

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S. First St., 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 Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico

Form C-101
Revised November 14, 2012

Energy Minerals and Natural Resources

Oil Conservation Division

☐ AMENDED REPORT

1220 South St. Francis Dr.

Santa Fe, NM 87505

RCVD JAN 29 '14
OIL CONS. DIV.
DIST. 3

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

¹ Operator Name and Address WPX Energy Production, LLC P.O. Box 640 Aztec, NM 87410		² OGRID Number 120782
		³ API Number 30-043-21193
⁴ Property Code 39908	⁵ Property Name Chaco 2206-02H	⁶ Well No. 272H

⁷ Surface Location

UL - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County
H	2	22N	6W		1707	North	335	East	Sandoval

⁸ Proposed Bottom Hole Location

UL - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County
E	2	22N	6W		2655	North	230	West	Sandoval

⁹ Pool Information

Pool Name Lybrook Gallup	Pool Code 42289
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Additional Well Information

¹¹ Work Type N	¹² Well Type O	¹³ Cable/Rotary R	¹⁴ Lease Type S	¹⁵ Ground Level Elevation 6949'
¹⁶ Multiple No	¹⁷ Proposed Depth 10,555' MD / 5,303' TVD	¹⁸ Formation Gallup	¹⁹ Contractor AWS	²⁰ Spud Date 03/01/2014
Depth to Ground water +/- 50'		Distance from nearest fresh water well >1000'		Distance to nearest surface water >1000'

²¹ Proposed Casing and Cement Program

Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
J-55	12-1/4"	9-5/8"	36#	400'	190	Surface
K-55	8-3/4"	7"	23#	5,938'	1050	Surface
N-80	6-1/8"	4-1/2"	11.6#	5,788'-10,555'	310	5,488'

Casing/Cement Program: Additional Comments

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²² Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer
Double Ram	3000#	2000#	

²³ I hereby certify that the information given above is true and complete to the best of my knowledge and belief.

I further certify that I have complied with 19.15.14.9 (A) NMAC ☐ and/or 19.15.14.9 (B) NMAC ☐, if applicable.

Signature: *Larry Higgins*

Printed name: Larry Higgins

Title: Regulatory Specialist

E-mail Address: larry.higgins@wpxenergy.com

Date: 01/28/2014

Phone: 333-1808

OIL CONSERVATION DIVISION

Approved By:

Charlie Perri

Title:

SUPERVISOR DISTRICT #4

Approved Date: 1-31-2014

Expiration Date: 1-31-2016

Conditions of Approval Attached

JAN 31 2014 CA

AV

NOTIFY AZTEC OCD 24 HRS PRIOR TO CASING & CEMENT

Hold C104 for Directional Survey and "As Drilled" plat

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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 30-043-21193		*Pool Code 42289	*Pool Name LYBROOK GALLUP
*Property Code 39908	*Property Name CHACO 2205-02H		*Well Number 272H
*GRID No. 120782	*Operator Name WPX ENERGY PRODUCTION, LLC		*Elevation 6949'

¹⁰ Surface Location

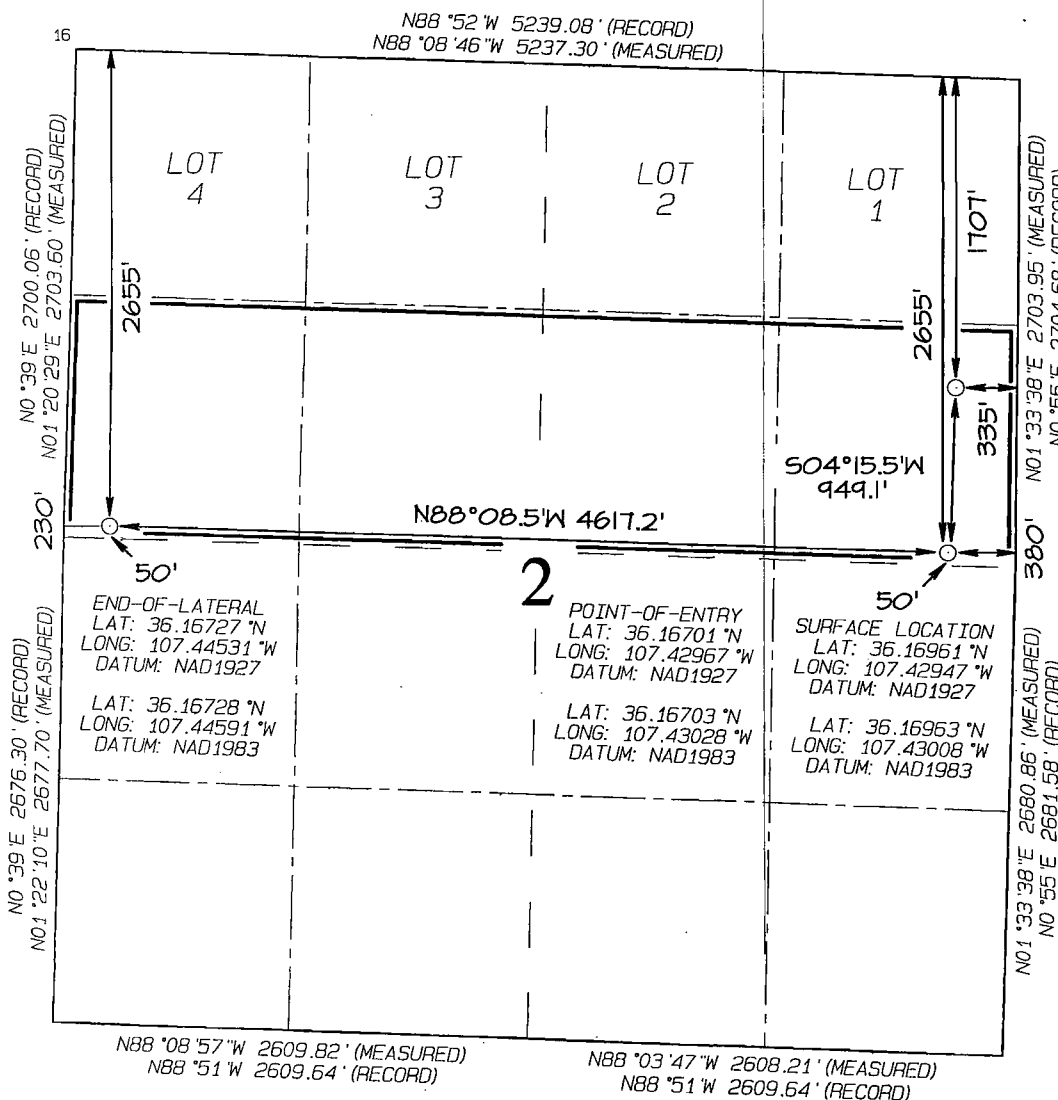
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
H	2	22N	6W		1707	NORTH	335	EAST	SANDOVAL

¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
E	2	22N	6W		2655	NORTH	230	WEST	SANDOVAL

¹² Dedicated Acres 160.0 Acres - (S/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 *Larry Higgins* Date **01/28/14**

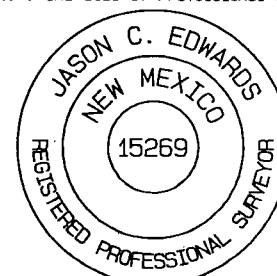
Printed Name
Larry Higgins
E-mail Address
larry.higgins@wpxenergy.com

¹⁸ SURVEYOR CERTIFICATION

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

Date Revised: JANUARY 27, 2014
Survey Date: JANUARY 10, 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: 1/27/2014 **FIELD:** Lybrook (Gallup)

WELL NAME: Chaco 2206-02H #272H **SURFACE:** State

SH Location: SENE Sec 2-22N-06W **ELEVATION:** 6,949' GR

BH Location: SWNW Sec 2-22N-06W **MINERALS:** State
Sandoval Co, NM

MEASURED DEPTH: 10,555' **LEASE #:** V09209

I. GEOLOGY: Surface formation – San Jose**A. FORMATION TOPS:** (KB)

Name	MD	TVD	Name	MD	TVD
Ojo Alamo	1,292	1,284	Point Lookout	4,195	4,082
Kirtland	1,583	1,564	Mancos	4,391	4,271
Pictured Cliffs	1,846	1,818	Kickoff Point	4,758	4,625
Lewis	1,963	1,931	Target Top	5,678	5,335
Chacra	2,289	2,245	Landing Point	5,938	5,383
Cliff House	3,441	3,355	Target Base	5,938	5,383
Menefee	3,473	3,386			
			TD	10,555	5,303

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, 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 +/- 4,758' (MD) / 4,625' (TVD). Curve portion of wellbore will be drilled and landed at +/- 90 deg. at +/- 5,938' (MD) / 5,383' (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 +/- 10,555' (MD) / 5,303' (TVD). Will run 4-1/2 in. Production Liner from +/- 5,788 ft. to TD and cemented. Liner will be tied back to surface w / 4-1/2" Casing for stimulation / testing, then removed from the well.

III. MATERIALS**A. CASING PROGRAM:**

<u>CASING TYPE</u>	<u>OH SIZE (IN)</u>	<u>DEPTH (MD) (FT)</u>	<u>CASING SIZE (IN)</u>	<u>WEIGHT(LB)</u>	<u>GRADE</u>
Surface	12.25"	400'+	9.625"	36#	J-55
Intermediate	8.75"	5,938'	7"	23#	K-55
Prod. Liner	6.125"	5,788' - 10,555'	4-1/2"	11.6#	N-80
Tie-Back String	N/A	Surf. - 5,788'	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 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 (310 sx / 536.3 cu ft / 95.5 bbls). Mix Foamed Cement w/ +/- 75,000 SCF Nitrogen. Est. TOC +/- 5,488 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 5,938 ft. MD) with a Liner Hanger and pack-off assembly then cemented to +/- 300 ft above the liner hanger. TOL will be +/- 5,788 ft. (MD) +/- 78 degree angle. TOC: +/- 5,488 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.

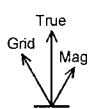
The Drilling Rig will be rigged down at this point and Completion operations will begin. After Stimulation and Testing operations are complete the 4-1/2" tie-back string will be removed from the well.

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

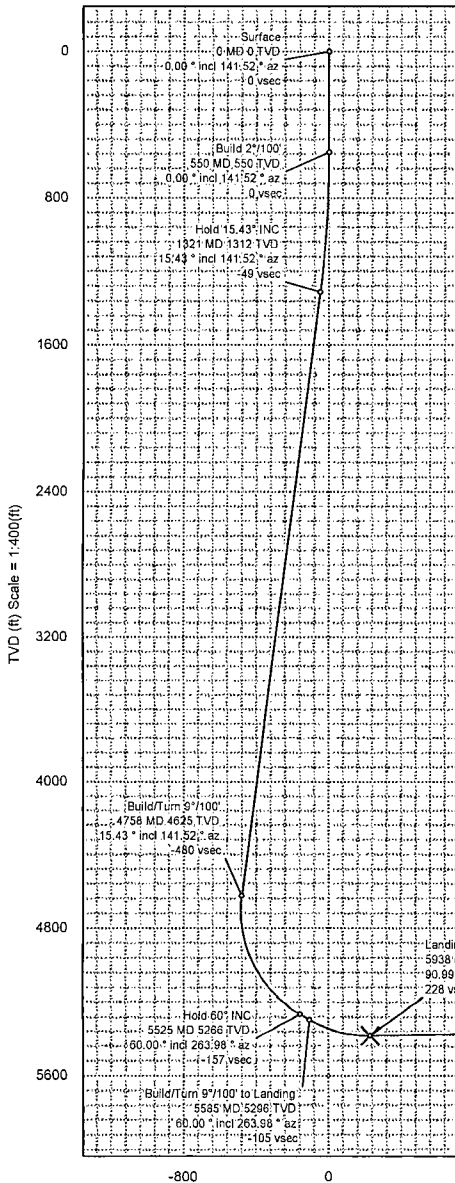
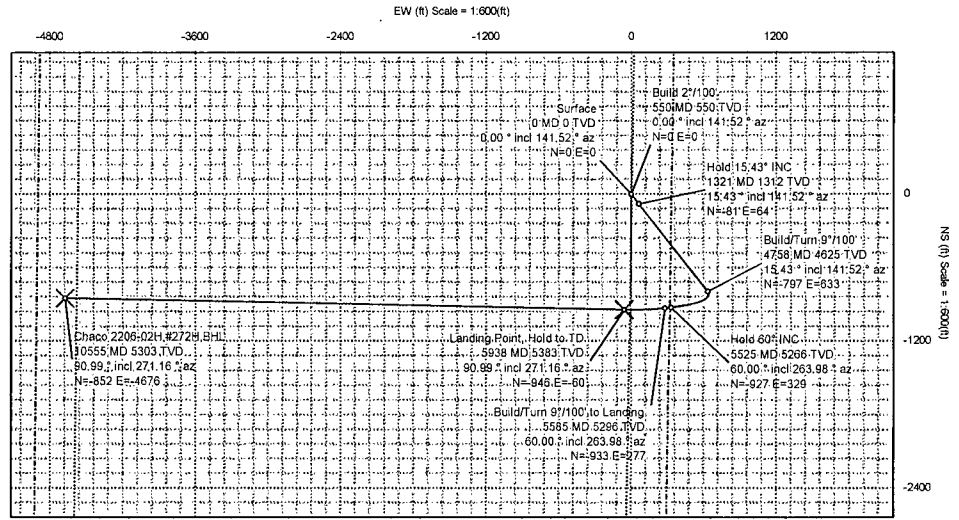
Borehole:	Well:	Field:	Structure:
Original Hole	Chaco 2206-02H #272H	NM Sandoval County NAD27	Sec 2-22N-6W

Gravity & Magnetic Parameters	Surface Location	Miscellaneous
Model: BGGM 2013 Dip: 62.978° Date: 27-Jan-2014	NAD27 New Mexico State Plane, Central Zone, US Feet	Slot: Chaco 2206-02H #272H
MagDec: 9.412° FS: 50126.334nT Gravity FS: 998.495mgN (9.80665 Based)	Lat: N 36 10 10.60 Northing: 1883062.624ft Grid Conv: -0.6962°	TVD Ref: RKB(6963ft above MSL)
	Lon: W 107 25 46.09 Easting: 151866.202ft Scale Fact: 1.00003869	Plan: Chaco 2206-02H #272H R1 mdv 27Jan14

Proposal



True North
Tot Corr (M→T 9.412°)
Mag Dec (9.412°)
Grid Conv (-0.696°)



Surface Location								
Northing: 1883062.624		Easting: 151866.202		Latitude: N 36 10 10.60		Longitude: W 107 25 46.09		VSec Azimuth: 259.673
Target Description		Grid Coord					Local Coord	
Target Name	Latitude	Longitude	Northing	Easting	TVD	VSec	N(+)/S(-)	E(+)/W(-)
Chaco 2206-02H #272H BHL	N 36 10 2.17	W 107 26 43.11	1882267.43	147180.28	5303.00	4752.74	-852.04	-4675.74
Chaco 2206-02H #272H PP	N 36 10 1.24	W 107 25 46.82	1882117.72	151794.91	5383.00	228.36	-945.67	-59.81
Chaco 2206-02H #272H 330' Setback	N 36 10 10.60	W 107 25 46.09	1883062.62	151866.20	6963.00	0.00	0.00	0.00
Chaco 2206-02H #272H Section Line	N 36 10 10.60	W 107 25 46.09	1883062.62	151866.20	6963.00	0.00	0.00	0.00
Critical Points								
Critical Point	MD	INCL	AZIM	TVD	VSEC	N(+)/S(-)	E(+)/W(-)	DLS
Surface	0.00	0.00	141.52	0.00	0.00	0.00	0.00	
Build 2°/100'	550.00	0.00	141.52	550.00	0.00	0.00	0.00	0.00
Hold 15.43° INC	1321.47	15.43	141.52	1312.18	-48.72	-80.82	64.25	2.00
Build/Turn 9°/100'	4758.21	15.43	141.52	4625.06	-480.16	-796.58	633.22	0.00
Hold 60° INC	5524.92	60.00	263.98	5265.64	-157.21	-927.45	328.81	9.00
Build/Turn 9°/100' to Landing	5584.92	60.00	263.98	5295.64	-105.40	-932.90	277.13	0.00
Landing Point, Hold to TD	5937.61	90.99	271.16	5383.00	228.25	-945.68	-59.69	9.00
Chaco 2206-02H #272H BHL	10555.31	90.99	271.16	5303.00	4752.74	-852.04	-4675.74	0.00



Chaco 2206-02H #272H R1 mdv 27Jan14 Proposal Geodetic Report



(Def Plan)

Report Date: January 27, 2014 - 09:16 AM
Client: WPX Energy
Field: NM Sandoval County NAD27
Structure / Slot: WPX Sec 2-22N-6W (Chaco 2206-02H #272H) / Chaco 2206-02H #272H
Well: Chaco 2206-02H #272H
Borehole: Original Hole
UWI / API#: Unknown / Unknown
Survey Name: Chaco 2206-02H #272H R1 mdv 27Jan14
Survey Date: January 27, 2014
Tort / AHD / DDI / ERD Ratio: 116.181' / 6393.354 ft / 6.163' / 1.188
Coordinate Reference System: NAD27 New Mexico State Plane, Central Zone, US Feet
Location Lat / Long: N 36° 10' 10.59600", W 107° 25' 46.09200"
Location Grid N/E Y/X: N 1883062.624 ftUS, E 151866.202 ftUS
CRS Grid Convergence Angle: -0.6962'
Grid Scale Factor: 1.00003869
Version / Patch: 2.7.1043.0
Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 259.673° (True North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: RKB
TVD Reference Elevation: 6963.000 ft above MSL
Seabed / Ground Elevation: 6949.000 ft above MSL
Magnetic Declination: 9.412°
Total Gravity Field Strength: 998.4854mgN (9.80665 Based)
Gravity Model: GARM
Total Magnetic Field Strength: 50126.334 nT
Magnetic Dip Angle: 62.978°
Declination Date: January 27, 2014
Magnetic Declination Model: BGGM 2013
North Reference: True North
Grid Convergence Used: 0.0000°
Total Corr Mag North->True North: 9.4118°
Local Coord Referenced To: Well Head

Comments	MD (ft)	Incl (°)	Azim True (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (ft/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
Surface	0.00	0.00	141.52	0.00	0.00	0.00	0.00	N/A	1883062.62	151866.20	N 36 10 10.60	W 107 25 46.09
Build 2°/100'	100.00	0.00	141.52	100.00	0.00	0.00	0.00	0.00	1883062.62	151866.20	N 36 10 10.60	W 107 25 46.09
	200.00	0.00	141.52	200.00	0.00	0.00	0.00	0.00	1883062.62	151866.20	N 36 10 10.60	W 107 25 46.09
	300.00	0.00	141.52	300.00	0.00	0.00	0.00	0.00	1883062.62	151866.20	N 36 10 10.60	W 107 25 46.09
	400.00	0.00	141.52	400.00	0.00	0.00	0.00	0.00	1883062.62	151866.20	N 36 10 10.60	W 107 25 46.09
	500.00	0.00	141.52	500.00	0.00	0.00	0.00	0.00	1883062.62	151866.20	N 36 10 10.60	W 107 25 46.09
	550.00	0.00	141.52	550.00	0.00	0.00	0.00	0.00	1883062.62	151866.20	N 36 10 10.60	W 107 25 46.09
	600.00	1.00	141.52	600.00	-0.21	-0.34	0.27	2.00	1883062.28	151866.47	N 36 10 10.59	W 107 25 46.09
	700.00	3.00	141.52	699.93	-1.85	-3.07	2.44	2.00	1883059.52	151868.61	N 36 10 10.57	W 107 25 46.06
	800.00	5.00	141.52	799.68	-5.14	-8.53	6.78	2.00	1883054.01	151872.88	N 36 10 10.51	W 107 25 46.01
	900.00	7.00	141.52	899.13	-10.08	-16.72	13.29	2.00	1883045.75	151879.29	N 36 10 10.43	W 107 25 45.93
Hold 15.43° INC	1000.00	9.00	141.52	998.15	-16.64	-27.61	21.95	2.00	1883034.75	151887.81	N 36 10 10.32	W 107 25 45.82
	1100.00	11.00	141.52	1096.63	-24.84	-41.20	32.75	2.00	1883021.03	151898.45	N 36 10 10.19	W 107 25 45.69
	1200.00	13.00	141.52	1194.44	-34.65	-57.48	45.69	2.00	1883004.59	151911.19	N 36 10 10.03	W 107 25 45.53
	1300.00	15.00	141.52	1291.46	-46.06	-76.41	60.74	2.00	1882985.48	151926.01	N 36 10 9.84	W 107 25 45.35
	1321.47	15.43	141.52	1312.18	-48.72	-80.82	64.25	2.00	1882981.02	151929.47	N 36 10 9.80	W 107 25 45.31
	1400.00	15.43	141.52	1387.88	-58.58	-97.18	77.25	0.00	1882964.51	151942.27	N 36 10 9.63	W 107 25 45.15
	1500.00	15.43	141.52	1484.27	-71.13	-118.01	93.81	0.00	1882943.48	151958.57	N 36 10 9.43	W 107 25 44.95
	1600.00	15.43	141.52	1580.67	-83.68	-138.83	110.36	0.00	1882922.46	151974.87	N 36 10 9.22	W 107 25 44.75
	1700.00	15.43	141.52	1677.07	-96.24	-159.66	126.92	0.00	1882901.43	151991.17	N 36 10 9.02	W 107 25 44.54
	1800.00	15.43	141.52	1773.46	-108.79	-180.49	143.47	0.00	1882880.40	152007.48	N 36 10 8.81	W 107 25 44.34
	1900.00	15.43	141.52	1869.86	-121.35	-201.31	160.03	0.00	1882859.38	152023.78	N 36 10 8.61	W 107 25 44.14
	2000.00	15.43	141.52	1966.25	-133.90	-222.14	176.58	0.00	1882838.35	152040.08	N 36 10 8.40	W 107 25 43.94
	2100.00	15.43	141.52	2062.65	-146.45	-242.97	193.14	0.00	1882817.32	152056.38	N 36 10 8.19	W 107 25 43.74
	2200.00	15.43	141.52	2159.05	-159.01	-263.79	209.69	0.00	1882796.29	152072.68	N 36 10 7.99	W 107 25 43.53
	2300.00	15.43	141.52	2255.44	-171.56	-284.62	226.25	0.00	1882775.27	152088.98	N 36 10 7.78	W 107 25 43.33
	2400.00	15.43	141.52	2351.84	-184.11	-305.45	242.81	0.00	1882754.24	152105.29	N 36 10 7.58	W 107 25 43.13
	2500.00	15.43	141.52	2448.23	-196.67	-326.27	259.36	0.00	1882733.21	152121.59	N 36 10 7.37	W 107 25 42.93
	2600.00	15.43	141.52	2544.63	-209.22	-347.10	275.92	0.00	1882712.19	152137.89	N 36 10 7.16	W 107 25 42.73
	2700.00	15.43	141.52	2641.03	-221.77	-367.92	292.47	0.00	1882691.16	152154.19	N 36 10 6.96	W 107 25 42.53
	2800.00	15.43	141.52	2737.42	-234.33	-388.75	309.03	0.00	1882670.13	152170.49	N 36 10 6.75	W 107 25 42.32
	2900.00	15.43	141.52	2833.82	-246.88	-409.58	325.58	0.00	1882649.11	152186.80	N 36 10 6.55	W 107 25 42.12
	3000.00	15.43	141.52	2930.21	-259.44	-430.40	342.14	0.00	1882628.08	152203.10	N 36 10 6.34	W 107 25 41.92
	3100.00	15.43	141.52	3026.61	-271.99	-451.23	358.69	0.00	1882607.05	152219.40	N 36 10 6.13	W 107 25 41.72
	3200.00	15.43	141.52	3123.01	-284.54	-472.06	375.25	0.00	1882586.03	152235.70	N 36 10 5.93	W 107 25 41.52
	3300.00	15.43	141.52	3219.40	-297.10	-492.88	391.81	0.00	1882565.00	152252.00	N 36 10 5.72	W 107 25 41.31
	3400.00	15.43	141.52	3315.80	-309.65	-513.71	408.36	0.00	1882543.97	152268.31	N 36 10 5.52	W 107 25 41.11
	3500.00	15.43	141.52	3412.19	-322.20	-534.54	424.92	0.00	1882522.94	152284.61	N 36 10 5.31	W 107 25 40.91
	3600.00	15.43	141.52	3508.59	-334.76	-555.36	441.47	0.00	1882501.92	152300.91	N 36 10 5.10	W 107 25 40.71
	3700.00	15.43	141.52	3604.98	-347.31	-576.19	458.03	0.00	1882480.89	152317.21	N 36 10 4.90	W 107 25 40.51
	3800.00	15.43	141.52	3701.38	-359.86	-597.02	474.58	0.00	1882459.86	152333.51	N 36 10 4.69	W 107 25 40.30
3900.00	15.43	141.52	3797.78	-372.42	-617.84	491.14	0.00	1882438.84	152349.81	N 36 10 4.49	W 107 25 40.10	
4000.00	15.43	141.52	3894.17	-384.97	-638.67	507.69	0.00	1882417.81	152366.12	N 36 10 4.28	W 107 25 39.90	
4100.00	15.43	141.52	3990.57	-397.53	-659.50	524.25	0.00	1882396.78	152382.42	N 36 10 4.07	W 107 25 39.70	
4200.00	15.43	141.52	4086.96	-410.08	-680.32	540.80	0.00	1882375.76	152398.72	N 36 10 3.87	W 107 25 39.50	
4300.00	15.43	141.52	4183.36	-422.63	-701.15	557.36	0.00	1882354.73	152415.02	N 36 10 3.66	W 107 25 39.29	
4400.00	15.43	141.52	4279.76	-435.19	-721.98	573.92	0.00	1882333.70	152431.32	N 36 10 3.46	W 107 25 39.09	
4500.00	15.43	141.52	4376.15	-447.74	-742.80	590.47	0.00	1882312.67	152447.63	N 36 10 3.25	W 107 25 38.89	
4600.00	15.43	141.52	4472.55	-460.29	-763.63	607.03	0.00	1882291.65	152463.93	N 36 10 3.04	W 107 25 38.69	
4700.00	15.43	141.52	4568.94	-472.85	-784.46	623.58	0.00	1882270.62	152480.23	N 36 10 2.84	W 107 25 38.49	
Build/Turn 9°/100'	4758.21	15.43	141.52	4625.06	-480.16	-796.58	633.22	0.00	1882258.38	152496.53	N 36 10 2.72	W 107 25 38.37
Build/Turn 9°/100' to Landinq	4800.00	13.41	154.31	4665.54	-484.06	-805.30	638.78	9.00	1882249.59	152495.17	N 36 10 2.63	W 107 25 38.30
	4900.00	12.39	195.23	4763.21	-482.51	-826.14	641.00	9.00	1882228.73	152497.14	N 36 10 2.43	W 107 25 38.27
	5000.00	16.93	226.66	4860.08	-465.64	-846.52	627.56	9.00	1882208.51	152493.45	N 36 10 2.22	W 107 25 38.44
	5100.00	24.07	242.58	4953.76	-433.87	-865.95	598.81	9.00	1882189.43	152454.47	N 36 10 2.03	W 107 25 38.79
	5200.00	32.12	251.22	5041.94	-387.98	-883.93	555.45	9.00	1882171.97	152410.89	N 36 10 1.85	W 107 25 39.32
	5300.00	40.54	256.63	5122.45	-329.11	-900.04	498.55	9.00	1882156.56	152353.79	N 36 10 1.70	W 107 25 40.01
	5400.00	49.13	260.43	5193.31	-258.71	-913.88	429.50	9.00	1882143.56	152284.58	N 36 10 1.56	W 107 25 40.85
	5500.00	57.82	263.34	5252.77	-178.50	-925.10	350.02	9.00	1882133.31	152204.97	N 36 10 1.45	W 107 25 41.82
	5524.92	60.00	263.98	5265.64	-157.21	-927.45	328.81	9.00	1882131.21	152183.73	N 36 10 1.42	W 107 25 42.08
	5584.92	60.00	263.98	5295.64	-105.40	-932.90	277.13	0.00	1882126.39	152131.99	N 36 10 1.37	W 107 25 42.71
Landing Point, Hold to TD	5600.00	61.32	264.35	5303.03	-92.29	-934.24	264.06	9.00	1882125.21	152118.90	N 36 10 1.36	W 107 25 42.87
	5700.00	70.09	266.58	5344.14	-1.72	-941.37	173.29	9.00	1882119.18	152028.05	N 36 10 1.29	W 107 25 43.98
	5800.00	78.88	268.59	5370.87	93.61	-945.39	77.12	9.00	1882116.33	151931.83	N 36 10 1.25	W 107 25 45.15
	5900.00	87.68	270.47	5382.56	191.36	-946.20	-22.09	9.00	1882116.73	151832.62	N 36 10 1.24	W 107 25 46.36
	5937.61	90.99	271.16	5383.00	228.25	-945.66	-59.69	9.00	1882117.72	151795.03	N 36 10 1.24	W 107 25 46.82
	6000.00	90.99	271.16	5381.92	289.38	-944.39	-122.05	0.00	1882119.75	151732.68	N 36 10 1.26	W 107 25 47.58
	6100.00	90.99	271.16	5380.18	387.36	-942.36	-222.02	0.00	1882122.99	151632.74	N 36 10 1.28	W 107 25 48.80
	6200.00	90.99	271.16	5378.45	485.34	-940.33	-321.98	0.00	1882126.24	151532.81	N 36 10 1.30	W 107 25 50.02
	6300.00	90.99	271.16	5376.71	583.32	-938.30	-421.95	0.00	1882129.49	151432.87	N 36 10 1.32	W 107 25 51.24
	6400.00	90.99	271.16	5374.98	681.30	-936.27	-521.91	0.00	1882132.73	151332.94	N 36 10 1.34	W 107 25 52.46
6500.00	90.99	271.16	5373.24	779.28	-93							

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 ° ' ")
	6700.00	90.99	271.16	5369.77	975.25	-930.18	-821.80	0.00	1882142.47	151033.13	N 36 10 1.40	W 107 25 56.11
	6800.00	90.99	271.16	5368.04	1073.23	-928.15	-921.77	0.00	1882145.71	150933.19	N 36 10 1.42	W 107 25 57.33
	6900.00	90.99	271.16	5366.31	1171.21	-926.12	-1021.73	0.00	1882148.96	150833.26	N 36 10 1.44	W 107 25 58.55
	7000.00	90.99	271.16	5364.57	1269.19	-924.09	-1121.70	0.00	1882152.20	150733.32	N 36 10 1.46	W 107 25 59.77
	7100.00	90.99	271.16	5362.84	1367.17	-922.06	-1221.66	0.00	1882155.45	150633.38	N 36 10 1.48	W 107 26 0.99
	7200.00	90.99	271.16	5361.11	1465.15	-920.03	-1321.62	0.00	1882158.69	150533.45	N 36 10 1.50	W 107 26 2.21
	7300.00	90.99	271.16	5359.37	1563.13	-918.00	-1421.59	0.00	1882161.93	150433.51	N 36 10 1.52	W 107 26 3.43
	7400.00	90.99	271.16	5357.64	1661.11	-915.97	-1521.55	0.00	1882165.18	150333.58	N 36 10 1.54	W 107 26 4.65
	7500.00	90.99	271.16	5355.91	1759.09	-913.94	-1621.52	0.00	1882168.42	150233.64	N 36 10 1.56	W 107 26 5.87
	7600.00	90.99	271.16	5354.17	1857.07	-911.91	-1721.48	0.00	1882171.67	150133.70	N 36 10 1.58	W 107 26 7.09
	7700.00	90.99	271.16	5352.44	1955.06	-909.88	-1821.45	0.00	1882174.91	150033.77	N 36 10 1.60	W 107 26 8.31
	7800.00	90.99	271.16	5350.71	2053.04	-907.85	-1921.41	0.00	1882178.15	149933.83	N 36 10 1.62	W 107 26 9.52
	7900.00	90.99	271.16	5348.97	2151.02	-905.82	-2021.38	0.00	1882181.39	149833.90	N 36 10 1.64	W 107 26 10.74
	8000.00	90.99	271.16	5347.24	2249.00	-903.80	-2121.34	0.00	1882184.64	149733.96	N 36 10 1.66	W 107 26 11.96
	8100.00	90.99	271.16	5345.51	2346.98	-901.77	-2221.30	0.00	1882187.88	149634.02	N 36 10 1.68	W 107 26 13.18
	8200.00	90.99	271.16	5343.78	2444.96	-899.74	-2321.27	0.00	1882191.12	149534.09	N 36 10 1.70	W 107 26 14.40
	8300.00	90.99	271.16	5342.04	2542.94	-897.71	-2421.23	0.00	1882194.36	149434.15	N 36 10 1.72	W 107 26 15.62
	8400.00	90.99	271.16	5340.31	2640.93	-895.69	-2521.20	0.00	1882197.61	149334.21	N 36 10 1.74	W 107 26 16.84
	8500.00	90.99	271.16	5338.58	2738.91	-893.66	-2621.16	0.00	1882200.85	149234.28	N 36 10 1.76	W 107 26 18.06
	8600.00	90.99	271.16	5336.85	2836.89	-891.63	-2721.13	0.00	1882204.09	149134.34	N 36 10 1.78	W 107 26 19.28
	8700.00	90.99	271.16	5335.12	2934.87	-889.61	-2821.09	0.00	1882207.33	149034.41	N 36 10 1.80	W 107 26 20.50
	8800.00	90.99	271.16	5333.38	3032.85	-887.58	-2921.06	0.00	1882210.57	148934.47	N 36 10 1.82	W 107 26 21.72
	8900.00	90.99	271.16	5331.65	3130.83	-885.55	-3021.02	0.00	1882213.81	148834.53	N 36 10 1.84	W 107 26 22.93
	9000.00	90.99	271.16	5329.92	3228.82	-883.53	-3120.98	0.00	1882217.05	148734.60	N 36 10 1.86	W 107 26 24.15
	9100.00	90.99	271.16	5328.19	3326.80	-881.50	-3220.95	0.00	1882220.29	148634.66	N 36 10 1.88	W 107 26 25.37
	9200.00	90.99	271.16	5326.46	3424.78	-879.48	-3320.91	0.00	1882223.53	148534.73	N 36 10 1.90	W 107 26 26.59
	9300.00	90.99	271.16	5324.73	3522.76	-877.45	-3420.88	0.00	1882226.77	148434.79	N 36 10 1.92	W 107 26 27.81
	9400.00	90.99	271.16	5322.99	3620.74	-875.42	-3520.84	0.00	1882230.01	148334.85	N 36 10 1.94	W 107 26 29.03
	9500.00	90.99	271.16	5321.26	3718.72	-873.40	-3620.81	0.00	1882233.25	148234.92	N 36 10 1.96	W 107 26 30.25
	9600.00	90.99	271.16	5319.53	3816.71	-871.37	-3720.77	0.00	1882236.49	148134.98	N 36 10 1.98	W 107 26 31.47
	9700.00	90.99	271.16	5317.80	3914.69	-869.35	-3820.74	0.00	1882239.73	148035.04	N 36 10 2.00	W 107 26 32.69
	9800.00	90.99	271.16	5316.07	4012.67	-867.33	-3920.70	0.00	1882242.97	147935.11	N 36 10 2.02	W 107 26 33.91
	9900.00	90.99	271.16	5314.34	4110.65	-865.30	-4020.66	0.00	1882246.21	147835.17	N 36 10 2.04	W 107 26 35.13
	10000.00	90.99	271.16	5312.61	4208.63	-863.28	-4120.63	0.00	1882249.45	147735.24	N 36 10 2.06	W 107 26 36.34
	10100.00	90.99	271.16	5310.88	4306.62	-861.25	-4220.59	0.00	1882252.69	147635.30	N 36 10 2.08	W 107 26 37.56
	10200.00	90.99	271.16	5309.15	4404.60	-859.23	-4320.56	0.00	1882255.92	147535.36	N 36 10 2.10	W 107 26 38.78
	10300.00	90.99	271.16	5307.42	4502.58	-857.21	-4420.52	0.00	1882259.16	147435.43	N 36 10 2.12	W 107 26 40.00
	10400.00	90.99	271.16	5305.69	4600.56	-855.18	-4520.49	0.00	1882262.40	147335.49	N 36 10 2.14	W 107 26 41.22
	10500.00	90.99	271.16	5303.96	4698.55	-853.16	-4620.45	0.00	1882265.64	147235.55	N 36 10 2.16	W 107 26 42.44
Chaco 2206-02H #272H BHL	10555.31	90.99	271.16	5303.00	4752.74	-852.04	-4675.74	0.00	1882267.43	147180.28	N 36 10 2.17	W 107 26 43.11

Survey Type: Def Plan

Survey Error Model: ISCWSA Rev 0 *** 3-D 95.000% Confidence 2.7955 sigma
Survey Program:

Description	Part	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Survey Tool Type	Borehole / Survey
	1	0.000	14.000	1/100.000	30.000	30.000	SLB_MWD-STD-Depth Only	Original Hole / Chaco 2206-02H #272H R1 mdv 27Jan14
	1	14.000	10555.307	1/100.000	30.000	30.000	SLB_MWD-STD	Original Hole / Chaco 2206-02H #272H R1 mdv 27Jan14