

State of New Mexico
Energy, Minerals and Natural Resources Department

Susana Martinez
Governor

David Martin
Cabinet Secretary-Designate

Brett F. Woods, Ph.D.
Deputy Cabinet Secretary

Jami Bailey, 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: 12/20/13

Well information;

Operator WPX, Well Name and Number Chaco 2307-13D 173H

API# 30-039-31267, Section 13, Township 23 NS, Range 7 EW

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
- ☐ 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



NMOCD Approved by Signature

3-18-2014

Date ca

RECEIVED

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

DEC 20 2013

APPLICATION FOR PERMIT TO DRILL OR REENTER

San Antonio Field Office
Bureau of Land Management

5. Lease Serial No.
NMSF-078360
6. If Indian, Allottee or Tribe Name
7. If Unit or CA Agreement, Name and No.
8. Lease Name and Well No.
Chaco 2307-13D #173H
9. API Well No.
30-039-31207
10. Field and Pool, or Exploratory
Lybrook Gallup
11. Sec., T., R., M., or Blk. and Survey or Area
Section 13, T23N, R7W
12. County or Parish
Rio Arriba County
13. State
NM

1a. Type of Work: ☒ DRILL ☐ REENTER
1b. Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other ☒ Single Zone ☐ Multiple Zone
2. Name of Operator
WPX Energy Production, LLC
3a. Address
P.O. Box 640 Aztec, NM 87410
3b. Phone No. (include area code)
(505) 333-1808
4. Location of Well (Report location clearly and in accordance with any State requirements. *)
At surface 1205' FNL & 484' FWL, sec 13, T23N, R7W
At proposed prod. zone 1255' FNL & 230' FWL, sec 14, T23N, R7W
14. Distance in miles and direction from nearest town or post office*
approximately 2 miles southeast of Lybrook, New Mexico
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)
484'
16. No. of Acres in lease
2565.24
17. Spacing Unit dedicated to this well
160 acres
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.
22'
19. Proposed Depth
10,483' MD / 5,503' TVD
20. BLM/BIA Bond No. on file
UTB000178
21. Elevations (Show whether DF, KDB, RT, GL, etc.)
7014' GR
22. Approximate date work will start*
March 1, 2014
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. | 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 shall be filed with the appropriate Forest Service Office). | 6. Such other site specific information and/or plans as may be required by the authorized officer. |

25. Signature	Name (Printed/Typed)	Date
	Larry Higgins	12/20/13
Title		

Permit Supervisor.		
Approved by (Signature)	Name (Printed/Typed)	Date
		3/5/14
Title	Office	
AFM	EFO	

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 Lybrook Gallup formation at the above described location in accordance with the attached drilling and surface use plans.

The well pad surface is under jurisdiction of the BLM, however it is off lease.

This location has been archaeologically surveyed by La Plata Archaeological Consultants. Copies of their report have been submitted directly to the BLM.

Approximately 373' of new access road is needed.

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

NMOCDA

**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**

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

WELL LOCATION AND ACREAGE DEDICATION PLAT

*API Number 30-039-31207	*Pool Code 42289	*Pool Name LYBROOK GALLUP
*Property Code 40466	*Property Name CHACO 2307-13D	*Well Number 173H
*GRID No. 120782	*Operator Name WPX ENERGY PRODUCTION, LLC	*Elevation 7014'

¹⁰ Surface Location

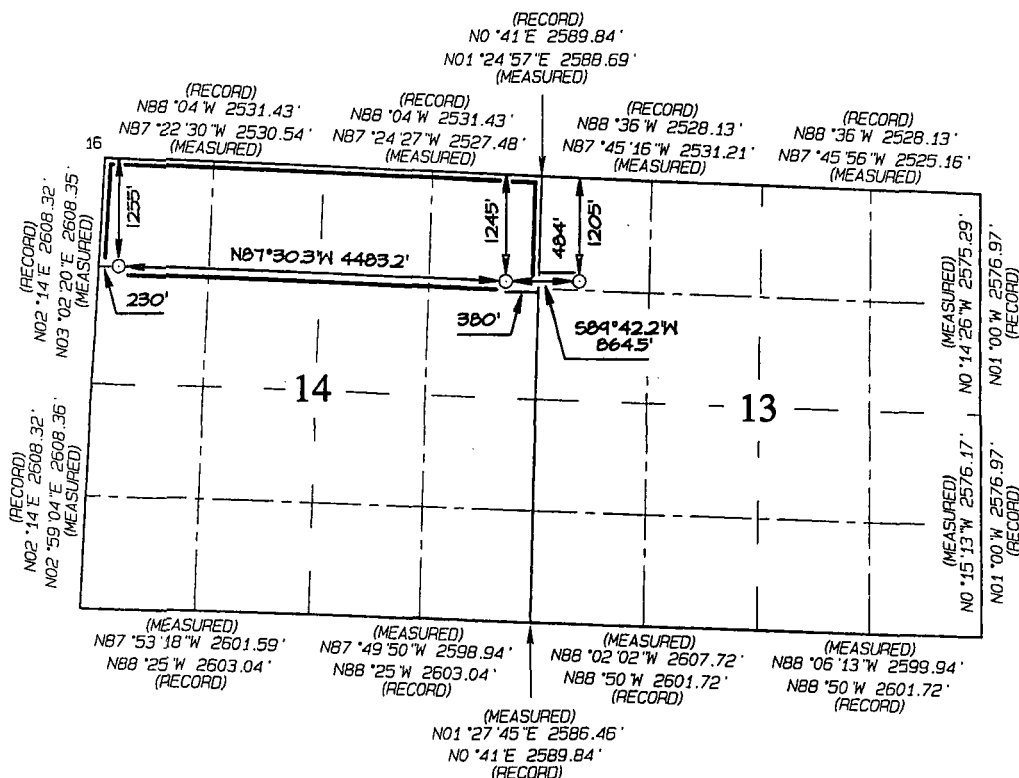
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
D	13	23N	7W		1205	NORTH	484	WEST	RIO ARriba

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
D	14	23N	7W		1255	NORTH	230	WEST	RIO ARriba

¹² Dedicated Acres 160.0 Acres N/2 N/2 - Section 14	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION



END-OF-LATERAL
1255' FNL 230' FWL
SECTION 14, T23N, R7W
LAT: 36.22968°N
LONG: 107.55184°W
DATUM: NAD1927

LAT: 36.22970°N
LONG: 107.55245°W
DATUM: NAD1983

POINT-OF-ENTRY
1245' FNL 380' FEL
SECTION 14, T23N, R7W
LAT: 36.22931°N
LONG: 107.53665°W
DATUM: NAD1927

LAT: 36.22933°N
LONG: 107.53726°W
DATUM: NAD1983

SURFACE LOCATION
1205' FNL 484' FWL
SECTION 13, T23N, R7W
LAT: 36.22936°N
LONG: 107.53372°W
DATUM: NAD1927

LAT: 36.22937°N
LONG: 107.53433°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.

Larry Higgins 12/20/13
Signature Date

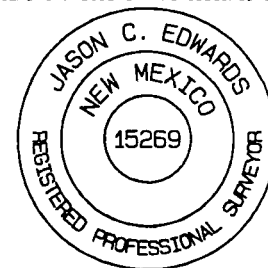
Larry Higgins
Printed Name
larry.higgins@wpenergy.com
E-mail Address

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: DECEMBER 19, 2013
Survey Date: OCTOBER 24, 2013

Signature and Seal of 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: 12/16/2013 **FIELD:** Lybrook (Gallup)
WELL NAME: Chaco 2307-13D #173H **SURFACE:** BLM
SH Location: NWNW Sec 13-23N-07W **ELEVATION:** 7014' GR
BH Location: NWNW Sec 14-23N-07W **MINERALS:** BLM
Rio Arriba Co, NM
MEASURED DEPTH: 10,483' **LEASE #:** NMSF-078360

I. **GEOLOGY:** Surface formation – San Jose

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

Name	MD	TVD	Name	MD	TVD
Ojo Alamo	1,406	1,400	Point Lookout	4,330	4,320
Kirtland	1,747	1,738	Mancos	4,489	4,479
Pictured Cliffs	2,028	2,018	Kickoff Point	4,928	4,917
Lewis	2,268	2,258	Target Top	5,752	5,539
Chacra	2,449	2,439	Landing Point	5,999	5,584
Cliff House	3,524	3,514	Target Base	5,999	5,584
Menefee	3,593	3,583			
			TD	10,483	5,503

B. **MUD LOGGING PROGRAM:** Mudlogger on location from surface csg to TD.

C. **LOGGING PROGRAM:** LWD GR from surface casing to TD. LWD GR / E- Sonic will be run in Lateral.

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.**

NOTE: Vertical portion of the well (8-3/4 in.) will be directionally drilled as per attached Directional Plan to +/- 4,928' (MD) / 4,917' (TVD). Curve portion of wellbore will be drilled and landed at +/- 90 deg. at +/- 5,999' (MD) / 5,584' (TVD). 7 in. csg will be set at this point. A 6-1/8" Lateral will be drilled as per the attached Directional Plan to +/- 10,483' (MD) / 5,503' (TVD). Will run 4-1/2 in. Production Liner from +/- 5,849 ft. to TD and cemented. Liner will be tied back to surface w / 4-1/2" Casing for stimulation / testing, then removed from the well.

III. MATERIALS**A. CASING PROGRAM:**

CASING TYPE	OH SIZE (IN)	DEPTH (MD) (FT)	CASING SIZE (IN)	WEIGHT(LB)	GRADE
Surface	12.25"	400'+	9.625"	36#	J-55
Intermediate	8.75"	5,999'	7"	23#	K-55
Prod. Liner	6.125"	5,849' - 10,483'	4-1/2"	11.6#	N-80
Tie-Back String	N/A	Surf. - 5,849'	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 + (2) RSI (Sliding Sleeves) 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:** 10 bbl Fr Water Spacer + 190 sx (222.3 cu.ft.) of "Premium Cement" + 2% Calcium Chloride Cement + 0.125# pps of Poly-E-Flake, 15.8 #/gal (1.17 cu ft./sk, Vol 39.58 Bbls.). The 100% excess should circulate cement to the surface. WOC 12 hours. Test csg to 600psi. Total Volume: (222.3 cu-ft/190 sx/39.6 Bbls). TOC at Surface.
2. **INTERMEDIATE:** 20 bbl (112 cu-ft) Mud Flush III spacer + Lead: 850 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: 1216 cu-ft / 216.5 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). Test Casing to 1500 PSI for 30 minutes. Total Cement Volume: (1050 sx / 1461 cu-ft / 260 bbls). Mix with +/- 84,000 SCF Nitrogen. TOC at surface.
3. **PRODUCTION LINER: STAGE 1:** 10 bbl (56.cu-ft) Fr Water Spacer. **STAGE 2:** 40 bbl 9.5 ppg (224.6 cu-ft) Tuned Spacer III + 0.5 gal/bbl Musol + 38.75 ppb Barite + 0.5 gal/bbl SEM-7. **STAGE 3:** 10 bbl Fr Water Spacer. **STAGE 4: Lead Cement:** 50 / 50 Poz Premium + 0.2% Versaset + 0.2% Halad -766, Yield 1.43 cu ft/sk, 13.0 ppg, (10 sx / 14.3 cu ft. / 2.5 bbls). **STAGE 5:** 200 sx. Foamed Lead Cement: 50 / 50 Poz Standard + 0.2% Versaset + 0.2% HALAD-766 + 1.5% Chem-Foamer 760. Yield 1.97 cu-ft/sk. 13.0 ppg (200 sx / 394 cu-ft. / 70.2 bbls.). **STAGE 6:** Tail Cement : 100 sx. 50/50 Poz Standard + 0.2% Versaset + 0.05% HALAD-766 + .05% SA-1015, Weight: 13.5 ppg (100 sx / Yield 1.28 cu ft/sk. / 128 cu ft. / 22.8 bbls) **STAGE 7:** Displace w/ +/- 137 bbl Fr Water. Total Cement (563.3 cu ft / 95.5 bbls). Mix Foamed Cement w/ +/- 75,000 SCF Nitrogen. Est. TOC +/- 5,549 ft.

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 point of curve (~5,800' MD).

- 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 (set at 5,999 ft. MD) with a Liner Hanger and pack-off assembly then cemented to +/- 300 ft above the liner hanger. TOL will be +/- 5,849 ft. (MD) +/- 74.4 degree angle. TOC: +/- 5,549 ft. (MD).

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.

The Drilling Rig will be rigged down at this point and Completion operations will begin. After Stimulation and Testing operations are complete the 4-1/2" tie-back string will be removed from the well.

Note: Changes to formation tops, casing landing points, well TD and Directional Plan.

WELL	Chaco 2307-13D #173H	FIELD	NM, Rio Arriba (NAD 27 CZ)	STRUCTURE	Sec 13-23N-7W
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Magnetic Parameters	Dip: 63.014°	Date: December 11, 2013	Surface Location	NAD27 New Mexico State Plane, Central Zone, US Feet	Macellaneous
Model: BGM 2013	Mag Dec: 9.476°	FS: 50181.8mT	Lat: N 36 13 45.696	North: 198303.01 BUS	Stat: Chaco 2307-13D #173H
			Lon: W 107 32 1.392	Grid Conv: -0.759'	TVD Ref: RKB(7028ft above MSL)
				Scale Fact: 1.0006404	Plan: R3 mdr 17Dec13
					Smy Date: December 11, 2013

Proposal

<<< W Scale = 1:1500(ft) E >>>

-6000

-4500

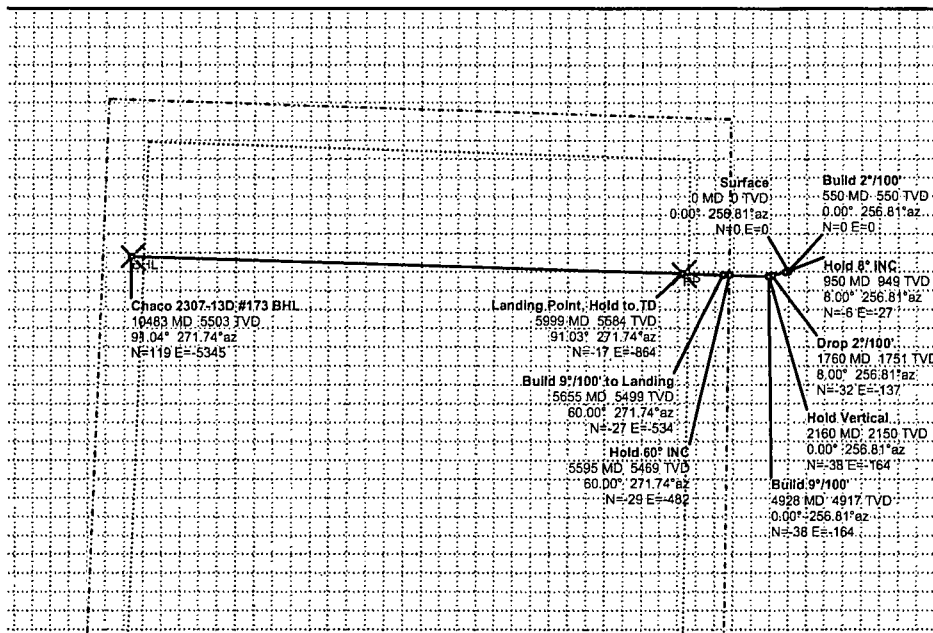
-3000

-1500

0



True North
Tot Corr (M->T 9.4757°)
Mag Dec (9.476°)
Grid Conv (-0.759°)



1500

0

-1500

<<< S Scale = 1:1500(ft) N >>>

TVD Scale = 1:1000(ft)

0

1000

2000

3000

4000

5000

6000

Targets						
Name	TVD(ft)	NS(ft)	EW(ft)	Latitude(deg)	Longitude(deg)	Shape
Chaco 2307-13D #173 PP	5584.00	-17.28	-863.94	N 36 13 45.525	W 107 32 11.936	POINT
Chaco 2307-13D #173 BHL	5503.00	118.56	-5344.74	N 36 13 46.863	W 107 33 6.625	POINT

Critical Points									
Comments	MD(ft)	INC	AZM	TVD(ft)	SS TVD	VS(ft)	NS(ft)	EW(ft)	DLS
Surface	0.00	0.00	256.81	0.00	-7028.00	0.00	0.00	0.00	
Build 2°/100'	550.00	0.00	256.81	550.00	-6478.00	0.00	0.00	0.00	0.00
Hold 8° INC	950.25	8.00	256.81	948.95	-6079.05	27.03	-6.37	-27.18	2.00
Drop 2°/100'	1760.25	8.00	256.81	1751.05	-5276.95	136.26	-32.11	-137.00	0.00
Hold Vertical	2160.49	0.00	256.81	2150.00	-4878.00	163.29	-38.48	-164.18	2.00
Build 9°/100'	4927.97	0.00	256.81	4917.48	-2110.52	163.29	-38.48	-164.18	0.00
Hold 60° INC	5594.64	60.00	271.74	5468.81	-1559.19	481.59	-28.84	-482.34	9.00
Build 9°/100' to Landing	5654.64	60.00	271.74	5498.81	-1529.19	533.55	-27.26	-534.28	0.00
Landing Point, Hold to TD	5999.47	91.04	271.74	5584.00	-1444.00	863.34	-17.28	-863.94	9.00
Chaco 2307-13D #173 BHL	10483.06	91.04	271.74	5503.00	-1525.00	5346.05	118.56	-5344.74	0.00

0

1000

2000

3000

4000

5000

Vertical Section (ft) Azim = 271.27° Scale = 1:1000(ft) Origin = 0 N-S, 0 E-W



Chaco 2307-13D #173H R3 mdv 17Dec13 Proposal Geodetic Report

(Def Plan)



Report Date: December 17, 2013 - 02:08 PM
Client: WPX Energy
Field: NM, Rio Arriba (NAD 27 CZ)
Structure / Slot: WPX Energy Sec 13-23N-7W (Chaco 2307-13D #173H) / Chaco 2307-13D #173H
Well: Chaco 2307-13D #173H
Borehole: Original Hole
UWI / API#: Unknown / Unknown
Survey Name: Chaco 2307-13D #173H R3 mdv 17Dec13
Survey Date: December 11, 2013
Tort / AHD / DDI / ERD Ratio: 107.048 * / 5351.565 ft / 6.032 / 0.958
Coordinate Reference System: NAD27 New Mexico State Plane, Central Zone, US Feet
Location Lat / Long: N 36° 13' 45.69600", W 107° 32' 1.39200"
Location Grid N/E Y/X: N 1905204.007 ftUS, E 121381.999 ftUS
CRS Grid Convergence Angle: -0.7588 *
Grid Scale Factor: 1.00006404

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 271.271 * (True North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: RKB
TVD Reference Elevation: 7028.000 ft above MSL
Seabed / Ground Elevation: 7014.000 ft above MSL
Magnetic Declination: 9.476 *
Total Gravity Field Strength: 998.4838mgm (9.80665 Based)
Total Magnetic Field Strength: 50161.586 nT
Magnetic Dip Angle: 63.014 *
Declination Date: December 11, 2013
Magnetic Declination Model: BGGM 2013
North Reference: True North
Grid Convergence Used: 0.0000 *
Total Corr Mag North->True North: 9.4757 *
Local Coord Referenced To: Well Head

Comments	MD (ft)	Incl (°)	Azim True (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (*/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
Surface	0.00	0.00	256.81	0.00	0.00	0.00	0.00	0.00	N/A	1905204.01	121382.00	N 36 13 45.70 W 107 32 1.39
	100.00	0.00	256.81	100.00	0.00	0.00	0.00	0.00	1905204.01	121382.00	N 36 13 45.70 W 107 32 1.39	
	200.00	0.00	256.81	200.00	0.00	0.00	0.00	0.00	1905204.01	121382.00	N 36 13 45.70 W 107 32 1.39	
	300.00	0.00	256.81	300.00	0.00	0.00	0.00	0.00	1905204.01	121382.00	N 36 13 45.70 W 107 32 1.39	
	400.00	0.00	256.81	400.00	0.00	0.00	0.00	0.00	1905204.01	121382.00	N 36 13 45.70 W 107 32 1.39	
	500.00	0.00	256.81	500.00	0.00	0.00	0.00	0.00	1905204.01	121382.00	N 36 13 45.70 W 107 32 1.39	
Build 2"/100'	550.00	0.00	256.81	550.00	0.00	0.00	0.00	0.00	1905204.01	121382.00	N 36 13 45.70 W 107 32 1.39	
	600.00	1.00	256.81	600.00	0.42	-0.10	-0.42	2.00	1905203.91	121381.57	N 36 13 45.70 W 107 32 1.40	
	700.00	3.00	256.81	699.93	3.80	-0.90	-3.82	2.00	1905203.16	121378.16	N 36 13 45.69 W 107 32 1.44	
	800.00	5.00	256.81	799.68	10.56	-2.49	-10.61	2.00	1905201.66	121371.35	N 36 13 45.67 W 107 32 1.52	
	900.00	7.00	256.81	899.13	20.68	-4.87	-20.79	2.00	1905199.41	121361.14	N 36 13 45.65 W 107 32 1.65	
Hold 8" INC	950.25	8.00	256.81	948.95	27.03	-6.37	-27.18	2.00	1905198.00	121354.74	N 36 13 45.63 W 107 32 1.72	
	1000.00	8.00	256.81	998.21	33.74	-7.95	-33.92	0.00	1905196.51	121347.97	N 36 13 45.62 W 107 32 1.81	
	1100.00	8.00	256.81	1097.24	47.22	-11.13	-47.48	0.00	1905193.51	121334.37	N 36 13 45.59 W 107 32 1.97	
	1200.00	8.00	256.81	1196.27	60.71	-14.30	-61.04	0.00	1905190.51	121320.77	N 36 13 45.55 W 107 32 2.14	
	1300.00	8.00	256.81	1295.29	74.19	-17.48	-74.60	0.00	1905187.51	121307.17	N 36 13 45.52 W 107 32 2.30	
	1400.00	8.00	256.81	1394.32	87.68	-20.66	-88.16	0.00	1905184.52	121293.57	N 36 13 45.49 W 107 32 2.47	
	1500.00	8.00	256.81	1493.34	101.16	-23.84	-101.72	0.00	1905181.52	121279.97	N 36 13 45.46 W 107 32 2.63	
Drop 2"/100'	1600.00	8.00	256.81	1592.37	114.65	-27.01	-115.27	0.00	1905178.52	121266.37	N 36 13 45.43 W 107 32 2.80	
	1700.00	8.00	256.81	1691.39	128.13	-30.19	-128.83	0.00	1905175.52	121252.77	N 36 13 45.40 W 107 32 2.96	
	1760.25	8.00	256.81	1751.05	136.26	-32.11	-137.00	0.00	1905173.72	121244.58	N 36 13 45.38 W 107 32 3.06	
	1800.00	7.21	256.81	1790.46	141.35	-33.31	-142.13	2.00	1905172.58	121239.44	N 36 13 45.37 W 107 32 3.13	
	1900.00	5.21	256.81	1889.86	151.83	-35.77	-152.66	2.00	1905170.25	121228.87	N 36 13 45.34 W 107 32 3.26	
	2000.00	3.21	256.81	1989.59	158.93	-37.45	-159.80	2.00	1905168.67	121221.70	N 36 13 45.33 W 107 32 3.34	
Hold Vertical	2100.00	1.21	256.81	2089.51	162.67	-38.33	-163.56	2.00	1905167.84	121217.94	N 36 13 45.32 W 107 32 3.39	
	2160.49	0.00	256.81	2150.00	163.29	-38.48	-164.18	2.00	1905167.71	121217.31	N 36 13 45.32 W 107 32 3.40	
	2200.00	0.00	256.81	2189.51	163.29	-38.48	-164.18	0.00	1905167.71	121217.31	N 36 13 45.32 W 107 32 3.40	
	2300.00	0.00	256.81	2289.51	163.29	-38.48	-164.18	0.00	1905167.71	121217.31	N 36 13 45.32 W 107 32 3.40	
	2400.00	0.00	256.81	2389.51	163.29	-38.48	-164.18	0.00	1905167.71	121217.31	N 36 13 45.32 W 107 32 3.40	
	2500.00	0.00	256.81	2489.51	163.29	-38.48	-164.18	0.00	1905167.71	121217.31	N 36 13 45.32 W 107 32 3.40	
	2600.00	0.00	256.81	2589.51	163.29	-38.48	-164.18	0.00	1905167.71	121217.31	N 36 13 45.32 W 107 32 3.40	
	2700.00	0.00	256.81	2689.51	163.29	-38.48	-164.18	0.00	1905167.71	121217.31	N 36 13 45.32 W 107 32 3.40	
	2800.00	0.00	256.81	2789.51	163.29	-38.48	-164.18	0.00	1905167.71	121217.31	N 36 13 45.32 W 107 32 3.40	
	2900.00	0.00	256.81	2889.51	163.29	-38.48	-164.18	0.00	1905167.71	121217.31	N 36 13 45.32 W 107 32 3.40	
	3000.00	0.00	256.81	2989.51	163.29	-38.48	-164.18	0.00	1905167.71	121217.31	N 36 13 45.32 W 107 32 3.40	
	3100.00	0.00	256.81	3089.51	163.29	-38.48	-164.18	0.00	1905167.71	121217.31	N 36 13 45.32 W 107 32 3.40	
	3200.00	0.00	256.81	3189.51	163.29	-38.48	-164.18	0.00	1905167.71	121217.31	N 36 13 45.32 W 107 32 3.40	
	3300.00	0.00	256.81	3289.51	163.29	-38.48	-164.18	0.00	1905167.71	121217.31	N 36 13 45.32 W 107 32 3.40	
	3400.00	0.00	256.81	3389.51	163.29	-38.48	-164.18	0.00	1905167.71	121217.31	N 36 13 45.32 W 107 32 3.40	
	3500.00	0.00	256.81	3489.51	163.29	-38.48	-164.18	0.00	1905167.71	121217.31	N 36 13 45.32 W 107 32 3.40	
	3600.00	0.00	256.81	3589.51	163.29	-38.48	-164.18	0.00	1905167.71	121217.31	N 36 13 45.32 W 107 32 3.40	
	3700.00	0.00	256.81	3689.51	163.29	-38.48	-164.18	0.00	1905167.71	121217.31	N 36 13 45.32 W 107 32 3.40	
	3800.00	0.00	256.81	3789.51	163.29	-38.48	-164.18	0.00	1905167.71	121217.31	N 36 13 45.32 W 107 32 3.40	
	3900.00	0.00	256.81	3889.51	163.29	-38.48	-164.18	0.00	1905167.71	121217.31	N 36 13 45.32 W 107 32 3.40	
	4000.00	0.00	256.81	3989.51	163.29	-38.48	-164.18	0.00	1905167.71	121217.31	N 36 13 45.32 W 107 32 3.40	
	4100.00	0.00	256.81	4089.51	163.29	-38.48	-164.18	0.00	1905167.71	121217.31	N 36 13 45.32 W 107 32 3.40	
	4200.00	0.00	256.81	4189.51	163.29	-38.48	-164.18	0.00	1905167.71	121217.31	N 36 13 45.32 W 107 32 3.40	
	4300.00	0.00	256.81	4289.51	163.29	-38.48	-164.18	0.00	1905167.71	121217.31	N 36 13 45.32 W 107 32 3.40	
	4400.00	0.00	256.81	4389.51	163.29	-38.48	-164.18	0.00	1905167.71	121217.31	N 36 13 45.32 W 107 32 3.40	
	4500.00	0.00	256.81	4489.51	163.29	-38.48	-164.18	0.00	1905167.71	121217.31	N 36 13 45.32 W 107 32 3.40	
	4600.00	0.00	256.81	4589.51	163.29	-38.48	-164.18	0.00	1905167.71	121217.31	N 36 13 45.32 W 107 32 3.40	
	4700.00	0.00	256.81	4689.51	163.29	-38.48	-164.18	0.00	1905167.71	121217.31	N 36 13 45.32 W 107 32 3.40	
	4800.00	0.00	256.81	4789.51	163.29	-38.48	-164.18	0.00	1905167.71	121217.31	N 36 13 45.32 W 107 32 3.40	
Build 9"/100'	4900.00	0.00	256.81	4889.51	163.29	-38.48	-164.18	0.00	1905167.71	121217.31	N 36 13 45.32 W 107 32 3.40	
	4927.97	0.00	256.81	4917.48	163.29	-38.48	-164.18	0.00	1905167.71	121217.31	N 36 13 45.32 W 107 32 3.40	
	5000.00	6.48	271.74	4989.35	167.36	-38.35	-168.25	9.00	1905167.88	121213.25	N 36 13 45.32 W 107 32 3.45	
	5100.00	15.48	271.74	5087.42	186.39	-37.78	-187.27	9.00	1905168.71	121194.23	N 36 13 45.32 W 107 32 3.68	
	5200.00	24.48	271.74	5181.30	220.52	-36.74	-221.39	9.00	1905170.20	121160.13	N 36 13 45.33 W 107 32 4.09	
	5300.00	33.48	271.74	5268.69	268.93	-35.28	-269.77	9.00	1905172.30	121111.76	N 36 13 45.35 W 107 32 4.68	
	5400.00	42.48	271.74	5347.43	330.40	-33.42	-331.23	9.00	1905174.98	121050.34	N 36 13 45.37 W 107 32 5.43	
	5500.00	51.48	271.74	5415.58	403.44	-31.20	-404.23	9.00	1905178.16	120977.37	N 36 13 45.39 W 107 32 6.33	
Hold 60" INC	5594.64	60.00	271.74	5468.81	481.59	-28.84	-482.34	9.00	1905181.56	120899.29	N 36 13 45.41 W 107 32 7.28	
	5600.00	60.00	271.74	5471.49	486.23	-28.70	-486.98	0.00	1905181.76	120894.65	N 36 13 45.41 W 107 32 7.34	
Build 9"/100' to Landing	5654.64	60.00	271.74	5498.81	533.55	-27.26	-534.28	0.00	1905183.82	120847.37	N 36 13 45.43 W 107 32 7.91	
	5700.00	64.08	271.74	5520.07	573.80	-26.05	-574.32	9.00	1905185.56	120807.35	N 36 13 45.44 W 107 32 8.40	
	5800.00	73.08	271.74	5556.55	666.60	-23.24	-667.28	9.00	1905189.61	120714.43	N 36 13 45.47 W 107 32 9.54	
	5900.00	82.08	271.74	5578.03	764.15	-20.28	-764.79	9.00	1905193.85	120616.96	N 36 13 45.50 W 107 32 10.73	
Landing Point, Hold to TD	5999.47	91.04	271.74	5584.00	863.34	-17.28	-863.94	9.00	1905198.17	120517.85	N 36 13 45.53 W 107 32 11.94	
	6000.00	91.04	271.74	5583.99	863.87	-17.26	-864.47	0.00	1905198.19	120517.33	N 36 13 45.53 W 107 32 11.94	
	6100.00	91.04	271.74	5582.18	963.85	-14.24	-964.40	0.00	1905202.54	120417.43	N 36 13 45.56 W 107 32 13.16	
	6200.00	91.04	271.74	5580.37	1063.83	-11.21	-1064.34	0.00	1905206.89	120317.54	N 36 3	

Comments	MD (ft)	Incl (°)	Azim True (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ° °)	Longitude (E/W ° ° °)
	6900.00	91.04	271.74	5567.73	1763.69	9.99	-1763.91	0.00	1905237.35	119618.27	N 36 13 45.79	W 107 32 22.92
	7000.00	91.04	271.74	5565.92	1863.67	13.01	-1863.84	0.00	1905241.71	119518.38	N 36 13 45.82	W 107 32 24.14
	7100.00	91.04	271.74	5564.12	1963.65	16.04	-1963.78	0.00	1905246.06	119418.48	N 36 13 45.85	W 107 32 25.36
	7200.00	91.04	271.74	5562.31	2063.63	19.07	-2063.72	0.00	1905250.41	119318.59	N 36 13 45.88	W 107 32 26.58
	7300.00	91.04	271.74	5560.50	2163.61	22.10	-2163.66	0.00	1905254.76	119218.69	N 36 13 45.91	W 107 32 27.80
	7400.00	91.04	271.74	5558.70	2263.60	25.13	-2263.59	0.00	1905259.11	119118.80	N 36 13 45.94	W 107 32 29.02
	7500.00	91.04	271.74	5556.89	2363.58	28.16	-2363.53	0.00	1905263.47	119018.90	N 36 13 45.97	W 107 32 30.24
	7600.00	91.04	271.74	5555.08	2463.56	31.19	-2463.47	0.00	1905267.82	118919.01	N 36 13 46.00	W 107 32 31.46
	7700.00	91.04	271.74	5553.28	2563.54	34.22	-2563.41	0.00	1905272.17	118819.11	N 36 13 46.03	W 107 32 32.68
	7800.00	91.04	271.74	5551.47	2663.52	37.24	-2663.35	0.00	1905276.52	118719.21	N 36 13 46.06	W 107 32 33.90
	7900.00	91.04	271.74	5549.66	2763.50	40.27	-2763.28	0.00	1905280.88	118619.32	N 36 13 46.09	W 107 32 35.12
	8000.00	91.04	271.74	5547.86	2863.48	43.30	-2863.22	0.00	1905285.23	118519.42	N 36 13 46.12	W 107 32 36.34
	8100.00	91.04	271.74	5546.05	2963.46	46.33	-2963.16	0.00	1905289.58	118419.53	N 36 13 46.15	W 107 32 37.56
	8200.00	91.04	271.74	5544.25	3063.44	49.36	-3063.10	0.00	1905293.93	118319.63	N 36 13 46.18	W 107 32 38.78
	8300.00	91.04	271.74	5542.44	3163.42	52.39	-3163.03	0.00	1905298.29	118219.74	N 36 13 46.21	W 107 32 40.00
	8400.00	91.04	271.74	5540.63	3263.40	55.42	-3262.97	0.00	1905302.64	118119.84	N 36 13 46.24	W 107 32 41.22
	8500.00	91.04	271.74	5538.83	3363.38	58.45	-3362.91	0.00	1905306.99	118019.95	N 36 13 46.27	W 107 32 42.44
	8600.00	91.04	271.74	5537.02	3463.36	61.48	-3462.85	0.00	1905311.35	117920.05	N 36 13 46.30	W 107 32 43.66
	8700.00	91.04	271.74	5535.21	3563.34	64.51	-3562.79	0.00	1905315.70	117820.16	N 36 13 46.33	W 107 32 44.88
	8800.00	91.04	271.74	5533.41	3663.32	67.54	-3662.72	0.00	1905320.06	117720.26	N 36 13 46.36	W 107 32 46.10
	8900.00	91.04	271.74	5531.60	3763.30	70.57	-3762.66	0.00	1905324.41	117620.37	N 36 13 46.39	W 107 32 47.32
	9000.00	91.04	271.74	5529.79	3863.28	73.60	-3862.60	0.00	1905328.76	117520.47	N 36 13 46.42	W 107 32 48.54
	9100.00	91.04	271.74	5527.99	3963.26	76.63	-3962.54	0.00	1905333.12	117420.58	N 36 13 46.45	W 107 32 49.76
	9200.00	91.04	271.74	5526.18	4063.24	79.66	-4062.47	0.00	1905337.47	117320.68	N 36 13 46.48	W 107 32 50.98
	9300.00	91.04	271.74	5524.37	4163.22	82.69	-4162.41	0.00	1905341.83	117220.79	N 36 13 46.51	W 107 32 52.19
	9400.00	91.04	271.74	5522.57	4263.20	85.73	-4262.35	0.00	1905346.18	117120.89	N 36 13 46.54	W 107 32 53.41
	9500.00	91.04	271.74	5520.76	4363.18	88.76	-4362.29	0.00	1905350.53	117021.00	N 36 13 46.57	W 107 32 54.63
	9600.00	91.04	271.74	5518.95	4463.16	91.79	-4462.23	0.00	1905354.89	116921.10	N 36 13 46.60	W 107 32 55.85
	9700.00	91.04	271.74	5517.15	4563.14	94.82	-4562.16	0.00	1905359.24	116821.21	N 36 13 46.63	W 107 32 57.07
	9800.00	91.04	271.74	5515.34	4663.12	97.85	-4662.10	0.00	1905363.60	116721.31	N 36 13 46.66	W 107 32 58.29
	9900.00	91.04	271.74	5513.53	4763.10	100.88	-4762.04	0.00	1905367.95	116621.42	N 36 13 46.69	W 107 32 59.51
	10000.00	91.04	271.74	5511.73	4863.08	103.91	-4861.98	0.00	1905372.31	116521.52	N 36 13 46.72	W 107 33 0.73
	10100.00	91.04	271.74	5509.92	4963.07	106.95	-4961.91	0.00	1905376.66	116421.63	N 36 13 46.75	W 107 33 1.95
	10200.00	91.04	271.74	5508.11	5063.05	109.98	-5061.85	0.00	1905381.02	116321.73	N 36 13 46.78	W 107 33 3.17
	10300.00	91.04	271.74	5506.31	5163.03	113.01	-5161.79	0.00	1905385.37	116221.84	N 36 13 46.81	W 107 33 4.39
	10400.00	91.04	271.74	5504.50	5263.01	116.04	-5261.73	0.00	1905389.73	116121.94	N 36 13 46.84	W 107 33 5.61
Chaco 2307-13D #173 BHL	10483.06	91.04	271.74	5503.00	5346.05	118.56	-5344.74	0.00	1905393.35	116038.97	N 36 13 46.86	W 107 33 6.82

Survey Type: Def Plan

Survey Error Model: ISCWSA Rev 0 *** 3-D 95.000% Confidence 2.7955 sigma
Survey Program:

Description	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Survey Tool Type	Borehole / Survey
	0.000	14.000	1/100.000	30.000	30.000	SLB_MWD-STD-Depth Only	Original Hole / Chaco 2307-13D #173H R3 mdy 17Dec13
	14.000	10483.062	1/100.000	30.000	30.000	SLB_MWD-STD	Original Hole / Chaco 2307-13D #173H R3 mdy 17Dec13

1. INTRODUCTION

WPX Energy Production, LLC (WPX), is providing this Surface Use Plan of Operations (SUPO)/Plan of Development (POD) to the Bureau of Land Management – Farmington Field Office (BLM-FFO), per Onshore Oil and Gas Order No. 1. This SUPO/POD applies to the following projects:

- Chaco 2307-13D No.172H (172H)
- Chaco 2307-13D No. 173H (173H)

The 172H and 173H oil and natural gas wells will be twinned with one another. Each well will be permitted by an approved Application for Permit to Drill (APD). The associated well pad and access road, which will be located off-lease, will be permitted under Right-of-Way (ROW) Grants.

A pre-disturbance onsite meeting for the project was held on October 23, 2013. The BLM, WPX, and an environmental consultant (Nelson Consulting, Inc.) attended the meeting.

In addition to the best management practices (BMPs) provided below and in the Surface Reclamation Plan (Reclamation Plan; Appendix A), the general Conditions of Approval/stipulations will be followed, if any are attached to the approved APDs and/or ROW Grants.

2. PROJECT LOCATION AND EXISTING ROADS

The project area is located approximately 42 miles south-southeast of the town of Bloomfield, New Mexico. To access the project area, head south from the U.S. Highway 550-U.S. Highway 64 intersection for approximately 50 miles. The 172H/173H access road will begin on the left side of U.S. Highway 550. The access route from U.S. Highway 550 is depicted on Figure 1 (Appendix B) and on the construction plats provided in the APD/ROW Grant permit packages.

For existing County Roads or roads that are considered collector roads, WPX will defer to the county or Roads Committee, when formed, for maintenance determinations. For the project, WPX was not allocated existing roads for upgrading or maintenance. If required by the BLM-FFO, WPX will upgrade existing non-County Roads leading to the project site. The road(s) will be upgraded following *The Gold Book: Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development (Gold Book)* and BLM Handbook 9113.

3. NEW OR RECONSTRUCTED ACCESS ROADS

The 172H/173H access road, a resource road, will begin at U.S. Highway 550 and end on the southwestern side of the 172H/173H well pad. A New Mexico Department of Transportation permit will be secured for this road. This road will primarily overlap an abandoned roadway and Enterprise Products Partners L.P. (Enterprise) pipeline working area; these previously disturbed areas are primarily devoid of vegetation. The road is depicted on Figures 1 and 2 in Appendix B and on the construction plats provided in the APD/ROW Grant permit packages.

The road will be 373 feet long. The construction corridor will be 30 feet wide; the running surface will be 14 feet wide. The driving surface will be crowned with a surfacing material (sandstone), if economically viable. The road will be built up 18 to 24 inches and designed following the Basic Design Requirements for Constructed Roads from the *Gold Book* and BLM Handbook 9113. The maximum road grade will be 4 percent. Topsoil removed from the road will be used on cut slopes and bar ditches.

Twenty-four-inch-diameter culverts will be installed beneath the road at approximate stationings 0+21.8 and 3+57.2. The need for additional water diversions, such as culverts, will be determined at interim reclamation. No turnouts will be constructed.

materials will be required for construction of the well pad. If sandstone is needed for surfacing the well pad, it will be retrieved from a permitted location.

Construction plats are provided in the APD/ROW Grant permit packages.

8. METHODS FOR HANDLING WASTE DISPOSAL

✓ Drilling operations will utilize a closed-loop system. Drilling of the horizontal lateral may be done with oil-based mud. All oil-based mud cuttings will be hauled to a commercial disposal facility or land farm.

A cuttings pit will be used. Due to a residence in the vicinity, the cuttings pit will be fenced prior to the placement of the liner within the pit.

A 30-mil reinforced liner will be placed under the drill rig mats and all drilling machinery, as shown on Figure 3 (Appendix B). This area will be enclosed by a containment berm and ditches, which will drain to sump areas for spill prevention and control. The containment berm will be ramped to allow access to the solids control area.

WPX will follow New Mexico Oil Conservation Division "Pit Rule" guidelines and Onshore Order Nos. 1 and 7 regarding the placement, operation, and closure of any reserve pits or closed-loop systems. No blow pit will be used.

As stated in the Reclamation Plan (Appendix A), if drilling has not been initiated on the well pad within 120 days of the well pad being constructed, WPX will submit a site-stabilization plan to the BLM-FFO.

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.

Portable toilets will be provided and maintained during drilling and completion operations.

9. ANCILLARY FACILITIES

Pipelines will be permitted and constructed at a later date.

One of the following well pads will be used as a staging area for the project:

- WPX's Chaco 2307-13L Nos. 174H/175H well pad (permitted by the BLM-FFO [APD Nos. 30-039-31192 and 30-039-31197])
- Elm Ridge Exploration Company's Lybrook South No. 3 well pad

During staging, WPX will stay within the boundaries of the existing well pad area. During interim reclamation, WPX will repair any damage to the staging area and will reseed the staging area (with the exception of any previously unvegetated portions of the well pad that the facility operator prefers to remain unseeded).

The potential staging areas are depicted in Appendix B (Figure 1).

10. WELL SITE LAYOUT

The interim reclamation/long-term disturbance layout is depicted in Figure 4, Appendix B, and is described below.

The following areas (known as the "non-reseed working areas") will remain unreclaimed throughout the lifetime of the project:

**3000 PSI BOP
Schematic**

