

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

MAR 20 2015

MAR 30 2015

FORM APPROVED
OMB No. 1004-0137
Expires: March 31, 2007Farmington Field Office
Bureau of Land Management

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.

Serial No.
N0-G-1312-17976. If Indian, Allottee or Tribe Name
791-151

7. If Unit of CA/Agreement, Name and/or No.

8. Well Name and No.
S CHACO UT #343H9. API Well No.
30-043-2124610. Field and Pool or Exploratory Area
LYBROOK GL11. Country or Parish, State
SANDOVAL, NM

1. Type of Well

☒ Oil Well ☐ Gas Well ☐ Other

2. Name of Operator

WPX Energy Production, LLC

3a. Address

PO Box 640 Aztec, NM 87410

3b. Phone No. (include area code)

505-333-1816

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

SHL N 27° FNL & 200° FEL SEC 2 22N 7W

BHL 2332' FNL & 240° FEL SEC 2 22N 7W

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
	☐ Alter Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Subsequent Report	☐ Casing Repair	☐ New Construction	☐ Recomplete	☐ Other
	☒ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	CORRECTION OF OPS/DIRECTIONAL PLANS
☐ Final Abandonment Notice	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

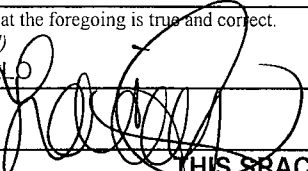
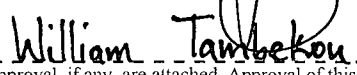
13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths 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/BJA. 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.)

Due to lateral re-planning the incorrect Ops and Directional plans were submitted with the APD. Attached are the corrected plans.

CONDITIONS OF APPROVAL

Adhere to previously issued stipulations

BLM'S APPROVAL OR ACCEPTANCE OF THIS ACTION DOES NOT RELIEVE THE LESSEE AND OPERATOR FROM OBTAINING ANY OTHER AUTHORIZATION REQUIRED FOR OPERATIONS ON FEDERAL AND INDIAN LANDS

14. I hereby certify that the foregoing is true and correct. Name (Printed/Typed) LACEY GRANILLO		Title PERMITTING TECH III	
Signature 		Date 3/20/15	
THIS SPACE FOR FEDERAL OR STATE OFFICE USE			
Approved by  William Tambekou		Title Petroleum Engineer	Date 3-24-15
Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.		Office PFO	

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.

WPXENERGY.**WPX ENERGY****Operations Plan***(Note: This procedure will be adjusted on site based upon actual conditions)*

DATE: 11/20/2014 **FIELD:** LYBROOK GALLUP

WELL NAME: Chaco 2207-02A 343H **SURFACE:** Indian Allotted

SH Location: SENE Sec 2 -22N -07W **ELEVATION:** 7034' GR

BH Location: NWNW Sec 2 -22N -07W **MINERALS:** Indian Allotted
Sandoval CO., NM

MEASURED DEPTH: 10,457 **LEASE #:** N0-G-1312-1797

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

Name	MD	TVD	Name	MD	TVD
Ojo Alamo	1162	1158	Point Lookout	4071	4033
Kirtland	1316	1310	Mancos	4245	4205
Picture Cliffs	1651	1642	Kickoff Point	4686	4644
Lewis	1740	1729	Top Target	5514	5263
Chacra	1977	1964	Landing Point	5754	5311
Cliff House	3163	3136	Base Target	5754	5311
Menefee	3211	3183			
			TD	10457	5252

- B. **MUD LOGGING PROGRAM:** Mudlogger on location from surface csg to TD.
- C. **LOGGING PROGRAM:** LWD GR from surface casing to TD.
- D. **NATURAL GAUGES:** Gauge any noticeable increases in gas flow. Record all gauges in Tour book and on morning reports.

II. DRILLING

- A. **MUD PROGRAM:** LSND mud (WBM) will be used to drill the 12-1/4" Surface hole, the 8 3/4" Directional Vertical hole, and the curve portion of the wellbore. A LSND (WBM) or (OBM) will be used to drill the lateral portion of well. Treat for lost circulation as necessary. Obtain 100% returns prior to cementing. Notify Engineering of any mud losses.
- B. **BOP TESTING:** While drill pipe is in use, the pipe rams and the blind rams will be function tested once each trip. The anticipated reservoir is expected to be less than 1300 psi, so the BOPE will be tested to **250 psi (Low) for 5 minutes** and **1500 psi (High) for 10 minutes**. Pressure test surface casing to **600 psi for 30 minutes** and intermediate casing to **1500 psi for 30 minutes**. Utilize a BOPE Testing Unit with a recording chart and appropriate test plug for testing. The drum brakes will be inspected and tested each tour. **All tests and inspections will be recorded in the tour book as to time and results.**

NOTE: Vertical portion of the well (8-3/4 in.) will be directionally drilled as per attached Directional Plan to +/- 4,686' (MD) / 4,644' (TVD). Curve portion of wellbore will be drilled and landed at +/- 90 deg. at +/- 5,754' (MD) / 5,311' (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 +/- 10,457' (MD) / 5,252' (TVD). Will run 4-1/2 in. Production Liner from +/- 5,604 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"	5,754'	7"	23#	K-55
Prod. Liner	6.125"	5,604 - 10,457'	4-1/2"	11.6#	N-80
Tie-Back String	N/A	Surf. - 5,604'	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 + 1 RSI (Sliding Sleeve) 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: +/- 700 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 +/- 5,644 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 6,094 ft. MD) with a Liner Hanger and pack-off assembly then cemented to +/- 300 ft above the liner hanger. TOL will be +/- 5,944 ft. (MD) +/- 78 degree angle. TOC: +/- 5,644 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.

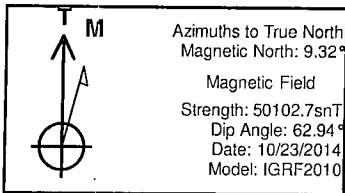
The Drilling Rig will be rigged down at this point and Completion operations will begin. After Stimulation and Testing operations are complete the 4-1/2" tie-back string will be removed from the well.

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

WPX ENERGY



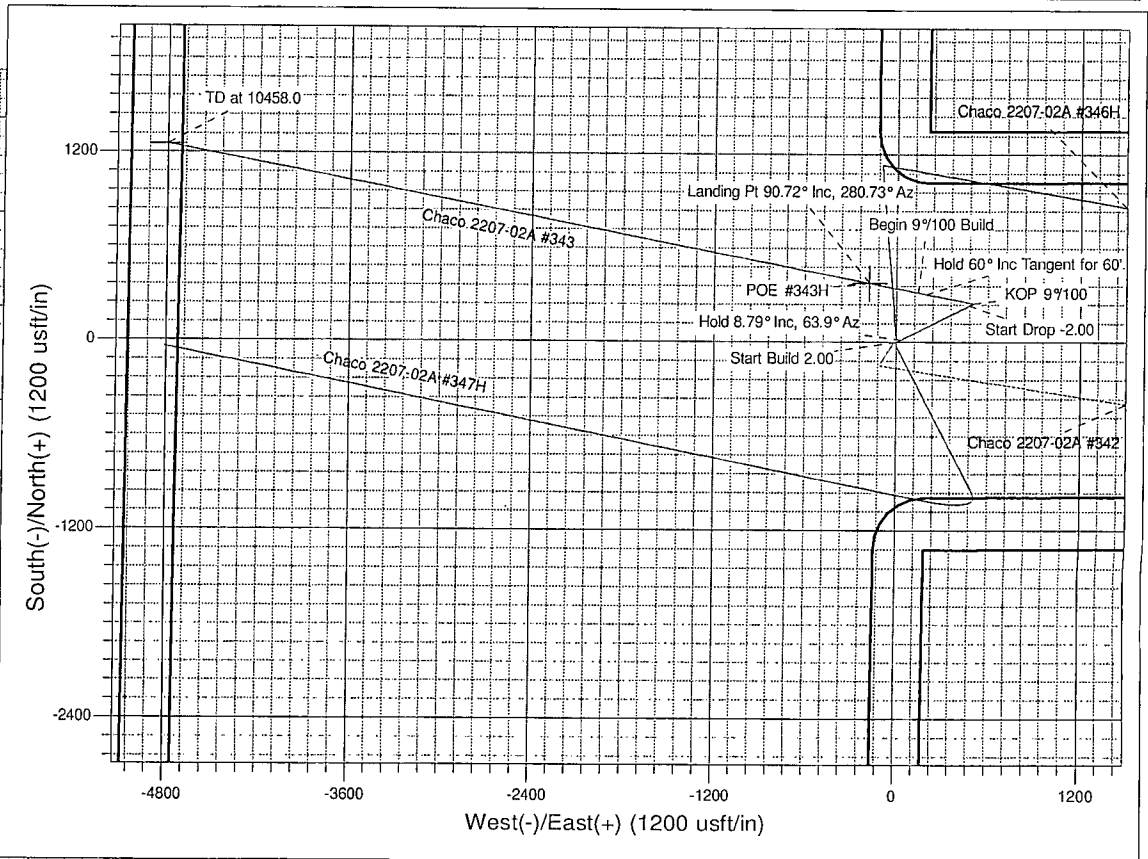
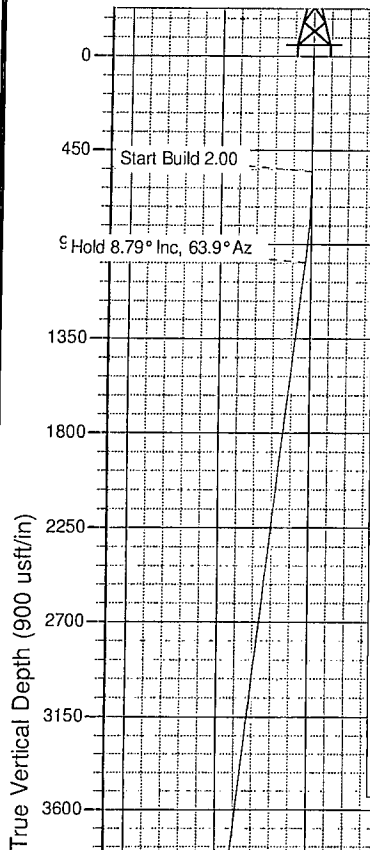
Well Name: Chaco 2207-02A #343
 Surface Location: Chaco 2207-02A
 NAD 1927 (NADCON CONUS) , US State Plane 1927 (Exact solution) New Mexico West 3003
 Ground Elevation: 7034.0
 +N/-S +E/-W Northing Easting Latitude Longitude Slot
 0.0 0.0 1881980.93 587898.05 36.171992 -107.535527 343H
 WELL @ 7048.0usft (Original Well Elev)



Project: SJ 02-22N-07W
 Site: Chaco 2207-02A
 Well: Chaco 2207-02A #343
 Design #1 23Oct14 kjs

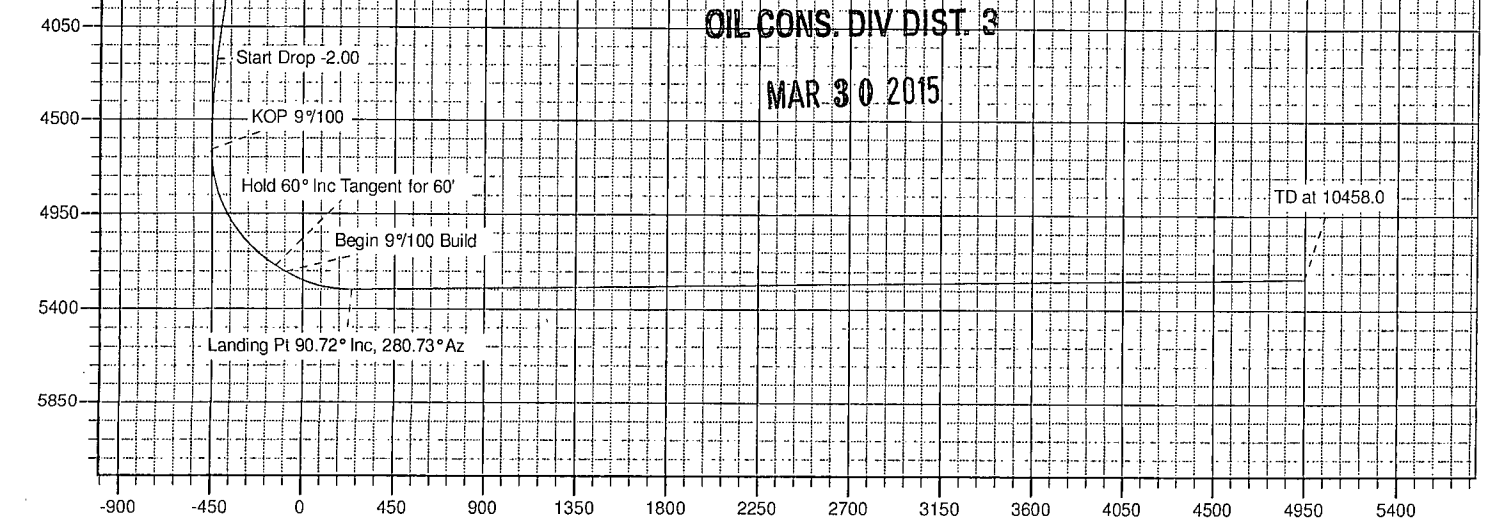
ANNOTATIONS									
TVD	MD	Inc	Azi	+N/-S	+E/-W	VSec	Departure	Annotation	
550.0	550.0	0.00	0.00	0.0	0.0	0.0	0.0	Start Build 2.00	
987.6	989.3	8.79	63.90	14.8	30.2	-26.9	33.6	Hold 8.79° Inc, 63.9° Az	
4206.9	4246.8	8.79	63.90	233.7	477.0	-425.2	531.2	Start Drop -2.00	
4644.4	4686.1	0.00	0.00	248.5	507.2	-452.1	564.8	KOP 9°/100	
5195.7	5352.7	60.00	280.73	307.8	194.5	-133.8	883.1	Hold 60° Inc Tangent for 60'	
5225.7	5412.7	60.00	280.73	317.4	143.4	-81.8	935.0	Begin 9°/100 Build	
5311.0	5754.0	90.71	280.73	378.2	-177.1	244.5	1261.3	Landing Pt 90.72° Inc, 280.73° Az	
5252.0	10457.0	90.72	280.73	1254.1	-4797.5	4947.1	5964.0	TD at 10458.0	

DESIGN TARGET DETAILS							
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
TD / PBHL #343H	5252.0	1254.3	-4798.5	1883220.47	583095.77	36.175437	-107.551785
POE #343H	5311.0	378.2	-177.2	1882358.59	587719.67	36.173031	-107.536127

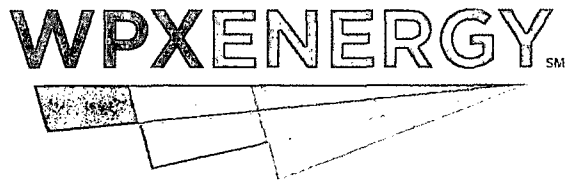


OIL CONS. DIV DIST. 3

MAR 30 2015



Vertical Section at 280.73° (900 usft/in)



SAN JUAN BASIN

SJ 02-22N-07W

Chaco 2207-02A

Chaco 2207-02A #343 - Slot 343H

Wellbore #1

Plan: Design #1 23Oct14 kjs

Standard Planning Report - Geographic

11 November, 2014



Database:	COMPASS-SANJUAN	Local Co-ordinate Reference:	Well Chaco 2207-02A #343 - Slot 343H
Company:	SAN JUAN BASIN	TVD Reference:	WELL @ 7048.0usft (Original Well Elev)
Project:	SJ 02-22N-07W	MD Reference:	WELL @ 7048.0usft (Original Well Elev)
Site:	Chaco 2207-02A	North Reference:	True
Well:	Chaco 2207-02A #343	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1 23Oct14 kjs		

Project	SJ 02-22N-07W, Sandoval County, NM		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico West 3003		

Site	Chaco 2207-02A		
Site Position:	From: Map	Northing:	1,881,980.93 usft
		Easting:	587,898.06 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13.200 in
		Latitude:	36.171992
		Longitude:	-107.535527
		Grid Convergence:	0.18 °

Well	Chaco 2207-02A #343 - Slot 343H		
Well Position	+N/-S	0.0 usft	Northing: 1,881,980.93 usft
	+E/-W	0.0 usft	Easting: 587,898.06 usft
Position Uncertainty	0.0 usft	Wellhead Elevation:	0.0 usft
		Latitude:	36.171992
		Longitude:	-107.535527
		Ground Level:	7,034.0 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	IGRF2010	10/23/2014	9.32	62.94	50,103

Design	Design #1 23Oct14 kjs			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(usft)	(usft)	(usft)	(°)
	0.0	0.0	0.0	280.73

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
550.0	0.00	0.00	550.0	0.0	0.0	0.00	0.00	0.00	0.00	
989.3	8.79	63.90	987.6	14.8	30.2	2.00	2.00	0.00	63.90	
4,246.8	8.79	63.90	4,206.8	233.7	477.0	0.00	0.00	0.00	0.00	
4,686.1	0.00	0.00	4,644.4	248.5	507.2	2.00	-2.00	0.00	180.00	
5,352.7	60.00	280.73	5,195.7	307.8	194.5	9.00	9.00	0.00	280.73	
5,412.7	60.00	280.73	5,225.7	317.4	143.4	0.00	0.00	0.00	0.00	
5,754.0	90.72	280.73	5,311.0	378.2	-177.2	9.00	9.00	0.00	0.01	
10,458.0	90.72	280.73	5,252.0	1,254.3	-4,798.5	0.00	0.00	0.00	0.00	TD / PBHL #343H

Database: COMPASS-SANJUAN
 Company: SAN JUAN BASIN
 Project: SJ 02-22N-07W
 Site: Chaco 2207-02A
 Well: Chaco 2207-02A #343
 Wellbore: Wellbore #1
 Design: Design #1 23Oct14 kjs

Local Co-ordinate Reference: Well Chaco 2207-02A #343 - Slot 343H
 TVD Reference: WELL @ 7048.0usft (Original Well Elev)
 MD Reference: WELL @ 7048.0usft (Original Well Elev)
 North Reference: True
 Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.0	0.00	0.00	0.0	0.0	0.0	1,881,980.93	587,898.06	36.171992	-107.535527
200.0	0.00	0.00	200.0	0.0	0.0	1,881,980.93	587,898.06	36.171992	-107.535527
400.0	0.00	0.00	400.0	0.0	0.0	1,881,980.93	587,898.06	36.171992	-107.535527
550.0	0.00	0.00	550.0	0.0	0.0	1,881,980.93	587,898.06	36.171992	-107.535527
Start Build 2.00									
600.0	1.00	63.90	600.0	0.2	0.4	1,881,981.12	587,898.45	36.171993	-107.535525
800.0	5.00	63.90	799.7	4.8	9.8	1,881,985.76	587,907.83	36.172005	-107.535494
989.3	8.79	63.90	987.6	14.8	30.2	1,881,995.81	587,928.20	36.172033	-107.535424
Hold 8.79° Inc, 63.9° Az									
1,000.0	8.79	63.90	998.2	15.5	31.7	1,881,996.54	587,929.66	36.172035	-107.535420
1,200.0	8.79	63.90	1,195.8	29.0	59.1	1,882,010.06	587,957.06	36.172072	-107.535327
1,400.0	8.79	63.90	1,393.5	42.4	86.5	1,882,023.59	587,984.45	36.172109	-107.535234
1,600.0	8.79	63.90	1,591.1	55.8	114.0	1,882,037.11	588,011.84	36.172145	-107.535141
1,800.0	8.79	63.90	1,788.8	69.3	141.4	1,882,050.64	588,039.23	36.172182	-107.535048
2,000.0	8.79	63.90	1,986.4	82.7	168.8	1,882,064.16	588,066.63	36.172219	-107.534955
2,200.0	8.79	63.90	2,184.1	96.2	196.3	1,882,077.69	588,094.02	36.172256	-107.534862
2,400.0	8.79	63.90	2,381.7	109.6	223.7	1,882,091.21	588,121.41	36.172293	-107.534769
2,600.0	8.79	63.90	2,579.4	123.0	251.1	1,882,104.74	588,148.80	36.172330	-107.534676
2,800.0	8.79	63.90	2,777.0	136.5	278.6	1,882,118.26	588,176.20	36.172367	-107.534583
3,000.0	8.79	63.90	2,974.7	149.9	306.0	1,882,131.79	588,203.59	36.172404	-107.534490
3,200.0	8.79	63.90	3,172.3	163.4	333.4	1,882,145.31	588,230.98	36.172441	-107.534397
3,400.0	8.79	63.90	3,370.0	176.8	360.9	1,882,158.84	588,258.37	36.172478	-107.534304
3,600.0	8.79	63.90	3,567.6	190.2	388.3	1,882,172.36	588,285.77	36.172515	-107.534211
3,800.0	8.79	63.90	3,765.3	203.7	415.7	1,882,185.89	588,313.16	36.172552	-107.534118
4,000.0	8.79	63.90	3,963.0	217.1	443.2	1,882,199.41	588,340.55	36.172589	-107.534025
4,200.0	8.79	63.90	4,160.6	230.6	470.6	1,882,212.94	588,367.94	36.172625	-107.533932
4,246.8	8.79	63.90	4,206.9	233.7	477.0	1,882,216.10	588,374.35	36.172634	-107.533911
Start Drop -2.00									
4,400.0	5.72	63.90	4,358.8	242.2	494.4	1,882,224.67	588,391.69	36.172658	-107.533852
4,600.0	1.72	63.90	4,558.3	247.9	506.0	1,882,230.41	588,403.33	36.172673	-107.533812
4,686.1	0.00	0.00	4,644.4	248.5	507.2	1,882,230.98	588,404.49	36.172675	-107.533808
KOP 9°/100									
4,800.0	10.25	280.73	4,757.7	250.4	497.2	1,882,232.85	588,394.49	36.172680	-107.533842
5,000.0	28.25	280.73	4,945.8	262.6	432.7	1,882,244.88	588,329.92	36.172714	-107.534061
5,200.0	46.25	280.73	5,104.3	285.1	314.2	1,882,266.96	588,211.39	36.172775	-107.534462
5,352.7	60.00	280.73	5,195.7	307.8	194.5	1,882,289.28	588,091.59	36.172838	-107.534868
Hold 60° Inc Tangent for 60°									
5,400.0	60.00	280.73	5,219.4	315.4	154.2	1,882,296.79	588,051.32	36.172859	-107.535004
5,412.7	60.00	280.73	5,225.7	317.4	143.4	1,882,298.80	588,040.51	36.172864	-107.535041
Begin 9°/100 Build									
5,600.0	76.85	280.73	5,294.3	349.7	-27.1	1,882,330.59	587,869.90	36.172953	-107.535619
5,754.0	90.71	280.73	5,311.0	378.2	-177.1	1,882,358.58	587,719.76	36.173031	-107.536127
Landing Pt 90.72° Inc, 280.73° Az									
5,754.1	90.71	280.73	5,311.0	378.2	-177.2	1,882,358.59	587,719.67	36.173031	-107.536127
POE #343H									
5,800.0	90.72	280.73	5,310.4	386.8	-222.3	1,882,367.00	587,674.54	36.173055	-107.536280
6,000.0	90.72	280.73	5,307.9	424.0	-418.8	1,882,403.65	587,477.94	36.173157	-107.536946
6,200.0	90.72	280.73	5,305.4	461.3	-615.3	1,882,440.29	587,281.35	36.173259	-107.537611
6,400.0	90.72	280.73	5,302.9	498.5	-811.8	1,882,476.94	587,084.75	36.173362	-107.538277
6,600.0	90.72	280.73	5,300.4	535.8	-1,008.3	1,882,513.59	586,888.15	36.173464	-107.538943
6,800.0	90.72	280.73	5,297.9	573.0	-1,204.8	1,882,550.23	586,691.55	36.173566	-107.539609
7,000.0	90.72	280.73	5,295.4	610.2	-1,401.2	1,882,586.88	586,494.95	36.173668	-107.540274
7,200.0	90.72	280.73	5,292.8	647.5	-1,597.7	1,882,623.52	586,298.36	36.173771	-107.540940
7,400.0	90.72	280.73	5,290.3	684.7	-1,794.2	1,882,660.17	586,101.76	36.173873	-107.541606

Database: COMPASS-SANJUAN
 Company: SAN JUAN BASIN
 Project: SJ 02-22N-07W
 Site: Chaco 2207-02A
 Well: Chaco 2207-02A #343
 Wellbore: Wellbore #1
 Design: Design #1 23Oct14 kjs

Local Co-ordinate Reference: Well Chaco 2207-02A #343 - Slot 343H
 TVD Reference: WELL @ 7048.0usft (Original Well Elev)
 MD Reference: WELL @ 7048.0usft (Original Well Elev)
 North Reference: True
 Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
7,600.0	90.72	280.73	5,287.8	722.0	-1,990.7	1,882,696.81	585,905.16	36.173975	-107.542272
7,800.0	90.72	280.73	5,285.3	759.2	-2,187.2	1,882,733.46	585,708.56	36.174078	-107.542937
8,000.0	90.72	280.73	5,282.8	796.5	-2,383.7	1,882,770.10	585,511.96	36.174180	-107.543603
8,200.0	90.72	280.73	5,280.3	833.7	-2,580.1	1,882,806.75	585,315.37	36.174282	-107.544269
8,400.0	90.72	280.73	5,277.8	871.0	-2,776.6	1,882,843.39	585,118.77	36.174384	-107.544934
8,600.0	90.72	280.73	5,275.3	908.2	-2,973.1	1,882,880.04	584,922.17	36.174487	-107.545600
8,800.0	90.72	280.73	5,272.8	945.5	-3,169.6	1,882,916.68	584,725.57	36.174589	-107.546266
9,000.0	90.72	280.73	5,270.3	982.7	-3,366.1	1,882,953.33	584,528.97	36.174691	-107.546932
9,200.0	90.72	280.73	5,267.8	1,020.0	-3,562.6	1,882,989.97	584,332.37	36.174794	-107.547597
9,400.0	90.72	280.73	5,265.3	1,057.2	-3,759.1	1,883,026.62	584,135.78	36.174896	-107.548263
9,600.0	90.72	280.73	5,262.8	1,094.5	-3,955.5	1,883,063.26	583,939.18	36.174998	-107.548929
9,800.0	90.72	280.73	5,260.2	1,131.7	-4,152.0	1,883,099.91	583,742.58	36.175100	-107.549595
10,000.0	90.72	280.73	5,257.7	1,169.0	-4,348.5	1,883,136.55	583,545.98	36.175203	-107.550260
10,200.0	90.72	280.73	5,255.2	1,206.2	-4,545.0	1,883,173.20	583,349.38	36.175305	-107.550926
10,400.0	90.72	280.73	5,252.7	1,243.5	-4,741.5	1,883,209.85	583,152.79	36.175407	-107.551592
10,457.9	90.72	280.73	5,252.0	1,254.3	-4,798.4	1,883,220.45	583,095.87	36.175437	-107.551785
TD at 10458.0									
10,458.0	90.72	280.73	5,252.0	1,254.3	-4,798.5	1,883,220.47	583,095.77	36.175437	-107.551785
TD / PBHL #343H									

Design Targets
Target Name

- hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
TD / PBHL #343H - plan hits target center - Point	0.00	0.00	5,252.0	1,254.3	-4,798.5	1,883,220.47	583,095.77	36.175437	-107.551785
POE #343H - plan hits target center - Point	0.00	0.00	5,311.0	378.2	-177.2	1,882,358.59	587,719.67	36.173031	-107.536127

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
550.0	550.0	0.0	0.0	Start Build 2.00
989.3	987.6	14.8	30.2	Hold 8.79° Inc, 63.9° Az
4,246.8	4,206.9	233.7	477.0	Start Drop -2.00
4,686.1	4,644.4	248.5	507.2	KOP 9°/100
5,352.7	5,195.7	307.8	194.5	Hold 60° Inc Tangent for 60'
5,412.7	5,225.7	317.4	143.4	Begin 9°/100 Build
5,754.0	5,311.0	378.2	-177.1	Landing Pt 90.72° Inc, 280.73° Az
10,457.9	5,252.0	1,254.3	-4,798.4	TD at 10458.0