

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENTCarlsbad Field Office
CD ArtesiaFORM 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.

5. Lease Serial No. NMNM13996
6. If Indian, Allottee or Tribe Name
7. If Unit or CA/Agreement, Name and/or No.
8. Well Name and No. HEIGHT CC 6_7 FEDERAL COM 32H
9. API Well No. 30-015-45554
10. Field and Pool or Exploratory Area PURPLE SAGE-WOLFCAMP (GAS)
11. County or Parish, State EDDY COUNTY, NM

SUBMIT IN TRIPLICATE - Other instructions on page 2

1. Type of Well ☒ Oil Well ☐ Gas Well ☐ Other	
2. Name of Operator OXY USA INCORPORATED	
Contact: DAVID STEWART E-Mail: david_stewart@oxy.com	
3a. Address 5 GREENWAY PLAZA SUITE 110 HOUSTON, TX 77046-0521	3b. Phone No. (include area code) Ph: 432.685.5717
4. Location of Well (Footage, Sec., T., R., M., or Survey Description) Sec 6 T24S R29E 294FNL 639FWL 32.253498 N Lat, 104.030281 W Lon	

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 APD
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

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 amend the approved APD.

The surface location was moved 190' south and 78' east of the original location.

Original: 294 FNL 639 FWL
New: 484 FNL 717 FWL

RECEIVED

This will allow OXY to batch drill four wells instead of two wells. The surface location and well pad are on private surface.

JAN 10 2019

DISTRICT II-ARTESIA O.C.D.

* See attached for Amended Drill Plan, C-102 plat, Site Plan, Rig Diagram, Directional Plan and Plot.

NRS 123 1-7-A USE Existing COA'S

14. I hereby certify that the foregoing is true and correct.	
Electronic Submission #448671 verified by the BLM Well Information System For OXY USA INCORPORATED, sent to the Carlsbad Committed to AFMSS for processing by PRISCILLA PEREZ on 12/20/2018 (19PP0688SE)	
Name (Printed/Typed) DAVID STEWART	Title REGULATORY ADVISOR
Signature (Electronic Submission)	Date 12/20/2018

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By <i>Cody R. [Signature]</i>	Title AFM - C & M	Date 01/01/2019
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 CSD	

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 ****

RWP 2-21-19,

RECEIVED

District I
1623 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
District III
1000 Rio Bravo Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District 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. DISTRICT II-ARTESIA O.C.D.
Santa Fe, NM 87505

JAN 10 2019

Form C-102

Revised August 1, 2011

Submit one copy to appropriate

District Office

☒ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30015-45554	Pool Code 98220	Pool Name Purple Sage Wolfcamp
Property Code 323008	Property Name HEIGHT CC "6-7" FEDERAL COM	Well Number 32H
OGRID No. 16694	Operator Name OXY USA INC.	Elevation 2963.4'

Surface Location

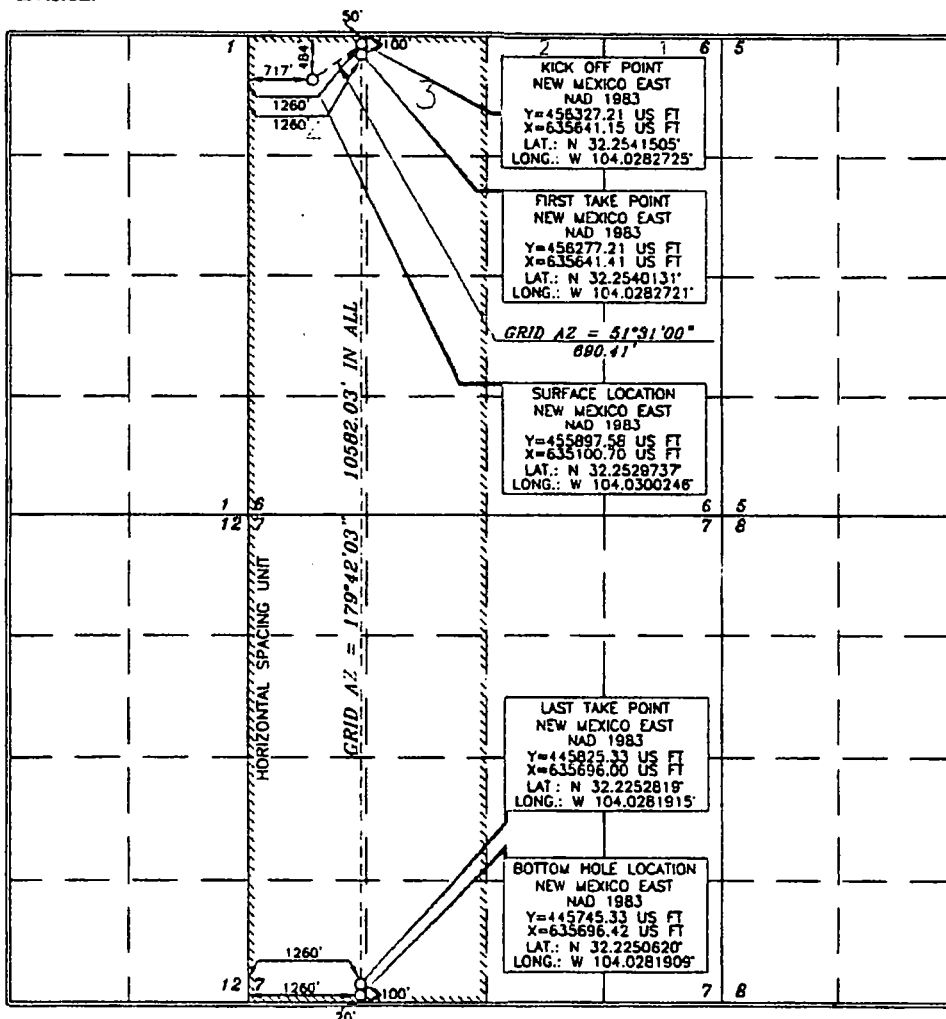
UL or lot no.	Section	Township	Range	Lot Ida	Feet from the	North/South line	Feet from the	East/West line	County
D 4	6	24 SOUTH	29 EAST, N.M.P.M.		484'	NORTH	717'	WEST	EDDY

Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Ida	Feet from the	North/South line	Feet from the	East/West line	County
M 4	7	24 SOUTH	29 EAST, N.M.P.M.		20'	SOUTH	1260'	WEST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
637.33	Y		

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 undivided mineral interest in the land underlying 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.

Hereby signed by the signatory

Signature: *David Stewart* Date: 12/20/18

Printed Name: David Stewart

E-mail Address: david.stewart@oxy.com

SURVEYOR CERTIFICATION

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

Date of Survey: NOVEMBER 8, 2018

Signature and Seal: *Terry J. Paul* Professional Surveyor

Certificate Number: 15079

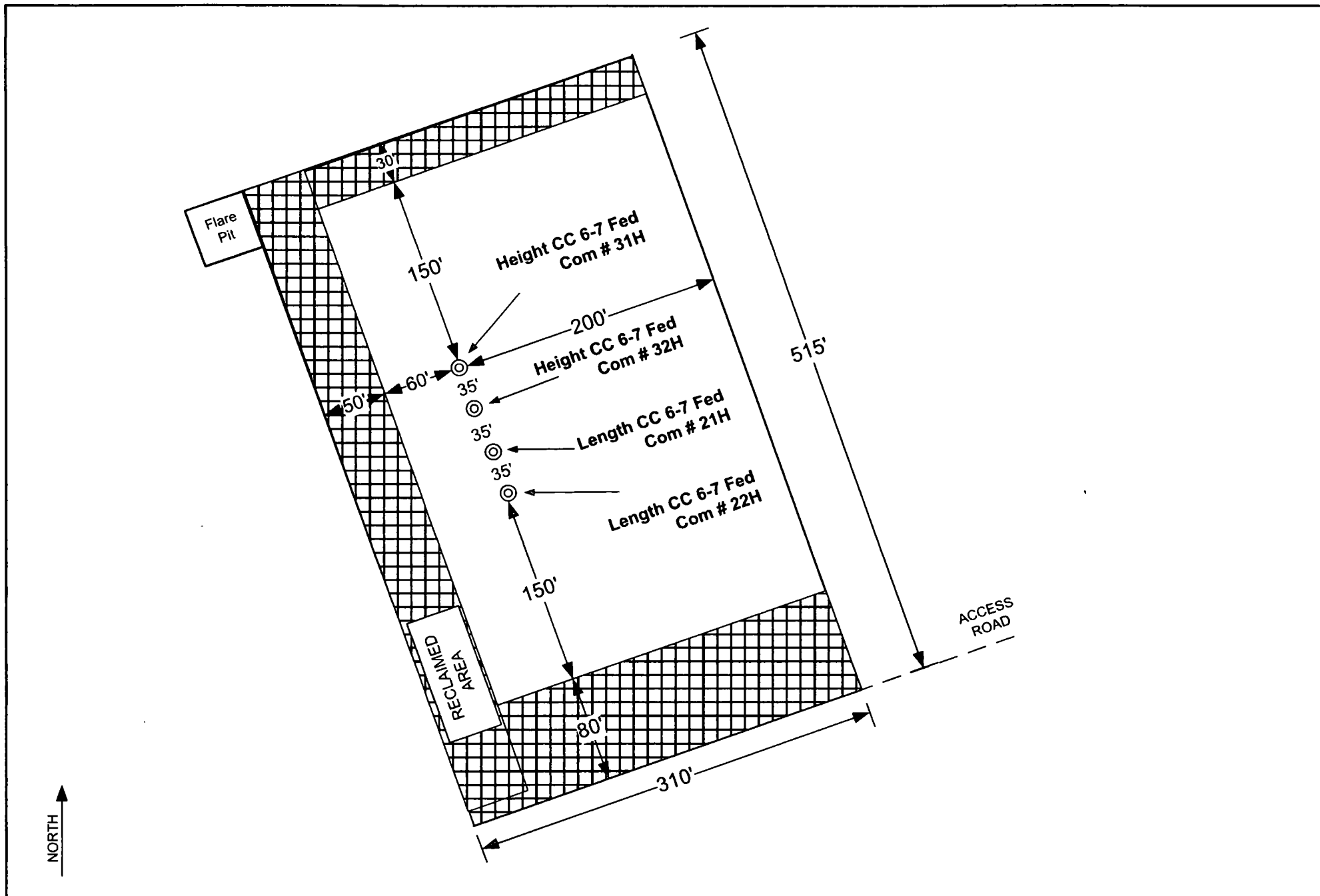
WD# 180608W-c (Rev. A) (NA)

PWP 2-21-19

FAA PERMIT: NO



Survey Date: 11/08/18	Sheet 1 of 1 Sheets	
W.O. Number: 180608WL-c (Rev. A)	Drawn By: KA	Rev: A
Date: 12/03/18	180608WL-c	Scale: 1"=200'



REVISION BLOCK						ENGINEERING RECORD		FLEX 3 RIG DIAGRAM Height CC 6-7 Fed Com # 31H & 32H Length CC 6-7 Fed Com # 21H & 22H EDDY COUNTY, NEW MEXICO	
NO.	DATE	DESCRIPTION				BY	DATE		

OXY USA Inc. - Height CC 6-7 Federal Com 32H – Amended Drill Plan 2

1. Geologic Formations

TVD of target	9803'	Pilot Hole Depth	N/A
MD at TD:	20780'	Deepest Expected fresh water:	205'

Delaware Basin

Formation	TVD - RKB	Expected Fluids
Rustler	205	
Salado	545	Salt
Castile	1,430	Salt
Lamar/Delaware	2,750	Oil/Gas/Brine
Bell Canyon	2,790	Oil/Gas/Brine
Cherry Canyon	3,673	Oil/Gas/Brine
Brushy Canyon	4,890	Losses
Bone Spring	6,470	Oil/Gas
1st Bone Spring	7,440	Oil/Gas
2nd Bone Spring	8,221	Oil/Gas
3rd Bone Spring	9,312	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 Collapse	SF Burst	Buoyant	Buoyant
	From (ft)	To (ft)							Body SF Tension	Joint SF Tension
14.75	0	485	10.75	40.5	J-55	BTC	1.125	1.2	1.4	1.4
9.875	0	9399	7.625	26.4	L-80 HC	BTC	1.125	1.2	1.4	1.4
6.75	0	20780	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 32H – Amended Drill Plan 2

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 32H – Amended Drill Plan 2

3. Cementing Program

Casing String	# Sk	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)	392	14.8	1.33	6.365	5:26	Class C Cement, Accelerator
Intermediate 1st Stage (Lead)	570	10.2	2.58	11.568	6:59	Pozzolan Cement, Retarder
Intermediate 1st Stage (Tail)	167	13.2	1.61	7.804	7:11	Class H Cement, Retarder, Dispersant, Salt
DV/ECP Tool @ 2800 (We request the option to cancel the second stage if cement is circulated to surface during the first stage of cement operations)						
Intermediate 2nd Stage (Lead)	N/A	N/A	N/A	N/A	N/A	N/A
Intermediate 2nd Stage (Tail)	664	13.6	1.67	8.765	7:32	Class C Cement, Accelerator, Retarder
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	485	100%
Intermediate 1st Stage (Lead)	2700	8399	20%
Intermediate 1st Stage (Tail)	8399	9399	20%
Intermediate 2nd Stage (Lead)	N/A	N/A	N/A
Intermediate 2nd Stage (Tail)	0	2800	100%
Production (Lead)	N/A	N/A	N/A
Production (Tail)	8899	20780	20%

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"	5M	Annular	✓	70% of working pressure
			Blind Ram	✓	250/5000psi
			Pipe Ram		
			Double Ram	✓	
			Other*		

*Specify if additional ram is utilized.

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

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

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

BOP Break Testing Request

As per the agreement reached in the Oxy/BLM 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.

OXY USA Inc. - Height CC 6-7 Federal Com 32H – Amended Drill Plan 2

5. Mud Program

Depth		Type	Weight (ppg)	Viscosity	Water Loss
From (ft)	To (ft)				
0	485	Water-Based Mud	8.6-8.8	40-60	N/C
485	9399	Saturated Brine-Based or Oil-Based Mud	8.0-10.0	35-45	N/C
9399	20780	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
---	--------------------------------

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
No	PEX

7. Drilling Conditions

Condition	Specify what type and where?
BH Pressure at deepest TVD	6118 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: 1450.7 bbls.

9. Company Personnel

Name	Title	Office Phone	Mobile Phone
Garrett Granier	Drilling Engineer	713-513-6633	832-265-0581
Diego Tellez	Drilling Engineer Supervisor	713-350-4602	713-303-4932
Simon Benavides	Drilling Superintendent	713-522-8652	281-684-6897
John Willis	Drilling Manager	713-366-5556	713-259-1417

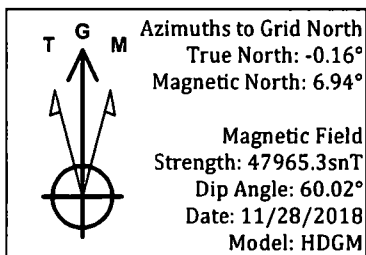


Project: PRD NM DIRECTIONAL PLANS (NAD 1983)
 Site: HEIGHT CC 6_7 FED COM
 Well: HEIGHT CC 6_7 FED COM 32H
 Wellbore: Wellbore #1
 Design: Permitting Plan

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

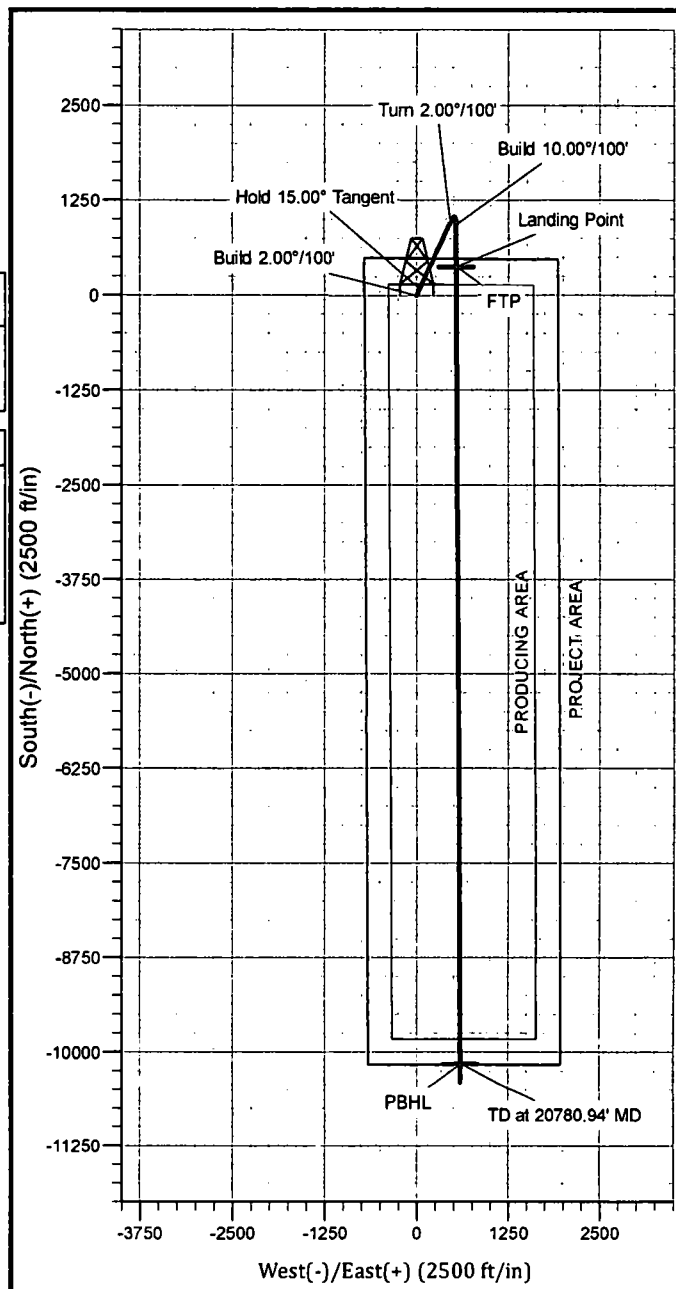
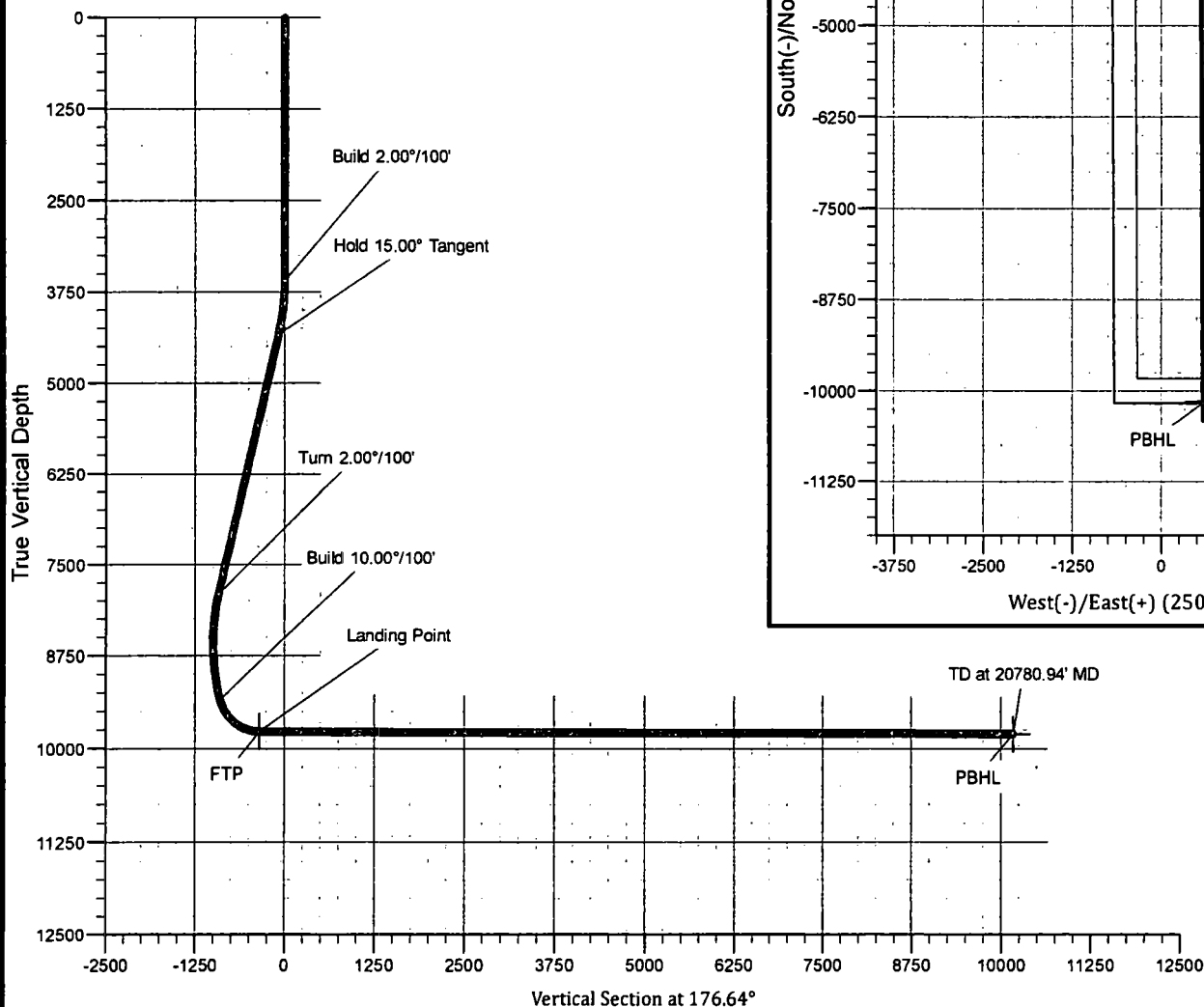


WELL DETAILS: HEIGHT CC 6_7 FED COM 32H

		Ground Level	2963.40		
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	455897.59	635100.72	32° 15' 10.705532 N	104° 1' 48.088460 W

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
3598.00	0.00	0.00	3598.00	0.00	0.00	0.00	0.00	0.00	Build 2.00°/100'
4348.11	15.00	25.51	4339.57	88.12	42.05	2.00	25.51	-85.51	Hold 15.00° Tangent
8038.58	15.00	25.51	7904.25	950.28	453.49	0.00	0.00	-922.08	Turn 2.00°/100'
9499.94	15.00	179.70	9347.24	931.46	537.78	2.00	166.66	-898.36	Build 10.00°/100'
10248.20	89.83	179.70	9771.90	379.77	540.66	10.00	0.00	-347.45	Landing Point
20780.94	89.83	179.70	9803.90	-10152.78	595.75	0.00	0.00	10170.24	TD at 20780.94' MD



OXY

PRD NM DIRECTIONAL PLANS (NAD 1983)

HEIGHT CC 6_7 FED COM

HEIGHT CC 6_7 FED COM 32H

Wellbore #1

Plan: Permitting Plan

Standard Planning Report

28 November, 2018

Oxy Planning Report

Database: HOPSPP
Company: ENGINEERING DESIGNS
Project: PRD NM DIRECTIONAL PLANS (NAD 1983)
Site: HEIGHT CC 6_7 FED COM
Well: HEIGHT CC 6_7 FED COM 32H
Wellbore: Wellbore #1
Design: Permitting Plan

Local Co-ordinate Reference: Well HEIGHT CC 6_7 FED COM 32H
TVD Reference: RKB=26.5' @ 2989.90ft
MD Reference: RKB=26.5' @ 2989.90ft
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
From:	Map	Easting:	0.00 usft
Position Uncertainty:	50.00 ft	Slot Radius:	13.200 in
		Latitude:	30° 59' 18.403714 N
		Longitude:	106° 3' 38.987298 W
		Grid Convergence:	-0.89 °

Well	HEIGHT CC 6_7 FED COM 32H		
Well Position	+N/-S	455,786.92 ft	Northing: 455,897.59 usft
	+E/-W	634,946.55 ft	Easting: 635,100.72 usft
Position Uncertainty	0.00 ft	Wellhead Elevation:	0.00 ft
		Latitude:	32° 15' 10.705532 N
		Longitude:	104° 1' 48.088460 W
		Ground Level:	2,963.40 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	176.64

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	
3,598.00	0.00	0.00	3,598.00	0.00	0.00	0.00	0.00	0.00	0.00	
4,348.11	15.00	25.51	4,339.57	88.12	42.05	2.00	2.00	0.00	25.51	
8,038.58	15.00	25.51	7,904.25	950.28	453.49	0.00	0.00	0.00	0.00	
9,499.94	15.00	179.70	9,347.24	931.46	537.78	2.00	0.00	10.55	166.66	
10,248.20	89.83	179.70	9,771.90	379.77	540.66	10.00	10.00	0.00	0.00	0.00 FTP (Height CC 6_7
20,780.94	89.83	179.70	9,803.90	-10,152.78	595.75	0.00	0.00	0.00	0.00	0.00 PBHL (Height CC

Oxy Planning Report

Database: HOPSPP
Company: ENGINEERING DESIGNS
Project: PRD NM DIRECTIONAL PLANS (NAD 1983)
Site: HEIGHT CC 6_7 FED COM
Well: HEIGHT CC 6_7 FED COM 32H
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TVD Reference: RKB=26.5' @ 2989.90ft
MD Reference: RKB=26.5' @ 2989.90ft
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
3,598.00	0.00	0.00	3,598.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.04	25.51	3,600.00	0.00	0.00	0.00	2.00	2.00	0.00
3,700.00	2.04	25.51	3,699.98	1.64	0.78	-1.59	2.00	2.00	0.00
3,800.00	4.04	25.51	3,799.83	6.42	3.07	-6.23	2.00	2.00	0.00
3,900.00	6.04	25.51	3,899.44	14.35	6.85	-13.93	2.00	2.00	0.00
4,000.00	8.04	25.51	3,998.68	25.41	12.13	-24.66	2.00	2.00	0.00
4,100.00	10.04	25.51	4,097.43	39.59	18.89	-38.42	2.00	2.00	0.00
4,200.00	12.04	25.51	4,195.58	56.87	27.14	-55.19	2.00	2.00	0.00
4,300.00	14.04	25.51	4,293.00	77.24	36.86	-74.95	2.00	2.00	0.00
4,348.11	15.00	25.51	4,339.57	88.12	42.05	-85.51	2.00	2.00	0.00
4,400.00	15.00	25.51	4,389.69	100.25	47.84	-97.27	0.00	0.00	0.00
4,500.00	15.00	25.51	4,486.28	123.61	58.99	-119.94	0.00	0.00	0.00
4,600.00	15.00	25.51	4,582.87	146.97	70.14	-142.61	0.00	0.00	0.00
4,700.00	15.00	25.51	4,679.46	170.33	81.29	-165.28	0.00	0.00	0.00
4,800.00	15.00	25.51	4,776.06	193.69	92.43	-187.95	0.00	0.00	0.00
4,900.00	15.00	25.51	4,872.65	217.05	103.58	-210.61	0.00	0.00	0.00
5,000.00	15.00	25.51	4,969.24	240.42	114.73	-233.28	0.00	0.00	0.00
5,100.00	15.00	25.51	5,065.83	263.78	125.88	-255.95	0.00	0.00	0.00

Oxy Planning Report

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Well: HEIGHT CC 6_7 FED COM 32H
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Design: Permitting Plan

Local Co-ordinate Reference: Well HEIGHT CC 6_7 FED COM 32H
TVD Reference: RKB=26.5' @ 2989.90ft
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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)
5,200.00	15.00	25.51	5,162.42	287.14	137.03	-278.62	0.00	0.00	0.00
5,300.00	15.00	25.51	5,259.01	310.50	148.18	-301.29	0.00	0.00	0.00
5,400.00	15.00	25.51	5,355.61	333.86	159.33	-323.96	0.00	0.00	0.00
5,500.00	15.00	25.51	5,452.20	357.22	170.48	-346.63	0.00	0.00	0.00
5,600.00	15.00	25.51	5,548.79	380.59	181.62	-369.29	0.00	0.00	0.00
5,700.00	15.00	25.51	5,645.38	403.95	192.77	-391.96	0.00	0.00	0.00
5,800.00	15.00	25.51	5,741.97	427.31	203.92	-414.63	0.00	0.00	0.00
5,900.00	15.00	25.51	5,838.56	450.67	215.07	-437.30	0.00	0.00	0.00
6,000.00	15.00	25.51	5,935.16	474.03	226.22	-459.97	0.00	0.00	0.00
6,100.00	15.00	25.51	6,031.75	497.39	237.37	-482.64	0.00	0.00	0.00
6,200.00	15.00	25.51	6,128.34	520.76	248.52	-505.30	0.00	0.00	0.00
6,300.00	15.00	25.51	6,224.93	544.12	259.66	-527.97	0.00	0.00	0.00
6,400.00	15.00	25.51	6,321.52	567.48	270.81	-550.64	0.00	0.00	0.00
6,500.00	15.00	25.51	6,418.11	590.84	281.96	-573.31	0.00	0.00	0.00
6,600.00	15.00	25.51	6,514.70	614.20	293.11	-595.98	0.00	0.00	0.00
6,700.00	15.00	25.51	6,611.30	637.56	304.26	-618.65	0.00	0.00	0.00
6,800.00	15.00	25.51	6,707.89	660.93	315.41	-641.32	0.00	0.00	0.00
6,900.00	15.00	25.51	6,804.48	684.29	326.56	-663.98	0.00	0.00	0.00
7,000.00	15.00	25.51	6,901.07	707.65	337.71	-686.65	0.00	0.00	0.00
7,100.00	15.00	25.51	6,997.66	731.01	348.85	-709.32	0.00	0.00	0.00
7,200.00	15.00	25.51	7,094.25	754.37	360.00	-731.99	0.00	0.00	0.00
7,300.00	15.00	25.51	7,190.85	777.74	371.15	-754.66	0.00	0.00	0.00
7,400.00	15.00	25.51	7,287.44	801.10	382.30	-777.33	0.00	0.00	0.00
7,500.00	15.00	25.51	7,384.03	824.46	393.45	-800.00	0.00	0.00	0.00
7,600.00	15.00	25.51	7,480.62	847.82	404.60	-822.66	0.00	0.00	0.00
7,700.00	15.00	25.51	7,577.21	871.18	415.75	-845.33	0.00	0.00	0.00
7,800.00	15.00	25.51	7,673.80	894.54	426.89	-868.00	0.00	0.00	0.00
7,900.00	15.00	25.51	7,770.40	917.91	438.04	-890.67	0.00	0.00	0.00
8,000.00	15.00	25.51	7,866.99	941.27	449.19	-913.34	0.00	0.00	0.00
8,038.58	15.00	25.51	7,904.25	950.28	453.49	-922.08	0.00	0.00	0.00
8,100.00	13.81	26.70	7,963.74	964.00	460.21	-935.39	2.00	-1.94	1.93
8,200.00	11.88	29.13	8,061.23	983.66	470.59	-954.41	2.00	-1.93	2.43
8,300.00	9.99	32.48	8,159.41	999.97	480.26	-970.12	2.00	-1.90	3.35
8,400.00	8.14	37.35	8,258.16	1,012.91	489.21	-982.52	2.00	-1.85	4.87
8,500.00	6.38	44.97	8,357.36	1,022.47	497.43	-991.58	2.00	-1.76	7.62
8,600.00	4.82	57.88	8,456.88	1,028.64	504.91	-997.29	2.00	-1.57	12.92
8,700.00	3.69	80.56	8,556.61	1,031.40	511.64	-999.66	2.00	-1.12	22.67
8,800.00	3.48	112.77	8,656.43	1,030.75	517.62	-998.66	2.00	-0.22	32.22
8,900.00	4.31	139.99	8,756.20	1,026.70	522.83	-994.31	2.00	0.83	27.22
9,000.00	5.74	156.09	8,855.82	1,019.25	527.28	-986.61	2.00	1.44	16.10
9,100.00	7.44	165.35	8,955.16	1,008.40	530.94	-975.57	2.00	1.70	9.25
9,200.00	9.26	171.08	9,054.10	994.18	533.83	-961.21	2.00	1.82	5.74
9,300.00	11.15	174.92	9,152.51	976.60	535.93	-943.53	2.00	1.88	3.84
9,400.00	13.06	177.66	9,250.28	955.68	537.25	-922.57	2.00	1.92	2.74
9,499.94	15.00	179.70	9,347.24	931.46	537.78	-898.36	2.00	1.94	2.04
9,500.00	15.00	179.70	9,347.30	931.44	537.78	-898.34	0.00	0.00	0.00
9,600.00	25.01	179.70	9,441.14	897.27	537.96	-864.22	10.01	10.01	0.00
9,700.00	35.01	179.70	9,527.63	847.33	538.22	-814.35	10.00	10.00	0.00
9,800.00	45.01	179.70	9,604.13	783.13	538.56	-750.23	10.00	10.00	0.00
9,900.00	55.01	179.70	9,668.32	706.61	538.96	-673.83	10.00	10.00	0.00
10,000.00	65.01	179.70	9,718.25	620.12	539.41	-587.45	10.00	10.00	0.00
10,100.00	75.01	179.70	9,752.40	526.26	539.90	-493.73	10.00	10.00	0.00
10,200.00	85.01	179.70	9,769.73	427.91	540.41	-395.52	10.00	10.00	0.00
10,248.20	89.83	179.70	9,771.90	379.77	540.66	-347.45	10.00	10.00	0.00

Oxy Planning Report

Database: HOPSPP
Company: ENGINEERING DESIGNS
Project: PRD NM DIRECTIONAL PLANS (NAD 1983)
Site: HEIGHT CC 6_7 FED COM
Well: HEIGHT CC 6_7 FED COM 32H
Wellbore: Wellbore #1
Design: Permitting Plan

Local Co-ordinate Reference: Well HEIGHT CC 6_7 FED COM 32H
TVD Reference: RKB=26.5' @ 2989.90ft
MD Reference: RKB=26.5' @ 2989.90ft
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)
10,300.00	89.83	179.70	9,772.06	327.97	540.94	-295.72	0.00	0.00	0.00
10,400.00	89.83	179.70	9,772.36	227.97	541.46	-195.86	0.00	0.00	0.00
10,500.00	89.83	179.70	9,772.67	127.98	541.98	-96.01	0.00	0.00	0.00
10,600.00	89.83	179.70	9,772.97	27.98	542.50	3.85	0.00	0.00	0.00
10,700.00	89.83	179.70	9,773.27	-72.02	543.03	103.71	0.00	0.00	0.00
10,800.00	89.83	179.70	9,773.58	-172.02	543.55	203.56	0.00	0.00	0.00
10,900.00	89.83	179.70	9,773.88	-272.02	544.07	303.42	0.00	0.00	0.00
11,000.00	89.83	179.70	9,774.18	-372.02	544.60	403.28	0.00	0.00	0.00
11,100.00	89.83	179.70	9,774.49	-472.01	545.12	503.14	0.00	0.00	0.00
11,200.00	89.83	179.70	9,774.79	-572.01	545.64	602.99	0.00	0.00	0.00
11,300.00	89.83	179.70	9,775.10	-672.01	546.17	702.85	0.00	0.00	0.00
11,400.00	89.83	179.70	9,775.40	-772.01	546.69	802.71	0.00	0.00	0.00
11,500.00	89.83	179.70	9,775.70	-872.01	547.21	902.56	0.00	0.00	0.00
11,600.00	89.83	179.70	9,776.01	-972.00	547.73	1,002.42	0.00	0.00	0.00
11,700.00	89.83	179.70	9,776.31	-1,072.00	548.26	1,102.28	0.00	0.00	0.00
11,800.00	89.83	179.70	9,776.61	-1,172.00	548.78	1,202.13	0.00	0.00	0.00
11,900.00	89.83	179.70	9,776.92	-1,272.00	549.30	1,301.99	0.00	0.00	0.00
12,000.00	89.83	179.70	9,777.22	-1,372.00	549.83	1,401.85	0.00	0.00	0.00
12,100.00	89.83	179.70	9,777.53	-1,472.00	550.35	1,501.71	0.00	0.00	0.00
12,200.00	89.83	179.70	9,777.83	-1,571.99	550.87	1,601.56	0.00	0.00	0.00
12,300.00	89.83	179.70	9,778.13	-1,671.99	551.40	1,701.42	0.00	0.00	0.00
12,400.00	89.83	179.70	9,778.44	-1,771.99	551.92	1,801.28	0.00	0.00	0.00
12,500.00	89.83	179.70	9,778.74	-1,871.99	552.44	1,901.13	0.00	0.00	0.00
12,600.00	89.83	179.70	9,779.05	-1,971.99	552.96	2,000.99	0.00	0.00	0.00
12,700.00	89.83	179.70	9,779.35	-2,071.98	553.49	2,100.85	0.00	0.00	0.00
12,800.00	89.83	179.70	9,779.65	-2,171.98	554.01	2,200.71	0.00	0.00	0.00
12,900.00	89.83	179.70	9,779.96	-2,271.98	554.53	2,300.56	0.00	0.00	0.00
13,000.00	89.83	179.70	9,780.26	-2,371.98	555.06	2,400.42	0.00	0.00	0.00
13,100.00	89.83	179.70	9,780.56	-2,471.98	555.58	2,500.28	0.00	0.00	0.00
13,200.00	89.83	179.70	9,780.87	-2,571.98	556.10	2,600.13	0.00	0.00	0.00
13,300.00	89.83	179.70	9,781.17	-2,671.97	556.63	2,699.99	0.00	0.00	0.00
13,400.00	89.83	179.70	9,781.48	-2,771.97	557.15	2,799.85	0.00	0.00	0.00
13,500.00	89.83	179.70	9,781.78	-2,871.97	557.67	2,899.71	0.00	0.00	0.00
13,600.00	89.83	179.70	9,782.08	-2,971.97	558.19	2,999.56	0.00	0.00	0.00
13,700.00	89.83	179.70	9,782.39	-3,071.97	558.72	3,099.42	0.00	0.00	0.00
13,800.00	89.83	179.70	9,782.69	-3,171.96	559.24	3,199.28	0.00	0.00	0.00
13,900.00	89.83	179.70	9,782.99	-3,271.96	559.76	3,299.13	0.00	0.00	0.00
14,000.00	89.83	179.70	9,783.30	-3,371.96	560.29	3,398.99	0.00	0.00	0.00
14,100.00	89.83	179.70	9,783.60	-3,471.96	560.81	3,498.85	0.00	0.00	0.00
14,200.00	89.83	179.70	9,783.91	-3,571.96	561.33	3,598.71	0.00	0.00	0.00
14,300.00	89.83	179.70	9,784.21	-3,671.96	561.86	3,698.56	0.00	0.00	0.00
14,400.00	89.83	179.70	9,784.51	-3,771.95	562.38	3,798.42	0.00	0.00	0.00
14,500.00	89.83	179.70	9,784.82	-3,871.95	562.90	3,898.28	0.00	0.00	0.00
14,600.00	89.83	179.70	9,785.12	-3,971.95	563.42	3,998.13	0.00	0.00	0.00
14,700.00	89.83	179.70	9,785.43	-4,071.95	563.95	4,097.99	0.00	0.00	0.00
14,800.00	89.83	179.70	9,785.73	-4,171.95	564.47	4,197.85	0.00	0.00	0.00
14,900.00	89.83	179.70	9,786.03	-4,271.94	564.99	4,297.70	0.00	0.00	0.00
15,000.00	89.83	179.70	9,786.34	-4,371.94	565.52	4,397.56	0.00	0.00	0.00
15,100.00	89.83	179.70	9,786.64	-4,471.94	566.04	4,497.42	0.00	0.00	0.00
15,200.00	89.83	179.70	9,786.94	-4,571.94	566.56	4,597.28	0.00	0.00	0.00
15,300.00	89.83	179.70	9,787.25	-4,671.94	567.08	4,697.13	0.00	0.00	0.00
15,400.00	89.83	179.70	9,787.55	-4,771.94	567.61	4,796.99	0.00	0.00	0.00
15,500.00	89.83	179.70	9,787.86	-4,871.93	568.13	4,896.85	0.00	0.00	0.00
15,600.00	89.83	179.70	9,788.16	-4,971.93	568.65	4,996.70	0.00	0.00	0.00

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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	89.83	179.70	9,788.46	-5,071.93	569.18	5,096.56	0.00	0.00	0.00
15,800.00	89.83	179.70	9,788.77	-5,171.93	569.70	5,196.42	0.00	0.00	0.00
15,900.00	89.83	179.70	9,789.07	-5,271.93	570.22	5,296.28	0.00	0.00	0.00
16,000.00	89.83	179.70	9,789.38	-5,371.92	570.75	5,396.13	0.00	0.00	0.00
16,100.00	89.83	179.70	9,789.68	-5,471.92	571.27	5,495.99	0.00	0.00	0.00
16,200.00	89.83	179.70	9,789.98	-5,571.92	571.79	5,595.85	0.00	0.00	0.00
16,300.00	89.83	179.70	9,790.29	-5,671.92	572.31	5,695.70	0.00	0.00	0.00
16,400.00	89.83	179.70	9,790.59	-5,771.92	572.84	5,795.56	0.00	0.00	0.00
16,500.00	89.83	179.70	9,790.89	-5,871.92	573.36	5,895.42	0.00	0.00	0.00
16,600.00	89.83	179.70	9,791.20	-5,971.91	573.88	5,995.28	0.00	0.00	0.00
16,700.00	89.83	179.70	9,791.50	-6,071.91	574.41	6,095.13	0.00	0.00	0.00
16,800.00	89.83	179.70	9,791.81	-6,171.91	574.93	6,194.99	0.00	0.00	0.00
16,900.00	89.83	179.70	9,792.11	-6,271.91	575.45	6,294.85	0.00	0.00	0.00
17,000.00	89.83	179.70	9,792.41	-6,371.91	575.98	6,394.70	0.00	0.00	0.00
17,100.00	89.83	179.70	9,792.72	-6,471.90	576.50	6,494.56	0.00	0.00	0.00
17,200.00	89.83	179.70	9,793.02	-6,571.90	577.02	6,594.42	0.00	0.00	0.00
17,300.00	89.83	179.70	9,793.32	-6,671.90	577.54	6,694.28	0.00	0.00	0.00
17,400.00	89.83	179.70	9,793.63	-6,771.90	578.07	6,794.13	0.00	0.00	0.00
17,500.00	89.83	179.70	9,793.93	-6,871.90	578.59	6,893.99	0.00	0.00	0.00
17,600.00	89.83	179.70	9,794.24	-6,971.90	579.11	6,993.85	0.00	0.00	0.00
17,700.00	89.83	179.70	9,794.54	-7,071.89	579.64	7,093.70	0.00	0.00	0.00
17,800.00	89.83	179.70	9,794.84	-7,171.89	580.16	7,193.56	0.00	0.00	0.00
17,900.00	89.83	179.70	9,795.15	-7,271.89	580.68	7,293.42	0.00	0.00	0.00
18,000.00	89.83	179.70	9,795.45	-7,371.89	581.21	7,393.27	0.00	0.00	0.00
18,100.00	89.83	179.70	9,795.76	-7,471.89	581.73	7,493.13	0.00	0.00	0.00
18,200.00	89.83	179.70	9,796.06	-7,571.88	582.25	7,592.99	0.00	0.00	0.00
18,300.00	89.83	179.70	9,796.36	-7,671.88	582.77	7,692.85	0.00	0.00	0.00
18,400.00	89.83	179.70	9,796.67	-7,771.88	583.30	7,792.70	0.00	0.00	0.00
18,500.00	89.83	179.70	9,796.97	-7,871.88	583.82	7,892.56	0.00	0.00	0.00
18,600.00	89.83	179.70	9,797.27	-7,971.88	584.34	7,992.42	0.00	0.00	0.00
18,700.00	89.83	179.70	9,797.58	-8,071.87	584.87	8,092.27	0.00	0.00	0.00
18,800.00	89.83	179.70	9,797.88	-8,171.87	585.39	8,192.13	0.00	0.00	0.00
18,900.00	89.83	179.70	9,798.19	-8,271.87	585.91	8,291.99	0.00	0.00	0.00
19,000.00	89.83	179.70	9,798.49	-8,371.87	586.44	8,391.85	0.00	0.00	0.00
19,100.00	89.83	179.70	9,798.79	-8,471.87	586.96	8,491.70	0.00	0.00	0.00
19,200.00	89.83	179.70	9,799.10	-8,571.87	587.48	8,591.56	0.00	0.00	0.00
19,300.00	89.83	179.70	9,799.40	-8,671.86	588.00	8,691.42	0.00	0.00	0.00
19,400.00	89.83	179.70	9,799.70	-8,771.86	588.53	8,791.27	0.00	0.00	0.00
19,500.00	89.83	179.70	9,800.01	-8,871.86	589.05	8,891.13	0.00	0.00	0.00
19,600.00	89.83	179.70	9,800.31	-8,971.86	589.57	8,990.99	0.00	0.00	0.00
19,700.00	89.83	179.70	9,800.62	-9,071.86	590.10	9,090.85	0.00	0.00	0.00
19,800.00	89.83	179.70	9,800.92	-9,171.85	590.62	9,190.70	0.00	0.00	0.00
19,900.00	89.83	179.70	9,801.22	-9,271.85	591.14	9,290.56	0.00	0.00	0.00
20,000.00	89.83	179.70	9,801.53	-9,371.85	591.67	9,390.42	0.00	0.00	0.00
20,100.00	89.83	179.70	9,801.83	-9,471.85	592.19	9,490.27	0.00	0.00	0.00
20,200.00	89.83	179.70	9,802.14	-9,571.85	592.71	9,590.13	0.00	0.00	0.00
20,300.00	89.83	179.70	9,802.44	-9,671.85	593.23	9,689.99	0.00	0.00	0.00
20,400.00	89.83	179.70	9,802.74	-9,771.84	593.76	9,789.85	0.00	0.00	0.00
20,500.00	89.83	179.70	9,803.05	-9,871.84	594.28	9,889.70	0.00	0.00	0.00
20,600.00	89.83	179.70	9,803.35	-9,971.84	594.80	9,989.56	0.00	0.00	0.00
20,700.00	89.83	179.70	9,803.65	-10,071.84	595.33	10,089.42	0.00	0.00	0.00
20,780.94	89.83	179.70	9,803.90	-10,152.78	595.75	10,170.25	0.00	0.00	0.00

Oxy Planning Report

Database: HOPSPP
Company: ENGINEERING DESIGNS
Project: PRD NM DIRECTIONAL PLANS (NAD 1983)
Site: HEIGHT CC 6_7 FED COM
Well: HEIGHT CC 6_7 FED COM 32H
Wellbore: Wellbore #1
Design: Permitting Plan

Local Co-ordinate Reference: Well HEIGHT CC 6_7 FED COM 32H
TVD Reference: RKB=26.5' @ 2989.90ft
MD Reference: RKB=26.5' @ 2989.90ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Design Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Eastng		
- Shape	(°)	(°)	(ft)	(ft)	(ft)	(usft)	(usft)	Latitude	Longitude
FTP (Height CC 6_7	0.00	0.00	9,771.90	379.77	540.66	456,277.33	635,641.34	32° 15' 14.448235 N	104° 1' 41.780227
- plan hits target center									
- Point									
PBHL (Height CC 6_7	0.00	0.00	9,803.90	-10,152.78	595.75	445,745.65	635,696.42	32° 13' 30.226235 N	104° 1' 41.487246
- plan hits target center									
- Point									

Plan Annotations				
Measured Depth	Vertical Depth	Local Coordinates		Comment
(ft)	(ft)	+N/-S (ft)	+E/-W (ft)	
3,598.00	3,598.00	0.00	0.00	Build 2.00°/100'
4,348.11	4,339.57	88.12	42.05	Hold 15.00° Tangent
8,038.58	7,904.25	950.28	453.49	Turn 2.00°/100'
9,499.94	9,347.24	931.46	537.78	Build 10.00°/100'
10,248.20	9,771.90	379.77	540.66	Landing Point
20,780.94	9,803.90	-10,152.78	595.75	TD at 20780.94' MD

Moved Per Mary
11-8-18

OXY U.S.A. INC.
NEW MEXICO STAKING FORM

5108332

Moved

Date Staked: 11-8-18

Lease / Well Name: Height CC 6-T Fed Com # 32H

Legal Description: 484' FNL 1717' FWL Sec 6 T24S R29E

Latitude: 32° 15' 10.71"

NAD 83

Longitude: -104° 01' 48.09"

NAD 83

X: 635100.70

NAD 83

Y: 455897.58

NAD 83

Elevation: 2963.4

NAD 83

Move information:

County: Eddy

Surface Owner: McDonald-Brantly

Nearest Residence: ?

Nearest Water Well:

V-Door: NW

Top soil: SE

Road Description: SE Cor From South

New Road:

Upgrade Existing Road:

Interim Reclamation:

Source of Caliche:

Veske Bassett - BLM

Jim Wilson - Oxy

Onsite Attendees: SWCA

Asst Survey

Date: 11-8-18

PERFORMANCE DATA

TMK UP SF TORQ™

5.500 in

20.00 lbs/ft

P110 HC

Technical Data Sheet

Tubular Parameters

Size	5.500	in	Minimum Yield	110,000	psi
Nominal Weight	20.00	lbs/ft	Minimum Tensile	125,000	psi
Grade	P110 HC		Yield Load	641,000	lbs
PE Weight	19.81	lbs/ft	Tensile Load	728,000	lbs
Wall Thickness	0.361	in	Min. Internal Yield Pressure	12,640	psi
Nominal ID	4.778	in	Collapse Pressure	12,780	psi
Drift Diameter	4.653	in			
Nom. Pipe Body Area	5.828	in ²			

Connection Parameters

Connection OD	5.777	in
Connection ID	4.734	in
Make-Up Loss	5.823	in
Critical Section Area	5.875	in ²
Tension Efficiency	90.0	%
Compression Efficiency	90.0	%
Yield Load In Tension	576,000	lbs
Min. Internal Yield Pressure	12,640	psi
Collapse Pressure	12,780	psi
Uniaxial Bending	83	/ 100 ft

Make-Up Torques

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

Printed on: February-22-2018

NOTE:

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IPSCO

PERFORMANCE DATA

TMK UP DQX
Technical Data Sheet

5.500 in

20.00 lbs/ft

P-110

Tubular Parameters

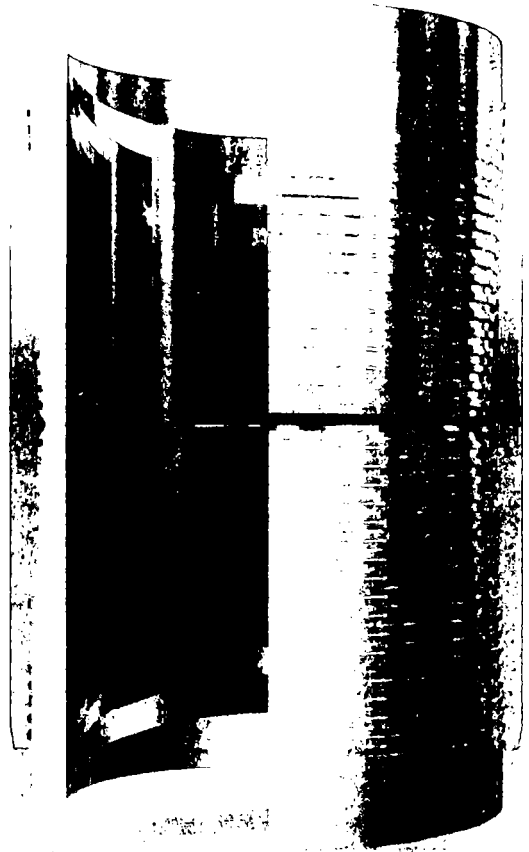
Size	5.500	in	Minimum Yield	110,000	psi
Nominal Weight	20.00	lbs/ft	Minimum Tensile	125,000	psi
Grade	P-110		Yield Load	641,000	lbs
PE Weight	19.81	lbs/ft	Tensile Load	729,000	lbs
Wall Thickness	0.361	in	Min. Internal Yield Pressure	12,600	psi
Nominal ID	4.778	in	Collapse Pressure	11,100	psi
Drift Diameter	4.653	in			
Nom. Pipe Body Area	5.828	in ²			

Connection Parameters

Connection OD	6.050	in
Connection ID	4.778	in
Make-Up Loss	4.122	in
Critical Section Area	5.828	in ²
Tension Efficiency	100.0	%
Compression Efficiency	100.0	%
Yield Load In Tension	641,000	lbs
Min. Internal Yield Pressure	12,600	psi
Collapse Pressure	11,100	psi

Make-Up Torques

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



Printed on: July-29-2014

NOTES

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