

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: 1/15/14

Well information;

Operator WPX, Well Name and Number Chaco 2306-19E 189H

API# 30-043-21188, Section 19, 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



NMOCDD Approved by Signature

2-25-2014

Date ca

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECEIVED

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

APPLICATION FOR PERMIT TO DRILL OR REENTER

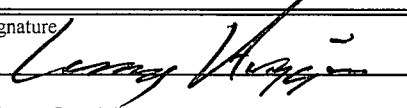
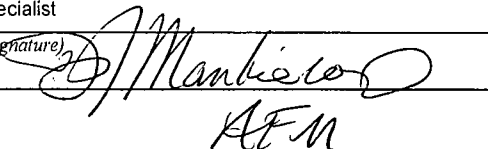
JAN 15 2014

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 2306-19E #189H	
9. API Well No. 3004321188	
10. Field and Pool, or Exploratory Lybrook Gallup	
11. Sec., T., R., M., or Blk. and Survey or Area Section 19, T23N, R6W	
12. County or Parish Sandoval County	13. State NM
14. Distance in miles and direction from nearest town or post office* approximately 4 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) 292'	16. No. of Acres in lease 2565.24
17. Spacing Unit dedicated to this well 160 acres RCVD FEB 18 '14	
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 40'	19. Proposed Depth 10,523' MD / 5,406' TVD
20. BLM/BIA Bond No. on file UTB000178 OIL CONS. DIV.	
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 6964' GR	22. Approximate date work will start* March 1, 2014
23. Estimated duration 1 month DIST. 3	

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) Larry Higgins	Date 1/15/14
Title Regulatory Specialist		
Approved by (Signature) 	Name (Printed/Typed) AFM	Date 2/18/14
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 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. The road and location are on lease.

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

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

BLM'S APPROVAL OR ACCEPTANCE OF THIS
OPERATOR FROM OBTAINING ANY OTHER
AUTHORIZATION REQUIRED FOR OPERATIONS
ON FEDERAL AND INDIAN LANDS

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

NMOC

AV

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 15th day of January, 2014.

Name Larry Higgins

Position Title Regulatory Specialist

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: 01/15/14


Larry Higgins
Regulatory Spec.
WPX Energy Production, LLC

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

☐ RECEIVED

JAN 15 2014

WELL LOCATION AND ACREAGE DEDICATION PLAT

Farmington Field Office
Bureau of Land Management

*API Number 30-043-21188	*Pool Code 42289	*Pool Name LYBROOK GALLUP
*Property Code 40021	*Property Name CHACO 2306-19E	*Well Number 189H
*GRID No. 120782	*Operator Name WPX ENERGY PRODUCTION, LLC	*Elevation 6964'

10 Surface Location

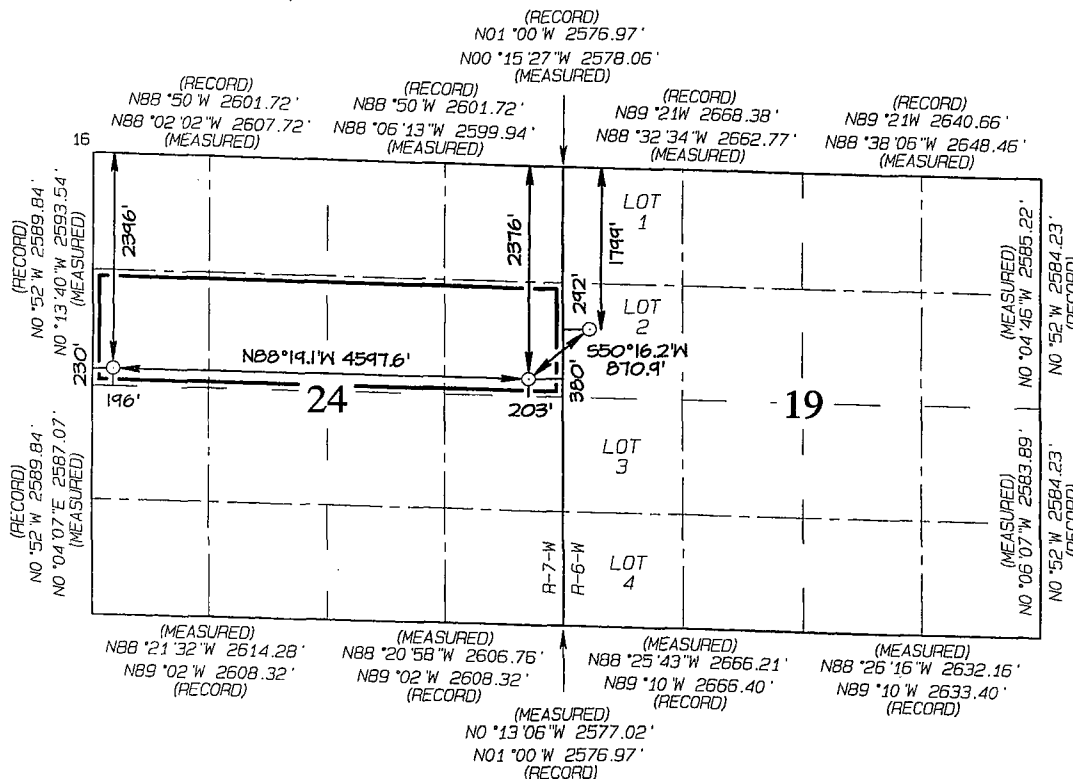
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
E	19	23N	6W	2	1799	NORTH	292	WEST	SANDOVAL

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
E	24	23N	7W		2396	NORTH	230	WEST	SANDOVAL

12 Dedicated Acres 160.0 Acres S/2 N/2 - Section 24	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
2369' FNL 230' FWL
SECTION 24, T23N, R7W
LAT: 36.21189°N
LONG: 107.53460°W
DATUM: NAD1927

POINT-OF-ENTRY
2376' FNL 380' FEL
SECTION 24, T23N, R7W
LAT: 36.21169°N
LONG: 107.51902°W
DATUM: NAD1927

SURFACE LOCATION
1799' FNL 292' FWL
SECTION 19, T23N, R6W
LAT: 36.21324°N
LONG: 107.51677°W
DATUM: NAD1927

LAT: 36.21190°N
LONG: 107.53521°W
DATUM: NAD1983

LAT: 36.21170°N
LONG: 107.51963°W
DATUM: NAD1983

LAT: 36.21325°N
LONG: 107.51738°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: *Larry Higgins* Date: 1/15/14

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

18 SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

Date Revised: NOVEMBER 11, 2013
Date of Survey: JULY 10, 2012

Signature and Seal of Professional Surveyor



JASON C. EDWARDS
Certificate Number 15269

WPX ENERGY

Operations Plan

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

DATE: 11/5/2013 **FIELD:** Lybrook (Gallup)

WELL NAME: Chaco 2306-19E #189H **SURFACE:** BLM

SH Location: SWNW Sec 19-23N-6W **ELEVATION:** 6,964' GR

BH Location: SWNW Sec 24-23N-7W **MINERALS:** BLM
Sandoval Co, NM

MEASURED DEPTH: 10,523' **LEASE #:** NMSF-078360

I. GEOLOGY: Surface formation – San Jose

A. FORMATION TOPS: (KB)

Name	MD	TVD	Name	MD	TVD
Ojo Alamo	1,310	1,304	Point Lookout	4,225	4,183
Kirtland	1,610	1,601	Mancos	4,412	4,369
Pictured Cliffs	1,914	1,901	Kickoff Point	4,855	4,811
Lewis	2,000	1,986	Target Top	5,650	5,422
Chacra	2,334	2,316	Landing Point	5,925	5,478
Cliff House	3,438	3,406	Target Base	5,925	5,478
Menefee	3,456	3,424			
			TD	10,523	5,406

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, the curve portion of the wellbore. 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 +/- 4,855' (MD) / 4,811' (TVD). Curve portion of wellbore will be drilled and landed at +/- 90 deg. at +/- 5,925' (MD) / 5,478' (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 +/- 10,523' (MD) / 5,406' (TVD). Will run 4-1/2 in. Production Liner from +/- 5,775 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:

<u>CASING TYPE</u>	<u>OH SIZE (IN)</u>	<u>DEPTH (MD) (FT)</u>	<u>CASING SIZE (IN)</u>	<u>WEIGHT(LB)</u>	<u>GRADE</u>
Surface	12.25"	400'+	9.625"	36#	J-55
Intermediate	8.75"	5,925'	7"	23#	K-55
Prod. Liner	6.125"	5,775' - 10,523'	4-1/2"	11.6#	N-80
Tie-Back String	N/A	Surf. - 5,775'	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 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).
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 +/- 5,475 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 (~5,680' 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 5,775 ft. MD) with a Liner Hanger and pack-off assembly then cemented to +/- 300 ft above the liner hanger. TOL will be +/- 5,775 ft. (MD) +/- 77 degree angle. TOC: +/- 5,475 ft. (MD). Set Pack-off at TOL.

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.

WELL	Chaco 2306-19E #189H	FIELD	NM Sandoval County NAD27	STRUCTURE	Sec 19-23N-6W
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Magnetic Parameters Model: 85GM 2013 Dip: 63.00° Mag Dec: 9.478°	Date: November 04, 2013 FS: 50167.0NT	Surface Location Lat: N 36 12 47.654 Lon: W 107 31 0.372	NAD27 New Mexico State Plane, Central Zone, US Feet Northing: 1899270.02 NUS Easting: 126304.77 NUS Grid Conv: -0.748° Scale Fact: 1.00005380	Miscellaneous Site: Chaco 2306-19E #189H Plan: RD mov 04Nov13	TVD Ref: RXB(6578) above MSL Srvy Date: November 04, 2013
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Proposal

-6000

-4500

-3000

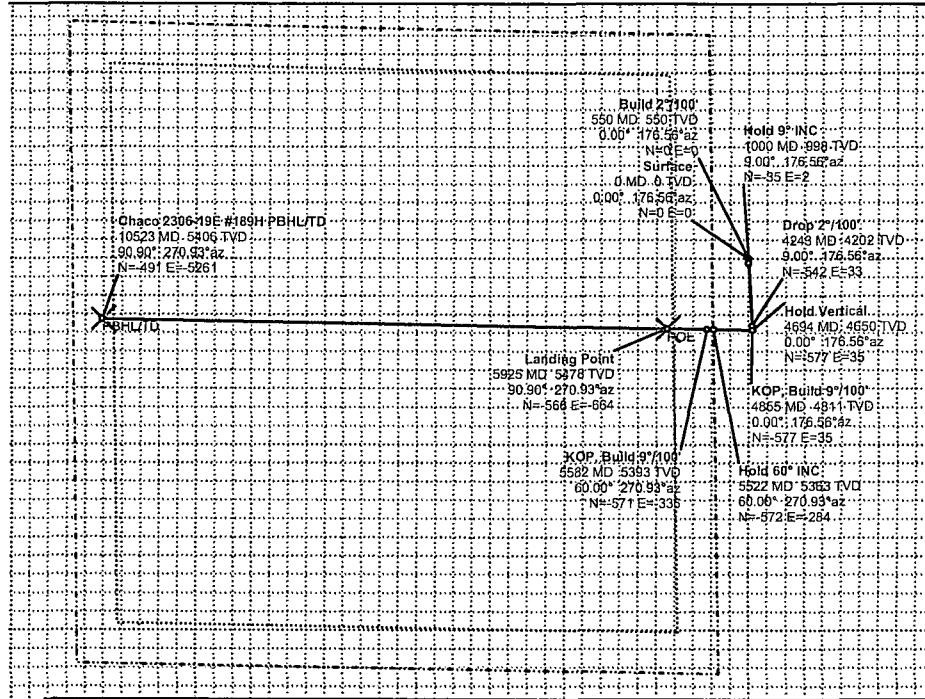
-1500

0

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



True North
Tot Corr (M>T 9.4778°)
Mag Dec (9.478°)
Grid Conv (-0.748°)



1500

0

-1500

-3000

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

TVD Scale = 1:1000(ft)

0

1000

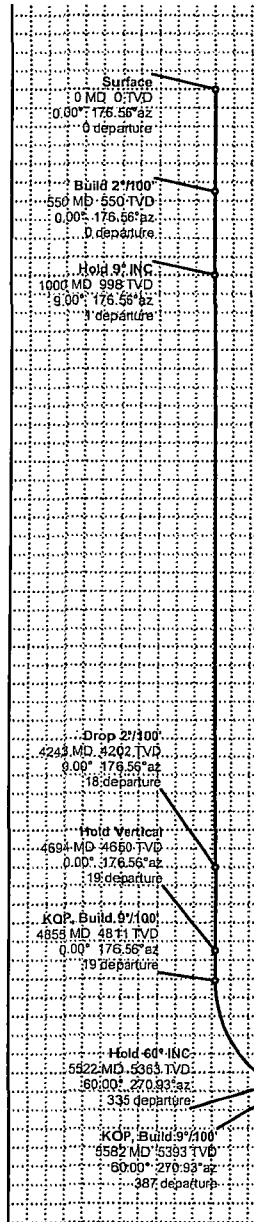
2000

3000

4000

5000

6000



-1000

0

1000

2000

3000

4000

5000

Vertical Section (ft) Azim = 264.67° Scale = 1:1000(ft) Origin = 0 N/-S, 0 E/-W

Targets									
Name	TVD(ft)	NS(ft)	EW(ft)	Latitude(deg)	Longitude(deg)	Shape			
Chaco 2306-19E #189H POE	5478.00	-565.75	-663.78	N 36 12 42.069	W 107 31 8.472	POINT			
Chaco 2306-19E #189H PBHL/TD	5406.00	-490.87	-5260.51	N 36 12 42.805	W 107 32 4.562	POINT			
Critical Points									
Comments	MD(ft)	INC	AZM	TVD(ft)	SS TVD	VS(ft)	NS(ft)	EW(ft)	DLS
Surface	0.00	0.00	176.56	0.00	-6978.00	0.00	0.00	0.00	
Build 2°/100'	550.00	0.00	176.56	550.00	-6428.00	0.00	0.00	0.00	0.00
Hold 9° INC	1000.17	9.00	176.56	998.32	-5979.68	1.16	-35.23	2.12	2.00
Drop 2°/100'	4243.49	9.00	176.56	4201.68	-2776.32	17.91	-541.87	32.58	0.00
Hold Vertical	4693.66	0.00	176.56	4650.00	-2328.00	19.07	-577.11	34.70	2.00
KOP, Build 9°/100'	4855.12	0.00	176.56	4811.46	-2166.54	19.07	-577.11	34.70	0.00
Hold 60° INC	5521.79	60.00	270.93	5362.79	-1615.21	335.48	-571.94	-283.57	9.00
KOP, Build 9°/100'	5581.79	60.00	270.93	5392.79	-1585.21	387.14	-571.10	-335.53	0.00
Landing Point	5925.11	90.90	270.93	5478.00	-1500.00	713.47	-565.75	-663.78	9.00
Chaco 2306-19E #189H PBHL/TD	10523.01	90.90	270.93	5406.00	-1572.00	5283.36	-490.87	-5260.51	0.00

Chaco 2306-19E #189H R0 mdv 04Nov13 Proposal Geodetic Report

(Def Plan)

Report Date: November 05, 2013 - 09:04 AM
Client: WPX Energy
Field: NM Sandoval County NAD27
Structure / Slot: WPX Sec 19-23N-6W (Chaco 2306-19E #189H) / Chaco 2306-19E #189H
Well: Chaco 2306-19E #189H
Borehole: Original Hole
UWI / API#: Unknown / Unknown
Survey Name: Chaco 2306-19E #189H R0 mdv 04Nov13
Survey Date: November 04, 2013
Tort / AHD / DDI / ERD Ratio: 108.909 * / 5874.052 ft / 6.090 / 1.072
Coordinate Reference System: NAD27 New Mexico State Plane, Central Zone, US Feet
Location Lat / Long: N 36° 12' 47.66400", W 107° 31' 0.37200"
Location Grid N/E Y/X: N 1899270.017 ftUS, E 126304.772 ftUS
CRS Grid Convergence Angle: -0.7485 *
Grid Scale Factor: 1.0000598

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 264.669 * (True North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: RKB
TVD Reference Elevation: 6978.000 ft above MSL
Seabed / Ground Elevation: 6964.000 ft above MSL
Magnetic Declination: 9.478 *
Total Gravity Field Strength: 998.4870mgN (9.80665 Based)
Total Magnetic Field Strength: 50167.013 nT
Magnetic Dip Angle: 63.006 *
Declination Date: November 04, 2013
Magnetic Declination Model: BGGM 2013
North Reference: True North
Grid Convergence Used: 0.0000 *
Total Corr Mag North->True North: 9.4778 *
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	176.56	0.00	0.00	0.00	0.00	N/A	1899270.02	126304.77	N 36 12 47.66	W 107 31 0.37
Build 2"/100'	100.00	0.00	176.56	100.00	0.00	0.00	0.00	0.00	1899270.02	126304.77	N 36 12 47.66	W 107 31 0.37
	200.00	0.00	176.56	200.00	0.00	0.00	0.00	0.00	1899270.02	126304.77	N 36 12 47.66	W 107 31 0.37
	300.00	0.00	176.56	300.00	0.00	0.00	0.00	0.00	1899270.02	126304.77	N 36 12 47.66	W 107 31 0.37
	400.00	0.00	176.56	400.00	0.00	0.00	0.00	0.00	1899270.02	126304.77	N 36 12 47.66	W 107 31 0.37
	500.00	0.00	176.56	500.00	0.00	0.00	0.00	0.00	1899270.02	126304.77	N 36 12 47.66	W 107 31 0.37
	550.00	0.00	176.56	550.00	0.00	0.00	0.00	0.00	1899270.02	126304.77	N 36 12 47.66	W 107 31 0.37
	600.00	1.00	176.56	600.00	0.01	-0.44	0.03	2.00	1899269.58	126304.79	N 36 12 47.66	W 107 31 0.37
	700.00	3.00	176.56	699.93	0.13	-3.92	0.24	2.00	1899266.10	126304.96	N 36 12 47.63	W 107 31 0.37
	800.00	5.00	176.56	799.68	0.36	-10.88	0.65	2.00	1899259.13	126305.28	N 36 12 47.56	W 107 31 0.36
	900.00	7.00	176.56	899.13	0.70	-21.32	1.28	2.00	1899248.69	126305.78	N 36 12 47.45	W 107 31 0.36
Hold 9" INC	1000.00	9.00	176.56	998.15	1.16	-35.21	2.12	2.00	1899234.78	126306.43	N 36 12 47.32	W 107 31 0.35
	1000.17	9.00	176.56	998.32	1.16	-35.23	2.12	2.00	1899234.76	126306.43	N 36 12 47.32	W 107 31 0.35
	1100.00	9.00	176.56	1096.92	1.68	-50.83	3.06	0.00	1899219.15	126307.16	N 36 12 47.16	W 107 31 0.33
	1200.00	9.00	176.56	1195.69	2.20	-66.45	3.99	0.00	1899203.52	126307.90	N 36 12 47.01	W 107 31 0.32
	1300.00	9.00	176.56	1294.46	2.71	-82.07	4.93	0.00	1899187.89	126308.63	N 36 12 46.85	W 107 31 0.31
	1400.00	9.00	176.56	1393.22	3.23	-97.69	5.87	0.00	1899172.25	126309.37	N 36 12 46.70	W 107 31 0.30
	1500.00	9.00	176.56	1491.99	3.74	-113.31	6.81	0.00	1899156.62	126310.10	N 36 12 46.54	W 107 31 0.29
	1600.00	9.00	176.56	1590.76	4.26	-128.93	7.75	0.00	1899140.99	126310.84	N 36 12 46.39	W 107 31 0.28
	1700.00	9.00	176.56	1689.53	4.78	-144.55	8.69	0.00	1899125.35	126311.57	N 36 12 46.23	W 107 31 0.27
	1800.00	9.00	176.56	1788.30	5.29	-160.17	9.63	0.00	1899109.72	126312.31	N 36 12 46.08	W 107 31 0.25
	1900.00	9.00	176.56	1887.06	5.81	-175.80	10.57	0.00	1899094.09	126313.04	N 36 12 45.93	W 107 31 0.24
	2000.00	9.00	176.56	1985.83	6.33	-191.42	11.51	0.00	1899078.46	126313.78	N 36 12 45.77	W 107 31 0.23
	2100.00	9.00	176.56	2084.60	6.84	-207.04	12.45	0.00	1899062.82	126314.51	N 36 12 45.62	W 107 31 0.22
	2200.00	9.00	176.56	2183.37	7.36	-222.66	13.39	0.00	1899047.19	126315.25	N 36 12 45.46	W 107 31 0.21
	2300.00	9.00	176.56	2282.13	7.87	-238.28	14.33	0.00	1899031.56	126315.98	N 36 12 45.31	W 107 31 0.20
	2400.00	9.00	176.56	2380.90	8.39	-253.90	15.26	0.00	1899015.92	126316.72	N 36 12 45.15	W 107 31 0.19
	2500.00	9.00	176.56	2479.67	8.91	-269.52	16.20	0.00	1899000.29	126317.45	N 36 12 45.00	W 107 31 0.17
	2600.00	9.00	176.56	2578.44	9.42	-285.14	17.14	0.00	1898984.66	126318.19	N 36 12 44.84	W 107 31 0.16
	2700.00	9.00	176.56	2677.21	9.94	-300.76	18.08	0.00	1898969.03	126318.92	N 36 12 44.69	W 107 31 0.15
	2800.00	9.00	176.56	2775.97	10.46	-316.38	19.02	0.00	1898953.39	126319.66	N 36 12 44.54	W 107 31 0.14
	2900.00	9.00	176.56	2874.74	10.97	-332.01	19.96	0.00	1898937.76	126320.39	N 36 12 44.38	W 107 31 0.13
	3000.00	9.00	176.56	2973.51	11.49	-347.63	20.90	0.00	1898922.13	126321.13	N 36 12 44.23	W 107 31 0.12
	3100.00	9.00	176.56	3072.28	12.00	-363.25	21.84	0.00	1898906.49	126321.86	N 36 12 44.07	W 107 31 0.11
	3200.00	9.00	176.56	3171.05	12.52	-378.87	22.78	0.00	1898890.86	126322.60	N 36 12 43.92	W 107 31 0.09
	3300.00	9.00	176.56	3269.81	13.04	-394.49	23.72	0.00	1898875.23	126323.33	N 36 12 43.76	W 107 31 0.08
	3400.00	9.00	176.56	3368.58	13.55	-410.11	24.66	0.00	1898859.60	126324.07	N 36 12 43.61	W 107 31 0.07
	3500.00	9.00	176.56	3467.35	14.07	-425.73	25.59	0.00	1898843.96	126324.80	N 36 12 43.45	W 107 31 0.06
	3600.00	9.00	176.56	3566.12	14.59	-441.35	26.53	0.00	1898828.33	126325.54	N 36 12 43.30	W 107 31 0.05
	3700.00	9.00	176.56	3664.89	15.10	-456.97	27.47	0.00	1898812.70	126326.27	N 36 12 43.15	W 107 31 0.04
	3800.00	9.00	176.56	3763.65	15.62	-472.59	28.41	0.00	1898797.07	126327.01	N 36 12 42.99	W 107 31 0.03
3900.00	9.00	176.56	3862.42	16.14	-488.22	29.35	0.00	1898781.43	126327.74	N 36 12 42.84	W 107 31 0.01	
4000.00	9.00	176.56	3961.19	16.65	-503.84	30.29	0.00	1898765.80	126328.48	N 36 12 42.68	W 107 31 0.00	
4100.00	9.00	176.56	4059.96	17.17	-519.46	31.23	0.00	1898750.17	126329.21	N 36 12 42.53	W 107 30 59.99	
Drop 2"/100'	4200.00	9.00	176.56	4158.73	17.68	-535.08	32.17	0.00	1898734.53	126329.95	N 36 12 42.37	W 107 30 59.98
	4243.49	9.00	176.56	4201.68	17.91	-541.87	32.58	0.00	1898727.73	126330.27	N 36 12 42.31	W 107 30 59.97
	4300.00	7.87	176.56	4257.58	18.18	-550.15	33.07	2.00	1898719.45	126330.66	N 36 12 42.22	W 107 30 59.97
	4400.00	5.87	176.56	4356.85	18.58	-562.09	33.79	2.00	1898707.50	126331.22	N 36 12 42.11	W 107 30 59.96
Hold Vertical	4500.00	3.87	176.56	4456.49	18.86	-570.57	34.30	2.00	1898699.01	126331.62	N 36 12 42.02	W 107 30 59.95
	4600.00	1.87	176.56	4556.36	19.02	-575.58	34.60	2.00	1898694.00	126331.86	N 36 12 41.97	W 107 30 59.95
	4693.66	0.00	176.56	4650.00	19.07	-577.11	34.70	2.00	1898692.47	126331.93	N 36 12 41.96	W 107 30 59.95
	4700.00	0.00	176.56	4656.34	19.07	-577.11	34.70	0.00	1898692.47	126331.93	N 36 12 41.96	W 107 30 59.95
KOP, Build 9"/100'	4800.00	0.00	176.56	4756.34	19.07	-577.11	34.70	0.00	1898692.47	126331.93	N 36 12 41.96	W 107 30 59.95
	4855.12	0.00	176.56	4811.46	19.07	-577.11	34.70	0.00	1898692.47	126331.93	N 36 12 41.96	W 107 30 59.95
	4900.00	4.04	270.93	4856.30	20.64	-577.08	33.11	9.00	1898692.52	126330.35	N 36 12 41.96	W 107 30 59.97
	5000.00	13.04	270.93	4955.09	35.39	-576.84	18.28	9.00	1898692.96	126315.52	N 36 12 41.96	W 107 31 0.15
	5100.00	22.04	270.93	5050.34	65.31	-576.35	-11.82	9.00	1898693.84	126285.43	N 36 12 41.96	W 107 31 0.52
	5200.00	31.04	270.93	5139.72	109.68	-575.63	-56.45	9.00	1898695.15	126240.81	N 36 12 41.97	W 107 31 1.06
	5300.00	40.04	270.93	5221.00	167.40	-574.68	-114.51	9.00	1898696.85	126182.76	N 36 12 41.98	W 107 31 1.77
	5400.00	49.04	270.93	5292.21	237.05	-573.55	-184.56	9.00	1898698.90	126112.72	N 36 12 41.99	W 107 31 2.62
	5500.00	58.04	270.93	5351.57	316.92	-572.24	-264.90	9.00	1898701.25	126032.41	N 36 12 42.01	W 107 31 3.60
	5521.79	60.00	270.93	5382.79	335.48	-571.94	-283.57	9.00	1898701.80	126013.74	N 36 12 42.01	W 107 31 3.83
Hold 60" INC KOP, Build 9"/100'	5581.79	60.00	270.93	5392.79	387.14	-571.10	-335.53	0.00	1898703.32	125961.79	N 36 12 42.02	W 107 31 4.47
	5600.00	61.64	270.93	5401.67	402.94	-570.84	-351.43	9.00	1898703.79	125945.80	N 36 12 42.02	W 107 31 4.66
	5700.00	70.64	270.93	5442.08	493.76	-569.35	-442.77	9.00	1898706.46	125854.57	N 36 12 42.03	W 107 31 5.77
	5800.00	79.64	270.93	5467.70	589.73	-567.78	-539.32	9.00	1898709.30	125758.05	N 36 12 42.05	W 107 31 6.95
	5900.00	88.64	270.93	5477.90	688.52	-566.16	-638.68	9.00	1898712.21	125658.72	N 36 12 42.07	W 107 31 8.17
	5925.11	90.90	270.93	5478.00	713.47	-565.75	-663.78	9.00	1898712.95	125633.62	N 36 12 42.07	W 107 31 8.47
	6000.00	90.90	270.93	5476.83	787.91	-564.53	-738.65	0.00	1898715.15	125558.76	N 36 12 42.08	W 107 31 9.39
	6100.00	90.90	270.93	5475.26	887.30	-562.90	-838.63	0.00	1898718.08	125458.61	N 36 12 42.10	W 107 31 10.61
	6200.00	90.90	270.93	5473.69	986.69	-561.27	-938.60	0.00	1898721.02	125358.86	N 36 12 42.11	W 107 31 11.83
	6300.00	90.90	270.93	5472.12	1086.08	-559.64	-1038.58	0.00	1898723.96	125258.91	N 36 12 42.13	W 107 31 13.04
Landing Point	6400.00	90.90	270.									

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 ° ° °)
	7100.00	90.90	270.93	5459.58	1881.21	-546.61	-1838.37	0.00	1898747.44	124459.31	N 36 12 42.26	W 107 31 22.80
	7200.00	90.90	270.93	5458.01	1980.60	-544.98	-1938.35	0.00	1898750.38	124359.36	N 36 12 42.27	W 107 31 24.02
	7300.00	90.90	270.93	5456.44	2079.99	-543.35	-2038.32	0.00	1898753.31	124259.41	N 36 12 42.29	W 107 31 25.24
	7400.00	90.90	270.93	5454.87	2179.38	-541.72	-2138.30	0.00	1898756.25	124159.46	N 36 12 42.31	W 107 31 26.46
	7500.00	90.90	270.93	5453.31	2278.77	-540.09	-2238.27	0.00	1898759.18	124059.51	N 36 12 42.32	W 107 31 27.68
	7600.00	90.90	270.93	5451.74	2378.16	-538.46	-2338.24	0.00	1898762.12	123959.56	N 36 12 42.34	W 107 31 28.90
	7700.00	90.90	270.93	5450.17	2477.55	-536.83	-2438.22	0.00	1898765.05	123859.61	N 36 12 42.35	W 107 31 30.12
	7800.00	90.90	270.93	5448.61	2576.94	-535.20	-2538.19	0.00	1898767.99	123759.66	N 36 12 42.37	W 107 31 31.34
	7900.00	90.90	270.93	5447.04	2676.33	-533.58	-2638.17	0.00	1898770.92	123659.71	N 36 12 42.39	W 107 31 32.56
	8000.00	90.90	270.93	5445.47	2775.72	-531.95	-2738.14	0.00	1898773.86	123559.76	N 36 12 42.40	W 107 31 33.78
	8100.00	90.90	270.93	5443.91	2875.11	-530.32	-2838.12	0.00	1898776.79	123459.81	N 36 12 42.42	W 107 31 35.00
	8200.00	90.90	270.93	5442.34	2974.50	-528.69	-2938.09	0.00	1898779.73	123359.86	N 36 12 42.43	W 107 31 36.22
	8300.00	90.90	270.93	5440.78	3073.89	-527.06	-3038.07	0.00	1898782.66	123259.90	N 36 12 42.45	W 107 31 37.44
	8400.00	90.90	270.93	5439.21	3173.28	-525.43	-3138.04	0.00	1898785.59	123159.95	N 36 12 42.47	W 107 31 38.66
	8500.00	90.90	270.93	5437.65	3272.67	-523.80	-3238.01	0.00	1898788.53	123060.00	N 36 12 42.48	W 107 31 39.88
	8600.00	90.90	270.93	5436.08	3372.07	-522.17	-3337.99	0.00	1898791.46	122960.05	N 36 12 42.50	W 107 31 41.10
	8700.00	90.90	270.93	5434.51	3471.46	-520.55	-3437.96	0.00	1898794.40	122860.10	N 36 12 42.51	W 107 31 42.32
	8800.00	90.90	270.93	5432.95	3570.85	-518.92	-3537.94	0.00	1898797.33	122760.15	N 36 12 42.53	W 107 31 43.54
	8900.00	90.90	270.93	5431.38	3670.24	-517.29	-3637.91	0.00	1898800.27	122660.20	N 36 12 42.55	W 107 31 44.76
	9000.00	90.90	270.93	5429.82	3769.63	-515.66	-3737.89	0.00	1898803.20	122560.25	N 36 12 42.56	W 107 31 45.98
	9100.00	90.90	270.93	5428.25	3869.02	-514.03	-3837.86	0.00	1898806.14	122460.30	N 36 12 42.58	W 107 31 47.20
	9200.00	90.90	270.93	5426.69	3968.41	-512.40	-3937.84	0.00	1898809.07	122360.35	N 36 12 42.59	W 107 31 48.42
	9300.00	90.90	270.93	5425.12	4067.80	-510.78	-4037.81	0.00	1898812.00	122260.40	N 36 12 42.61	W 107 31 49.64
	9400.00	90.90	270.93	5423.56	4167.19	-509.15	-4137.79	0.00	1898814.94	122160.45	N 36 12 42.63	W 107 31 50.86
	9500.00	90.90	270.93	5422.00	4266.58	-507.52	-4237.76	0.00	1898817.87	122060.50	N 36 12 42.64	W 107 31 52.08
	9600.00	90.90	270.93	5420.43	4365.97	-505.89	-4337.73	0.00	1898820.81	121960.55	N 36 12 42.66	W 107 31 53.30
	9700.00	90.90	270.93	5418.87	4465.36	-504.26	-4437.71	0.00	1898823.74	121860.60	N 36 12 42.67	W 107 31 54.52
	9800.00	90.90	270.93	5417.30	4564.76	-502.64	-4537.68	0.00	1898826.67	121760.65	N 36 12 42.69	W 107 31 55.74
	9900.00	90.90	270.93	5415.74	4664.15	-501.01	-4637.66	0.00	1898829.61	121660.70	N 36 12 42.71	W 107 31 56.96
	10000.00	90.90	270.93	5414.18	4763.54	-499.38	-4737.63	0.00	1898832.54	121560.75	N 36 12 42.72	W 107 31 58.18
	10100.00	90.90	270.93	5412.61	4862.93	-497.75	-4837.61	0.00	1898835.48	121460.80	N 36 12 42.74	W 107 31 59.40
	10200.00	90.90	270.93	5411.05	4962.32	-496.12	-4937.58	0.00	1898838.41	121360.85	N 36 12 42.75	W 107 32 0.62
	10300.00	90.90	270.93	5409.49	5061.71	-494.50	-5037.56	0.00	1898841.34	121260.90	N 36 12 42.77	W 107 32 1.84
	10400.00	90.90	270.93	5407.92	5161.10	-492.87	-5137.53	0.00	1898844.28	121160.94	N 36 12 42.79	W 107 32 3.06
	10500.00	90.90	270.93	5406.36	5260.49	-491.24	-5237.50	0.00	1898847.21	121060.99	N 36 12 42.80	W 107 32 4.28
Chaco 2306-19E #189H PBHL/TO	10523.01	90.90	270.93	5406.00	5283.36	-490.87	-5260.51	0.00	1898847.89	121038.00	N 36 12 42.81	W 107 32 4.56

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 2306-19E #189H R0 mdv 04Nov13
	14.000	10523.009	1/100.000	30.000	30.000	SLB_MWD-STD	Original Hole / Chaco 2306-19E #189H R0 mdv 04Nov13

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 2306-19E No. 189H (189H) Application for Permit to Drill (APD), related to Onshore Oil and Gas Order No. 1. The 189H well will be twinned with the Chaco 2306-19E No. 188H (188H) well.

This SUPO also serves as a revision to the original 188H SUPO, which was submitted as part of the 188H APD package. An APD has been issued for the 188H (APD No. 30-043-21136). Because of the changes necessary to the 188H project as a result of the 188H/189H twin, a revised 188H SUPO was required by the BLM-FFO. All surface activities associated with the 188H/189H project are authorized under the two APDs.

An onsite meeting for the 188H project was held on November 1, 2012. An onsite meeting for the 189H project was held on July 31, 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 188H APD or are attached to the 189 APD.

2. PROJECT LOCATION AND EXISTING ROADS

The 188H/189H well pad is located approximately 52.0 road miles south-southeast of the town of Bloomfield, New Mexico. To access the location, head south from the U.S. Highway 550-U.S. Highway 64 intersection for approximately 51.0 miles, then turn right to follow unnamed, dirt roads for approximately 1.0 mile until reaching the start of the proposed access road. The access route from U.S. Highway 550 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 meeting, WPX was allocated an existing road for upgrade. The road 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 existing, unnamed oil and gas lease road will be upgraded, from the first intersection off of U.S. Highway 550 to the start of the proposed access road.

A 275-foot-long access road was previously permitted for the 188H project. This road was planned to enter the 188H well pad on its northern edge (between corners 3 and 5). This road has not yet been constructed.

Because the addition of the 189H twin to the 188H well pad would result in an expansion of the northern side of the previously permitted 188H well pad, the proposed access route has changed slightly. The proposed access road will be 80 feet long and will enter the pad at the pad's northeastern corner (Corner 5).

The all-weather driving surface of the access road will be 14 feet wide with turnouts placed as necessary. The access 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. Topsoil removed from the access road will be used on cut slopes and bar ditches. The road will be crowned with a surface material (sandstone), if it is economically available. The placement of water diversions, such as culverts and silt traps, along the access road was not determined during the pre-disturbance site visit. Twenty-four-inch-

The water hauler(s) will access the well pad via the roads described in Section 2 (Project Location and Existing Roads) and 3 (New or Reconstructed Access Roads), above.

7. WELL PAD CONSTRUCTION MATERIAL

Excavated materials from the cuts will be used on the fill portions of the location to level the well pad. Up to 4 feet of cut and 3 feet of fill will be needed to create a level well pad. Construction plats for the project are provided in the APD permit packages.

An existing silt trap, located immediately north-northwest of the well pad, will be cleaned as part of the project. Some dirt excavated from this silt trap may be used as fill within the project area.

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 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 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

Pipeline(s), if required, will be permitted and constructed at a later date.

During the onsite meeting, one staging area was identified for the 189H project: the Elm Ridge Exploration Company's Lybrook South No. 12 well pad, located 150 feet east of the 188H/189H well pad. The Lybrook South No. 12 well has been plugged, and the well pad has been reclaimed. The original well pad disturbance area measures approximately 1.0 acre (estimated from an aerial photo); WPX will stay within the boundaries of the original well pad disturbance area. During interim reclamation, WPX will repair any damage done to the staging area and reseed the staging area. The staging area is depicted in Appendix B (Figure 1).

10. WELL SITE LAYOUT

The production facilities associated with the wells will be located within a 100-by-300-foot (0.69-acre) area along the northern side of the well pad.

A teardrop will be located within the originally permitted 188H well pad area. The teardrop, which will provide access to both wellheads, will have a running surface width of 35 feet. The teardrop will measure

Figure 2. Existing Wells within 1-Mile Radius of Project Area

