

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: 11/3/2017

Well information;

Operator WAX, Well Name and Number W Lybrook / Int. 710H

API# 30-045-3503, Section 13, 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 Harris  
NMOCD Approved by Signature

2-14-2017  
Date

Lessee: WPX  
note 4/17/16

1040000-122-1

Form 3160-3  
(March 2012)

NOS: 0  
ADDP: 5  
MP:  
SMA: Nov-BIA  
BOND:  
CA/PA: Nm 1352160x

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. NOG13101841	
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. WEST LYBROOK UNIT / NMMN135216;	
3a. Address 720 S Main Aztec NM 87410		8. Lease Name and Well No. W LYBROOK UT 710H	
3b. Phone No. (include area code) (505)333-1822		9. API Well No. 30045-35803	
4. Location of Well (Report location clearly and in accordance with any State requirements.) At surface SENW / 1961 FNL / 2464 FWL / LAT 36.228821 / LONG -107.740909 At proposed prod. zone NWNE / 719 FNL / 2289 FEL / LAT 36.246635 / LONG -107.757113		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 13 / 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 160	12. County or Parish SAN JUAN	
17. Spacing Unit dedicated to this well 360	18. Distance from proposed location* to nearest well, drilling, completed, 1961 feet applied for, on this lease, ft.	13. State NM	
19. Proposed Depth 4820 feet / 13487 feet	20. BLM/BIA Bond No. on file IND: B001576	<b>OIL CONS. DIV DIST. 3</b> <b>JAN 31 2017</b>	
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 6700 feet	22. Approximate date work will start* 12/01/2016	23. Estimated duration 30 days	

R

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.   | 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above). |
| 2. A Drilling Plan.  | 5. Operator certification   |
| 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). | 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 11/03/2016
Title Permitting Tech III		
Approved by (Signature) <i>[Signature]</i>	Name (Printed/Typed)	Date 1/27/17
Title AFM	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)

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

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

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

NMOCDV

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

Form C-102  
Revised August 1, 2011

Submit one copy to  
Appropriate District Office

OIL CONSERVATION DIVISION

1220 South St. Francis Drive  
Santa Fe, NM 87505

AMENDED REPORT  
OIL CONS. DIV DIST. 3

FEB 06 2017

WELL LOCATION AND ACREAGE DEDICATION PLAT

*API Number 30-045-35803		*Pool Code 98157		*Pool Name LYBROOK MANCOS W	
*Property Code 315250		*Property Name W LYBROOK UNIT		*Well Number 710H	
*GRID No. 120782		*Operator Name WPX ENERGY PRODUCTION, LLC		*Elevation 6700'	

10 Surface Location

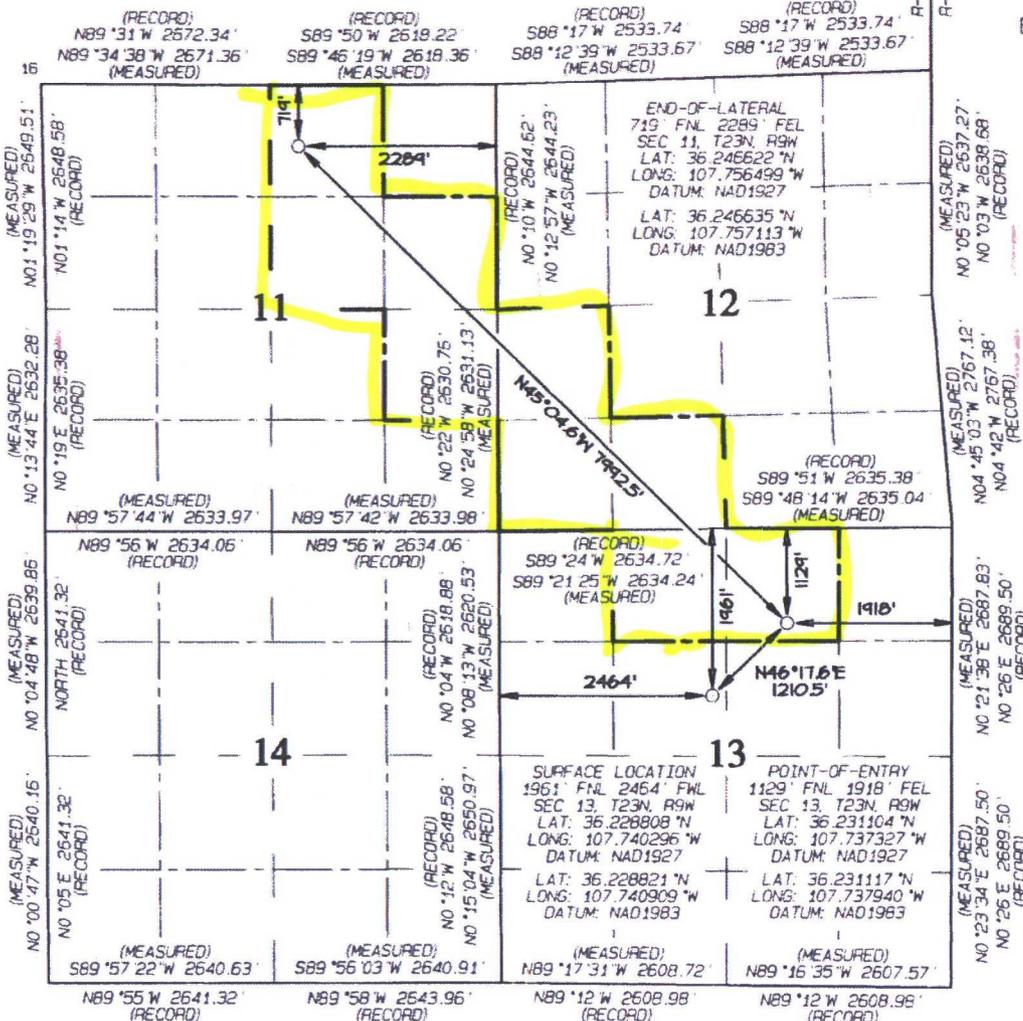
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
F	13	23N	9W		1961	NORTH	2464	WEST	SAN JUAN

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
B	11	23N	9W		719	NORTH	2289	EAST	SAN JUAN

*Dedicated Acres 360.00		*Joint or Infill		*Consolidation Code		*Order No. R-14051 - 12,807.24 Acres	
NW/4 NE/4, S/2 NE/4 NE/4 SE/4 - Section 11 NW/4 SW/4, S/2 SW/4 - Section 12 NE/4 NW/4, NW/4 NE/4 - Section 13							

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 enforced by the division.  
Signature: [Signature] Date: 10/31/16  
Printed Name: Lacey Granillo  
E-mail Address: lacey.granillo@wpxenergy.com

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 24, 2016  
Survey Date: OCTOBER 23, 2015  
Signature and Seal of Professional Surveyor:  
  
Jason C. Edwards  
Certificate Number 15269



## WPX Energy

### Operations Plan

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

<b>Date:</b>	November 3, 2016	<b>Field:</b>	Lybrook Mancos W
<b>Well Name:</b>	W Lybrook Unit # 710H	<b>Surface:</b>	
<b>SH Location:</b>	SENW Sec 13 23N-09W	<b>Elevation:</b>	6700' GR
<b>BH Location:</b>	NWNE Sec 11 23N-09W	<b>Minerals:</b>	

**Measured Depth:** 13,486.98'

## **I. GEOLOGY**

Surface formation - NACIMIENTO

### **A. FORMATION TOPS: (GR)**

NAME	MD	TVD	NAME	MD	TVD
OJO ALAMO	479.00	479.00	POINT LOOKOUT	3,762.00	3,546.00
KIRTLAND	641.00	641.00	MANCOS	3,954.00	3,721.00
PICTURED CLIFFS	1,216.00	1,209.00	GALLUP	4,323.00	4,060.00
LEWIS	1,303.00	1,293.00	KICKOFF POINT	4,224.29	3,967.89
CHACRA	1,532.00	1,510.00	TOP TARGET	5,389.00	4,790.00
CLIFF HOUSE	2,743.00	2,617.00	LANDING POINT	5,494.56	4,799.00
MENELEE	2,762.00	2,634.00	BASE TARGET	5,494.56	4,799.00
			TD	13,486.98	4,820.00

### **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 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 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"	5,494.56'	7"	23 LBS	J-55 or equiv	LTC
PRODUCTION	6.125"	5344.56' - 13,486.98'	4.5"	11.6 LBS	P-110 or equiv	LTC
TIE BACK	6.125"	Surf. - 5344.56'	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 utilized 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 opened 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.

##### 2. Intermediate:

Spacer #1: 20 bbl (112 cuft) Chemwash. Lead Cement: 103 bbls, 293 sks, (578 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/ +/- 216 bbl Drilling mud or water. Total Cement: 162 bbls, 548 sks, (909 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 (798 sx /1085 cuft /193 bbls). Tail Spacer: 20 BBL of MMCR. Displacement: Displace w/ +/-182bbl Fr Water. Total Cement (798 sx /1085bbls).

#### **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.

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#### **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).

(Lat/Long) is recorded and full drill log report is completed and filed with WPX. The bed will not be energized for a minimum of 45 days.

After the completion phases and pipeline installation, portions of the project area not needed for operation will be reclaimed. When the wells are plugged, final reclamation will occur within the remainder of the project area. Reclamation is described in detail in the Surface Use Reclamation Plan (Appendix A).

## 7. METHODS FOR HANDLING WASTE

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### 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

- 1 Portable toilets will be provided and maintained during construction, as needed (see Figures 3, 4, 6 and 7 in Appendix B for the location of toilets per wellpad).

### E. Garbage and other waste material

- 1 All garbage and trash will be placed in a metal trash basket. The trash and garbage will be hauled off site and dumped in an approved landfill, as needed.

### F. Hazardous Waste

- 1 No chemicals subject to reporting under Superfund Amendments and Reauthorization Act Title III in an amount equal to or greater than 10,000 pounds will be used, produced, stored, transported, or disposed of annually in association with the drilling, testing, or completing of these wells.
- 2 No extremely hazardous substances, as defined in 40 CFR 355, in threshold planning quantities will be used, produced, stored, transported, or disposed of annually in association with the drilling, testing, or completing of these wells.
- 3 All fluids (i.e., scrubber cleaners) used during washing of production equipment will be properly disposed of to avoid ground contamination or hazard to livestock or wildlife.

### G. Produced Water:

- 1 WPX Energy will dispose of produced water from this well at one of the following facilities:
  - Lybrook Yard WDW #1, API #30-039-27533, NMOCD permit #SWD-907, operated by Elm Ridge Resources, located in NE ¼, Section 14, Township 23 North, Range 7 West
  - Jillson Federal #1, NMOCD order #R-10168, operated by ConocoPhillips, located in NW ¼, Section 8, Township 24 North, Range 3 West
  - Basin Disposal, permit #NM-01-005, located in the NW ¼, Section 3, Township 29 North, Range 11 West
  - Sunco SWD #001, API #30-045-28653, NMOCD permit SWD-457, operated by Key Energy, located in NW ¼, Section 2, Township 29 North, Range 12 West
- 2 Water will be hauled by truck. Some produced water may also be used in drilling and completion operations as an alternative disposal method.

# **WPX Energy**

**T23N R9W**

**2309-13F WLU**

**W Lybrook UT #710H - Slot A2**

**Wellbore #1**

**Plan: Design #1 26Sept16 sam**

## **Standard Planning Report**

**26 September, 2016**

**WPX**  
Planning Report

<b>Database:</b>	COMPASS	<b>Local Co-ordinate Reference:</b>	Well W Lybrook UT #710H (A2) - Slot A2
<b>Company:</b>	WPX Energy	<b>TVD Reference:</b>	GL @ 6700.00usft (Original Well Elev)
<b>Project:</b>	T23N R9W	<b>MD Reference:</b>	GL @ 6700.00usft (Original Well Elev)
<b>Site:</b>	2309-13F WLU	<b>North Reference:</b>	True
<b>Well:</b>	W Lybrook UT #710H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1 26Sept16 sam		

<b>Project</b>	T23N R9W		
<b>Map System:</b>	US State Plane 1927 (Exact solution)	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	NAD 1927 (NADCON CONUS)		
<b>Map Zone:</b>	New Mexico West 3003		

<b>Site</b>	2309-13F WLU				
<b>Site Position:</b>		<b>Northing:</b>	1,902,559.83 usft	<b>Latitude:</b>	36.228860
<b>From:</b>	Map	<b>Easting:</b>	527,432.82 usft	<b>Longitude:</b>	-107.740321
<b>Position Uncertainty:</b>	0.00 usft	<b>Slot Radius:</b>	13.200 in	<b>Grid Convergence:</b>	0.05 °

<b>Well</b>	W Lybrook UT #710H - Slot A2					
<b>Well Position</b>	<b>+N/-S</b>	-18.93 usft	<b>Northing:</b>	1,902,540.91 usft	<b>Latitude:</b>	36.228808
	<b>+E/-W</b>	7.37 usft	<b>Easting:</b>	527,440.21 usft	<b>Longitude:</b>	-107.740296
<b>Position Uncertainty</b>	0.00 usft		<b>Wellhead Elevation:</b>	0.00 usft	<b>Ground Level:</b>	6,700.00 usft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination</b>	<b>Dip Angle</b>	<b>Field Strength</b>
	IGRF2015	4/25/2016	(°)	(°)	(nT)
			9.31	62.92	49,867

<b>Design</b>	Design #1 26Sept16 sam			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD)</b>	<b>+N/-S</b>	<b>+E/-W</b>	<b>Direction</b>
	(usft)	(usft)	(usft)	(bearing)
	0.00	0.00	0.00	323.62

<b>Plan Sections</b>										
Measured Depth (usft)	Inclination (°)	Azimuth (bearing)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Buld 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	
1,709.42	24.19	80.34	1,673.82	42.21	247.95	2.00	2.00	0.00	80.34	
4,224.29	24.19	80.34	3,967.89	215.11	1,263.78	0.00	0.00	0.00	0.00	
5,062.93	60.00	314.98	4,663.71	550.63	1,160.99	9.00	4.27	-14.95	-133.15	Start 60 Tan #710H
5,162.93	60.00	314.98	4,713.71	611.85	1,099.73	0.00	0.00	0.00	0.00	End 60 Tan #710H
5,298.75	72.23	314.99	4,768.60	699.48	1,012.06	9.01	9.01	0.00	0.01	
5,494.56	89.85	314.98	4,799.00	835.66	875.79	9.00	9.00	0.00	-0.03	POE #710H
13,486.98	89.85	314.98	4,820.00	6,484.99	-4,777.83	0.00	0.00	0.00	0.00	BHL #710H

**WPX**  
Planning Report

<b>Database:</b>	COMPASS	<b>Local Co-ordinate Reference:</b>	Well W Lybrook UT #710H (A2) - Slot A2
<b>Company:</b>	WPX Energy	<b>TVD Reference:</b>	GL @ 6700.00usft (Original Well Elev)
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<b>Site:</b>	2309-13F WLU	<b>North Reference:</b>	True
<b>Well:</b>	W Lybrook UT #710H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1 26Sept16 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	0.00
320.00	0.00	0.00	320.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>9 5/8"</b>										
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Start Build 2.00</b>										
1,000.00	10.00	80.34	997.47	7.30	42.91	-19.57	2.00	2.00	0.00	0.00
1,500.00	20.00	80.34	1,479.82	28.99	170.32	-77.68	2.00	2.00	0.00	0.00
1,709.42	24.19	80.34	1,673.82	42.21	247.95	-113.10	2.00	2.00	0.00	0.00
<b>Hold 24.19 Inclination</b>										
2,000.00	24.19	80.34	1,938.88	62.18	365.33	-166.63	0.00	0.00	0.00	0.00
2,500.00	24.19	80.34	2,394.98	96.56	567.29	-258.75	0.00	0.00	0.00	0.00
3,000.00	24.19	80.34	2,851.08	130.94	769.26	-350.87	0.00	0.00	0.00	0.00
3,500.00	24.19	80.34	3,307.19	165.31	971.22	-442.99	0.00	0.00	0.00	0.00
4,000.00	24.19	80.34	3,763.29	199.69	1,173.19	-535.11	0.00	0.00	0.00	0.00
4,224.29	24.19	80.34	3,967.89	215.11	1,263.78	-576.43	0.00	0.00	0.00	0.00
<b>Start Build DLS 9.00 TFO -133.15</b>										
4,500.00	18.99	10.12	4,228.07	269.60	1,328.36	-570.86	9.00	-1.89	-25.47	
5,000.00	54.71	317.38	4,629.77	512.44	1,197.68	-297.85	9.00	7.14	-10.55	
5,062.93	60.00	314.98	4,663.71	550.63	1,160.99	-245.34	9.00	8.41	-3.80	
<b>Hold 60.00 Inclination</b>										
5,162.93	60.00	314.98	4,713.71	611.85	1,099.73	-159.72	0.00	0.00	0.00	0.00
<b>Start Build DLS 9.01 TFO 0.01</b>										
5,298.75	72.23	314.99	4,768.60	699.48	1,012.06	-37.16	9.01	9.01	0.00	0.00
<b>Start DLS 9.00 TFO -0.03</b>										
5,494.56	89.85	314.98	4,799.00	835.66	875.79	153.30	9.00	9.00	0.00	0.00
<b>POE at 89.85 Inc 314.98 Deg</b>										
5,495.00	89.85	314.98	4,799.00	835.97	875.48	153.74	0.00	0.00	0.00	0.00
<b>7"</b>										
5,500.00	89.85	314.98	4,799.01	839.51	871.94	158.68	0.00	0.00	0.00	0.00
6,000.00	89.85	314.98	4,800.33	1,192.92	518.26	653.01	0.00	0.00	0.00	0.00
6,500.00	89.85	314.98	4,801.64	1,546.34	164.57	1,147.33	0.00	0.00	0.00	0.00
7,000.00	89.85	314.98	4,802.96	1,899.76	-189.12	1,641.65	0.00	0.00	0.00	0.00
7,500.00	89.85	314.98	4,804.27	2,253.18	-542.80	2,135.98	0.00	0.00	0.00	0.00
8,000.00	89.85	314.98	4,805.58	2,606.59	-896.49	2,630.30	0.00	0.00	0.00	0.00
8,500.00	89.85	314.98	4,806.90	2,960.01	-1,250.17	3,124.62	0.00	0.00	0.00	0.00
9,000.00	89.85	314.98	4,808.21	3,313.43	-1,603.86	3,618.94	0.00	0.00	0.00	0.00
9,500.00	89.85	314.98	4,809.52	3,666.85	-1,957.55	4,113.27	0.00	0.00	0.00	0.00
10,000.00	89.85	314.98	4,810.84	4,020.27	-2,311.23	4,607.59	0.00	0.00	0.00	0.00
10,500.00	89.85	314.98	4,812.15	4,373.68	-2,664.92	5,101.91	0.00	0.00	0.00	0.00
11,000.00	89.85	314.98	4,813.47	4,727.10	-3,018.61	5,596.24	0.00	0.00	0.00	0.00
11,500.00	89.85	314.98	4,814.78	5,080.52	-3,372.29	6,090.56	0.00	0.00	0.00	0.00
12,000.00	89.85	314.98	4,816.09	5,433.94	-3,725.98	6,584.88	0.00	0.00	0.00	0.00
12,500.00	89.85	314.98	4,817.41	5,787.36	-4,079.67	7,079.21	0.00	0.00	0.00	0.00
13,000.00	89.85	314.98	4,818.72	6,140.77	-4,433.35	7,573.53	0.00	0.00	0.00	0.00
13,486.98	89.85	314.98	4,820.00	6,484.99	-4,777.83	8,054.98	0.00	0.00	0.00	0.00
<b>TD at 13486.98</b>										

**WPX**  
Planning Report

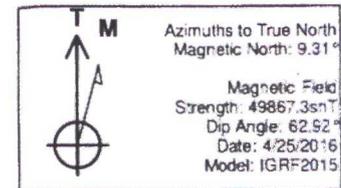
<b>Database:</b>	COMPASS	<b>Local Co-ordinate Reference:</b>	Well W Lybrook UT #710H (A2) - Slot A2
<b>Company:</b>	WPX Energy	<b>TVD Reference:</b>	GL @ 6700.00usft (Original Well Elev)
<b>Project:</b>	T23N-R9W	<b>MD Reference:</b>	GL @ 6700.00usft (Original Well Elev)
<b>Site:</b>	2309-13F WLU	<b>North Reference:</b>	True
<b>Well:</b>	W Lybrook UT #710H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1 26Sept16 sam		

Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(bearing)	(usft)	(usft)	(usft)	(usft)	(usft)		
- Shape									
Start 60 Tan #710H - plan hits target center - Point	0.00	0.00	4,663.71	550.63	1,160.99	1,903,092.66	528,600.67	36.230321	-107.736360
End 60 Tan #710H - plan misses target center by 0.03usft at 5162.91usft MD (4713.70 TVD, 611.84 N, 1099.75 E) - Point	0.00	0.00	4,713.71	611.85	1,099.77	1,903,153.82	528,539.39	36.230489	-107.736567
POE #710H - plan hits target center - Point	0.00	0.00	4,799.00	835.66	875.79	1,903,377.41	528,315.20	36.231104	-107.737327
BHL #710H - plan hits target center - Point	0.00	0.00	4,820.00	6,484.99	-4,777.83	1,909,021.31	522,656.16	36.246622	-107.756499

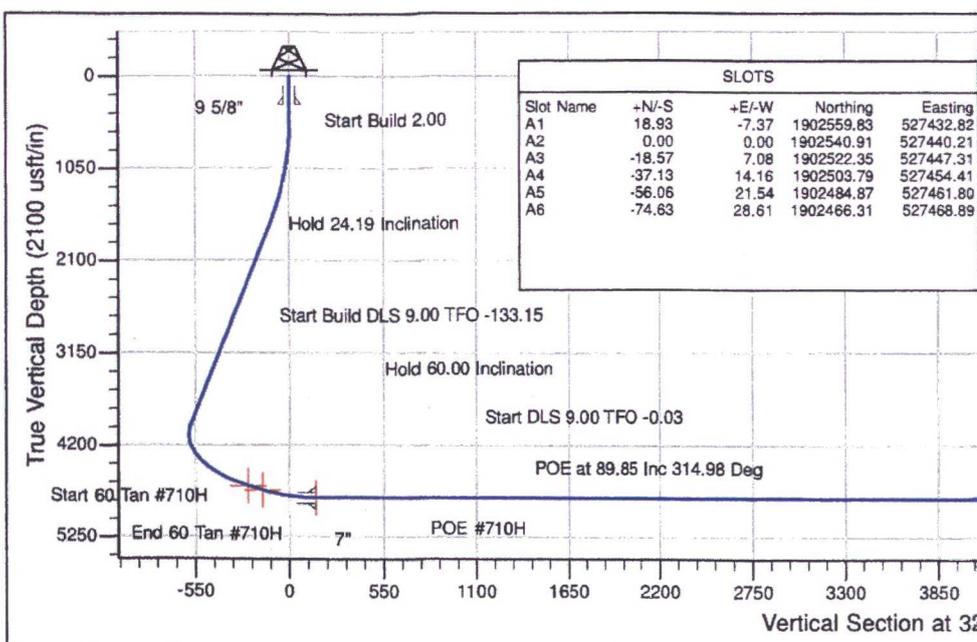
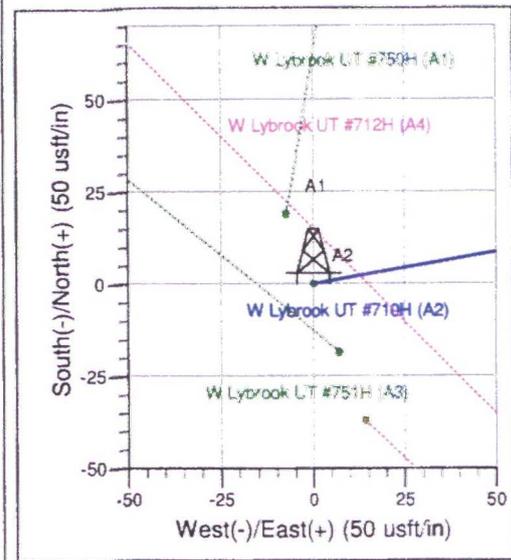
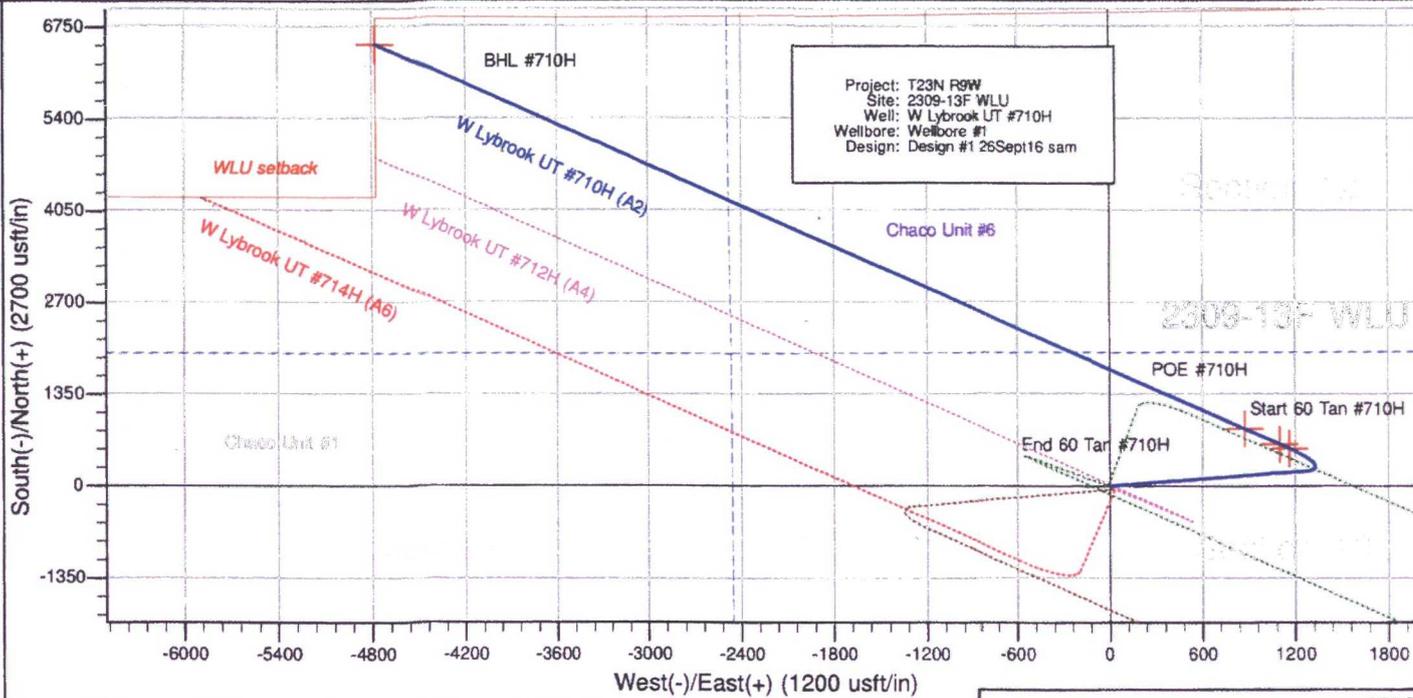
Casing Points					
Measured Depth	Vertical Depth		Name	Casing Diameter	Hole Diameter
(usft)	(usft)			(in)	(in)
320.00	320.00	9 5/8"		9.625	12.250
5,495.00	4,799.00	7"		7.000	8.750

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates		Comment	
(usft)	(usft)	+N/-S (usft)	+E/-W (usft)		
500.00	500.00	0.00	0.00	Start Build 2.00	
1,709.42	1,673.82	42.21	247.95	Hold 24.19 Inclination	
4,224.29	3,967.89	215.11	1,263.78	Start Build DLS 9.00 TFO -133.15	
5,062.93	4,663.71	550.63	1,160.99	Hold 60.00 Inclination	
5,162.93	4,713.71	611.85	1,099.73	Start Build DLS 9.01 TFO 0.01	
5,298.75	4,768.60	699.48	1,012.06	Start DLS 9.00 TFO -0.03	
5,494.56	4,799.00	835.66	875.79	POE at 89.85 Inc 314.98 Deg	
13,486.98	4,820.00	6,484.99	-4,777.83	TD at 13486.98	

Well Name: W Lybrook U1 #710H  
 Surface Location: 2309-13F WLU  
 NAD 1927 (NADCON CONUS), US State Plane 1927 (Exact solution) New Mexico West 3003  
 Ground Elevation: 6700.00  
 +N/-S 0.00 +E/-W 0.00 Northing 1902540.91 Easting 527440.21 Latitude 36.228808 Longitude -107.740296 Slot A2  
 GL @ 6700.00usft (Original Well Elev)



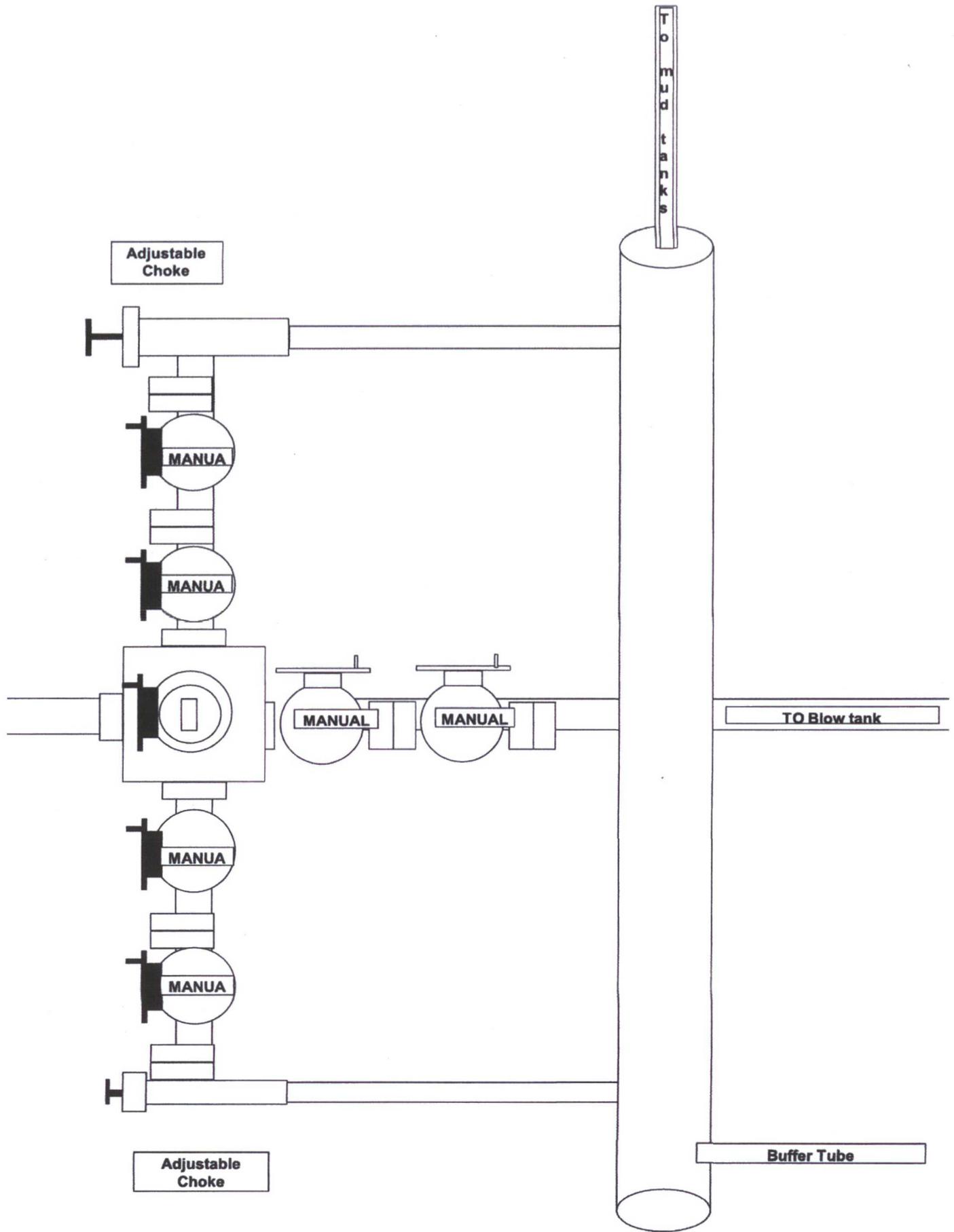
Project: T23N R9W  
 Site: 2309-13F WLU  
 Well: W Lybrook UT #710H  
 Wellbore: Wellbore #1  
 Design: Design #1 26Sept16 sam

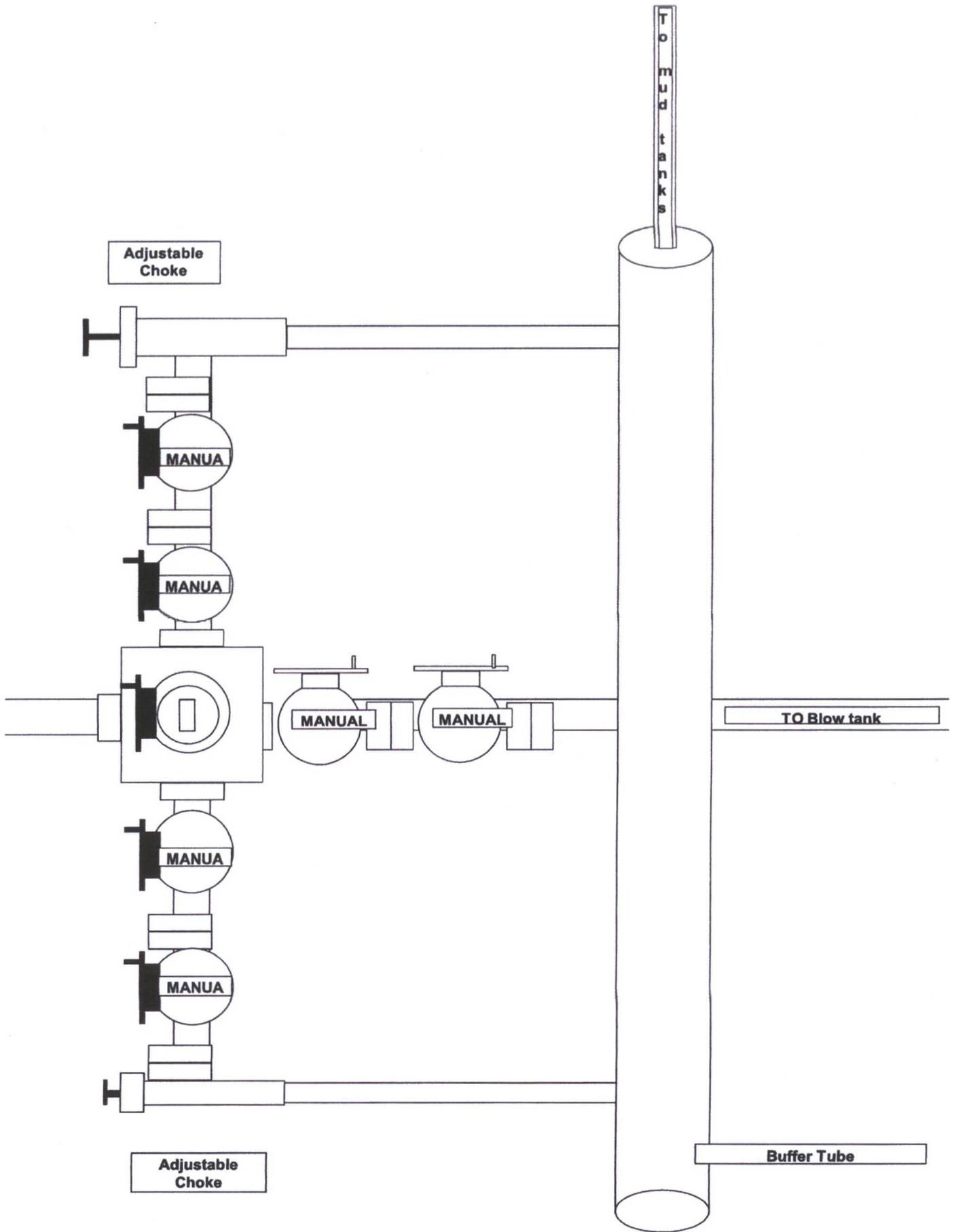


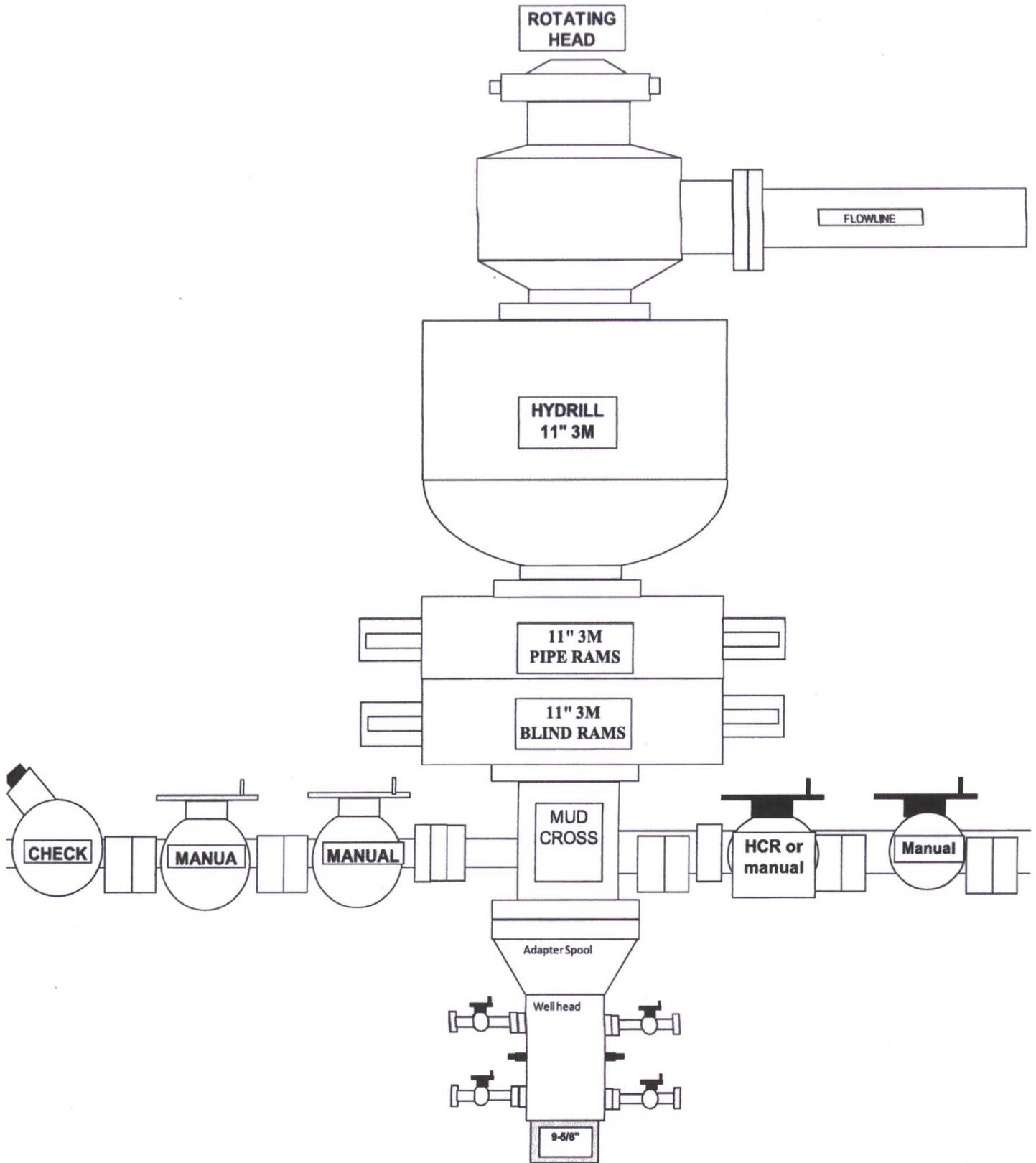
Slot Name	+N/-S	+E/-W	Northing	Easting
A1	18.83	-7.37	1902559.83	527432.82
A2	0.00	0.00	1902540.91	527440.21
A3	-18.57	7.08	1902522.35	527447.31
A4	-37.13	14.16	1902503.79	527454.41
A5	-56.06	21.54	1902484.87	527461.80
A6	-74.63	28.61	1902466.31	527468.89

DESIGN TARGET DETAILS								
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
Start 60 Tan #710H	4663.71	550.63	1160.99	1903092.65	528600.67	36.230321	-107.736360	Point
End 60 Tan #710H	4713.71	611.85	1099.77	1903153.82	528539.39	36.230489	-107.736567	Point
POE #710H	4799.00	835.66	875.79	1903377.41	528315.20	36.231104	-107.737327	Point
BHL #710H	4820.00	6484.99	-4777.83	1909021.31	522656.16	36.246622	-107.756499	Point

ANNOTATIONS									
TVD	MD	Inc	Azi	+N/-S	+E/-W	V Sect	Departure	Annotation	
500.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	Start Build 2.00	
1673.82	1709.42	24.19	80.34	42.21	247.95	-113.10	251.52	Hold 24.19 Inclination	
3967.89	4224.29	24.19	80.34	215.11	1263.78	-576.43	1281.96	Start Build DLS 9.00 TFO -133.15	
4663.71	5062.93	60.00	314.98	550.63	1160.99	-245.34	1709.20	Hold 60.00 Inclination	
4713.71	5162.93	60.00	314.98	611.85	1099.77	-159.72	1795.80	Start Build DLS 9.01 TFO 0.01	
4768.60	5298.75	72.23	314.99	699.48	1012.06	-37.16	1919.76	Start DLS 9.00 TFO -0.03	
4799.00	5494.56	89.85	314.98	835.66	875.79	153.30	2112.42	POE at 89.85 Inc 314.98 Deg	
4820.00	13486.98	89.85	314.98	6484.99	-4777.83	8054.98	10104.81	TD at 13486.98	







**Directions from the Intersection of US Hwy 550 & US Hwy 64**  
**in Bloomfield, NM to WPX Energy Production, LLC W Lybrook Unit #710H**  
**1961' FNL & 2464' FWL, Section 13, T23N, R9W, N.M.P.M., San Juan County, NM**

**Latitude: 36.228821°N Longitude: 107.740909°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 begin access on right-hand side of roadway:

Go Right (North-westerly) continuing for 5799.2' to staked WPX W Lybrook Unit #710H location.