

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 MAY 15 '13
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 30-043-21148
⁴ Property Code 39909	⁵ Property Name Chaco 2206-16A	⁶ Well No. 221H

⁷ Surface Location

UL - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County
A	16	22N	6W		738	North	270	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
D	16	22N	6W		340	North	340	West	Sandoval

⁹ Pool Information

Pool Name	Pool Code
Lybrook Gallup	42289

Additional Well Information

¹¹ Work Type N	¹² Well Type O	¹³ Cable/Rotary R	¹⁴ Lease Type S	¹⁵ Ground Level Elevation 7148'
¹⁶ Multiple No	¹⁷ Proposed Depth 10,055' MD / 5,273' TVD	¹⁸ Formation Gallup	¹⁹ Contractor AWS	²⁰ Spud Date 06/01/13
Depth to Ground water +/- 100'		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
K-55	12-1/4"	9-5/8"	36#	400'	190	Surface
J-55	8-3/4"	7"	23#	5,812'	1050	Surface
N-80	6-1/8"	4-1/2"	11.6#	10,055'	458	4,404'

Casing/Cement Program: Additional Comments

A COMPLETE C-144 MUST BE SUBMITTED TO AND APPROVED BY THE NMOC FOR: A PIT, CLOSED LOOP SYSTEM, BELOW GRADE TANK, OR PROPOSED ALTERNATIVE METHOD, PURSUANT TO NMOC PART 19.15.17, PRIOR TO THE USE OR CONSTRUCTION OF THE ABOVE APPLICATIONS.

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*

Hold C104

Printed name: Larry Higgins

for Directional Survey
and "As Drilled" plat

Title: Permit Supervisor

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

Date: 05/07/13

Phone: 333-1808

OIL CONSERVATION DIVISION

Approved By:

Charlie Derrin

Title: SUPERVISOR DISTRICT # 3

Approved Date: MAY 17 2013

Expiration Date: MAY 17 2015

Conditions of Approval Attached

MAY 17 2013 ca

PV

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

¹ API Number 30-043-21148	² Pool Code 42289	³ Pool Name LYBROOK GALLUP
⁴ Property Code 39909	⁵ Property Name CHACO 2206-16A	⁶ Well Number 221H
⁷ GRID No. 120782	⁸ Operator Name WPX ENERGY PRODUCTION, LLC	⁹ Elevation 7148'

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
A	16	22N	6W		738	NORTH	270	EAST	SANDOVAL

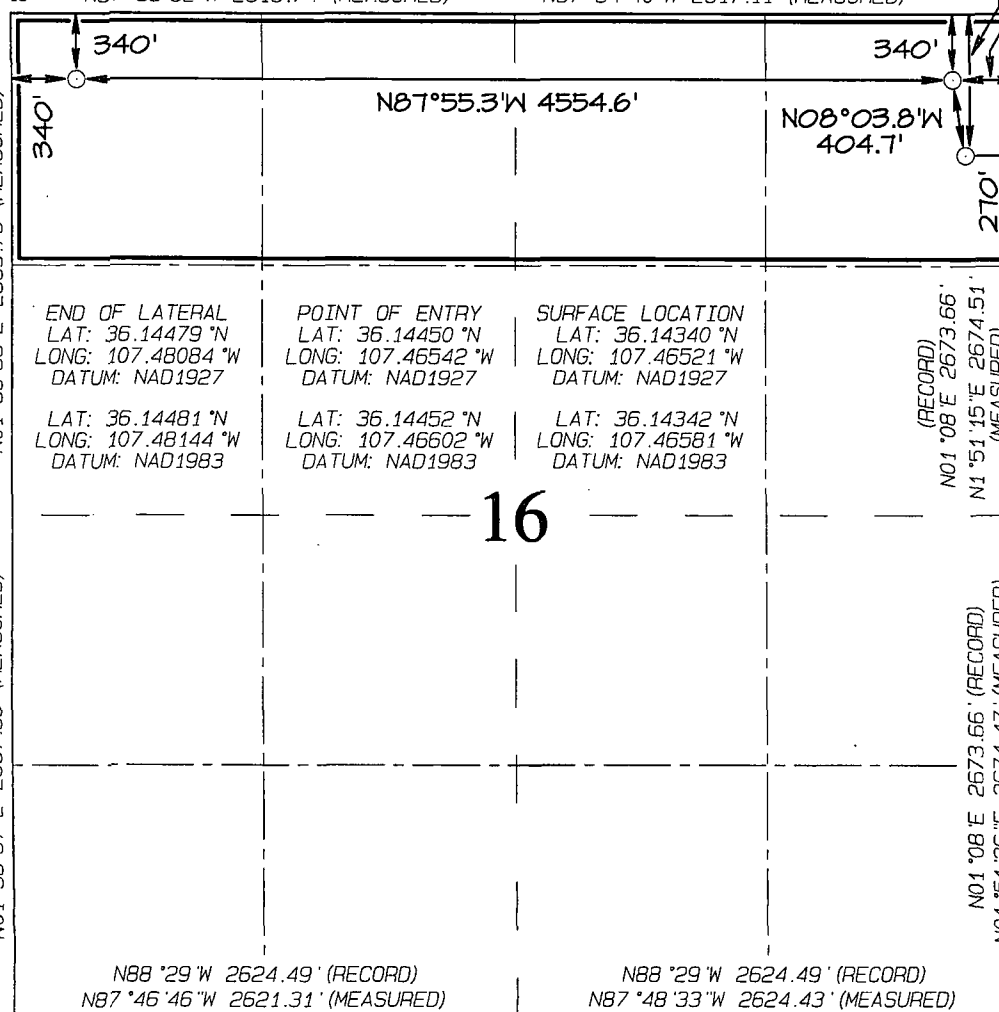
¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
D	16	22N	6W		340	NORTH	340	WEST	SANDOVAL

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

¹⁶ N88°35'W 2616.57' (RECORD) N88°35'W 2616.57' (RECORD) 738' 340'
N87°55'52"W 2616.74' (MEASURED) N87°54'40"W 2617.11' (MEASURED)



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 5/7/13

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: FEBRUARY 14, 2013

Date of Survey: JUNE 15, 2012

Signature and Seal of Professional Surveyor



JASON C. EDWARDS

Certificate Number 15269

WPX ENERGY

Operations Plan

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

DATE: 12/21/2012 **FIELD:** Wildcat Gallup

WELL NAME: Chaco 2206-16A #221H **SURFACE:** State

SH Location: NENE Sec 16-22N-6W **ELEVATION:** 7,148' GR

BH Location: NWNW Sec 16-22N-6W
Sandoval Co, NM **MINERALS:** State

MEASURED DEPTH: 10,055' **LEASE #:** State

I. GEOLOGY: Surface formation – San Jose

A. FORMATION TOPS: (KB)

Name	MD	TVD	Name	MD	TVD
Ojo Alamo	1,290	1,290	Point Lookout	4,159	4,127
Kirtland	1,441	1,441	Mancos	4,312	4,269
Pictured Cliffs	1,863	1,862	Kickoff Point	4,888	4,854
Lewis	1,974	1,973	Target Top	5,350	5,307
Chacra	2,250	2,245	Landing Point	5,812	5,427
Cliff House	2,680	2,662	Target Base	5,812	5,427
Menefee	3,404	3,365	Pilot Hole TD	5,913	5,870
			TD	10,055	5,253

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

C. LOGGING PROGRAM: OH Wireline logs in pilot hole, TD to Surface Csg. LWD GR from KOP to TD. Sonic will be run in Lateral. Conventional Cores +/- 120 ft. will be cut in the Pilot Hole at +/- 5,600 ft. in Mancos Formation. Exact interval to be selected.

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 8 3/4" vertical Pilot Hole. Will use WBM or Oil Base mud (OBM) to drill the curve portion of well, and OBM 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 2000 psi, so the BOPE will be tested to **250 psi (Low) for 5 minutes** and **2000 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: Pilot Hole (8-3/4 in.) will be vertically/directionally drilled as per attached Directional Plan to +/- 5,913' MD, evaluated, and plugged back to above KOP at +/- 4,888' (MD) to build Curve portion of wellbore and land curve at +/- 90 deg. at +/- 5,812' (MD). 7 in. csg will be set at this point. A 6-1/8" Lateral will be drilled as per the attached Directional Plan to +/- 10,055' (MD). Will run 4-1/2 in. Production Casing to TD and Cement.

Directions

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

Surface	12.25"	400'	9 5/8	36#	K-55
Intermediate	8.75"	5,812	7	23#	J-55
Longstring	6.125"	10,055	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) Turbulent centralizer on each of the bottom (3) joints and one standard centralizer every (3) joints to 2,500 ft. Run (1) Turbulent centralizer at 2,700 ft., 2,500 ft., 2,300ft., 2,000ft., 1,500 ft., and 1,000 ft. (**Need and setting depth of a DV Tool will be determined from Pilot Hole information.**)
3. **PRODUCTION CASING:** 4-1/2" whirler type cement nose guide shoe with a latch collar on top of 20' bottom joint. Run one spiral type solid body centralizer on every 3rd joint in lateral and around curve.

C. CEMENTING:

(Note: Volumes may be adjusted onsite due to actual conditions)

1. **SURFACE:** 10 bbl Fr Water Spacer + 190 sx (222.3 cu.ft.) of "Premium Cement" + 2% Calcium Chloride Cement + 0.125# pps of Poly-E-Flake, 15.8 #/gal (1.17 cu ft./sk, Vol 39.58 Bbls.). The 100% excess should circulate cement to the surface. WOC 12 hours. Test csg to 600psi. Total Volume: (222.3 cu-ft/190 sx/39.6 Bbls).
2. **PILOT HOLE PLUG BACK: 3 STAGE CEMENT JOB: STAGE 1:** 33 bbl Fr Water Spacer (Mud Flush III) + 162 Sx Premium Cem, 15.8 #/gal (Yield 1.15 cu ft/sk / Vol: 186.3 cu-ft), .3% HR-5 retarder + .1% CFR-3 Dispersant. displace w/ Fr Water Est. TOC +/- 5,342 ft.. **STAGE 2:** 33 bbl Fr Water Spacer (Mud Flush III) + 200 sx Premium Cement. 15.8 #/gal (Yield 1.15 cu ft/sk / Vol: 230 cu-ft) + .2% HR-5 Retarder & .1% CFR-3 Dispersant displace w/ Fr Water Est. TOC +/- 4,634 ft. **STAGE 3:** 30 bbl Mud Flush III + 230 sx Premium Cement. 17 #/gal (Yield 1.0 cu-ft /sk / Vol: 230 cu-ft). +3% KCL Acc. + 0.2% HR-5 retarder. Est. TOC +/- 4,134 ft. Total Volume: (647 cu-ft/592 sx/115.2 bbls).
3. **INTERMEDIATE:** 20 bbl (112 cu-ft) Mud Flush III spacer + Lead: 850 sx Foamed 50/50 Poz Cement. 13.0 ppg (Yield :1.43 cu-ft/ sk. / Vol: 1216 cu-ft) + 0.1% Halad 766 + 0.2% Versaset + 1.5% Chem-Foamer 760 / TOTETANK + TAIL: 100 sx 13.5 #/gal. (Yield: 1.28 cu-ft / sk / Vol: 128 cu-ft) + 0.2% Versaset + 0.15% HALAD-766. + F. Water Displacement (1,511 cu-ft) + 100 sx Top-Out Cement Premium: Yield: (1.17 cu-ft/ sk (Vol: 117 cu-ft). Est TOC: Surface. Test Casing to 1500 PSI for 30 minutes. Total Volume: (2021 cu-ft/1050 sx/260 bbls).
4. **PRODUCTION CASING:** **STAGE 1:**10 bbl (56.cu-ft) Fr Water Spacer. **STAGE 2:**20 bbl 10 ppg (112.3 cu-ft) Tuned Spacer III + 0.2 gal/bbl Musol + 59.8 ppb Barite. **STAGE 3:** 10 bbl Fr Water Spacer. **STAGE 4: Lead Cement:** Standard Type V + .4% Halad-766 + .3% Halad R-344, Yield 1.19 cu ft/sk, 15.6 #/gal, (60 sx/71.4 cu ft.) **STAGE 5:** 248 sx Foamed Lead Cement: 13.0 ppg (63.28 bbl / 355.3 cu-ft) 50/50 Poz Standard + 0.2% Versaset + 0.2% HALAD-766 + 1.5% Chem-Foamer 760. Yield 1.43 cu-ft/sk. **STAGE 6:** Tail Cement : 150 sx 50/50 Poz Standard + 0.2% Versaset + 0.25% HALAD-766, Weight: 13.5 ppg (Yield 1.29 cu ft/sk. / 193.5 cu ft.) **STAGE 7:** Displace w/176.6 bbl Fr Water. Total Cement (620.2 cu ft / 110.4 bbls). Mix w/ +/- 75,000 SCF Nitrogen. Est. TOC +/- 4.404 ft. Total Volume: (620.2 cu-ft/458 sx/110.4 bbls).

IV. COMPLETION**A. CBL**

1. Run Cement Bond Log and ensure top of cement is above 7" casing shoe.

B. PRESSURE TEST

1. Pressure test 4-1/2" casing to 5000 psi max, hold at 1500 psi for 30 minutes.

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 with CTU and flowback lateral.

D. RUNNING TUBING

1. *Production Tubing:* Run 2-3/8", 4.7#, N-80, EUE tubing with a SN (1.91" ID) on top of bottom joint. Land tubing at landing point of curve (~5,800' MD).
-



WPX Chaco 2206-16A #221 ST1 Rev0 JBE 08Apr13 Proposal Geodetic Report

(Non-Def Plan)

Report Date: April 08, 2013 - 03:52 PM
Client: WPX Energy
Field: NM Sandoval County NAD27
Structure / Slot: WPX Chaco 2206-16A #221 / Chaco 2206-16A #221
Well: WPX Chaco 2206-16A #221
Borehole: ST1
UWI / API#: Unknown / Unknown
Survey Name: WPX Chaco 2206-16A #221 ST1 Rev0 JBE 08Apr13
Survey Date: April 08, 2013
Tort / AHD / DDI / ERD Ratio: 112.722 ° / 5253.211 ft / 6.040 / 0.968
Coordinate Reference System: NAD27 New Mexico State Plane, Central Zone, US Feet
Location Lat / Long: N 36° 8' 36.24000", W 107° 27' 54.75600"
Location Grid N/E Y/X: N 1873651.603 ftUS, E 141197.252 ftUS
CRS Grid Convergence Angle: -0.7168 °
Grid Scale Factor: 1.00004732

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 275.770 ° (True North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: RKB
TVD Reference Elevation: 7162.000 ft above MSL
Seabed / Ground Elevation: 7148.000 ft above MSL
Magnetic Declination: 9.527 °
Total Gravity Field Strength: 999.1407 mgn (9.8 based)
Total Magnetic Field Strength: 50182.652 nT
Magnetic Dip Angle: 62.938 °
Declination Date: April 08, 2013
Magnetic Declination Model: BGGM 2012
North Reference: True North
Grid Convergence Used: 0.0000 °
Total Corr Mag North->True North: 9.5275 °
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 ° ' '')
SHL Chaco 2206-16A #221	0.00	0.00	31.87	0.00	0.00	0.00	0.00	N/A	1873651.60	141197.25	N 36 8 36.24	W 107 27 54.76
Nudge 1.5°/100'	1500.00	0.00	31.87	1500.00	0.00	0.00	0.00	0.00	1873651.60	141197.25	N 36 8 36.24	W 107 27 54.76
Hold 15° Tangent	2179.08	10.19	31.87	2175.51	-26.48	51.13	31.79	1.50	1873702.33	141229.68	N 36 8 36.75	W 107 27 54.37
Drop 1.5°/100'	3854.47	10.19	31.87	3824.49	-156.82	302.76	188.21	0.00	1873952.00	141389.25	N 36 8 39.23	W 107 27 52.46
Hold Vertical	4533.55	0.00	31.87	4500.00	-183.30	353.89	220.00	1.50	1874002.73	141421.67	N 36 8 39.74	W 107 27 52.07
Tie-In to Pilot	4800.00	0.00	271.33	4766.45	-183.30	353.89	220.00	N/A	1874002.73	141421.67	N 36 8 39.74	W 107 27 52.07
KOP 10°/100'	4888.08	0.00	271.33	4854.53	-183.30	353.89	220.00	0.00	1874002.73	141421.67	N 36 8 39.74	W 107 27 52.07
	4900.00	1.19	271.33	4866.45	-183.18	353.89	219.88	10.00	1874002.73	141421.55	N 36 8 39.74	W 107 27 52.08
	5000.00	11.19	271.33	4965.74	-172.44	354.14	209.11	10.00	1874003.12	141410.78	N 36 8 39.74	W 107 27 52.21
	5100.00	21.19	271.33	5061.65	-144.67	354.79	181.26	10.00	1874004.12	141382.95	N 36 8 39.75	W 107 27 52.55
	5200.00	31.19	271.33	5151.27	-100.72	355.82	137.19	10.00	1874005.69	141338.89	N 36 8 39.76	W 107 27 53.08
	5300.00	41.19	271.33	5231.87	-41.93	357.19	78.23	10.00	1874007.80	141279.95	N 36 8 39.77	W 107 27 53.80
	5400.00	51.19	271.33	5301.01	29.93	358.86	6.18	10.00	1874010.38	141207.92	N 36 8 39.79	W 107 27 54.68
	5500.00	61.19	271.33	5356.58	112.67	360.80	-76.78	10.00	1874013.35	141124.98	N 36 8 39.81	W 107 27 55.69
	5600.00	71.19	271.33	5396.89	203.77	362.92	-168.13	10.00	1874016.62	141033.66	N 36 8 39.83	W 107 27 56.81
	5700.00	81.19	271.33	5420.73	300.47	365.18	-265.09	10.00	1874020.08	140936.74	N 36 8 39.85	W 107 27 57.99
	5800.00	91.19	271.33	5427.36	399.82	367.49	-364.72	10.00	1874023.65	140837.14	N 36 8 39.87	W 107 27 59.20
Chaco 2206-16A #221 Landing	5811.58	92.35	271.33	5427.00	411.36	367.76	-376.29	10.00	1874024.06	140825.58	N 36 8 39.88	W 107 27 59.34
	5900.00	92.35	271.33	5423.38	499.44	369.82	-464.61	0.00	1874027.22	140737.28	N 36 8 39.90	W 107 28 0.42
	6000.00	92.35	271.33	5419.28	599.06	372.14	-564.50	0.00	1874030.80	140637.43	N 36 8 39.92	W 107 28 1.64
	6100.00	92.35	271.33	5415.18	698.67	374.47	-664.39	0.00	1874034.37	140537.57	N 36 8 39.94	W 107 28 2.86
	6200.00	92.35	271.33	5411.08	798.29	376.79	-764.28	0.00	1874037.94	140437.71	N 36 8 39.97	W 107 28 4.07
	6300.00	92.35	271.33	5406.98	897.91	379.11	-864.17	0.00	1874041.52	140337.86	N 36 8 39.99	W 107 28 5.29
	6400.00	92.35	271.33	5402.88	997.52	381.44	-964.06	0.00	1874045.09	140238.00	N 36 8 40.01	W 107 28 6.51
	6500.00	92.35	271.33	5398.78	1097.14	383.76	-1063.95	0.00	1874048.66	140138.14	N 36 8 40.03	W 107 28 7.73
	6600.00	92.35	271.33	5394.68	1196.76	386.09	-1163.83	0.00	1874052.24	140038.29	N 36 8 40.06	W 107 28 8.95
	6700.00	92.35	271.33	5390.58	1296.37	388.41	-1263.72	0.00	1874055.81	139938.43	N 36 8 40.08	W 107 28 10.16

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 ° ' ")
	6800.00	92.35	271.33	5386.48	1395.99	390.73	-1363.61	0.00	1874059.39	139838.57	N 36 8 40.10	W 107 28 11.38
	6900.00	92.35	271.33	5382.38	1495.60	393.06	-1463.50	0.00	1874062.96	139738.72	N 36 8 40.13	W 107 28 12.60
	7000.00	92.35	271.33	5378.27	1595.22	395.38	-1563.39	0.00	1874066.53	139638.86	N 36 8 40.15	W 107 28 13.82
	7100.00	92.35	271.33	5374.17	1694.84	397.71	-1663.28	0.00	1874070.11	139539.00	N 36 8 40.17	W 107 28 15.03
	7200.00	92.35	271.33	5370.07	1794.45	400.03	-1763.17	0.00	1874073.68	139439.15	N 36 8 40.20	W 107 28 16.25
	7300.00	92.35	271.33	5365.97	1894.07	402.35	-1863.06	0.00	1874077.25	139339.29	N 36 8 40.22	W 107 28 17.47
	7400.00	92.35	271.33	5361.87	1993.69	404.68	-1962.95	0.00	1874080.83	139239.43	N 36 8 40.24	W 107 28 18.69
	7500.00	92.35	271.33	5357.77	2093.30	407.00	-2062.83	0.00	1874084.40	139139.58	N 36 8 40.26	W 107 28 19.91
	7600.00	92.35	271.33	5353.67	2192.92	409.33	-2162.72	0.00	1874087.97	139039.72	N 36 8 40.29	W 107 28 21.12
	7700.00	92.35	271.33	5349.57	2292.54	411.65	-2262.61	0.00	1874091.55	138939.86	N 36 8 40.31	W 107 28 22.34
	7800.00	92.35	271.33	5345.47	2392.15	413.98	-2362.50	0.00	1874095.12	138840.01	N 36 8 40.33	W 107 28 23.56
	7900.00	92.35	271.33	5341.37	2491.77	416.30	-2462.39	0.00	1874098.70	138740.15	N 36 8 40.36	W 107 28 24.78
	8000.00	92.35	271.33	5337.27	2591.38	418.62	-2562.28	0.00	1874102.27	138640.30	N 36 8 40.38	W 107 28 25.99
	8100.00	92.35	271.33	5333.17	2691.00	420.95	-2662.17	0.00	1874105.84	138540.44	N 36 8 40.40	W 107 28 27.21
	8200.00	92.35	271.33	5329.07	2790.62	423.27	-2762.06	0.00	1874109.42	138440.58	N 36 8 40.42	W 107 28 28.43
	8300.00	92.35	271.33	5324.97	2890.23	425.60	-2861.95	0.00	1874112.99	138340.73	N 36 8 40.45	W 107 28 29.65
	8400.00	92.35	271.33	5320.87	2989.85	427.92	-2961.83	0.00	1874116.56	138240.87	N 36 8 40.47	W 107 28 30.87
	8500.00	92.35	271.33	5316.77	3089.47	430.24	-3061.72	0.00	1874120.14	138141.01	N 36 8 40.49	W 107 28 32.08
	8600.00	92.35	271.33	5312.67	3189.08	432.57	-3161.61	0.00	1874123.71	138041.16	N 36 8 40.52	W 107 28 33.30
	8700.00	92.35	271.33	5308.57	3288.70	434.89	-3261.50	0.00	1874127.28	137941.30	N 36 8 40.54	W 107 28 34.52
	8800.00	92.35	271.33	5304.47	3388.32	437.22	-3361.39	0.00	1874130.86	137841.44	N 36 8 40.56	W 107 28 35.74
	8900.00	92.35	271.33	5300.37	3487.93	439.54	-3461.28	0.00	1874134.43	137741.59	N 36 8 40.58	W 107 28 36.96
	9000.00	92.35	271.33	5296.27	3587.55	441.86	-3561.17	0.00	1874138.01	137641.73	N 36 8 40.61	W 107 28 38.17
	9100.00	92.35	271.33	5292.17	3687.16	444.19	-3661.06	0.00	1874141.58	137541.87	N 36 8 40.63	W 107 28 39.39
	9200.00	92.35	271.33	5288.07	3786.78	446.51	-3760.95	0.00	1874145.15	137442.02	N 36 8 40.65	W 107 28 40.61
	9300.00	92.35	271.33	5283.97	3886.40	448.84	-3860.83	0.00	1874148.73	137342.16	N 36 8 40.68	W 107 28 41.83
	9400.00	92.35	271.33	5279.87	3986.01	451.16	-3960.72	0.00	1874152.30	137242.30	N 36 8 40.70	W 107 28 43.04
	9500.00	92.35	271.33	5275.77	4085.63	453.48	-4060.61	0.00	1874155.87	137142.45	N 36 8 40.72	W 107 28 44.26
	9600.00	92.35	271.33	5271.67	4185.25	455.81	-4160.50	0.00	1874159.45	137042.59	N 36 8 40.74	W 107 28 45.48
	9700.00	92.35	271.33	5267.56	4284.86	458.13	-4260.39	0.00	1874163.02	136942.73	N 36 8 40.77	W 107 28 46.70
	9800.00	92.35	271.33	5263.46	4384.48	460.46	-4360.28	0.00	1874166.60	136842.88	N 36 8 40.79	W 107 28 47.92
	9900.00	92.35	271.33	5259.36	4484.10	462.78	-4460.17	0.00	1874170.17	136743.02	N 36 8 40.81	W 107 28 49.13
	10000.00	92.35	271.33	5255.26	4583.71	465.10	-4560.06	0.00	1874173.74	136643.17	N 36 8 40.84	W 107 28 50.35
Chaco 2206-16A #221 PBHL	10055.21	92.35	271.33	5253.00	4638.71	466.39	-4615.20	0.00	1874175.72	136588.04	N 36 8 40.85	W 107 28 51.02

Survey Type: Non-Def Plan

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

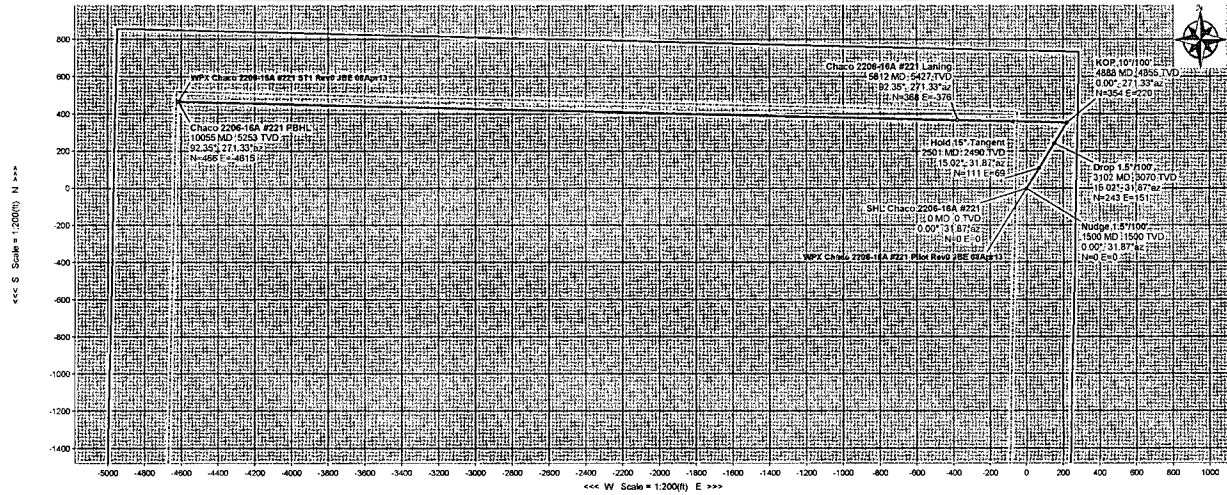
Survey Program:

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_UNKNOWN-Depth Only	ST1 / WPX Chaco 2206-16A #221 ST1 Rev0 JBE 08Apr13
	14.000	4533.550	1/100.000	30.000	30.000	SLB_UNKNOWN	ST1 / WPX Chaco 2206-16A #221 ST1 Rev0 JBE 08Apr13
	4533.550	10055.208	1/100.000	30.000	30.000	SLB_MWD-STD	ST1 / WPX Chaco 2206-16A #221 ST1 Rev0 JBE 08Apr13

WELL	WPX Chaco 2206-16A #221	FIELD	NM Sandoval County NAD27	STRUCTURE	AWS #980
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Magnetic Parameters	Day	42.198°	Date	April 08, 2013	Surface Location	NAD27 New Mexico State Plane Central Zone, US Feet	Map Date	April 08, 2013	Map Dec	9.527°	FS	90382.767	Lat	N 36 34.340	Longitude	W 107 27 54.756	Northing	187349.168105	Grid Conv	-4.1127	Scale Factor	1.00004732	Map	Chaco 2206-16A #221	ST1 Rev0 JBE 08Apr13	ST1 Rev0 JBE 08Apr13	ST1 Rev0 JBE 08Apr13
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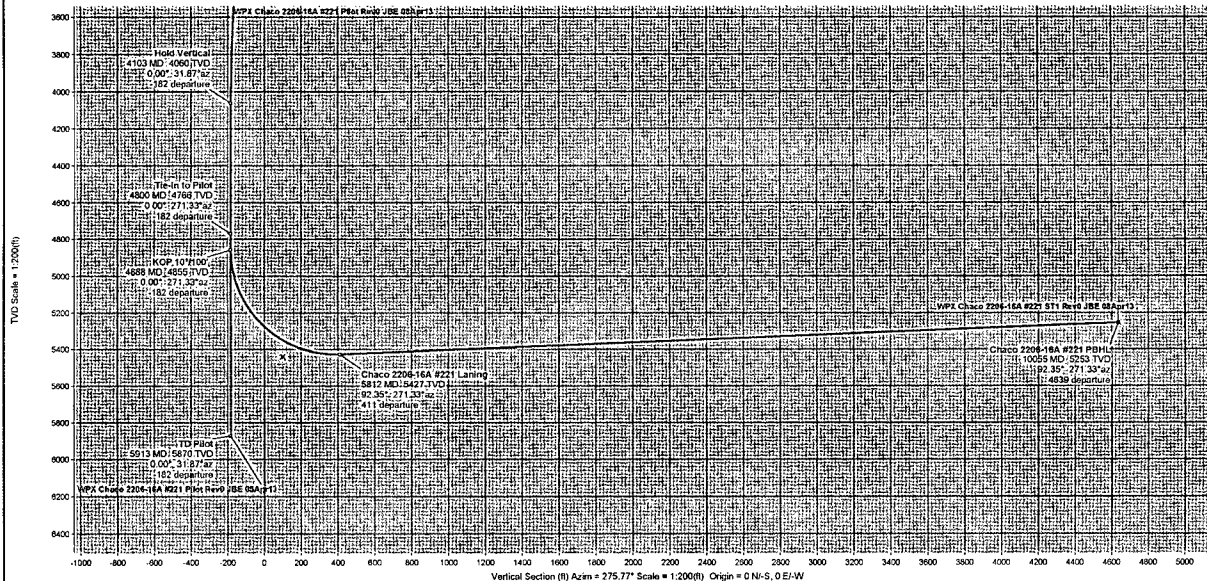
Name	TVD (ft)	NS (ft)	EW (ft)	Latitude (deg)	Longitude (deg)	Shape
Chaco 2206-16A #221 PP	5440.00	360.44	-62.01	N 36 8 39.804	W 107 27 55.512	POINT
Chaco 2206-16A #221 PBHL	5253.00	466.39	-4615.20	N 36 8 40.848	W 107 28 51.024	POINT



Legend
 Sec 16 T22N R06W 330' HL
 Sec 16 T22N R06W
 Chaco 2206-16A #221 PP
 Chaco 2206-16A #221 PBHL
 WPX Chaco 2206-16A #221 ST1 Rev0 JBE 08Apr13
 WPX Chaco 2206-16A #221 Pilot Rev0 JBE 08Apr13



True North
 Tot Corr (M→T 9.527°)
 Mag Dec (9.527°)
 Grid Conv (-0.717°)



Comments	Survey MD (ft)	Inclination (deg)	Azimuth (deg)	TVD (ft)	VS (ft)	NS (ft)	EW (ft)	Closure (ft)	Closure Azimuth (deg)	DLS (°/100ft)
SHL Chaco 2206-16A #221	0.00	0.00	31.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nudge 1.5°/100'	1500.00	0.00	31.87	1500.00	0.00	0.00	0.00	0.00	0.00	0.00
Hold 15° Tangent	2179.08	10.19	31.87	2175.51	-26.48	51.13	31.79	60.21	31.87	1.50
Drop 1.5°/100'	3854.47	10.19	31.87	3824.49	-156.82	302.76	188.21	356.49	31.87	0.00
Hold Vertical	4533.55	0.00	31.87	4500.00	-183.30	353.89	220.00	416.70	31.87	1.50
Tie-In to Pilot	4800.00	0.00	271.33	4766.45	-183.30	353.89	220.00	416.70	31.87	0.00
KOP 10°/100'	4888.08	0.00	271.33	4854.53	-183.30	353.89	220.00	416.70	31.87	0.00
Chaco 2206-16A #221 Landing	5811.58	92.35	271.33	5427.00	411.36	367.76	-376.29	526.16	314.34	10.00
Chaco 2206-16A #221 PBHL	10055.21	92.35	271.33	5253.00	4638.71	466.39	-4615.20	4638.71	275.77	0.00

Drawn By: Black Creek
 Date Created: April 08, 2013 03:30:27 PM
 Checked By:
 Checked Date:
 Approved By:
 Approved Date: