

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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OCD Artesia

FORM 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.
NMLC064827A

6. If Indian, Allottee or Tribe Name

SUBMIT IN TRIPLICATE - Other instructions on page 27. If Unit or CA/Agreement, Name and/or No.
891000558X

1. Type of Well

☒ Oil Well ☐ Gas Well ☐ Other

8. Well Name and No.

JAMES RANCH UNIT DI2 WCY-2W 272H

2. Name of Operator

XTO PERMIAN OPERATING LLC

Contact: KELLY KARDOS

E-Mail: kelly_kardos@xtoenergy.com

9. API Well No.

30-015-45466-00-X1

3a. Address

6401 HOLIDAY HILL ROAD BLDG 5
MIDLAND, TX 79707

3b. Phone No. (include area code)

Ph: 432-620-4374

10. Field and Pool or Exploratory Area
WILDCAT

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

Sec 25 T22S R30E SENW 2600FSL 1960FWL
32.362988 N Lat, 103.836594 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

☒ Notice of Intent☐ Subsequent Report☐ Final Abandonment Notice

TYPE OF ACTION

☐ Acidize☐ Alter Casing☐ Casing Repair☐ Change Plans☐ Convert to Injection☐ Deepen☐ Hydraulic Fracturing☐ New Construction☐ Plug and Abandon☐ Plug Back☐ Production (Start/Resume)☐ Reclamation☐ Recomplete☐ Temporarily Abandon☐ Water Disposal☐ Water Shut-Off☐ Well Integrity☒ Other
Change to Original A
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.

XTO Permian Operating, LLC requests permission to make the following changes to the original APD:

Change name from James Ranch Unit DI 2 WCY-2W 272H to James Ranch Unit DI 2 111H.

— Change SHL from 2600'FSL & 1960'FWL to 2600'FSL & 2020'FWL.

— Change BHL from 990'FNL & 2440'FEL to 990'FNL & 2640'FEL.

Change drilling program per the attached procedure.

XTO requests to not utilize centralizers in the curve or lateral.

SEE ATTACHED FOR
CONDITIONS OF APPROVALNO NEW SURFACE DISTURBANCE
SAME COA'S APPLY.

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

Electronic Submission #487548 verified by the BLM Well Information System
For XTO PERMIAN OPERATING LLC, sent to the Carlsbad
Committed to AFMSS for processing by PRISCILLA PEREZ on 10/11/2019 (20PP0095SE)

Name (Printed/Typed) KELLY KARDOS

Title

REGULATORY COORDINATOR

Signature

(Electronic Submission)

Date

10/11/2019

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 **

RW-2-11-2020

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 Brazos 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

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

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-015- 45466	² Pool Code 96597	³ Pool Name LOS MEDANOS; WOLFCAMP (GAS)
⁴ Property Code	⁵ Property Name JAMES RANCH UNIT DI 2	⁶ Well Number 111H
⁷ OGRID No. 373075	⁸ Operator Name XTO PERMIAN OPERATING, LLC.	⁹ Elevation 3,344'

¹⁰ Surface Location

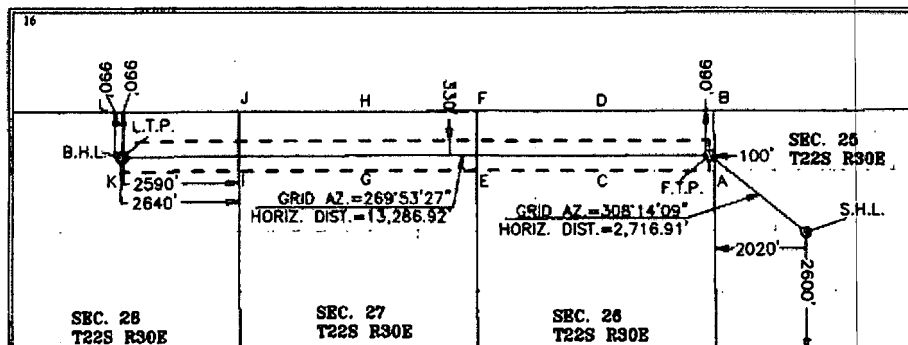
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
K	25	22 S	30 E		2,600	SOUTH	2,020	WEST	EDDY

¹¹ 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
B	28	22 S	30 E		990	NORTH	2,640	EAST	EDDY

¹² Dedicated Acres 800	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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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.



¹⁷ 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.

Kelly Kardos 10/11/19
Signature Date

Kelly Kardos

Printed Name

kelly_kardos@xtoenergy.com

E-mail Address

¹⁸ SURVEYOR CERTIFICATION

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

08-30-2019

Date of Survey

Signature and Seal of
Professional Surveyor:



MARK DILLON HARP 23786
Certificate Number

RR/AW

2019051231

SURFACE LOCATION	LAST TAKE POINT
NAD 83 NME	NAD 83 NME
Y= 496,142.8	Y= 497,799.2
X= 694,771.3	X= 679,450.3
LAT.= 32.362988°N	LAT.= 32.367726°N
LONG.= 103.836402°W	LONG.= 103.885998°W
FIRST TAKE POINT	BOTTOM HOLE LOCATION
NAD 83 NME	NAD 83 NME
Y= 497,824.3	Y= 497,799.1
X= 692,637.2	X= 679,400.3
LAT.= 32.367637°N	LAT.= 32.367727°N
LONG.= 103.843288°W	LONG.= 103.886160°W

SURFACE LOCATION	LAST TAKE POINT
NAD 27 NME	NAD 27 NME
Y= 496,082.7	Y= 497,739.0
X= 653,589.3	X= 638,268.4
LAT.= 32.362866°N	LAT.= 32.367605°N
LONG.= 103.835909°W	LONG.= 103.885505°W
FIRST TAKE POINT	BOTTOM HOLE LOCATION
NAD 27 NME	NAD 27 NME
Y= 497,764.1	Y= 497,738.9
X= 651,455.2	X= 638,218.4
LAT.= 32.367515°N	LAT.= 32.367805°N
LONG.= 103.842796°W	LONG.= 103.885667°W

CORNER COORDINATES TABLE

NAD 83 NME	
A - Y= 497,495.1 N, X= 692,739.9 E	
B - Y= 498,814.5 N, X= 692,729.2 E	
C - Y= 497,489.4 N, X= 690,059.6 E	
D - Y= 498,809.0 N, X= 690,051.3 E	
E - Y= 497,484.2 N, X= 687,379.4 E	
F - Y= 498,804.6 N, X= 687,373.7 E	
G - Y= 497,478.3 N, X= 684,709.6 E	
H - Y= 498,797.8 N, X= 684,704.4 E	
I - Y= 497,473.7 N, X= 682,041.3 E	
J - Y= 498,793.4 N, X= 682,037.5 E	
K - Y= 497,469.5 N, X= 679,360.6 E	
L - Y= 498,789.0 N, X= 679,354.8 E	

CORNER COORDINATES TABLE

NAD 27 NME	
A - Y= 497,435.0 N, X= 651,557.9 E	
B - Y= 498,754.3 N, X= 651,547.3 E	
C - Y= 497,429.2 N, X= 648,877.6 E	
D - Y= 498,748.8 N, X= 648,869.4 E	
E - Y= 497,424.0 N, X= 646,197.4 E	
F - Y= 498,744.4 N, X= 646,191.8 E	
G - Y= 497,418.1 N, X= 643,527.6 E	
H - Y= 498,737.6 N, X= 643,522.5 E	
I - Y= 497,413.5 N, X= 640,859.4 E	
J - Y= 498,733.2 N, X= 640,855.6 E	
K - Y= 497,409.3 N, X= 638,178.7 E	
L - Y= 498,728.8 N, X= 638,172.9 E	

Intent ☒ As Drilled ☐

API #
30-015-45466

Operator Name: XTO PERMIAN OPERATING, LLC	Property Name: JAMES RANCH UNIT DI 2	Well Number 111H
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Kick Off Point (KOP)

UL K	Section 25	Township 22S	Range 30E	Lot	Feet 2600	From N/S SOUTH	Feet 2020	From E/W WEST	County Eddy
Latitude 32.362988					Longitude -103.836402			NAD 83	

First Take Point (FTP)

UL A	Section 26	Township 22S	Range 30E	Lot	Feet 990	From N/S NORTH	Feet 100	From E/W EAST	County Eddy
Latitude 32.367637					Longitude -103.843288			NAD 83	

Last Take Point (LTP)

UL B	Section 28	Township 22S	Range 30E	Lot	Feet 990	From N/S NORTH	Feet 2590	From E/W EAST	County Eddy
Latitude 32.369541					Longitude -103.885995			NAD 83	

Is this well the defining well for the Horizontal Spacing Unit?

☒

Is this well an infill well?

☐

If infill is yes please provide API if available, Operator Name and well number for Defining well for Horizontal Spacing Unit.

API #

Operator Name: XTO PERMIAN OPERATING, LLC	Property Name:	Well Number
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KZ 06/29/2018

DRILLING PLAN: BLM COMPLIANCE
(Supplement to BLM 3160-3)

XTO Energy Inc.

James Ranch Unit DI 2 111H

Projected TD: 24942' MD / 11179' TVD

SHL: 2600' FSL & 2020' FWL , Section 25, T22S, R30E

BHL: 990' FNL & 2640' FEL , Section 28, T22S, R30E

Eddy County, NM

1. Geologic Name of Surface Formation

A. Quaternary

2. Estimated Tops of Geological Markers & Depths of Anticipated Fresh Water, Oil or Gas

Formation	Well Depth (TVD)	Water/Oil/Gas
Rustler	366'	Water
Top of Salt	761'	Water
Base of Salt	3604'	Water
Delaware	3850'	Water
Bone Spring Lime	7701'	Water
1st Bone Spring Ss	8841'	Water/Oil/Gas
2nd Bone Spring Ss	9584'	Water/Oil/Gas
3rd Bone Spring Carb	9849'	Water/Oil/Gas
3rd Bone Spring Ss	10544'	Water/Oil/Gas
Wolfcamp	10979'	Water/Oil/Gas
Target/Land Curve	11179'	Water/Oil/Gas

*** Hydrocarbons @ Brushy Canyon

*** Groundwater depth 40' (per NM State Engineers Office).

No other formations are expected to yield oil, gas or fresh water in measurable volumes. The surface fresh water sands will be protected by setting 18-5/8" inch casing @ 736' (25' above the salt) and circulating cement back to surface. The salt will be isolated by setting 13-3/8" inch casing at 3800' and circulating cement to surface. The second intermediate will isolate from the salt down to the next casing seat by setting 9-5/8" inch casing at 8372' and cemented back into the 13-3/8 inch casing shoe. A 8-3/4" inch curve and lateral hole will be drilled to MD/TD and 5-1/2 inch casing will be set at TD and cemented back up to 2nd intermediate (estimated TOC 7872 feet) per Potash regulations.

3. Casing Design

Hole Size	Depth	OD Csg	Weight	Collar	Grade	New/Used	SF Burst	SF Collapse	SF Tension
24"	0' - 736'	18-5/8"	87.5	STC	H-40	New	1.41	1.89	8.68
17-1/2"	0' - 3800'	13-3/8"	68	STC	J-55	New	1.59	1.66	2.61
12-1/4"	0' - 8372'	9-5/8"	40	LTC	HCL-80	New	1.69	2.42	2.17
8-3/4"	0' - 24942'	5-1/2"	17	BTC	P-110	New	1.12	1.27	1.97

- XTO requests to not utilize centralizers in the curve and lateral
- 18-5/8" Collapse analyzed using 75% evacuation. Casing to be filled while running.
- 13-3/8" Collapse analyzed using 50% evacuation based on regional experience.
- 9-5/8" Collapse analyzed using 33% evacuation based on regional experience.
- 5-1/2" Tension calculated using vertical hanging weight plus the lateral weight multiplied by a friction factor of 0.35
- Test on 2M Annular & Casing will be limited to 70% burst of the casing or 1500 psi, whichever is less

Wellhead:

Temporary Wellhead

- 18-5/8" SOW bottom x 21-1/4" 2M top flange.

- Permanent Wellhead - GE RSH Multibowl System

A. Starting Head: 13-5/8" 5M top flange x 13-3/8" SOW bottom

B. Tubing Head: 13-5/8" 5M bottom flange x 7-1/16" 10M top flange

- Wellhead will be installed by manufacturer's representatives.
- Manufacturer will monitor welding process to ensure appropriate temperature of seal.
- Operator will test the 9-5/8" casing per BLM Onshore Order 2
- Wellhead Manufacturer representative will not be present for BOP test plug installation

4. Cement Program

Surface Casing: 18-5/8", 87.5 New H-40, STC casing to be set at +/- 736'

Lead: 580 sxs EconoCem-HLTRRC (mixed at 12.9 ppg, 1.87 ft³/sx, 10.13 gal/sx water)

Tail: 550 sxs Halcem-C + 2% CaCl (mixed at 14.8 ppg, 1.35 ft³/sx, 6.39 gal/sx water)

Compressives: 12-hr = 900 psi 24 hr = 1500 psi

1st Intermediate Casing: 13-3/8", 68 New J-55, STC casing to be set at +/- 3800'

Lead: 2600 sxs EconoCem-HLTRRC (mixed at 12.9 ppg, 1.87 ft³/sx, 10.13 gal/sx water)

Tail: 300 sxs Halcem-C + 2% CaCl (mixed at 14.8 ppg, 1.35 ft³/sx, 6.39 gal/sx water)

Compressives: 12-hr = 900 psi 24 hr = 1500 psi

2nd Intermediate Casing: 9-5/8", 40 New HCL-80, LTC casing to be set at +/- 8372'

ECP/DV Tool to be set at 3850'

1st Stage

Lead: 1340 sxs Halcem-C + 2% CaCl (mixed at 12.9 ppg, 1.88 ft³/sx, 9.61 gal/sx water)

Tail: 230 sxs Halcem-C + 2% CaCl (mixed at 14.8 ppg, 1.33 ft³/sx, 6.39 gal/sx water)

Compressives: 12-hr = 900 psi 24 hr = 1500 psi

2nd Stage

Lead: 1110 sxs Halcem-C + 2% CaCl (mixed at 12.9 ppg, 1.88 ft³/sx, 9.61 gal/sx water)

Tail: 230 sxs Halcem-C + 2% CaCl (mixed at 14.8 ppg, 1.33 ft³/sx, 6.39 gal/sx water)

Compressives: 12-hr = 900 psi 24 hr = 1500 psi

Production Casing: 5-1/2", 17 New P-110, BTC casing to be set at +/- 24942'

Lead: 2970 sxs VersaCem (mixed at 13.2 ppg, 1.61 ft³/sx, 8.38 gal/sx water) Top of Cement: 7872 feet

Compressives: 12-hr = 1375 psi 24 hr = 2285 psi

5. Pressure Control Equipment

The blow out preventer equipment (BOP) on surface casing temporary wellhead will consist of a 21-1/4" minimum 2M Hydril. MASP should not exceed 1160 psi.

Once the permanent WH is installed on the 13-3/8" casing, the blow out preventer equipment (BOP) will consist of a 13-5/8" minimum 5M Hydril and a 13-5/8" minimum 5M Double Ram BOP. MASP should not exceed 3412 psi. In any instance where 10M BOP is required by BLM, XTO requests a variance to utilize 5M annular with 10M ram preventers (a common BOP configuration, which allows use of 10M rams in unlikely event that pressures exceed 5M).

All BOP testing will be done by an independent service company. Annular pressure tests will be limited to 50% of the working pressure. When nipping up on the 13-3/8", 5M bradenhead and flange, the BOP test will be limited to 5M psi. When nipping up on the 9-5/8", the BOP will be tested to a minimum of 5M psi. All BOP tests will include a low pressure test as per BLM regulations. The 5M BOP diagrams are attached. Blind rams will be functioned tested each trip, pipe rams will be functioned tested each day.

A variance is requested to allow use of a flex hose as the choke line from the BOP to the Choke Manifold. If this hose is used, a copy of the manufacturer's certification and pressure test chart will be kept on the rig. Attached is an example of a certification and pressure test chart. The manufacturer does not require anchors.

6. Proposed Mud Circulation System

INTERVAL	Hole Size	Mud Type	MW (ppg)	Viscosity (sec/qt)	Fluid Loss (cc)
0' - 736'	24"	FW/Native	8.4-8.8	35-40	NC
736' - 3800'	17-1/2"	Brine	9.8-10.2	30-32	NC
3800' to 8372'	12-1/4"	FW / Cut Brine	8.7-9.4	30-32	NC
8372' to 24942'	8-3/4"	Cut Brine / Polymer	9.8 - 10.1	29-32	NC - 20

The necessary mud products for weight addition and fluid loss control will be on location at all times.

Spud with fresh water/native mud. Drill out from under 18-5/8" surface casing with brine solution. A 9.8 ppg -10.2 ppg brine mud will be used while drilling through the salt formation. Use fibrous materials as needed to control seepage and lost circulation. Pump viscous sweeps as needed for hole cleaning. Pump speed will be recorded on a daily drilling report after mudding up. A Pason or Totco will be used to detect changes in loss or gain of mud volume. A mud test will be performed every 24 hours to determine: density, viscosity, strength, filtration and pH as necessary. Use available solids controls equipment to help keep mud weight down after mud up. Rig up solids control equipment to operate as a closed loop system.

7. Auxiliary Well Control and Monitoring Equipment

- A. A Kelly cock will be in the drill string at all times.
- B. A full opening drill pipe stabbing valve having appropriate connections will be on the rig floor at all times.
- C. H2S monitors will be on location when drilling below the 13-3/8" casing.

8. Logging, Coring and Testing Program

Mud Logger: Mud Logging Unit (2 man) below intermediate casing.

Open hole logging will not be done on this well.

9. Abnormal Pressures and Temperatures / Potential Hazards

None Anticipated. BHT of 175 to 195 F is anticipated. No H2S is expected but monitors will be in place to detect any H2S occurrences. Should these circumstances be encountered the operator and drilling contractor are prepared to take all necessary steps to ensure safety of all personnel and environment. Lost circulation could occur but is not expected to be a serious problem in this area and hole seepage will be compensated for by additions of small amounts of LCM in the drilling fluid. The maximum anticipated bottom hole pressure for this well is 5871 psi.

10. Anticipated Starting Date and Duration of Operations

Road and location construction will begin after Santa Fe and BLM have approved the APD. Anticipated spud date will be as soon after Santa Fe and BLM approval and as soon as a rig will be available. Move in operations and drilling is expected to take 40 days. If production casing is run, an additional 30 days will be needed to complete well and construct surface facilities and/or lay flow lines in order to place well on production.



5D Plan Report

XTO Energy

Field Name: *XTO NAD 27 NME*
Site Name: *JRU DI 2 901,111,112,113*
Well Name: *JRU DI 2 111*
Plan: *P1:V1*

25 June 2019



Weatherford®


Weatherford
**XTO
ENERGY**
JRU DI 2 111

Field Name: XTO NAD 27 NME	Map Units: US ft		Company Name: XTO Energy	
	Vertical Reference Datum (VRD): Mean Sea Level			
	Projected Coordinate System: NAD27 / New Mexico East			
	Comment:			
Site: JRU DI 2 901,111,112,113	Units: US ft	North Reference: Grid	Convergence Angle: 0.27	
	Position:	Northing: 496518.25 US ft	Latitude: 32° 21' 50.63"	
		Easting: 653535.58 US ft	Longitude: -103° 50' 9.88"	
	Elevation above MSL: 3343.00 US ft			
Comment: Eddy Co, NM				
Slot: JRU DI 2 111	Position (Relative to Site Centre)			
	+N/-S: 0.14 US ft	Northing: 496518.39 US ft	Latitude: 32° 21' 50.63"	
	+E/-W: 30.01 US ft	Easting: 653565.59 US ft	Longitude: -103° 50' 9.53"	
	Elevation above MSL: 3343.00 US ft			
Comment:				
Well: JRU DI 2 111	Type: Main well		UWI:	Plan: P1:V1
	File Number:	Comment:		
	Closure Distance: 15394.10 US ft		Closure Azimuth: 274.58°	
	Vertical Section: Position of Origin (Relative to Slot centre)			
	+N/-S: 0.00 US ft		+E/-W: 0.00 US ft	Az: 269.82°
	Magnetic Parameters:			
	Model: bggm2018	Field Strength: 47833.5nT	Declination: 6.93°	Dip: 60.06° Date: 25/Jun/2019

Drill floor: Plan: P1:V1
Rig Height (Drill Floor): 25.00 US ft **Elevation above MSL:** 3368.00 US ft **Inclination:** 0.00° **Azimuth:** 0.00°

Target set: JRU DI 2 111 Comment:								
Target Name:	TVD (US ft)	TVD (MSL) (US ft)	N Offset (US ft)	E Offset (US ft)	Northing (US ft)	Easting (US ft)	C.P. Distance (US ft)	Comment
FTP	11068.00	7700.00	1269.59	-2054.70	497787.98	651510.89	0.00	
LTP	11048.00	7680.00	1228.27	-15295.03	497746.66	638270.56	0.09	
PBHL 111	11048.00	7680.00	1228.06	-15345.05	497746.45	638220.54	0.00	

Wellpath created using minimum curvature.

SD Plan Report

Tie Point:
MD: 0.00USFt **Inclination:** **Azimuth:** 0.00° **TVD:** 0.00USFt **North Offset:** 0.00USFt **East Offset:** 0.00USFt

Salient Points: (Relative to Slot centre)(TVD relative to Drill Floor)												Comment
MD (US ft)	Incl (°)	Az (°)	TVD (US ft)	IVD (MSL) (US ft)	VS (US ft)	N. Offset (US ft)	E. Offset (US ft)	N. Rate (%/100US ft)	T. Rate (%/100US ft)	Fore (°)	DLS (%/100US ft)	
0.00	0.00	0.00	0.00	-3368.00	-0.00	0.00	0.00	0.00	0.00	0.00	0.00	
3100.00	0.00	0.00	3100.00	-268.00	-0.00	0.00	0.00	0.00	0.00	0.00	0.00	Nudge
4117.39	15.26	308.66	4105.40	737.40	104.91	84.15	-105.17	1.50	0.00	308.66	1.50	Hold
10869.12	15.26	308.66	10619.05	7251.05	1489.06	1194.40	-1492.82	0.00	0.00	0.00	0.00	KOP
11651.67	90.09	269.82	11068.00	7700.00	2050.70	1269.59	-2054.70	9.56	-4.96	320.16	10.00	LP/FTP
24942.10	90.09	269.82	11048.00	7680.00	15341.12	1228.06	-15345.05	0.00	0.00	0.00	0.00	PBHL 111

Interpolated Points: (Relative to Slot centre)(TVD relative to Drill Floor)												Comment
MD (US ft)	Incl (°)	Az (°)	TVD (US ft)	IVD (MSL) (US ft)	VS (US ft)	N. Offset (US ft)	E. Offset (US ft)	N. Rate (%/100US ft)	T. Rate (%/100US ft)	Fore (°)	DLS (%/100US ft)	
0.00	0.00	0.00	0.00	-3368.00	-0.00	0.00	0.00	496518.39	653565.59	0.00		
100.00	0.00	0.00	100.00	-3268.00	-0.00	0.00	0.00	496518.39	653565.59	0.00		
200.00	0.00	0.00	200.00	-3168.00	-0.00	0.00	0.00	496518.39	653565.59	0.00		
300.00	0.00	0.00	300.00	-3068.00	-0.00	0.00	0.00	496518.39	653565.59	0.00		
400.00	0.00	0.00	400.00	-2968.00	-0.00	0.00	0.00	496518.39	653565.59	0.00		
500.00	0.00	0.00	500.00	-2868.00	-0.00	0.00	0.00	496518.39	653565.59	0.00		
600.00	0.00	0.00	600.00	-2768.00	-0.00	0.00	0.00	496518.39	653565.59	0.00		
700.00	0.00	0.00	700.00	-2668.00	-0.00	0.00	0.00	496518.39	653565.59	0.00		
800.00	0.00	0.00	800.00	-2568.00	-0.00	0.00	0.00	496518.39	653565.59	0.00		
900.00	0.00	0.00	900.00	-2468.00	-0.00	0.00	0.00	496518.39	653565.59	0.00		
1000.00	0.00	0.00	1000.00	-2368.00	-0.00	0.00	0.00	496518.39	653565.59	0.00		
1100.00	0.00	0.00	1100.00	-2268.00	-0.00	0.00	0.00	496518.39	653565.59	0.00		
1200.00	0.00	0.00	1200.00	-2168.00	-0.00	0.00	0.00	496518.39	653565.59	0.00		
1300.00	0.00	0.00	1300.00	-2068.00	-0.00	0.00	0.00	496518.39	653565.59	0.00		
1400.00	0.00	0.00	1400.00	-1968.00	-0.00	0.00	0.00	496518.39	653565.59	0.00		
1500.00	0.00	0.00	1500.00	-1868.00	-0.00	0.00	0.00	496518.39	653565.59	0.00		
1600.00	0.00	0.00	1600.00	-1768.00	-0.00	0.00	0.00	496518.39	653565.59	0.00		
1700.00	0.00	0.00	1700.00	-1668.00	-0.00	0.00	0.00	496518.39	653565.59	0.00		
1800.00	0.00	0.00	1800.00	-1568.00	-0.00	0.00	0.00	496518.39	653565.59	0.00		
1900.00	0.00	0.00	1900.00	-1468.00	-0.00	0.00	0.00	496518.39	653565.59	0.00		
2000.00	0.00	0.00	2000.00	-1368.00	-0.00	0.00	0.00	496518.39	653565.59	0.00		
2100.00	0.00	0.00	2100.00	-1268.00	-0.00	0.00	0.00	496518.39	653565.59	0.00		
2200.00	0.00	0.00	2200.00	-1168.00	-0.00	0.00	0.00	496518.39	653565.59	0.00		
2300.00	0.00	0.00	2300.00	-1068.00	-0.00	0.00	0.00	496518.39	653565.59	0.00		
2400.00	0.00	0.00	2400.00	-968.00	-0.00	0.00	0.00	496518.39	653565.59	0.00		
2500.00	0.00	0.00	2500.00	-868.00	-0.00	0.00	0.00	496518.39	653565.59	0.00		
2600.00	0.00	0.00	2600.00	-768.00	-0.00	0.00	0.00	496518.39	653565.59	0.00		
2700.00	0.00	0.00	2700.00	-668.00	-0.00	0.00	0.00	496518.39	653565.59	0.00		
2800.00	0.00	0.00	2800.00	-568.00	-0.00	0.00	0.00	496518.39	653565.59	0.00		
2900.00	0.00	0.00	2900.00	-468.00	-0.00	0.00	0.00	496518.39	653565.59	0.00		
3000.00	0.00	0.00	3000.00	-368.00	-0.00	0.00	0.00	496518.39	653565.59	0.00		
3100.00	0.00	0.00	3100.00	-268.00	-0.00	0.00	0.00	496518.39	653565.59	0.00		Nudge
3200.00	1.50	308.66	3199.99	-168.01	1.02	0.82	-1.02	496519.21	653564.57	1.50		
3300.00	3.00	308.66	3299.91	-68.09	4.08	3.27	-4.09	496521.66	653561.50	1.50		
3400.00	4.50	308.66	3399.69	31.69	9.17	7.36	-9.19	496525.75	653556.40	1.50		
3500.00	6.00	308.66	3499.27	131.27	16.30	13.07	-16.34	496531.46	653549.25	1.50		
3600.00	7.50	308.66	3598.57	230.57	25.45	20.42	-25.52	496538.81	653540.07	1.50		
3700.00	9.00	308.66	3697.54	329.54	36.63	29.38	-36.72	496547.77	653528.87	1.50		
3800.00	10.50	308.66	3796.09	428.09	49.82	39.96	-49.94	496558.35	653515.65	1.50		
3900.00	12.00	308.66	3894.16	526.16	65.01	52.15	-65.18	496570.54	653500.41	1.50		
4000.00	13.50	308.66	3991.70	623.70	82.20	65.93	-82.41	496584.33	653483.18	1.50		
4100.00	15.00	308.66	4088.62	720.62	101.37	81.31	-101.63	496599.70	653463.96	1.50		
4117.39	15.26	308.66	4105.40	737.40	104.91	84.15	-105.17	496602.54	653460.42	1.50		Hold
4200.00	15.26	308.66	4185.10	817.10	121.84	97.73	-122.15	496616.12	653443.44	0.00		
4300.00	15.26	308.66	4281.57	913.57	142.34	114.18	-142.70	496632.57	653422.89	0.00		

5D Plan Report

Interpolated Points: (Relative to Slot centre) (TVD relative to Drill Floor)										
MD (US ft)	Incl (°)	API (°)	TVD (US ft)	TVD (HSL) (US ft)	VS (US ft)	Northing (US ft)	Easting (US ft)	Northing (US ft)	Easting (US ft)	DLS (%/100US ft)
4400.00	15.26	308.66	4378.05	1010.05	162.84	130.62	-163.26	496649.01	653402.33	0.00
4500.00	15.26	308.66	4474.52	1106.52	183.35	147.06	-183.81	496665.46	653381.78	0.00
4600.00	15.26	308.66	4571.00	1203.00	203.85	163.51	-204.36	496681.90	653361.23	0.00
4700.00	15.26	308.66	4667.47	1299.47	224.35	179.95	-224.91	496698.34	653340.68	0.00
4800.00	15.26	308.66	4763.94	1395.94	244.85	196.40	-245.47	496714.79	653320.12	0.00
4900.00	15.26	308.66	4860.42	1492.42	265.35	212.84	-266.02	496731.23	653299.57	0.00
5000.00	15.26	308.66	4956.89	1588.89	285.85	229.28	-286.57	496747.68	653279.02	0.00
5100.00	15.26	308.66	5053.36	1685.36	306.35	245.73	-307.12	496764.12	653258.47	0.00
5200.00	15.26	308.66	5149.84	1781.84	326.85	262.17	-327.68	496780.56	653237.91	0.00
5300.00	15.26	308.66	5246.31	1878.31	347.35	278.62	-348.23	496797.01	653217.36	0.00
5400.00	15.26	308.66	5342.79	1974.79	367.85	295.06	-368.78	496813.45	653196.81	0.00
5500.00	15.26	308.66	5439.26	2071.26	388.35	311.50	-389.33	496829.90	653176.26	0.00
5600.00	15.26	308.66	5535.73	2167.73	408.85	327.95	-409.89	496846.34	653155.70	0.00
5700.00	15.26	308.66	5632.21	2264.21	429.35	344.39	-430.44	496862.78	653135.15	0.00
5800.00	15.26	308.66	5728.68	2360.68	449.86	360.84	-450.99	496879.23	653114.60	0.00
5900.00	15.26	308.66	5825.15	2457.15	470.36	377.28	-471.54	496895.67	653094.05	0.00
6000.00	15.26	308.66	5921.63	2553.63	490.86	393.72	-492.10	496912.12	653073.49	0.00
6100.00	15.26	308.66	6018.10	2650.10	511.36	410.17	-512.65	496928.56	653052.94	0.00
6200.00	15.26	308.66	6114.58	2746.58	531.86	426.61	-533.20	496945.00	653032.39	0.00
6300.00	15.26	308.66	6211.05	2843.05	552.36	443.06	-553.75	496961.45	653011.84	0.00
6400.00	15.26	308.66	6307.52	2939.52	572.86	459.50	-574.31	496977.89	652991.28	0.00
6500.00	15.26	308.66	6404.00	3036.00	593.36	475.94	-594.86	496994.34	652970.73	0.00
6600.00	15.26	308.66	6500.47	3132.47	613.86	492.39	-615.41	497010.78	652950.18	0.00
6700.00	15.26	308.66	6596.94	3228.94	634.36	508.83	-635.96	497027.22	652929.63	0.00
6800.00	15.26	308.66	6693.42	3325.42	654.86	525.28	-656.52	497043.67	652909.07	0.00
6900.00	15.26	308.66	6789.89	3421.89	675.36	541.72	-677.07	497060.11	652888.52	0.00
7000.00	15.26	308.66	6886.37	3518.37	695.86	558.16	-697.62	497076.56	652867.97	0.00
7100.00	15.26	308.66	6982.84	3614.84	716.37	574.61	-718.17	497093.00	652847.42	0.00
7200.00	15.26	308.66	7079.31	3711.31	736.87	591.05	-738.73	497109.44	652826.86	0.00
7300.00	15.26	308.66	7175.79	3807.79	757.37	607.50	-759.28	497125.89	652806.31	0.00
7400.00	15.26	308.66	7272.26	3904.26	777.87	623.94	-779.83	497142.33	652785.76	0.00
7500.00	15.26	308.66	7368.73	4000.73	798.37	640.38	-800.38	497158.78	652765.20	0.00
7600.00	15.26	308.66	7465.21	4097.21	818.87	656.83	-820.94	497175.22	652744.65	0.00
7700.00	15.26	308.66	7561.68	4193.68	839.37	673.27	-841.49	497191.66	652724.10	0.00
7800.00	15.26	308.66	7658.16	4290.16	859.87	689.72	-862.04	497208.11	652703.55	0.00
7900.00	15.26	308.66	7754.63	4386.63	880.37	706.16	-882.59	497224.55	652682.99	0.00
8000.00	15.26	308.66	7851.10	4483.10	900.87	722.60	-903.15	497241.00	652662.44	0.00
8100.00	15.26	308.66	7947.58	4579.58	921.37	739.05	-923.70	497257.44	652641.89	0.00
8200.00	15.26	308.66	8044.05	4676.05	941.87	755.49	-944.25	497273.88	652621.34	0.00
8300.00	15.26	308.66	8140.52	4772.52	962.37	771.94	-964.80	497290.33	652600.78	0.00
8400.00	15.26	308.66	8237.00	4869.00	982.88	788.38	-985.35	497306.77	652580.23	0.00
8500.00	15.26	308.66	8333.47	4965.47	1003.38	804.82	-1005.91	497323.22	652559.68	0.00
8600.00	15.26	308.66	8429.95	5061.95	1023.88	821.27	-1026.46	497339.66	652539.13	0.00
8700.00	15.26	308.66	8526.42	5158.42	1044.38	837.71	-1047.01	497356.10	652518.57	0.00
8800.00	15.26	308.66	8622.89	5254.89	1064.88	854.16	-1067.57	497372.55	652498.02	0.00
8900.00	15.26	308.66	8719.37	5351.37	1085.38	870.60	-1088.12	497388.99	652477.47	0.00
9000.00	15.26	308.66	8815.84	5447.84	1105.88	887.04	-1108.67	497405.44	652456.92	0.00
9100.00	15.26	308.66	8912.31	5544.31	1126.38	903.49	-1129.23	497421.88	652436.36	0.00
9200.00	15.26	308.66	9008.79	5640.79	1146.88	919.93	-1149.78	497438.32	652415.81	0.00
9300.00	15.26	308.66	9105.26	5737.26	1167.38	936.38	-1170.33	497454.77	652395.26	0.00
9400.00	15.26	308.66	9201.74	5833.74	1187.88	952.82	-1190.88	497471.21	652374.71	0.00
9500.00	15.26	308.66	9298.21	5930.21	1208.38	969.26	-1211.44	497487.66	652354.15	0.00
9600.00	15.26	308.66	9394.68	6026.68	1228.89	985.71	-1231.99	497504.10	652333.60	0.00
9700.00	15.26	308.66	9491.16	6123.16	1249.39	1002.15	-1252.54	497520.54	652313.05	0.00
9800.00	15.26	308.66	9587.63	6219.63	1269.89	1018.60	-1273.09	497536.99	652292.50	0.00
9900.00	15.26	308.66	9684.10	6316.10	1290.39	1035.04	-1293.65	497553.43	652271.94	0.00
10000.00	15.26	308.66	9780.58	6412.58	1310.89	1051.48	-1314.20	497569.88	652251.39	0.00
10100.00	15.26	308.66	9877.05	6509.05	1331.39	1067.93	-1334.75	497586.32	652230.84	0.00

SD Plan Report

Interpolated Points (Relative to Slot Centre) (TVD relative to Drill Floor)											
TD (US ft)	Incl (°)	Δ (°)	TVD (US ft)	VD (RST) (US ft)	VS (US ft)	N Offset (US ft)	E Offset (US ft)	Northing (US ft)	Easting (US ft)	CIS (°/1000S ft)	Comment
10200.00	15.26	308.66	9973.53	6605.53	1351.89	1084.37	-1355.30	497602.76	652210.29	0.00	
10300.00	15.26	308.66	10070.00	6702.00	1372.39	1100.82	-1375.86	497619.21	652189.73	0.00	
10400.00	15.26	308.66	10166.47	6798.47	1392.89	1117.26	-1396.41	497635.65	652169.18	0.00	
10500.00	15.26	308.66	10262.95	6894.95	1413.39	1133.70	-1416.96	497652.10	652148.63	0.00	
10600.00	15.26	308.66	10359.42	6991.42	1433.89	1150.15	-1437.51	497668.54	652128.08	0.00	
10700.00	15.26	308.66	10455.90	7087.90	1454.39	1166.59	-1458.07	497684.98	652107.52	0.00	
10800.00	15.26	308.66	10552.37	7184.37	1474.89	1183.04	-1478.62	497701.43	652086.97	0.00	
10869.12	15.26	308.66	10619.05	7251.05	1489.06	1194.40	-1492.82	497712.79	652072.77	0.00	KOP
10900.00	17.74	302.16	10648.66	7280.66	1496.21	1199.45	-1499.98	497717.84	652065.61	10.00	
11000.00	26.63	289.78	10741.21	7373.21	1530.23	1215.18	-1534.06	497733.57	652031.53	10.00	
11100.00	36.08	283.41	10826.54	7458.54	1580.04	1229.63	-1583.91	497748.02	651981.68	10.00	
11200.00	45.74	279.43	10902.03	7534.03	1644.13	1242.37	-1648.04	497760.76	651917.55	10.00	
11300.00	55.49	276.59	10965.42	7597.42	1720.55	1252.99	-1724.49	497771.38	651841.10	10.00	
11400.00	65.30	274.35	11014.76	7646.76	1806.97	1261.18	-1810.94	497779.57	651754.65	10.00	
11500.00	75.14	272.44	11048.55	7680.55	1900.77	1266.69	-1904.76	497785.08	651660.83	10.00	
11600.00	84.99	270.69	11065.78	7697.78	1999.10	1269.36	-2003.10	497787.75	651562.49	10.00	
11651.67	90.09	269.82	11068.00	7700.00	2050.70	1269.59	-2054.70	497787.98	651510.89	10.00	LP/FTP
11700.00	90.09	269.82	11067.93	7699.93	2099.03	1269.44	-2103.03	497787.83	651462.56	0.00	
11800.00	90.09	269.82	11067.78	7699.78	2199.03	1269.13	-2203.03	497787.52	651362.56	0.00	
11900.00	90.09	269.82	11067.63	7699.63	2299.03	1268.81	-2303.03	497787.20	651262.56	0.00	
12000.00	90.09	269.82	11067.48	7699.48	2399.03	1268.50	-2403.03	497786.89	651162.56	0.00	
12100.00	90.09	269.82	11067.33	7699.33	2499.03	1268.19	-2503.03	497786.58	651062.56	0.00	
12200.00	90.09	269.82	11067.17	7699.17	2599.03	1267.88	-2603.03	497786.27	650962.56	0.00	
12300.00	90.09	269.82	11067.02	7699.02	2699.03	1267.56	-2703.03	497785.95	650862.56	0.00	
12400.00	90.09	269.82	11066.87	7698.87	2799.03	1267.25	-2803.03	497785.64	650762.56	0.00	
12500.00	90.09	269.82	11066.72	7698.72	2899.03	1266.94	-2903.03	497785.33	650662.56	0.00	
12600.00	90.09	269.82	11066.57	7698.57	2999.03	1266.63	-3003.03	497785.02	650562.56	0.00	
12700.00	90.09	269.82	11066.42	7698.42	3099.03	1266.31	-3103.03	497784.70	650462.56	0.00	
12800.00	90.09	269.82	11066.27	7698.27	3199.03	1266.00	-3203.02	497784.39	650362.56	0.00	
12900.00	90.09	269.82	11066.12	7698.12	3299.03	1265.69	-3303.02	497784.08	650262.57	0.00	
13000.00	90.09	269.82	11065.97	7697.97	3399.03	1265.38	-3403.02	497783.77	650162.57	0.00	
13100.00	90.09	269.82	11065.82	7697.82	3499.03	1265.06	-3503.02	497783.45	650062.57	0.00	
13200.00	90.09	269.82	11065.67	7697.67	3599.03	1264.75	-3603.02	497783.14	649962.57	0.00	
13300.00	90.09	269.82	11065.52	7697.52	3699.03	1264.44	-3703.02	497782.83	649862.57	0.00	
13400.00	90.09	269.82	11065.37	7697.37	3799.03	1264.13	-3803.02	497782.52	649762.57	0.00	
13500.00	90.09	269.82	11065.22	7697.22	3899.03	1263.81	-3903.02	497782.20	649662.57	0.00	
13600.00	90.09	269.82	11065.07	7697.07	3999.03	1263.50	-4003.02	497781.89	649562.57	0.00	
13700.00	90.09	269.82	11064.92	7696.92	4099.03	1263.19	-4103.02	497781.58	649462.57	0.00	
13800.00	90.09	269.82	11064.77	7696.77	4199.03	1262.88	-4203.02	497781.27	649362.57	0.00	
13900.00	90.09	269.82	11064.62	7696.62	4299.03	1262.56	-4303.02	497780.95	649262.57	0.00	
14000.00	90.09	269.82	11064.47	7696.47	4399.03	1262.25	-4403.02	497780.64	649162.57	0.00	
14100.00	90.09	269.82	11064.32	7696.32	4499.03	1261.94	-4503.02	497780.33	649062.57	0.00	
14200.00	90.09	269.82	11064.17	7696.17	4599.03	1261.63	-4603.02	497780.02	648962.57	0.00	
14300.00	90.09	269.82	11064.01	7696.01	4699.03	1261.31	-4703.02	497779.70	648862.57	0.00	
14400.00	90.09	269.82	11063.86	7695.86	4799.03	1261.00	-4803.02	497779.39	648762.57	0.00	
14500.00	90.09	269.82	11063.71	7695.71	4899.03	1260.69	-4903.01	497779.08	648662.58	0.00	
14600.00	90.09	269.82	11063.56	7695.56	4999.03	1260.38	-5003.01	497778.77	648562.58	0.00	
14700.00	90.09	269.82	11063.41	7695.41	5099.03	1260.06	-5103.01	497778.45	648462.58	0.00	
14800.00	90.09	269.82	11063.26	7695.26	5199.03	1259.75	-5203.01	497778.14	648362.58	0.00	
14900.00	90.09	269.82	11063.11	7695.11	5299.03	1259.44	-5303.01	497777.83	648262.58	0.00	
15000.00	90.09	269.82	11062.96	7694.96	5399.03	1259.13	-5403.01	497777.52	648162.58	0.00	
15100.00	90.09	269.82	11062.81	7694.81	5499.03	1258.81	-5503.01	497777.20	648062.58	0.00	
15200.00	90.09	269.82	11062.66	7694.66	5599.03	1258.50	-5603.01	497776.89	647962.58	0.00	
15300.00	90.09	269.82	11062.51	7694.51	5699.03	1258.19	-5703.01	497776.58	647862.58	0.00	
15400.00	90.09	269.82	11062.36	7694.36	5799.03	1257.88	-5803.01	497776.27	647762.58	0.00	
15500.00	90.09	269.82	11062.21	7694.21	5899.03	1257.56	-5903.01	497775.95	647662.58	0.00	
15600.00	90.09	269.82	11062.06	7694.06	5999.03	1257.25	-6003.01	497775.64	647562.58	0.00	
15700.00	90.09	269.82	11061.91	7693.91	6099.03	1256.94	-6103.01	497775.33	647462.58	0.00	

5D Plan Report

Interpolated Points: (Relative to Slot centre) (TVD relative to Drill Floor)											
MD (US ft)	Inc (°)	Az (°)	IVD (US ft)	TVD (HSL) (US ft)	VS (US ft)	H. Offset (US ft)	E. Offset (US ft)	Northing (US ft)	Easting (US ft)	ELS (9/100US ft)	Comment
15800.00	90.09	269.82	11061.76	7693.76	6199.03	1256.63	-6203.01	497775.02	647362.58	0.00	
15900.00	90.09	269.82	11061.61	7693.61	6299.03	1256.31	-6303.01	497774.70	647262.58	0.00	
16000.00	90.09	269.82	11061.46	7693.46	6399.03	1256.00	-6403.01	497774.39	647162.58	0.00	
16100.00	90.09	269.82	11061.31	7693.31	6499.03	1255.69	-6503.00	497774.08	647062.58	0.00	
16200.00	90.09	269.82	11061.16	7693.16	6599.03	1255.38	-6603.00	497773.77	646962.59	0.00	
16300.00	90.09	269.82	11061.00	7693.00	6699.03	1255.06	-6703.00	497773.45	646862.59	0.00	
16400.00	90.09	269.82	11060.85	7692.85	6799.03	1254.75	-6803.00	497773.14	646762.59	0.00	
16500.00	90.09	269.82	11060.70	7692.70	6899.03	1254.44	-6903.00	497772.83	646662.59	0.00	
16600.00	90.09	269.82	11060.55	7692.55	6999.03	1254.13	-7003.00	497772.52	646562.59	0.00	
16700.00	90.09	269.82	11060.40	7692.40	7099.03	1253.81	-7103.00	497772.20	646462.59	0.00	
16800.00	90.09	269.82	11060.25	7692.25	7199.03	1253.50	-7203.00	497771.89	646362.59	0.00	
16900.00	90.09	269.82	11060.10	7692.10	7299.03	1253.19	-7303.00	497771.58	646262.59	0.00	
17000.00	90.09	269.82	11059.95	7691.95	7399.03	1252.88	-7403.00	497771.27	646162.59	0.00	
17100.00	90.09	269.82	11059.80	7691.80	7499.03	1252.56	-7503.00	497770.96	646062.59	0.00	
17200.00	90.09	269.82	11059.65	7691.65	7599.03	1252.25	-7603.00	497770.64	645962.59	0.00	
17300.00	90.09	269.82	11059.50	7691.50	7699.03	1251.94	-7703.00	497770.33	645862.59	0.00	
17400.00	90.09	269.82	11059.35	7691.35	7799.03	1251.63	-7803.00	497770.02	645762.59	0.00	
17500.00	90.09	269.82	11059.20	7691.20	7899.03	1251.31	-7903.00	497769.71	645662.59	0.00	
17600.00	90.09	269.82	11059.05	7691.05	7999.03	1251.00	-8003.00	497769.39	645562.59	0.00	
17700.00	90.09	269.82	11058.90	7690.90	8099.03	1250.69	-8103.00	497769.08	645462.59	0.00	
17800.00	90.09	269.82	11058.75	7690.75	8199.03	1250.38	-8202.99	497768.77	645362.59	0.00	
17900.00	90.09	269.82	11058.60	7690.60	8299.03	1250.06	-8302.99	497768.46	645262.60	0.00	
18000.00	90.09	269.82	11058.45	7690.45	8399.03	1249.75	-8402.99	497768.14	645162.60	0.00	
18100.00	90.09	269.82	11058.30	7690.30	8499.03	1249.44	-8502.99	497767.83	645062.60	0.00	
18200.00	90.09	269.82	11058.15	7690.15	8599.03	1249.13	-8602.99	497767.52	644962.60	0.00	
18300.00	90.09	269.82	11058.00	7690.00	8699.03	1248.81	-8702.99	497767.21	644862.60	0.00	
18400.00	90.09	269.82	11057.84	7689.84	8799.03	1248.50	-8802.99	497766.89	644762.60	0.00	
18500.00	90.09	269.82	11057.69	7689.69	8899.03	1248.19	-8902.99	497766.58	644662.60	0.00	
18600.00	90.09	269.82	11057.54	7689.54	8999.03	1247.88	-9002.99	497766.27	644562.60	0.00	
18700.00	90.09	269.82	11057.39	7689.39	9099.02	1247.56	-9102.99	497765.96	644462.60	0.00	
18800.00	90.09	269.82	11057.24	7689.24	9199.02	1247.25	-9202.99	497765.64	644362.60	0.00	
18900.00	90.09	269.82	11057.09	7689.09	9299.02	1246.94	-9302.99	497765.33	644262.60	0.00	
19000.00	90.09	269.82	11056.94	7688.94	9399.02	1246.63	-9402.99	497765.02	644162.60	0.00	
19100.00	90.09	269.82	11056.79	7688.79	9499.02	1246.31	-9502.99	497764.71	644062.60	0.00	
19200.00	90.09	269.82	11056.64	7688.64	9599.02	1246.00	-9602.99	497764.39	643962.60	0.00	
19300.00	90.09	269.82	11056.49	7688.49	9699.02	1245.69	-9702.99	497764.08	643862.60	0.00	
19400.00	90.09	269.82	11056.34	7688.34	9799.02	1245.38	-9802.98	497763.77	643762.60	0.00	
19500.00	90.09	269.82	11056.19	7688.19	9899.02	1245.06	-9902.98	497763.46	643662.61	0.00	
19600.00	90.09	269.82	11056.04	7688.04	9999.02	1244.75	-10002.98	497763.14	643562.61	0.00	
19700.00	90.09	269.82	11055.89	7687.89	10099.02	1244.44	-10102.98	497762.83	643462.61	0.00	
19800.00	90.09	269.82	11055.74	7687.74	10199.02	1244.13	-10202.98	497762.52	643362.61	0.00	
19900.00	90.09	269.82	11055.59	7687.59	10299.02	1243.82	-10302.98	497762.21	643262.61	0.00	
20000.00	90.09	269.82	11055.44	7687.44	10399.02	1243.50	-10402.98	497761.89	643162.61	0.00	
20100.00	90.09	269.82	11055.29	7687.29	10499.02	1243.19	-10502.98	497761.58	643062.61	0.00	
20200.00	90.09	269.82	11055.14	7687.14	10599.02	1242.88	-10602.98	497761.27	642962.61	0.00	
20300.00	90.09	269.82	11054.99	7686.99	10699.02	1242.57	-10702.98	497760.96	642862.61	0.00	
20400.00	90.09	269.82	11054.84	7686.84	10799.02	1242.25	-10802.98	497760.64	642762.61	0.00	
20500.00	90.09	269.82	11054.68	7686.68	10899.02	1241.94	-10902.98	497760.33	642662.61	0.00	
20600.00	90.09	269.82	11054.53	7686.53	10999.02	1241.63	-11002.98	497760.02	642562.61	0.00	
20700.00	90.09	269.82	11054.38	7686.38	11099.02	1241.32	-11102.98	497759.71	642462.61	0.00	
20800.00	90.09	269.82	11054.23	7686.23	11199.02	1241.00	-11202.98	497759.39	642362.61	0.00	
20900.00	90.09	269.82	11054.08	7686.08	11299.02	1240.69	-11302.98	497759.08	642262.61	0.00	
21000.00	90.09	269.82	11053.93	7685.93	11399.02	1240.38	-11402.98	497758.77	642162.61	0.00	
21100.00	90.09	269.82	11053.78	7685.78	11499.02	1240.07	-11502.97	497758.46	642062.61	0.00	
21200.00	90.09	269.82	11053.63	7685.63	11599.02	1239.75	-11602.97	497758.14	641962.62	0.00	
21300.00	90.09	269.82	11053.48	7685.48	11699.02	1239.44	-11702.97	497757.83	641862.62	0.00	
21400.00	90.09	269.82	11053.33	7685.33	11799.02	1239.13	-11802.97	497757.52	641762.62	0.00	
21500.00	90.09	269.82	11053.18	7685.18	11899.02	1238.82	-11902.97	497757.21	641662.62	0.00	

SD Plan Report

Interpolated Points: (Relative to Slot centre) (TVD relative to Drill Floor)											
BD (US ft)	Inc (°)	AP (°)	TVD (US ft)	TD (HSL) (US ft)	VS (US ft)	H. Offset (US ft)	E. Offset (US ft)	Heading (US ft)	Heading (US ft)	D.S. (°/1000S ft)	Comment
21600.00	90.09	269.82	11053.03	7685.03	11999.02	1238.50	-12002.97	497756.89	641562.62	0.00	
21700.00	90.09	269.82	11052.88	7684.88	12099.02	1238.19	-12102.97	497756.58	641462.62	0.00	
21800.00	90.09	269.82	11052.73	7684.73	12199.02	1237.88	-12202.97	497756.27	641362.62	0.00	
21900.00	90.09	269.82	11052.58	7684.58	12299.02	1237.57	-12302.97	497755.96	641262.62	0.00	
22000.00	90.09	269.82	11052.43	7684.43	12399.02	1237.25	-12402.97	497755.64	641162.62	0.00	
22100.00	90.09	269.82	11052.28	7684.28	12499.02	1236.94	-12502.97	497755.33	641062.62	0.00	
22200.00	90.09	269.82	11052.13	7684.13	12599.02	1236.63	-12602.97	497755.02	640962.62	0.00	
22300.00	90.09	269.82	11051.98	7683.98	12699.02	1236.32	-12702.97	497754.71	640862.62	0.00	
22400.00	90.09	269.82	11051.83	7683.83	12799.02	1236.00	-12802.97	497754.39	640762.62	0.00	
22500.00	90.09	269.82	11051.67	7683.67	12899.02	1235.69	-12902.97	497754.08	640662.62	0.00	
22600.00	90.09	269.82	11051.52	7683.52	12999.02	1235.38	-13002.97	497753.77	640562.62	0.00	
22700.00	90.09	269.82	11051.37	7683.37	13099.02	1235.07	-13102.97	497753.46	640462.62	0.00	
22800.00	90.09	269.82	11051.22	7683.22	13199.02	1234.75	-13202.96	497753.14	640362.63	0.00	
22900.00	90.09	269.82	11051.07	7683.07	13299.02	1234.44	-13302.96	497752.83	640262.63	0.00	
23000.00	90.09	269.82	11050.92	7682.92	13399.02	1234.13	-13402.96	497752.52	640162.63	0.00	
23100.00	90.09	269.82	11050.77	7682.77	13499.02	1233.82	-13502.96	497752.21	640062.63	0.00	
23200.00	90.09	269.82	11050.62	7682.62	13599.02	1233.50	-13602.96	497751.89	639962.63	0.00	
23300.00	90.09	269.82	11050.47	7682.47	13699.02	1233.19	-13702.96	497751.58	639862.63	0.00	
23400.00	90.09	269.82	11050.32	7682.32	13799.02	1232.88	-13802.96	497751.27	639762.63	0.00	
23500.00	90.09	269.82	11050.17	7682.17	13899.02	1232.57	-13902.96	497750.96	639662.63	0.00	
23600.00	90.09	269.82	11050.02	7682.02	13999.02	1232.25	-14002.96	497750.64	639562.63	0.00	
23700.00	90.09	269.82	11049.87	7681.87	14099.02	1231.94	-14102.96	497750.33	639462.63	0.00	
23800.00	90.09	269.82	11049.72	7681.72	14199.02	1231.63	-14202.96	497750.02	639362.63	0.00	
23900.00	90.09	269.82	11049.57	7681.57	14299.02	1231.32	-14302.96	497749.71	639262.63	0.00	
24000.00	90.09	269.82	11049.42	7681.42	14399.02	1231.00	-14402.96	497749.39	639162.63	0.00	
24100.00	90.09	269.82	11049.27	7681.27	14499.02	1230.69	-14502.96	497749.08	639062.63	0.00	
24200.00	90.09	269.82	11049.12	7681.12	14599.02	1230.38	-14602.96	497748.77	638962.63	0.00	
24300.00	90.09	269.82	11048.97	7680.97	14699.02	1230.07	-14702.96	497748.46	638862.63	0.00	
24400.00	90.09	269.82	11048.82	7680.82	14799.02	1229.75	-14802.95	497748.14	638762.63	0.00	
24500.00	90.09	269.82	11048.67	7680.67	14899.02	1229.44	-14902.95	497747.83	638662.64	0.00	
24600.00	90.09	269.82	11048.51	7680.51	14999.02	1229.13	-15002.95	497747.52	638562.64	0.00	
24700.00	90.09	269.82	11048.36	7680.36	15099.02	1228.82	-15102.95	497747.21	638462.64	0.00	
24800.00	90.09	269.82	11048.21	7680.21	15199.02	1228.50	-15202.95	497746.89	638362.64	0.00	
24900.00	90.09	269.82	11048.06	7680.06	15299.02	1228.19	-15302.95	497746.58	638262.64	0.00	
24942.10	90.09	269.82	11048.00	7680.00	15341.12	1228.06	-15345.05	497746.45	638220.54	0.00	FBHL 111

PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	XTO Permian Operating, LLC
LEASE NO.:	NMLC-064827A
WELL NAME & NO.:	James Ranch Unit DI 2 111H
SURFACE HOLE FOOTAGE:	2600' FSL & 2020' FWL
BOTTOM HOLE FOOTAGE:	0990' FNL & 2640' FEL Sec. 28, T. 22 S., R 30 E.
LOCATION:	Section 25, T. 22 S., R 30 E., NMPM
COUNTY:	Eddy County, New Mexico



H2S	☒ Yes	☐ No	
Potash	☐ None	☐ Secretary	☒ R-111-P
Cave/Karst Potential	☒ Low	☐ Medium	☐ High
Cave/Karst Potential	☐ Critical		
Variance	☐ None	☒ Flex Hose	☐ Other
Wellhead	☐ Conventional	☒ Multibowl	☐ Both
Other	☐ 4 String Area	☐ Capitan Reef	☒ WIPP
Other	☒ Fluid Filled	☐ Cement Squeeze	☐ Pilot Hole
Special Requirements	☐ Water Disposal	☐ COM	☒ Unit

A. HYDROGEN SULFIDE

Hydrogen Sulfide (H2S) monitors shall be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the Hydrogen Sulfide area shall meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, provide measured values and formations to the BLM.

B. CASING

1. The 18-5/8 inch surface casing shall be set at approximately 690 feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt) and cemented to the surface. If salt is encountered, set casing at least 25 feet above the salt.
 - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.

- b. Wait on cement (WOC) time for a primary cement job will be a minimum of **24 hours in the Potash Area** or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)
- c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
- d. If cement falls back, remedial cementing will be done prior to drilling out that string.

13-3/8 inch 1st Intermediate casing must be kept fluid filled to meet BLM minimum collapse requirement.

- 2. The minimum required fill of cement behind the 13-3/8 inch intermediate casing is:

- Cement to surface. If cement does not circulate, contact the appropriate BLM office. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to potash.**

9-5/8 inch 2nd Intermediate casing must be kept fluid filled to meet BLM minimum collapse requirement.

- 3. The minimum required fill of cement behind the 9-5/8 inch intermediate casing is:

Operator has proposed a DV tool, the depth may be adjusted as long as the cement is changed proportionally. DV tool shall be set a minimum of 50' below previous shoe and a minimum of 200' above current shoe. The DV tool may be cancelled if cement circulates to surface on the first stage.

- a. First stage to DV tool:

- Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with second stage cement job.

- b. Second stage above DV tool:

- Cement to surface. If cement does not circulate, contact the appropriate BLM office. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to potash.**

- ❖ In R111 Potash Areas if cement does not circulate to surface on the first two casing strings, the cement on the 3rd casing string must come to surface.
- ❖ In WIPP Areas cement must come to surface on the first three casing strings.

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

- Cement should tie-back 200 feet into the previous casing. Operator shall provide method of verification. Excess calculates to 13% - Additional cement may be required.

C. PRESSURE CONTROL

1. Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).
2. In the case where the only BOP installed is an annular preventer, it shall be tested to a minimum of 2000 psi (which may require upgrading to 3M or 5M annular).
3. Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the 13-3/8 inch 1st intermediate casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the 13-3/8 inch 1st intermediate casing shoe shall be 5,000 (5M) psi.
 - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
 - b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
 - c. Manufacturer representative shall install the test plug for the initial BOP test.
 - d. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
 - e. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.

D. SPECIAL REQUIREMENT (S)

Unit Wells

The well sign for a unit well shall include the unit number in addition to the surface and bottom hole lease numbers. This also applies to participating area numbers. If a participating area has not been established, the operator can use the general unit designation, but will replace the unit number with the participating area number when the sign is replaced.

Commercial Well Determination

A commercial well determination shall be submitted after production has been established for at least six months.

WIPP Requirements

The proposed well is located within 330' of the WIPP Land Withdrawal Area boundary. As a result, XTO Permian Operating, LLC is required to submit daily drilling reports, logs and deviation survey information to the Bureau of Land Management and the Department of Energy per requirements of the Joint Powers Agreement until a total vertical depth of 7,000 feet is reached. These reports will have at a minimum the rate of penetration and a clearly marked section showing the deviation for each 500 foot interval. Operator may be required to do more frequent deviation surveys based on the daily information submitted and may be required to take other corrective measures. Information from this well will be included in the Quarterly Drilling Report. Information will also be provided to the New Mexico Oil Conservation Division after drilling activities have been completed. Upon completion of the well, the operator shall submit a complete directional survey. Any future entry into the well for purposes of completing additional drilling will require supplemental information.

XTO Permian Operating, LLC can email the required information to Mr. Melvin Balderrama at Melvin.Balderama@wipp.ws or Mr. J. Neatherlin at Jimmy.Neatherlin@wipp.ws fax to his attention at 575-234-6062.

GENERAL REQUIREMENTS

The BLM is to be notified in advance for a representative to witness:

- a. Spudding well (minimum of 24 hours)
- b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
- c. BOPE tests (minimum of 4 hours)

☒ Eddy County

Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220,
(575) 361-2822

1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
 - a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).

- b. When the operator proposes to set surface casing with Spudder Rig
 - Notify the BLM when moving in and removing the Spudder Rig.
 - Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
 - BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.
2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.
3. The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.
2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
3. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.
4. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.

5. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.
6. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.
7. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

B. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.
2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.
3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.
5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
 - a. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the plug. However, no tests shall commence until the cement has had a minimum of 24 hours setup time, except the casing pressure test can be initiated immediately after bumping the plug (only applies to single stage cement jobs).
 - b. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer.

- c. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.
- d. The results of the test shall be reported to the appropriate BLM office.
- e. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.
- f. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.
- g. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

C. DRILLING MUD

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the Wolfcamp formation, and shall be used until production casing is run and cemented.

D. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

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