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 3160-4 or 3160-5 form.

Operator Signature Date:

Application Type:

☐ P&A ☒ Drilling/Casing Change ☐ Recomplete/DHC

☐ Location Change ☐ Other: Extend lateral

Well information:

API WELL #	Well Name	Well #	Operator Name	Type	Stat	County	Surf Owner	UL	Sec	Twp	N/S	Rng	W/E	Feet	NS	Ft	EW
30-043-21136-00-00	CHACO 2306 19E	188H	WPX ENERGY PRODUCTION, LLC	O	N	Sandoval	F	E	19	23	N	6	W	1779	N	302	W

Conditions of Approval:

Notify NMOCD 24hrs prior to beginning operations

Hold C104 for directional survey, as drilled plat, NSL and NSP

NMOCD Approved by Signature

Date

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

Form 3160-5
(February 2005)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECEIVED
JUN 11 2014

OIL CONS. DIV DIST. 3
JUN 19 2014

FORM APPROVED
OMB No. 1004-0137
Expires: March 31, 2007

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.

SUBMIT IN TRIPLICATE – *Other instructions on page 2.*

1. Type of Well ☒ Oil Well ☐ Gas Well ☐ Other	5. Lease Serial No. NMSF-078360
	6. If Indian, Allottee or Tribe Name
	7. If Unit of CA/Agreement, Name and/or No.
	8. Well Name and No. Chaco 2306-19E #188H
2. Name of Operator WPX Energy Production, LLC	9. API Well No. 30-043-21136
3a. Address PO Box 640 Aztec, NM 87410 3b. Phone No. *(include area code)* 505-333-1808	10. Field and Pool or Exploratory Area Lybrook Gallup
4. Location of Well *(Footage, Sec., T.,R.,M., or Survey Description)* Sur: 1779' FNL & 302' FWL, sec 19, T23N, R6W – BHL: 926' FNL & 230' FWL, Sec 24, T23N, R7W	11. Country or Parish, State Sandoval County, NM

12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☒ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
	☐ Alter Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Subsequent Report	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other Extewnd Lateral
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
☐ Final Abandonment Notice	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.)

WPX plans to plans to extend the lateral on this well as per attached C-102, operations plan and directional plan. No new surface disturbance is required. This well is in an extended CA per NMOCD order R-13817. 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.

CONDITIONS OF APPROVAL

Adhere to previously issued stipulations

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

14. I hereby certify that the foregoing is true and correct. Name *(Printed/Typed)* Larry Higgins	Title Regulatory Specialist
Signature Larry Higgins	Date 6/11/2014

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by William Tambekou	Title Petroleum Engineer	Date 6/16/2014
Conditions of approval, if any, are attached. Approval of this notice 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.	Office FFO	

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 page 2)

NMOCD

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District I
1625 N. French Drive, Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720

District II
811 S. First Street, Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720

District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170

District IV
1220 S. St. Francis Drive, Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department

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

Form C-102
Revised August 1, 2011

Submit one copy to
Appropriate District Office

☐ AMENDED REPORT

RECEIVED

JUN 11 2014

WELL LOCATION AND ACREAGE DEDICATION PLAT

[1] API Number	[2] Pool Code	[3] Pool Name
30-043-21136	42289	LYBROOK GALLUP

[4] Property Code	[5] Property Name	[6] Well Number
40021	CHACO 2306-19E	188H

[7] OGRID No.	[8] Operator Name	[9] Elevation
120782	WPX ENERGY PRODUCTION, LLC	6965'

[10] Surface Location

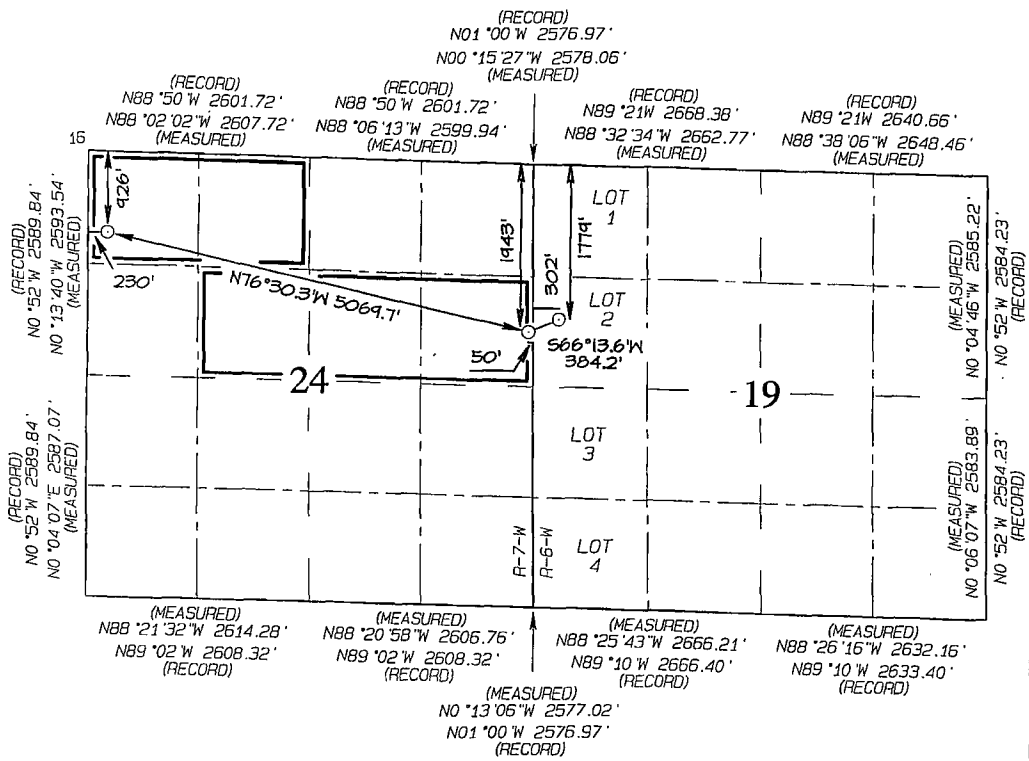
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
E	19	23N	6W	2	1779	NORTH	302	WEST	SANDOVAL

[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
D	24	23N	7W		926	NORTH	230	WEST	SANDOVAL

[12] Dedicated Acres	[13] Joint or Infill	[14] Consolidation Code	[15] Order No.
200.0 Acres - Section 24 N/2 NW/4 - S/2 NE/4 - SE/4 NW/4			

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
926' FNL 230' FWL
SECTION 24, T23N, R7W
LAT: 36.21593 °N
LONG: 107.53469 °W
DATUM: NAD1927

LAT: 36.21594 °N
LONG: 107.53529 °W
DATUM: NAD1983

POINT-OF-ENTRY
1943' FNL 50' FEL
SECTION 24, T23N, R7W
LAT: 36.21286 °N
LONG: 107.51793 °W
DATUM: NAD1927

LAT: 36.21287 °N
LONG: 107.51853 °W
DATUM: NAD1983

SURFACE LOCATION
1779' FNL 302' FWL
SECTION 19, T23N, R6W
LAT: 36.21329 °N
LONG: 107.51674 °W
DATUM: NAD1927

LAT: 36.21331 °N
LONG: 107.51735 °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 Date 6/11/14

Larry Higgins
Printed Name

larry.higgins@wpxenergy.com
E-mail Address

[18] SURVEYOR CERTIFICATION

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

Date Revised: JUNE 11, 2014
Date of Survey: JULY 10, 2012

Signature and Seal of Professional Surveyor

JASON C. EDWARDS
NEW MEXICO
15269
REGISTERED PROFESSIONAL SURVEYOR

JASON C. EDWARDS
Certificate Number 15269

WPXENERGY.

WPX ENERGY

Operations Plan

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

DATE:	6/10/2014	**FIELD:**	Lybrook (Gallup)
WELL NAME:	**Chaco 2306-19E #188H Rev**	**SURFACE:**	BLM
SH Location:	SWNW Sec 19-23N-06W	**ELEVATION:**	6965' GR
BH Location:	NWNW Sec 24-23N-07W Sandoval, NM	**MINERALS:**	BLM
MEASURED DEPTH:	**10,996'**	**LEASE #:**	NMSF 078360

I. GEOLOGY: Surface formation – San Jose

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

Name	MD	TVD	Name	MD	TVD
Ojo Alamo	1309	1305	Point Lookout	4199	4184
Kirtland	1608	1602	Mancos	4385	4370
Picture Cliffs	1910	1902	**Kickoff Point**	**4840**	4812
Lewis	1993	1987	Top Target	5621	5423
Chacra	2329	2317	**Landing Point**	**5926**	5479
Cliff House	3422	3407	Base Target	5926	5479
Menefee	3440	3425			
			TD	10996	5429

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

C. **LOGGING PROGRAM:** LWD GR from surface casing to TD.

D. **NATURAL GAUGES:** Gauge any noticeable increases in gas flow. Record all gauges in Tour book and on morning reports.

II. DRILLING

A. **MUD PROGRAM:** LSND mud (WBM) will be used to drill the 12-1/4" Surface hole, the 8 ¾" Directional Vertical hole, and the curve portion of the wellbore. A LSND (WBM) or (OBM) will be used to drill the lateral portion of well. Treat for lost circulation as necessary. Obtain 100% returns prior to cementing. Notify Engineering of any mud losses.

B. **BOP TESTING:** While drill pipe is in use, the pipe rams and the blind rams will be function tested once each trip. The anticipated reservoir is expected to be less than 1300 psi, so the BOPE will be tested to **250 psi (Low) for 5 minutes** and **1500 psi (High) for 10 minutes**. Pressure test surface casing to **600 psi for 30 minutes** and intermediate casing to **1500 psi for 30 minutes.** Utilize a BOPE Testing Unit with a recording chart and appropriate test plug for testing. The drum brakes will be inspected and tested each tour. **All tests and inspections will be recorded in the tour book as to time and results.**

NOTE: Vertical portion of the well (8-3/4 in.) will be directionally drilled as per attached Directional Plan to +/- 4,840' (MD) / 4,812' (TVD). Curve portion of wellbore will be drilled and landed at +/- 90 deg. at +/- 5,926' (MD) / 5,479' (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 +/- 10,996' (MD) / 5,429' (TVD). Will run 4-1/2 in. Production Liner from +/- 5,776 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"	5,926'	7"	23#	K-55
Prod. Liner	6.125"	5,776' - 10,996'	4-1/2"	11.6#	N-80
Tie-Back String	N/A	Surf. - 5,776'	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., and 2,000ft. Additionally run 1 turbolizing centralizer on every other joint from 100' below the top of the Kirtland to 100' above the top of the Ojo Alamo, as referenced in Formation Tops in Section I-A.

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:** 220 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 (220 sx / 433 cu-ft. / 77.1 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 (330 sx / 575.3 cu ft / 102.1 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 (~5,800' 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 +/-10,994 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) +/- 90 degree angle. TOC: +/- 5,475 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: Casing Landing Points, well TD and Directional Plan.

WPX ENERGY

Company: WPX Energy Rocky Mountai
Project: Sandoval County, NM NAD
Site: Chaco 2306-19E
Well: Chaco 2306-19E #188H
Wellbore: OH
Design: Plan #3

PROJECT DETAILS: Sandoval County, NM NAD27

Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico Central 3002
System Datum: Mean Sea Level
Local North: True

Scientific Drilling

WELL DETAILS: Chaco 2306-19E #188H

GL 6965' & RKB 14' @ 6979.00ft

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	1899288.10	126313.86	36° 12' 47.844 N	107° 31' 0.264 W

Plan: Plan #3 (Chaco 2306-19E #188H/OH)

Created By: Janie Collins Date: 16:02, June 09 2014

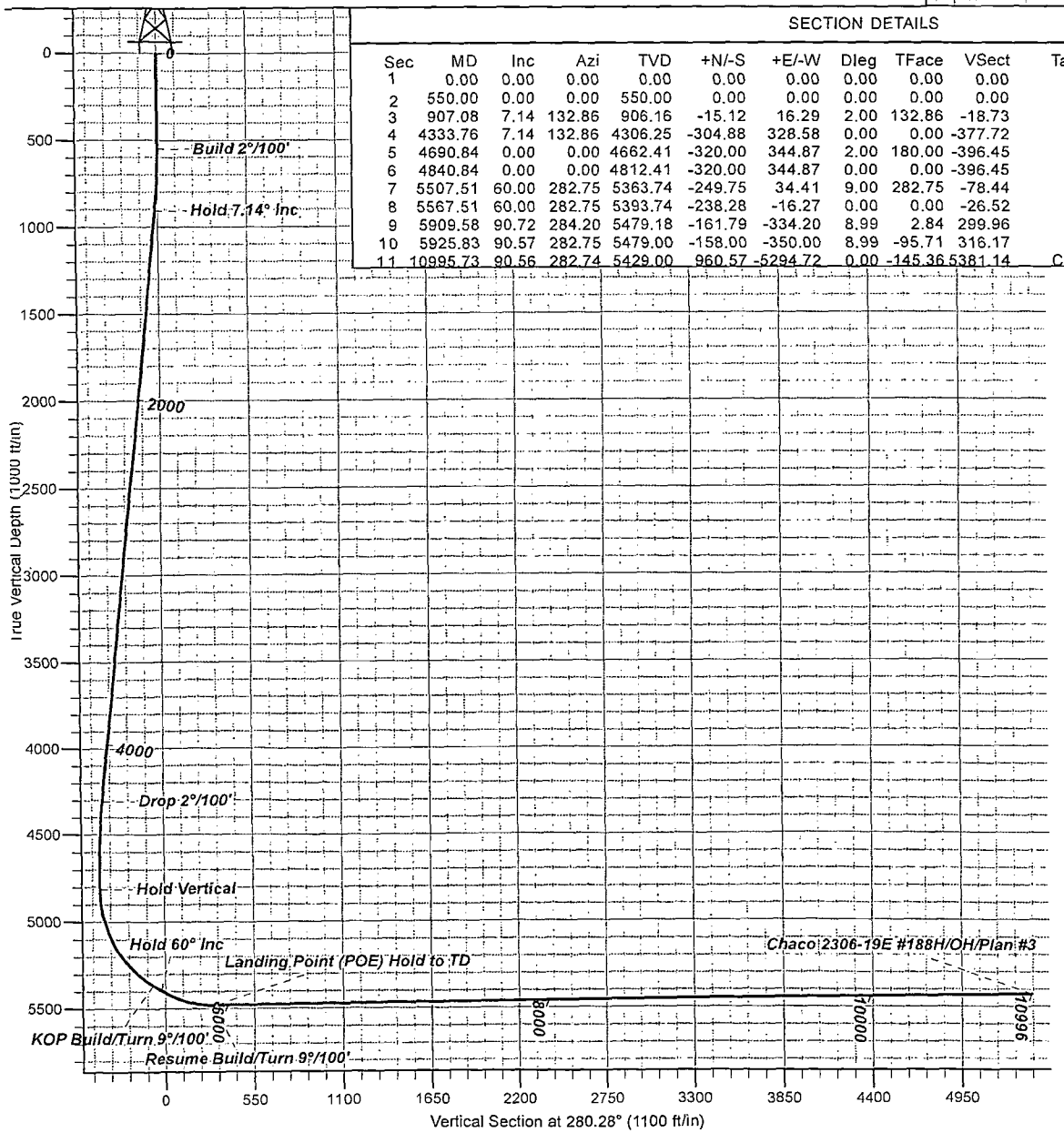
T M

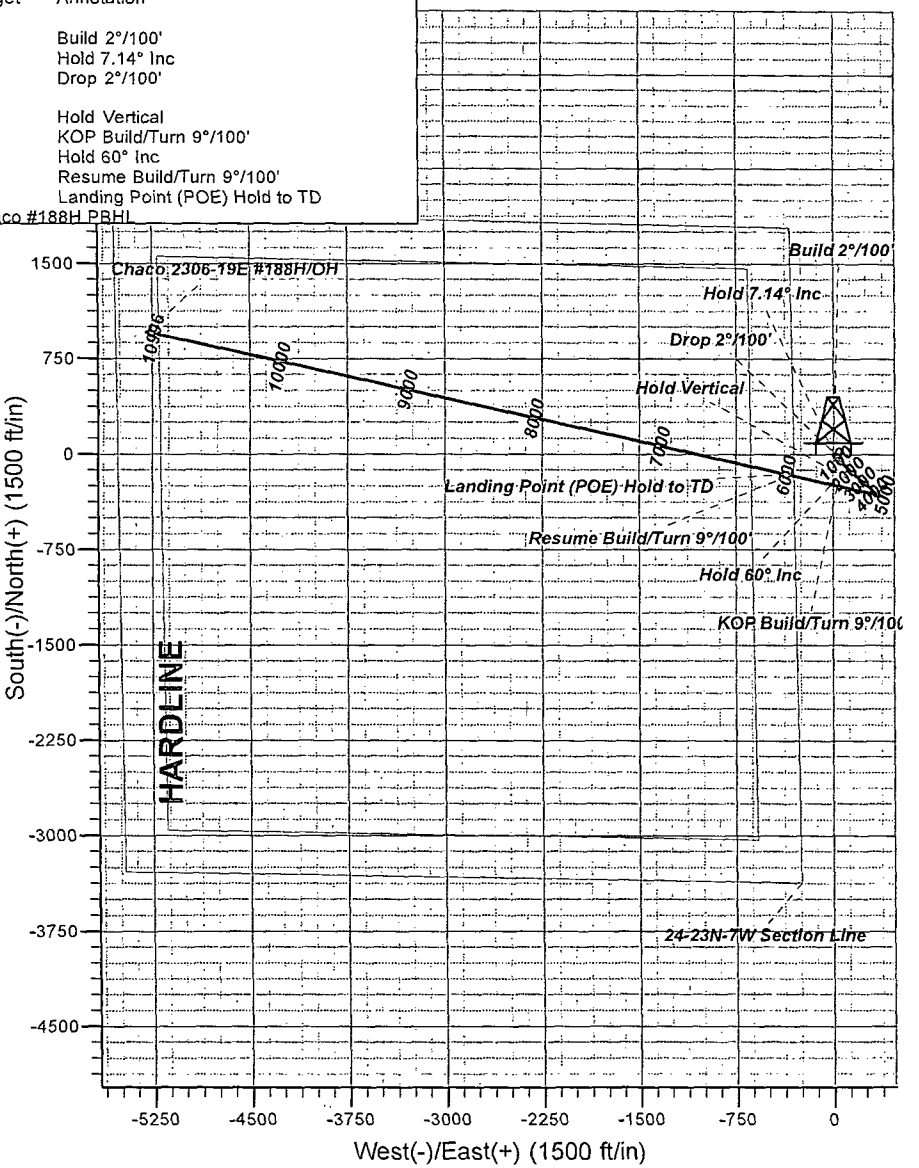
Azimuths to True Nort
Magnetic North: 8.8

Magnetic Fiel
Strength: 49885.1sn
Dip Angle: 61.0
Date: 6/28/201
Model: HDGI

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2	550.00	0.00	0.00	550.00	0.00	0.00	0.00	0.00	0.00		Build 2°/100'
3	907.08	7.14	132.86	906.16	-15.12	16.29	2.00	132.86	-18.73		Hold 7.14° Inc
4	4333.76	7.14	132.86	4306.25	-304.88	328.58	0.00	0.00	-377.72		Drop 2°/100'
5	4690.84	0.00	0.00	4662.41	-320.00	344.87	2.00	180.00	-396.45		
6	4840.84	0.00	0.00	4812.41	-320.00	344.87	0.00	0.00	-396.45		Hold Vertical
7	5507.51	60.00	282.75	5363.74	-249.75	34.41	9.00	282.75	-78.44		KOP Build/Turn 9°/100'
8	5567.51	60.00	282.75	5393.74	-238.28	-16.27	0.00	0.00	-26.52		Hold 60° Inc
9	5909.58	90.72	284.20	5479.18	-161.79	-334.20	8.99	2.84	299.96		Resume Build/Turn 9°/100'
10	5925.83	90.57	282.75	5479.00	-158.00	-350.00	8.99	-95.71	316.17		Landing Point (POE) Hold to TD
11	10995.73	90.56	282.74	5429.00	960.57	-5294.72	0.00	-145.36	5381.14	Chaco #188H PBHL	





Database:	Grand Junction District	**Local Co-ordinate Reference:**	Well Chaco 2306-19E #188H
Company:	WPX Energy Rocky Mountain, LLC	**TVD Reference:**	GL 6965' & RKB 14' @ 6979.00ft
Project:	Sandoval County, NM NAD27	**MD Reference:**	GL 6965' & RKB 14' @ 6979.00ft
Site:	Chaco 2306-19E	**North Reference:**	True
Well:	Chaco 2306-19E #188H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3		

Project	Sandoval County, NM NAD27		
Map System:	US State Plane 1927 (Exact solution)	**System Datum:**	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico Central 3002		

Site	Chaco 2306-19E				
Site Position:		**Northing:**	1,899,266.26 usft	**Latitude:**	36° 12' 47.628 N
From:	Lat/Long	**Easting:**	126,313.58 usft	**Longitude:**	107° 31' 0.264 W
Position Uncertainty:	0.00 ft	**Slot Radius:**	13.200 in	**Grid Convergence:**	-0.75 °

Well	Chaco 2306-19E #188H					
Well Position	**+N/-S**	0.00 ft	**Northing:**	1,899,288.11 usft	**Latitude:**	36° 12' 47.844 N
	+E/-W	0.00 ft	**Easting:**	126,313.86 usft	**Longitude:**	107° 31' 0.264 W
Position Uncertainty		0.00 ft	**Wellhead Elevation:**	0.00 ft	**Ground Level:**	6,965.00 ft

Wellbore	OH				
Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	HDGM	6/28/2014	8.85	61.05	49,885

Design	Plan #3				
Audit Notes:					
Version:		**Phase:**	PLAN	**Tie On Depth:**	0.00
Vertical Section:	**Depth From (TVD) (ft)**	**+N/-S (ft)**	**+E/-W (ft)**	**Direction (°)**	
	0.00	0.00	0.00	280.28	

Plan Sections

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
550.00	0.00	0.00	550.00	0.00	0.00	0.00	0.00	0.00	0.00	
907.08	7.14	132.86	906.16	-15.12	16.29	2.00	2.00	0.00	132.86	
4,333.76	7.14	132.86	4,306.25	-304.88	328.58	0.00	0.00	0.00	0.00	
4,690.84	0.00	0.00	4,662.41	-320.00	344.87	2.00	-2.00	0.00	180.00	
4,840.84	0.00	0.00	4,812.41	-320.00	344.87	0.00	0.00	0.00	0.00	
5,507.51	60.00	282.75	5,363.74	-249.75	34.41	9.00	9.00	0.00	282.75	
5,567.51	60.00	282.75	5,393.74	-238.28	-16.27	0.00	0.00	0.00	0.00	
5,909.58	90.72	284.20	5,479.18	-161.79	-334.20	8.99	8.98	0.42	2.84	
5,925.83	90.57	282.75	5,479.00	-158.00	-350.00	8.99	-0.90	-8.94	-95.71	Chaco #188H POE
10,995.73	90.56	282.74	5,429.00	960.57	-5,294.72	0.00	0.00	0.00	-145.36	Chaco #188H PBHL

Database:	Grand Junction District	**Local Co-ordinate Reference:**	Well Chaco 2306-19E #188H
Company:	WPX Energy Rocky Mountain, LLC	**TVD Reference:**	GL 6965' & RKB 14' @ 6979.00ft
Project:	Sandoval County, NM NAD27	**MD Reference:**	GL 6965' & RKB 14' @ 6979.00ft
Site:	Chaco 2306-19E	**North Reference:**	True
Well:	Chaco 2306-19E #188H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.00	0.00	0.00	0.00	0.00	0.00	1,899,288.11	126,313.86	36° 12' 47.844 N	107° 31' 0.264 W
100.00	0.00	0.00	100.00	0.00	0.00	1,899,288.11	126,313.86	36° 12' 47.844 N	107° 31' 0.264 W
200.00	0.00	0.00	200.00	0.00	0.00	1,899,288.11	126,313.86	36° 12' 47.844 N	107° 31' 0.264 W
300.00	0.00	0.00	300.00	0.00	0.00	1,899,288.11	126,313.86	36° 12' 47.844 N	107° 31' 0.264 W
400.00	0.00	0.00	400.00	0.00	0.00	1,899,288.11	126,313.86	36° 12' 47.844 N	107° 31' 0.264 W
500.00	0.00	0.00	500.00	0.00	0.00	1,899,288.11	126,313.86	36° 12' 47.844 N	107° 31' 0.264 W
550.00	0.00	0.00	550.00	0.00	0.00	1,899,288.11	126,313.86	36° 12' 47.844 N	107° 31' 0.264 W
Build 2°/100'									
600.00	1.00	132.86	600.00	-0.30	0.32	1,899,287.80	126,314.18	36° 12' 47.841 N	107° 31' 0.260 W
700.00	3.00	132.86	699.93	-2.67	2.88	1,899,285.40	126,316.71	36° 12' 47.818 N	107° 31' 0.229 W
800.00	5.00	132.86	799.68	-7.41	7.99	1,899,280.59	126,321.76	36° 12' 47.771 N	107° 31' 0.166 W
900.00	7.00	132.86	899.13	-14.52	15.65	1,899,273.38	126,329.33	36° 12' 47.700 N	107° 31' 0.073 W
907.08	7.14	132.86	906.16	-15.12	16.29	1,899,272.78	126,329.96	36° 12' 47.695 N	107° 31' 0.065 W
1,000.00	7.14	132.86	998.36	-22.97	24.76	1,899,264.81	126,338.32	36° 12' 47.617 N	107° 30' 59.962 W
1,057.00	7.14	132.86	1,054.91	-27.79	29.95	1,899,259.92	126,343.45	36° 12' 47.569 N	107° 30' 59.898 W
Hold 10.14° Inc									
1,100.00	7.14	132.86	1,097.58	-31.43	33.87	1,899,256.24	126,347.32	36° 12' 47.533 N	107° 30' 59.851 W
1,200.00	7.14	132.86	1,196.80	-39.89	42.99	1,899,247.66	126,356.33	36° 12' 47.450 N	107° 30' 59.739 W
1,300.00	7.14	132.86	1,296.03	-48.34	52.10	1,899,239.09	126,365.33	36° 12' 47.366 N	107° 30' 59.628 W
1,400.00	7.14	132.86	1,395.25	-56.80	61.21	1,899,230.51	126,374.33	36° 12' 47.282 N	107° 30' 59.517 W
1,500.00	7.14	132.86	1,494.48	-65.26	70.33	1,899,221.94	126,383.33	36° 12' 47.199 N	107° 30' 59.406 W
1,600.00	7.14	132.86	1,593.70	-73.71	79.44	1,899,213.36	126,392.33	36° 12' 47.115 N	107° 30' 59.295 W
1,700.00	7.14	132.86	1,692.92	-82.17	88.55	1,899,204.79	126,401.34	36° 12' 47.031 N	107° 30' 59.183 W
1,800.00	7.14	132.86	1,792.15	-90.62	97.67	1,899,196.21	126,410.34	36° 12' 46.948 N	107° 30' 59.072 W
1,900.00	7.14	132.86	1,891.37	-99.08	106.78	1,899,187.64	126,419.34	36° 12' 46.864 N	107° 30' 58.961 W
2,000.00	7.14	132.86	1,990.60	-107.54	115.89	1,899,179.06	126,428.34	36° 12' 46.781 N	107° 30' 58.850 W
2,100.00	7.14	132.86	2,089.82	-115.99	125.01	1,899,170.49	126,437.34	36° 12' 46.697 N	107° 30' 58.739 W
2,200.00	7.14	132.86	2,189.05	-124.45	134.12	1,899,161.92	126,446.35	36° 12' 46.613 N	107° 30' 58.627 W
2,300.00	7.14	132.86	2,288.27	-132.90	143.23	1,899,153.34	126,455.35	36° 12' 46.530 N	107° 30' 58.516 W
2,400.00	7.14	132.86	2,387.49	-141.36	152.35	1,899,144.77	126,464.35	36° 12' 46.446 N	107° 30' 58.405 W
2,500.00	7.14	132.86	2,486.72	-149.82	161.46	1,899,136.19	126,473.35	36° 12' 46.363 N	107° 30' 58.294 W
2,503.00	7.14	132.86	2,489.69	-150.07	161.73	1,899,135.94	126,473.62	36° 12' 46.360 N	107° 30' 58.291 W
Drop 2°/100'									
2,600.00	7.14	132.86	2,585.94	-158.27	170.57	1,899,127.62	126,482.35	36° 12' 46.279 N	107° 30' 58.183 W
2,700.00	7.14	132.86	2,685.17	-166.73	179.69	1,899,119.04	126,491.36	36° 12' 46.195 N	107° 30' 58.072 W
2,800.00	7.14	132.86	2,784.39	-175.19	188.80	1,899,110.47	126,500.36	36° 12' 46.112 N	107° 30' 57.960 W
2,900.00	7.14	132.86	2,883.61	-183.64	197.91	1,899,101.89	126,509.36	36° 12' 46.028 N	107° 30' 57.849 W
3,000.00	7.14	132.86	2,982.84	-192.10	207.03	1,899,093.32	126,518.36	36° 12' 45.944 N	107° 30' 57.738 W
3,010.00	7.14	132.86	2,992.76	-192.94	207.94	1,899,092.46	126,519.26	36° 12' 45.936 N	107° 30' 57.727 W
Hold Vertical									
3,100.00	7.14	132.86	3,082.06	-200.55	216.14	1,899,084.75	126,527.37	36° 12' 45.861 N	107° 30' 57.627 W
3,200.00	7.14	132.86	3,181.29	-209.01	225.25	1,899,076.17	126,536.37	36° 12' 45.777 N	107° 30' 57.516 W
3,300.00	7.14	132.86	3,280.51	-217.47	234.37	1,899,067.60	126,545.37	36° 12' 45.694 N	107° 30' 57.404 W
3,400.00	7.14	132.86	3,379.74	-225.92	243.48	1,899,059.02	126,554.37	36° 12' 45.610 N	107° 30' 57.293 W
3,500.00	7.14	132.86	3,478.96	-234.38	252.59	1,899,050.45	126,563.37	36° 12' 45.526 N	107° 30' 57.182 W
3,600.00	7.14	132.86	3,578.18	-242.83	261.71	1,899,041.87	126,572.38	36° 12' 45.443 N	107° 30' 57.071 W
3,700.00	7.14	132.86	3,677.41	-251.29	270.82	1,899,033.30	126,581.38	36° 12' 45.359 N	107° 30' 56.960 W
3,800.00	7.14	132.86	3,776.63	-259.75	279.93	1,899,024.72	126,590.38	36° 12' 45.276 N	107° 30' 56.848 W
3,900.00	7.14	132.86	3,875.86	-268.20	289.05	1,899,016.15	126,599.38	36° 12' 45.192 N	107° 30' 56.737 W
4,000.00	7.14	132.86	3,975.08	-276.66	298.16	1,899,007.58	126,608.38	36° 12' 45.108 N	107° 30' 56.626 W
4,100.00	7.14	132.86	4,074.31	-285.12	307.27	1,898,999.00	126,617.39	36° 12' 45.025 N	107° 30' 56.515 W
4,200.00	7.14	132.86	4,173.53	-293.57	316.39	1,898,990.43	126,626.39	36° 12' 44.941 N	107° 30' 56.404 W
4,300.00	7.14	132.86	4,272.75	-302.03	325.50	1,898,981.85	126,635.39	36° 12' 44.857 N	107° 30' 56.292 W
4,333.76	7.14	132.86	4,306.25	-304.88	328.58	1,898,978.96	126,638.43	36° 12' 44.829 N	107° 30' 56.255 W

Database:	Grand Junction District	**Local Co-ordinate Reference:**	Well Chaco 2306-19E #188H
Company:	WPX Energy Rocky Mountain, LLC	**TVD Reference:**	GL 6965' & RKB 14' @ 6979.00ft
Project:	Sandoval County, NM NAD27	**MD Reference:**	GL 6965' & RKB 14' @ 6979.00ft
Site:	Chaco 2306-19E	**North Reference:**	True
Well:	Chaco 2306-19E #188H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
4,400.00	5.82	132.86	4,372.07	-309.97	334.06	1,898,973.80	126,643.84	36° 12' 44.779 N	107° 30' 56.188 W
4,500.00	3.82	132.86	4,471.71	-315.68	340.21	1,898,968.01	126,649.92	36° 12' 44.722 N	107° 30' 56.113 W
4,600.00	1.82	132.86	4,571.58	-319.02	343.81	1,898,964.62	126,653.48	36° 12' 44.689 N	107° 30' 56.069 W
4,690.84	0.00	0.00	4,662.41	-320.00	344.87	1,898,963.63	126,654.52	36° 12' 44.680 N	107° 30' 56.056 W
4,700.00	0.00	0.00	4,671.57	-320.00	344.87	1,898,963.63	126,654.52	36° 12' 44.680 N	107° 30' 56.056 W
4,800.00	0.00	0.00	4,771.57	-320.00	344.87	1,898,963.63	126,654.52	36° 12' 44.680 N	107° 30' 56.056 W
4,840.46	0.00	0.00	4,812.03	-320.00	344.87	1,898,963.63	126,654.52	36° 12' 44.680 N	107° 30' 56.056 W
KOP Build/Turn 9.2°/100'									
4,840.84	0.00	0.00	4,812.41	-320.00	344.87	1,898,963.63	126,654.52	36° 12' 44.680 N	107° 30' 56.056 W
4,900.00	5.32	282.75	4,871.48	-319.39	342.19	1,898,964.27	126,651.85	36° 12' 44.686 N	107° 30' 56.089 W
5,000.00	14.32	282.75	4,969.92	-315.63	325.57	1,898,968.25	126,635.28	36° 12' 44.723 N	107° 30' 56.292 W
5,100.00	23.32	282.75	5,064.47	-308.52	294.13	1,898,975.77	126,603.94	36° 12' 44.793 N	107° 30' 56.675 W
5,200.00	32.32	282.75	5,152.82	-298.23	248.65	1,898,986.66	126,558.60	36° 12' 44.895 N	107° 30' 57.230 W
5,300.00	41.32	282.75	5,232.78	-285.01	190.25	1,899,000.63	126,500.37	36° 12' 45.026 N	107° 30' 57.943 W
5,400.00	50.32	282.75	5,302.40	-269.20	120.37	1,899,017.36	126,430.71	36° 12' 45.182 N	107° 30' 58.795 W
5,492.63	58.66	282.75	5,356.15	-252.57	46.89	1,899,034.94	126,357.45	36° 12' 45.346 N	107° 30' 59.692 W
Hold 60° Inc									
5,500.00	59.32	282.75	5,359.95	-251.18	40.73	1,899,036.42	126,351.31	36° 12' 45.360 N	107° 30' 59.767 W
5,507.51	60.00	282.75	5,363.74	-249.75	34.41	1,899,037.93	126,345.01	36° 12' 45.374 N	107° 30' 59.844 W
5,567.51	60.00	282.75	5,393.74	-238.28	-16.27	1,899,050.06	126,294.48	36° 12' 45.488 N	107° 31' 0.463 W
5,577.28	60.88	282.80	5,398.56	-236.40	-24.56	1,899,052.04	126,286.22	36° 12' 45.506 N	107° 31' 0.564 W
Resume Build/Turn 9°/100'									
5,600.00	62.92	282.91	5,409.26	-231.94	-44.10	1,899,056.76	126,266.74	36° 12' 45.550 N	107° 31' 0.802 W
5,700.00	71.90	283.37	5,447.64	-210.97	-133.91	1,899,078.91	126,177.21	36° 12' 45.758 N	107° 31' 1.898 W
5,800.00	80.87	283.78	5,471.16	-188.18	-228.29	1,899,102.93	126,083.14	36° 12' 45.983 N	107° 31' 3.050 W
5,900.00	89.85	284.17	5,479.23	-164.13	-324.91	1,899,128.23	125,986.83	36° 12' 46.221 N	107° 31' 4.229 W
5,909.58	90.72	284.20	5,479.18	-161.79	-334.20	1,899,130.70	125,977.57	36° 12' 46.244 N	107° 31' 4.342 W
5,917.28	90.65	283.51	5,479.09	-159.94	-341.68	1,899,132.64	125,970.13	36° 12' 46.262 N	107° 31' 4.433 W
Landing Point (POE) Hold to TD									
5,925.83	90.57	282.75	5,479.00	-158.00	-350.00	1,899,134.69	125,961.83	36° 12' 46.282 N	107° 31' 4.535 W
Chaco #188H POE									
6,000.00	90.57	282.75	5,478.26	-141.63	-422.34	1,899,152.00	125,889.71	36° 12' 46.443 N	107° 31' 5.417 W
6,100.00	90.57	282.75	5,477.27	-119.56	-519.87	1,899,175.34	125,792.48	36° 12' 46.662 N	107° 31' 6.607 W
6,200.00	90.57	282.75	5,476.27	-97.49	-617.40	1,899,198.68	125,695.24	36° 12' 46.880 N	107° 31' 7.797 W
6,300.00	90.57	282.75	5,475.28	-75.43	-714.93	1,899,222.02	125,598.01	36° 12' 47.098 N	107° 31' 8.987 W
6,400.00	90.57	282.75	5,474.29	-53.36	-812.46	1,899,245.36	125,500.78	36° 12' 47.316 N	107° 31' 10.177 W
6,500.00	90.57	282.75	5,473.29	-31.29	-909.99	1,899,268.70	125,403.55	36° 12' 47.534 N	107° 31' 11.367 W
6,600.00	90.57	282.75	5,472.30	-9.22	-1,007.52	1,899,292.04	125,306.31	36° 12' 47.753 N	107° 31' 12.558 W
6,700.00	90.57	282.75	5,471.31	12.84	-1,105.05	1,899,315.38	125,209.08	36° 12' 47.971 N	107° 31' 13.748 W
6,800.00	90.57	282.75	5,470.32	34.91	-1,202.58	1,899,338.72	125,111.85	36° 12' 48.189 N	107° 31' 14.938 W
6,900.00	90.57	282.75	5,469.32	56.98	-1,300.11	1,899,362.06	125,014.61	36° 12' 48.407 N	107° 31' 16.128 W
7,000.00	90.57	282.75	5,468.33	79.04	-1,397.64	1,899,385.40	124,917.38	36° 12' 48.625 N	107° 31' 17.318 W
7,100.00	90.57	282.75	5,467.34	101.11	-1,495.17	1,899,408.74	124,820.15	36° 12' 48.843 N	107° 31' 18.508 W
7,200.00	90.57	282.75	5,466.35	123.17	-1,592.70	1,899,432.08	124,722.91	36° 12' 49.062 N	107° 31' 19.698 W
7,300.00	90.57	282.75	5,465.36	145.24	-1,690.23	1,899,455.41	124,625.68	36° 12' 49.280 N	107° 31' 20.888 W
7,400.00	90.57	282.75	5,464.37	167.31	-1,787.76	1,899,478.75	124,528.45	36° 12' 49.498 N	107° 31' 22.078 W
7,500.00	90.57	282.75	5,463.38	189.37	-1,885.29	1,899,502.09	124,431.21	36° 12' 49.716 N	107° 31' 23.268 W
7,600.00	90.57	282.75	5,462.39	211.44	-1,982.82	1,899,525.43	124,333.98	36° 12' 49.934 N	107° 31' 24.458 W
7,700.00	90.57	282.75	5,461.40	233.50	-2,080.35	1,899,548.76	124,236.75	36° 12' 50.152 N	107° 31' 25.648 W
7,800.00	90.57	282.75	5,460.42	255.56	-2,177.88	1,899,572.10	124,139.51	36° 12' 50.370 N	107° 31' 26.838 W
7,900.00	90.57	282.75	5,459.43	277.63	-2,275.41	1,899,595.44	124,042.28	36° 12' 50.588 N	107° 31' 28.028 W
8,000.00	90.57	282.75	5,458.44	299.69	-2,372.94	1,899,618.77	123,945.05	36° 12' 50.807 N	107° 31' 29.218 W
8,100.00	90.57	282.75	5,457.45	321.76	-2,470.47	1,899,642.11	123,847.81	36° 12' 51.025 N	107° 31' 30.408 W
8,200.00	90.57	282.75	5,456.46	343.82	-2,568.00	1,899,665.44	123,750.58	36° 12' 51.243 N	107° 31' 31.599 W

Database:	Grand Junction District	**Local Co-ordinate Reference:**	Well Chaco 2306-19E #188H
Company:	WPX Energy Rocky Mountain, LLC	**TVD Reference:**	GL 6965' & RKB 14' @ 6979.00ft
Project:	Sandoval County, NM NAD27	**MD Reference:**	GL 6965' & RKB 14' @ 6979.00ft
Site:	Chaco 2306-19E	**North Reference:**	True
Well:	Chaco 2306-19E #188H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
8,300.00	90.57	282.75	5,455.48	365.88	-2,665.53	1,899,688.78	123,653.34	36° 12' 51.461 N	107° 31' 32.789 W
8,400.00	90.57	282.75	5,454.49	387.95	-2,763.06	1,899,712.11	123,556.11	36° 12' 51.679 N	107° 31' 33.979 W
8,500.00	90.56	282.75	5,453.50	410.01	-2,860.59	1,899,735.45	123,458.88	36° 12' 51.897 N	107° 31' 35.169 W
8,600.00	90.56	282.75	5,452.52	432.07	-2,958.12	1,899,758.78	123,361.64	36° 12' 52.115 N	107° 31' 36.359 W
8,700.00	90.56	282.75	5,451.53	454.13	-3,055.65	1,899,782.12	123,264.41	36° 12' 52.333 N	107° 31' 37.549 W
8,800.00	90.56	282.75	5,450.55	476.20	-3,153.19	1,899,805.45	123,167.17	36° 12' 52.551 N	107° 31' 38.739 W
8,900.00	90.56	282.75	5,449.56	498.26	-3,250.72	1,899,828.79	123,069.94	36° 12' 52.769 N	107° 31' 39.929 W
9,000.00	90.56	282.75	5,448.58	520.32	-3,348.25	1,899,852.12	122,972.71	36° 12' 52.987 N	107° 31' 41.119 W
9,100.00	90.56	282.75	5,447.59	542.38	-3,445.78	1,899,875.45	122,875.47	36° 12' 53.205 N	107° 31' 42.309 W
9,200.00	90.56	282.75	5,446.61	564.44	-3,543.31	1,899,898.79	122,778.24	36° 12' 53.423 N	107° 31' 43.500 W
9,300.00	90.56	282.75	5,445.63	586.50	-3,640.84	1,899,922.12	122,681.00	36° 12' 53.641 N	107° 31' 44.690 W
9,400.00	90.56	282.75	5,444.64	608.57	-3,738.37	1,899,945.45	122,583.77	36° 12' 53.859 N	107° 31' 45.880 W
9,500.00	90.56	282.75	5,443.66	630.63	-3,835.90	1,899,968.79	122,486.53	36° 12' 54.077 N	107° 31' 47.070 W
9,600.00	90.56	282.75	5,442.68	652.69	-3,933.44	1,899,992.12	122,389.30	36° 12' 54.295 N	107° 31' 48.260 W
9,700.00	90.56	282.74	5,441.70	674.75	-4,030.97	1,900,015.45	122,292.06	36° 12' 54.513 N	107° 31' 49.450 W
9,800.00	90.56	282.74	5,440.71	696.81	-4,128.50	1,900,038.78	122,194.83	36° 12' 54.731 N	107° 31' 50.640 W
9,900.00	90.56	282.74	5,439.73	718.87	-4,226.03	1,900,062.12	122,097.59	36° 12' 54.949 N	107° 31' 51.830 W
10,000.00	90.56	282.74	5,438.75	740.93	-4,323.56	1,900,085.45	122,000.36	36° 12' 55.167 N	107° 31' 53.020 W
10,100.00	90.56	282.74	5,437.77	762.98	-4,421.09	1,900,108.78	121,903.12	36° 12' 55.385 N	107° 31' 54.211 W
10,200.00	90.56	282.74	5,436.79	785.04	-4,518.63	1,900,132.11	121,805.89	36° 12' 55.603 N	107° 31' 55.401 W
10,300.00	90.56	282.74	5,435.81	807.10	-4,616.16	1,900,155.44	121,708.65	36° 12' 55.821 N	107° 31' 56.591 W
10,400.00	90.56	282.74	5,434.83	829.16	-4,713.69	1,900,178.77	121,611.42	36° 12' 56.039 N	107° 31' 57.781 W
10,500.00	90.56	282.74	5,433.85	851.22	-4,811.22	1,900,202.10	121,514.18	36° 12' 56.257 N	107° 31' 58.971 W
10,600.00	90.56	282.74	5,432.87	873.28	-4,908.75	1,900,225.43	121,416.95	36° 12' 56.475 N	107° 32' 0.161 W
10,700.00	90.56	282.74	5,431.89	895.34	-5,006.28	1,900,248.76	121,319.71	36° 12' 56.693 N	107° 32' 1.351 W
10,800.00	90.56	282.74	5,430.91	917.39	-5,103.82	1,900,272.09	121,222.48	36° 12' 56.911 N	107° 32' 2.542 W
10,900.00	90.56	282.74	5,429.94	939.45	-5,201.35	1,900,295.42	121,125.24	36° 12' 57.129 N	107° 32' 3.732 W
10,995.73	90.56	282.74	5,429.00	960.57	-5,294.72	1,900,317.76	121,032.16	36° 12' 57.338 N	107° 32' 4.871 W
Chaco #188H PBHL									

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Chaco #188H PBHL - plan hits target center - Point	0.00	0.00	5,429.00	960.57	-5,294.72	1,900,317.76	121,032.16	36° 12' 57.338 N	107° 32' 4.871 W
Chaco #188H POE - plan hits target center - Point	0.00	0.00	5,479.00	-158.00	-350.00	1,899,134.69	125,961.83	36° 12' 46.282 N	107° 31' 4.535 W

Database:	Grand Junction District	**Local Co-ordinate Reference:**	Well Chaco 2306-19E #188H
Company:	WPX Energy Rocky Mountain, LLC	**TVD Reference:**	GL 6965' & RKB 14' @ 6979.00ft
Project:	Sandoval County, NM NAD27	**MD Reference:**	GL 6965' & RKB 14' @ 6979.00ft
Site:	Chaco 2306-19E	**North Reference:**	True
Well:	Chaco 2306-19E #188H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3		

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
550.00	550.00	0.00	0.00	Build 2°/100'
1,057.00	1,054.36	-36.65	25.67	Hold 10.14° Inc
2,503.00	2,477.78	-245.15	171.66	Drop 2°/100'
3,010.00	2,982.38	-279.54	195.73	Hold Vertical
4,840.46	4,812.84	-279.51	195.63	KOP Build/Turn 9.2°/100'
5,492.63	5,348.79	-209.08	-114.90	Hold 60° Inc
5,577.28	5,391.12	-192.86	-186.40	Resume Build/Turn 9°/100'
5,917.28	5,478.44	-121.09	-502.79	Landing Point (POE) Hold to TD