

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: 12/20/2017

Well information;

Operator WPK, Well Name and Number U) Lybrook UT 237H

API# 30-045-35822, Section 28, Township 23 N/S, Range 9 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
 - ☐ Spacing rule violation. Operator must follow up with change of status notification on other well to be shut in or abandoned
 - ☐ 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
 - ☐ 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
 - ☐ 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.

Charles L. Sayer
NMOCD Approved by Signature

6-9-2017
Date

lessee - WPX
HB unit
on-site 9/30/15 + 6/10/16

Form 3160-3
(March 2012)

NOS: 15
APDP: 5
MP: 5
SMA: BLM
BOND: UTB000178
CA/PA: NMB SA16A

10400008936
ATS-F010-15-348

15-348

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: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. NMNM118731
1b. Type of Well: <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other <input type="checkbox"/> Single Zone <input checked="" type="checkbox"/> Multiple Zone		6. If Indian, Allottee or Tribe Name EASTERN NAVAJO
2. Name of Operator WPX ENERGY LLC		7. If Unit or CA Agreement, Name and No. INITIAL MANCOS PA / NMNM135216A
3a. Address 720 S Main Aztec NM 87410		8. Lease Name and Well No. W LYBROOK UT 737H
3b. Phone No. (include area code) (505)333-1822		9. API Well No. 30-045-35822
4. Location of Well (Report location clearly and in accordance with any State requirements.)* At surface: NENW / 181 FNL / 2357 FWL / LAT 36.204663 / LONG -107.795072 At proposed prod. zone: NENW / 1143 FNL / 2627 FWL / LAT 36.187576 / LONG -107.77636		10. Field and Pool, or Exploratory LYBROOK MANCOS W / LYBROOK MA
14. Distance in miles and direction from nearest town or post office* 37.8 miles		11. Sec., T. R. M. or Blk. and Survey or Area SEC 28 / T23N / R9W / NMP
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 20 feet	16. No. of acres in lease 1120	17. Spacing Unit dedicated to this well 280
18. Distance from proposed location* to nearest well, drilling, completed, 181 feet applied for, on this lease, ft.	19. Proposed Depth 4322 feet / 11800 feet	20. BLM/BIA Bond No. on file FED: UTB000178 / IND: B001576
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 6534 feet	22. Approximate date work will start* 01/01/2017	23. Estimated duration 30 days

24. Attachments

OIL CONS. DIV DIST. 3

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) Lacey Granillo / Ph: (505)333-1816	Date 12/20/2016
Title Permitting Tech III		
Approved by (Signature) <i>[Signature]</i>	Name (Printed/Typed) A. Garza	Date 6/1/17
Title AFM - MUCP-15	Office FARMINGTON	Date 4/10/2017

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)

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

*(Instructions on page 2)

DEC 21 2016

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

NMOCDA

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

NEW
INSTRUMENT

Federal Minerals Navajo Surface

WPXENERGY

WPX Energy

Operations Plan

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

Date: December 13, 2016 **Field:** Lybrook Mancos W
Well Name: W Lybrook Unit #737H **Surface:**
SH Location: NENW Sec 28 22N-09W **Elevation:** 6534' GR
BH Location: NENW Sec 34 22N-09W **Minerals:**

Measured Depth: 11,800.00'

I. GEOLOGY: SURFACE FORMATION - NACIMIENTO

A. FORMATION TOPS (KB)

NAME	MD	TVD	NAME	MD	TVD
OJO ALAMO	63	63	POINT LOOKOUT	3217	3130
KIRTLAND	225	225	MANCOS	3399	3305
PICTURED CLIFFS	794	793	GALLUP	3752	3644
LEWIS	913	912	KICKOFF POINT	4,021.84	3,902.83
CHACRA	1098	1094	TOP TARGET	4699	4374
CLIFF HOUSE	2249	2201	LANDING POINT	4,937.67	4,415.00
MENEFEE	2267	2218	BASE TARGET	4,937.67	4,415.00
			TD	11,800.00	4,322.16

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 3/4" 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 anticipated reservoir is expected to be less than 1300 psi, so the BOPE will be tested to **250 psi (Low) for 5 minutes and 1500 psi (High) for 10 minutes**. Pressure test surface casing to **600 psi for 30 minutes** and intermediate casing to **1500 psi for 30 minutes**. Utilize a BOPE Testing Unit with a recording chart and appropriate test plug for testing. The drum brakes will be inspected and tested each tour. **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"	4,937.67'	7"	23 LBS	J-55 or equiv	LTC
PRODUCTION	6.125"	4787.67' - 11,800.00'	4.5"	11.6 LBS	P-110 or equiv	LTC
TIE BACK	6.125"	Surf. - 4787.67'	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. **A 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.**
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. CEMENTING:

(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.
2. Intermediate STAGE 1: Spacer #1: 20 bbl (112 cuft) Chemwash. Lead Cement: 87 bbls, 248 sks, (489 cuft), 12.3 ppg @ 1.97 cuft/sk yield. Tail Cement: 89 bbls, 386 sks, (502 cuft), 13.5 ppg @ 1.3 cuft/sk yield. Displacement: Displace w/ +/- 194 bbl Drilling mud or water. Total Cement: 177 bbls, 634 sks, (991 cuft)
STAGE 2: Spacer #1: 20 bbl (112 cuft) Chemwash. Lead Cement: 16 bbls, 46 sks, (90 cuft), 12.3 ppg @ 1.97 cuft/sk yield. Tail Cement: 16 bbls, 78 sks, (90 cuft), 13.5 ppg @ 1.3 cuft/sk yield. Displacement: Displace w/ +/- 39 bbl Drilling mud or water. Total Cement: 32 bbls, 125 sks, (180 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 (687 sx /934 cuft /166 bbls). Tail Spacer: 20 BBL of MMCR. Displacement: Displace w/ +/- 140 bbl Fr Water. Total Cement (687 sx /934bbls).

I.
COMPLETION

A. CBL

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.

NOTE:

Proposed Operations:

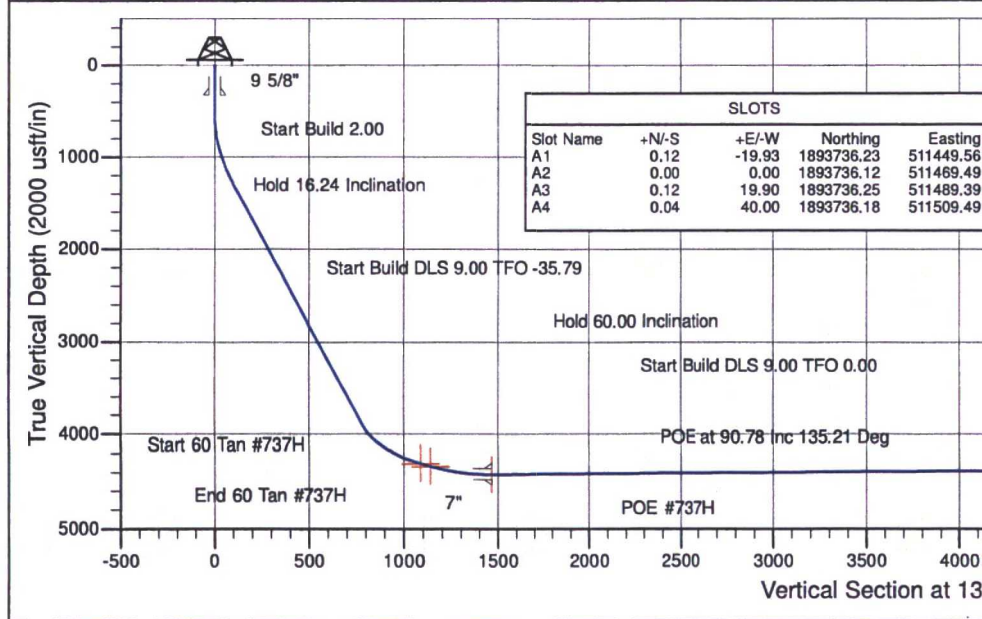
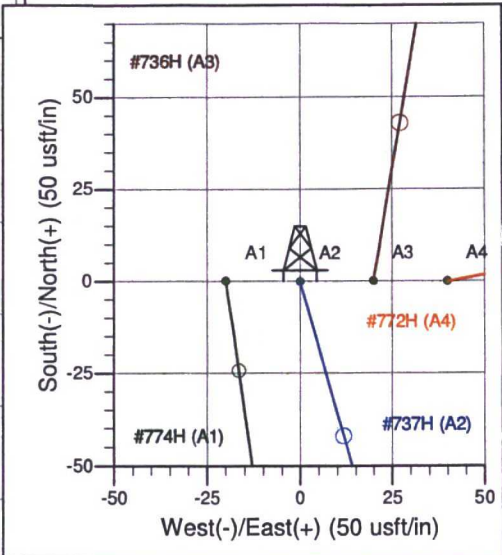
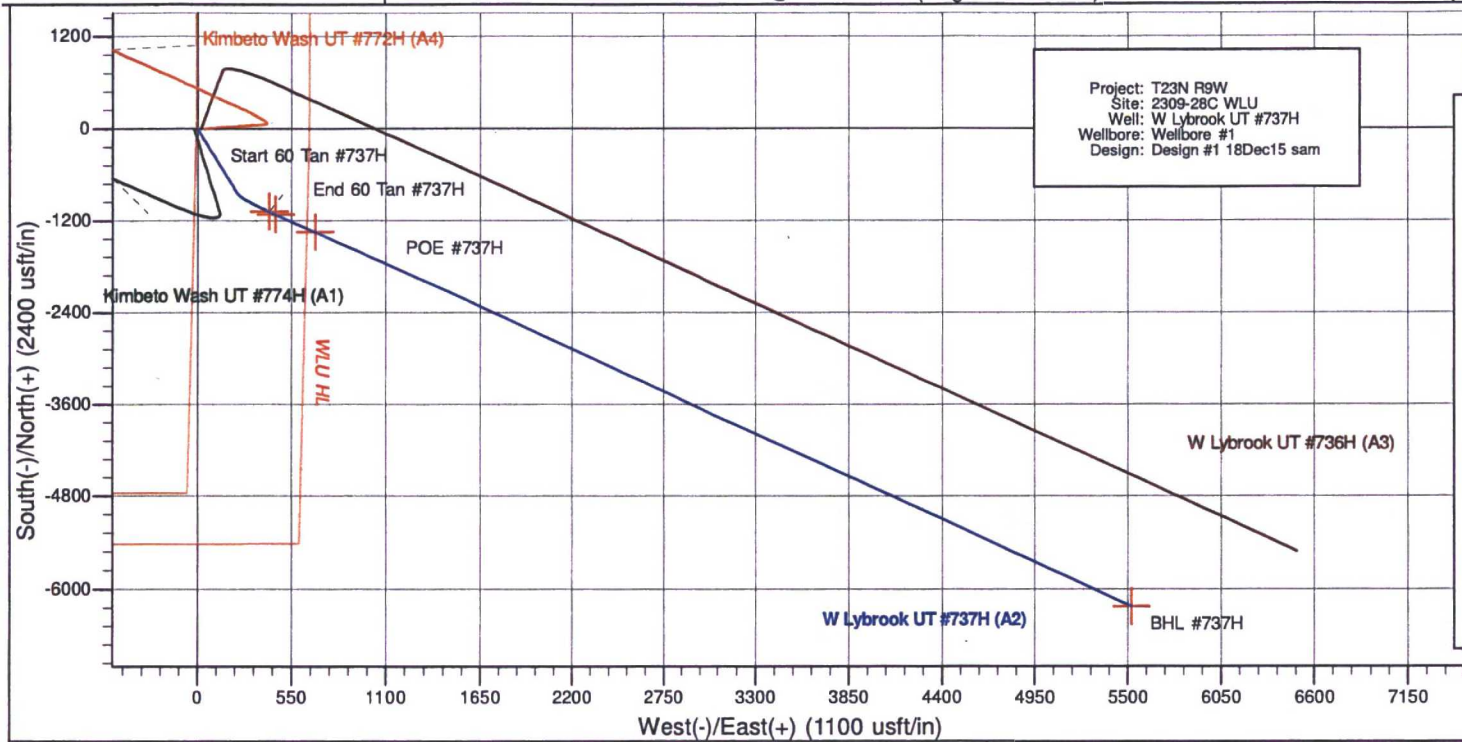
A 4-1/2" 11.6# P-110 Liner will be run to TD and landed +/- 150 ft. into the 7" 23# J-55 Intermediate casing with a Liner Hanger and pack-off assembly then cemented to top of liner hanger.

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

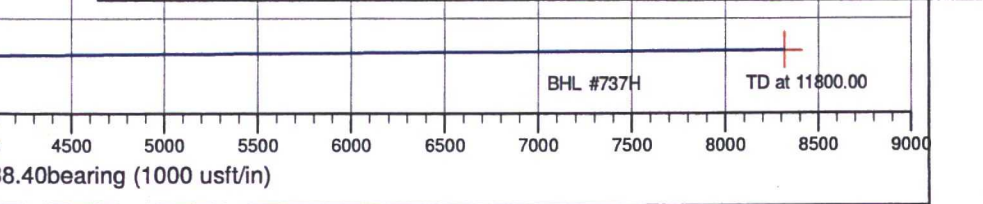


Well Name: W Lybrook UT #737H
Surface Location: 2309-28C WLU
NAD 1927 (NADCON CONUS) , US State Plane 1927 (Exact solution) New Mexico West 3003
Ground Elevation: 6534.00
+N/-S +E/-W Northing Easting Latitude Longitude Slot
0.00 0.00 1893736.12 511469.49 36.204650 -107.794457 A2
GL @ 6534.00usft (Original Well Elev)

Azimuths to True North
Magnetic North: 9.36°
Magnetic Field
Strength: 49885.1nT
Dip Angle: 62.89°
Date: 12/18/2015
Model: IGRF2015



DESIGN TARGET DETAILS									
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape	
Start 60 Tan #737H	4299.77	-1080.58	420.83	1892655.71	511890.75	36.201681	-107.793031	Point	
End 60 Tan #737H	- plan hits target center								
	4329.77	-1117.46	457.44	1892618.84	511927.38	36.201580	-107.792907	Point	
POE #737H	- plan hits target center								
	4415.00	-1349.49	687.75	1892386.91	512157.78	36.200942	-107.792126	Point	
BHL #737H	- plan hits target center								
	4322.16	-6219.33	5521.75	1887519.00	516993.73	36.187563	-107.775746	Point	
	- plan hits target center								
ANNOTATIONS									
TVD	MD	Inc	Azi	+N/-S	+E/-W	VSection	Departure	Annotation	
500.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	Start Build 2.00	
1301.38	1312.22	16.24	164.40	-110.16	30.75	102.79	114.37	Hold 16.24 Inclination	
3902.83	4021.84	16.24	164.40	-840.23	234.52	784.03	872.35	Start Build DLS 9.00 TFO -35.79	
4299.77	4535.72	60.00	135.21	-1080.58	420.83	1087.46	1178.51	Hold 60.00 Inclination	
4329.77	4595.72	60.00	135.21	-1117.46	457.44	1139.34	1230.47	Start Build DLS 9.00 TFO 0.00	
4395.22	4769.69	75.66	135.21	-1231.44	570.58	1299.70	1391.08	Start DLS 9.00 TFO 0.00	
4415.00	4937.67	90.78	135.21	-1349.49	687.75	1465.76	1557.40	POE at 90.78 Inc 135.21 Deg	
4322.16	11800.00	90.78	135.21	-6219.33	5521.75	8316.84	8419.10	TD at 11800.00	



WPX Energy

T23N R9W

2309-28C WLU

W Lybrook UT #737H - Slot A2

Wellbore #1

Plan: Design #1 18Dec15 sam

Standard Planning Report

12 January, 2016

WPX Planning Report

Database: COMPASS
Company: WPX Energy
Project: T23N R9W
Site: 2309-28C WLU
Well: W Lybrook UT #737H
Wellbore: Wellbore #1
Design: Design #1 18Dec15 sam

Local Co-ordinate Reference: Well W Lybrook UT #737H (A2) - Slot A2
TVD Reference: GL @ 6534.00usft (Original Well Elev)
MD Reference: GL @ 6534.00usft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature

Project	T23N R9W		
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	2309-28C WLU		
Site Position:	Map	Northing:	1,893,736.25 usft
From:		Easting:	511,489.39 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13.200 in
		Latitude:	36.204650
		Longitude:	-107.794390
		Grid Convergence:	0.02 °

Well	W Lybrook UT #737H - Slot A2		
Well Position	+N/-S	-0.12 usft	Northing:
	+E/-W	-19.90 usft	Easting:
Position Uncertainty	0.00 usft	Wellhead Elevation:	0.00 usft
		Latitude:	36.204650
		Longitude:	-107.794458
		Ground Level:	6,534.00 usft

Wellbore	Wellbore #1		
Magnetics	Model Name	Sample Date	Declination
	IGRF2015	12/18/2015	9.36
			Dip Angle
			62.89
			Field Strength
			49,885

Design	Design #1 18Dec15 sam		
Audit Notes:			
Version:	Phase:	PLAN	Tie On Depth:
			0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.00	0.00	0.00
			Direction
			(bearing)
			138.40

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	
1,312.22	16.24	164.40	1,301.38	-110.16	30.75	2.00	2.00	0.00	164.40	
4,021.84	16.24	164.40	3,902.83	-840.23	234.52	0.00	0.00	0.00	0.00	
4,535.72	60.00	135.21	4,299.77	-1,080.58	420.83	9.00	8.51	-5.68	-35.79	Start 60 Tan #737H
4,595.72	60.00	135.21	4,329.77	-1,117.46	457.44	0.00	0.00	0.00	0.00	End 60 Tan #737H
4,769.69	75.66	135.21	4,395.22	-1,231.44	570.58	9.00	9.00	0.00	0.00	
4,937.67	90.78	135.21	4,415.00	-1,349.49	687.75	9.00	9.00	0.00	0.00	POE #737H
11,800.00	90.78	135.21	4,322.16	-6,219.33	5,521.75	0.00	0.00	0.00	0.00	BHL #737H

WPX Planning Report

Database: COMPASS
Company: WPX Energy
Project: T23N R9W
Site: 2309-28C WLU
Well: W Lybrook UT #737H
Wellbore: Wellbore #1
Design: Design #1 18Dec15 sam

Local Co-ordinate Reference: Well W Lybrook UT #737H (A2) - Slot A2
TVD Reference: GL @ 6534.00usft (Original Well Elev)
MD Reference: GL @ 6534.00usft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature

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	164.40	997.47	-41.92	11.70	39.12	2.00	2.00	0.00
1,312.22	16.24	164.40	1,301.38	-110.16	30.75	102.79	2.00	2.00	0.00
Hold 16.24 Inclination									
1,500.00	16.24	164.40	1,481.67	-160.75	44.87	150.00	0.00	0.00	0.00
2,000.00	16.24	164.40	1,961.70	-295.47	82.47	275.71	0.00	0.00	0.00
2,500.00	16.24	164.40	2,441.74	-430.19	120.07	401.42	0.00	0.00	0.00
3,000.00	16.24	164.40	2,921.78	-564.91	157.68	527.12	0.00	0.00	0.00
3,500.00	16.24	164.40	3,401.82	-699.63	195.28	652.83	0.00	0.00	0.00
4,000.00	16.24	164.40	3,881.86	-834.35	232.88	778.54	0.00	0.00	0.00
4,021.84	16.24	164.40	3,902.83	-840.23	234.52	784.03	0.00	0.00	0.00
Start Build DLS 9.00 TFO -35.79									
4,500.00	56.85	135.94	4,281.07	-1,058.85	399.53	1,057.07	9.00	8.49	-5.95
4,535.72	60.00	135.21	4,299.77	-1,080.58	420.83	1,087.46	9.00	8.83	-2.03
Hold 60.00 Inclination									
4,595.72	60.00	135.21	4,329.77	-1,117.46	457.44	1,139.34	0.00	0.00	0.00
Start Build DLS 9.00 TFO 0.00									
4,769.69	75.66	135.21	4,395.22	-1,231.44	570.58	1,299.70	9.00	9.00	0.00
Start DLS 9.00 TFO 0.00									
4,937.67	90.78	135.21	4,415.00	-1,349.49	687.75	1,465.76	9.00	9.00	0.00
POE at 90.78 Inc 135.21 Deg									
4,938.00	90.78	135.21	4,415.00	-1,349.72	687.98	1,466.09	0.00	0.00	0.00
7"									
5,000.00	90.78	135.21	4,414.16	-1,393.72	731.66	1,527.99	0.00	0.00	0.00
5,500.00	90.78	135.21	4,407.39	-1,748.54	1,083.87	2,027.17	0.00	0.00	0.00
6,000.00	90.78	135.21	4,400.63	-2,103.37	1,436.08	2,526.35	0.00	0.00	0.00
6,500.00	90.78	135.21	4,393.86	-2,458.19	1,788.29	3,025.53	0.00	0.00	0.00
7,000.00	90.78	135.21	4,387.10	-2,813.02	2,140.51	3,524.71	0.00	0.00	0.00
7,500.00	90.78	135.21	4,380.33	-3,167.84	2,492.72	4,023.89	0.00	0.00	0.00
8,000.00	90.78	135.21	4,373.57	-3,522.66	2,844.93	4,523.07	0.00	0.00	0.00
8,500.00	90.78	135.21	4,366.80	-3,877.49	3,197.15	5,022.25	0.00	0.00	0.00
9,000.00	90.78	135.21	4,360.04	-4,232.31	3,549.36	5,521.43	0.00	0.00	0.00
9,500.00	90.78	135.21	4,353.28	-4,587.14	3,901.57	6,020.61	0.00	0.00	0.00
10,000.00	90.78	135.21	4,346.51	-4,941.96	4,253.78	6,519.79	0.00	0.00	0.00
10,500.00	90.78	135.21	4,339.75	-5,296.79	4,606.00	7,018.97	0.00	0.00	0.00
11,000.00	90.78	135.21	4,332.98	-5,651.61	4,958.21	7,518.15	0.00	0.00	0.00
11,500.00	90.78	135.21	4,326.22	-6,006.44	5,310.42	8,017.33	0.00	0.00	0.00
11,800.00	90.78	135.21	4,322.16	-6,219.33	5,521.75	8,316.84	0.00	0.00	0.00
TD at 11800.00									

WPX Planning Report

Database: COMPASS
Company: WPX Energy
Project: T23N R9W
Site: 2309-28C WLU
Well: W Lybrook UT #737H
Wellbore: Wellbore #1
Design: Design #1 18Dec15 sam

Local Co-ordinate Reference: Well W Lybrook UT #737H (A2) - Slot A2
TVD Reference: GL @ 6534.00usft (Original Well Elev)
MD Reference: GL @ 6534.00usft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature

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 #737H - plan hits target center - Point	0.00	0.00	4,299.77	-1,080.58	420.83	1,892,655.71	511,890.75	36.201681	-107.793031
BHL #737H - plan hits target center - Point	0.00	0.00	4,322.16	-6,219.33	5,521.75	1,887,519.01	516,993.73	36.187563	-107.775746
End 60 Tan #737H - plan hits target center - Point	0.00	0.00	4,329.77	-1,117.46	457.44	1,892,618.85	511,927.38	36.201580	-107.792907
POE #737H - plan hits target center - Point	0.00	0.00	4,415.00	-1,349.49	687.75	1,892,386.91	512,157.78	36.200942	-107.792127

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
4,938.00	4,415.00	7"	7.000	8.750

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
500.00	500.00	0.00	0.00	Start Build 2.00
1,312.22	1,301.38	-110.16	30.75	Hold 16.24 Inclination
4,021.84	3,902.83	-840.23	234.52	Start Build DLS 9.00 TFO -35.79
4,535.72	4,299.77	-1,080.58	420.83	Hold 60.00 Inclination
4,595.72	4,329.77	-1,117.46	457.44	Start Build DLS 9.00 TFO 0.00
4,769.69	4,395.22	-1,231.44	570.58	Start DLS 9.00 TFO 0.00
4,937.67	4,415.00	-1,349.49	687.75	POE at 90.78 Inc 135.21 Deg
11,800.00	4,322.16	-6,219.33	5,521.75	TD at 11800.00

Surface Use Plan of Operation

roads, soils, or streams. Surfacing material, such as sandstone, would be used if economically viable and would be obtained from a permitted location.

The Natural Resources Conservation Service (NRCS) has mapped the soils in the proposed KWU 772H/774H and W Lybrook Unit 736H/737H Project area. Complete soil information is available in the NRCS's *Soil Survey of San Juan County, New Mexico, Eastern Part* (USDA/NRCS 2015). The soil map units within the proposed project area footprint are described in the sections below.

A. Blancot – Notal association, gently sloping

Within the project area, this soil map unit is found throughout the entirety of the project with exception to the southeastern most corner of the construction buffer zone. As such, excavated soils during construction of the well pad, access roads, and well connect pipelines would consist of native borrow and subsoils from the Blancot – Notal association, gently sloping soil map unit. A brief description of this soil can be found below.

The Blancot-Notal soil association is composed of 55 percent Blancot and similar soils and 25 percent Notal and similar soils. This soil map unit is considered a well-drained soil, with the depth to water table and depth to restrictive layer being more than 80 inches. This soil association has a moderate to high potential for water erosion and low to moderate potential for wind erosion. The Blancot-Notal association is typically found ranging in elevation from 5,600 to 6,400 feet in elevation, along fan remnant and stream terrace landforms (0- to 5-percent slopes) and within loamy and salt flat ecological sites (USDA/NRCS 2015).

B. Badland

Within the project area, this soil map unit is found at the southeastern most corner of the construction buffer zone. This particular corner of the well pad will require a fill of approximately 6 feet. The construction buffer zone was expanded to 100 feet along the south and east edges of the well pad in order to accommodate the necessary room for a silt trap and topsoil storage within these badland soils. As a result, the 50-foot construction zone along the north and west edges of the well pad were eliminated.

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).

7. METHODS FOR HANDLING WASTE

A. Cuttings

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

B. Drilling Fluids

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

C. Spills

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

D. Sewage

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

in Bloomfield, NM to WPX Energy Production, LLC W Lybrook Unit #737H

181' FNL & 2357' FWL, Section 28, T23N, R9W, N.M.P.M., San Juan County, NM

Latitude: 36.204663°N Longitude: 107.795072°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 0.8 miles to fork in roadway;

Go Left (Southerly) remaining on County Road #7890 for 1.3 miles to fork in roadway;

Go Left (South-westerly) remaining on County Road #7890 for 0.6 miles to fork in roadway;

Go Right (South-westerly) remaining on County Road #7890 for 0.5 miles to WPX W Lybrook Unit #720H proposed access on right hand side of County Road;

Go Right (Westerly) exiting County Road #7890 following along WPX W Lybrook Unit #720H proposed access for 3123.8' to fork in proposed access;

Go Left (Westerly) which is straight, following along WPX W Lybrook Unit #726H proposed access for 3937.3' to fork in proposed access;

Go Left (Westerly) which is straight, following along WPX W Lybrook Unit #730H proposed access for 11,605.3' to new access on right-hand side of proposed roadway, which continues for 2093.2' to staked WPX W Lybrook Unit #737H location.

