

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: 10/17/13

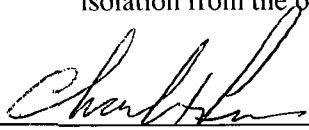
Well information;

Operator WPX, Well Name and Number Chaco 2306-06L 178H

API# 30-039-31200, Section 6, Township 23 NS, Range 6 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

11-7-2013 ca
Date

RECEIVED

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

OCT 17 2013

APPLICATION FOR PERMIT TO DRILL OR REENTER

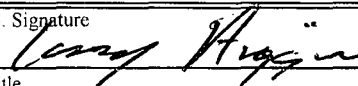
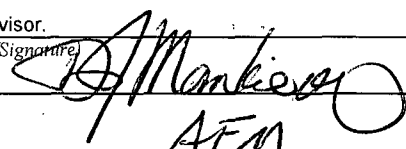
5. Lease Serial No. NMSF-078362
6. If Indian, Allottee or Tribe Name
7. If Unit or CA Agreement, Name and No.
8. Lease Name and Well No. Chaco 2306-06L #178H
9. API Well No. 30-039-31200
10. Field and Pool, or Exploratory Lybrook Gallup
11. Sec., T., R., M., or Blk. and Survey or Area BHL: Sec 1, T23N, R7W Section 6, T23N, R6W SHL
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 1691' FSL & 572' FWL, sec 6, T23N, R6W At proposed prod. zone 1482' FSL & 280' FWL, sec 1, T23N, R7W	
14. Distance in miles and direction from nearest town or post office* approximately 3 miles northeast of Lybrook, New Mexico	
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 572'	16. No. of Acres in lease 1277-08-2530.37
17. Spacing Unit dedicated to this well 151.49 acres	18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 20'
19. Proposed Depth 10,510' MD / 5,492' TVD	20. BLM/BIA Bond No. on file UTB000178
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 6933' GR	22. Approximate date work will start* July 1, 2013
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) Larry Higgins	Date 10/17/13
Title		
Permit Supervisor. Approved by (Signature) 	Name (Printed/Typed) AFM	Date 10/31/13
Title		
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 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.

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

808 feet of new access road is needed.

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

NMOCDA

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

APD Certification:

I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions which currently exist; that I have full knowledge of state and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.

Executed this 17th day of October, 2013.

Name Larry Higgins

Position Title Permit Supervisor

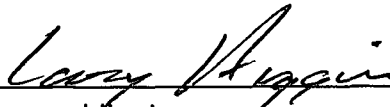
Address P.O. Box 640, Aztec, NM 87410

Telephone (505) 333-1808

Field representative (if not above signatory) _____

E-mail larry.higgins@wpxenergy.com

Date: 10/17/2013



Larry Higgins
Permit Suprv.
WPX Energy Production, LLC

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

OIL CONSERVATION DIVISION
1220 South St. Francis Drive
Santa Fe, NM 87505

Submit one copy to
Appropriate District Office

☐ AMENDED REPORT

RECEIVED

OCT 17 2013

WELL LOCATION AND ACREAGE DEDICATION PLAT

*API Number 30-039-31200	*Pool Code 42289	*Pool Name LYBROOK, GALLUP Farmington Field Office Bureau of Land Management
*Property Code 40085	*Property Name CHACO 2306-06L	*Well Number 178H
*OGRID No. 120782	*Operator Name WPX ENERGY PRODUCTION, LLC	*Elevation 6933'

¹⁰ Surface Location

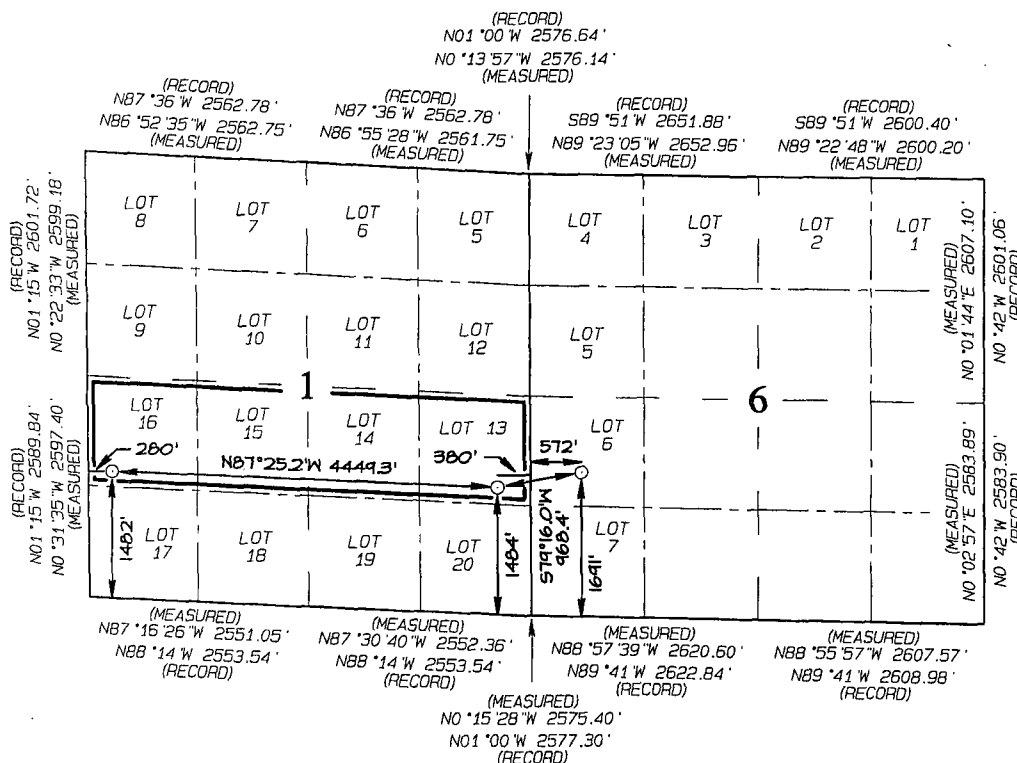
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
L	6	23N	6W	6	1691	SOUTH	572	WEST	RIO ARRIBA

¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	280	East/West line	County
L	1	23N	7W	16	1482	SOUTH	280	WEST	RIO ARRIBA

12 Dedicated Acres	151.40 Acres N/2 S/2 - Section 1	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
1482' FSL 280' FWL
SECTION 1, T23N, R7W
LAT: 36.25098°N
LONG: 107.53493°W
DATUM: NAD1927

LAT: 36.25100 °N
LONG: 107.53554 °W
DATUM: NAD1983

POINT-OF-ENTRY
1484' FSL 380' FEL
SECTION 1, T23N, R7W
LAT: 36.25060°N
LONG: 107.51985°W
DATUM: NAD1927

LAT: 36.25061°N
LONG: 107.52046°W
DATUM: NAD1983

SURFACE LOCATION
1691' FSL 572' FWL
SECTION 6, T23N, R6W
LAT: 36.25112°N
LONG: 107.51663°W
DATUM: NAD1927

LAT: 36.25114 °N
LONG: 107.51724 °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 10/1/13
Signature Date
Larry Higgins
Printed Name
larry.higgins@wpxenenergy.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: SEPT 30, 2013
Survey Date: OCTOBER 1, 2012
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: 9/26/13 **FIELD:** Lybrook Gallup
WELL NAME: Chaco 2306-06L #178H **SURFACE:** BLM
SH Location: NWSW Sec 6-23N-6W **ELEVATION:** 6,933' GR
BH Location: NWSW Sec 1-23N-7W **MINERALS:** BLM
Rio Arriba Co, NM
MEASURED DEPTH: 10,510' **LEASE #:** NMSF 078362

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

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

Name	MD	TVD	Name	MD	TVD
Ojo Alamo	1,435	1,432	Point Lookout	4,312	4,299
Kirtland	1,749	1,745	Mancos	4,535	4,522
Pictured Cliffs	2,040	2,035	Kickoff Point	4,914	4,901
Lewis	2,298	2,292	Target Top	5,693	5,535
Chacra	2,490	2,483	Landing Point	6,059	5,617
Cliff House	3,034	3,025	Target Base	6,059	5,617
Menefee	3,058	3,049			
			TD	10,510	5,492

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

C. **LOGGING PROGRAM:** LWD GR from KOP to TD. LWD GR / 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 drill the Curve Section of the wellbore. (OBM) will be used to drill the Lateral Section of well. Treat for lost circulation as necessary. Obtain 100% returns prior to cementing. Notify Engineering of any mud losses.

B. **BOP / CASING 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**, intermediate casing to **1500 psi for 30 minutes**, TOL and Liner to **1500 psi for 30 minutes**. Utilize a BOPE Testing Unit with a recording chart and, when applicable, 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 +/- 4,914' (MD) / 4,901' (TVD). Curve portion of wellbore will be drilled and landed at +/- 90 deg. at +/- 6,059' (MD) / 5,617' (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 +/- 10,510' (MD) / 5,492' (TVD). Will run 4-1/2 in. Production Liner from +/- 5,910 ft. (+/- 78 deg angle) to TD and cemented. Production 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 5/8	36#	J-55
Intermediate	8.75"	6,059'	7	23#	K-55
Prod. Liner	6.125"	5,910'-10,510'	4 1/2	11.6#	N-80
Tie-Back String	N/A	Surf. - 5,910'	4.5"	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. 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 CASING: Run 4-1/2" Liner with cement nose guide Float Shoe + 2jts. of 4-1/2" casing + Float Collar + Landing Collar. Centralizer program will be determined by Wellbore condition and when Lateral is evaluated by Geoscientists and Reservoir Engineers.
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).
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 +/- 5,710 ft.

IV. COMPLETION**A. CBL**

1. Run CCL for perforating.

B. PRESSURE TEST

1. Pressure test 4-1/2" Liner / Liner Hanger / Tie-Back Seals and Tie-Back string to 6000 psi max, hold at 6000 psi for 30 minutes.

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 (~5,910' 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.
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WELL Chaco 2306-06L #178H	FIELD NM, Rio Arriba	STRUCTURE WPX Energy 6-23N-6W
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Magnetic Parameters Model: BGGM 2013 Dip: 63.042° Mag Dec: 9.494°	Date: September 25, 2013 FS: 50201.7nT	Surface Location Lat: N 36 15 4.032 Lon: W 107 30 59.868 Northing: 1913059.07 NUS Easting: 126526.28 NUS Scale Fact: 1.00005961	Miscellaneous Skt: Chaco 2306-06L #178H Plan: Chaco 2306-06L #178H R0 TVD Ref: RKB(6947n above MSL) Srv Date: September 25, 2013
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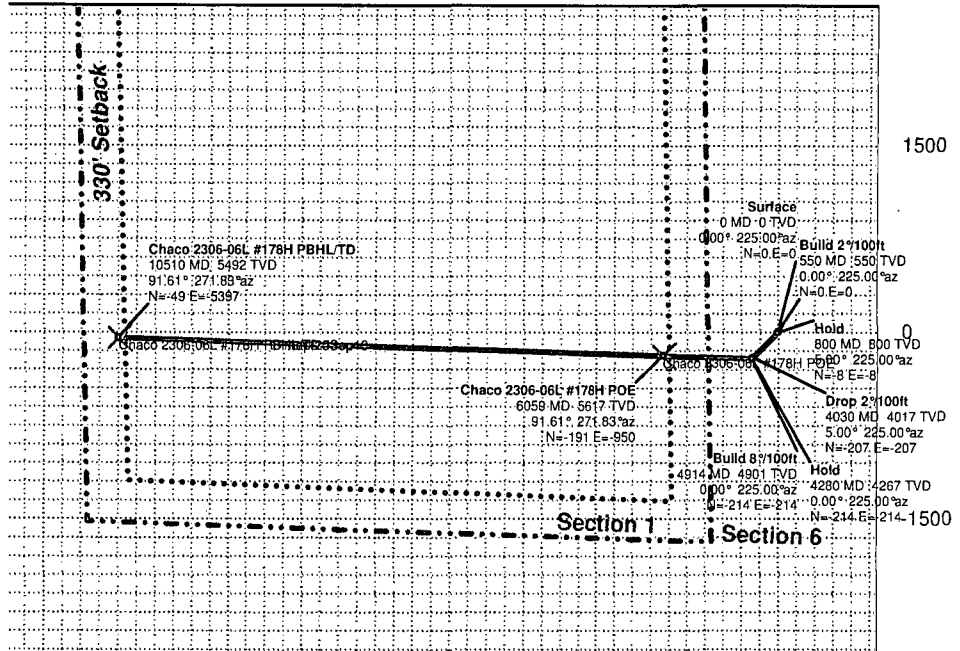
Proposal



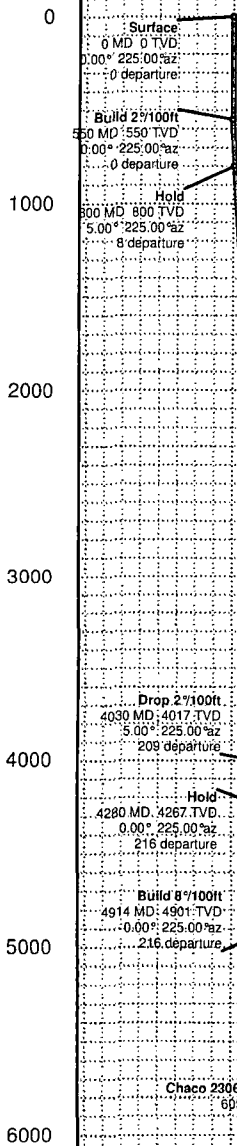
Quality Control
Date Drawn: September 25, 2013 09:12:43 PM
Drawn by: Mike Peltier
Checked by:
Client OK:

True North
True North (N=0°)
Mag Dec (9.494°)
Grid North (N=9.494°)

Scale = 1:1500(ft) W E
-6000 -4500 -3000 -1500 0



TVD Scale = 1:1000(ft)



Targets						
Name	TVD(ft)	NS(ft)	EW(ft)	Latitude(deg)	Longitude(deg)	Shape
Chaco 2306-06L #178H PBHL/TD	5492.00	-48.92	-5396.98	N 36 15 3.543	W 107 32 5.756	POINT
Chaco 2306-06L #178H POE	5617.00	-191.01	-950.25	N 36 15 2.143	W 107 31 11.469	POINT

Critical Points									
Comments	Survey MD(ft)	Inclination(deg)	Azimuth(deg)	TVD(ft)	Sub-Sea TVD	VS(ft)	NS(ft)	EW(ft)	DLS(°/100ft)
Surface	0.00	0.00	225.00	0.00	-6947.00	0.00	0.00	0.00	
Marker MudLine	14.00	0.00	225.00	14.00	-6933.00	0.00	0.00	0.00	0.00
Build 2°/100ft	550.00	0.00	225.00	550.00	-6397.00	0.00	0.00	0.00	0.00
Hold	800.00	5.00	225.00	799.68	-6147.32	7.78	-7.71	-7.71	2.00
Drop 2°/100ft	4030.00	5.00	225.00	4017.39	-2929.61	208.63	-206.77	-206.77	0.00
Hold	4280.00	0.00	225.00	4267.07	-2679.93	216.41	-214.48	-214.48	2.00
Build 8°/100ft	4914.17	0.00	225.00	4901.25	-2045.75	216.41	-214.48	-214.48	0.00
Chaco 2306-06L #178H POE	6059.04	91.61	271.83	5617.00	-1330.00	951.95	-191.01	-950.25	8.00
Chaco 2306-06L #178H PBHL/TD	10509.79	91.61	271.83	5492.00	-1455.00	5397.20	-48.92	-5396.98	0.00

0 1000 2000 3000 4000 5000 6000

Vertical Section (ft) Azim = 269.48° Scale = 1:1000(ft) Origin = 0 N/-S, 0 E/-W

Scale = 1:1500(ft) N S



Chaco 2306-06L #178H R0 map 25Sep13 Proposal Geodetic Report
(Non-Def Plan)

Report Date: September 25, 2013 - 04:37 PM
Client: WPX Energy
Field: NM, Rio Arriba (NAD 27 CZ)
Structure / Slot: WPX Energy 6-23N-6W (Chaco 2306-06L #178H) / Chaco 2306-06L #178H
Well: Chaco 2306-06L #178H
Borehole: Original Hole
UWI / API#: Unknown / Unknown
Survey Name: Chaco 2306-06L #178H R0 map 25Sep13
Survey Date: September 25, 2013
Tort / AHD / DDI / ERD Ratio: 101.616' / 5488.461 ft / 6.018 / 0.977
Coordinate Reference System: NAD27 New Mexico State Plane, Central Zone, US Feet
Location Lat / Long: N 36° 15' 4.03200", W 107° 30' 59.66800"
Location Grid N/E Y/X: N 1913059.075 ftUS, E 126526.285 ftUS
CRS Grid Convergence Angle: -0.7491°
Grid Scale Factor: 1.00005861

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 269.481° (True North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: RKB
TVD Reference Elevation: 6947.000 ft above MSL
Seabed / Ground Elevation: 6933.000 ft above MSL
Magnetic Declination: 9.494°
Total Gravity Field Strength: 999.1708 mgn (9.8 based)
Total Magnetic Field Strength: 50201.665 nT
Magnetic Dip Angle: 63.042°
Declination Date: September 25, 2013
Magnetic Declination Model: BGGM 2013
North Reference: True North
Grid Convergence Used: 0.0000°
Total Corr Mag North->True North: 9.4941°
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	225.00	0.00	0.00	0.00	0.00	N/A	1913059.07	126526.28	N 36 15 4.03	W 107 30 59.87
Marker MudLine	14.00	0.00	225.00	14.00	0.00	0.00	0.00	0.00	1913059.07	126526.28	N 36 15 4.03	W 107 30 59.87
	100.00	0.00	225.00	100.00	0.00	0.00	0.00	0.00	1913059.07	126526.28	N 36 15 4.03	W 107 30 59.87
	200.00	0.00	225.00	200.00	0.00	0.00	0.00	0.00	1913059.07	126526.28	N 36 15 4.03	W 107 30 59.87
	300.00	0.00	225.00	300.00	0.00	0.00	0.00	0.00	1913059.07	126526.28	N 36 15 4.03	W 107 30 59.87
	400.00	0.00	225.00	400.00	0.00	0.00	0.00	0.00	1913059.07	126526.28	N 36 15 4.03	W 107 30 59.87
	500.00	0.00	225.00	500.00	0.00	0.00	0.00	0.00	1913059.07	126526.28	N 36 15 4.03	W 107 30 59.87
Build 2"/100ft	550.00	0.00	225.00	550.00	0.00	0.00	0.00	0.00	1913059.07	126526.28	N 36 15 4.03	W 107 30 59.87
	600.00	1.00	225.00	600.00	0.31	-0.31	-0.31	2.00	1913058.77	126525.97	N 36 15 4.03	W 107 30 59.87
	700.00	3.00	225.00	699.93	2.80	-2.78	-2.78	2.00	1913058.34	126523.47	N 36 15 4.00	W 107 30 59.90
Hold	800.00	5.00	225.00	799.68	7.78	-7.71	-7.71	2.00	1913051.47	126518.48	N 36 15 3.96	W 107 30 59.96
	900.00	5.00	225.00	899.30	14.00	-13.87	-13.87	0.00	1913045.39	126512.23	N 36 15 3.89	W 107 31 0.04
	1000.00	5.00	225.00	998.92	20.21	-20.03	-20.03	0.00	1913039.30	126505.99	N 36 15 3.83	W 107 31 0.11
	1100.00	5.00	225.00	1098.54	26.43	-26.20	-26.20	0.00	1913033.22	126499.75	N 36 15 3.77	W 107 31 0.19
	1200.00	5.00	225.00	1198.16	32.65	-32.36	-32.36	0.00	1913027.14	126493.50	N 36 15 3.71	W 107 31 0.26
	1300.00	5.00	225.00	1297.78	38.87	-38.52	-38.52	0.00	1913021.06	126487.26	N 36 15 3.65	W 107 31 0.34
	1400.00	5.00	225.00	1397.40	45.09	-44.69	-44.69	0.00	1913014.97	126481.02	N 36 15 3.59	W 107 31 0.41
	1500.00	5.00	225.00	1497.02	51.31	-50.85	-50.85	0.00	1913008.89	126474.77	N 36 15 3.53	W 107 31 0.49
	1600.00	5.00	225.00	1596.64	57.53	-57.01	-57.01	0.00	1913002.81	126468.53	N 36 15 3.47	W 107 31 0.56
	1700.00	5.00	225.00	1696.26	63.74	-63.17	-63.17	0.00	1912996.73	126462.29	N 36 15 3.41	W 107 31 0.64
	1800.00	5.00	225.00	1795.88	69.96	-69.34	-69.34	0.00	1912990.65	126456.04	N 36 15 3.35	W 107 31 0.71
	1900.00	5.00	225.00	1895.50	76.18	-75.50	-75.50	0.00	1912984.56	126449.80	N 36 15 3.29	W 107 31 0.79
	2000.00	5.00	225.00	1995.12	82.40	-81.66	-81.66	0.00	1912978.48	126443.56	N 36 15 3.22	W 107 31 0.86
	2100.00	5.00	225.00	2094.74	88.62	-87.83	-87.83	0.00	1912972.40	126437.31	N 36 15 3.16	W 107 31 0.94
	2200.00	5.00	225.00	2194.36	94.84	-93.99	-93.99	0.00	1912966.32	126431.07	N 36 15 3.10	W 107 31 1.02
	2300.00	5.00	225.00	2293.97	101.05	-100.15	-100.15	0.00	1912960.24	126424.83	N 36 15 3.04	W 107 31 1.09
	2400.00	5.00	225.00	2393.59	107.27	-106.31	-106.31	0.00	1912954.15	126418.58	N 36 15 2.98	W 107 31 1.17
	2500.00	5.00	225.00	2493.21	113.49	-112.48	-112.48	0.00	1912948.07	126412.34	N 36 15 2.92	W 107 31 1.24
	2600.00	5.00	225.00	2592.83	119.71	-118.64	-118.64	0.00	1912941.99	126406.10	N 36 15 2.86	W 107 31 1.32
	2700.00	5.00	225.00	2692.45	125.93	-124.80	-124.80	0.00	1912935.91	126399.85	N 36 15 2.80	W 107 31 1.39
	2800.00	5.00	225.00	2792.07	132.15	-130.97	-130.97	0.00	1912929.83	126393.61	N 36 15 2.74	W 107 31 1.47
	2900.00	5.00	225.00	2891.69	138.37	-137.13	-137.13	0.00	1912923.74	126387.37	N 36 15 2.68	W 107 31 1.54
	3000.00	5.00	225.00	2991.31	144.58	-143.29	-143.29	0.00	1912917.66	126381.12	N 36 15 2.62	W 107 31 1.62
	3100.00	5.00	225.00	3090.93	150.80	-149.45	-149.45	0.00	1912911.58	126374.88	N 36 15 2.55	W 107 31 1.69
	3200.00	5.00	225.00	3190.55	157.02	-155.62	-155.62	0.00	1912905.50	126368.64	N 36 15 2.49	W 107 31 1.77
	3300.00	5.00	225.00	3290.17	163.24	-161.78	-161.78	0.00	1912899.41	126362.39	N 36 15 2.43	W 107 31 1.84
	3400.00	5.00	225.00	3389.79	169.46	-167.94	-167.94	0.00	1912893.33	126356.15	N 36 15 2.37	W 107 31 1.92
	3500.00	5.00	225.00	3489.41	175.68	-174.11	-174.11	0.00	1912887.25	126349.91	N 36 15 2.31	W 107 31 1.99
	3600.00	5.00	225.00	3589.03	181.89	-180.27	-180.27	0.00	1912881.17	126343.67	N 36 15 2.25	W 107 31 2.07
	3700.00	5.00	225.00	3688.65	188.11	-186.43	-186.43	0.00	1912875.09	126337.42	N 36 15 2.19	W 107 31 2.14
	3800.00	5.00	225.00	3788.27	194.33	-192.59	-192.59	0.00	1912869.00	126331.18	N 36 15 2.13	W 107 31 2.22
	3900.00	5.00	225.00	3887.89	200.55	-198.76	-198.76	0.00	1912862.92	126324.94	N 36 15 2.07	W 107 31 2.29
	4000.00	5.00	225.00	3987.51	206.77	-204.92	-204.92	0.00	1912856.84	126318.69	N 36 15 2.01	W 107 31 2.37
Drop 2"/100ft	4030.00	5.00	225.00	4017.39	208.63	-206.77	-206.77	0.00	1912855.02	126316.82	N 36 15 1.99	W 107 31 2.39
	4100.00	3.60	225.00	4087.19	212.38	-210.48	-210.48	2.00	1912851.35	126313.06	N 36 15 1.95	W 107 31 2.44
Hold	4200.00	1.60	225.00	4187.08	215.61	-213.69	-213.69	2.00	1912848.19	126309.81	N 36 15 1.92	W 107 31 2.48
	4280.00	0.00	225.00	4267.07	218.41	-214.48	-214.48	2.00	1912847.41	126309.01	N 36 15 1.91	W 107 31 2.49
	4300.00	0.00	225.00	4287.07	216.41	-214.48	-214.48	0.00	1912847.41	126309.01	N 36 15 1.91	W 107 31 2.49
	4400.00	0.00	225.00	4387.07	216.41	-214.48	-214.48	0.00	1912847.41	126309.01	N 36 15 1.91	W 107 31 2.49
	4500.00	0.00	225.00	4487.07	216.41	-214.48	-214.48	0.00	1912847.41	126309.01	N 36 15 1.91	W 107 31 2.49
	4600.00	0.00	225.00	4587.07	216.41	-214.48	-214.48	0.00	1912847.41	126309.01	N 36 15 1.91	W 107 31 2.49
	4700.00	0.00	225.00	4687.07	216.41	-214.48	-214.48	0.00	1912847.41	126309.01	N 36 15 1.91	W 107 31 2.49
	4800.00	0.00	225.00	4787.07	216.41	-214.48	-214.48	0.00	1912847.41	126309.01	N 36 15 1.91	W 107 31 2.49
	4900.00	0.00	225.00	4887.07	216.41	-214.48	-214.48	0.00	1912847.41	126309.01	N 36 15 1.91	W 107 31 2.49
Build 8"/100ft	4914.17	0.00	225.00	4901.25	216.41	-214.48	-214.48	0.00	1912847.41	126309.01	N 36 15 1.91	W 107 31 2.49
	5000.00	6.87	271.83	4986.87	221.54	-214.31	-219.61	8.00	1912847.64	126303.88	N 36 15 1.91	W 107 31 2.55
	5100.00	14.87	271.83	5065.00	240.37	-213.71	-238.44	8.00	1912848.49	126285.06	N 36 15 1.92	W 107 31 2.78
	5200.00	22.87	271.83	5179.54	272.66	-212.68	-270.74	8.00	1912849.94	126252.77	N 36 15 1.93	W 107 31 3.17
	5300.00	30.87	271.83	5268.67	317.78	-211.24	-315.88	8.00	1912851.97	126207.65	N 36 15 1.94	W 107 31 3.72
	5400.00	38.87	271.83	5350.65	374.87	-209.42	-372.98	8.00	1912854.54	126150.57	N 36 15 1.96	W 107 31 4.42
	5500.00	46.88	271.83	5423.87	442.80	-207.25	-440.94	8.00	1912857.59	126082.65	N 36 15 1.98	W 107 31 5.25
	5600.00	54.88	271.83	5486.92	520.25	-204.78	-518.41	8.00	1912861.08	126005.21	N 36 15 2.01	W 107 31 6.20
	5700.00	62.88	271.83	5538.58	605.72	-202.05	-603.91	8.00	1912864.92	125919.75	N 36 15 2.03	W 107 31 7.24
	5800.00	70.88	271.83	5577.79	697.53	-199.12	-685.76	8.00	1912869.05	125827.94	N 36 15 2.06	W 107 31 8.36
	5900.00	78.88	271.83	5603.85	793.91	-196.05	-792.17	8.00	1912873.39	125731.57	N 36 15 2.09	W 107 31 9.54

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 ° ' ")
Chaco 2306-06L #178H POE	6000.00	86.89	271.83	5616.23	892.98	-192.89	-891.27	8.00	1912877.84	125632.52	N 36 15 2.12	W 107 31 10.75
	6059.04	91.61	271.83	5617.00	951.95	-191.01	-950.25	8.00	1912880.50	125573.56	N 36 15 2.14	W 107 31 11.47
	6100.00	91.61	271.83	5615.85	962.86	-189.70	-991.18	0.00	1912882.34	125532.65	N 36 15 2.16	W 107 31 11.97
	6200.00	91.61	271.83	5613.04	1092.73	-186.51	-1091.09	0.00	1912886.83	125432.79	N 36 15 2.19	W 107 31 13.19
	6300.00	91.61	271.83	5610.23	1192.61	-183.33	-1191.00	0.00	1912891.32	125332.92	N 36 15 2.22	W 107 31 14.41
	6400.00	91.61	271.83	5607.42	1292.49	-180.14	-1290.91	0.00	1912895.82	125233.06	N 36 15 2.25	W 107 31 15.63
	6500.00	91.61	271.83	5604.61	1392.36	-176.95	-1390.82	0.00	1912900.31	125133.19	N 36 15 2.28	W 107 31 16.85
	6600.00	91.61	271.83	5601.80	1492.24	-173.76	-1490.73	0.00	1912904.81	125033.33	N 36 15 2.31	W 107 31 18.07
	6700.00	91.61	271.83	5598.99	1592.12	-170.57	-1590.64	0.00	1912909.30	124933.46	N 36 15 2.34	W 107 31 19.29
	6800.00	91.61	271.83	5596.18	1691.99	-167.39	-1690.55	0.00	1912913.80	124833.60	N 36 15 2.38	W 107 31 20.51
	6900.00	91.61	271.83	5593.37	1791.87	-164.20	-1790.46	0.00	1912918.29	124733.73	N 36 15 2.41	W 107 31 21.73
	7000.00	91.61	271.83	5590.56	1891.75	-161.01	-1890.37	0.00	1912922.79	124633.87	N 36 15 2.44	W 107 31 22.95
	7100.00	91.61	271.83	5587.76	1991.62	-157.82	-1990.28	0.00	1912927.28	124534.00	N 36 15 2.47	W 107 31 24.17
	7200.00	91.61	271.83	5584.95	2091.50	-154.63	-2090.19	0.00	1912931.78	124434.14	N 36 15 2.50	W 107 31 25.39
	7300.00	91.61	271.83	5582.14	2191.38	-151.44	-2190.10	0.00	1912936.27	124334.27	N 36 15 2.53	W 107 31 26.61
	7400.00	91.61	271.83	5579.33	2291.25	-148.25	-2290.00	0.00	1912940.77	124234.41	N 36 15 2.57	W 107 31 27.83
	7500.00	91.61	271.83	5576.52	2391.13	-145.06	-2389.91	0.00	1912945.27	124134.54	N 36 15 2.60	W 107 31 29.04
	7600.00	91.61	271.83	5573.71	2491.01	-141.87	-2489.82	0.00	1912949.76	124034.68	N 36 15 2.63	W 107 31 30.26
	7700.00	91.61	271.83	5570.90	2590.88	-138.68	-2589.73	0.00	1912954.26	123934.81	N 36 15 2.66	W 107 31 31.48
	7800.00	91.61	271.83	5568.09	2690.76	-135.49	-2689.64	0.00	1912958.76	123834.95	N 36 15 2.69	W 107 31 32.70
	7900.00	91.61	271.83	5565.28	2790.64	-132.29	-2789.55	0.00	1912963.26	123735.08	N 36 15 2.72	W 107 31 33.92
	8000.00	91.61	271.83	5562.48	2890.51	-129.10	-2889.46	0.00	1912967.75	123635.22	N 36 15 2.75	W 107 31 35.14
	8100.00	91.61	271.83	5559.67	2990.39	-125.91	-2989.37	0.00	1912972.25	123535.35	N 36 15 2.79	W 107 31 36.36
	8200.00	91.61	271.83	5556.86	3090.27	-122.72	-3089.28	0.00	1912976.75	123435.49	N 36 15 2.82	W 107 31 37.58
	8300.00	91.61	271.83	5554.05	3190.14	-119.53	-3189.19	0.00	1912981.25	123335.62	N 36 15 2.85	W 107 31 38.80
	8400.00	91.61	271.83	5551.24	3290.02	-116.33	-3289.10	0.00	1912985.75	123235.76	N 36 15 2.88	W 107 31 40.02
	8500.00	91.61	271.83	5548.43	3389.90	-113.14	-3389.01	0.00	1912990.25	123135.89	N 36 15 2.91	W 107 31 41.24
	8600.00	91.61	271.83	5545.62	3489.77	-109.95	-3488.92	0.00	1912994.74	123036.02	N 36 15 2.94	W 107 31 42.46
	8700.00	91.61	271.83	5542.82	3589.65	-106.75	-3588.83	0.00	1912999.24	122936.16	N 36 15 2.97	W 107 31 43.68
	8800.00	91.61	271.83	5540.01	3689.53	-103.56	-3688.74	0.00	1913003.74	122836.29	N 36 15 3.01	W 107 31 44.90
	8900.00	91.61	271.83	5537.20	3789.40	-100.37	-3788.65	0.00	1913008.24	122736.43	N 36 15 3.04	W 107 31 46.12
	9000.00	91.61	271.83	5534.39	3889.28	-97.17	-3888.56	0.00	1913012.74	122636.57	N 36 15 3.07	W 107 31 47.34
	9100.00	91.61	271.83	5531.58	3989.16	-93.98	-3988.47	0.00	1913017.24	122536.70	N 36 15 3.10	W 107 31 48.56
	9200.00	91.61	271.83	5528.78	4089.03	-90.78	-4088.38	0.00	1913021.74	122436.84	N 36 15 3.13	W 107 31 49.78
	9300.00	91.61	271.83	5525.97	4188.91	-87.59	-4188.29	0.00	1913026.25	122336.97	N 36 15 3.16	W 107 31 51.00
	9400.00	91.61	271.83	5523.16	4288.78	-84.39	-4288.20	0.00	1913030.75	122237.11	N 36 15 3.19	W 107 31 52.22
	9500.00	91.61	271.83	5520.35	4388.66	-81.20	-4388.11	0.00	1913035.25	122137.24	N 36 15 3.23	W 107 31 53.44
	9600.00	91.61	271.83	5517.54	4488.54	-78.00	-4488.01	0.00	1913039.75	122037.38	N 36 15 3.26	W 107 31 54.66
	9700.00	91.61	271.83	5514.74	4588.41	-74.81	-4587.92	0.00	1913044.25	121937.51	N 36 15 3.29	W 107 31 55.88
	9800.00	91.61	271.83	5511.93	4688.29	-71.61	-4687.83	0.00	1913048.76	121837.65	N 36 15 3.32	W 107 31 57.10
	9900.00	91.61	271.83	5509.12	4788.17	-68.41	-4787.74	0.00	1913053.26	121737.78	N 36 15 3.35	W 107 31 58.32
	10000.00	91.61	271.83	5506.31	4888.04	-65.22	-4887.65	0.00	1913057.76	121637.92	N 36 15 3.38	W 107 31 59.54
	10100.00	91.61	271.83	5503.50	4987.92	-62.02	-4987.56	0.00	1913062.26	121538.05	N 36 15 3.41	W 107 32 0.76
	10200.00	91.61	271.83	5500.70	5087.80	-58.82	-5087.47	0.00	1913066.77	121438.19	N 36 15 3.45	W 107 32 1.98
	10300.00	91.61	271.83	5497.89	5187.67	-55.63	-5187.38	0.00	1913071.27	121338.32	N 36 15 3.48	W 107 32 3.20
	10400.00	91.61	271.83	5495.08	5287.55	-52.43	-5287.29	0.00	1913075.77	121238.46	N 36 15 3.51	W 107 32 4.42
	10500.00	91.61	271.83	5492.27	5387.42	-49.23	-5387.20	0.00	1913080.28	121138.59	N 36 15 3.54	W 107 32 5.64
Chaco 2306-06L #178H PBHL/TD	10509.79	91.61	271.83	5492.00	5397.20	-48.92	-5396.98	0.00	1913080.72	121128.82	N 36 15 3.54	W 107 32 5.76

Survey Type: Non-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 2306-06L #178H R0 map 25Sep13
	14.000	10509.787	1/100.000	30.000	30.000	SLB_MWD-STD	Original Hole / Chaco 2306-06L #178H R0 map 25Sep13

1. INTRODUCTION

WPX Energy Production, LLC (WPX) is providing this Surface Use Plan of Operations (SUPO) to the Bureau of Land Management – Farmington Field Office (BLM-FFO) as part of their Chaco 2306-06L Number (No.) 178H (178H) Application for Permit to Drill (APD), related to Onshore Oil and Gas Order No. 1. The proposed 178H well will be twinned with the Chaco 2306-19E No. 179H (179H) well.

This SUPO also serves as a revision to the original 179H SUPO, which was submitted as part of the 179H APD package. An APD has been issued for the 179H (APD No. 30-039-31190). The 179H well pad and access road have been constructed, but the 179H well has not been drilled. Because of the changes necessary to the 179H project as a result of the 178H/179H twin, a revised 179H SUPO was required by the BLM-FFO.

An onsite meeting for the 179H project was held on December 18, 2012. An onsite meeting for the 178H project was held on September 5, 2013.

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 will be followed, if any were attached to the 179H APD or are attached to the 178H APD.

2. PROJECT LOCATION AND EXISTING ROADS

The 178H/179H well pad is located approximately 52 road miles south-southeast of the town of Bloomfield, New Mexico. To access the location, head south from the United States (U.S.) Highway 550-U.S. Highway 64 intersection for approximately 48.9 miles, turn left onto County Road 378 for approximately 2.5 miles, and turn right to follow an unnamed, existing road for approximately 0.4 mile until reaching the 808-foot-long 179H access road. The access route from the U.S. Highway 550-County Road 378 intersection is depicted on Figure 1 (Appendix B) and on the construction plats provided in the APD 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. During the onsite meetings, WPX was not allocated existing roads for upgrading or maintenance. WPX will upgrade existing non-County Roads leading to the project site, if required by the BLM-FFO. 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

An 808-foot-long access road was previously permitted for the 179H project; this road has been constructed. Therefore, no new roads will be constructed as part of the proposed project.

If the 179H well is plugged before the 178H well, WPX will continue to operate and maintain the 179H access road, as described in the 179H SUPO. No construction or routine maintenance activities will be performed during periods when the soil is too wet to adequately support construction equipment. If equipment creates ruts deeper than 6 inches, the soil is deemed too wet for construction or maintenance.

BMPs for dust abatement and erosion control will be utilized along the 179H access road to reduce fugitive dust throughout the life of the project. Water application, using a rear-spraying truck or other suitable means, will be the primary method of dust suppression along the access road. Any additional erosion-control practices will include the BLM-standard BMPs found in the *Gold Book* and the BMPs outlined in the Conditions of Approval, such as the application of magnesium chloride, organic-based compounds, or polymer compounds to the access road.

