

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENTFORM APPROVED
OMB NO. 1004-0137
Expires: January 31, 2018**SUNDRY NOTICES AND REPORTS ON WELLS**
*Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.*Carlsbad Field
OCD Artesia
NMOCD CONSERVATION

Lease Serial No.

NMNM13996

Indian, Allottee or Tribe Name

SUBMIT IN TRIPLICATE - Other instructions on page 2

ARTESIA DISTRICT

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

1. Type of Well

☒ Oil Well ☐ Gas Well ☐ Other

MAR 11 2019

8. Well Name and No.

HEIGHT CC 6_7 FEDERAL COM 31Y

2. Name of Operator

OXY USA INCORPORATED

Contact: DAVID STEWART

E-Mail: david_stewart@oxy.com

RECEIVED

9. API Well No.

30-015-45770

3a. Address

5 GREENWAY PLAZA SUITE 110
HOUSTON, TX 77046-0521

3b. Phone No. (include area code)

Ph: 432.685.5717

10. Field and Pool or Exploratory Area

PURPLE SAGE-WOLFCAMP (GAS)

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

Sec 6 T24S R29E 519FNL 732FWL
32.253586 N Lat, 104.030319 W Lon

11. County or Parish, State

EDDY COUNTY, NM

12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☒ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☐ Subsequent Report	☐ Alter Casing	☐ Hydraulic Fracturing	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	Change to Original A
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	PD

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleat horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompleat in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.

OXY USA Inc. respectfully requests to skid and move the Height CC 6-7 Federal Com #31H, API No. 30-015-45574, 44" southeast due to hole problems and excessive deviation in conductor. The Intent to P&A was verbally approved 2/18/19 and well was plugged to 80'. The remaining 80' of conductor will serve as a mousehole for the 31Y and will be filled with cement after drilling has been completed.

-128/2019: Engineering review completed by m. Hogue

This well will be replaced by the Height CC 6-7 Federal Com #31Y. Please see attached for the 3160-3, C-102, drilling plan, directional plan/plot, and site plan.

No additional surface disturbance is required for this well pad.

Sundry Notice to P&A was filed 2/21/19 - EC Transaction 455505 - Serial Number 950-27276

Accepted for record
NMOCD
up
3-1-19

14. I hereby certify that the foregoing is true and correct.

Electronic Submission #455515 verified by the BLM Well Information System

For OXY USA INCORPORATED, sent to the Carlsbad

Committed to AFMSS for processing by PRISCILLA PEREZ on 02/27/2019 (19PP1132SE)

Name (Printed/Typed) DAVID STEWART

Title REGULATORY ADVISOR

Signature (Electronic Submission)

Date 02/21/2019

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By

Title

Date

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

Office

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

(Instructions on page 2)

**** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ****

Additional data for EC transaction #455515 that would not fit on the form

32. Additional remarks, continued

Sundry Notice to spud well was filed 2/21/19 - EC Transaction 455484 - Serial Number 950-27287

Sundry Notice to swap wells was filed 2/14/19 - EC Transaction 454723 - Serial Number 950-26499.

Sundry Notice to move surface location was filed 1/10/19 - EC Transaction 448669 - Serial No.
950-21048

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
APPLICATION FOR PERMIT TO DRILL OR REENTER

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

1a Type of work ☒ DRILL ☐ REENTER 1b Type of Well ☒ Oil Well ☐ Gas Well ☐ Other 1c Type of Completion ☐ Hydraulic Fracturing ☒ Single Zone ☐ Multiple Zone		5 Lease Serial No NMNM13996 6 If Indian, Allottee or Tribe Name
2 Name of Operator OXY USA Inc.		7 If Unit or CA Agreement, Name and No 8 Lease Name and Well No Height CC 6-7 Federal Com 31Y
3a Address P.O. Box 50250 Midland, TX 79710	3b Phone No (include area code) 432-685-5717	9 API Well No 30-015- 10 Field and Pool, or Exploratory Purple Sage Wolfcamp
4 Location of Well (Report location clearly and in accordance with any State requirements *) At surface 519 FNL 732 FWL NWNW (4) Lat 32.2528755 Long -104.0299769 Sec 6 At proposed prod zone 20 FSL 330 FWL SWSW(4) Lat 32.2250709 Long -104.0311984 Sec 7		11 Sec., T R M or Blk and Survey or Area Sec 6 T24S R29E NMP
14 Distance in miles and direction from nearest town or post office* 15 miles		12 County or Parish Eddy
15 Distance from proposed* location to nearest property or lease line, ft (Also to nearest drig unit line, if any) 20'	16 No of acres in lease 199.71	17 Spacing Unit dedicated to this well 640
18 Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft 35	19 Proposed Depth 9848'V / 20844'M	20 BLM/BIA Bond No in file Fed: ESB000226
21 Elevations (Show whether DF, KDB, RT, GL, etc) 2964'	22 Approximate date work will start* After Permit Approval	23 Estimated duration 20days

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No 1, and the Hydraulic Fracturing rule per 43 CFR 3162 3-3 (as applicable)

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

25 Signature	Name (Printed/Typed) David Stewart	Date 02/21/2019
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Title Sr. Regulatory Advisor	david_stewart@oxy.com
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Approved by (Signature)	Name (Printed/Typed)	Date
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Title Sr. Regulatory Advisor	Office
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Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon

Conditions of approval, if any, are attached

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

Division I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
Division II
211 S. First St., Artesia, NM 88210
Phone: (575) 748-1281 Fax: (575) 748-9720
Division III
1037 Red Bank Rd., Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
Division IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

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

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

☐ AMENDED REPORT

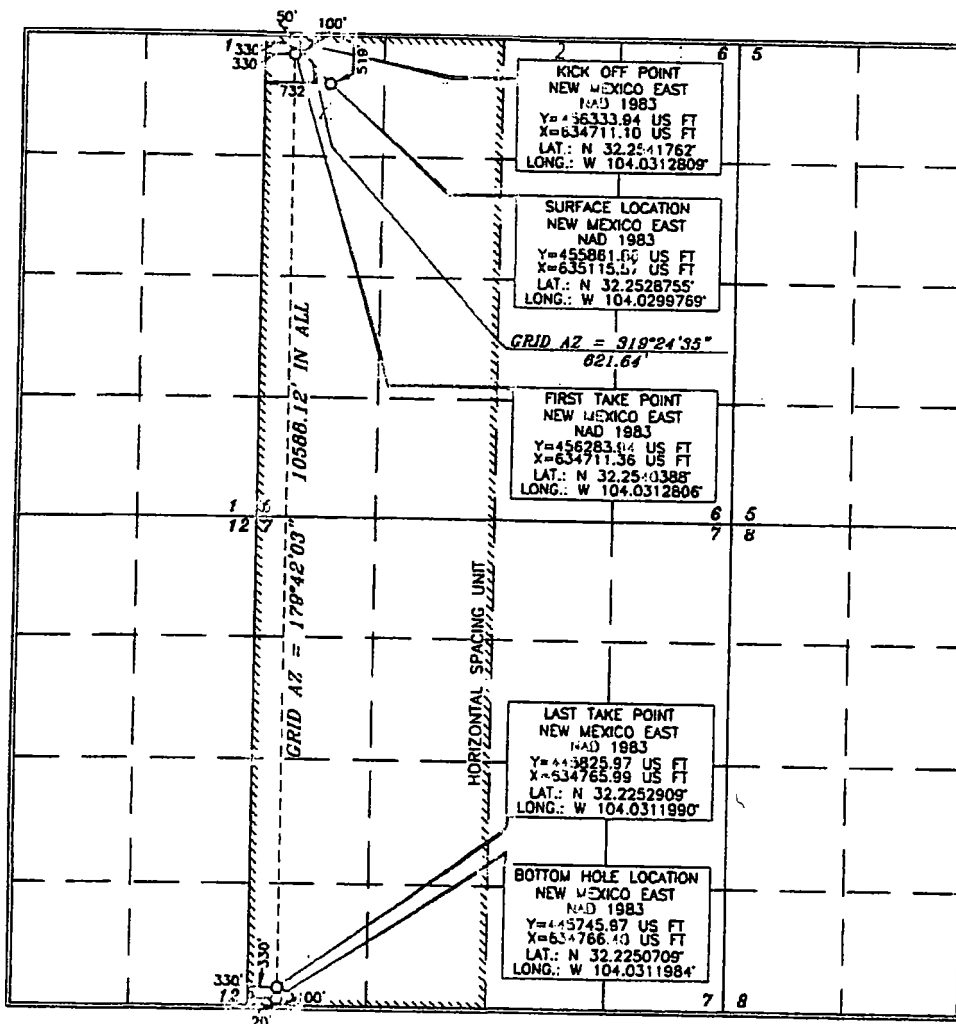
WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30015	Pool Code 98220	Pool Name Purple Sage Wolfound
Property Code 372.003	Property Name HEIGHT CC "6-7" FEDERAL COM	Well Number 31Y
UGRID No. 116696	Operator Name OXY USA INC.	Elevation 2933.6'

UL or lot no. 4	Section 6	Township 24 SOUTH	Range 29 EAST, N.M.P.M.	Lot Idn	Feet from the 519'	North/South line NORTH	Feet from the 732'	East/West line WEST	County EDDY
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Bottom Hole Location If Different From Surface									
UL or lot no. 4	Section 7	Township 24 SOUTH	Range 29 EAST, N.M.P.M.	Lot Idn	Feet from the 20'	North/South line SOUTH	Feet from the 330'	East/West line WEST	County EDDY
Dedicated Acres 637.33	Joint or Infill Y	Consolidation Code	Order No.						

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.



OPERATOR CERTIFICATION	
I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.	
Signature <i>David Stewart</i>	Date 2/21/19
Printed Name David Stewart	
E-mail Address david_stewart@oxy.com	

SURVEYOR CERTIFICATION	
I have personally examined the plat shown on this plat and certify that it is a true and correct copy of the actual survey made by me or under my supervision and that the same is true and correct to the best of my knowledge.	
Date of Survey February 3, 2018	
Signature of Surveyor <i>[Signature]</i>	
Professional Seal 15079	

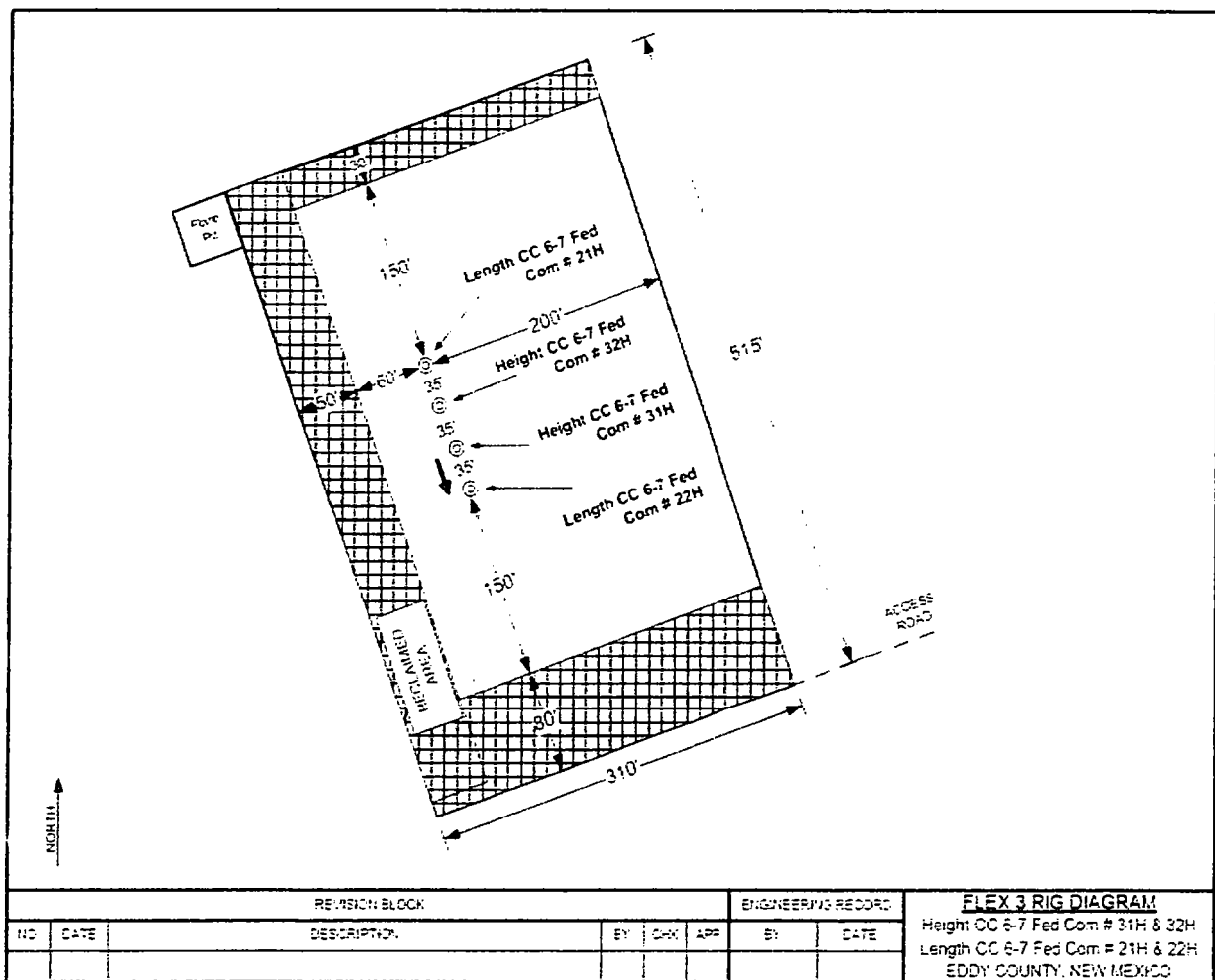
**Oxy USA Inc. – Height CC 6-7 Fed Com 31H
NOI Sundry – Skid Original Wellbore**

This is a notice of intent to skid the original wellbore for the Height CC 6-7 Fed Com 31H. The new wellbore will be the Height CC 6-7 Fed Com 31Y. Form 3160-3, a new plat, directional plan and drill plan are attached. The following well is affected:

API Number	Well Name	Lease Serial Number
3001545574	Height CC 6-7 Fed Com 31H	NMNM013996

Oxy will skid the wellbore 44 inches in the direction of the Length CC 6-7 Fed Com 22H. The image below shows the direction of the move.

A. Skid Direction



OXY USA Inc. - Height CC 6-7 Federal Com 31Y – Drill Plan

1. Geologic Formations

TVD of target	9848'	Pilot Hole Depth	N/A
MD at TD:	20844'	Deepest Expected fresh water:	205'

Delaware Basin

Formation	TVD - RKB	Expected Fluids
Rustler	205	
Salado	520	Salt
Castile	1,430	Salt
Lamar/Delaware	2,721	Oil/Gas/Brine
Bell Canyon	2,761	Oil/Gas/Brine
Cherry Canyon	3,573	Oil/Gas/Brine
Brushy Canyon	4,806	Losses
Bone Spring	6,412	Oil/Gas
1st Bone Spring	7,450	Oil/Gas
2nd Bone Spring	8,204	Oil/Gas
3rd Bone Spring	9,314	Oil/Gas
Wolfcamp	9,667	Oil/Gas

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

2. Casing Program

Hole Size (in)	Casing Interval		Csg. Size (in)	Weight (lbs)	Grade	Conn.	SF		Body SF Tension	Joint SF Tension
	From (ft)	To (ft)					Collapse	SF Burst		
14.75	0	460	10.75	40.5	J-55	BTC	1.125	1.2	1.4	1.4
9.875	0	9456	7.625	26.4	L-80 HC	BTC	1.125	1.2	1.4	1.4
6.75	0	20844	5.5	20	P-110	DQX	1.125	1.2	1.4	1.4
SF Values will meet or Exceed										

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

*Oxy requests the option to set casing shallower yet still below the salts if losses or hole conditions require this. Cement volumes may be adjusted if casing is set shallower and a DV tool may be run in case hole conditions merit pumping a second stage cement job to comply with permitted top of cement. If cement circulated to surface during first stage, we will drop a cancellation cone and not pump the second stage.

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

OXY USA Inc. - Height CC 6-7 Federal Com 31Y – Drill Plan

Annular Clearance Variance Request

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

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

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

OXY USA Inc. - Height CC 6-7 Federal Com 31Y -- Drill Plan

3. Cementing Program

Casing String	# Sks	Wt. (lb/gal)	Yld (ft ³ /sack)	H ₂ O (gal/sk)	500# Comp. Strength (hours)	Slurry Description
Surface (Lead)	N/A	N/A	N/A	N/A	N/A	N/A
Surface (Tail)	371	14.8	1.33	6.365	5:26	Class C Cement, Accelerator
Intermediate 1st Stage (Lead)	N/A	N/A	N/A	N/A	N/A	N/A
Intermediate 1st Stage (Tail)	609	13.2	1.65	8.640	11:54	Class H Cement, Retarder, Dispersant, Salt
Intermediate 2nd Stage (Tail Slurry) to be pumped as Bradenhead Squeeze from surface, down the Intermediate annulus						
Intermediate 2nd Stage (Lead)	N/A	N/A	N/A	N/A	N/A	N/A
Intermediate 2nd Stage (Tail)	622	12.9	1.92	10.41	23:10	Class C Cement, Accelerator
Production (Lead)	N/A	N/A	N/A	N/A	N/A	N/A
Production (Tail)	871	13.2	1.38	6.686	3:39	Class H Cement, Retarder, Dispersant, Salt

Casing String	Top (ft)	Bottom (ft)	% Excess
Surface (Lead)	N/A	N/A	N/A
Surface (Tail)	0	460	100%
Intermediate 1st Stage (Lead)	N/A	N/A	N/A
Intermediate 1st Stage (Tail)	5056	9456	5%
Intermediate 2nd Stage (Lead)	N/A	N/A	N/A
Intermediate 2nd Stage (Tail)	0	5056	10%
Production (Lead)	N/A	N/A	N/A
Production (Tail)	8956	20844	20%

OXY requests to pump a two stage Intermediate casing cement job with the first stage being pumped conventionally with the calculated TOC @ the Brushy Canyon and the second stage performed as a bradenhead squeeze with planned cement from the top of the Brushy Canyon to Surface.

OXY USA Inc. - Height CC 6-7 Federal Com 31Y – Drill Plan

4. Pressure Control Equipment

BOP installed and tested before drilling which hole?	Size?	Min. Required WP	Type	✓	Tested to:
9.875" Hole	13-5/8"	3M	Annular	✓	70% of working pressure
		3M	Blind Ram	✓	250 psi / 3000 psi
			Pipe Ram		
			Double Ram	✓	
			Other*		
6.75" Hole	13-5/8"	5M	Annular	✓	70% of working pressure
		5M	Blind Ram	✓	250 psi / 5000 psi
			Pipe Ram		
			Double Ram	✓	
			Other*		

*Specify if additional ram is utilized.

Oxy will utilize a 5M annular with a 10M BOPE stack. The BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all the components installed will be functional and tested.

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

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

OXY USA Inc. - Height CC 6-7 Federal Com 31Y – Drill Plan

BOP Break Testing Request

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

- After a full BOP test is conducted on the first well on the pad.
- When skidding to drill an intermediate section that does not penetrate into the Wolfcamp.
- Full BOP test will be required prior to drilling any production hole.

5. Mud Program

Depth		Type	Weight (ppg)	Viscosity	Water Loss
From (ft)	To (ft)				
0	460	Water-Based Mud	8.6-8.8	40-60	N/C
460	9456	Saturated Brine-Based or Oil-Based Mud	8.0-10.0	35-45	N/C
9456	20844	Water-Based or Oil-Based Mud	9.5-12.0	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	
No	CBL	
Yes	Mud log	ICP - TD
No	PEX	

OXY USA Inc. - Height CC 6-7 Federal Com 31Y – Drill Plan

7. Drilling Conditions

Condition	Specify what type and where?
BH Pressure at deepest TVD	6146 psi
Abnormal Temperature	No
BH Temperature at deepest TVD	159°F

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

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

8. Other facets of operation

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

Total estimated cuttings volume: 1453.5 bbls.

9. Company Personnel

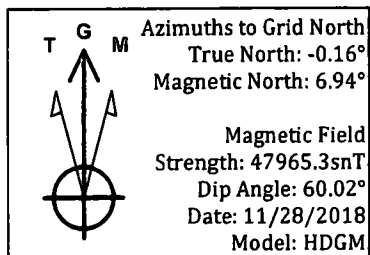
Name	Title	Office Phone	Mobile Phone
Christopher Hollis	Drilling Engineer	713-350-4754	713-380-7754
William Turner	Drilling Engineer Supervisor	713-350-4951	661-817-4586
Simon Benavides	Drilling Superintendent	713-522-8652	281-684-6897
John Willis	Drilling Manager	713-366-5556	713-259-1417



Project: PRD NM DIRECTIONAL PLANS (NAD 1983)
 Site: HEIGHT CC 6_7 FED COM
 Well: HEIGHT CC 6_7 FEDERAL COM 31Y
 Wellbore: Wellbore #1
 Design: Permitting Plan

PROJECT DETAILS: NM DIRECTIONAL PLANS (NAD 1983)

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

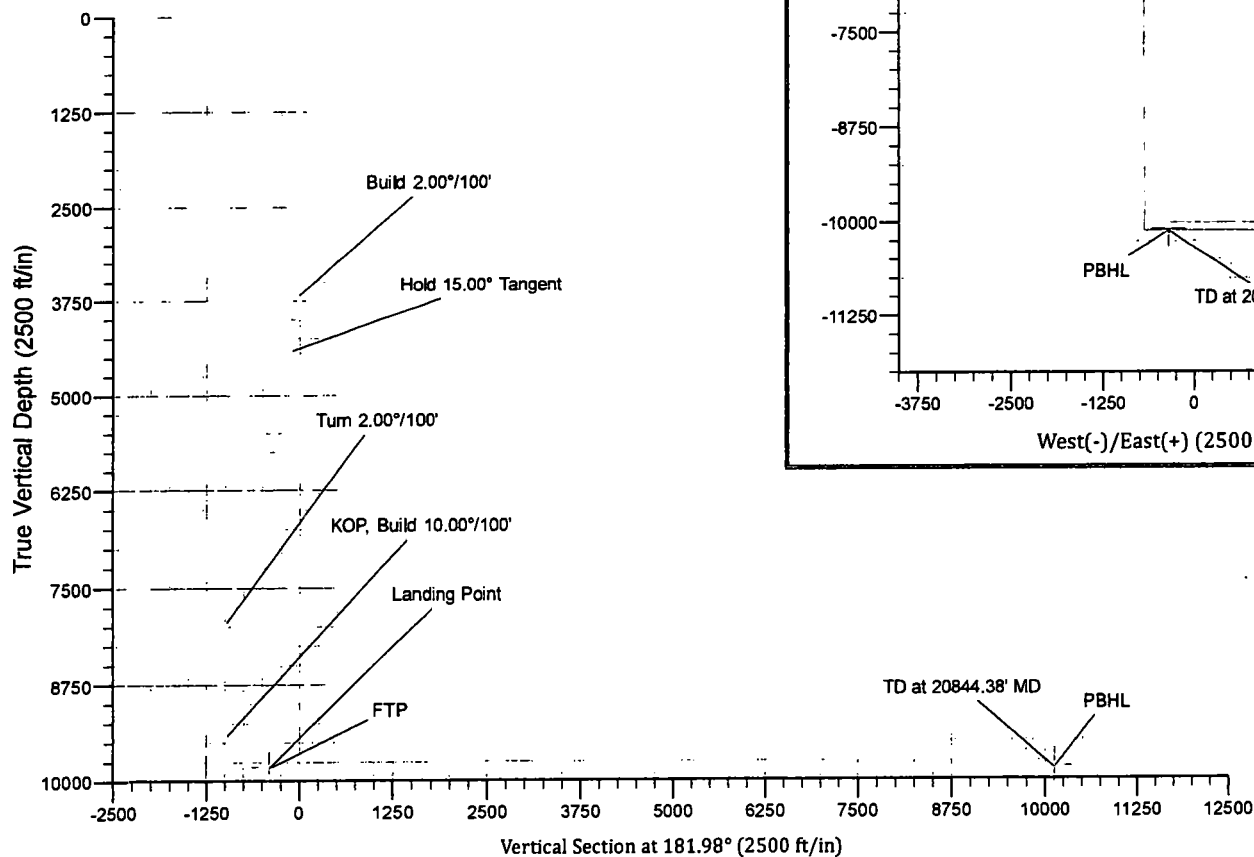
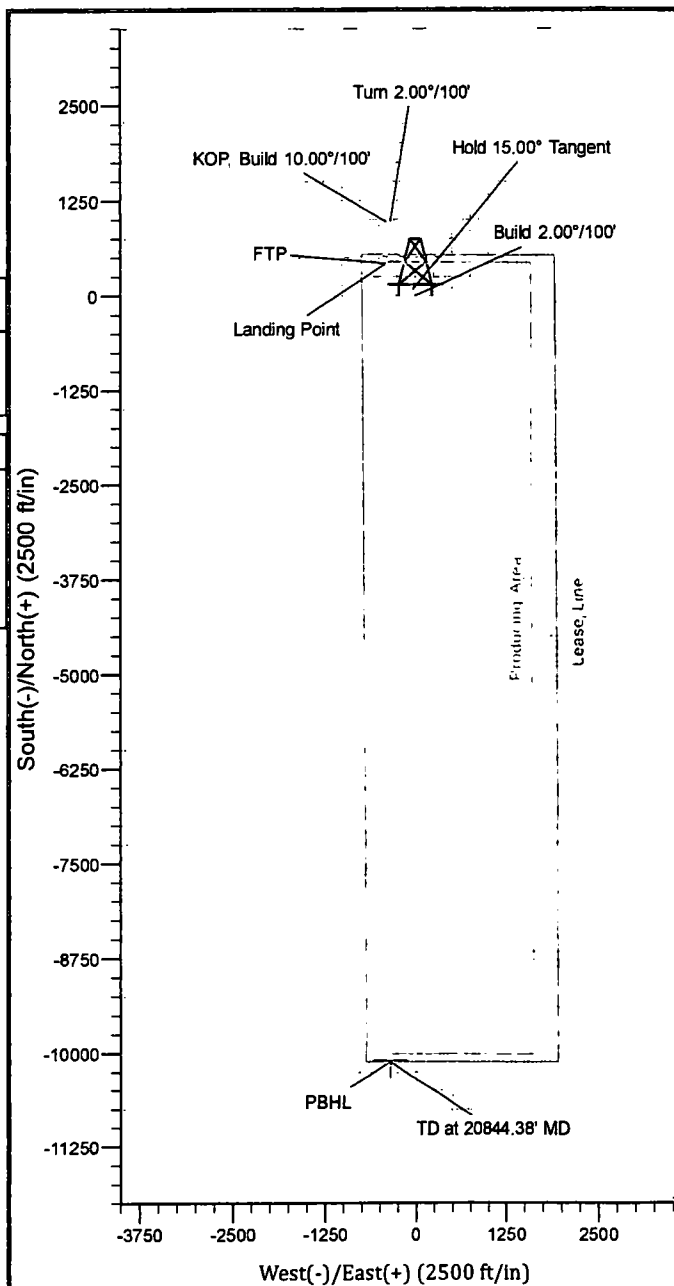


WELL DETAILS: HEIGHT CC 6_7 FEDERAL COM 31Y

+N-S	+E-W	North	Ground Level	2963.60	Latitude	Longitude
0.00	0.00	455861.88	Easting	635115.57	32° 15' 10.351735 N	104° 1' 47.916702 W

SECTION DETAILS

MD	Inc	Azi	TVD	+N-S	+E-W	Dleg	TFace	VFace	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
3673.00	0.00	0.00	3673.00	0.00	0.00	0.00	0.00	0.00	Build 2.00°/100'
4423.22	15.00	340.77	4414.67	92.22	-32.16	2.00	340.77	-91.06	Hold 15.00° Tangent
8077.02	15.00	340.77	7943.90	985.41	-343.65	0.00	0.00	-872.97	Turn 2.00°/100'
9556.35	15.00	179.70	9405.44	974.54	-407.13	2.00	-170.21	-959.92	KOP, Build 10.00°/100'
10305.37	89.90	179.70	9830.10	422.09	-404.24	10.00	0.00	-407.90	Landing Point
20844.38	89.90	179.70	9848.10	-10116.75	-349.20	0.00	0.00	10122.77	TD at 20844.38' MD



OXY

PRD NM DIRECTIONAL PLANS (NAD 1983)

HEIGHT CC 6_7 FED COM

HEIGHT CC 6_7 FEDERAL COM 31Y

Wellbore #1

Plan: Permitting Plan

Standard Planning Report

20 February, 2019

Database: HOPSPP
Company: ENGINEERING DESIGNS
Project: PRD NM DIRECTIONAL PLANS (NAD 1983)
Site: HEIGHT CC 6_7 FED COM
Well: HEIGHT CC 6_7 FEDERAL COM 31Y
Wellbore: Wellbore #1
Design: Permitting Plan

Local Co-ordinate Reference: Well HEIGHT CC 6_7 FEDERAL COM 31Y
TVD Reference: RKB=26.5' @ 2990.10ft
MD Reference: RKB=26.5' @ 2990.10ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Project	PRD NM DIRECTIONAL PLANS (NAD 1983)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		Using geodetic scale factor

Site	HEIGHT CC 6_7 FED COM			
Site Position:		Northing:	0.00 usft	Latitude: 30° 59' 18.403714 N
From:	Map	Easting:	0.00 usft	Longitude: 106° 3' 38.987298 W
Position Uncertainty:	50.00 ft	Slot Radius:	13.200 in	Grid Convergence: -0.89 °

Well	HEIGHT CC 6_7 FEDERAL COM 31Y			
Well Position	+N/-S	455,751.22 ft	Northing:	455,861.88 usft
	+E/-W	634,961.39 ft	Easting:	635,115.57 usft
Position Uncertainty		2.00 ft	Wellhead Elevation:	0.00 ft
			Ground Level:	2,963.60 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	11/28/2018	7.10	60.02	47,965

Design	Permitting Plan			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	181.98

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,673.00	0.00	0.00	3,673.00	0.00	0.00	0.00	0.00	0.00	0.00	
4,423.22	15.00	340.77	4,414.67	92.22	-32.16	2.00	2.00	0.00	340.77	
8,077.02	15.00	340.77	7,943.90	985.41	-343.65	0.00	0.00	0.00	0.00	
9,556.35	15.00	179.70	9,405.44	974.54	-407.13	2.00	0.00	-10.89	-170.21	
10,305.37	89.90	179.70	9,830.10	422.09	-404.24	10.00	10.00	0.00	0.00	FTP (Height CC 6_7
20,844.38	89.90	179.70	9,848.10	-10,116.75	-349.20	0.00	0.00	0.00	0.00	PBHL (Height CC

Database: HOPSP
Company: ENGINEERING DESIGNS
Project: PRD NM DIRECTIONAL PLANS (NAD 1983)
Site: HEIGHT CC 6_7 FED COM
Well: HEIGHT CC 6_7 FEDERAL COM 31Y
Wellbore: Wellbore #1
Design: Permitting Plan

Local Co-ordinate Reference: Well HEIGHT CC 6_7 FEDERAL COM 31Y
TVD Reference: RKB=26.5' @ 2990.10ft
MD Reference: RKB=26.5' @ 2990.10ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00
3,673.00	0.00	0.00	3,673.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.54	340.77	3,700.00	0.12	-0.04	-0.12	2.00	2.00	0.00
3,800.00	2.54	340.77	3,799.96	2.66	-0.93	-2.62	2.00	2.00	0.00
3,900.00	4.54	340.77	3,899.76	8.49	-2.96	-8.38	2.00	2.00	0.00
4,000.00	6.54	340.77	3,999.29	17.60	-6.14	-17.38	2.00	2.00	0.00
4,100.00	8.54	340.77	4,098.42	29.99	-10.46	-29.61	2.00	2.00	0.00
4,200.00	10.54	340.77	4,197.03	45.64	-15.92	-45.06	2.00	2.00	0.00
4,300.00	12.54	340.77	4,295.01	64.53	-22.50	-63.71	2.00	2.00	0.00
4,400.00	14.54	340.77	4,392.22	86.63	-30.21	-85.54	2.00	2.00	0.00
4,423.22	15.00	340.77	4,414.67	92.22	-32.16	-91.06	2.00	2.00	0.00
4,500.00	15.00	340.77	4,488.84	110.99	-38.71	-109.59	0.00	0.00	0.00
4,600.00	15.00	340.77	4,585.43	135.44	-47.23	-133.73	0.00	0.00	0.00
4,700.00	15.00	340.77	4,682.02	159.88	-55.76	-157.87	0.00	0.00	0.00
4,800.00	15.00	340.77	4,778.61	184.33	-64.28	-182.00	0.00	0.00	0.00
4,900.00	15.00	340.77	4,875.20	208.78	-72.81	-206.14	0.00	0.00	0.00
5,000.00	15.00	340.77	4,971.79	233.22	-81.33	-230.28	0.00	0.00	0.00
5,100.00	15.00	340.77	5,068.38	257.67	-89.86	-254.41	0.00	0.00	0.00

Database: HOPSPP
Company: ENGINEERING DESIGNS
Project: PRD NM DIRECTIONAL PLANS (NAD 1983)
Site: HEIGHT CC 6_7 FED COM
Well: HEIGHT CC 6_7 FEDERAL COM 31Y
Wellbore: Wellbore #1
Design: Permitting Plan

Local Co-ordinate Reference:
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:

Well HEIGHT CC 6_7 FEDERAL COM 31Y
RKB=26.5' @ 2990.10ft
RKB=26.5' @ 2990.10ft
Grid
Minimum Curvature

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
5,200.00	15.00	340.77	5,164.97	282.11	-98.38	-278.55	0.00	0.00	0.00
5,300.00	15.00	340.77	5,261.56	306.56	-106.91	-302.69	0.00	0.00	0.00
5,400.00	15.00	340.77	5,358.15	331.00	-115.43	-326.82	0.00	0.00	0.00
5,500.00	15.00	340.77	5,454.74	355.45	-123.96	-350.96	0.00	0.00	0.00
5,600.00	15.00	340.77	5,551.33	379.89	-132.49	-375.10	0.00	0.00	0.00
5,700.00	15.00	340.77	5,647.92	404.34	-141.01	-399.23	0.00	0.00	0.00
5,800.00	15.00	340.77	5,744.51	428.78	-149.54	-423.37	0.00	0.00	0.00
5,900.00	15.00	340.77	5,841.11	453.23	-158.06	-447.51	0.00	0.00	0.00
6,000.00	15.00	340.77	5,937.70	477.67	-166.59	-471.64	0.00	0.00	0.00
6,100.00	15.00	340.77	6,034.29	502.12	-175.11	-495.78	0.00	0.00	0.00
6,200.00	15.00	340.77	6,130.88	526.56	-183.64	-519.92	0.00	0.00	0.00
6,300.00	15.00	340.77	6,227.47	551.01	-192.16	-544.05	0.00	0.00	0.00
6,400.00	15.00	340.77	6,324.06	575.46	-200.69	-568.19	0.00	0.00	0.00
6,500.00	15.00	340.77	6,420.65	599.90	-209.21	-592.33	0.00	0.00	0.00
6,600.00	15.00	340.77	6,517.24	624.35	-217.74	-616.46	0.00	0.00	0.00
6,700.00	15.00	340.77	6,613.83	648.79	-226.26	-640.60	0.00	0.00	0.00
6,800.00	15.00	340.77	6,710.42	673.24	-234.79	-664.74	0.00	0.00	0.00
6,900.00	15.00	340.77	6,807.01	697.68	-243.31	-688.87	0.00	0.00	0.00
7,000.00	15.00	340.77	6,903.60	722.13	-251.84	-713.01	0.00	0.00	0.00
7,100.00	15.00	340.77	7,000.19	746.57	-260.36	-737.15	0.00	0.00	0.00
7,200.00	15.00	340.77	7,096.78	771.02	-268.89	-761.28	0.00	0.00	0.00
7,300.00	15.00	340.77	7,193.37	795.46	-277.41	-785.42	0.00	0.00	0.00
7,400.00	15.00	340.77	7,289.96	819.91	-285.94	-809.56	0.00	0.00	0.00
7,500.00	15.00	340.77	7,386.56	844.35	-294.46	-833.69	0.00	0.00	0.00
7,600.00	15.00	340.77	7,483.15	868.80	-302.99	-857.83	0.00	0.00	0.00
7,700.00	15.00	340.77	7,579.74	893.25	-311.51	-881.97	0.00	0.00	0.00
7,800.00	15.00	340.77	7,676.33	917.69	-320.04	-906.10	0.00	0.00	0.00
7,900.00	15.00	340.77	7,772.92	942.14	-328.56	-930.24	0.00	0.00	0.00
8,000.00	15.00	340.77	7,869.51	966.58	-337.09	-954.38	0.00	0.00	0.00
8,077.02	15.00	340.77	7,943.90	985.41	-343.65	-972.97	0.00	0.00	0.00
8,100.00	14.55	340.46	7,966.12	990.94	-345.60	-978.43	2.00	-1.97	-1.35
8,200.00	12.59	338.86	8,063.33	1,012.94	-353.73	-1,000.14	2.00	-1.96	-1.61
8,300.00	10.64	336.67	8,161.28	1,031.58	-361.32	-1,018.50	2.00	-1.95	-2.19
8,400.00	8.71	333.51	8,259.85	1,046.83	-368.35	-1,033.50	2.00	-1.93	-3.15
8,500.00	6.82	328.61	8,358.93	1,058.67	-374.82	-1,045.11	2.00	-1.89	-4.90
8,600.00	5.02	320.10	8,458.40	1,067.10	-380.71	-1,053.33	2.00	-1.80	-8.51
8,700.00	3.44	303.06	8,558.12	1,072.08	-386.03	-1,058.13	2.00	-1.58	-17.04
8,800.00	2.55	267.82	8,658.00	1,073.64	-390.76	-1,059.52	2.00	-0.89	-35.23
8,900.00	3.02	226.81	8,757.89	1,071.75	-394.90	-1,057.49	2.00	0.48	-41.01
9,000.00	4.45	204.74	8,857.68	1,066.42	-398.45	-1,052.04	2.00	1.43	-22.07
9,100.00	6.20	194.17	8,957.24	1,057.66	-401.39	-1,043.19	2.00	1.75	-10.57
9,200.00	8.07	188.35	9,056.47	1,045.49	-403.74	-1,030.94	2.00	1.87	-5.82
9,300.00	9.98	184.73	9,155.22	1,029.90	-405.47	-1,015.30	2.00	1.92	-3.62
9,400.00	11.93	182.27	9,253.40	1,010.93	-406.59	-996.31	2.00	1.95	-2.46
9,500.00	13.89	180.50	9,350.87	988.60	-407.11	-973.97	2.00	1.96	-1.77
9,556.35	15.00	179.70	9,405.44	974.54	-407.13	-959.92	2.00	1.97	-1.42
9,600.00	19.36	179.70	9,447.12	961.65	-407.06	-947.04	10.00	10.00	0.00
9,700.00	29.36	179.70	9,538.10	920.45	-406.85	-905.87	10.00	10.00	0.00
9,800.00	39.36	179.70	9,620.54	864.08	-406.55	-849.54	10.00	10.00	0.00
9,900.00	49.36	179.70	9,691.94	794.25	-406.19	-779.76	10.00	10.00	0.00
10,000.00	59.36	179.70	9,750.13	713.08	-405.76	-698.65	10.00	10.00	0.00
10,100.00	69.36	179.70	9,793.34	623.03	-405.29	-608.68	10.00	10.00	0.00
10,200.00	79.36	179.70	9,820.26	526.86	-404.79	-512.58	10.00	10.00	0.00
10,300.00	89.36	179.70	9,830.07	427.47	-404.27	-413.27	10.00	10.00	0.00

Database: HOPSP
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Site: HEIGHT CC 6_7 FED COM
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Wellbore: Wellbore #1
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Local Co-ordinate Reference:
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Survey Calculation Method:

Well HEIGHT CC 6_7 FEDERAL COM 31Y
RKB=26.5' @ 2990.10ft
RKB=26.5' @ 2990.10ft
Grid
Minimum Curvature

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)
10,305.37	89.90	179.70	9,830.10	422.09	-404.24	-407.90	10.00	10.00	0.00
10,400.00	89.90	179.70	9,830.26	327.47	-403.75	-313.35	0.00	0.00	0.00
10,500.00	89.90	179.70	9,830.43	227.47	-403.23	-213.43	0.00	0.00	0.00
10,600.00	89.90	179.70	9,830.60	127.47	-402.70	-113.51	0.00	0.00	0.00
10,700.00	89.90	179.70	9,830.77	27.48	-402.18	-13.58	0.00	0.00	0.00
10,800.00	89.90	179.70	9,830.95	-72.52	-401.66	86.34	0.00	0.00	0.00
10,900.00	89.90	179.70	9,831.12	-172.52	-401.14	186.26	0.00	0.00	0.00
11,000.00	89.90	179.70	9,831.29	-272.52	-400.62	286.18	0.00	0.00	0.00
11,100.00	89.90	179.70	9,831.46	-372.52	-400.09	386.10	0.00	0.00	0.00
11,200.00	89.90	179.70	9,831.63	-472.52	-399.57	486.02	0.00	0.00	0.00
11,300.00	89.90	179.70	9,831.80	-572.52	-399.05	585.94	0.00	0.00	0.00
11,400.00	89.90	179.70	9,831.97	-672.51	-398.53	685.86	0.00	0.00	0.00
11,500.00	89.90	179.70	9,832.14	-772.51	-398.00	785.78	0.00	0.00	0.00
11,600.00	89.90	179.70	9,832.31	-872.51	-397.48	885.70	0.00	0.00	0.00
11,700.00	89.90	179.70	9,832.48	-972.51	-396.96	985.62	0.00	0.00	0.00
11,800.00	89.90	179.70	9,832.65	-1,072.51	-396.44	1,085.55	0.00	0.00	0.00
11,900.00	89.90	179.70	9,832.82	-1,172.51	-395.91	1,185.47	0.00	0.00	0.00
12,000.00	89.90	179.70	9,832.99	-1,272.51	-395.39	1,285.39	0.00	0.00	0.00
12,100.00	89.90	179.70	9,833.17	-1,372.50	-394.87	1,385.31	0.00	0.00	0.00
12,200.00	89.90	179.70	9,833.34	-1,472.50	-394.35	1,485.23	0.00	0.00	0.00
12,300.00	89.90	179.70	9,833.51	-1,572.50	-393.83	1,585.15	0.00	0.00	0.00
12,400.00	89.90	179.70	9,833.68	-1,672.50	-393.30	1,685.07	0.00	0.00	0.00
12,500.00	89.90	179.70	9,833.85	-1,772.50	-392.78	1,784.99	0.00	0.00	0.00
12,600.00	89.90	179.70	9,834.02	-1,872.50	-392.26	1,884.91	0.00	0.00	0.00
12,700.00	89.90	179.70	9,834.19	-1,972.49	-391.74	1,984.83	0.00	0.00	0.00
12,800.00	89.90	179.70	9,834.36	-2,072.49	-391.21	2,084.76	0.00	0.00	0.00
12,900.00	89.90	179.70	9,834.53	-2,172.49	-390.69	2,184.68	0.00	0.00	0.00
13,000.00	89.90	179.70	9,834.70	-2,272.49	-390.17	2,284.60	0.00	0.00	0.00
13,100.00	89.90	179.70	9,834.87	-2,372.49	-389.65	2,384.52	0.00	0.00	0.00
13,200.00	89.90	179.70	9,835.04	-2,472.49	-389.13	2,484.44	0.00	0.00	0.00
13,300.00	89.90	179.70	9,835.21	-2,572.49	-388.60	2,584.36	0.00	0.00	0.00
13,400.00	89.90	179.70	9,835.39	-2,672.48	-388.08	2,684.28	0.00	0.00	0.00
13,500.00	89.90	179.70	9,835.56	-2,772.48	-387.56	2,784.20	0.00	0.00	0.00
13,600.00	89.90	179.70	9,835.73	-2,872.48	-387.04	2,884.12	0.00	0.00	0.00
13,700.00	89.90	179.70	9,835.90	-2,972.48	-386.51	2,984.04	0.00	0.00	0.00
13,800.00	89.90	179.70	9,836.07	-3,072.48	-385.99	3,083.96	0.00	0.00	0.00
13,900.00	89.90	179.70	9,836.24	-3,172.48	-385.47	3,183.89	0.00	0.00	0.00
14,000.00	89.90	179.70	9,836.41	-3,272.48	-384.95	3,283.81	0.00	0.00	0.00
14,100.00	89.90	179.70	9,836.58	-3,372.47	-384.42	3,383.73	0.00	0.00	0.00
14,200.00	89.90	179.70	9,836.75	-3,472.47	-383.90	3,483.65	0.00	0.00	0.00
14,300.00	89.90	179.70	9,836.92	-3,572.47	-383.38	3,583.57	0.00	0.00	0.00
14,400.00	89.90	179.70	9,837.09	-3,672.47	-382.86	3,683.49	0.00	0.00	0.00
14,500.00	89.90	179.70	9,837.26	-3,772.47	-382.34	3,783.41	0.00	0.00	0.00
14,600.00	89.90	179.70	9,837.44	-3,872.47	-381.81	3,883.33	0.00	0.00	0.00
14,700.00	89.90	179.70	9,837.61	-3,972.46	-381.29	3,983.25	0.00	0.00	0.00
14,800.00	89.90	179.70	9,837.78	-4,072.46	-380.77	4,083.17	0.00	0.00	0.00
14,900.00	89.90	179.70	9,837.95	-4,172.46	-380.25	4,183.10	0.00	0.00	0.00
15,000.00	89.90	179.70	9,838.12	-4,272.46	-379.72	4,283.02	0.00	0.00	0.00
15,100.00	89.90	179.70	9,838.29	-4,372.46	-379.20	4,382.94	0.00	0.00	0.00
15,200.00	89.90	179.70	9,838.46	-4,472.46	-378.68	4,482.86	0.00	0.00	0.00
15,300.00	89.90	179.70	9,838.63	-4,572.46	-378.16	4,582.78	0.00	0.00	0.00
15,400.00	89.90	179.70	9,838.80	-4,672.45	-377.63	4,682.70	0.00	0.00	0.00
15,500.00	89.90	179.70	9,838.97	-4,772.45	-377.11	4,782.62	0.00	0.00	0.00
15,600.00	89.90	179.70	9,839.14	-4,872.45	-376.59	4,882.54	0.00	0.00	0.00

Database: HOPSP
Company: ENGINEERING DESIGNS
Project: PRD NM DIRECTIONAL PLANS (NAD 1983)
Site: HEIGHT CC 6_7 FED COM
Well: HEIGHT CC 6_7 FEDERAL COM 31Y
Wellbore: Wellbore #1
Design: Permitting Plan

Local Co-ordinate Reference: Well HEIGHT CC 6_7 FEDERAL COM 31Y
TVD Reference: RKB=26.5' @ 2990.10ft
MD Reference: RKB=26.5' @ 2990.10ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

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	89.90	179.70	9,839.31	-4,972.45	-376.07	4,982.46	0.00	0.00	0.00
15,800.00	89.90	179.70	9,839.48	-5,072.45	-375.55	5,082.38	0.00	0.00	0.00
15,900.00	89.90	179.70	9,839.66	-5,172.45	-375.02	5,182.30	0.00	0.00	0.00
16,000.00	89.90	179.70	9,839.83	-5,272.44	-374.50	5,282.23	0.00	0.00	0.00
16,100.00	89.90	179.70	9,840.00	-5,372.44	-373.98	5,382.15	0.00	0.00	0.00
16,200.00	89.90	179.70	9,840.17	-5,472.44	-373.46	5,482.07	0.00	0.00	0.00
16,300.00	89.90	179.70	9,840.34	-5,572.44	-372.93	5,581.99	0.00	0.00	0.00
16,400.00	89.90	179.70	9,840.51	-5,672.44	-372.41	5,681.91	0.00	0.00	0.00
16,500.00	89.90	179.70	9,840.68	-5,772.44	-371.89	5,781.83	0.00	0.00	0.00
16,600.00	89.90	179.70	9,840.85	-5,872.44	-371.37	5,881.75	0.00	0.00	0.00
16,700.00	89.90	179.70	9,841.02	-5,972.43	-370.84	5,981.67	0.00	0.00	0.00
16,800.00	89.90	179.70	9,841.19	-6,072.43	-370.32	6,081.59	0.00	0.00	0.00
16,900.00	89.90	179.70	9,841.36	-6,172.43	-369.80	6,181.51	0.00	0.00	0.00
17,000.00	89.90	179.70	9,841.53	-6,272.43	-369.28	6,281.44	0.00	0.00	0.00
17,100.00	89.90	179.70	9,841.71	-6,372.43	-368.76	6,381.36	0.00	0.00	0.00
17,200.00	89.90	179.70	9,841.88	-6,472.43	-368.23	6,481.28	0.00	0.00	0.00
17,300.00	89.90	179.70	9,842.05	-6,572.43	-367.71	6,581.20	0.00	0.00	0.00
17,400.00	89.90	179.70	9,842.22	-6,672.42	-367.19	6,681.12	0.00	0.00	0.00
17,500.00	89.90	179.70	9,842.39	-6,772.42	-366.67	6,781.04	0.00	0.00	0.00
17,600.00	89.90	179.70	9,842.56	-6,872.42	-366.14	6,880.96	0.00	0.00	0.00
17,700.00	89.90	179.70	9,842.73	-6,972.42	-365.62	6,980.88	0.00	0.00	0.00
17,800.00	89.90	179.70	9,842.90	-7,072.42	-365.10	7,080.80	0.00	0.00	0.00
17,900.00	89.90	179.70	9,843.07	-7,172.42	-364.58	7,180.72	0.00	0.00	0.00
18,000.00	89.90	179.70	9,843.24	-7,272.41	-364.05	7,280.65	0.00	0.00	0.00
18,100.00	89.90	179.70	9,843.41	-7,372.41	-363.53	7,380.57	0.00	0.00	0.00
18,200.00	89.90	179.70	9,843.58	-7,472.41	-363.01	7,480.49	0.00	0.00	0.00
18,300.00	89.90	179.70	9,843.75	-7,572.41	-362.49	7,580.41	0.00	0.00	0.00
18,400.00	89.90	179.70	9,843.93	-7,672.41	-361.97	7,680.33	0.00	0.00	0.00
18,500.00	89.90	179.70	9,844.10	-7,772.41	-361.44	7,780.25	0.00	0.00	0.00
18,600.00	89.90	179.70	9,844.27	-7,872.41	-360.92	7,880.17	0.00	0.00	0.00
18,700.00	89.90	179.70	9,844.44	-7,972.40	-360.40	7,980.09	0.00	0.00	0.00
18,800.00	89.90	179.70	9,844.61	-8,072.40	-359.88	8,080.01	0.00	0.00	0.00
18,900.00	89.90	179.70	9,844.78	-8,172.40	-359.35	8,179.93	0.00	0.00	0.00
19,000.00	89.90	179.70	9,844.95	-8,272.40	-358.83	8,279.85	0.00	0.00	0.00
19,100.00	89.90	179.70	9,845.12	-8,372.40	-358.31	8,379.78	0.00	0.00	0.00
19,200.00	89.90	179.70	9,845.29	-8,472.40	-357.79	8,479.70	0.00	0.00	0.00
19,300.00	89.90	179.70	9,845.46	-8,572.40	-357.27	8,579.62	0.00	0.00	0.00
19,400.00	89.90	179.70	9,845.63	-8,672.39	-356.74	8,679.54	0.00	0.00	0.00
19,500.00	89.90	179.70	9,845.80	-8,772.39	-356.22	8,779.46	0.00	0.00	0.00
19,600.00	89.90	179.70	9,845.97	-8,872.39	-355.70	8,879.38	0.00	0.00	0.00
19,700.00	89.90	179.70	9,846.15	-8,972.39	-355.18	8,979.30	0.00	0.00	0.00
19,800.00	89.90	179.70	9,846.32	-9,072.39	-354.65	9,079.22	0.00	0.00	0.00
19,900.00	89.90	179.70	9,846.49	-9,172.39	-354.13	9,179.14	0.00	0.00	0.00
20,000.00	89.90	179.70	9,846.66	-9,272.38	-353.61	9,279.06	0.00	0.00	0.00
20,100.00	89.90	179.70	9,846.83	-9,372.38	-353.09	9,378.99	0.00	0.00	0.00
20,200.00	89.90	179.70	9,847.00	-9,472.38	-352.56	9,478.91	0.00	0.00	0.00
20,300.00	89.90	179.70	9,847.17	-9,572.38	-352.04	9,578.83	0.00	0.00	0.00
20,400.00	89.90	179.70	9,847.34	-9,672.38	-351.52	9,678.75	0.00	0.00	0.00
20,500.00	89.90	179.70	9,847.51	-9,772.38	-351.00	9,778.67	0.00	0.00	0.00
20,600.00	89.90	179.70	9,847.68	-9,872.38	-350.48	9,878.59	0.00	0.00	0.00
20,700.00	89.90	179.70	9,847.85	-9,972.37	-349.95	9,978.51	0.00	0.00	0.00
20,800.00	89.90	179.70	9,848.02	-10,072.37	-349.43	10,078.43	0.00	0.00	0.00
20,844.38	89.90	179.70	9,848.10	-10,116.75	-349.20	10,122.77	0.00	0.00	0.00

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MD Reference: RKB=26.5' @ 2990.10ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

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
FTP (Height CC 6_7 - plan hits target center - Point	0.00	0.00	9,830.10	422.09	-404.24	456,283.94	634,711.36	32° 15' 14.539668 N	104° 1' 52.610006
PBHL (Height CC 6_7 - plan hits target center - Point	0.00	0.00	9,848.10	-10,116.75	-349.20	445,745.97	634,766.40	32° 13' 30.255410 N	104° 1' 52.314263

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
3,673.00	3,673.00	0.00	0.00	Build 2.00°/100'
4,423.22	4,414.67	92.22	-32.16	Hold 15.00° Tangent
8,077.02	7,943.90	985.41	-343.65	Turn 2.00°/100'
9,556.35	9,405.43	974.54	-407.13	KOP, Build 10.00°/100'
10,305.37	9,830.10	422.10	-404.24	Landing Point
20,844.38	9,848.10	-10,116.75	-349.20	TD at 20844.38' MD