelf - Blowout Preventer Systems and Well Control*, which became effective on July 28, 2016. Section 250.737(d.1) states "Follow the testing requirements of API Standard 53". In addition, Section 250.737(d.8) has adopted language from API Standard 53 as it states "Pressure test affected **BOP** components following the disconnection or repair of any well-pressure containment seal in the wellhead or **BOP** stack assembly".

Break testing has been approved by the BLM in the past. See the Appendix for a Sundry Notice that was approved in 2015 by the Farmington Field Office. This approval granted permission for the operator to break test when skidding its Aztec 1000 rig on multi-well pads.

Oxy feels break testing and our current procedures meet the intent of 43 CFR part 3170 Subpart 3172 and often exceed it. We have not seen any evidence that break testing results in more components failing tests than seen on full BOP tests. As skidding operations take place within the 30-day full BOPE test window, the BOP shell and components such as the pipe rams and check valve get tested to the full rated working pressure more often. Therefore, there are more opportunities to ensure components are in good working order. Also, Oxy's standard requires complete BOP tests more often than that of 43 CFR part 3170 Subpart 3172. In addition to function testing the annular at least weekly and the pipe and blind rams on each trip, Oxy also performs a choke drill prior to drilling out every casing shoe. As a crew's training is a vital part of well control, this procedure to simulate step one of the Driller's Method exceeds the requirements of 43 CFR part 3170 Subpart 3172.

### Procedures

- 1) OXY would perform BOP break testing on multi-well pads where multiple intermediate or production sections can be drilled and cased within the 21-day BOP test window
- 2) After performing a complete BOP test on the first well and drilling and casing the hole section, three breaks would be made on the BOP.
  - Between the check valve and the kill line
  - Between the HCR valve and the co-flex hose or the co-flex hose and the manifold
  - Between the BOP flange and the wellhead
- 3) The BOP is then lifted and removed from the wellhead by the hydraulic winch system
- 4) After skidding to the next well, the BOP is moved to the wellhead by the hydraulic winch system and installed
- 5) The choke line and kill line are reconnected
- 6) A test plug is installed in the wellhead with a joint of drill pipe and the internal parts of the check valve are removed
- 7) A shell test is performed against the upper pipe rams testing all three breaks
- 8) The internal parts of the check valve are reinstalled and the HCR valve is closed. A second test is performed on them
- 9) These tests consist of a 250 psi low test and a high test to the value submitted in the APD or SN (e.g., 5000 psi)
- 10) Perform a function test of components not pressure tested to include the lower pipe rams, the blind rams and the annular
- 11) If this were a three well pad, the same three breaks on the BOP would be made and steps 4 through 11 would be repeated
- 12) A second break test would only be done if the third hole section could be completed within the 21-day BOP test window
- 13) If a second break test is performed, additional components that were not tested on the initial break test will be tested on this break test

### Notes:

- a. If any parts of the BOP are changed out or any additional breaks are made during the skidding operation, these affected components would also be tested as in step 9.
- b. As the choke manifold remains stationary during the skidding operation and the only break to the manifold is tested in step 8 above, no further testing of the manifold is done until the next full BOP test.

## Summary

OXY requests a variance to allow break testing of the BOP stack when skidding drilling rigs between wells on multi-well pads. API standards, specifications and recommended practices are considered industry standards and are consistently utilized and referenced by the industry and the BLM. API Standard 53 recognizes break testing as an acceptable practice and BSEE adopted language from this standard into its newly created 30 CFR Part 250 which also supports break testing. Due to this, OXY feels this request meets the intent of 43 CFR part 3170

## **Bradenhead Cement CBL Variance Request**

Oxy requests permission to adjust the CBL requirement after bradenhead cement jobs, on 7-5/8" intermediate casings, as per the agreement reached in the OXY/BLM meeting on September 5, 2019.

### **Three string wells:**

- CBL will be required on one well per pad
- If the pumped volume of cement is less than permitted in the APD, BLM will be notified and a CBL may be run
- Echometer will be used after bradenhead cement job to determine TOC before pumping top-out cement

### **Four string wells:**

- CBL is not required
- If the pumped volume of cement is less than permitted in the APD, BLM will be notified and a CBL may be run
- Echometer will be used after bradenhead cement job to determine TOC before pumping top-out cement

## Offline Cementing Variance Request

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

### 1. Cement Program

No changes to the cement program will take place for offline cementing.

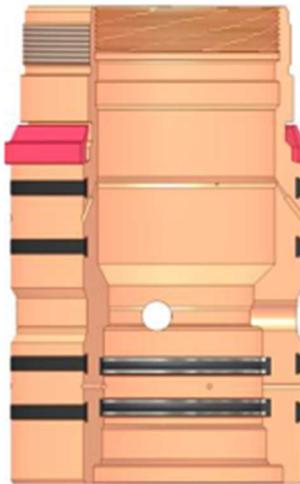
### 2. Offline Cementing Procedure

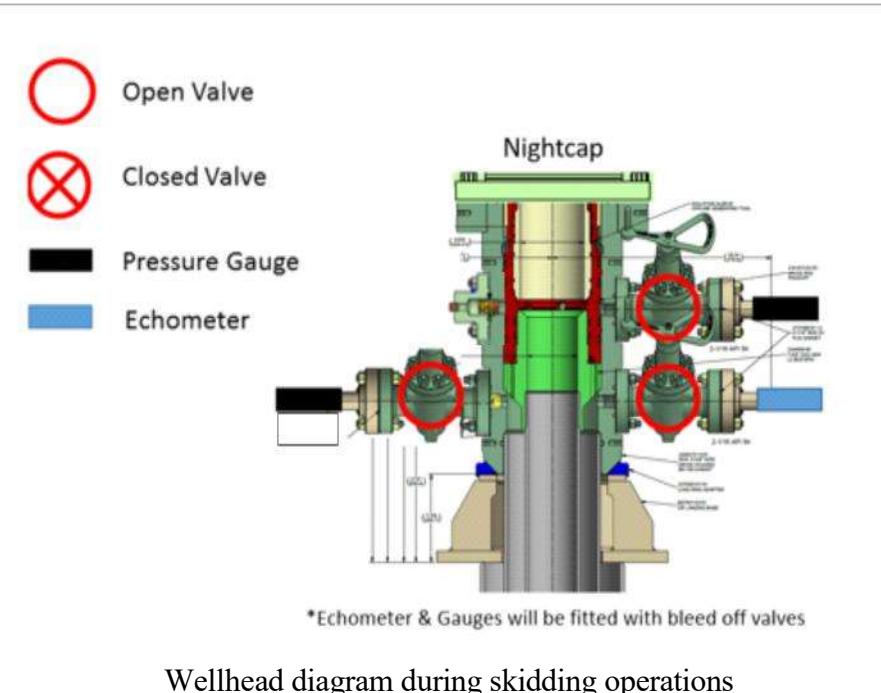
The operational sequence will be as follows:

1. Run casing as per normal operations. While running casing, conduct negative pressure test and confirm integrity of the float equipment (float collar and shoe)
2. Land casing with mandrel
3. Fill pipe with kill weight fluid, do not circulate through floats and confirm well is static
4. Set annular packoff shown below and pressure test to confirm integrity of the seal.

Pressure ratings of wellhead components and valves is 5,000 psi

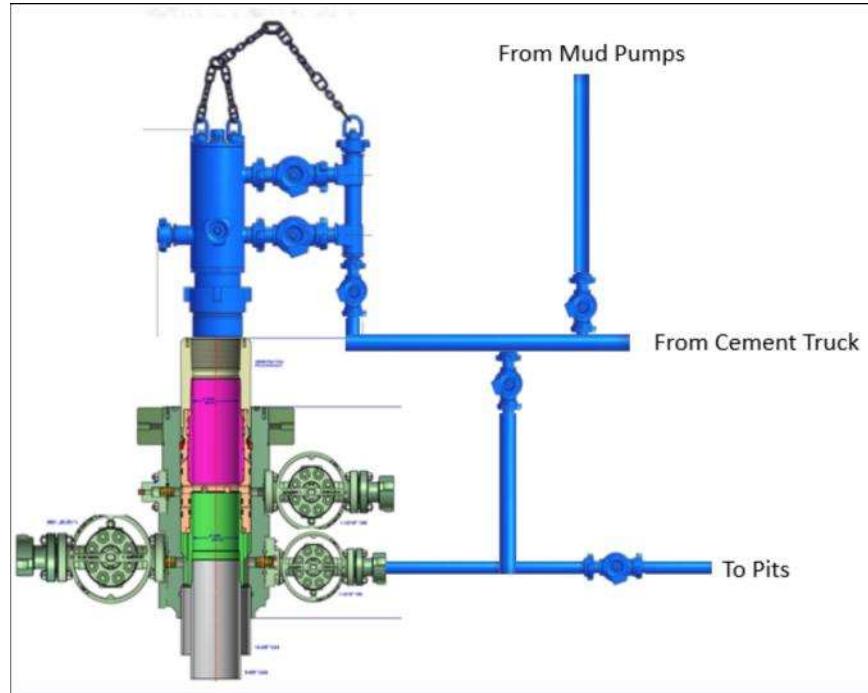
Annular packoff with both external and internal seals





Wellhead diagram during skidding operations

5. After confirmation of both annular barriers and internal barriers, nipple down BOP and install cap flange.
  - a. If any barrier fails to test, the BOP stack will not be nippled down until after the cement job is completed with cement 500ft above the highest formation capable of flow with kill weight mud above or after it has achieved 50 psi compressive strength if cannot be verified.
6. Skid rig to next well on pad.
7. Confirm well is static before removing cap flange, flange will not be removed and offline cementing operations will not commence until well is under control. If well is not static, casing outlet valves will provide access to both the casing ID and annulus. Rig or third party pump truck will kill well prior to cementing or nipping up for further remediation.
  - a. Well Control Plan
    - i. The Drillers Method will be the primary well control method to regain control of the wellbore prior to cementing, if wellbore conditions do not permit the drillers method other methods of well control may be used
    - ii. Rig pumps or a 3<sup>rd</sup> party pump will be tied into the upper casing valve to pump down the casing ID
    - iii. A high pressure return line will be rigged up to lower casing valve and run to choke manifold to control annular pressure
    - iv. Once influx is circulated out of the hole, kill weight mud will be circulated
    - v. Well will be confirmed static
    - vi. Once confirmed static, cap flange will be removed to allow for offline cementing operations to commence
8. Install offline cement tool
9. Rig up cement equipment



Wellhead diagram during offline cementing operations

10. Circulate bottoms up with cement truck
  - a. If gas is present on bottoms up, well will be shut in and returns rerouted through gas buster to handle entrained gas
  - b. Max anticipated time before circulating with cement truck is 6 hrs
11. Perform cement job taking returns from the annulus wellhead valve
12. Confirm well is static and floats are holding after cement job
13. Remove cement equipment, offline cement tools and install night cap with pressure gauge for monitoring.