

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.*Lease Serial No.
NMNM13996

6. If Indian, Allottee or Tribe Name

SUBMIT IN TRIPLICATE - Other instructions on page 2

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

1. Type of Well

☒ Oil Well ☐ Gas Well ☐ Other

8. Well Name and No.

LENGTH CC 6_7 FEDERAL COM 23H

2. Name of Operator

OXY USA INCORPORATED

Contact: DAVID STEWART

E-Mail: david_stewart@oxy.com

9. API Well No.

30-015-45551-00-X1

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

PIERCE CROSSING-BONE SPRING

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

Sec 6 T24S R29E 410FNL 2355FWL
32.253132 N Lat, 104.024727 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 amend the approved APD.

The surface location was moved 180' north and 35' west of the original location.

Original: 410 FNL 2355 FWL

New: 230 FNL 2320 FWL

RECEIVED

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

JAN 10 2019

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

DISTRICT II-ARTESIA O.C.D.

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

Electronic Submission #448708 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 (19PP0695SE)

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

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 **

RWP 2-21-19

RECEIVED

District I
1625 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.
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 30015-45551	Pool Code 50371	Pool Name Pierce Crossing Bone Springs
Property Code 323007	Property Name LENGTH CC "6-7" FEDERAL COM	Well Number 23H
OGRID No. 16696	Operator Name OXY USA INC.	Elevation 2958.6'

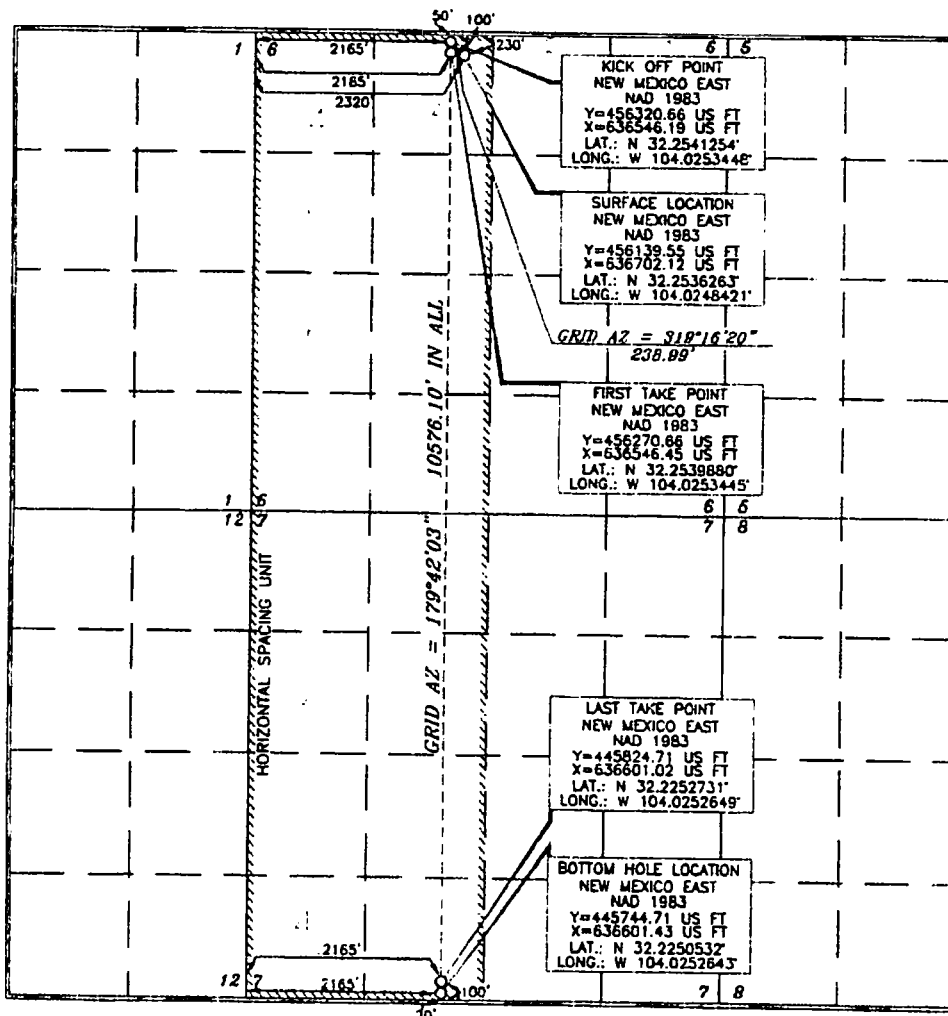
Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
C 3	6	24 SOUTH	29 EAST, N.M.P.M.		230'	NORTH	2320'	WEST	EDDY

Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
N	7	24 SOUTH	29 EAST, N.M.P.M.		20'	SOUTH	2165'	WEST	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 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: David Stewart Date: 12/20/18

Printed Name: David Stewart
E-mail Address: dwid_stewart@oxy.com

SURVEYOR CERTIFICATION

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

Signature: ERRY J. AS Date of Survey: NOVEMBER 8, 2018

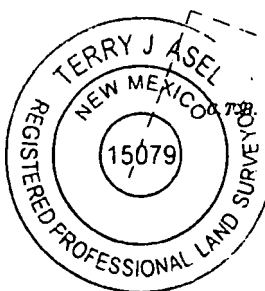
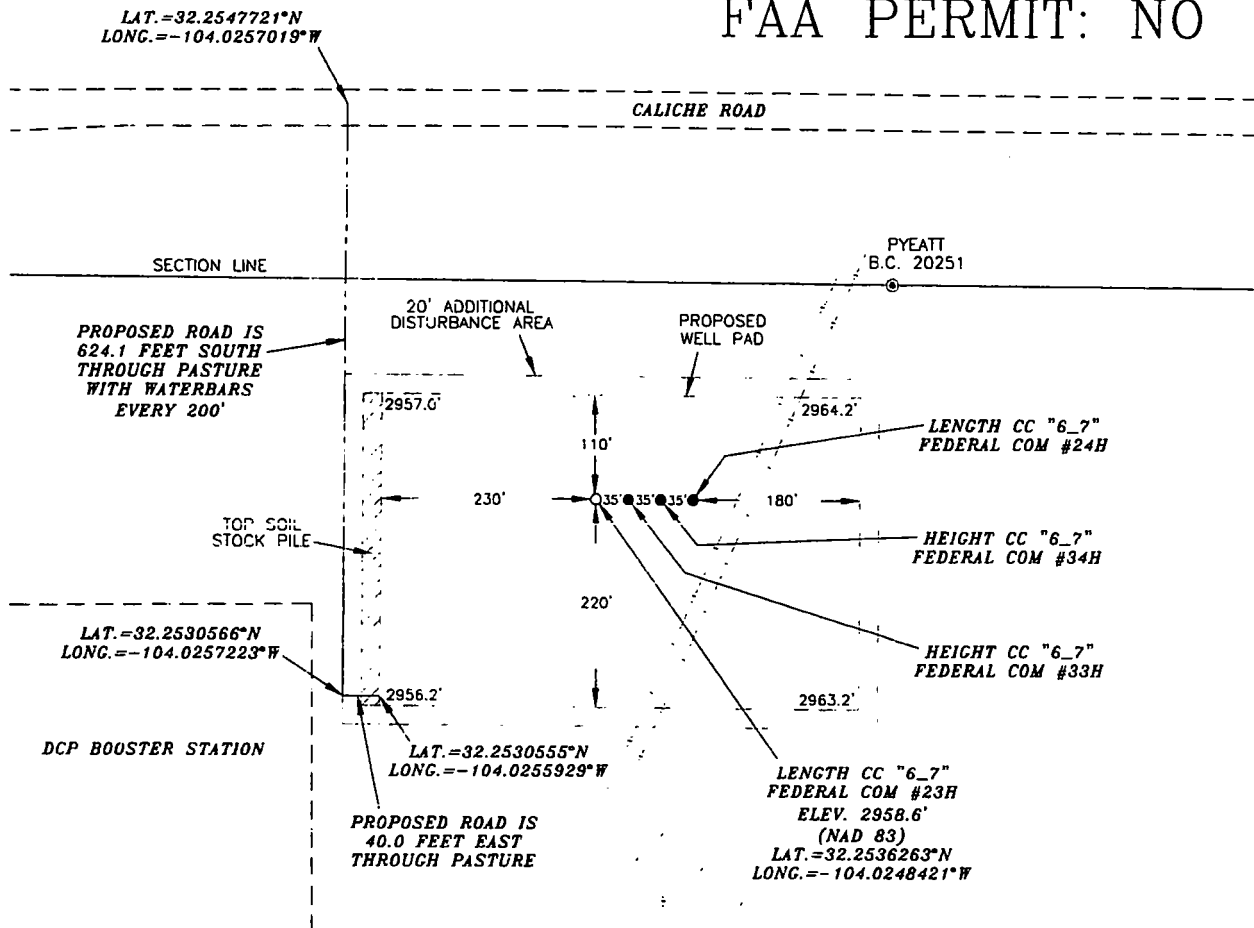
Signature and Seal of Professional Surveyor: ERRY J. AS Certificate Number: 15079

WOF 180627WL-b (Rev. A) (NA)

RW 2-21-19

OXY USA INC. LENGTH CC "6_7" FEDERAL COM #23H SITE PLAN

FAA PERMIT: NO



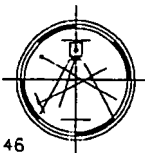
SURVEYORS CERTIFICATE

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

Terry J. Asel 12/7/2018
Terry J. Asel, N.M. R.P.L.S. No. 15079

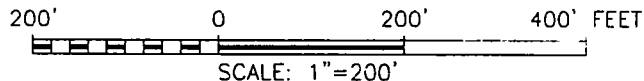
Asel Surveying

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



LEGEND

- DENOTES PROPOSED WELL PAD
- DENOTES PROPOSED ROAD
- DENOTES STOCK PILE AREA

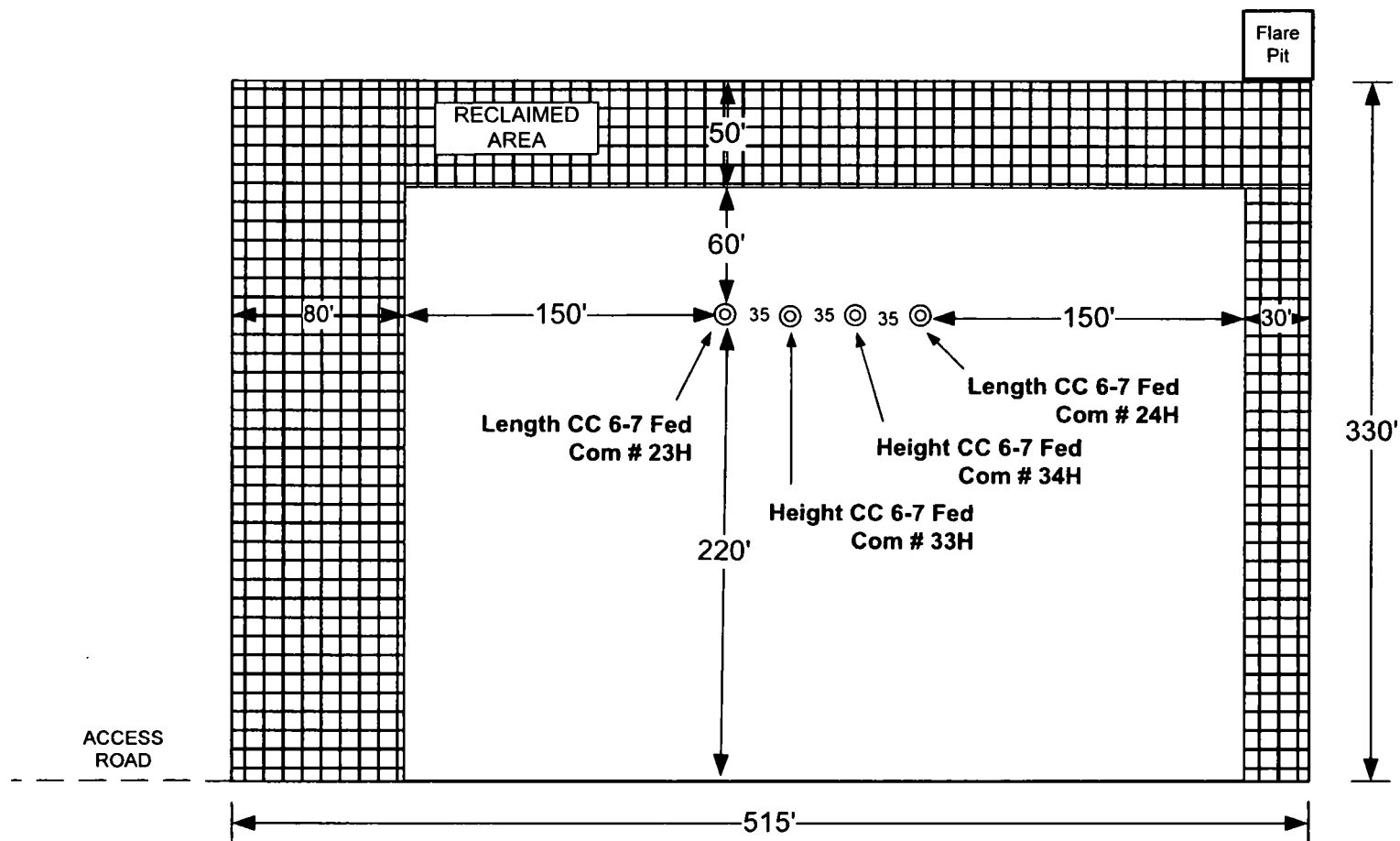


OXY USA INC.

LENGTH CC "6_7" FEDERAL COM #23H
LOCATED AT 230' FNL & 2320' FWL IN
SECTION 6, TOWNSHIP 24 SOUTH, RANGE 29
EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO

Survey Date: 11/08/18	Sheet 1 of 1 Sheets
W.O. Number: 180627WL-b (Rev. A)	Drawn By: KA Rev: A
Date: 12/05/18	180627WL-b Scale: 1"=200'

NORTH
↑



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

FLEX 3 RIG DIAGRAM
 Length CC 6-7 Fed Com # 23H & 24H
 Height CC 6-7 Fed Com # 33H & 34H
 EDDY COUNTY, NEW MEXICO

OXY USA Inc. - Length CC 6-7 Federal Com 23H – Amended Drill Plan

1. Geologic Formations

TVD of target	8347'	Pilot Hole Depth	N/A
MD at TD:	19292'	Deepest Expected fresh water:	129'

Delaware Basin

Formation	TVD - RKB	Expected Fluids
Rustler	129	
Salado	475	Salt
Castile	1,352	Salt
Lamar/Delaware	2,755	Oil/Gas/Brine
Bell Canyon	2,790	Oil/Gas/Brine
Cherry Canyon	3,645	Oil/Gas/Brine
Brushy Canyon	4,884	Losses
Bone Spring	6,450	Oil/Gas
1st Bone Spring	7,450	Oil/Gas
2nd Bone Spring	8,204	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	SF Burst	Buoyant	Buoyant
	From (ft)	To (ft)					Collapse		Body SF Tension	Joint SF Tension
14.75	0	415	10.75	40.5	J-55	BTC	1.125	1.2	1.4	1.4
9.875	0	7937	7.625	26.4	L-80 HC	BTC	1.125	1.2	1.4	1.4
6.75	0	19292	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. - Length CC 6-7 Federal Com 23H – Amended 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. - Length CC 6-7 Federal Com 23H – Amended Drill Plan

3. Cementing Program

Casing String	# Sk	Wt. (lb/gal)	Yld (ft3/sack)	H2O (gal/sk)	500# Comp. Strength (hours)	Slurry Description
Surface (Lead)	N/A	N/A	N/A	N/A	N/A	N/A
Surface (Tail)	334	14.8	1.33	6.365	5:26	Class C Cement, Accelerator
Intermediate 1st Stage (Lead)	423	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 @ 2805 (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)	674	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)	869	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	415	100%
Intermediate 1st Stage (Lead)	2705	6937	20%
Intermediate 1st Stage (Tail)	6937	7937	20%
Intermediate 2nd Stage (Lead)	N/A	N/A	N/A
Intermediate 2nd Stage (Tail)	0	2805	100%
Production (Lead)	N/A	N/A	N/A
Production (Tail)	7437	19292	20%

OXY USA Inc. - Length CC 6-7 Federal Com 23H – Amended 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"	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. - Length CC 6-7 Federal Com 23H – Amended Drill Plan

5. Mud Program

Depth		Type	Weight (ppg)	Viscosity	Water Loss
From (ft)	To (ft)				
0	415	Water-Based Mud	8.6-8.8	40-60	N/C
415	7937	Saturated Brine-Based or Oil-Based Mud	8.0-10.0	35-45	N/C
7937	19292	Water-Based or Oil-Based Mud	8.0-9.6	38-50	N/C

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

What will be used to monitor the loss or gain of fluid?	PVT/MD Totco/Visual Monitoring
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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. - Length CC 6-7 Federal Com 23H – Amended Drill Plan

7. Drilling Conditions

Condition	Specify what type and where?
BH Pressure at deepest TVD	4167 psi
Abnormal Temperature	No
BH Temperature at deepest TVD	147°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: 1302.9 bbls.

9. Company Personnel

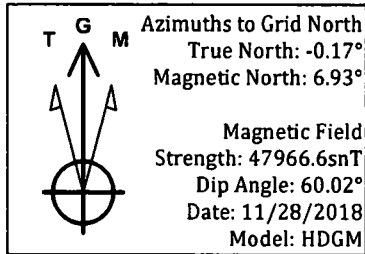
Name	Title	Office Phone	Mobile Phone
Price Maxwell	Drilling Engineer	713-552-8744	830-370-6326
Diego Tellez	Drilling Engineer Supervisor	713-350-4602	713-303-4932
Simon Benavides	Drilling Superintendent	713-522-8652	281-684-6897
John Willis	Drilling Manager	713-366-5556	713-259-1417



Project: PRD NM DIRECTIONAL PLANS (NAD 1983)
 Site: LENGTH CC 6_7 FED COM
 Well: LENGTH CC 6_7 FED COM 23H
 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

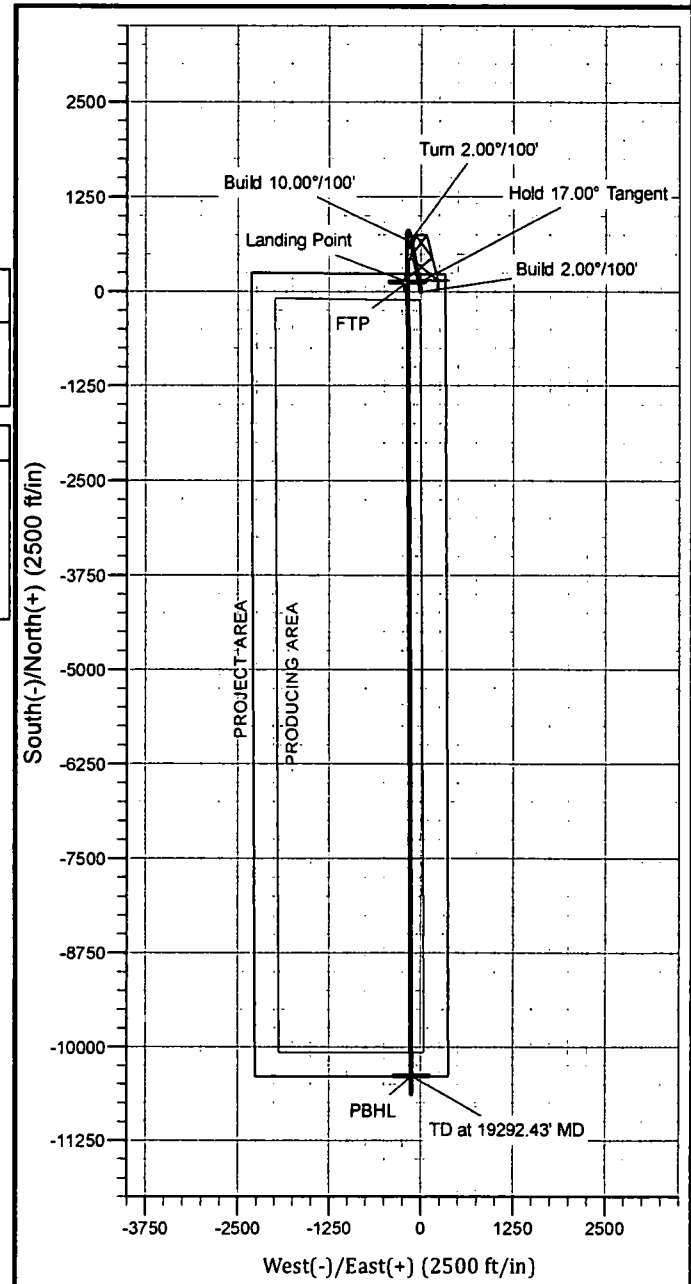
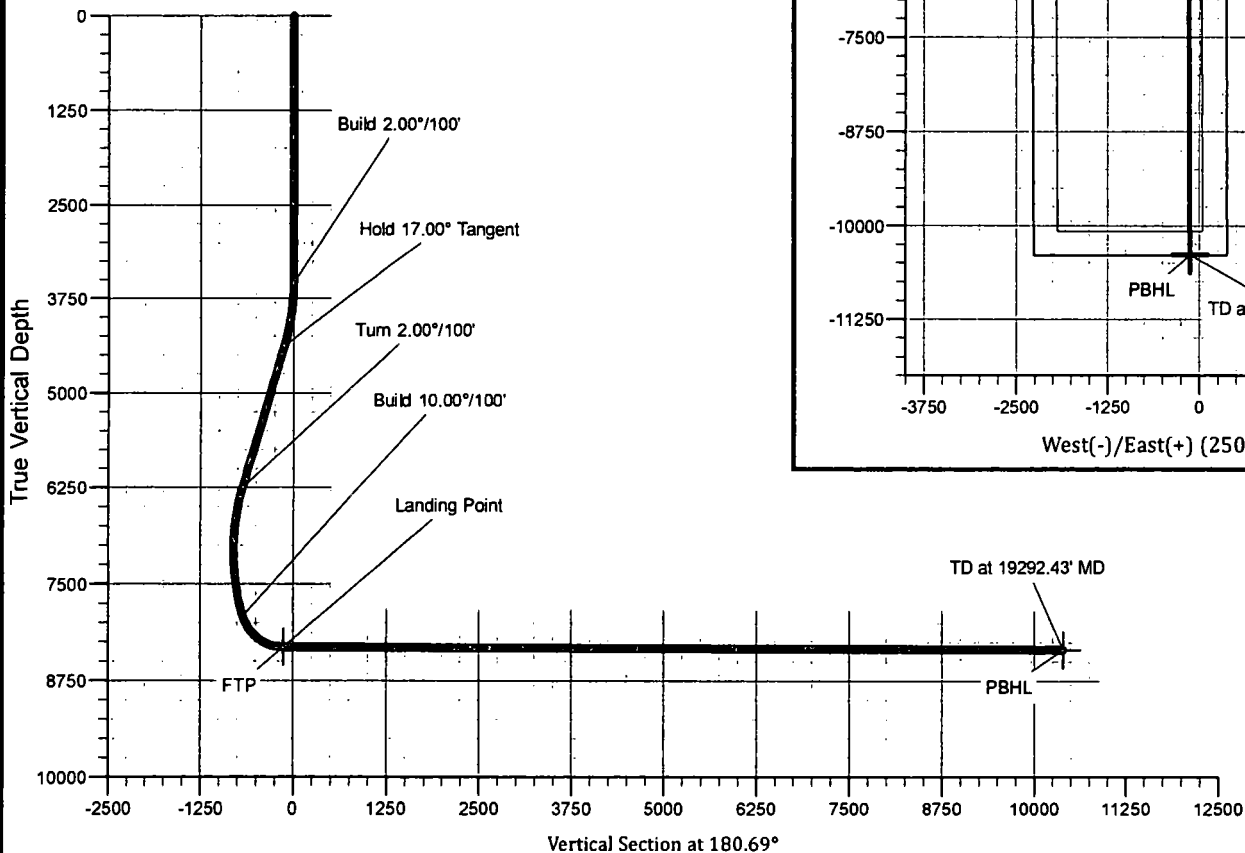


WELL DETAILS: LENGTH CC 6_7 FED COM 23H

+N-S	+E-W	Ground Level	2958.60
0.00	0.00	Northing	456139.30
		Easting	636702.12
		Latitude	32° 15' 13.052312 N
		Longitude	104° 1' 29.431635 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	
3542.00	0.00	0.00	3542.00	0.00	0.00	0.00	0.00	0.00	Build 2.00°/100'
4392.15	17.00	348.78	4379.73	122.83	-24.36	2.00	348.78	-122.53	Hold 17.00° Tangent
6344.93	17.00	348.78	6247.15	682.96	-135.42	0.00	0.00	-681.27	Turn 2.00°/100'
8037.14	17.00	179.70	7914.16	678.14	-183.67	2.00	-174.29	-675.87	Build 10.00°/100'
8765.62	89.85	179.70	8319.60	131.75	-180.80	10.00	0.00	-129.56	Landing Point
19292.43	89.85	179.70	8347.60	-10394.88	-125.70	0.00	0.00	10395.64	TD at 19292.43' MD



OXY

PRD NM DIRECTIONAL PLANS (NAD 1983)

LENGTH CC 6_7 FED COM

LENGTH CC 6_7 FED COM 23H

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: LENGTH CC 6_7 FED COM
Well: LENGTH CC 6_7 FED COM 23H
Wellbore: Wellbore #1
Design: Permitting Plan

Local Co-ordinate Reference: Well LENGTH CC 6_7 FED COM 23H
TVD Reference: RKB=26.5' @ 2985.10ft
MD Reference: RKB=26.5' @ 2985.10ft
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	LENGTH CC 6_7 FED COM			
Site Position:		Northing:	456,139.30 usft	Latitude: 32° 15' 13.052312 N
From:	Map	Easting:	636,702.12 usft	Longitude: 104° 1' 29.431636 W
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence: 0.16 °

Well	LENGTH CC 6_7 FED COM 23H			
Well Position	+N/-S	0.00 ft	Northing:	456,139.30 usft
	+E/-W	0.00 ft	Easting:	636,702.12 usft
Position Uncertainty	0.00 ft	Wellhead Elevation:	0.00 ft	Ground Level: 2,958.60 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	11/28/2018	7.10	60.02	47,967

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	180.69

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	
3,542.00	0.00	0.00	3,542.00	0.00	0.00	0.00	0.00	0.00	0.00	
4,392.15	17.00	348.78	4,379.73	122.83	-24.36	2.00	2.00	0.00	348.78	
6,344.93	17.00	348.78	6,247.15	682.96	-135.42	0.00	0.00	0.00	0.00	
8,037.14	17.00	179.70	7,914.16	678.14	-183.67	2.00	0.00	-9.99	-174.29	
8,765.62	89.85	179.70	8,319.60	131.75	-180.80	10.00	10.00	0.00	0.00	FTP (Length CC
19,292.43	89.85	179.70	8,347.60	-10,394.88	-125.70	0.00	0.00	0.00	0.00	PBHL (Length CC

Oxy Planning Report

Database: HOPSP
Company: ENGINEERING DESIGNS
Project: PRD NM DIRECTIONAL PLANS (NAD 1983)
Site: LENGTH CC 6_7 FED COM
Well: LENGTH CC 6_7 FED COM 23H
Wellbore: Wellbore #1
Design: Permitting Plan

Local Co-ordinate Reference: Well LENGTH CC 6_7 FED COM 23H
TVD Reference: RKB=26.5' @ 2985.10ft
MD Reference: RKB=26.5' @ 2985.10ft
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
3,542.00	0.00	0.00	3,542.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	1.16	348.78	3,600.00	0.58	-0.11	-0.57	2.00	2.00	0.00
3,700.00	3.16	348.78	3,699.92	4.27	-0.85	-4.26	2.00	2.00	0.00
3,800.00	5.16	348.78	3,799.65	11.39	-2.26	-11.36	2.00	2.00	0.00
3,900.00	7.16	348.78	3,899.07	21.91	-4.35	-21.86	2.00	2.00	0.00
4,000.00	9.16	348.78	3,998.05	35.84	-7.11	-35.75	2.00	2.00	0.00
4,100.00	11.16	348.78	4,096.48	53.14	-10.54	-53.01	2.00	2.00	0.00
4,200.00	13.16	348.78	4,194.23	73.80	-14.63	-73.62	2.00	2.00	0.00
4,300.00	15.16	348.78	4,291.19	97.79	-19.39	-97.55	2.00	2.00	0.00
4,392.15	17.00	348.78	4,379.73	122.83	-24.36	-122.53	2.00	2.00	0.00
4,400.00	17.00	348.78	4,387.23	125.08	-24.80	-124.77	0.00	0.00	0.00
4,500.00	17.00	348.78	4,482.86	153.77	-30.49	-153.39	0.00	0.00	0.00
4,600.00	17.00	348.78	4,578.49	182.45	-36.18	-182.00	0.00	0.00	0.00
4,700.00	17.00	348.78	4,674.12	211.13	-41.87	-210.61	0.00	0.00	0.00
4,800.00	17.00	348.78	4,769.75	239.82	-47.55	-239.22	0.00	0.00	0.00
4,900.00	17.00	348.78	4,865.38	268.50	-53.24	-267.84	0.00	0.00	0.00
5,000.00	17.00	348.78	4,961.01	297.18	-58.93	-296.45	0.00	0.00	0.00
5,100.00	17.00	348.78	5,056.64	325.87	-64.62	-325.06	0.00	0.00	0.00

Oxy

Planning Report

Database: HOPSPP
Company: ENGINEERING DESIGNS
Project: PRD NM DIRECTIONAL PLANS (NAD 1983)
Site: LENGTH CC 6_7 FED COM
Well: LENGTH CC 6_7 FED COM 23H
Wellbore: Wellbore #1
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Local Co-ordinate Reference: Well LENGTH CC 6_7 FED COM 23H
TVD Reference: RKB=26.5' @ 2985.10ft
MD Reference: RKB=26.5' @ 2985.10ft
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)
5,200.00	17.00	348.78	5,152.26	354.55	-70.30	-353.68	0.00	0.00	0.00
5,300.00	17.00	348.78	5,247.89	383.24	-75.99	-382.29	0.00	0.00	0.00
5,400.00	17.00	348.78	5,343.52	411.92	-81.68	-410.90	0.00	0.00	0.00
5,500.00	17.00	348.78	5,439.15	440.60	-87.37	-439.51	0.00	0.00	0.00
5,600.00	17.00	348.78	5,534.78	469.29	-93.06	-468.13	0.00	0.00	0.00
5,700.00	17.00	348.78	5,630.41	497.97	-98.74	-496.74	0.00	0.00	0.00
5,800.00	17.00	348.78	5,726.04	526.65	-104.43	-525.35	0.00	0.00	0.00
5,900.00	17.00	348.78	5,821.67	555.34	-110.12	-553.97	0.00	0.00	0.00
6,000.00	17.00	348.78	5,917.30	584.02	-115.81	-582.58	0.00	0.00	0.00
6,100.00	17.00	348.78	6,012.93	612.71	-121.49	-611.19	0.00	0.00	0.00
6,200.00	17.00	348.78	6,108.55	641.39	-127.18	-639.81	0.00	0.00	0.00
6,300.00	17.00	348.78	6,204.18	670.07	-132.87	-668.42	0.00	0.00	0.00
6,344.93	17.00	348.78	6,247.15	682.96	-135.42	-681.27	0.00	0.00	0.00
6,400.00	15.91	348.38	6,299.96	698.25	-138.51	-696.53	2.00	-1.99	-0.73
6,500.00	13.92	347.50	6,396.59	723.42	-143.87	-721.63	2.00	-1.99	-0.88
6,600.00	11.94	346.33	6,494.05	745.22	-148.92	-743.36	2.00	-1.98	-1.17
6,700.00	9.96	344.71	6,592.22	763.61	-153.64	-761.70	2.00	-1.98	-1.62
6,800.00	8.00	342.29	6,690.99	778.58	-158.04	-776.61	2.00	-1.96	-2.42
6,900.00	6.06	338.33	6,790.24	790.11	-162.10	-788.09	2.00	-1.94	-3.96
7,000.00	4.17	330.73	6,889.84	798.18	-165.83	-796.12	2.00	-1.89	-7.60
7,100.00	2.47	311.82	6,989.67	802.79	-169.21	-800.69	2.00	-1.70	-18.90
7,200.00	1.68	258.15	7,089.61	803.93	-172.25	-801.79	2.00	-0.79	-53.67
7,300.00	2.74	211.64	7,189.54	801.59	-174.93	-799.42	2.00	1.07	-46.51
7,400.00	4.50	195.94	7,289.34	795.78	-177.27	-793.58	2.00	1.76	-15.69
7,500.00	6.40	189.27	7,388.89	786.52	-179.24	-784.29	2.00	1.90	-6.67
7,600.00	8.34	185.68	7,488.06	773.80	-180.86	-771.55	2.00	1.95	-3.60
7,700.00	10.31	183.44	7,586.73	757.64	-182.11	-755.38	2.00	1.97	-2.24
7,800.00	12.29	181.91	7,684.79	738.07	-183.00	-735.80	2.00	1.98	-1.53
7,900.00	14.27	180.81	7,782.11	715.10	-183.53	-712.83	2.00	1.98	-1.11
8,000.00	16.26	179.96	7,878.57	688.77	-183.70	-686.50	2.00	1.99	-0.84
8,037.14	17.00	179.70	7,914.16	678.14	-183.67	-675.87	2.00	1.99	-0.71
8,100.00	23.29	179.70	7,973.15	656.51	-183.55	-654.24	10.00	10.00	0.00
8,200.00	33.29	179.70	8,061.09	609.18	-183.30	-606.92	10.00	10.00	0.00
8,300.00	43.29	179.70	8,139.49	547.30	-182.98	-545.05	10.00	10.00	0.00
8,400.00	53.29	179.70	8,205.94	472.75	-182.59	-470.51	10.00	10.00	0.00
8,500.00	63.29	179.70	8,258.44	387.79	-182.15	-385.56	10.00	10.00	0.00
8,600.00	73.29	179.70	8,295.40	295.01	-181.66	-292.79	10.00	10.00	0.00
8,700.00	83.29	179.70	8,315.67	197.21	-181.15	-195.01	10.00	10.00	0.00
8,765.62	89.85	179.70	8,319.60	131.75	-180.80	-129.56	10.00	10.00	0.00
8,800.00	89.85	179.70	8,319.69	97.37	-180.62	-95.18	0.00	0.00	0.00
8,900.00	89.85	179.70	8,319.96	-2.63	-180.10	4.81	0.00	0.00	0.00
9,000.00	89.85	179.70	8,320.22	-102.63	-179.58	104.79	0.00	0.00	0.00
9,100.00	89.85	179.70	8,320.49	-202.63	-179.05	204.78	0.00	0.00	0.00
9,200.00	89.85	179.70	8,320.76	-302.62	-178.53	304.76	0.00	0.00	0.00
9,300.00	89.85	179.70	8,321.02	-402.62	-178.01	404.75	0.00	0.00	0.00
9,400.00	89.85	179.70	8,321.29	-502.62	-177.48	504.73	0.00	0.00	0.00
9,500.00	89.85	179.70	8,321.55	-602.62	-176.96	604.71	0.00	0.00	0.00
9,600.00	89.85	179.70	8,321.82	-702.62	-176.44	704.70	0.00	0.00	0.00
9,700.00	89.85	179.70	8,322.09	-802.62	-175.91	804.68	0.00	0.00	0.00
9,800.00	89.85	179.70	8,322.35	-902.61	-175.39	904.67	0.00	0.00	0.00
9,900.00	89.85	179.70	8,322.62	-1,002.61	-174.87	1,004.65	0.00	0.00	0.00
10,000.00	89.85	179.70	8,322.88	-1,102.61	-174.34	1,104.64	0.00	0.00	0.00
10,100.00	89.85	179.70	8,323.15	-1,202.61	-173.82	1,204.62	0.00	0.00	0.00
10,200.00	89.85	179.70	8,323.42	-1,302.61	-173.30	1,304.61	0.00	0.00	0.00

Oxy Planning Report

Database: HOPSPP
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Project: PRD NM DIRECTIONAL PLANS (NAD 1983)
Site: LENGTH CC 6_7 FED COM
Well: LENGTH CC 6_7 FED COM 23H
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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)
10,300.00	89.85	179.70	8,323.68	-1,402.61	-172.77	1,404.59	0.00	0.00	0.00
10,400.00	89.85	179.70	8,323.95	-1,502.60	-172.25	1,504.58	0.00	0.00	0.00
10,500.00	89.85	179.70	8,324.21	-1,602.60	-171.73	1,604.56	0.00	0.00	0.00
10,600.00	89.85	179.70	8,324.48	-1,702.60	-171.20	1,704.55	0.00	0.00	0.00
10,700.00	89.85	179.70	8,324.75	-1,802.60	-170.68	1,804.53	0.00	0.00	0.00
10,800.00	89.85	179.70	8,325.01	-1,902.60	-170.16	1,904.51	0.00	0.00	0.00
10,900.00	89.85	179.70	8,325.28	-2,002.59	-169.63	2,004.50	0.00	0.00	0.00
11,000.00	89.85	179.70	8,325.54	-2,102.59	-169.11	2,104.48	0.00	0.00	0.00
11,100.00	89.85	179.70	8,325.81	-2,202.59	-168.59	2,204.47	0.00	0.00	0.00
11,200.00	89.85	179.70	8,326.08	-2,302.59	-168.06	2,304.45	0.00	0.00	0.00
11,300.00	89.85	179.70	8,326.34	-2,402.59	-167.54	2,404.44	0.00	0.00	0.00
11,400.00	89.85	179.70	8,326.61	-2,502.59	-167.01	2,504.42	0.00	0.00	0.00
11,500.00	89.85	179.70	8,326.87	-2,602.58	-166.49	2,604.41	0.00	0.00	0.00
11,600.00	89.85	179.70	8,327.14	-2,702.58	-165.97	2,704.39	0.00	0.00	0.00
11,700.00	89.85	179.70	8,327.41	-2,802.58	-165.44	2,804.38	0.00	0.00	0.00
11,800.00	89.85	179.70	8,327.67	-2,902.58	-164.92	2,904.36	0.00	0.00	0.00
11,900.00	89.85	179.70	8,327.94	-3,002.58	-164.40	3,004.35	0.00	0.00	0.00
12,000.00	89.85	179.70	8,328.20	-3,102.58	-163.87	3,104.33	0.00	0.00	0.00
12,100.00	89.85	179.70	8,328.47	-3,202.57	-163.35	3,204.32	0.00	0.00	0.00
12,200.00	89.85	179.70	8,328.74	-3,302.57	-162.83	3,304.30	0.00	0.00	0.00
12,300.00	89.85	179.70	8,329.00	-3,402.57	-162.30	3,404.28	0.00	0.00	0.00
12,400.00	89.85	179.70	8,329.27	-3,502.57	-161.78	3,504.27	0.00	0.00	0.00
12,500.00	89.85	179.70	8,329.53	-3,602.57	-161.26	3,604.25	0.00	0.00	0.00
12,600.00	89.85	179.70	8,329.80	-3,702.57	-160.73	3,704.24	0.00	0.00	0.00
12,700.00	89.85	179.70	8,330.07	-3,802.56	-160.21	3,804.22	0.00	0.00	0.00
12,800.00	89.85	179.70	8,330.33	-3,902.56	-159.69	3,904.21	0.00	0.00	0.00
12,900.00	89.85	179.70	8,330.60	-4,002.56	-159.16	4,004.19	0.00	0.00	0.00
13,000.00	89.85	179.70	8,330.86	-4,102.56	-158.64	4,104.18	0.00	0.00	0.00
13,100.00	89.85	179.70	8,331.13	-4,202.56	-158.12	4,204.16	0.00	0.00	0.00
13,200.00	89.85	179.70	8,331.40	-4,302.56	-157.59	4,304.15	0.00	0.00	0.00
13,300.00	89.85	179.70	8,331.66	-4,402.55	-157.07	4,404.13	0.00	0.00	0.00
13,400.00	89.85	179.70	8,331.93	-4,502.55	-156.55	4,504.12	0.00	0.00	0.00
13,500.00	89.85	179.70	8,332.19	-4,602.55	-156.02	4,604.10	0.00	0.00	0.00
13,600.00	89.85	179.70	8,332.46	-4,702.55	-155.50	4,704.08	0.00	0.00	0.00
13,700.00	89.85	179.70	8,332.73	-4,802.55	-154.97	4,804.07	0.00	0.00	0.00
13,800.00	89.85	179.70	8,332.99	-4,902.54	-154.45	4,904.05	0.00	0.00	0.00
13,900.00	89.85	179.70	8,333.26	-5,002.54	-153.93	5,004.04	0.00	0.00	0.00
14,000.00	89.85	179.70	8,333.52	-5,102.54	-153.40	5,104.02	0.00	0.00	0.00
14,100.00	89.85	179.70	8,333.79	-5,202.54	-152.88	5,204.01	0.00	0.00	0.00
14,200.00	89.85	179.70	8,334.05	-5,302.54	-152.36	5,303.99	0.00	0.00	0.00
14,300.00	89.85	179.70	8,334.32	-5,402.54	-151.83	5,403.98	0.00	0.00	0.00
14,400.00	89.85	179.70	8,334.59	-5,502.53	-151.31	5,503.96	0.00	0.00	0.00
14,500.00	89.85	179.70	8,334.85	-5,602.53	-150.79	5,603.95	0.00	0.00	0.00
14,600.00	89.85	179.70	8,335.12	-5,702.53	-150.26	5,703.93	0.00	0.00	0.00
14,700.00	89.85	179.70	8,335.38	-5,802.53	-149.74	5,803.92	0.00	0.00	0.00
14,800.00	89.85	179.70	8,335.65	-5,902.53	-149.22	5,903.90	0.00	0.00	0.00
14,900.00	89.85	179.70	8,335.92	-6,002.53	-148.69	6,003.89	0.00	0.00	0.00
15,000.00	89.85	179.70	8,336.18	-6,102.52	-148.17	6,103.87	0.00	0.00	0.00
15,100.00	89.85	179.70	8,336.45	-6,202.52	-147.65	6,203.85	0.00	0.00	0.00
15,200.00	89.85	179.70	8,336.71	-6,302.52	-147.12	6,303.84	0.00	0.00	0.00
15,300.00	89.85	179.70	8,336.98	-6,402.52	-146.60	6,403.82	0.00	0.00	0.00
15,400.00	89.85	179.70	8,337.25	-6,502.52	-146.08	6,503.81	0.00	0.00	0.00
15,500.00	89.85	179.70	8,337.51	-6,602.52	-145.55	6,603.79	0.00	0.00	0.00
15,600.00	89.85	179.70	8,337.78	-6,702.51	-145.03	6,703.78	0.00	0.00	0.00

Oxy Planning Report

Database: HOPSPP
Company: ENGINEERING DESIGNS
Project: PRD NM DIRECTIONAL PLANS (NAD 1983)
Site: LENGTH CC 6_7 FED COM
Well: LENGTH CC 6_7 FED COM 23H
Wellbore: Wellbore #1
Design: Permitting Plan

Local Co-ordinate Reference: Well LENGTH CC 6_7 FED COM 23H
TVD Reference: RKB=26.5' @ 2985.10ft
MD Reference: RKB=26.5' @ 2985.10ft
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	89.85	179.70	8,338.04	-6,802.51	-144.51	6,803.76	0.00	0.00	0.00
15,800.00	89.85	179.70	8,338.31	-6,902.51	-143.98	6,903.75	0.00	0.00	0.00
15,900.00	89.85	179.70	8,338.58	-7,002.51	-143.46	7,003.73	0.00	0.00	0.00
16,000.00	89.85	179.70	8,338.84	-7,102.51	-142.94	7,103.72	0.00	0.00	0.00
16,100.00	89.85	179.70	8,339.11	-7,202.51	-142.41	7,203.70	0.00	0.00	0.00
16,200.00	89.85	179.70	8,339.37	-7,302.50	-141.89	7,303.69	0.00	0.00	0.00
16,300.00	89.85	179.70	8,339.64	-7,402.50	-141.36	7,403.67	0.00	0.00	0.00
16,400.00	89.85	179.70	8,339.91	-7,502.50	-140.84	7,503.65	0.00	0.00	0.00
16,500.00	89.85	179.70	8,340.17	-7,602.50	-140.32	7,603.64	0.00	0.00	0.00
16,600.00	89.85	179.70	8,340.44	-7,702.50	-139.79	7,703.62	0.00	0.00	0.00
16,700.00	89.85	179.70	8,340.70	-7,802.50	-139.27	7,803.61	0.00	0.00	0.00
16,800.00	89.85	179.70	8,340.97	-7,902.49	-138.75	7,903.59	0.00	0.00	0.00
16,900.00	89.85	179.70	8,341.24	-8,002.49	-138.22	8,003.58	0.00	0.00	0.00
17,000.00	89.85	179.70	8,341.50	-8,102.49	-137.70	8,103.56	0.00	0.00	0.00
17,100.00	89.85	179.70	8,341.77	-8,202.49	-137.18	8,203.55	0.00	0.00	0.00
17,200.00	89.85	179.70	8,342.03	-8,302.49	-136.65	8,303.53	0.00	0.00	0.00
17,300.00	89.85	179.70	8,342.30	-8,402.48	-136.13	8,403.52	0.00	0.00	0.00
17,400.00	89.85	179.70	8,342.57	-8,502.48	-135.61	8,503.50	0.00	0.00	0.00
17,500.00	89.85	179.70	8,342.83	-8,602.48	-135.08	8,603.49	0.00	0.00	0.00
17,600.00	89.85	179.70	8,343.10	-8,702.48	-134.56	8,703.47	0.00	0.00	0.00
17,700.00	89.85	179.70	8,343.36	-8,802.48	-134.04	8,803.45	0.00	0.00	0.00
17,800.00	89.85	179.70	8,343.63	-8,902.48	-133.51	8,903.44	0.00	0.00	0.00
17,900.00	89.85	179.70	8,343.90	-9,002.47	-132.99	9,003.42	0.00	0.00	0.00
18,000.00	89.85	179.70	8,344.16	-9,102.47	-132.47	9,103.41	0.00	0.00	0.00
18,100.00	89.85	179.70	8,344.43	-9,202.47	-131.94	9,203.39	0.00	0.00	0.00
18,200.00	89.85	179.70	8,344.69	-9,302.47	-131.42	9,303.38	0.00	0.00	0.00
18,300.00	89.85	179.70	8,344.96	-9,402.47	-130.90	9,403.36	0.00	0.00	0.00
18,400.00	89.85	179.70	8,345.23	-9,502.47	-130.37	9,503.35	0.00	0.00	0.00
18,500.00	89.85	179.70	8,345.49	-9,602.46	-129.85	9,603.33	0.00	0.00	0.00
18,600.00	89.85	179.70	8,345.76	-9,702.46	-129.33	9,703.32	0.00	0.00	0.00
18,700.00	89.85	179.70	8,346.02	-9,802.46	-128.80	9,803.30	0.00	0.00	0.00
18,800.00	89.85	179.70	8,346.29	-9,902.46	-128.28	9,903.29	0.00	0.00	0.00
18,900.00	89.85	179.70	8,346.56	-10,002.46	-127.75	10,003.27	0.00	0.00	0.00
19,000.00	89.85	179.70	8,346.82	-10,102.46	-127.23	10,103.26	0.00	0.00	0.00
19,100.00	89.85	179.70	8,347.09	-10,202.45	-126.71	10,203.24	0.00	0.00	0.00
19,200.00	89.85	179.70	8,347.35	-10,302.45	-126.18	10,303.22	0.00	0.00	0.00
19,292.43	89.85	179.70	8,347.60	-10,394.88	-125.70	10,395.64	0.00	0.00	0.00

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
FTP (Length CC 6_7 - hit/miss target - Shape - Point)	0.00	0.00	8,319.60	131.75	-180.80	456,271.04	636,521.33	32° 15' 14.361130 N	104° 1' 31.532599
PBHL (Length CC 6_7 - plan hits target center - Point)	0.00	0.00	8,347.60	-10,394.88	-125.70	445,745.28	636,576.43	32° 13' 30.197726 N	104° 1' 31.242437

Oxy Planning Report

Database: HOPSPP
Company: ENGINEERING DESIGNS
Project: PRD NM DIRECTIONAL PLANS (NAD 1983)
Site: LENGTH CC 6_7 FED COM
Well: LENGTH CC 6_7 FED COM 23H
Wellbore: Wellbore #1
Design: Permitting Plan

Local Co-ordinate Reference: Well LENGTH CC 6_7 FED COM 23H
TVD Reference: RKB=26.5' @ 2985.10ft
MD Reference: RKB=26.5' @ 2985.10ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
3,542.00	3,542.00	0.00	0.00	Build 2.00°/100'
4,392.15	4,379.73	122.83	-24.36	Hold 17.00° Tangent
6,344.93	6,247.15	682.96	-135.42	Turn 2.00°/100'
8,037.14	7,914.16	678.14	-183.67	Build 10.00°/100'
8,765.62	8,319.60	131.75	-180.80	Landing Point
19,292.43	8,347.60	-10,394.88	-125.70	TD at 19292.43' MD

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

The content of this Technical Data Sheet is for general information only and does not guarantee performance or imply fitness for a particular purpose, which only a competent drilling professional can determine considering the specific installation and operation parameters. Information that is printed or downloaded is no longer controlled by TMK IPSCO and might not be the latest information. Anyone using the information herein does so at their own risk. To verify that you have the latest TMK IPSCO technical information, please contact TMK IPSCO Technical Sales toll-free at 1-888-258-2000.



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PERFORMANCE DATA

TMK UP DQX
Technical Data Sheet

5.500 in

20.00 lbs/ft

P-110

Tubular Parameters

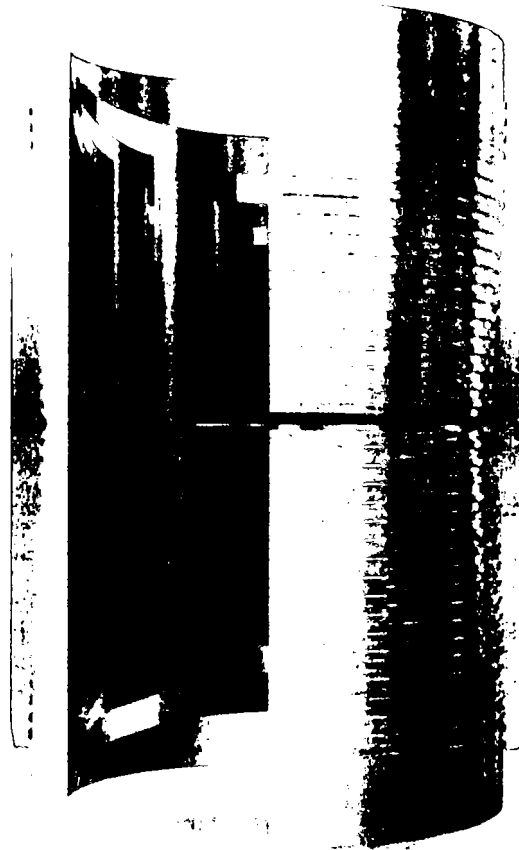
Size	5.500	in	Minimum Yield	110,000	psi
Nominal Weight	20.00	lbs/ft	Minimum Tensile	125,000	psi
Grade	P-110		Yield Load	641,000	lbs
PE Weight	19.81	lbs/ft	Tensile Load	729,000	lbs
Wall Thickness	0.361	in	Min. Internal Yield Pressure	12,600	psi
Nominal ID	4.778	in	Collapse Pressure	11,100	psi
Drift Diameter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



Revised on July-29-2014

NOTES:

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