

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

1220 South St. Francis Dr.

Santa Fe, NM 87505

☐ AMENDED REPORT

RCVD DEC 5 '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 30-045-35500
⁴ Property Code 39581	⁵ Property Name Chaco 2308-161	⁶ Well No. 148H

⁷ Surface Location

UL - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County
I	16	23N	8W		1500	South	228	East	San Juan

⁸ Proposed Bottom Hole Location

UL - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County
M	16	23N	8W		380	South	230	West	San Juan

⁹ Pool Information

Pool Name Basin Mancos/Nageezi Gallup	Pool Code 97232/47540
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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 6866'
¹⁶ Multiple No	¹⁷ Proposed Depth 10,327' MD/4,911' TVD	¹⁸ Formation Gallup	¹⁹ Contractor AWS	²⁰ Spud Date 12/31/13
Depth to Ground water 52'		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#	5652'	1050'	Surface
N-80	6-1/8"	4-1/2"	11.6#	5502' - 10,327'	310	5302'

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: <i>Larry Higgins</i>		OIL CONSERVATION DIVISION	
Printed name: Larry Higgins		Approved By: <i>Chad Lee</i> 12-9-2013	
Title: Permit Supervisor		Title: SUPERVISOR DISTRICT #3	
E-mail Address: larry.higgins@wpenergy.com		Approved Date: DEC 09 2013	
Date: 12/4/13		Expiration Date: DEC 09 2015	
Phone: 333-1808		Conditions of Approval Attached	

DEC 09 2013

AV

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 30-045-35500		2 Pool Code 97232 / 47540		3 Pool Name BASIN MANCOS (M&N) / NAGEEZI GALLUP (O&P)	
4 Property Code 39581		5 Property Name CHACO 2308-16I			6 Well Number 148H
OGRID No. 120782		8 Operator Name WPX ENERGY PRODUCTION, LLC			9 Elevation 5866'

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
I	16	23N	8W		1500	SOUTH	228	EAST	SAN JUAN

11 Bottom Hole Location If Different From Surface

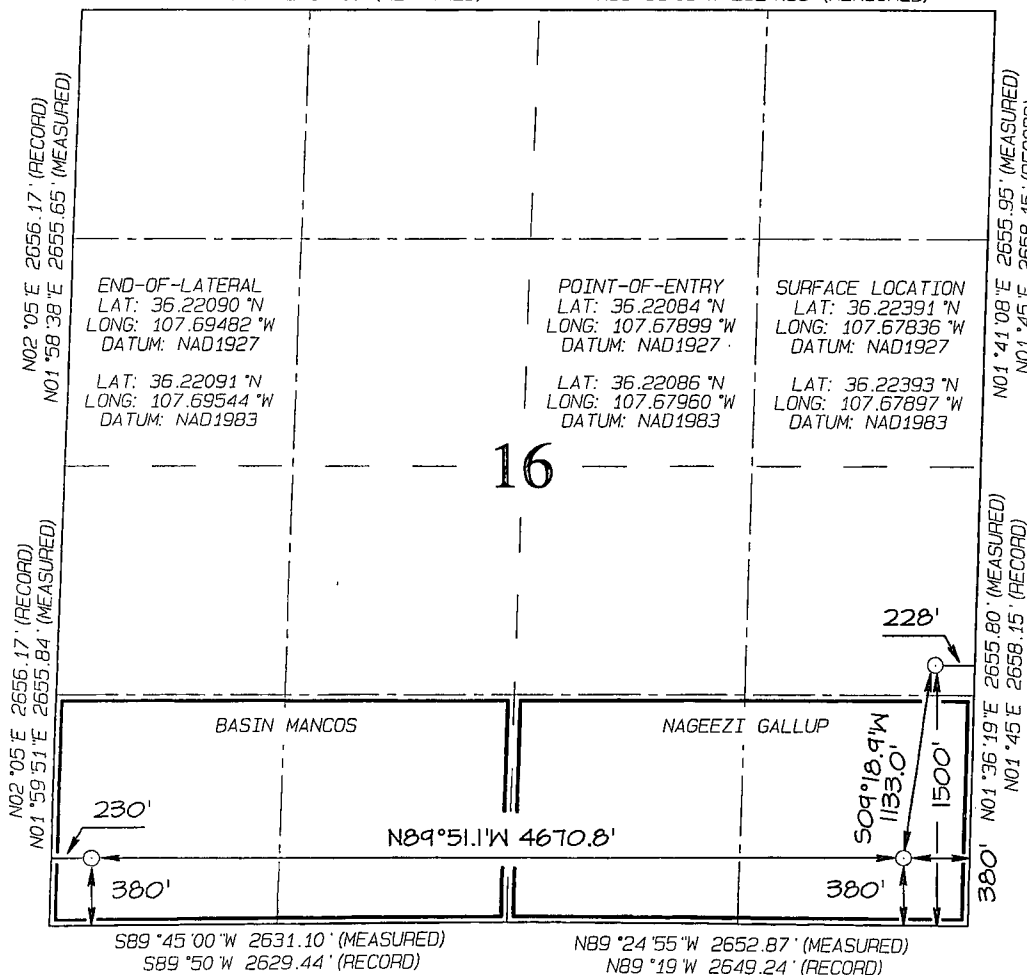
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	16	23N	8W		380	SOUTH	230	WEST	SAN JUAN

12 Dedicated Acres 160.0 Acres - (S/2 S/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

N89°43'W 2627.13' (RECORD)
N89°50'08"W 2627.81' (MEASURED)

N89°43'W 2627.13' (RECORD)
N89°51'06"W 2624.33' (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: *12/4/13*

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.

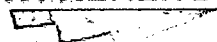
Date Revised: OCTOBER 10, 2013
Survey Date: FEBRUARY 1, 2013

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: 10/14/13 **FIELD:** Nageezi Gallup/Basin Mancos
WELL NAME: Chaco 2308-16I #148H Rev(1) **SURFACE:** BLM
SH Location: NESE of Sec 16-23N-8W **ELEVATION:** 6,866' GR
BH Location: SWSW Sec 16-23N-8W **MINERALS:** State
San Juan Co, NM
MEASURED DEPTH: 10,327' **LEASE #:** V09208

I. GEOLOGY: Surface formation – Nacimiento

A. FORMATION TOPS: (KB)

Name	MD	TVD	Name	MD	TVD
Ojo Alamo	791	791	Point Lookout	3,896	3,776
Kirtland	940	939	Mancos	4,107	3,978
Pictured Cliffs	1,405	1,392	Kickoff Point	4,544	4,396
Lewis	1,606	1,585	Target Top	5,172	4,937
Chacra	1,796	1,767	Landing Point	5,652	5,090
Cliff House	2,938	2,859	Target Base	5,652	5,090
Menefee	2,973	2,893			
			TD	10,327	4,911

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

C. LOGGING PROGRAM: LWD GR from KOP to TD. LWD GR / 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 and the Lateral. (OBM) may 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 +/- 4,544' (MD) / 4,396' (TVD). Curve portion of wellbore will be drilled and landed at +/- 90 deg. at +/- 5,652' (MD) / 5,090' (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 +/- 10,327' (MD) / 4,911' (TVD). A 4-1/2 in. Production Liner will be run from +/- 5,502 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"	5,652'	7"	23#	K-55
Prod. Liner	6.125"	5,502' - 10,327'	4-1/2"	11.6#	N-80
Tie-Back String	N/A	Surf. - 5,502'	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 CASING: Run 4-1/2" Liner with cement nose guide Float Shoe + 2jts. of 4-1/2" casing + Float Collar + Landing Collar. Centralizer program will be determined by Wellbore condition and when Lateral is evaluated by Geoscientists and Reservoir Engineers.
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).
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 +/- 5,302 ft.

IV. COMPLETION**A. CBL**

1. Run CCL for perforating.

B. PRESSURE TEST

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

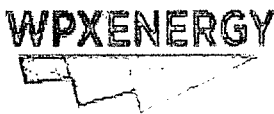
C. STIMULATION

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 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 (~5,500' 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.
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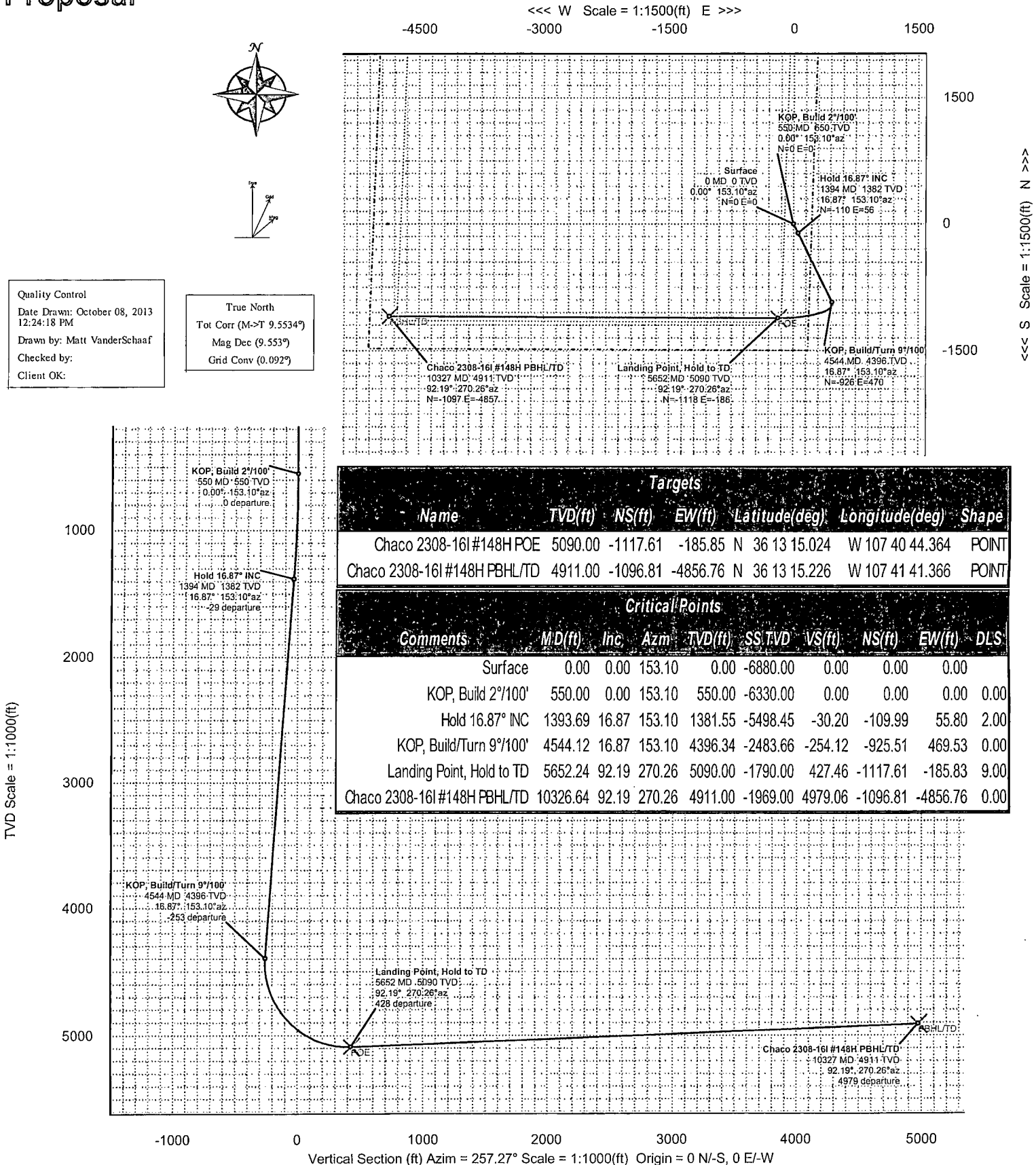
WPX Energy

Rev 0

PATHFINDER
A Schlumberger Company

WELL	Chaco 2308-16I #148H	FIELD	NM San Juan County NAD27	STRUCTURE	Sec 16-23N-8W
Magnetic Parameters	Model: BGGM 2013 Dip: 62.986° Mag Dec: 9.553°	Date: October 08, 2013 FS: 50181.8mT	Surface Location Lat: N 36 13 26.078 Lon: W 107 40 42.098	NAD27 New Mexico State Plane, Western Zone, US Feet Northing: 1960781.34 ftUS Easting: 548710.33 ftUS Grid Conv: 0.092° Scale Fact: 0.99991808	Miscellaneous Sht: Chaco 2308-16I #148H Plan: R0 mvd 08Oct13 TVD Ref: RKB(8880ft above MSL) Srvy Date: October 08, 2013

Proposal





Chaco 2308-16I #148H R0 mdv 08Oct13 Proposal Geodetic Report

(Def Plan)



Report Date:	October 08, 2013 - 12:22 PM	Survey / DLS Computation:	Minimum Curvature / Lubinski
Client:	WPX Energy	Vertical Section Azimuth:	257.274 ° (True North)
Field:	NM San Juan County NAD27	Vertical Section Origin:	0.000 ft, 0.000 ft
Structure / Slot:	WPX Sec 16-23N-8W (Chaco 2308-16I #148H) / Chaco 2308-16I #148H	TVD Reference Datum:	RKB
Well:	Chaco 2308-16I #148H	TVD Reference Elevation:	6880.000 ft above MSL
Borehole:	Original Hole	Seabed / Ground Elevation:	6866.000 ft above MSL
UWI / API#:	Unknown / Unknown	Magnetic Declination:	9.553 °
Survey Name:	Chaco 2308-16I #148H R0 mdv 08Oct13	Total Gravity Field Strength:	998.4973mgn (9.80665 Based)
Survey Date:	October 08, 2013	Total Magnetic Field Strength:	50181.824 nT
Tort / AHD / DDI / ERD Ratio:	116.605 ° / 6442.699 ft / 6.183 / 1.266	Magnetic Dip Angle:	62.988 °
Coordinate Reference System:	NAD27 New Mexico State Plane, Western Zone, US Feet	Declination Date:	October 08, 2013
Location Lat / Long:	N 36° 13' 26.07600", W 107° 40' 42.09600"	Magnetic Declination Model:	BGGM 2013
Location Grid N/E Y/X:	N 1900781.337 RUS, E 545710.335 RUS	North Reference:	True North
CRS Grid Convergence Angle:	0.0916 °	Grid Convergence Used:	0.0000 °
Grid Scale Factor:	0.99991906	Total Corr Mag North->True North:	9.5534 °
		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	153.10	0.00	0.00	0.00	0.00	N/A	1900781.34	545710.33	N 36 13 26.08	W 107 40 42.10
KOP, Build 2°/100°	100.00	0.00	153.10	100.00	0.00	0.00	0.00	0.00	1900781.34	545710.33	N 36 13 26.08	W 107 40 42.10
	200.00	0.00	153.10	200.00	0.00	0.00	0.00	0.00	1900781.34	545710.33	N 36 13 26.08	W 107 40 42.10
	300.00	0.00	153.10	300.00	0.00	0.00	0.00	0.00	1900781.34	545710.33	N 36 13 26.08	W 107 40 42.10
	400.00	0.00	153.10	400.00	0.00	0.00	0.00	0.00	1900781.34	545710.33	N 36 13 26.08	W 107 40 42.10
	500.00	0.00	153.10	500.00	0.00	0.00	0.00	0.00	1900781.34	545710.33	N 36 13 26.08	W 107 40 42.10
	550.00	0.00	153.10	550.00	0.00	0.00	0.00	0.00	1900781.34	545710.33	N 36 13 26.08	W 107 40 42.10
	600.00	1.00	153.10	600.00	-0.11	-0.39	0.20	2.00	1900780.95	545710.53	N 36 13 26.07	W 107 40 42.09
	700.00	3.00	153.10	699.93	-0.96	-3.50	1.78	2.00	1900777.84	545712.12	N 36 13 26.04	W 107 40 42.07
	800.00	5.00	153.10	799.68	-2.67	-9.72	4.93	2.00	1900771.62	545715.28	N 36 13 25.98	W 107 40 42.04
	900.00	7.00	153.10	899.13	-5.23	-19.04	9.66	2.00	1900762.31	545720.03	N 36 13 25.89	W 107 40 41.98
Hold 16.87° INC	1000.00	9.00	153.10	998.15	-8.64	-31.45	15.96	2.00	1900749.91	545726.34	N 36 13 25.76	W 107 40 41.90
	1100.00	11.00	153.10	1096.63	-12.89	-46.94	23.81	2.00	1900734.44	545734.22	N 36 13 25.61	W 107 40 41.81
	1200.00	13.00	153.10	1194.44	-17.98	-65.48	33.22	2.00	1900715.92	545743.66	N 36 13 25.43	W 107 40 41.69
	1300.00	15.00	153.10	1291.46	-23.90	-87.05	44.16	2.00	1900694.36	545754.63	N 36 13 25.22	W 107 40 41.56
	1393.69	16.87	153.10	1381.55	-30.20	-109.99	55.80	2.00	1900671.44	545766.31	N 36 13 24.99	W 107 40 41.41
	1400.00	16.87	153.10	1387.59	-30.65	-111.63	56.63	0.00	1900669.81	545767.14	N 36 13 24.97	W 107 40 41.40
	1500.00	16.87	153.10	1483.28	-37.76	-137.51	69.76	0.00	1900643.95	545780.31	N 36 13 24.72	W 107 40 41.24
	1600.00	16.87	153.10	1578.97	-44.87	-163.40	82.90	0.00	1900618.08	545793.49	N 36 13 24.46	W 107 40 41.08
	1700.00	16.87	153.10	1674.67	-51.97	-189.28	96.03	0.00	1900592.22	545806.66	N 36 13 24.20	W 107 40 40.92
	1800.00	16.87	153.10	1770.36	-59.08	-215.17	109.16	0.00	1900566.36	545819.83	N 36 13 23.95	W 107 40 40.78
	1900.00	16.87	153.10	1866.06	-66.19	-241.06	122.29	0.00	1900540.50	545833.00	N 36 13 23.69	W 107 40 40.60
	2000.00	16.87	153.10	1961.75	-73.30	-266.94	135.43	0.00	1900514.63	545846.18	N 36 13 23.44	W 107 40 40.44
	2100.00	16.87	153.10	2057.45	-80.40	-292.83	148.56	0.00	1900488.77	545859.35	N 36 13 23.18	W 107 40 40.28
	2200.00	16.87	153.10	2153.14	-87.51	-318.71	161.69	0.00	1900462.91	545872.52	N 36 13 22.92	W 107 40 40.12
	2300.00	16.87	153.10	2248.84	-94.62	-344.60	174.82	0.00	1900437.05	545885.70	N 36 13 22.67	W 107 40 39.96
	2400.00	16.87	153.10	2344.53	-101.73	-370.49	187.96	0.00	1900411.18	545898.87	N 36 13 22.41	W 107 40 39.80
	2500.00	16.87	153.10	2440.23	-108.84	-396.37	201.09	0.00	1900385.32	545912.04	N 36 13 22.16	W 107 40 39.64
	2600.00	16.87	153.10	2535.92	-115.94	-422.26	214.22	0.00	1900359.46	545925.21	N 36 13 21.90	W 107 40 39.48
	2700.00	16.87	153.10	2631.62	-123.05	-448.14	227.35	0.00	1900333.59	545938.39	N 36 13 21.64	W 107 40 39.32
	2800.00	16.87	153.10	2727.31	-130.16	-474.03	240.49	0.00	1900307.73	545951.56	N 36 13 21.39	W 107 40 39.16
	2900.00	16.87	153.10	2823.00	-137.27	-499.91	253.62	0.00	1900281.87	545964.73	N 36 13 21.13	W 107 40 39.00
	3000.00	16.87	153.10	2918.70	-144.37	-525.80	266.75	0.00	1900256.01	545977.90	N 36 13 20.88	W 107 40 38.84
	3100.00	16.87	153.10	3014.39	-151.48	-551.69	279.88	0.00	1900230.14	545991.08	N 36 13 20.62	W 107 40 38.68
	3200.00	16.87	153.10	3110.09	-158.59	-577.57	293.02	0.00	1900204.28	546004.25	N 36 13 20.36	W 107 40 38.52
	3300.00	16.87	153.10	3205.78	-165.70	-603.46	306.15	0.00	1900178.42	546017.42	N 36 13 20.11	W 107 40 38.36
	3400.00	16.87	153.10	3301.48	-172.80	-629.34	319.28	0.00	1900152.56	546030.60	N 36 13 19.85	W 107 40 38.20
	3500.00	16.87	153.10	3397.17	-179.91	-655.23	332.42	0.00	1900126.69	546043.77	N 36 13 19.60	W 107 40 38.04
	3600.00	16.87	153.10	3492.87	-187.02	-681.12	345.55	0.00	1900100.83	546056.94	N 36 13 19.34	W 107 40 37.88
	3700.00	16.87	153.10	3588.56	-194.13	-707.00	358.68	0.00	1900074.97	546070.11	N 36 13 19.08	W 107 40 37.72
	3800.00	16.87	153.10	3684.26	-201.24	-732.89	371.81	0.00	1900049.11	546083.29	N 36 13 18.83	W 107 40 37.56
3900.00	16.87	153.10	3779.95	-208.34	-758.77	384.95	0.00	1900023.24	546096.46	N 36 13 18.57	W 107 40 37.40	
4000.00	16.87	153.10	3875.65	-215.45	-784.66	398.08	0.00	1899997.38	546109.63	N 36 13 18.32	W 107 40 37.24	
4100.00	16.87	153.10	3971.34	-222.56	-810.55	411.21	0.00	1899971.52	546122.81	N 36 13 18.06	W 107 40 37.08	
4200.00	16.87	153.10	4067.03	-229.67	-836.43	424.34	0.00	1899945.65	546135.98	N 36 13 17.80	W 107 40 36.92	
4300.00	16.87	153.10	4162.73	-236.77	-862.32	437.48	0.00	1899919.79	546149.15	N 36 13 17.55	W 107 40 36.76	
4400.00	16.87	153.10	4258.42	-243.88	-888.20	450.61	0.00	1899893.93	546162.32	N 36 13 17.29	W 107 40 36.60	
4500.00	16.87	153.10	4354.12	-250.99	-914.09	463.74	0.00	1899868.07	546175.50	N 36 13 17.04	W 107 40 36.44	
KOP, Build/Turn 9°/100°	4544.12	16.87	153.10	4396.34	-254.12	-925.51	469.53	0.00	1899856.66	546181.31	N 36 13 16.92	W 107 40 36.37
Landing Point, Hold to TD	4600.00	15.37	170.46	4450.05	-255.70	-940.05	474.43	9.00	1899842.12	546186.23	N 36 13 16.78	W 107 40 36.31
	4700.00	16.51	203.41	4546.40	-246.56	-966.22	470.98	9.00	1899815.96	546182.82	N 36 13 16.52	W 107 40 36.35
	4800.00	21.61	226.44	4641.02	-222.32	-992.00	451.94	9.00	1899790.14	546183.83	N 36 13 16.27	W 107 40 36.58
	4900.00	28.63	239.86	4731.57	-183.56	-1016.77	417.81	9.00	1899765.32	546129.73	N 36 13 16.02	W 107 40 37.00
	5000.00	36.47	248.13	4815.84	-131.25	-1039.92	369.40	9.00	1899742.09	546081.37	N 36 13 15.79	W 107 40 37.59
	5100.00	44.71	253.75	4891.74	-66.66	-1060.88	307.92	9.00	1899721.04	546019.93	N 36 13 15.58	W 107 40 38.34
	5200.00	53.14	257.92	4957.40	8.60	-1079.13	234.88	9.00	1899702.67	545946.92	N 36 13 15.40	W 107 40 39.23
	5300.00	61.69	261.26	5011.21	92.69	-1094.22	152.08	9.00	1899687.45	545864.15	N 36 13 15.26	W 107 40 40.24
	5400.00	70.32	264.09	5051.85	183.54	-1105.79	61.56	9.00	1899675.74	545773.66	N 36 13 15.14	W 107 40 41.34
	5500.00	78.98	266.63	5078.30	278.91	-1113.54	-34.46	9.00	1899667.84	545677.66	N 36 13 15.06	W 107 40 42.52
	5600.00	87.66	269.02	5089.93	376.44	-1117.28	-133.61	9.00	1899663.94	545578.53	N 36 13 15.03	W 107 40 43.73
	5652.24	92.19	270.26	5090.00	427.46	-1117.61	-185.83	9.00	1899663.52	545526.31	N 36 13 15.02	W 107 40 44.36
	5700.00	92.19	270.26	5088.17	473.96	-1117.40	-233.55	0.00	1899663.66	545478.59	N 36 13 15.03	W 107 40 44.95
	5800.00	92.19	270.26	5084.34	571.34	-1116.95	-333.48	0.00	1899663.95	545378.67	N 36 13 15.03	W 107 40 46.17
	5900.00	92.19	270.26	5080.51	668.71	-1116.51	-433.41	0.00	1899664.23	545278.75	N 36 13 15.03	W 107 40 47.39
	6000.00	92.19	270.26	5076.68	766.08	-1116.06	-533.33	0.00	1899664.52	545178.83	N 36 13 15.04	W 107 40 48.60
	6100.00	92.19	270.26	5072.85	863.46	-1115.62	-633.26	0.00	1899664.80	545078.91	N 36 13 15.04	W 107 40 49.82
	6200.00	92.19	270.26	5069.02	960.83	-1115.17	-733.18	0.00	1899665.09	544979.00	N 36 13 15.05	W 107 40 51.04
6300.00	92.19	270.26	5065.19	1058.20	-1114.73	-833.11	0.00	1899665.37	544879.08	N 36 13 15.05	W 107 40 52.26	
6400.00	92.19	270.26	5061.37	1155.57	-1114.28	-933.03	0.00	1899665.66	544779.16	N 36 13 15.06	W 107 40 53.48	
6500.00	92.19	270.26	5057.54	1252.95	-1113.84	-1032.96	0.00	1899665.94	544679.24	N 36 13 15.06	W 107 40 54.70	
6600.00	92.19	270.26	5053.71	1350.32	-1113.39	-1132.89	0.00	1899666.23	544579.32	N 36 13 15.07	W 107 40 55.92	
6700.00	92.19	270.26	5049.88	1447.69	-1112.95	-1232.81	0.00	1899666.51	544479.41	N 36 13 15.07	W 107 407	

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 ° ' ")
	7300.00	92.19	270.26	5026.90	2031.93	-1110.28	-1832.37	0.00	1899668.22	543879.90	N 36 13 15.10	W 107 41 4.46
	7400.00	92.19	270.26	5023.07	2129.30	-1109.83	-1932.29	0.00	1899668.51	543779.98	N 36 13 15.10	W 107 41 5.68
	7500.00	92.19	270.26	5019.24	2226.68	-1109.39	-2032.22	0.00	1899668.79	543680.06	N 36 13 15.10	W 107 41 6.90
	7600.00	92.19	270.26	5015.41	2324.05	-1108.94	-2132.14	0.00	1899669.08	543580.14	N 36 13 15.11	W 107 41 8.12
	7700.00	92.19	270.26	5011.58	2421.42	-1108.50	-2232.07	0.00	1899669.36	543480.23	N 36 13 15.11	W 107 41 9.34
	7800.00	92.19	270.26	5007.75	2518.80	-1108.05	-2331.99	0.00	1899669.65	543380.31	N 36 13 15.12	W 107 41 10.55
	7900.00	92.19	270.26	5003.92	2616.17	-1107.61	-2431.92	0.00	1899669.93	543280.39	N 36 13 15.12	W 107 41 11.77
	8000.00	92.19	270.26	5000.10	2713.54	-1107.16	-2531.84	0.00	1899670.22	543180.47	N 36 13 15.13	W 107 41 12.99
	8100.00	92.19	270.26	4996.27	2810.92	-1106.72	-2631.77	0.00	1899670.50	543080.55	N 36 13 15.13	W 107 41 14.21
	8200.00	92.19	270.26	4992.44	2908.29	-1106.27	-2731.70	0.00	1899670.79	542980.64	N 36 13 15.13	W 107 41 15.43
	8300.00	92.19	270.26	4988.61	3005.66	-1105.83	-2831.62	0.00	1899671.07	542880.72	N 36 13 15.14	W 107 41 16.65
	8400.00	92.19	270.26	4984.78	3103.04	-1105.39	-2931.55	0.00	1899671.36	542780.80	N 36 13 15.14	W 107 41 17.87
	8500.00	92.19	270.26	4980.95	3200.41	-1104.94	-3031.47	0.00	1899671.65	542680.88	N 36 13 15.15	W 107 41 19.09
	8600.00	92.19	270.26	4977.12	3297.78	-1104.50	-3131.40	0.00	1899671.93	542580.96	N 36 13 15.15	W 107 41 20.31
	8700.00	92.19	270.26	4973.29	3395.15	-1104.05	-3231.32	0.00	1899672.22	542481.05	N 36 13 15.16	W 107 41 21.53
	8800.00	92.19	270.26	4969.46	3492.53	-1103.61	-3331.25	0.00	1899672.50	542381.13	N 36 13 15.16	W 107 41 22.75
	8900.00	92.19	270.26	4965.63	3589.90	-1103.16	-3431.18	0.00	1899672.79	542281.21	N 36 13 15.16	W 107 41 23.97
	9000.00	92.19	270.26	4961.80	3687.27	-1102.72	-3531.10	0.00	1899673.07	542181.29	N 36 13 15.17	W 107 41 25.19
	9100.00	92.19	270.26	4957.97	3784.65	-1102.27	-3631.03	0.00	1899673.36	542081.38	N 36 13 15.17	W 107 41 26.41
	9200.00	92.19	270.26	4954.14	3882.02	-1101.83	-3730.95	0.00	1899673.64	541981.46	N 36 13 15.18	W 107 41 27.63
	9300.00	92.19	270.26	4950.31	3979.39	-1101.38	-3830.88	0.00	1899673.93	541881.54	N 36 13 15.18	W 107 41 28.85
	9400.00	92.19	270.26	4946.48	4076.77	-1100.94	-3930.80	0.00	1899674.21	541781.62	N 36 13 15.19	W 107 41 30.07
	9500.00	92.19	270.26	4942.66	4174.14	-1100.49	-4030.73	0.00	1899674.50	541681.70	N 36 13 15.19	W 107 41 31.29
	9600.00	92.19	270.26	4938.83	4271.51	-1100.05	-4130.66	0.00	1899674.78	541581.79	N 36 13 15.19	W 107 41 32.51
	9700.00	92.19	270.26	4935.00	4368.88	-1099.60	-4230.58	0.00	1899675.07	541481.87	N 36 13 15.20	W 107 41 33.72
	9800.00	92.19	270.26	4931.17	4466.26	-1099.16	-4330.51	0.00	1899675.35	541381.95	N 36 13 15.20	W 107 41 34.94
	9900.00	92.19	270.26	4927.34	4563.63	-1098.71	-4430.43	0.00	1899675.64	541282.03	N 36 13 15.21	W 107 41 36.16
	10000.00	92.19	270.26	4923.51	4661.00	-1098.27	-4530.36	0.00	1899675.92	541182.11	N 36 13 15.21	W 107 41 37.38
	10100.00	92.19	270.26	4919.68	4758.38	-1097.82	-4630.28	0.00	1899676.21	541082.20	N 36 13 15.22	W 107 41 38.60
	10200.00	92.19	270.26	4915.85	4855.75	-1097.38	-4730.21	0.00	1899676.49	540982.28	N 36 13 15.22	W 107 41 39.82
	10300.00	92.19	270.26	4912.02	4953.12	-1096.93	-4830.13	0.00	1899676.78	540882.36	N 36 13 15.22	W 107 41 41.04
Chaco 2308-161 #148H PBHL/TD	10326.64	92.19	270.26	4911.00	4979.06	-1096.81	-4856.76	0.00	1899676.85	540855.74	N 36 13 15.23	W 107 41 41.37

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 2308-161 #148H R0 mdv 08Oct13
	14.000	10326.640	1/100.000	30.000	30.000	SLB_MWD-STD	Original Hole / Chaco 2308-161 #148H R0 mdv 08Oct13