State of New Mexico
Energy, Minerals and Natural Resources Department

Susana Martinez
Governor

Ken McQueen
Cabinet Secretary

Matthias Sayer
Deputy Cabinet Secretary

David R. Catanach, Division Director
Oil Conservation Division

New Mexico Oil Conservation Division approval and conditions listed below are made in accordance with OCD Rule 19.15.7.11 and are in addition to the actions approved by BLM on the following 3160-3 APD form.

Operator Signature Date: a/23/2017
Well information;
Operator WPX, Well Name and Number Rodeo Unit 501H

API# 30-045-35800, Section 18, Township 23 (N)/S, Range 8 E/(W)

Conditions of Approval: (See the below checked and handwritten conditions)

- ✓ Notify Aztec OCD 24hrs prior to casing & cement.
- ✓ Hold C-104 for directional survey & "As Drilled" Plat
- ✓ Hold C-104 for NSL, NSP, DHC
- o Spacing rule violation. Operator must follow up with change of status notification on other well to be shut in or abandoned
- o Regarding the use of a pit, closed loop system or below grade tank, the operator must comply with the following as applicable:
  - A pit requires a complete C-144 be submitted and approved prior to the construction or use of the pit, pursuant to 19.15.17.8.A
  - A closed loop system requires notification prior to use, pursuant to 19.15.17.9.A
  - A below grade tank requires a registration be filed prior to the construction or use of the below grade tank, pursuant to 19.15.17.8.C
- o Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string
- o Submit Gas Capture Plan form prior to spudding or initiating recompletion operations
- ✓ Regarding Hydraulic Fracturing, review EPA Underground Injection Control Guidance 84
- ✓ Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system.
- ✓ Well-bore communication is regulated under 19.15.29 NMAC. This requires well-bore Communication to be reported in accordance with 19.15.29.8.

- APD Held for Unit approval by all Agencies

Charles Hen
NMOCD Approved by Signature

5-26-17
Date

1220 South St. Francis Drive • Santa Fe, New Mexico 87505
Phone (505) 476-3441 • Fax (505) 476-3462 • www.emnrd.state.nm.us/ocd

Lease - Dugan

Onsite - 6/15/2016

NOS:
APDP:
MP:
SMA:
BOND: UTB000178
CA/PA: pending

10400006456
ATS-FOD-17-01

OIL CONS. DIV DIST. 3

MAR 0 8 2017

Form 3160-3
(March 2012)

FORM APPROVED
OMB No. 1004-0137
Expires October 31, 2014

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: ☑ DRILL ☐ REENTER	5. Lease Serial No. NMNM136159
1b. Type of Well: ☑ Oil Well ☐ Gas Well ☐ Other ☐ Single Zone ☑ Multiple Zone	6. If Indian, Allotee or Tribe Name
2. Name of Operator WPX ENERGY LLC	7. If Unit or CA Agreement, Name and No.
3a. Address 720 S MAIN AZTEC NM 87410	8. Lease Name and Well No. RODEO UT 501H
3b. Phone No. (include area code) (505)333-1822	9. API Well No. 30-045-35800
4. Location of Well (Report location clearly and in accordance with any State requirements.*) At surface SESE / 282 FSL / 427 FEL / LAT 36.220442 / LONG -107.715623 At proposed prod. zone NENE / 923 FNL / 330 FEL / LAT 36.202562 / LONG -107.696721	10. Field and Pool, or Exploratory BASIN MANCOS / MANCOS
	11. Sec., T. R. M. or Blk. and Survey or Area SEC 18 / T23N / R8W / NMP
14. Distance in miles and direction from nearest town or post office* 37.8 miles	12. County or Parish SAN JUAN / 13. State NM
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 282 feet	16. No. of acres in lease 400 / 17. Spacing Unit dedicated to this well 960
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 6555.1 feet	19. Proposed Depth 5500 feet / 10000 feet (12357) / 20. BLM/BIA Bond No. on file FED: UTB000178
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 6896 feet	22. Approximate date work will start* 12/01/2016 / 23. Estimated duration 55 days

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, must be attached to this form:

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

25. Signature (Electronic Submission)	Name (Printed/Typed) Marie Jaramillo / Ph: (505)533-1808	Date 10/21/2016
Title Permitting Tech III		
Approved by (Signature) Matthew Kade AFM	Name (Printed/Typed)	Date 3/23/17
Title	Office FARMINGTON	

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

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

(Continued on page 2)

*(Instructions on page 2)

BLM'S APPROVAL OR ACCEPTANCE OF THIS ACTION DOES NOT RELIEVE THE LESSEE AND OPERATOR FROM OBTAINING ANY OTHER AUTHORIZATION REQUIRED FOR OPERATIONS ON FEDERAL AND INDIAN LANDS

This action is subject to technical and procedural review pursuant to 43 CFR 3165.3 and appeal pursuant to 43 CFR 3165.4

DRILLING OPERATIONS AUTHORIZED ARE SUBJECT TO COMPLIANCE WITH ATTACHED "GENERAL REQUIREMENTS"

NMOCD

District I
1625 N. French Drive, Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S. First Street, 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 Drive, 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 Drive
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	2 Pool Code	3 Pool Name
30-045-35800	97232	BASIN MANCOS
4 Property Code	**5 Property Name**	**6 Well Number**
317527	RODEO UT	501H
7 OGRID No.	**8 Operator Name**	**9 Elevation**
120782	WPX ENERGY PRODUCTION, LLC	6896'

10 Surface Location

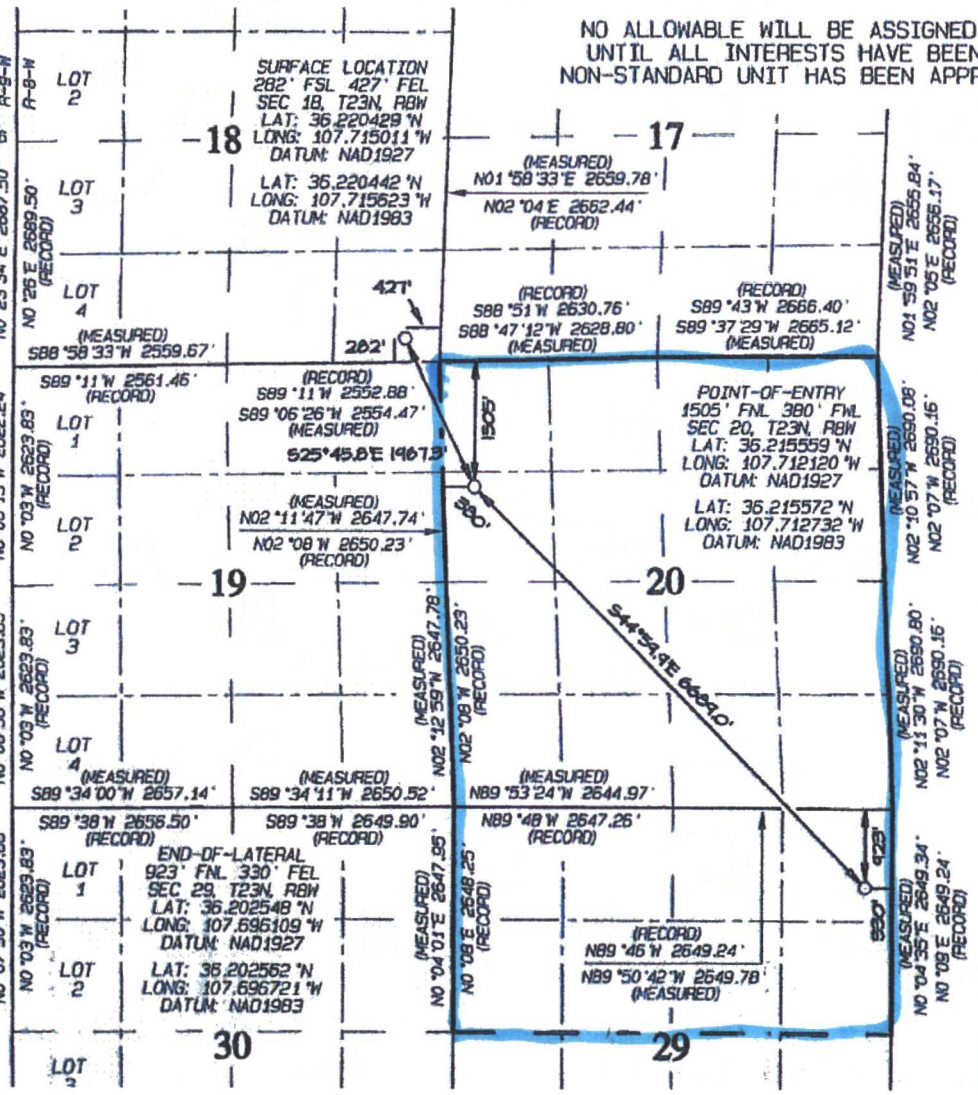
Ul. or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	18	23N	8W		282	SOUTH	427	EAST	SAN JUAN

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
A	29	23N	8W		923	NORTH	330	EAST	SAN JUAN

12 Dedicated Acres		13 Joint or Infill	14 Consolidation Code	15 Order No.
960.00	Entire Section 20 N/2 - Section 29			

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.

Signature 10/14/16
Date

Marie E. Jaramillo
Printed Name

marie.e.jaramillo@wpxenegry.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.

Date Revised: OCTOBER 6, 2016
Date of Survey: APRIL 11, 2016

Signature and Seal of Professional Surveyor

JASON C. EDWARDS
NEW MEXICO
15269
REGISTERED PROFESSIONAL SURVEYOR

JASON C. EDWARDS
Certificate Number 15269

WPX Energy

Operations Plan

(Note: This procedure will be adjusted onsite based upon actual conditions)

Date:	October 6, 2016	**Field:**	Basin Mancos
Well Name:	Rodeo UT 501H	**Surface:**	BLM
SH Location:	SESE Sec 18-23N-08W	**Elevation:**	6896' GR
BH Location:	NENE Sec 29-23N-08W	**Minerals:**	Federal

Measured Depth: 12,359.36'

I. GEOLOGY

Surface formation - NACIMIENTO

A. FORMATION TOPS: (GR)

NAME	MD	TVD	NAME	MD	TVD
OJO ALAMO	646.00	646.00	POINT LOOKOUT	3,903.00	3,734.00
KIRTLAND	818.00	817.00	MANCOS	4,087.00	3,906.00
PICTURED CLIFFS	1,288.00	1,278.00	GALLUP	4,438.00	4,235.00
LEWIS	1,488.00	1,469.00	KICKOFF POINT	4,750.79	4,528.66
CHACRA	1,722.00	1,688.00	TOP TARGET	5,274.00	4,911.00
CLIFF HOUSE	2,896.00	2,789.00	LANDING POINT	5,669.51	5,022.00
MENEFEE	2,919.00	2,811.00	BASE TARGET	5,669.51	5,022.00
			TD	12,359.36	4,911.00

B. MUD LOGGING PROGRAM:

Mudlogger on location from surface csg to TD.

C. LOGGING PROGRAM:

LWD GR from surface casing to TD.

D. NATURAL GAUGES:

Gauge any noticeable increases in gas flow. Record all gauges in Tour book and on morning reports.

II. DRILLING

A. MUD PROGRAM:

LSND mud (WBM) will be used to drill the 12-1/4" Surface hole, the 8 ¾" Directional Vertical hole, and the curve portion of the wellbore. A LSND (WBM) or (OBM) will be used to drill the lateral portion of well. Treat for lost circulation as necessary. Obtain 100% returns prior to cementing. Notify Engineering of any mud losses.

B. BOP TESTING:

While drill pipe is in use, the pipe rams and the blind rams will be function tested once each trip. The BOPE will be tested to 2,000 psi (High) for 10 minutes and the annular tested to 1,500 psi for 10 minutes. Pressure test surface casing to 1,500 psi for 30 minutes and intermediate casing to 1,500 psi for 30 minutes. Utilize a BOPE Testing Unit with a recording chart and appropriate test plug for testing. All tests and inspections will be recorded in the tour book as to time and results.

III. MATERIALS

A. CASING PROGRAM:

CASING TYPE	OH SIZE (IN)	DEPTH (MD)	CSG SIZE	WEIGHT	GRADE	CONN
SURFACE	12.25"	320.00'	9.625"	36 LBS	J-55 or equiv	STC
INTERMEDIATE	8.75"	5,669.51'	7"	23 LBS	J-55 or equiv	LTC
PRODUCTION	6.125"	5519.51' - 12,359.36'	4.5"	11.6 LBS	P-110 or equiv	LTC
TIE BACK	6.125"	Surf. - 5519.51'	4.5"	11.6 LBS	P-110 or equiv	LTC

B. FLOAT EQUIPMENT:

1. SURFACE CASING:

   9-5/8" notched regular pattern guide shoe. Run (1) standard centralizer on each of the bottom (4) joints of Surface Casing.

2. INTERMEDIATE CASING:

   7" cement nose guide shoe with a self-fill insert float. Place float collar one joint above the shoe. Install (1) centralizer on each of the bottom (3) joints and one standard centralizer every (3) joints to 2,500 ft. Run (1) centralizer at 2,500 ft., 2,300ft., 2,000ft., 1,500 ft., and 1,000 ft. If losses are encountered during the drilling of the intermediate section a DV tool will be utalized and a 2 stage cement job may be planned to ensure cement circ back to surface. The DV tool will be placed 100' above the top of the Chacra formation. If cement is circulated back to surface on the first stage, a cancelation device will be dropped to shift the dv tool closed and the 2nd stage cement job will be aborted at that time, if no cement is seen at surface on the 1st stage the stage tool will be opend and a 2nd stage cement job will be pumped.

3. PRODUCTION LINER:

   Run 4-1/2" Liner with cement nose guide Float Shoe + 2jts. of 4-1/2" casing + Landing Collar + 4-1/2" pup joint + 1 RSI (Sliding Sleeve) positioned inside the 330ft Hard line. Centralizer program will be determined by Wellbore condition and when Lateral is evaluated by Geoscientists and Reservoir Engineers. Set seals on Liner Hanger. Test TOL to 1500 psi for 15 minutes.

C. CEMENT:

(Note: Volumes may be adjusted onsite due to actual conditions)

1. Surface:

   5 bbl Fresh Water Spacer, 100 sx (160 cu.ft.) of 14.5 ppg Type I-II (Neat G) + 20% Fly Ash cement w/ 7.41 gal/sack mix water ratio @ 1.61 cu ft/sx yield. Calculated @ volume + 50% excess. WOC 12 hours. Test csg to 600psi. Total Volume: (160 cu-ft/100 sx/ Bbls).TOC at Surface.

   100 x 1.60 = 160

2. Intermediate:

   Spacer #1: 20 bbl (112 cuft) Chemwash. Lead Cement: 108 bbls, 308 sks, (607 cuft), 12.3 ppg @ 1.97 cuft/sk yield. Tail Cement: 59 bbls, 254 sks, (331 cuft), 13.5 ppg @ 1.3 cuft/sk yield. Displacement: Displace w/ +/- 223 bbl Drilling mud or water.

   607 + 331 = 938 ft³

Total Cement: 167 bbls, 562 sks, (938 cuft).

3. Prod Liner:

Spacer #1:10 bbl (56.cu-ft) Water Spacer. Spacer #2: 40 bbl 9.5 ppg (224.6 cu-ft) Tuned Spacer III. Spacer #3: 10 bbl Water Spacer. Lead Cement: Extencem ™ System. Yield 1.36 cuft/sk 13.3 ppg (670 sx /911 cuft /162 bbls). Tail Spacer: 20 BBL of MMCR. Displacement: Displace w/ +/-163bbl Fr Water. Total Cement (670 sx /911bbls).

670 x 1.36 = ~~771.36~~ 911.2 FT3

D. COMPLETION:

Run CCL for perforating

A. PRESSURE TEST:

1. Pressure test 4-1/2" casing to 4500 psi max, hold at 1500 psi for 30 minutes. Increase pressure to Open RSI sleeves.

B. STIMULATION:

1. Stimulate with approximately 2,805,000# 20/40 mesh sand and 340,000# 16/30 mesh sand in 619,113 gallons water with 42,696 mscf N2 for 17 stages.
2. Isolate stages with flow through frac plug.
3. Drill out frac plugs and flowback lateral.

C. RUNNING TUBING:

1. *Production Tubing:* Run 2-7/8", 6.5#, J-55, EUE tubing with a SN on top of bottom joint. Land tubing near Top of Liner.

If this horizontal well is drilled past the applicable setbacks, an unorthodox location application is not required because the completed interval in this well, as defined by 19.15.16.7 B(1) NMAC,will be entirely within the applicable setbacks . This approach complies with all applicable rules, including 19.15.16.14 A(3) NMAC, 19.15.16.14 B(2) NMAC, 19.15.16.15 B(2)NMAC, and 19.15.16.15. B(4) NMAC.

NOTES:

A 4-1/2" 11.6# P-110 Liner will be run to TD and landed +/- 150 ft. into the 7" 23# J-55 Intermediate casing with a Liner Hanger and pack-off assembly then cemented to top of liner hanger.

After cementing and TOL clean up operations are complete, the TOL will be tested to 1500 psi (per BLM).

WPX Energy

T23N R8W
2308-18P Rodeo
Rodeo UT #501H

Wellbore #1

Plan: Design #1 26July16 sam

Standard Planning Report

28 July, 2016

WPX
Planning Report

Database:	COMPASS	**Local Co-ordinate Reference:**	Well Rodeo UT #501H
Company:	WPX Energy	**TVD Reference:**	GL @ 6896.00usft (Original Well Elev)
Project:	T23N R8W	**MD Reference:**	GL @ 6896.00usft (Original Well Elev)
Site:	2308-18P Rodeo	**North Reference:**	True
Well:	Rodeo UT #501H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1 26July16 sam		

Project	T23N R8W		
Map System:	US State Plane 1927 (Exact solution)	**System Datum:**	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico West 3003		

Site	2308-18P Rodeo				
Site Position:		**Northing:**	1,899,488.44 usft	**Latitude:**	36.220400
From:	Map	**Easting:**	534,918.26 usft	**Longitude:**	-107.714954
Position Uncertainty:	0.00 usft	**Slot Radius:**	13.200 in	**Grid Convergence:**	0.07 °

Well	Rodeo UT #501H				
Well Position	**+N/-S**	10.55 usft	**Northing:**	1,899,498.97 usft	**Latitude:** 36.220429
	+E/-W	-16.81 usft	**Easting:**	534,901.44 usft	**Longitude:** -107.715011
Position Uncertainty		0.00 usft	**Wellhead Elevation:**	0.00 usft	**Ground Level:** 6,896.00 usft

Wellbore	Wellbore #1			
Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	IGRF2015	7/26/2016	9.27	62.91	49,838

Design	Design #1 26July16 sam			
Audit Notes:				
Version:	**Phase:**	PLAN	**Tie On Depth:**	0.00

Vertical Section:	**Depth From (TVD) (usft)**	**+N/-S (usft)**	**+E/-W (usft)**	**Direction (bearing)**
	0.00	0.00	0.00	139.41

Plan Sections

Measured Depth (usft)	Inclination (°)	Azimuth (bearing)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,515.11	20.30	162.94	1,494.00	-170.14	52.21	2.00	2.00	0.00	162.94	
4,750.79	20.30	162.94	4,528.66	-1,243.44	381.53	0.00	0.00	0.00	0.00	
5,225.62	60.00	135.04	4,886.80	-1,478.70	559.30	9.00	8.36	-5.88	-36.67	Start 60 Tan #501H
5,325.62	60.00	135.04	4,936.80	-1,539.98	620.49	0.00	0.00	0.00	0.00	End 60 Tan #501H
5,500.98	75.78	135.03	5,002.59	-1,654.56	734.94	9.00	9.00	-0.01	-0.05	
5,669.51	90.95	135.07	5,022.00	-1,772.69	852.87	9.00	9.00	0.03	0.17	POE #501H
12,359.36	90.95	135.07	4,911.00	-6,508.34	5,576.78	0.00	0.00	0.00	0.00	BHL #501H

WPX

Planning Report

Database:	COMPASS	**Local Co-ordinate Reference:**	Well Rodeo UT #501H
Company:	WPX Energy	**TVD Reference:**	GL @ 6896.00usft (Original Well Elev)
Project:	T23N R8W	**MD Reference:**	GL @ 6896.00usft (Original Well Elev)
Site:	2308-16P Rodeo	**North Reference:**	True
Well:	Rodeo UT #501H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1 26July16 sam		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (bearing)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
320.00	0.00	0.00	320.00	0.00	0.00	0.00	0.00	0.00	0.00
9 5/8"									
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
1,000.00	10.00	162.94	997.47	-41.61	12.77	39.90	2.00	2.00	0.00
1,500.00	20.00	162.94	1,479.82	-165.17	50.68	158.40	2.00	2.00	0.00
1,515.11	20.30	162.94	1,494.00	-170.14	52.21	163.17	2.00	2.00	0.00
Hold 20.30 Inclination									
2,000.00	20.30	162.94	1,948.77	-330.99	101.56	317.42	0.00	0.00	0.00
2,500.00	20.30	162.94	2,417.70	-496.84	152.45	476.47	0.00	0.00	0.00
3,000.00	20.30	162.94	2,886.64	-662.69	203.34	635.53	0.00	0.00	0.00
3,500.00	20.30	162.94	3,355.58	-828.55	254.23	794.59	0.00	0.00	0.00
4,000.00	20.30	162.94	3,824.52	-994.40	305.12	953.64	0.00	0.00	0.00
4,500.00	20.30	162.94	4,293.46	-1,160.26	356.01	1,112.70	0.00	0.00	0.00
4,750.79	20.30	162.94	4,528.66	-1,243.44	381.53	1,192.47	0.00	0.00	0.00
Start Build DLS 9.00 TFO -36.67									
5,000.00	40.47	142.39	4,743.07	-1,350.21	444.38	1,314.44	9.00	8.09	-8.25
5,225.62	60.00	135.04	4,886.80	-1,478.70	559.30	1,486.79	9.00	8.66	-3.26
Hold 60.00 Inclination									
5,325.62	60.00	135.04	4,936.80	-1,539.98	620.49	1,573.14	0.00	0.00	0.00
Start Build DLS 9.00 TFO -0.05									
5,500.00	75.69	135.03	5,002.35	-1,653.89	734.27	1,733.67	9.00	9.00	-0.01
5,500.98	75.78	135.03	5,002.59	-1,654.56	734.94	1,734.61	9.00	9.00	-0.01
Start DLS 9.00 TFO 0.17									
5,669.51	90.95	135.07	5,022.00	-1,772.69	852.87	1,901.05	9.00	9.00	0.03
POE at 90.95 at 135.07									
5,670.00	90.95	135.07	5,021.99	-1,773.04	853.21	1,901.53	0.00	0.00	0.00
7"									
6,000.00	90.95	135.07	5,016.52	-2,006.64	1,086.24	2,230.54	0.00	0.00	0.00
6,500.00	90.95	135.07	5,008.22	-2,360.58	1,439.30	2,729.04	0.00	0.00	0.00
7,000.00	90.95	135.07	4,999.92	-2,714.53	1,792.37	3,227.54	0.00	0.00	0.00
7,500.00	90.95	135.07	4,991.63	-3,068.47	2,145.43	3,726.04	0.00	0.00	0.00
8,000.00	90.95	135.07	4,983.33	-3,422.41	2,498.50	4,224.54	0.00	0.00	0.00
8,500.00	90.95	135.07	4,975.04	-3,776.36	2,851.57	4,723.04	0.00	0.00	0.00
9,000.00	90.95	135.07	4,966.74	-4,130.30	3,204.63	5,221.54	0.00	0.00	0.00
9,500.00	90.95	135.07	4,958.44	-4,484.24	3,557.70	5,720.04	0.00	0.00	0.00
10,000.00	90.95	135.07	4,950.15	-4,838.18	3,910.76	6,218.54	0.00	0.00	0.00
10,500.00	90.95	135.07	4,941.85	-5,192.13	4,263.83	6,717.04	0.00	0.00	0.00
11,000.00	90.95	135.07	4,933.56	-5,546.07	4,616.90	7,215.54	0.00	0.00	0.00
11,500.00	90.95	135.07	4,925.26	-5,900.01	4,969.96	7,714.04	0.00	0.00	0.00
12,000.00	90.95	135.07	4,916.96	-6,253.96	5,323.03	8,212.54	0.00	0.00	0.00
12,359.36	90.95	135.07	4,911.00	-6,508.34	5,576.78	8,570.82	0.00	0.00	0.00
TD at 12359.36									

Database:	COMPASS	Local Co-ordinate Reference:	Well Rodeo UT #501H
Company:	WPX Energy	TVD Reference:	GL @ 6896.00usft (Original Well Elev)
Project:	T23N R8W	MD Reference:	GL @ 6896.00usft (Original Well Elev)
Site:	2308-16P Rodeo	North Reference:	True
Well:	Rodeo UT #501H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1 26July16 sam		

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (bearing	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Start 60 Tan #501H - plan hits target center - Point	0.00	0.00	4,886.80	-1,478.70	559.30	1,898,020.96	535,462.55	36.216367	-107.713115
BHL #501H - plan hits target center - Point	0.00	0.00	4,911.00	-6,508.34	5,576.78	1,892,997.44	540,486.16	36.202548	-107.696109
End 60 Tan #501H - plan misses target center by 0.17usft at 5325.62usft MD (4936.80 TVD, -1539.98 N, 620.49 E) - Point	0.00	0.00	4,936.80	-1,539.86	620.61	1,897,959.87	535,523.93	36.216199	-107.712907
POE #501H - plan hits target center - Point	0.00	0.00	5,022.00	-1,772.69	852.87	1,897,727.32	535,756.47	36.215559	-107.712120

Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)
320.00	320.00	9 5/8"	9.625	12.250
5,670.00	5,021.99	7"	7.000	8.750

Plan Annotations

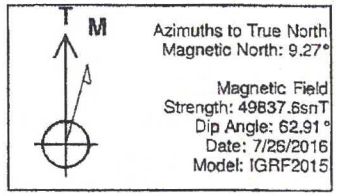
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
500.00	500.00	0.00	0.00	Start Build 2.00
1,515.11	1,494.00	-170.14	52.21	Hold 20.30 Inclination
4,750.79	4,528.66	-1,243.44	381.53	Start Build DLS 9.00 TFO -36.67
5,225.62	4,886.80	-1,478.70	559.30	Hold 60.00 Inclination
5,325.62	4,936.80	-1,539.98	620.49	Start Build DLS 9.00 TFO -0.05
5,500.98	5,002.59	-1,654.56	734.94	Start DLS 9.00 TFO 0.17
5,669.51	5,022.00	-1,772.69	852.87	POE at 90.95 at 135.07
12,359.36	4,911.00	-6,508.34	5,576.78	TD at 12359.36

PXENERGY

Well Name: Rodeo UT #501H
Surface Location: 2308-18P Rodeo
NAD 1927 (NADCON CONUS) , US State Plane 1927 (Exact solution) New Mexico West 3003
Ground Elevation: 6896.00

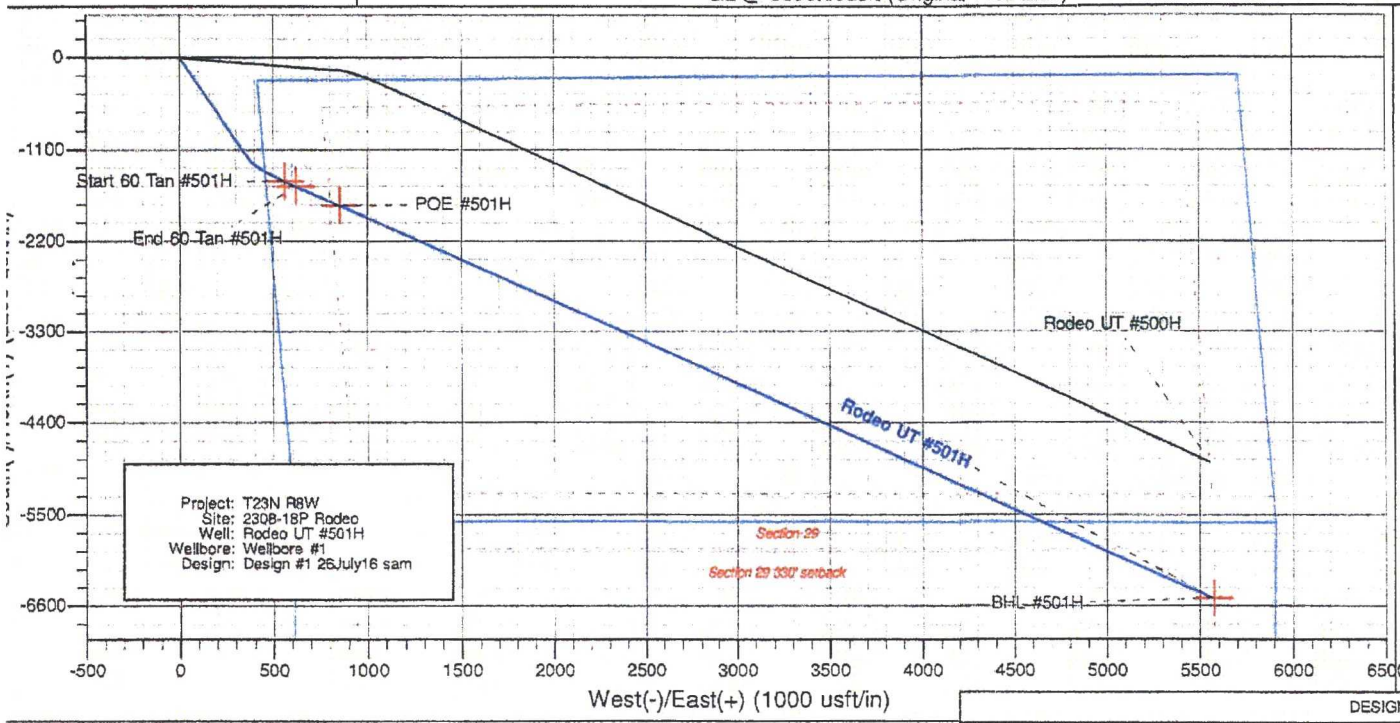
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	1899498.97	534901.44	36.220429	-107.715011	

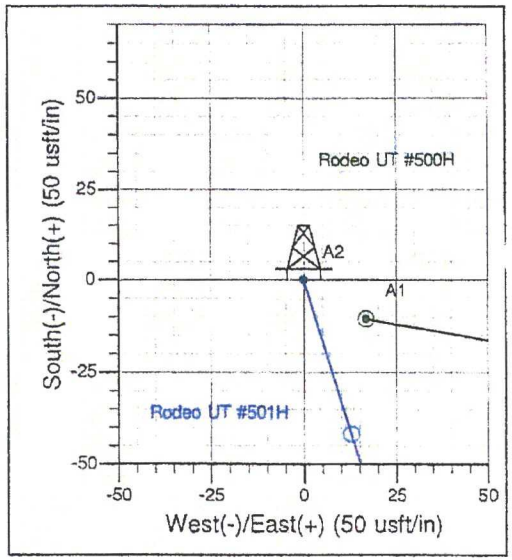
GL @ 6896.00usft (Original Well Elev)



Azimuths to True North
Magnetic North: 9.27°

Magnetic Field
Strength: 49837.6snT
Dip Angle: 62.91°
Date: 7/26/2016
Model: IGRF2015



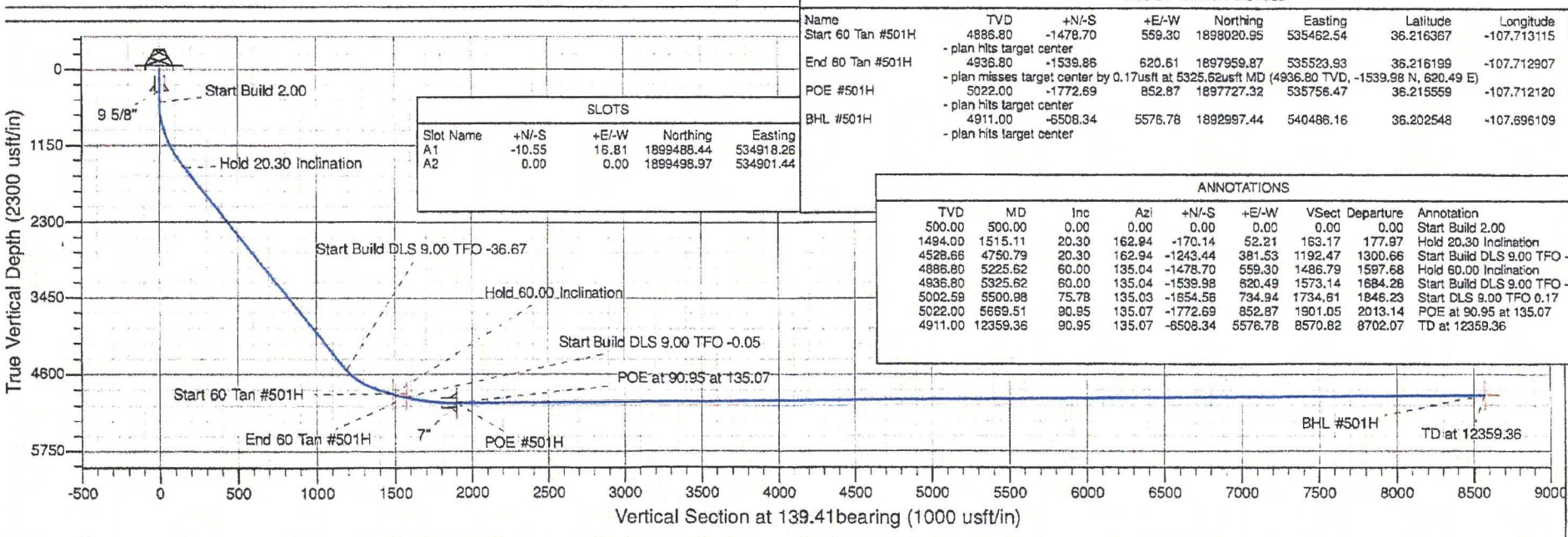


DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
Start 60 Tan #501H	4886.80	-1478.70	559.30	1898020.95	535462.54	36.216367	-107.713115	Point
- plan hits target center								
End 60 Tan #501H	4936.80	-1539.86	620.61	1897959.87	535523.93	36.216199	-107.712907	Point
- plan misses target center by 0.17usft at 5325.62usft MD (4936.80 TVD, -1539.98 N, 620.49 E)								
POE #501H	5022.00	-1772.69	852.87	1897727.32	535756.47	36.215559	-107.712120	Point
- plan hits target center								
BHL #501H	4911.00	-6508.34	5576.78	1892997.44	540486.16	36.202548	-107.696109	Point
- plan hits target center								

SLOTS

Slot Name	+N/-S	+E/-W	Northing	Easting
A1	-10.55	16.81	1899488.44	534918.26
A2	0.00	0.00	1899498.97	534901.44



ANNOTATIONS

TVD	MD	Inc	Azi	+N/-S	+E/-W	VSect	Departure	Annotation
500.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	Start Build 2.00
1494.00	1515.11	20.30	162.94	-170.14	52.21	163.17	177.97	Hold 20.30 Inclination
4528.66	4750.79	20.30	162.94	-1243.44	381.53	1192.47	1300.66	Start Build DLS 9.00 TFO -36.67
4886.80	5225.62	60.00	135.04	-1478.70	559.30	1486.79	1597.68	Hold 60.00 Inclination
4936.80	5325.62	60.00	135.04	-1539.98	620.49	1573.14	1684.26	Start Build DLS 9.00 TFO -0.05
5002.59	5500.98	75.78	135.03	-1654.56	734.94	1734.61	1846.23	Start DLS 9.00 TFO 0.17
5022.00	5669.51	90.95	135.07	-1772.69	852.87	1901.05	2013.14	POE at 90.95 at 135.07
4911.00	12359.36	90.95	135.07	-6508.34	5576.78	8570.82	8702.07	TD at 12359.36

B. Fruitland-Persayo-Sheppard complex, hilly

Within the project area, this soil map unit is found on the hills and ridges surrounding the sagebrush basins discussed above. As such, excavated soils during construction of segments of access road, segments of well-connect pipeline, and the southern majority of the well pad, would consist of native borrow and subsoils from the Fruitland-Persayo-Sheppard complex, hilly soil map unit. A brief description of this soil can be found below.

The Fruitland-Persayo-Sheppard complex, hilly is composed of 40 percent Fruitland and similar soils, 30 percent Persayo and similar soils, and 25 percent Sheppard and similar soils. Fruitland-Persayo-Sheppard complex, hilly soils are found on alluvial fans, stream terraces, hills, ridges, breaks, and dunes ranging from 4,000 feet to 6,400 feet in elevation. Fruitland soils occur on slopes of 5 to 30 percent, are well drained, and have a high water permeability. Persayo soils occur on slopes of 5 to 30 percent, are well drained, and have low to moderately high water permeability. Sheppard soils occur on slopes of 5 to 30 percent, are excessively drained, and have high to very high water permeability. This soil complex has a low to moderate potential for water erosion and moderate to high potential for wind erosion. The Fruitland-Persayo-Sheppard complex (hilly) is generally found within sandy, shale hills, and deep sand ecological sites (USDA/NRCS 2015).

C. Badland

Within the project area, this soil map unit is distinctly recognized by the presence of contrasting black to light grey shades of clay soils with little to no vegetation cover. Excavated soils during construction of one segment of well-connect pipeline would consist of native borrow and subsoils from the badland soil map unit. A brief description of this soil can be found below.

The parent material of the Badland map unit primarily consists of shale. This soil is considered a somewhat excessively drained soil, with the depth to restrictive layer (paralithic bedrock) being zero to two inches. Available water capacity for the Badland soil unit is very low (zero inches). This soil type has a low to moderate potential for water erosion and moderate potential for wind erosion. Badland soils are typically found along the side slopes of break landforms (5- to 80-percent slopes), and are commonly used for wildlife habitat (USDA/NRCS 2015). (USDA/NRCS 2015).

7. METHODS FOR HANDLING WASTE

A. Cuttings

1 Drilling operations would utilize a closed-loop system. Drilling of the horizontal laterals would be accomplished with water-based mud. All cuttings would be placed in roll-off bins and hauled to a commercial disposal facility or land farm. WPX would follow Onshore Oil and Gas Order No. 1 regarding the placement, operation, and removal of closed-loop systems. No blow pit would be used.

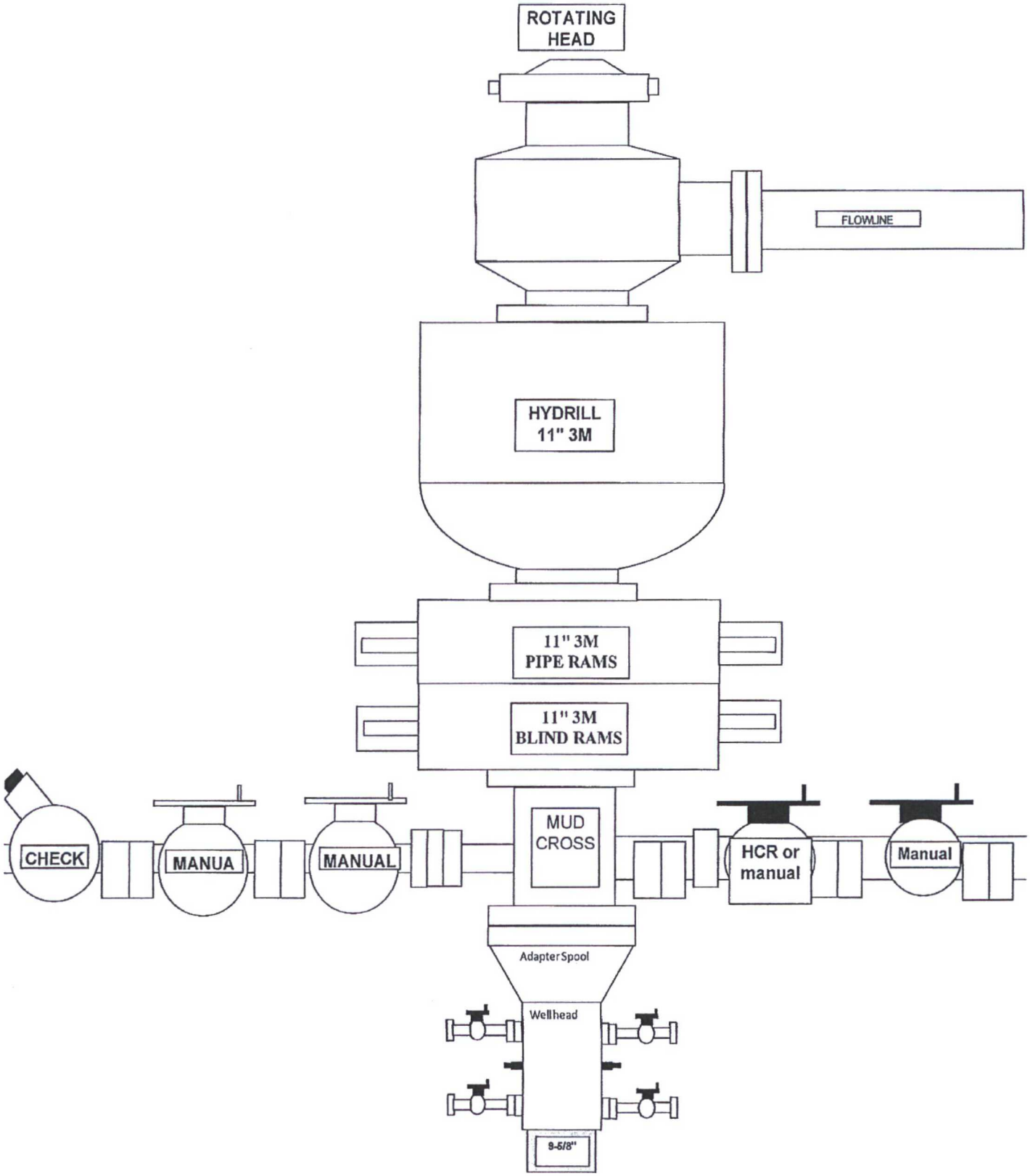
2 Closed-loop tanks would be adequately sized for containment of all fluids.

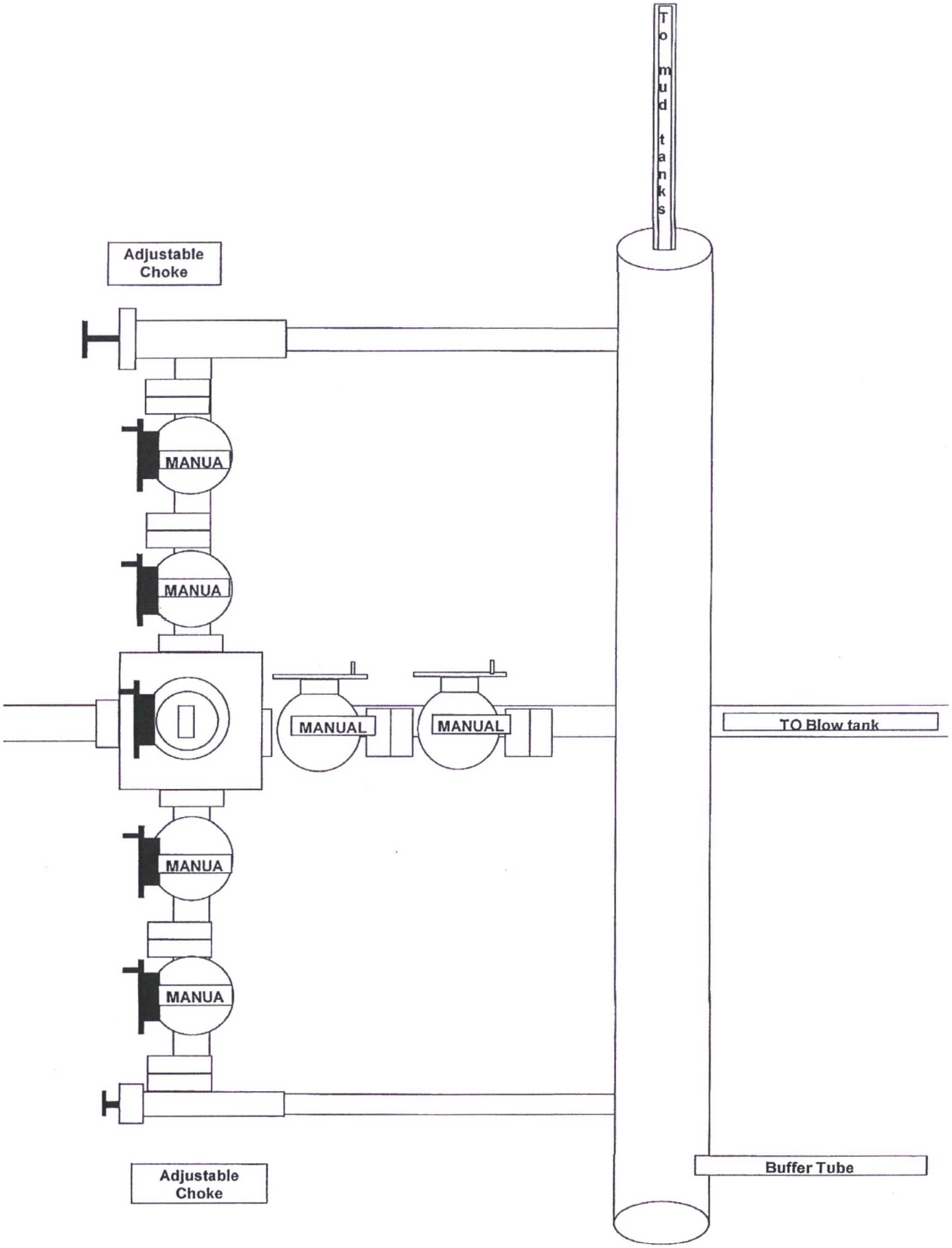
B. Drilling Fluids

1 Drilling fluids would be stored onsite in above-ground storage tanks. Upon termination of drilling operations, the drilling fluids would be recycled and transferred to other permitted closed-loop systems or returned to the vendor for reuse, as practical. All residual fluids would be hauled to a commercial disposal facility.

C. Spills

1 Any spills of non-freshwater fluids would be immediately cleaned up and removed to an approved disposal site.


ROTATING HEAD
FLOWLINE
HYDRILL 11" 3M
11" 3M PIPE RAMS
11" 3M BLIND RAMS
CHECK
MANUA
MANUAL
MUD CROSS
HCR or manual
Manual
Adapter Spool
Wellhead
9-5/8"


To mud tanks
Adjustable Choke
MANUA
MANUA
MANUAL
MANUAL
TO Blow tank
MANUA
MANUA
Adjustable Choke
Buffer Tube

Directions from the Intersection of US Hwy 550 & US Hwy 64

in Bloomfield, NM to WPX Energy Production, LLC Rodeo UT #501H

282' FSL & 427' FEL, Section 18, T23N, R8W, N.M.P.M., San Juan County, NM

Latitude: 36.220442°N Longitude: 107.715623°W Datum: NAD1983

From the intersection of US Hwy 550 & US Hwy 64 in Bloomfield, NM, travel Southerly on US Hwy 550 for 37.8 miles to Mile Marker 113.4;

Go Right (South-westerly) on County Road #7890 for 0.7 miles to begin proposed access on left-hand side of County Road #7890 which continues for an additional 6555.1' to staked WPX Rodeo UT #501H location.