State of New Mexico
Energy, Minerals and Natural Resources Department

Susana Martinez
Governor

David Martin
Cabinet Secretary

Brett F. Woods, Ph.D.
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: 8-4-15
Well information:
Operator WPX, Well Name and Number Chaco 2307 07N #409H

API# 30-039-31337, Section 7, Township 23 N/S, Range 7 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
- ✓ 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.

Chad Hensley
NMOCD Approved by Signature

10-29-2015
Date KC

1220 South St. Francis Drive • Santa Fe, New Mexico 87505
Phone (505) 476-3460 • Fax (505) 476-3462 • www.emnrd.state.nm.us/ocd

Form 3160-3
(September 2001)

RECEIVED
AUG 04 2015
Farmington Field Office
Bureau of Land Management

FORM APPROVED
OMB No. 1004-0136
Expires January 31, 2004

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.
NMNM109397

6. If Indian, Allottee or Tribe Name

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

1a. Type of Work: ☒ DRILL ☐ REENTER

1b. Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other ☒ Single Zone ☐ Multiple Zone

8. Lease Name and Well No.
Chaco 2307-07N #409H

2. Name of Operator
WPX Energy Production, LLC

9. API Well No.
30-039-31337

3a. Address
P.O. Box 640 Aztec, NM 87410

3b. Phone No. *(include area code)*
(505) 333-1849

10. Field and Pool, or Exploratory
Basin Mancos / Lybrook Gallup

4. Location of Well *(Report location clearly and in accordance with any State requirements. *)*
At surface N 971' FSL & 2186' FWL, sec 7, T23N, R7W – Rio Arriba County
At proposed prod. zone L 2338' FSL & 270' FWL, sec 12, T23N, R8W – San Juan County

11. Sec., T., R., M., or Blk. and Survey or Area
SHL: Section 7, T23N, R7W
BHL: Section 12, T23N, R8W

14. Distance in miles and direction from nearest town or post office*
Approximately 46.3 miles South from Bloomfield NM

12. County or Parish
Rio Arriba

13. State
NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 971'

16. No. of Acres in lease
800.48 BH

17. Spacing Unit dedicated to this well
360.70 S/2(Except SE/4SE/4) Section 12
N/2SW/4 Section 7

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.
40'

19. Proposed Depth
13,420 MD / 5,682 TVD

20. BLM/BIA Bond No. on file
UTB000178

OIL CONS. DIV DIST. 3
OCT 28 2015

21. Elevations (Show whether DF, KDB, RT, GL, etc.)
7307' GR

22. Approximate date work will start*
September 1, 2015

23. Estimated duration
1 month

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, shall 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 shall 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 authorized officer.

25. Signature
Name *(Printed/Typed)* Andrea Felix
Date 8-4-2015

Title
Regulatory Specialist Senior

Approved by *(Signature)*
Name *(Printed/Typed)*
Date 10/26/15

Title AFM
Office FFO

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.

**(Instructions on reverse)*

WPX Energy Production, LLC, proposes to develop the Basin Mancos / Lybrook Gallup Pool at the above described location in accordance with the attached drilling and surface use plans.

The well pad surface is off lease on BLM surface and is co-located with the Chaco 2307-07N #410H. The ROW # for the well pad authorization is NMNM133823

This location has been archaeologically surveyed by LaPlata Archeology. Copies of their report have been submitted directly to the BLM.

New access road is approximately 9,153.5' off lease on BLM surface. The ROW # for this authorization is NMNM133823.

New pipeline is approximately 288.2' off lease on BLM surface. The ROW #'s for this authorization are NMNM133825 and NMNM133824.

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

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

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
30-039-31337	97232 / 42289	BASIN MANCOS / LYBROOK GALLUP

4 Property Code	5 Property Name	6 Well Number
315625	CHACO 2307-07N	409H

7 OGRID No.	8 Operator Name	9 Elevation
120782	WPX ENERGY PRODUCTION, LLC	7307'

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
N	7	23N	7W		971	SOUTH	2186	WEST	RIO ARRIBA

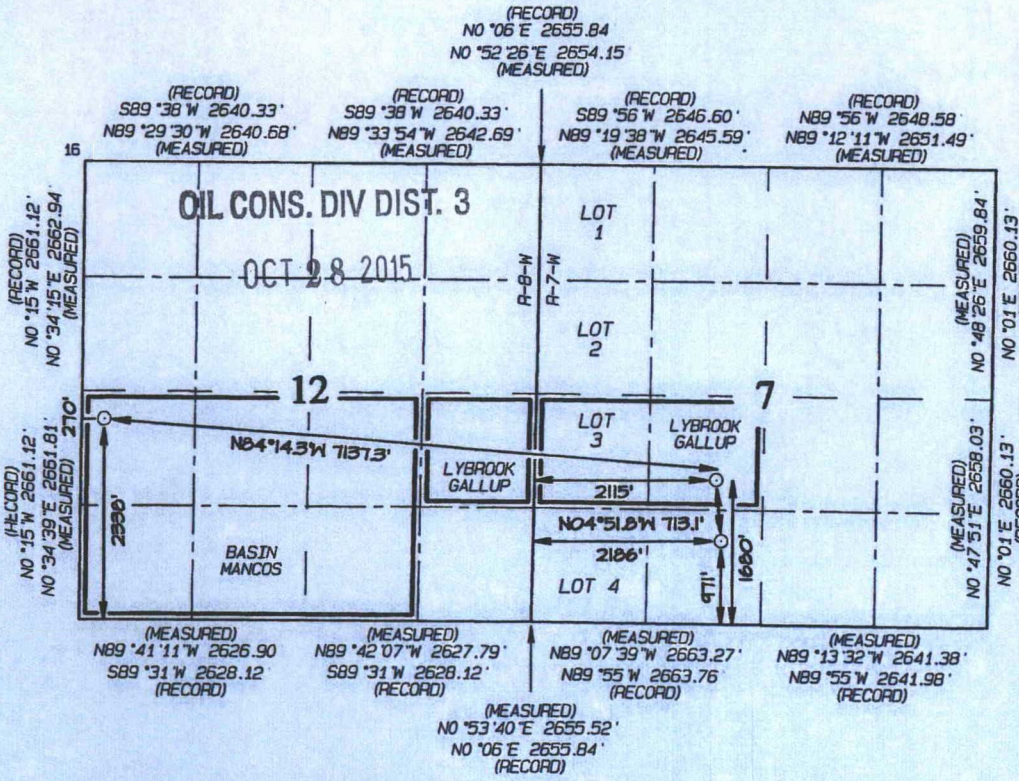
11 Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
L	12	23N	8W		2338	SOUTH	270	WEST	SAN JUAN

12 Dedicated Acres		13 Joint or Infill	14 Consolidation Code	15 Order No.
360.70	N/2 SW/4 - Sec 7 S/2 (Except SE/4 SE/4) - Sec 12			

120.70=GALLUP 240=MANCOS

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



END-OF-LATERAL
2338' FSL 270' FWL
SECTION 12, T23N, R8W
LAT: 36.240675 °N
LONG: 107.640581 °W
DATUM: NAD1927

LAT: 36.240688 °N
LONG: 107.641190 °W
DATUM: NAD1983

POINT-OF-ENTRY
1680' FSL 2115' FWL
SECTION 12, T23N, R8W
LAT: 36.238985 °N
LONG: 107.616472 °W
DATUM: NAD1927

LAT: 36.238998 °N
LONG: 107.617081 °W
DATUM: NAD1983

SURFACE LOCATION
971' FSL 2186' FWL
SECTION 7, T23N, R7W
LAT: 36.237036 °N
LONG: 107.616233 °W
DATUM: NAD1927

LAT: 36.237049 °N
LONG: 107.616842 °W
DATUM: NAD1983

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 8-4-2015 Date

Andrea Felix
Printed Name

andrea.felix@wpxenergy.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: JULY 21, 2015
Date of Survey: JUNE 5, 2015

Signature and Seal of Professional Surveyor

JASON C. EDWARDS
NEW MEXICO
15269
REGISTERED PROFESSIONAL SURVEYOR

JASON C. EDWARDS
Certificate Number 15269

WPXENERGY

WPX ENERGY

Operations Plan

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

DATE: 07/28/2015

FIELD: BASIN MANCOS / LYBROOK GALLUP

WELL NAME: CHACO 2307- 07N #409H

SURFACE: Federal

SH Location: SESW 7 23N-07W
Rio Arriba CO., NM

ELEVATION: 7307'

BH Location: NWSW 12 23N-08W
San Juan CO., NM

MINERALS: Federal

MEASURED DEPTH:

I. GEOLOGY:

Surface formation – San Jose / Nacimiento

A. **FORMATION TOPS:** (KB)

Name	MD	TVD	Name	MD	TVD
Ojo Alamo	1449	1439	Point Lookout	4563	4491
Kirtland	1763	1747	Mancos	4761	4686
Picture Cliffs	2146	2122	Gallup	**5126**	5043
Lewis	2257	2231	**Kickoff Point**	**5127**	5044
Chacra	2564	2532	Top Target	5983	5728
Cliff House	3670	3616	**Landing Point**	**6284**	5793
Menefee	3717	3662	Base Target	6284	5793
			TD	13420	5682

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 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) (FT)	CASING SIZE (IN)	WEIGHT(LB)	GRADE
Surface	12.25"	320'	9.625"	36#	J-55
Intermediate	8.75"	6,284	7"	23#	K-55
Prod. Liner	6.125"	6134' - 13,420'	4-1/2"	11.6#	N-80
Tie-Back String	N/A	Surf. - 6134'	4-1/2"	11.6#	N-80

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 2,700 ft., 2,500 ft., 2,300ft., 2,000ft., 1,500 ft., and 1,000 ft.

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.

4. TIE-BACK CASING: None

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: 20 bbl (112 cu-ft) Mud Flush III spacer + Lead: +/- 700 sx Foamed 50/50 Poz Cement. 13.0 ppg + 0.1% Halad 766 + 0.2% Versaset + 1.5% Chem-Foamer 760 (Yield :1.43 cu-ft/ sk. / Vol: 1001 cu-ft / 178.3 Bbls.) + TAIL: 100 sx 13.5 #/gal. + 0.2% Versaset + 0.15% HALAD-766 (Yield: 1.28 cu-ft / sk / Vol: 128 cu-ft / 22.8 Bbls.). + Fresh Water Displacement (1,362 cu-ft / +/- 242 Bbls) + 100 sx Top-Out Cement Premium: Yield: (1.17 cu-ft/ sk / (Vol: 117 cu-ft / 20.8 Bbls). WOC 12 hrs. Test Casing to 1500 PSI for 30 minutes. Total Cement Volume: (900 sx / 1246 cu-ft / 222 bbls). Mix with +/- 84,000 SCF Nitrogen. TOC at surface.

3. PRODUCTION 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 1.29 cu ft/sk, 13.5 ppg, (405 sx / 519.68 cu ft. / 92.6 bbls). **Tail Spacer:** 20 BBL of MMCR. **Displacement**: Displace w/ +/- 140 bbl Fr Water. Total Cement (520 cu ft / 92.6 bbls).

IV. COMPLETION

A. CBL

1. Run CCL for perforating.

B. 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.

C. 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.

D. 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.

- Although this horizontal well will be 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:

Installation of RSI sleeves at Toe of Lateral.

Proposed Operations:

A 4-1/2" 11.6# N-80 Liner will be run to TD and landed +/- 150 ft. into the 7" 23# K-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).

A 4-1/2" 11.6# N-80 tie-back string with seal assembly will be run and stung into the PBR of the liner hanger, tested to 1500 PSI and hung off at the surface. After Stimulation and Testing operations are complete the 4-1/2" tie-back string will be removed from the well.

WPXENERGY

Well Name: Chaco 2307-07N #409H
Surface Location: Chaco 2307-07N
NAD 1927 (NADCON CONUS) , US State Plane 1927 (Exact solution) New Mexico West 3003
Ground Elevation: 6991.00

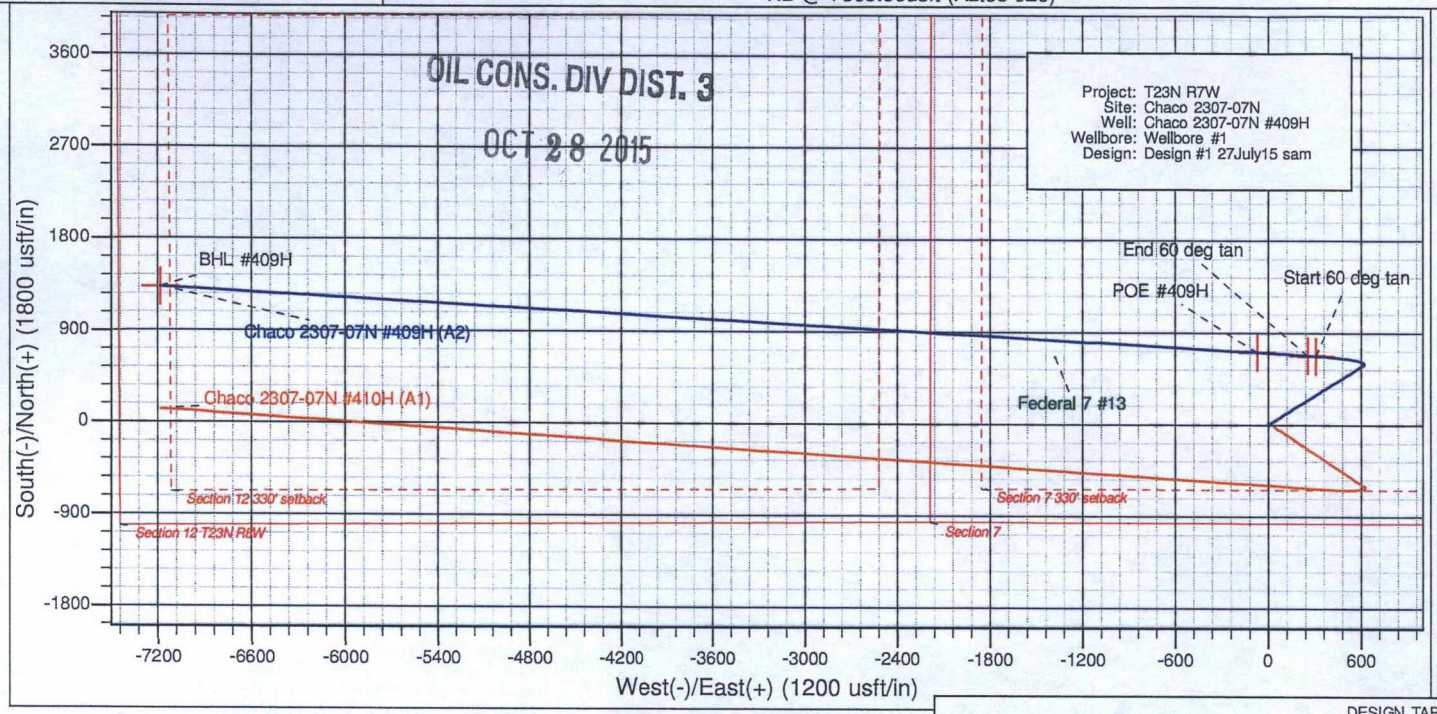
+N/-S	+E/-W	Northing	Easting	Latittude	Longitude	Slot
0.00	0.00	1905594.54	564024.40	36.2370360	-107.6162330	A2

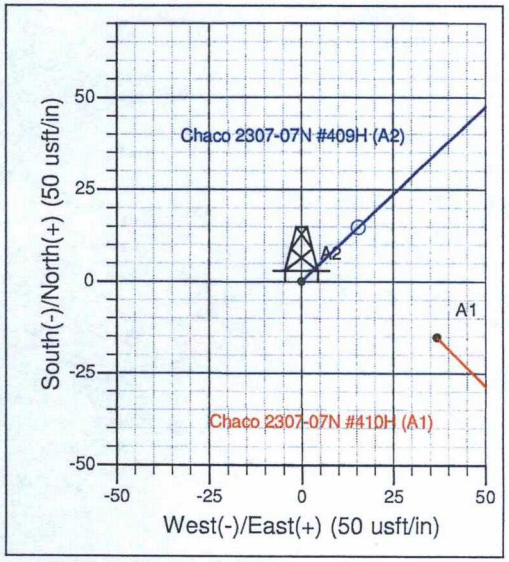
KB @ 7005.00usft (Aztec 920)

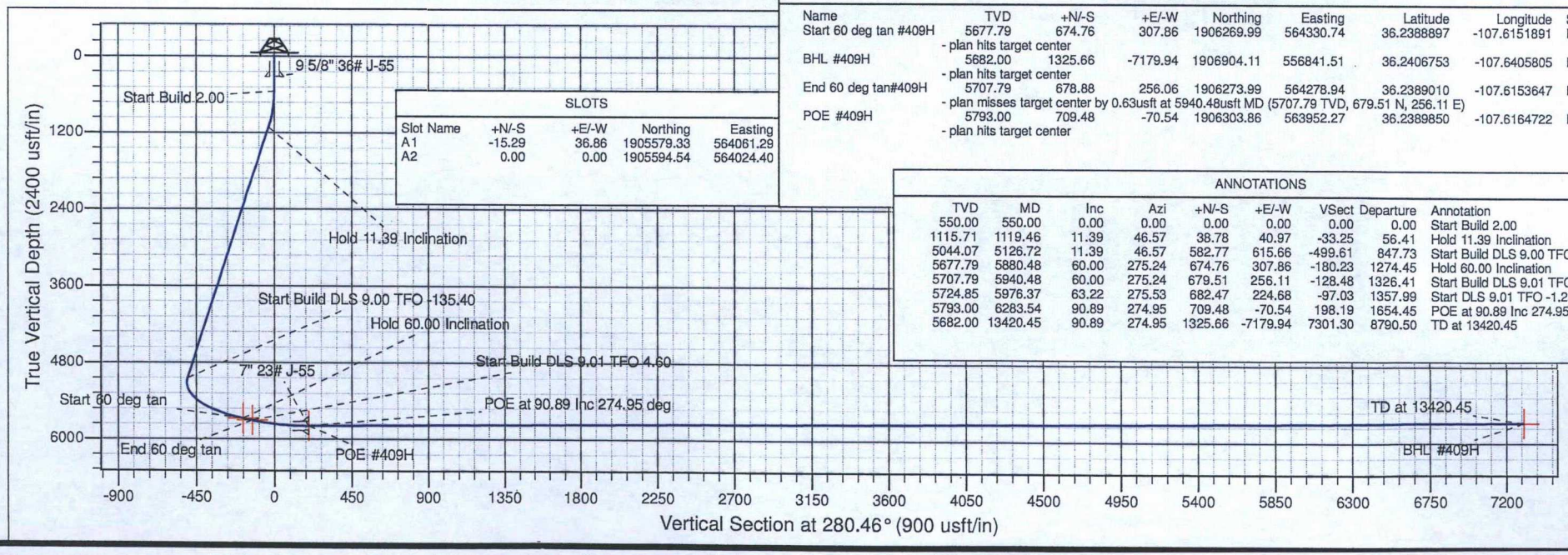
T M

Azimuths to True North
Magnetic North: 9.28°

Magnetic Field
Strength: 50062.8snT
Dip Angle: 62.96°
Date: 6/29/2015
Model: IGRF2010







SLOTS

Slot Name	+N/-S	+E/-W	Northing	Easting
A1	-15.29	36.86	1905579.33	564061.29
A2	0.00	0.00	1905594.54	564024.40

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
Start 60 deg tan #409H	5677.79	674.76	307.86	1906269.99	564330.74	36.2388897	-107.6151891	Point
	- plan hits target center							
BHL #409H	5682.00	1325.66	-7179.94	1906904.11	556841.51	36.2406753	-107.6405805	Point
	- plan hits target center							
End 60 deg tan#409H	5707.79	678.88	256.06	1906273.99	564278.94	36.2389010	-107.6153647	Point
	- plan misses target center by 0.63usft at 5940.48usft MD (5707.79 TVD, 679.51 N, 256.11 E)							
POE #409H	5793.00	709.48	-70.54	1906303.86	563952.27	36.2389850	-107.6164722	Point
	- plan hits target center							

ANNOTATIONS

TVD	MD	Inc	Azi	+N/-S	+E/-W	VSect	Departure	Annotation
550.00	550.00	0.00	0.00	0.00	0.00	0.00	0.00	Start Build 2.00
1115.71	1119.46	11.39	46.57	38.78	40.97	-33.25	56.41	Hold 11.39 Inclination
5044.07	5126.72	11.39	46.57	582.77	615.66	-499.61	847.73	Start Build DLS 9.00 TFO -135.40
5677.79	5880.48	60.00	275.24	674.76	307.86	-180.23	1274.45	Hold 60.00 Inclination
5707.79	5940.48	60.00	275.24	679.51	256.11	-128.48	1326.41	Start Build DLS 9.01 TFO 4.60
5724.85	5976.37	63.22	275.53	682.47	224.68	-97.03	1357.99	Start DLS 9.01 TFO -1.25
5793.00	6283.54	90.89	274.95	709.48	-70.54	198.19	1654.45	POE at 90.89 Inc 274.95 deg
5682.00	13420.45	90.89	274.95	1325.66	-7179.94	7301.30	8790.50	TD at 13420.45

WPX Energy

T23N R7W
Chaco 2307-07N
Chaco 2307-07N #409H - Slot A2

Wellbore #1

Plan: Design #1 27July15 sam

Standard Planning Report

27 July, 2015

WPX

Planning Report

Database:	San Juan	**Local Co-ordinate Reference:**	Well Chaco 2307-07N #409H (A2) - Slot A2
Company:	WPX Energy	**TVD Reference:**	KB @ 7005.00usft (Aztec 920)
Project:	T23N R7W	**MD Reference:**	KB @ 7005.00usft (Aztec 920)
Site:	Chaco 2307-07N	**North Reference:**	True
Well:	Chaco 2307-07N #409H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1 27July15 sam		

Project	T23N R7W		
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	Chaco 2307-07N				
Site Position:		**Northing:**	1,905,594.54 usft	**Latitude:**	36.2370360
From:	Lat/Long	**Easting:**	564,024.40 usft	**Longitude:**	-107.6162330
Position Uncertainty:	0.00 usft	**Slot Radius:**	13.20 in	**Grid Convergence:**	0.13 °

Well	Chaco 2307-07N #409H - Slot A2					
Well Position	**+N/-S**	0.00 usft	**Northing:**	1,905,594.54 usft	**Latitude:**	36.2370360
	+E/-W	0.00 usft	**Easting:**	564,024.40 usft	**Longitude:**	-107.6162330
Position Uncertainty		0.00 usft	**Wellhead Elevation:**	0.00 usft	**Ground Level:**	6,991.00 usft

Wellbore	Wellbore #1			
Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	IGRF2010	6/29/2015	9.28	62.96	50,063

Design	Design #1 27July15 sam			
Audit Notes:				
Version:	**Phase:**	PLAN	**Tie On Depth:**	0.00

Vertical Section:	**Depth From (TVD) (usft)**	**+N/-S (usft)**	**+E/-W (usft)**	**Direction (°)**
	0.00	0.00	0.00	280.46

Plan Sections

Measured Depth (usft)	Inclination (°)	Azimuth (°)	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	
550.00	0.00	0.00	550.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,119.46	11.39	46.57	1,115.71	38.78	40.97	2.00	2.00	0.00	46.57	
5,126.72	11.39	46.57	5,044.07	582.77	615.66	0.00	0.00	0.00	0.00	
5,880.48	60.00	275.24	5,677.79	674.76	307.86	9.00	6.45	-17.42	-135.40	Start 60 deg tan #409
5,940.48	60.00	275.24	5,707.79	679.51	256.11	0.00	0.00	0.00	0.00	End 60 deg tan#409H
5,976.37	63.22	275.53	5,724.85	682.47	224.68	9.01	8.98	0.81	4.60	
6,283.54	90.89	274.95	5,793.00	709.48	-70.54	9.01	9.01	-0.19	-1.25	POE #409H
13,420.45	90.89	274.95	5,682.00	1,325.66	-7,179.94	0.00	0.00	0.00	0.00	BHL #409H

Database:	San Juan	**Local Co-ordinate Reference:**	Well Chaco 2307-07N #409H (A2) - Slot A2
Company:	WPX Energy	**TVD Reference:**	KB @ 7005.00usft (Aztec 920)
Project:	T23N R7W	**MD Reference:**	KB @ 7005.00usft (Aztec 920)
Site:	Chaco 2307-07N	**North Reference:**	True
Well:	Chaco 2307-07N #409H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1 27July15 sam		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	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" 36# J-55									
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
550.00	0.00	0.00	550.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
1,000.00	9.00	46.57	998.15	24.25	25.61	-20.79	2.00	2.00	0.00
1,119.46	11.39	46.57	1,115.71	38.78	40.97	-33.25	2.00	2.00	0.00
Hold 11.39 Inclination									
1,500.00	11.39	46.57	1,488.76	90.44	95.54	-77.53	0.00	0.00	0.00
2,000.00	11.39	46.57	1,978.92	158.31	167.25	-135.72	0.00	0.00	0.00
2,500.00	11.39	46.57	2,469.07	226.19	238.95	-193.92	0.00	0.00	0.00
3,000.00	11.39	46.57	2,959.23	294.06	310.66	-252.11	0.00	0.00	0.00
3,500.00	11.39	46.57	3,449.38	361.94	382.37	-310.30	0.00	0.00	0.00
4,000.00	11.39	46.57	3,939.54	429.81	454.07	-368.49	0.00	0.00	0.00
4,500.00	11.39	46.57	4,429.69	497.69	525.78	-426.68	0.00	0.00	0.00
5,000.00	11.39	46.57	4,919.84	565.56	597.48	-484.87	0.00	0.00	0.00
5,126.72	11.39	46.57	5,044.07	582.77	615.66	-499.61	0.00	0.00	0.00
Start Build DLS 9.00 TFO -135.40									
5,500.00	26.57	286.86	5,404.34	633.79	560.94	-436.55	9.00	4.07	-32.07
5,880.48	60.00	275.24	5,677.79	674.76	307.86	-180.23	9.00	8.79	-3.05
Hold 60.00 Inclination									
5,940.48	60.00	275.24	5,707.79	679.51	256.11	-128.48	0.00	0.00	0.00
Start Build DLS 9.01 TFO 4.60									
5,976.37	63.22	275.53	5,724.85	682.47	224.68	-97.03	9.01	8.98	0.81
Start DLS 9.01 TFO -1.25									
6,000.00	65.35	275.48	5,735.10	684.52	203.49	-75.83	9.01	9.01	-0.22
6,283.00	90.84	274.95	5,793.00	709.43	-70.01	197.65	9.01	9.01	-0.19
7" 23# J-55									
6,283.54	90.89	274.95	5,793.00	709.48	-70.54	198.19	9.01	9.01	-0.18
POE at 90.89 Inc 274.95 deg									
6,500.00	90.89	274.95	5,789.63	728.17	-286.17	413.62	0.00	0.00	0.00
7,000.00	90.89	274.95	5,781.86	771.34	-784.24	911.25	0.00	0.00	0.00
7,500.00	90.89	274.95	5,774.08	814.51	-1,282.31	1,408.89	0.00	0.00	0.00
8,000.00	90.89	274.95	5,766.30	857.67	-1,780.39	1,906.52	0.00	0.00	0.00
8,500.00	90.89	274.95	5,758.53	900.84	-2,278.46	2,404.15	0.00	0.00	0.00
9,000.00	90.89	274.95	5,750.75	944.01	-2,776.53	2,901.78	0.00	0.00	0.00
9,500.00	90.89	274.95	5,742.97	987.18	-3,274.60	3,399.41	0.00	0.00	0.00
10,000.00	90.89	274.95	5,735.20	1,030.35	-3,772.68	3,897.04	0.00	0.00	0.00
10,500.00	90.89	274.95	5,727.42	1,073.52	-4,270.75	4,394.68	0.00	0.00	0.00
11,000.00	90.89	274.95	5,719.65	1,116.68	-4,768.82	4,892.31	0.00	0.00	0.00
11,500.00	90.89	274.95	5,711.87	1,159.85	-5,266.89	5,389.94	0.00	0.00	0.00
12,000.00	90.89	274.95	5,704.09	1,203.02	-5,764.96	5,887.57	0.00	0.00	0.00
12,500.00	90.89	274.95	5,696.32	1,246.19	-6,263.04	6,385.20	0.00	0.00	0.00
13,000.00	90.89	274.95	5,688.54	1,289.36	-6,761.11	6,882.83	0.00	0.00	0.00
13,420.45	90.89	274.95	5,682.00	1,325.66	-7,179.94	7,301.30	0.00	0.00	0.00
TD at 13420.45									

WPX

Planning Report

Database:	San Juan	**Local Co-ordinate Reference:**	Well Chaco 2307-07N #409H (A2) - Slot A2
Company:	WPX Energy	**TVD Reference:**	KB @ 7005.00usft (Aztec 920)
Project:	T23N R7W	**MD Reference:**	KB @ 7005.00usft (Aztec 920)
Site:	Chaco 2307-07N	**North Reference:**	True
Well:	Chaco 2307-07N #409H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1 27July15 sam		

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Start 60 deg tan #409H - plan hits target center - Point	0.00	0.00	5,677.79	674.76	307.86	1,906,269.99	564,330.75	36.2388896	-107.6151891
BHL #409H - plan hits target center - Point	0.00	0.00	5,682.00	1,325.66	-7,179.94	1,906,904.12	556,841.51	36.2406753	-107.6405805
End 60 deg tan#409H - plan misses target center by 0.63usft at 5940.48usft MD (5707.79 TVD, 679.51 N, 256.11 E) - Point	0.00	0.00	5,707.79	678.88	256.06	1,906,273.99	564,278.94	36.2389010	-107.6153648
POE #409H - plan hits target center - Point	0.00	0.00	5,793.00	709.48	-70.54	1,906,303.86	563,952.27	36.2389850	-107.6164722

Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)
320.00	320.00	9 5/8" 36# J-55	9.62	12.25
6,283.00	5,793.00	7" 23# J-55	7.00	8.75

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
550.00	550.00	0.00	0.00	Start Build 2.00
1,119.46	1,115.71	38.78	40.97	Hold 11.39 Inclination
5,126.72	5,044.07	582.77	615.66	Start Build DLS 9.00 TFO -135.40
5,880.48	5,677.79	674.76	307.86	Hold 60.00 Inclination
5,940.48	5,707.79	679.51	256.11	Start Build DLS 9.01 TFO 4.60
5,976.37	5,724.85	682.47	224.68	Start DLS 9.01 TFO -1.25
6,283.54	5,793.00	709.48	-70.54	POE at 90.89 Inc 274.95 deg
13,420.45	5,682.00	1,325.66	-7,179.94	TD at 13420.45

3. The well pad will be leveled to provide space and a level surface for vehicles and equipment. Excavated materials from cuts will be used on fill portions of the well pad to level the pad. Construction of the well pad will require a maximum fill of approximately 3 feet on the northern edge, and a cut of 5 feet at the northeast corner to create a level well pad. No additional surfacing materials will be required for construction.
4. As determined during the onsite on June 18, 2015, the following best management practices will be implemented:
    a. Diversions will be installed upon reclamation.
    b. No additional fill would be required to construct the pad.
    c. Corner 5 will be rounded off and reduced within the construction zone due to archeology. An arch fence will be installed to protect the site as specified in the COA's
5. All project activities will be confined to permitted areas only.
6. Construction equipment may include chain saws, a brush hog, scraper, maintainer, excavator, and a dozer.
7. If drilling has not been initiated on the well pad within 120 days of the well pad being constructed, the operator will consult with the BLM to address a site-stabilization plan.

D. Production Facilities
1. As practical, access will be a teardrop-shaped road through the production area so that the center may be revegetated.
2. Within 90 days of installation, production facilities would be painted Juniper Green to blend with the natural color of the landscape and would be located, to the extent practical, to reasonably minimize visual impact.
3. Berms will be constructed around all storage facilities sufficient in size to contain the storage capacity of tanks. Berm walls will be compacted with appropriate equipment to assure containment.

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

7.0 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

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

in Bloomfield, NM to WPX Energy Production, LLC Chaco 2307-07N #409H

971' FSL & 2186' FWL, Section 7, T23N, R7W, N.M.P.M., Rio Arriba County, NM

Latitude: 36.237049°N Longitude: 107.616842°W Datum: NAD1983

From the intersection of US Hwy 550 & US Hwy 64 in Bloomfield, NM, travel Southerly on US Hwy 550 for 46.3 miles to Mile Marker 104.9;

Go Right (Southerly) for 0.1 miles to fork in roadway;

Go Right (North-westerly) for 0.4 miles to existing Beth Greiger #1 location on which new access continues for 9153.5` to staked WPX Chaco 2307-07N #409H location.

3000 PSI BOP Schematic