

State of New Mexico
Energy, Minerals and Natural Resources Department

Susana Martinez
Governor

David Martin
Cabinet Secretary

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

David R. Catanach, Division Director
Oil Conservation Division



New Mexico Oil Conservation Division approval and conditions listed below are made in accordance with OCD Rule 19.15.7.11 and are in addition to the actions approved by BLM on the following 3160-4 or 3160-5 form.

Operator Signature Date: 3/24/2015

Well information:

API WELL #	Well Name	Well #	Operator Name	Type	Stat	County	Surf_Owner	UL	Sec	Twp	N/S	Rng	W/E
30-039-31227-00-00	CHACO 2307 17H	275H	WPX ENERGY PRODUCTION, LLC	G	N	Rio Arriba	F	H	17	23	N	7	W

Drilling/Casing Change

Conditions of Approval:

(See the below checked and additional 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 & **Verification of type of well (Oil or Gas)**
- ☐ Spacing rule violation. Operator must follow up with change of status notification on other well to be shut in or abandoned
- ☐ Ensure compliance with 19.15.17
- ☐ Once the well is spud, to prevent ground water-contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string
- ☒ Regarding Hydraulic Fracturing, review EPA Underground Injection Control Guidance 84
- ☒ Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system.
- ☒ Well-bore communication is regulated under 19.15.29 NMAC. This requires well-bore Communication to be reported in accordance with 19.15.29.8.

Additional requirements:

Must resubmit request for NSL, NSP, and DHC with correct directional and perforation information.

The activities are in violation; action pending.

API # on Sundry is incorrect should be county 039

NMOCD Approved by Signature

4-29-15

Date

RECEIVED

Form 3160-5
(February 2005)UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

MAR 20 2015

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.

5. Lease Serial No. NMNM 058877
6. Indian, Allottee or Tribe Name
7. If Unit of CA/Agreement, Name and/or No.
8. Well Name and No. Chaco 2307 17H #275H
9. API Well No. 30-045-31227
10. Field and Pool or Exploratory Area Basin Mancos
11. Country or Parish, State Rio Arriba, NM

SUBMIT IN TRIPLICATE - Other instructions on page 2.

1. Type of Well ☒ Oil Well ☐ Gas Well ☐ Other		7. If Unit of CA/Agreement, Name and/or No.
2. Name of Operator WPX Energy Production, LLC		8. Well Name and No. Chaco 2307 17H #275H
3a. Address PO Box 640 Aztec, NM 87410	3b. Phone No. (include area code) 505-333-1816	9. API Well No. 30-045-31227
4. Location of Well (Footage, Sec., T., R., M., or Survey Description) SHL: 1849' FNL & 372' FEL SEC 17 T23N R7W BHL: 380' FNL & 230' FWL SEC 17 T23N R7W		10. Field and Pool or Exploratory Area Basin Mancos
		11. Country or Parish, State Rio Arriba, 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
☐ Subsequent Report	☐ Alter Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☐ Other
	☒ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
	☐ 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 recompletable 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 recompletable 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 changed the directional plans on the Chaco 2307-17H #275H well after the completed approved APD packet was issued. Inadvertently the NOI sundry with the change was not submitted. The well was drilled using the new directional and ops plans. Verbal notification was made to Troy Salyers on 3/13/15. Troy requested WPX to submit an NOI sundry for all noted changes. Attached are the updated As-Drilled C102, OPS and Directional Plans.

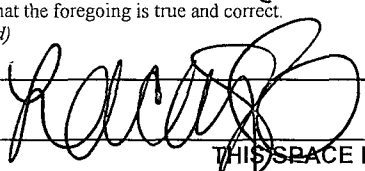
OIL CONS. DIV DIST. 3

CONDITIONS OF APPROVAL

Adhere to previously issued stipulations

MAR 30 2015

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) Lacey Granillo		Title Permit Tech III	
Signature 		Date 3/20/15	
THIS SPACE FOR FEDERAL OR STATE OFFICE USE			
Approved by William Tambekou		Title Petroleum Engineer	Date 3-24-15
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)

NMOCDAY

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

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

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

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

State of New Mexico
Energy, Minerals & Natural Resources Department

Form C-102
Revised August 1, 2011

Submit one copy to
Appropriate District Office

OIL CONSERVATION DIVISION

1220 South St. Francis Drive
Santa Fe, NM 87505

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

*API Number 30-039-31227	*Pool Code 97232 / 42289	*Pool Name BASIN MANCOS / LYBROOK GALLUP
*Property Code 3131810	*Property Name CHACO 2307-17H	*Well Number 275H
*OGAID No. 120782	*Operator Name WPX ENERGY PRODUCTION, LLC	*Elevation 7257'

¹⁰ Surface Location

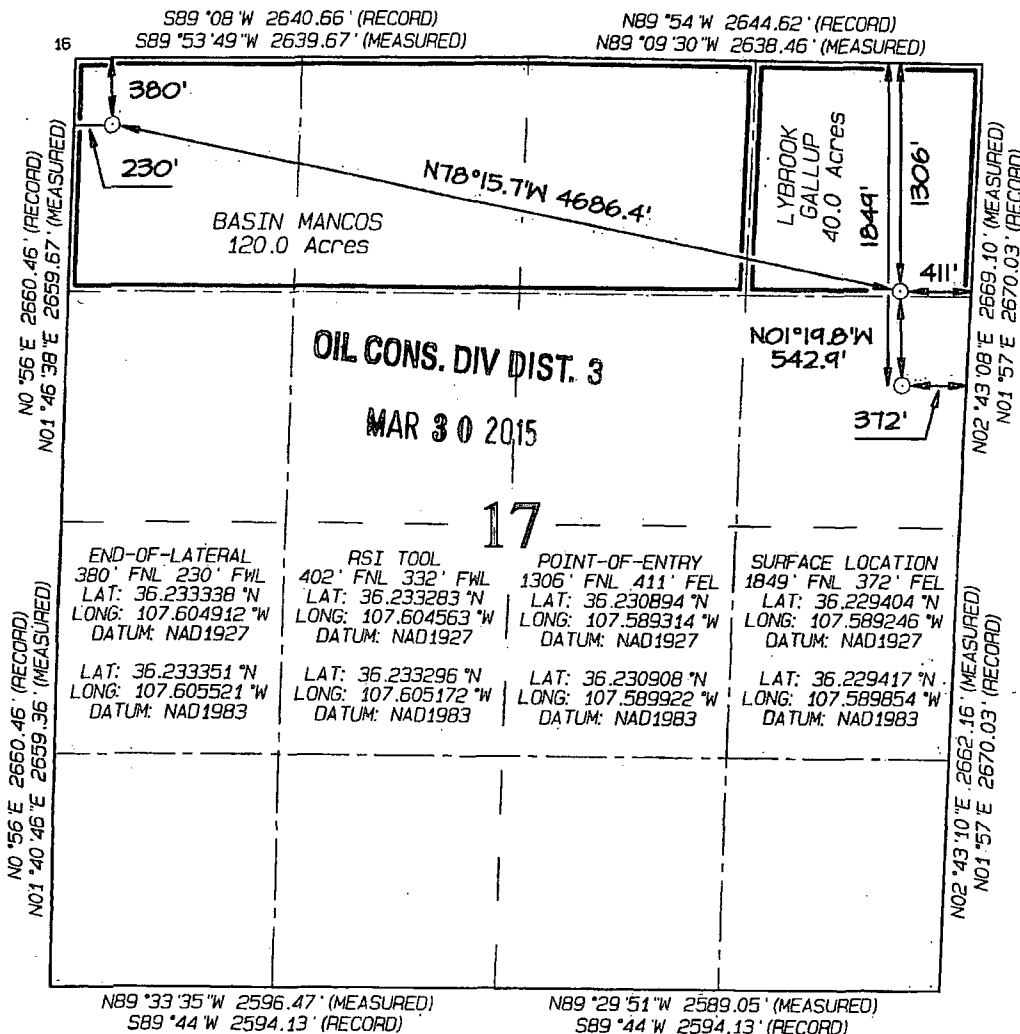
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
H	17	23N	7W		1849	NORTH	372	EAST	RIO ARriba

¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
D	17	23N	7W		380	NORTH	230	WEST	RIO ARriba

¹² Dedicated Acres 160.0 Acres - (N/2 N/2)	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



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: *[Signature]*
Date: 3/20/15
Printed Name: Jason C. Edwards
E-mail Address: jcedwards@wpk.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: MARCH 19, 2015
Survey Date: JANUARY 30, 2014

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: 3/2/2015 **FIELD:** Lybrook (Gallup)

WELL NAME: Chaco 2307-17M #275H **SURFACE:** BLM

SH Location: SENE Sec 17-23N-07W **ELEVATION:** 7257' GR

BH Location: SWNW Sec 17-23N-07W **MINERALS:** BLM
Rio Arriba, NM

MEASURED DEPTH: 10,923' **LEASE #:** ?????

I. GEOLOGY: Surface formation – San Jose

A. FORMATION TOPS: (KB)

Name	MD	TVD	Name	MD	TVD
Ojo Alamo	1467	1456	Point Lookout	4517	4439
Kirtland	1786	1768	Mancos	4662	4583
Picture Cliffs	2132	2106	Kickoff Point	5141	5061
Lewis	2255	2226	Top Target	5940	5677
Chacra	2554	2519	Landing Point	6204	5728
Cliff House	3651	3592	Base Target	6204	5728
Menefee	3679	3619			
			TD	10923	5708

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 3/4" Directional Vertical hole, and the curve portion of the wellbore. A LSND (WBM) or (OBM) will be used to drill the lateral portion of well. Treat for lost circulation as necessary. Obtain 100% returns prior to cementing. Notify Engineering of any mud losses.

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

NOTE: Vertical portion of the well (8-3/4 in.) will be directionally drilled as per attached Directional Plan to +/- 5,141 (MD) / 5,061' (TVD). Curve portion of wellbore will be drilled and landed at +/- 90 deg. at +/- 6,204' (MD) / 5,728' (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 +/- 10,923' (MD) / 5,708' (TVD). Will run 4-1/2 in. Production Liner from +/- 6,054 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"	6,204'	7"	23#	K-55
Prod. Liner	6.125"	6,054' - 10,923'	4-1/2"	11.6#	N-80
Tie-Back String	N/A	Surf. - 6,054'	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:** 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 (536.3 cu ft / 95.5 bbls). Mix Foamed Cement w/ +/- 75,000 SCF Nitrogen. Est. TOC +/- 5,513 ft.

IV. COMPLETION

A. CBL

1. Run CCL for perforating.

B. PRESSURE TEST

1. Pressure test 4-1/2" casing to 4500 psi max, hold at 1500 psi for 30 minutes. Increase pressure to Open RSI sleeves.

C. STIMULATION

1. Stimulate with approximately 2,805,000# 20/40 mesh sand and 340,000# 16/30 mesh sand in 619,113 gallons water with 42,696 mscf N2 for 17 stages.
2. Isolate stages with flow through frac plug.
3. Drill out frac plugs and flowback lateral.

D. RUNNING TUBING

1. Production Tubing: Run 2-7/8", 6.5#, J-55, EUE tubing with a SN on top of bottom joint. Land tubing near Top of Liner point of curve (~5,800' MD).

- Although this horizontal well will be drilled past the applicable setbacks, an unorthodox location application is not required because the completed interval in this well, as defined by 19.15.16.7 B(1) NMAC, will be entirely within the applicable setbacks. This approach complies with all applicable rules, including 19.15.16.14 A(3) NMAC, 19.15.16.14 B(2) NMAC, 19.15.16.15 B(2) NMAC, and 19.15.16.15 B(4) NMAC.

NOTE:

Installation of RSI sleeves at Toe of Lateral.

Proposed Operations:

A 4-1/2" 11.6# N-80 Liner will be run to TD and landed +/- 150 ft. into the 7" 23# K-55 Intermediate casing (set at 5,963 ft. MD) with a Liner Hanger and pack-off assembly then cemented to +/- 300 ft above the liner hanger. TOL will be +/- 5,813 ft. (MD) +/- 78 degree angle. TOC: +/- 5,513 ft. (MD).

After cementing and TOL clean up operations are complete, the TOL will be tested to 1500 psi (per BLM).

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

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

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



Company: WPX Energy Rocky Mountain, LLC
Project: Rio Arriba County, NM NAD27
Site: Chaco 2307-17H Pad
Well: Chaco 2307-17H #275H
Wellbore: OH
Design: Plan #1

PROJECT DETAILS: Rio Arriba 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



WELL DETAILS: Chaco 2307-17H #275H

Plan: Plan #1 (Chaco 2307-17H #275H/OH)

Created By: Robert Scott Date: 14:54, August 27 2014

GL 7257' & RKB 14' @ 7271.00ft (Aztec 730)
+N/-S +E/-W Northing Easting Latitude Longitude
0.00 0.00 1905440.18 105003.40 36° 13' 45.840 N 107° 35' 21.300 W

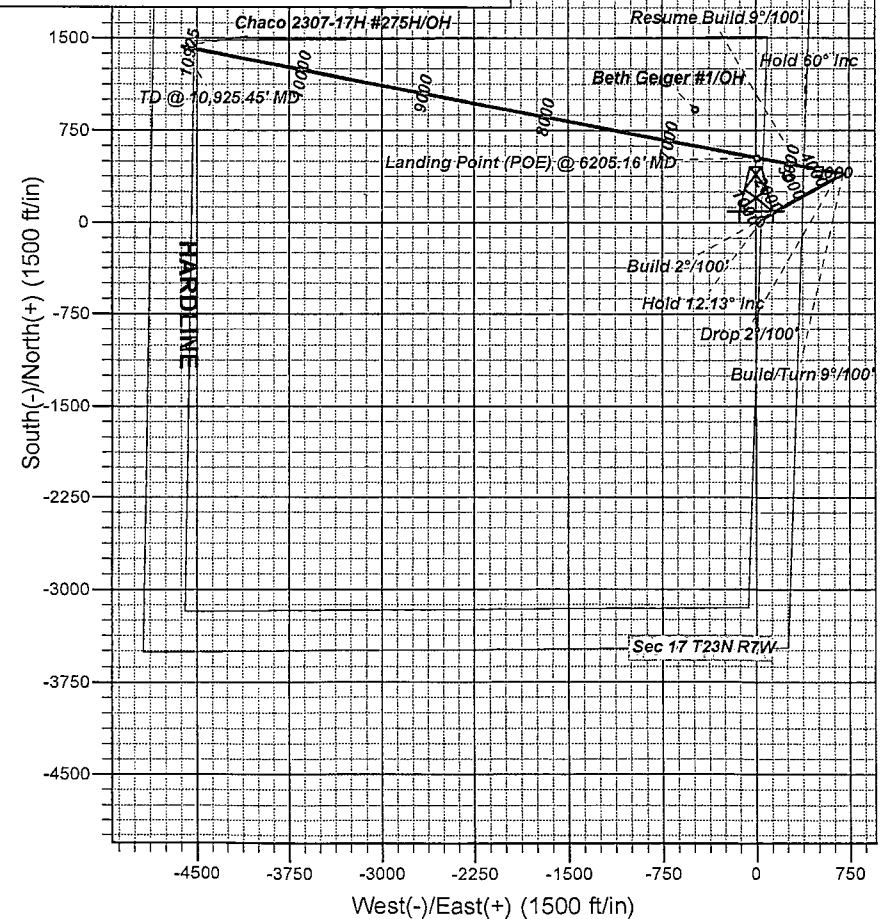
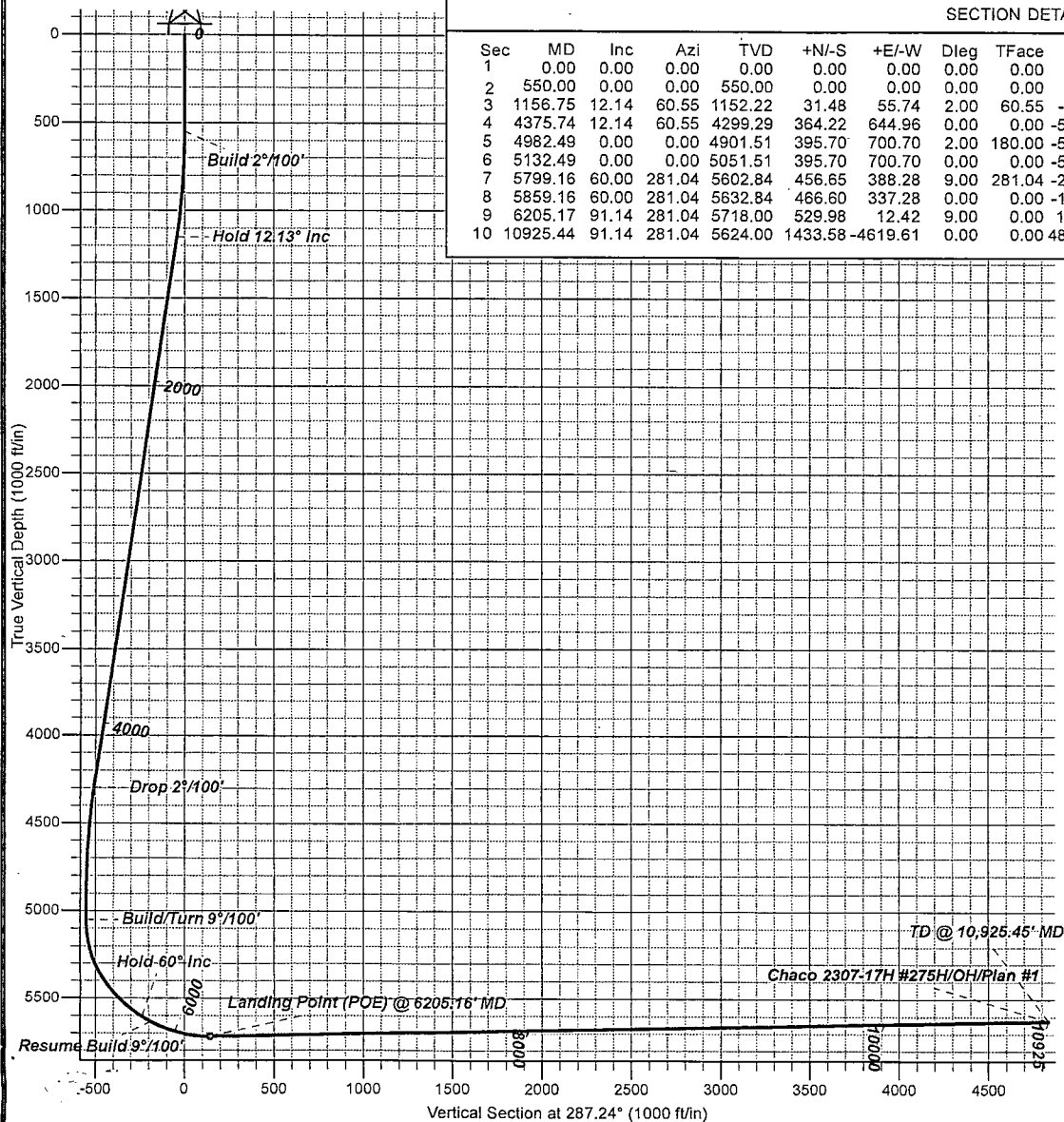


Azimuths to True North
Magnetic North: 9.45°

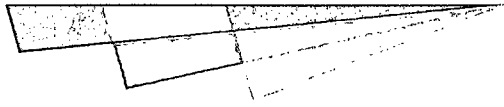
Magnetic Field
Strength: 50058.4nT
Dip Angle: 62.99°
Date: 8/27/2014
Model: BGGM2014

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	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	1156.75	12.14	60.55	1152.22	31.48	55.74	2.00	60.55	-43.91		Hold 12.13° Inc
4	4375.74	12.14	60.55	4299.29	364.22	644.96	0.00	0.00	-508.03		Drop 2°/100'
5	4982.49	0.00	0.00	4901.51	395.70	700.70	2.00	180.00	-551.94		
6	5132.49	0.00	0.00	5051.51	395.70	700.70	0.00	0.00	-551.94		Build/Turn 9°/100'
7	5799.16	60.00	281.04	5602.84	456.65	388.28	9.00	281.04	-235.49		Hold 60° Inc
8	5859.16	60.00	281.04	5632.84	466.60	337.28	0.00	0.00	-183.83		Resume Build 9°/100'
9	6205.17	91.14	281.04	5718.00	529.98	12.42	9.00	0.00	145.22		Landing Point (POE) @ 6205.16' MD
10	10925.44	91.14	281.04	5624.00	1433.58	-4619.61	0.00	0.00	4836.93	Chaco 175H PBHL	TD @ 10,925.45' MD



WPXENERGYSM



WPX Energy Rocky Mountain, LLC

Rio Arriba County, NM NAD27

Chaco 2307-17H

Chaco 2307-17H #275H

OH

Plan: Plan #1

Standard Planning Report - Geographic

28 August, 2014



Scientific Drilling

www.scientificdrilling.com



Planning Report - Geographic



Database:	Grand Junction District	Local Co-ordinate Reference:	Well Chaco 2307-17H #275H
Company:	WPX Energy Rocky Mountain, LLC	TVD Reference:	GL 7257' & RKB 14' @ 7271.00ft (Aztec 730)
Project:	Rio Arriba County, NM NAD27	MD Reference:	GL 7257' & RKB 14' @ 7271.00ft (Aztec 730)
Site:	Chaco 2307-17H	North Reference:	True
Well:	Chaco 2307-17H #275H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Project	Rio Arriba 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 2307-17H		
Site Position:		Northing:	1,905,418.33 usft
From:	Lat/Long	Easting:	105,003.10 usft
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in
		Latitude:	36.2293399
		Longitude:	-107.5892500
		Grid Convergence:	-0.79 °

Well	Chaco 2307-17H #275H		
Well Position	+N-S	0.00 ft	Northing:
	+E-W	0.00 ft	Easting:
Position Uncertainty	0.00 ft	Wellhead Elevation:	0.00 ft
		Latitude:	36.2294000
		Longitude:	-107.5892500
		Ground Level:	7,257.00 ft

Wellbore	OH		
Magnetics	Model Name	Sample Date	Declination
	BGGM2014	8/27/2014	9.45
			Dip Angle
			62.99
			Field Strength
			50,058

Design	Plan #1		
Audit Notes:			
Version:	Phase:	PLAN	Tie On Depth:
			0.00
Vertical Section:	Depth From (TVD)	+N-S	+E-W
	(ft)	(ft)	(ft)
	0.00	0.00	0.00
			Direction
			287.24

Plan Sections										
Measured	Inclination	Azimuth	Vertical	+N-S	+E-W	Dogleg	Build	Turn	TFO	Target
Depth	(°)	(°)	Depth	(ft)	(ft)	Rate	Rate	Rate	(°)	
(ft)			(ft)			(°/100ft)	(°/100ft)	(°/100ft)		
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
550.00	0.00	0.00	550.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,156.75	12.14	60.55	1,152.22	31.48	55.74	2.00	2.00	0.00	60.55	
4,375.74	12.14	60.55	4,299.29	364.22	644.96	0.00	0.00	0.00	0.00	
4,982.49	0.00	0.00	4,901.51	395.70	700.70	2.00	-2.00	0.00	180.00	
5,132.49	0.00	0.00	5,051.51	395.70	700.70	0.00	0.00	0.00	0.00	
5,799.16	60.00	281.04	5,602.84	456.65	388.28	9.00	9.00	0.00	281.04	
5,859.16	60.00	281.04	5,632.84	466.60	337.28	0.00	0.00	0.00	0.00	
6,205.17	91.14	281.04	5,718.00	529.98	12.42	9.00	9.00	0.00	0.00	
10,925.44	91.14	281.04	5,624.00	1,433.58	-4,619.61	0.00	0.00	0.00	0.00	Chaco 175H PBHL

Database:	Grand Junction District	Local Co-ordinate Reference:	Well Chaco 2307-17H #275H
Company:	WPX Energy Rocky Mountain, LLC	TVD Reference:	GL 7257' & RKB 14' @ 7271.00ft (Aztec 730)
Project:	Rio Arriba County, NM NAD27	MD Reference:	GL 7257' & RKB 14' @ 7271.00ft (Aztec 730)
Site:	Chaco 2307-17H	North Reference:	True
Well:	Chaco 2307-17H #275H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

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	1,905,440.19	105,003.40	36.2294000	-107.5892500
100.00	0.00	0.00	100.00	0.00	0.00	1,905,440.19	105,003.40	36.2294000	-107.5892500
200.00	0.00	0.00	200.00	0.00	0.00	1,905,440.19	105,003.40	36.2294000	-107.5892500
300.00	0.00	0.00	300.00	0.00	0.00	1,905,440.19	105,003.40	36.2294000	-107.5892500
400.00	0.00	0.00	400.00	0.00	0.00	1,905,440.19	105,003.40	36.2294000	-107.5892500
500.00	0.00	0.00	500.00	0.00	0.00	1,905,440.19	105,003.40	36.2294000	-107.5892500
550.00	0.00	0.00	550.00	0.00	0.00	1,905,440.19	105,003.40	36.2294000	-107.5892500
Build 2°/100'									
600.00	1.00	60.55	600.00	0.21	0.38	1,905,440.40	105,003.78	36.2294006	-107.5892488
700.00	3.00	60.55	699.93	1.93	3.42	1,905,442.07	105,006.84	36.2294053	-107.5892385
800.00	5.00	60.55	799.68	5.36	9.49	1,905,445.42	105,012.96	36.2294147	-107.5892179
900.00	7.00	60.55	899.13	10.50	18.59	1,905,450.43	105,022.14	36.2294288	-107.5891870
1,000.00	9.00	60.55	998.15	17.34	30.71	1,905,457.10	105,034.35	36.2294476	-107.5891459
1,100.00	11.00	60.55	1,096.63	25.88	45.83	1,905,465.43	105,049.58	36.2294711	-107.5890947
1,156.71	12.13	60.55	1,152.18	31.47	55.73	1,905,470.89	105,059.56	36.2294864	-107.5890611
Hold 12.13° inc									
1,156.75	12.14	60.55	1,152.22	31.48	55.74	1,905,470.89	105,059.57	36.2294864	-107.5890611
1,200.00	12.14	60.55	1,194.51	35.95	63.66	1,905,475.25	105,067.55	36.2294987	-107.5890342
1,300.00	12.14	60.55	1,292.27	46.29	81.96	1,905,485.33	105,085.99	36.2295271	-107.5889722
1,400.00	12.14	60.55	1,390.04	56.62	100.27	1,905,495.42	105,104.44	36.2295555	-107.5889101
1,500.00	12.14	60.55	1,487.80	66.96	118.57	1,905,505.50	105,122.88	36.2295839	-107.5888481
1,600.00	12.14	60.55	1,585.57	77.30	136.87	1,905,515.58	105,141.33	36.2296123	-107.5887860
1,700.00	12.14	60.55	1,683.34	87.63	155.18	1,905,525.67	105,159.77	36.2296407	-107.5887240
1,800.00	12.14	60.55	1,781.10	97.97	173.48	1,905,535.75	105,178.22	36.2296691	-107.5886619
1,900.00	12.14	60.55	1,878.87	108.31	191.79	1,905,545.83	105,196.66	36.2296975	-107.5885999
2,000.00	12.14	60.55	1,976.63	118.64	210.09	1,905,555.92	105,215.11	36.2297259	-107.5885378
2,100.00	12.14	60.55	2,074.40	128.98	228.40	1,905,566.00	105,233.56	36.2297542	-107.5884758
2,200.00	12.14	60.55	2,172.16	139.32	246.70	1,905,576.08	105,252.00	36.2297826	-107.5884137
2,300.00	12.14	60.55	2,269.93	149.65	265.01	1,905,586.16	105,270.45	36.2298110	-107.5883517
2,400.00	12.14	60.55	2,367.69	159.99	283.31	1,905,596.25	105,288.89	36.2298394	-107.5882896
2,500.00	12.14	60.55	2,465.46	170.33	301.62	1,905,606.33	105,307.34	36.2298678	-107.5882276
2,600.00	12.14	60.55	2,563.22	180.67	319.92	1,905,616.41	105,325.78	36.2298962	-107.5881655
2,700.00	12.14	60.55	2,660.99	191.00	338.22	1,905,626.50	105,344.23	36.2299246	-107.5881034
2,800.00	12.14	60.55	2,758.76	201.34	356.53	1,905,636.58	105,362.67	36.2299530	-107.5880414
2,900.00	12.14	60.55	2,856.52	211.68	374.83	1,905,646.66	105,381.12	36.2299814	-107.5879793
3,000.00	12.14	60.55	2,954.29	222.01	393.14	1,905,656.75	105,399.57	36.2300098	-107.5879173
3,100.00	12.14	60.55	3,052.05	232.35	411.44	1,905,666.83	105,418.01	36.2300382	-107.5878552
3,200.00	12.14	60.55	3,149.82	242.69	429.75	1,905,676.91	105,436.46	36.2300666	-107.5877932
3,300.00	12.14	60.55	3,247.58	253.02	448.05	1,905,686.99	105,454.90	36.2300949	-107.5877311
3,400.00	12.14	60.55	3,345.35	263.36	466.36	1,905,697.08	105,473.35	36.2301233	-107.5876691
3,500.00	12.14	60.55	3,443.11	273.70	484.66	1,905,707.16	105,491.79	36.2301517	-107.5876070
3,600.00	12.14	60.55	3,540.88	284.03	502.96	1,905,717.24	105,510.24	36.2301801	-107.5875450
3,700.00	12.14	60.55	3,638.65	294.37	521.27	1,905,727.33	105,528.68	36.2302085	-107.5874829
3,800.00	12.14	60.55	3,736.41	304.71	539.57	1,905,737.41	105,547.13	36.2302369	-107.5874209
3,900.00	12.14	60.55	3,834.18	315.05	557.88	1,905,747.49	105,565.58	36.2302653	-107.5873588
4,000.00	12.14	60.55	3,931.94	325.38	576.18	1,905,757.58	105,584.02	36.2302937	-107.5872967
4,100.00	12.14	60.55	4,029.71	335.72	594.49	1,905,767.66	105,602.47	36.2303221	-107.5872347
4,200.00	12.14	60.55	4,127.47	346.06	612.79	1,905,777.74	105,620.91	36.2303505	-107.5871726
4,300.00	12.14	60.55	4,225.24	356.39	631.10	1,905,787.83	105,639.36	36.2303789	-107.5871106
4,375.74	12.14	60.55	4,299.29	364.22	644.96	1,905,795.46	105,653.33	36.2304004	-107.5870636
4,375.77	12.14	60.55	4,299.31	364.23	644.97	1,905,795.47	105,653.33	36.2304004	-107.5870636
Drop 2°/100'									
4,400.00	11.65	60.55	4,323.02	366.68	649.31	1,905,797.86	105,657.72	36.2304071	-107.5870488
4,500.00	9.65	60.55	4,421.30	375.77	665.40	1,905,806.72	105,673.93	36.2304321	-107.5869943

Database:	Grand Junction District	Local Co-ordinate Reference:	Well Chaco 2307-17H #275H
Company:	WPX Energy Rocky Mountain, LLC	TVD Reference:	GL 7257' & RKB 14' @ 7271.00ft (Aztec 730)
Project:	Rio Arriba County, NM NAD27	MD Reference:	GL 7257' & RKB 14' @ 7271.00ft (Aztec 730)
Site:	Chaco 2307-17H	North Reference:	True
Well:	Chaco 2307-17H #275H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
4,600.00	7.65	60.55	4,520.15	383.16	678.50	1,905,813.94	105,687.13	36.2304524	-107.5869499
4,700.00	5.65	60.55	4,619.48	388.86	688.58	1,905,819.49	105,697.29	36.2304680	-107.5869157
4,800.00	3.65	60.55	4,719.14	392.84	695.64	1,905,823.38	105,704.40	36.2304790	-107.5868918
4,900.00	1.65	60.55	4,819.03	395.12	699.67	1,905,825.60	105,708.46	36.2304852	-107.5868781
4,982.49	0.00	0.00	4,901.51	395.70	700.70	1,905,826.17	105,709.50	36.2304868	-107.5868746
5,000.00	0.00	0.00	4,919.02	395.70	700.70	1,905,826.17	105,709.50	36.2304868	-107.5868746
5,100.00	0.00	0.00	5,019.02	395.70	700.70	1,905,826.17	105,709.50	36.2304868	-107.5868746
5,132.48	0.00	0.00	5,051.50	395.70	700.70	1,905,826.17	105,709.50	36.2304868	-107.5868746
Build/Turn 9°/100'									
5,132.49	0.00	0.00	5,051.51	395.70	700.70	1,905,826.17	105,709.50	36.2304868	-107.5868746
5,200.00	6.08	281.04	5,118.89	396.38	697.19	1,905,826.90	105,706.00	36.2304887	-107.5868865
5,300.00	15.08	281.04	5,217.09	399.90	679.19	1,905,830.66	105,688.05	36.2304984	-107.5869475
5,400.00	24.08	281.04	5,311.22	406.31	646.34	1,905,837.52	105,655.29	36.2305160	-107.5870589
5,500.00	33.08	281.04	5,398.94	415.46	599.44	1,905,847.32	105,608.52	36.2305411	-107.5872179
5,600.00	42.08	281.04	5,478.12	427.12	539.65	1,905,859.81	105,548.90	36.2305731	-107.5874206
5,700.00	51.08	281.04	5,546.79	441.01	468.44	1,905,874.69	105,477.89	36.2306113	-107.5876620
5,799.15	60.00	281.04	5,602.84	456.65	388.29	1,905,891.43	105,397.96	36.2306543	-107.5879337
Hold 60° Inc									
5,799.16	60.00	281.04	5,602.84	456.65	388.28	1,905,891.43	105,397.95	36.2306543	-107.5879337
5,800.00	60.00	281.04	5,603.26	456.79	387.56	1,905,891.58	105,397.24	36.2306546	-107.5879362
5,859.15	60.00	281.04	5,632.84	466.60	337.29	1,905,902.08	105,347.10	36.2306816	-107.5881066
Resume Build 9°/100'									
5,859.16	60.00	281.04	5,632.84	466.60	337.28	1,905,902.09	105,347.09	36.2306816	-107.5881066
5,900.00	63.68	281.04	5,652.11	473.50	301.95	1,905,909.47	105,311.86	36.2307005	-107.5882264
6,000.00	72.68	281.04	5,689.25	491.26	210.92	1,905,928.48	105,221.09	36.2307493	-107.5885350
6,100.00	81.68	281.04	5,711.42	509.91	115.32	1,905,948.45	105,125.75	36.2308005	-107.5888591
6,200.00	90.68	281.04	5,718.09	528.99	17.49	1,905,968.89	105,028.20	36.2308530	-107.5891907
6,205.16	91.14	281.04	5,718.00	529.98	12.43	1,905,969.94	105,023.15	36.2308557	-107.5892079
Landing Point (POE) @ 6205.16' MD									
6,205.17	91.14	281.04	5,718.00	529.98	12.42	1,905,969.95	105,023.14	36.2308557	-107.5892079
Chaco 175H POE									
6,300.00	91.14	281.04	5,716.12	548.14	-80.64	1,905,989.38	104,930.34	36.2309055	-107.5895234
6,400.00	91.14	281.04	5,714.12	567.28	-178.77	1,906,009.88	104,832.48	36.2309581	-107.5898561
6,500.00	91.14	281.04	5,712.13	586.42	-276.90	1,906,030.38	104,734.63	36.2310107	-107.5901888
6,600.00	91.14	281.04	5,710.14	605.56	-375.03	1,906,050.87	104,636.77	36.2310633	-107.5905214
6,700.00	91.14	281.04	5,708.15	624.71	-473.16	1,906,071.37	104,538.91	36.2311159	-107.5908541
6,800.00	91.14	281.04	5,706.16	643.85	-571.29	1,906,091.87	104,441.06	36.2311684	-107.5911868
6,900.00	91.14	281.04	5,704.17	662.99	-669.42	1,906,112.36	104,343.20	36.2312210	-107.5915194
7,000.00	91.14	281.04	5,702.17	682.14	-767.55	1,906,132.86	104,245.35	36.2312736	-107.5918521
7,100.00	91.14	281.04	5,700.18	701.28	-865.68	1,906,153.36	104,147.49	36.2313262	-107.5921848
7,200.00	91.14	281.04	5,698.19	720.42	-963.81	1,906,173.86	104,049.63	36.2313787	-107.5925175
7,300.00	91.14	281.04	5,696.20	739.57	-1,061.94	1,906,194.35	103,951.78	36.2314313	-107.5928501
7,400.00	91.14	281.04	5,694.21	758.71	-1,160.08	1,906,214.85	103,853.92	36.2314839	-107.5931828
7,500.00	91.14	281.04	5,692.22	777.85	-1,258.21	1,906,235.35	103,756.06	36.2315364	-107.5935155
7,600.00	91.14	281.04	5,690.23	796.99	-1,356.34	1,906,255.84	103,658.21	36.2315890	-107.5938482
7,700.00	91.14	281.04	5,688.23	816.14	-1,454.47	1,906,276.34	103,560.35	36.2316416	-107.5941808
7,800.00	91.14	281.04	5,686.24	835.28	-1,552.60	1,906,296.84	103,462.49	36.2316941	-107.5945135
7,900.00	91.14	281.04	5,684.25	854.42	-1,650.73	1,906,317.33	103,364.64	36.2317467	-107.5948462
8,000.00	91.14	281.04	5,682.26	873.57	-1,748.86	1,906,337.83	103,266.78	36.2317993	-107.5951789
8,100.00	91.14	281.04	5,680.27	892.71	-1,846.99	1,906,358.33	103,168.93	36.2318518	-107.5955116
8,200.00	91.14	281.04	5,678.28	911.85	-1,945.12	1,906,378.82	103,071.07	36.2319044	-107.5958442
8,300.00	91.14	281.04	5,676.29	930.99	-2,043.25	1,906,399.32	102,973.21	36.2319569	-107.5961769
8,400.00	91.14	281.04	5,674.29	950.14	-2,141.38	1,906,419.82	102,875.36	36.2320095	-107.5965096
8,500.00	91.14	281.04	5,672.30	969.28	-2,239.51	1,906,440.32	102,777.50	36.2320621	-107.5968423

Database:	Grand Junction District	Local Co-ordinate Reference:	Well Chaco 2307-17H #275H
Company:	WPX Energy Rocky Mountain, LLC	TVD Reference:	GL 7257' & RKB 14' @ 7271.00ft (Aztec 730)
Project:	Rio Arriba County, NM NAD27	MD Reference:	GL 7257' & RKB 14' @ 7271.00ft (Aztec 730)
Site:	Chaco 2307-17H	North Reference:	True
Well:	Chaco 2307-17H #275H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
8,600.00	91.14	281.04	5,670.31	988.42	-2,337.64	1,906,460.81	102,679.64	36.2321146	-107.5971749
8,700.00	91.14	281.04	5,668.32	1,007.57	-2,435.77	1,906,481.31	102,581.79	36.2321672	-107.5975076
8,800.00	91.14	281.04	5,666.33	1,026.71	-2,533.90	1,906,501.81	102,483.93	36.2322197	-107.5978403
8,900.00	91.14	281.04	5,664.34	1,045.85	-2,632.03	1,906,522.30	102,386.07	36.2322723	-107.5981730
9,000.00	91.14	281.04	5,662.35	1,065.00	-2,730.16	1,906,542.80	102,288.22	36.2323248	-107.5985057
9,100.00	91.14	281.04	5,660.35	1,084.14	-2,828.29	1,906,563.30	102,190.36	36.2323774	-107.5988384
9,200.00	91.14	281.04	5,658.36	1,103.28	-2,926.42	1,906,583.79	102,092.51	36.2324300	-107.5991710
9,300.00	91.14	281.04	5,656.37	1,122.42	-3,024.55	1,906,604.29	101,994.65	36.2324825	-107.5995037
9,400.00	91.14	281.04	5,654.38	1,141.57	-3,122.68	1,906,624.79	101,896.79	36.2325351	-107.5998364
9,500.00	91.14	281.04	5,652.39	1,160.71	-3,220.81	1,906,645.28	101,798.94	36.2325876	-107.6001691
9,600.00	91.14	281.04	5,650.40	1,179.85	-3,318.94	1,906,665.78	101,701.08	36.2326402	-107.6005018
9,700.00	91.14	281.04	5,648.40	1,199.00	-3,417.07	1,906,686.28	101,603.22	36.2326927	-107.6008345
9,800.00	91.14	281.04	5,646.41	1,218.14	-3,515.21	1,906,706.78	101,505.37	36.2327453	-107.6011671
9,900.00	91.14	281.04	5,644.42	1,237.28	-3,613.34	1,906,727.27	101,407.51	36.2327978	-107.6014998
10,000.00	91.14	281.04	5,642.43	1,256.43	-3,711.47	1,906,747.77	101,309.65	36.2328503	-107.6018325
10,100.00	91.14	281.04	5,640.44	1,275.57	-3,809.60	1,906,768.27	101,211.80	36.2329029	-107.6021652
10,200.00	91.14	281.04	5,638.45	1,294.71	-3,907.73	1,906,788.76	101,113.94	36.2329554	-107.6024979
10,300.00	91.14	281.04	5,636.46	1,313.85	-4,005.86	1,906,809.26	101,016.08	36.2330080	-107.6028306
10,400.00	91.14	281.04	5,634.46	1,333.00	-4,103.99	1,906,829.76	100,918.23	36.2330605	-107.6031633
10,500.00	91.14	281.04	5,632.47	1,352.14	-4,202.12	1,906,850.25	100,820.37	36.2331131	-107.6034959
10,600.00	91.14	281.04	5,630.48	1,371.28	-4,300.25	1,906,870.75	100,722.52	36.2331656	-107.6038286
10,700.00	91.14	281.04	5,628.49	1,390.43	-4,398.38	1,906,891.25	100,624.66	36.2332181	-107.6041613
10,800.00	91.14	281.04	5,626.50	1,409.57	-4,496.51	1,906,911.75	100,526.80	36.2332707	-107.6044940
10,900.00	91.14	281.04	5,624.51	1,428.71	-4,594.64	1,906,932.24	100,428.95	36.2333232	-107.6048267
10,925.44	91.14	281.04	5,624.00	1,433.58	-4,619.61	1,906,937.46	100,404.05	36.2333366	-107.6049113
TD @ 10,925.45' MD - Chaco 175H PBHL									

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N-S (ft)	+E-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
Chaco 175H PBHL - hit/miss target - Shape - plan hits target center - Point	0.00	0.00	5,624.00	1,433.58	-4,619.61	1,906,937.46	100,404.05	36.2333366	-107.6049113	
Chaco 175H POE - plan hits target center - Point	0.00	0.00	5,718.00	529.98	12.42	1,905,969.94	105,023.14	36.2308557	-107.5892079	

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N-S (ft)	+E-W (ft)		
550.00	550.00	0.00	0.00	Build 2°/100'	
1,156.71	1,152.18	31.47	55.73	Hold 12.13° Inc	
4,375.77	4,299.31	364.23	644.97	Drop 2°/100'	
5,132.48	5,051.50	395.70	700.70	Build/Turn 9°/100'	
5,799.15	5,602.84	456.65	388.29	Hold 60° Inc	
5,859.15	5,632.84	466.60	337.29	Resume Build 9°/100'	
6,205.16	5,718.00	529.98	12.43	Landing Point (POE) @ 6205.16' MD	
10,925.44	5,624.00	1,433.58	-4,619.61	TD @ 10,925.45' MD	