

APPROVAL
FOR CONDITIONS
OF APPROVALUNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECEIVED

NOV 01 2013

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
2. Name of Operator WPX Energy Production, LLC		6. If Indian, Allottee or Tribe Name
3a. Address PO Box 640 Aztec, NM 87410	3b. Phone No. (include area code) 505-333-1808	7. If Unit of CA/Agreement, Name and/or No.
4. Location of Well (Footage, Sec., T., R., M., or Survey Description) Sur: 485' FSL & 155' FWL, sec 20, T23N, R6W - BHL: 430' FSL & 230' FWL, Sec 19, T23N, R6W		8. Well Name and No. Chaco 2306-20M #208H
		9. API Well No. 30-043-21170
		10. Field and Pool or Exploratory Area Lybrook Gallup
		11. Country or Parish, State Sandoval, 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 <u>Lateral change</u>
	☐ 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 recomplate 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 change this well as follows: Move BHL lateral approximately 50' to the north as per attached plat, operation and directional plans. 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.

RCVD NOV 6 '13
OIL CONS. DIV.
DIST. 3

14. I hereby certify that the foregoing is true and correct. Name (Printed/Typed) Larry Higgins	Title Permit Supervisor
Signature <i>Larry Higgins</i>	Date 11/01/13

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by <i>William Tambekou</i>	Title <i>Petroleum Engineer</i>	Date <i>11/1/2013</i>
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 <i>FPO</i>	

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)

CONDITIONS OF APPROVAL
Adhere to previously issued stipulations.NMOCD
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BLM'S APPROVAL OR ACCEPTANCE FOR THIS ACTION DOES NOT RELIEVE THE LESSEE AND OPERATOR FROM OBTAINING ANY OTHER AUTHORIZATION REQUIRED FOR OPERATIONS ON FEDERAL AND INDIAN LANDS

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

RECEIVED

WELL LOCATION AND ACREAGE DEDICATION PLAT

NOV 01 2013

*API Number 30-043-21170		*Pool Code 42289		*Pool Name LYBROOK GALLUP	
*Property Code 40186		*Property Name CHACO 2306-20M			*Well Number 208H
*OGRID No. 120782		*Operator Name WPX ENERGY PRODUCTION, LLC			*Elevation 7037'

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
M	20	23N	6W		485	SOUTH	155	WEST	SANDOVAL

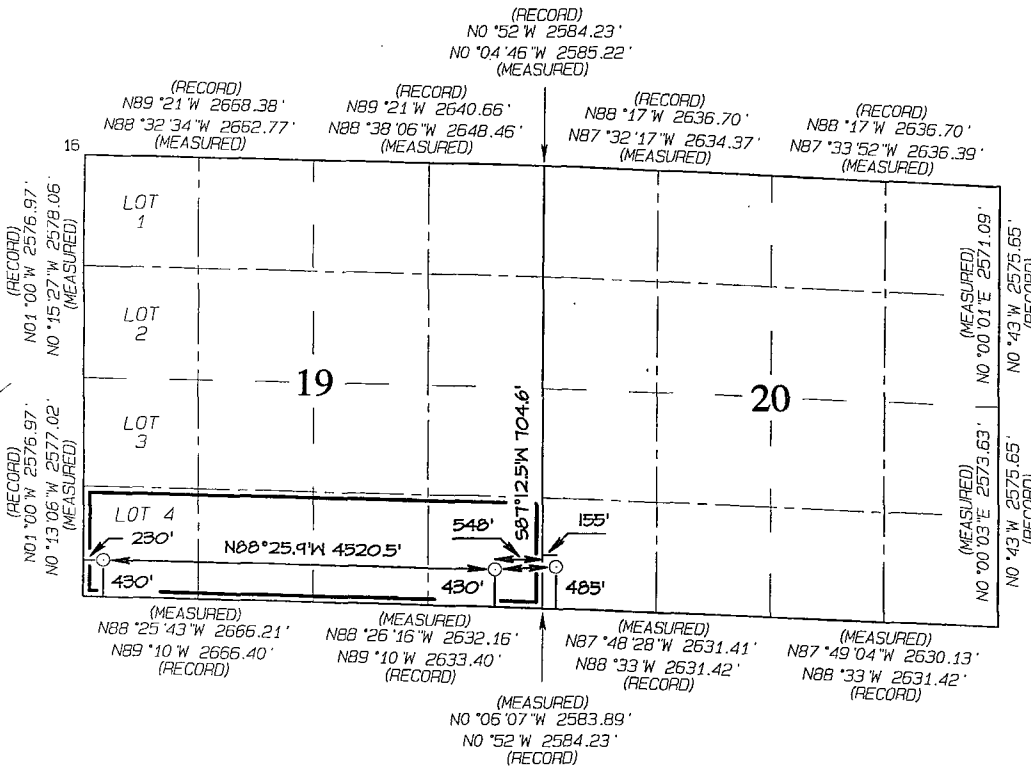
11 Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	19	23N	6W	4	430	SOUTH	230	WEST	SANDOVAL

12 Dedicated Acres 160.98 Acres S/2 S/2 - Section 19		13 Joint or Infill	14 Consolidation Code	15 Order No.
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RCVD NOV 6 '13
OIL CONS. DIV.
DIST. 3

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: Larry Higgins Date: 11/1/13

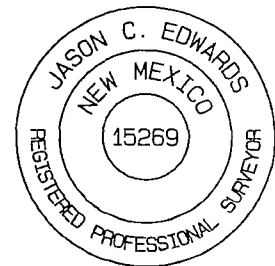
Printed Name: Larry Higgins
E-mail Address: larry.higgins@wpxenergy.com

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: OCTOBER 31, 2013
Date of Survey: JULY 9, 2013

Signature and Seal of Professional Surveyor



JASON C. EDWARDS

Certificate Number 15269

END-OF-LATERAL
430' FSL 230' FWL
SECTION 19, T23N, R6W
LAT: 36.20521°N
LONG: 107.51682°W
DATUM: NAD1927

POINT-OF-ENTRY
430' FSL 548' FEL
SECTION 19, T23N, R6W
LAT: 36.20503°N
LONG: 107.50150°W
DATUM: NAD1927

SURFACE LOCATION
485' FSL 155' FWL
SECTION 20, T23N, R6W
LAT: 36.20515°N
LONG: 107.49911°W
DATUM: NAD1927

LAT: 36.20522°N
LONG: 107.51742°W
DATUM: NAD1983

LAT: 36.20504°N
LONG: 107.50210°W
DATUM: NAD1983

LAT: 36.20516°N
LONG: 107.49972°W
DATUM: NAD1983

WPX ENERGY

Operations Plan

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

DATE: 10/30/2013 **FIELD:** Lybrook (Gallup)

WELL NAME: Chaco 2306-20M #208H **SURFACE:** BLM

SH Location: SWSW Sec 20-23N-6W **ELEVATION:** 7,037' GR

BH Location: SWSW Sec 19-23N-6W **MINERALS:** BLM
Sandoval Co, NM

MEASURED DEPTH: 10,487' **LEASE #:** NMSF-078360

I. GEOLOGY: Surface formation – San Jose

A. FORMATION TOPS: (KB)

Name	MD	TVD	Name	MD	TVD
Ojo Alamo	1,384	1,384	Point Lookout	4,262	4,262
Kirtland	1,661	1,661	Mancos	4,449	4,449
Pictured Cliffs	1,965	1,965	Kickoff Point	4,888	4,888
Lewis	2,064	2,064	Target Top	5,693	5,504
Chacra	2,391	2,391	Landing Point	5,966	5,556
Cliff House	3,471	3,471	Target Base	5,966	5,556
Menefee	3,492	3,492			
			TD	10,487	5,469

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 +/- 4,888' (MD) / 4,888' (TVD). Curve portion of wellbore will be drilled and landed at +/- 90 deg. at +/- 5,966' (MD) / 5,556' (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 +/- 10,487' (MD) / 5,469' (TVD). Will run 4-1/2 in. Production Liner from +/- 5,816 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"	5,966'	7"	23#	K-55
Prod. Liner	6.125"	5,816' - 10,487'	4-1/2"	11.6#	N-80
Tie-Back String	N/A	Surf. - 5,816'	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). TOC at surface.
2. INTERMEDIATE: 20 bbl (112 cu-ft) Mud Flush III spacer + Lead: 850 sx Foamed 50/50 Poz Cement. 13.0 ppg + 0.1% Halad 766 + 0.2% Versaset + 1.5% Chem-Foamer 760 (Yield :1.43 cu-ft/ sk. / Vol: 1216 cu-ft / 216.5 Bbls.) + TAIL: 100 sx 13.5 #/gal. + 0.2% Versaset + 0.15% HALAD-766 (Yield: 1.28 cu-ft / sk / Vol: 128 cu-ft / 22.8 Bbls.). + Fresh Water Displacement (1,362 cu-ft / +/- 242 Bbls) + 100 sx Top-Out Cement Premium: Yield: (1.17 cu-ft/ sk / (Vol: 117 cu-ft / 20.8 Bbls). Test Casing to 1500 PSI for 30 minutes. Total Cement Volume: (1050 sx / 1461 cu-ft / 260 bbls). Mix with +/- 84,000 SCF Nitrogen. TOC at surface.
3. PRODUCTION LINER: **STAGE 1**:10 bbl (56.cu-ft) Fr Water Spacer. **STAGE 2**:40 bbl 9.5 ppg (224.6 cu-ft) Tuned Spacer III + 0.5 gal/bbl Musol + 38.75 ppb Barite + 0.5 gal/bbl SEM-7. **STAGE 3**: 10 bbl Fr Water Spacer. **STAGE 4: Lead Cement**: 50 / 50 Poz Premium + 0.2% Versaset + 0.2% Halad -766, Yield 1.43 cu ft/sk, 13.0 ppg, (10 sx / 14.3 cu ft. / 2.5 bbls). **STAGE 5**: 200 sx. Foamed Lead Cement: 50 / 50 Poz Standard + 0.2% Versaset + 0.2% HALAD-766 + 1.5% Chem-Foamer 760. Yield 1.97 cu-ft/sk. 13.0 ppg (200 sx / 394 cu-ft. / 70.2 bbls.). **STAGE 6**: Tail Cement : 100 sx. 50/50 Poz Standard + 0.2% Versaset + 0.05% HALAD-766 + .05% SA-1015, Weight: 13.5 ppg (100 sx / Yield 1.28 cu ft/sk. / 128 cu ft. / 22.8 bbls) **STAGE 7**: Displace w/ +/- 137 bbl Fr Water. Total Cement (563.3 cu ft / 95.5 bbls). Mix Foamed Cement w/ +/- 75,000 SCF Nitrogen. Est. TOC +/- 5,516 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. Open RSI sleeve.

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.

The CHACO 2306 – 20M #208H was originally planned to run and cement a full string of 4-1/2" 11.6# N-80 Production Casing from surface to TD:

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 5,966 ft. MD) with a Liner Hanger and pack-off assembly then cemented to +/- 300 ft above the liner hanger. TOL will be +/- 5,816 ft. (MD) +/- 78 degree angle. TOC: +/- 5,516 ft. (MD).

After cementing, setting Liner Hanger 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. LSND WBM will be used drilling the Lateral.

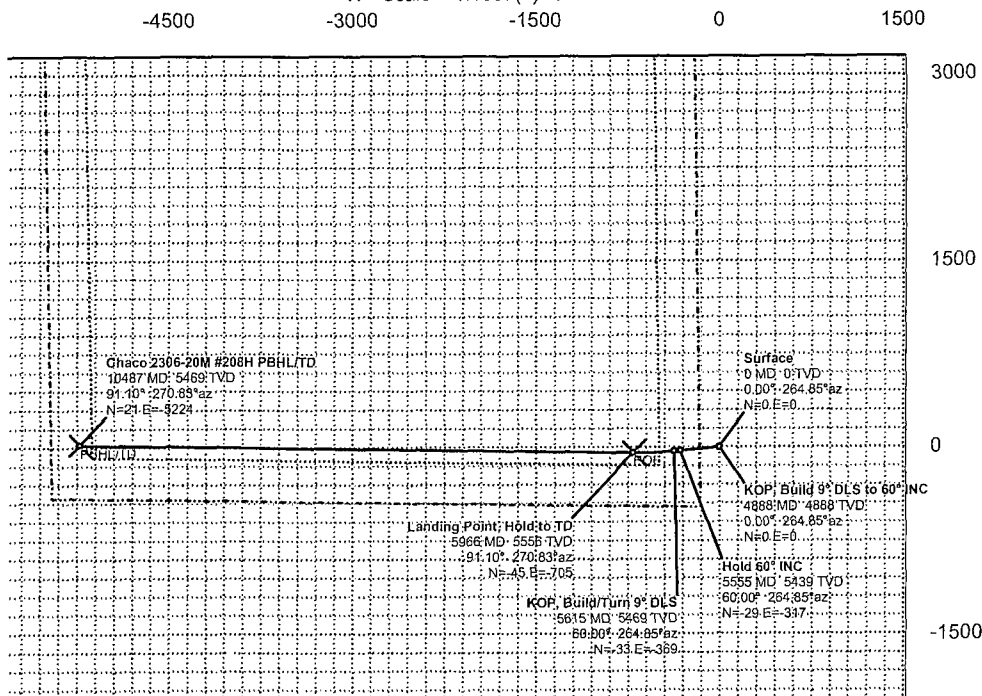
WELL	Chaco 2306-20M #208H	FIELD	NM Sandoval County NAD27	STRUCTURE	Sec 20-23N-6W
Magnetic Parameters Model: BIGGM 2013 Dip: 63.008° Mag Dec: 9.492°		Surface Location Lat: N 36 12 18.540 Lon: W 107 29 56.796		NAD27 New Mexico State Plane, Central Zone, US Feet Northing: 1855257.41 NUS Easting: 131476.76 RUS Grid Conv: -0.738° Scale Fact: 1.0000541	
Date: August 21, 2013 FS: 50188 4nT		Miscellaneous Slot: Chaco 2306-20M #208H Plan: R2 mdv 230ct13		TVD Ref: RKB(7051ft above MSL) Srvy Date: August 21, 2013	

Proposal

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



True North
Tot Corr (M-T 9.4917°)
Mag Dec (9.492°)
Grid Conv (-0.738°)



TVD Scale = 1:1000(ft)

2000

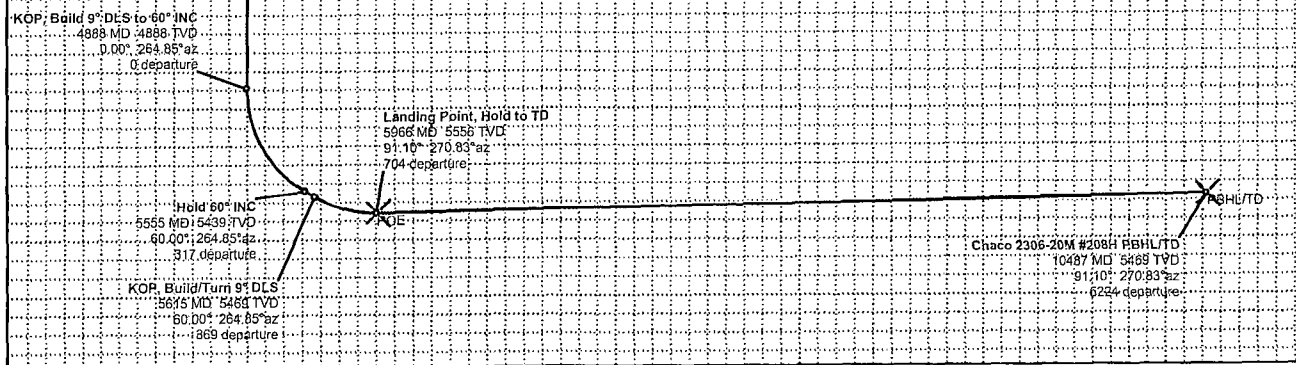
3000

4000

5000

6000

Targets						
Name	TVD(ft)	NS(ft)	EW(ft)	Latitude(deg)	Longitude(deg)	Shape
Chaco 2306-20M #208H POE	5556.00	-44.64	-704.50	N 36 12 18.098	W 107 30 5.392	POINT
Chaco 2306-20M #208H PBHL/TD	5469.00	20.86	-5224.29	N 36 12 18.742	W 107 31 0.539	POINT
Critical Points						
Comments	MD(ft)	INC	AZM	TVD(ft)	SS.TVD	VS(ft)
Surface	0.00	0.00	264.85	0.00	-7051.00	0.00
KOP, Build 9° DLS to 60° INC	4888.00	0.00	264.85	4888.00	-2163.00	0.00
Hold 60° INC	5554.67	60.00	264.85	5439.33	-1611.67	316.91
KOP, Build/Turn 9° DLS	5614.67	60.00	264.85	5469.33	-1581.67	368.64
Landing Point, Hold to TD	5966.03	91.10	270.83	5556.00	-1495.00	704.32
Chaco 2306-20M #208H PBHL/TD	10487.13	91.10	270.83	5469.00	-1582.00	5224.33



Vertical Section (ft) Azim = 270.23° Scale = 1:1000(ft) Origin = 0 N-S, 0 E-W



Chaco 2306-20M #208H R2 mdv 29Oct13 Proposal Geodetic Report



(Def Plan)

Report Date: October 29, 2013 - 02:28 PM
Client: WPX Energy
Field: NM Sandoval County NAD27
Structure / Slot: WPX Sec 20-23N-6W (Chaco 2306-20M #208H) / Chaco 2306-20M #208H
Well: Chaco 2306-20M #208H
Borehole: Original Hole
UWI / API#: Unknown / Unknown
Survey Name: Chaco 2306-20M #208H R2 mdv 29Oct13
Survey Date: August 21, 2013
Tort / AHD / DDI / ERD Ratio: 91.626 * / 5226.603 ft / 5.956 / 0.941
Coordinate Reference System: NAD27 New Mexico State Plane, Central Zone, US Feet
Location Lat / Long: N 36° 12' 18.54000", W 107° 29' 56.79600"
Location Grid N/E Y/X: N 1896257.413 RUS, E 131476.765 RUS
CRS Grid Convergence Angle: -0.7379 °
Grid Scale Factor: 1.00005541

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 270.229 ° (True North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: RKB
TVD Reference Elevation: 7051.000 ft above MSL
Seabed / Ground Elevation: 7037.000 ft above MSL
Magnetic Declination: 9.492 °
Total Gravity Field Strength: 998.4793mgn (9.80665 Based)
Total Magnetic Field Strength: 50188.446 nT
Magnetic Dip Angle: 63.008 °
Declination Date: August 21, 2013
Magnetic Declination Model: BGGM 2013
North Reference: True North
Grid Convergence Used: 0.0000 °
Total Corr Mag North->True North: 9.4917 °
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	264.85	0.00	0.00	0.00	0.00	N/A	1896257.41	131476.76	N 36 12 18.54	W 107 29 56.80	
	100.00	0.00	264.85	100.00	0.00	0.00	0.00	0.00	1896257.41	131476.76	N 36 12 18.54	W 107 29 56.80	
	200.00	0.00	264.85	200.00	0.00	0.00	0.00	0.00	1896257.41	131476.76	N 36 12 18.54	W 107 29 56.80	
	300.00	0.00	264.85	300.00	0.00	0.00	0.00	0.00	1896257.41	131476.76	N 36 12 18.54	W 107 29 56.80	
	400.00	0.00	264.85	400.00	0.00	0.00	0.00	0.00	1896257.41	131476.76	N 36 12 18.54	W 107 29 56.80	
	500.00	0.00	264.85	500.00	0.00	0.00	0.00	0.00	1896257.41	131476.76	N 36 12 18.54	W 107 29 56.80	
	600.00	0.00	264.85	600.00	0.00	0.00	0.00	0.00	1896257.41	131476.76	N 36 12 18.54	W 107 29 56.80	
	700.00	0.00	264.85	700.00	0.00	0.00	0.00	0.00	1896257.41	131476.76	N 36 12 18.54	W 107 29 56.80	
	800.00	0.00	264.85	800.00	0.00	0.00	0.00	0.00	1896257.41	131476.76	N 36 12 18.54	W 107 29 56.80	
	900.00	0.00	264.85	900.00	0.00	0.00	0.00	0.00	1896257.41	131476.76	N 36 12 18.54	W 107 29 56.80	
	1000.00	0.00	264.85	1000.00	0.00	0.00	0.00	0.00	1896257.41	131476.76	N 36 12 18.54	W 107 29 56.80	
	1100.00	0.00	264.85	1100.00	0.00	0.00	0.00	0.00	1896257.41	131476.76	N 36 12 18.54	W 107 29 56.80	
	1200.00	0.00	264.85	1200.00	0.00	0.00	0.00	0.00	1896257.41	131476.76	N 36 12 18.54	W 107 29 56.80	
	1300.00	0.00	264.85	1300.00	0.00	0.00	0.00	0.00	1896257.41	131476.76	N 36 12 18.54	W 107 29 56.80	
	1400.00	0.00	264.85	1400.00	0.00	0.00	0.00	0.00	1896257.41	131476.76	N 36 12 18.54	W 107 29 56.80	
	1500.00	0.00	264.85	1500.00	0.00	0.00	0.00	0.00	1896257.41	131476.76	N 36 12 18.54	W 107 29 56.80	
	1600.00	0.00	264.85	1600.00	0.00	0.00	0.00	0.00	1896257.41	131476.76	N 36 12 18.54	W 107 29 56.80	
	1700.00	0.00	264.85	1700.00	0.00	0.00	0.00	0.00	1896257.41	131476.76	N 36 12 18.54	W 107 29 56.80	
	1800.00	0.00	264.85	1800.00	0.00	0.00	0.00	0.00	1896257.41	131476.76	N 36 12 18.54	W 107 29 56.80	
	1900.00	0.00	264.85	1900.00	0.00	0.00	0.00	0.00	1896257.41	131476.76	N 36 12 18.54	W 107 29 56.80	
	2000.00	0.00	264.85	2000.00	0.00	0.00	0.00	0.00	1896257.41	131476.76	N 36 12 18.54	W 107 29 56.80	
	2100.00	0.00	264.85	2100.00	0.00	0.00	0.00	0.00	1896257.41	131476.76	N 36 12 18.54	W 107 29 56.80	
	2200.00	0.00	264.85	2200.00	0.00	0.00	0.00	0.00	1896257.41	131476.76	N 36 12 18.54	W 107 29 56.80	
	2300.00	0.00	264.85	2300.00	0.00	0.00	0.00	0.00	1896257.41	131476.76	N 36 12 18.54	W 107 29 56.80	
	2400.00	0.00	264.85	2400.00	0.00	0.00	0.00	0.00	1896257.41	131476.76	N 36 12 18.54	W 107 29 56.80	
	2500.00	0.00	264.85	2500.00	0.00	0.00	0.00	0.00	1896257.41	131476.76	N 36 12 18.54	W 107 29 56.80	
	2600.00	0.00	264.85	2600.00	0.00	0.00	0.00	0.00	1896257.41	131476.76	N 36 12 18.54	W 107 29 56.80	
	2700.00	0.00	264.85	2700.00	0.00	0.00	0.00	0.00	1896257.41	131476.76	N 36 12 18.54	W 107 29 56.80	
	2800.00	0.00	264.85	2800.00	0.00	0.00	0.00	0.00	1896257.41	131476.76	N 36 12 18.54	W 107 29 56.80	
	2900.00	0.00	264.85	2900.00	0.00	0.00	0.00	0.00	1896257.41	131476.76	N 36 12 18.54	W 107 29 56.80	
	3000.00	0.00	264.85	3000.00	0.00	0.00	0.00	0.00	1896257.41	131476.76	N 36 12 18.54	W 107 29 56.80	
	3100.00	0.00	264.85	3100.00	0.00	0.00	0.00	0.00	1896257.41	131476.76	N 36 12 18.54	W 107 29 56.80	
	3200.00	0.00	264.85	3200.00	0.00	0.00	0.00	0.00	1896257.41	131476.76	N 36 12 18.54	W 107 29 56.80	
	3300.00	0.00	264.85	3300.00	0.00	0.00	0.00	0.00	1896257.41	131476.76	N 36 12 18.54	W 107 29 56.80	
	3400.00	0.00	264.85	3400.00	0.00	0.00	0.00	0.00	1896257.41	131476.76	N 36 12 18.54	W 107 29 56.80	
	3500.00	0.00	264.85	3500.00	0.00	0.00	0.00	0.00	1896257.41	131476.76	N 36 12 18.54	W 107 29 56.80	
	3600.00	0.00	264.85	3600.00	0.00	0.00	0.00	0.00	1896257.41	131476.76	N 36 12 18.54	W 107 29 56.80	
	3700.00	0.00	264.85	3700.00	0.00	0.00	0.00	0.00	1896257.41	131476.76	N 36 12 18.54	W 107 29 56.80	
	3800.00	0.00	264.85	3800.00	0.00	0.00	0.00	0.00	1896257.41	131476.76	N 36 12 18.54	W 107 29 56.80	
	3900.00	0.00	264.85	3900.00	0.00	0.00	0.00	0.00	1896257.41	131476.76	N 36 12 18.54	W 107 29 56.80	
	4000.00	0.00	264.85	4000.00	0.00	0.00	0.00	0.00	1896257.41	131476.76	N 36 12 18.54	W 107 29 56.80	
	4100.00	0.00	264.85	4100.00	0.00	0.00	0.00	0.00	1896257.41	131476.76	N 36 12 18.54	W 107 29 56.80	
	4200.00	0.00	264.85	4200.00	0.00	0.00	0.00	0.00	1896257.41	131476.76	N 36 12 18.54	W 107 29 56.80	
	4300.00	0.00	264.85	4300.00	0.00	0.00	0.00	0.00	1896257.41	131476.76	N 36 12 18.54	W 107 29 56.80	
	4400.00	0.00	264.85	4400.00	0.00	0.00	0.00	0.00	1896257.41	131476.76	N 36 12 18.54	W 107 29 56.80	
	4500.00	0.00	264.85	4500.00	0.00	0.00	0.00	0.00	1896257.41	131476.76	N 36 12 18.54	W 107 29 56.80	
	4600.00	0.00	264.85	4600.00	0.00	0.00	0.00	0.00	1896257.41	131476.76	N 36 12 18.54	W 107 29 56.80	
	4700.00	0.00	264.85	4700.00	0.00	0.00	0.00	0.00	1896257.41	131476.76	N 36 12 18.54	W 107 29 56.80	
4800.00	0.00	264.85	4800.00	0.00	0.00	0.00	0.00	1896257.41	131476.76	N 36 12 18.54	W 107 29 56.80		
KOP, Build 9° DLS to 60° INC	4888.00	0.00	264.85	4888.00	0.00	0.00	0.00	0.00	1896257.41	131476.76	N 36 12 18.54	W 107 29 56.80	
	4900.00	1.08	264.85	4900.00	0.11	-0.01	-0.11	9.00	1896257.40	131476.65	N 36 12 18.54	W 107 29 56.80	
	5000.00	10.08	264.85	4999.42	9.78	-0.88	-9.79	9.00	1896256.66	131466.97	N 36 12 18.53	W 107 29 56.92	
	5100.00	19.08	264.85	5096.10	34.82	-3.14	-34.83	9.00	1896254.72	131441.89	N 36 12 18.51	W 107 29 57.22	
	5200.00	28.08	264.85	5187.66	74.61	-6.73	-74.63	9.00	1896251.65	131402.05	N 36 12 18.47	W 107 29 57.71	
	5300.00	37.08	264.85	5271.84	128.16	-11.56	-128.21	9.00	1896247.51	131348.41	N 36 12 18.43	W 107 29 58.36	
	5400.00	46.08	264.85	5346.56	194.17	-17.51	-194.24	9.00	1896242.41	131282.31	N 36 12 18.37	W 107 29 59.17	
	5500.00	55.08	264.85	5410.00	271.00	-24.43	-271.10	9.00	1896236.47	131205.36	N 36 12 18.30	W 107 30 0.10	
	5554.67	60.00	264.85	5439.33	316.91	-28.57	-317.02	9.00	1896232.92	131159.38	N 36 12 18.26	W 107 30 0.66	
	5600.00	60.00	264.85	5462.00	356.00	-32.10	-356.13	0.00	1896229.90	131120.24	N 36 12 18.22	W 107 30 1.14	
	KOP, Build/Turn 9° DLS	5614.67	60.00	264.85	5469.33	368.64	-33.24	-368.78	0.00	1896228.93	131107.57	N 36 12 18.21	W 107 30 1.30
		5700.00	67.54	266.50	5507.02	444.89	-38.97	-445.05	9.00	1896224.17	131031.23	N 36 12 18.15	W 107 30 2.23
5800.00		76.39	268.21	5537.96	539.76	-43.32	-539.94	9.00	1896221.05	130936.29	N 36 12 18.11	W 107 30 3.38	
5900.00		85.25	269.81	5553.90	638.35	-45.01	-638.54	9.00	1896220.63	130837.67	N 36 12 18.09	W 107 30 4.59	
Landing Point, Hold to TD		5966.03	91.10	270.83	5558.00	704.32	-44.64	-704.50	9.00	1896221.85	130771.71	N 36 12 18.10	W 107 30 5.39
		6000.00	91.10	270.83	5555.34	738.28	-44.15	-738.46	0.00	1896222.78	130737.75	N 36 12 18.10	W 107 30 5.61
		6100.00	91.10	270.83	5553.41	838.26	-42.70	-838.43	0.00	1896225.51	130637.80	N 36 12 18.12	W 107 30 7.03
		6200.00	91.10	270.83	5551.49	938.23	-41.25	-938.41	0.00	1896228.25	130537.86	N 36 12 18.13	W 107 30 8.25
		6300.00	91.10	270.83	5549.56	1038.21	-39.80	-1038.38	0.00	1896230.98	130437.91	N 36 12 18.15	W 107 30 9.47
		6400.00	91.10	270.83	5547.64	1138.19	-38.36	-1138.35	0.00	1896233.72	130337.96	N 36 12 18.16	W 107 30 10.69
		6500.00	91.10	270.83	5545.71	1238.16	-36.91	-1238.32	0.00	1896236.46	130238.01	N 36 12 18.17	W 107 30 11.91
		6600.00	91.10	270.83	5543.78	1338.14	-35.46	-1338.29	0.00	1896239.19	130138.06	N 36 12 18.19	W 107 30 13.12
	6700.00	91.10	270.83	5541.86	1438.11	-34.01	-1438.26	0.00	1896241.93	130038.11	N 36 12 18.20	W 107 30 14.34	
	6800.00	91.10	270.83	5539.93	1538.09	-32.56							

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 ° ' ")
	7200.00	91.10	270.83	5532.23	1937.99	-26.77	-1938.12	0.00	1896255.61	129538.36	N 36 12 18.27	W 107 30 20.44
	7300.00	91.10	270.83	5530.30	2037.97	-25.32	-2038.09	0.00	1896258.34	129438.41	N 36 12 18.29	W 107 30 21.66
	7400.00	91.10	270.83	5528.38	2137.94	-23.87	-2138.06	0.00	1896261.08	129338.46	N 36 12 18.30	W 107 30 22.88
	7500.00	91.10	270.83	5526.45	2237.92	-22.42	-2238.03	0.00	1896263.82	129238.51	N 36 12 18.32	W 107 30 24.10
	7600.00	91.10	270.83	5524.53	2337.90	-20.97	-2338.00	0.00	1896266.55	129138.56	N 36 12 18.33	W 107 30 25.32
	7700.00	91.10	270.83	5522.60	2437.87	-19.52	-2437.97	0.00	1896269.29	129038.62	N 36 12 18.35	W 107 30 26.54
	7800.00	91.10	270.83	5520.68	2537.85	-18.07	-2537.94	0.00	1896272.02	128938.67	N 36 12 18.36	W 107 30 27.76
	7900.00	91.10	270.83	5518.75	2637.82	-16.63	-2637.91	0.00	1896274.76	128838.72	N 36 12 18.37	W 107 30 28.98
	8000.00	91.10	270.83	5516.83	2737.80	-15.18	-2737.88	0.00	1896277.50	128738.77	N 36 12 18.39	W 107 30 30.20
	8100.00	91.10	270.83	5514.91	2837.78	-13.73	-2837.85	0.00	1896280.23	128638.82	N 36 12 18.40	W 107 30 31.42
	8200.00	91.10	270.83	5512.98	2937.75	-12.28	-2937.83	0.00	1896282.97	128538.87	N 36 12 18.42	W 107 30 32.64
	8300.00	91.10	270.83	5511.06	3037.73	-10.83	-3037.80	0.00	1896285.71	128438.92	N 36 12 18.43	W 107 30 33.86
	8400.00	91.10	270.83	5509.13	3137.70	-9.38	-3137.77	0.00	1896288.44	128338.97	N 36 12 18.45	W 107 30 35.08
	8500.00	91.10	270.83	5507.21	3237.68	-7.93	-3237.74	0.00	1896291.18	128239.02	N 36 12 18.46	W 107 30 36.30
	8600.00	91.10	270.83	5505.29	3337.66	-6.48	-3337.71	0.00	1896293.92	128139.07	N 36 12 18.47	W 107 30 37.52
	8700.00	91.10	270.83	5503.36	3437.63	-5.04	-3437.68	0.00	1896296.65	128039.12	N 36 12 18.49	W 107 30 38.74
	8800.00	91.10	270.83	5501.44	3537.61	-3.59	-3537.65	0.00	1896299.39	127939.17	N 36 12 18.50	W 107 30 39.96
	8900.00	91.10	270.83	5499.51	3637.58	-2.14	-3637.62	0.00	1896302.12	127839.22	N 36 12 18.52	W 107 30 41.18
	9000.00	91.10	270.83	5497.59	3737.56	-0.69	-3737.59	0.00	1896304.86	127739.27	N 36 12 18.53	W 107 30 42.40
	9100.00	91.10	270.83	5495.67	3837.54	0.76	-3837.56	0.00	1896307.60	127639.32	N 36 12 18.54	W 107 30 43.62
	9200.00	91.10	270.83	5493.74	3937.51	2.21	-3937.54	0.00	1896310.33	127539.37	N 36 12 18.56	W 107 30 44.84
	9300.00	91.10	270.83	5491.82	4037.49	3.66	-4037.51	0.00	1896313.07	127439.43	N 36 12 18.57	W 107 30 46.06
	9400.00	91.10	270.83	5489.90	4137.46	5.11	-4137.48	0.00	1896315.81	127339.48	N 36 12 18.59	W 107 30 47.28
	9500.00	91.10	270.83	5487.98	4237.44	6.56	-4237.45	0.00	1896318.54	127239.53	N 36 12 18.60	W 107 30 48.50
	9600.00	91.10	270.83	5486.05	4337.42	8.01	-4337.42	0.00	1896321.28	127139.58	N 36 12 18.62	W 107 30 49.72
	9700.00	91.10	270.83	5484.13	4437.39	9.46	-4437.39	0.00	1896324.02	127039.63	N 36 12 18.63	W 107 30 50.94
	9800.00	91.10	270.83	5482.21	4537.37	10.90	-4537.36	0.00	1896326.75	126939.68	N 36 12 18.64	W 107 30 52.16
	9900.00	91.10	270.83	5480.28	4637.34	12.35	-4637.33	0.00	1896329.49	126839.73	N 36 12 18.66	W 107 30 53.38
	10000.00	91.10	270.83	5478.36	4737.32	13.80	-4737.30	0.00	1896332.23	126739.78	N 36 12 18.67	W 107 30 54.60
	10100.00	91.10	270.83	5476.44	4837.30	15.25	-4837.27	0.00	1896334.96	126639.83	N 36 12 18.69	W 107 30 55.82
	10200.00	91.10	270.83	5474.52	4937.27	16.70	-4937.25	0.00	1896337.70	126539.88	N 36 12 18.70	W 107 30 57.04
	10300.00	91.10	270.83	5472.60	5037.25	18.15	-5037.22	0.00	1896340.44	126439.93	N 36 12 18.72	W 107 30 58.26
	10400.00	91.10	270.83	5470.67	5137.22	19.60	-5137.19	0.00	1896343.18	126339.98	N 36 12 18.73	W 107 30 59.48
Chaco 2306-20M #208H PBHL/TD	10487.13	91.10	270.83	5469.00	5224.33	20.88	-5224.29	0.00	1896345.56	126252.90	N 36 12 18.74	W 107 31 0.54

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 2306-20M #208H R2 mdv 29Oct13
	14.000	10487.131	1/100.000	30.000	30.000	SLB_MWD-STD	Original Hole / Chaco 2306-20M #208H R2 mdv 29Oct13

$$PBHL \left\{ \begin{array}{l} Y-P (485-20.86)_{ft} = 464.14 \times 464 ft/s \quad (Sec. 19) \\ X-D (155+2632.16+2666.21-5224.29)_{ft} = 229.08 \approx 229 ft/w \quad (Sec. 19) \end{array} \right.$$

William Tambeken
11/1/2013