

District I
1625 N. French Drive, Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720

District II
811 S. First Street, Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720

District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170

District IV
1220 S. St. Francis Drive, Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department

Form C-102
Revised August 1, 2011

Submit one copy to
Appropriate District Office

OIL CONSERVATION DIVISION

1220 South St. Francis Drive
Santa Fe, NM 87505

☐ AMENDED REPORT

AS DRILLED

WELL LOCATION AND ACREAGE DEDICATION PLAT

*API Number 30-045-35550	*Pool Code 97232	*Pool Name BASIN MANCOS
*Property Code 313712	*Property Name CHACO 2308-24H	*Well Number 153H
*GRID No. 120782	*Operator Name WPX ENERGY PRODUCTION, LLC	*Elevation 6894'

¹⁰ Surface Location

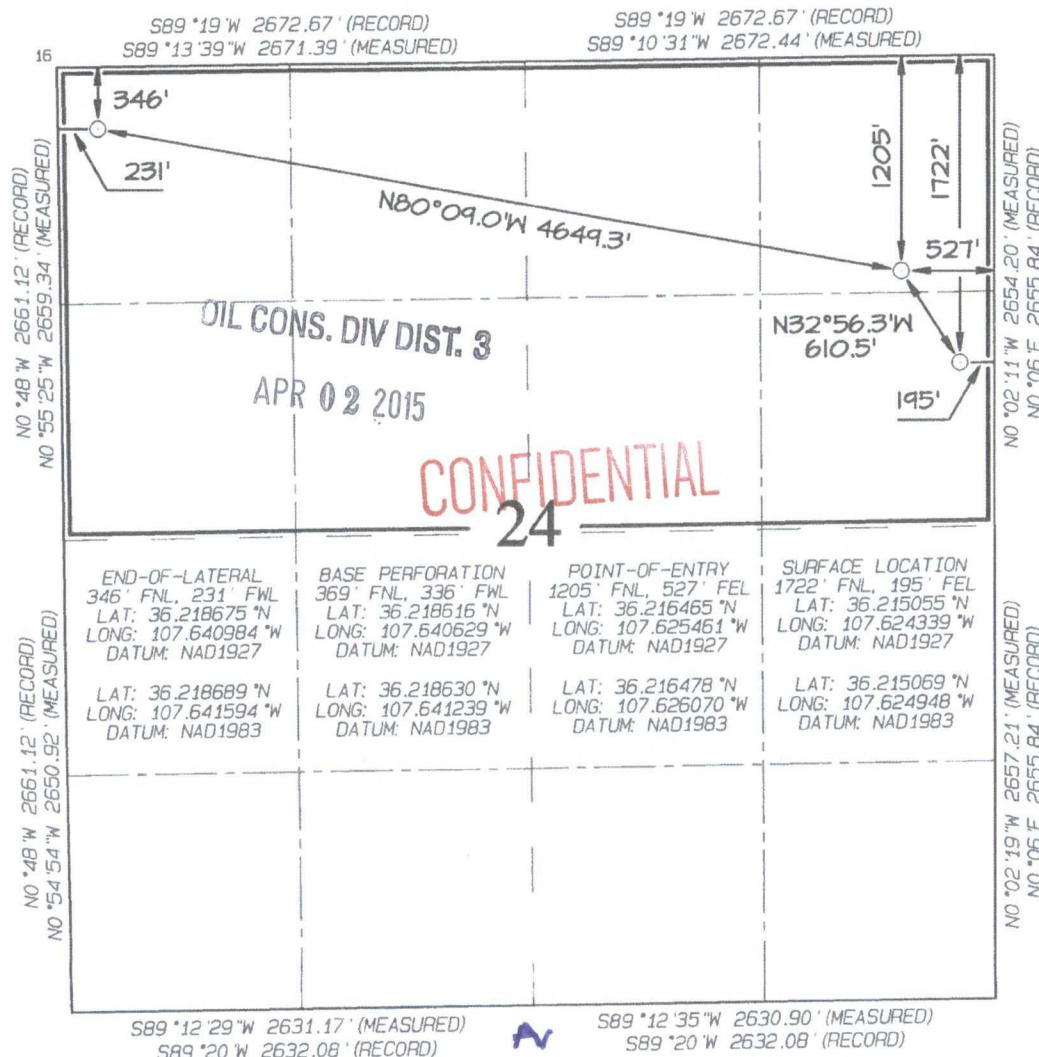
UL or Lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
H	24	23N	8W		1722	NORTH	195	EAST	SAN JUAN

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
D	24	23N	8W		346	NORTH	231	WEST	SAN JUAN

*Dedicated Acres 320.0 Acres N/2 - Section 24	*Joint or Infill	*Consolidation Code	*Order No. 7281 NSL-PENDING Approved 5-15-15
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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
LACEY GRANILLO

Printed Name
lacey.granillo@wpenergy.com

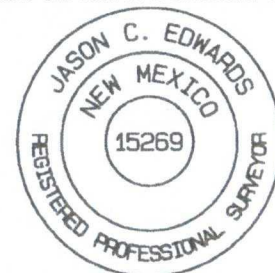
E-mail Address

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: MARCH 19, 2015
Survey Date: SEPTEMBER 12, 2013

Signature and Seal of Professional Surveyor



JASON C. EDWARDS

Certificate Number 15269



WELL DETAILS: Chaco 2308-24H 153H

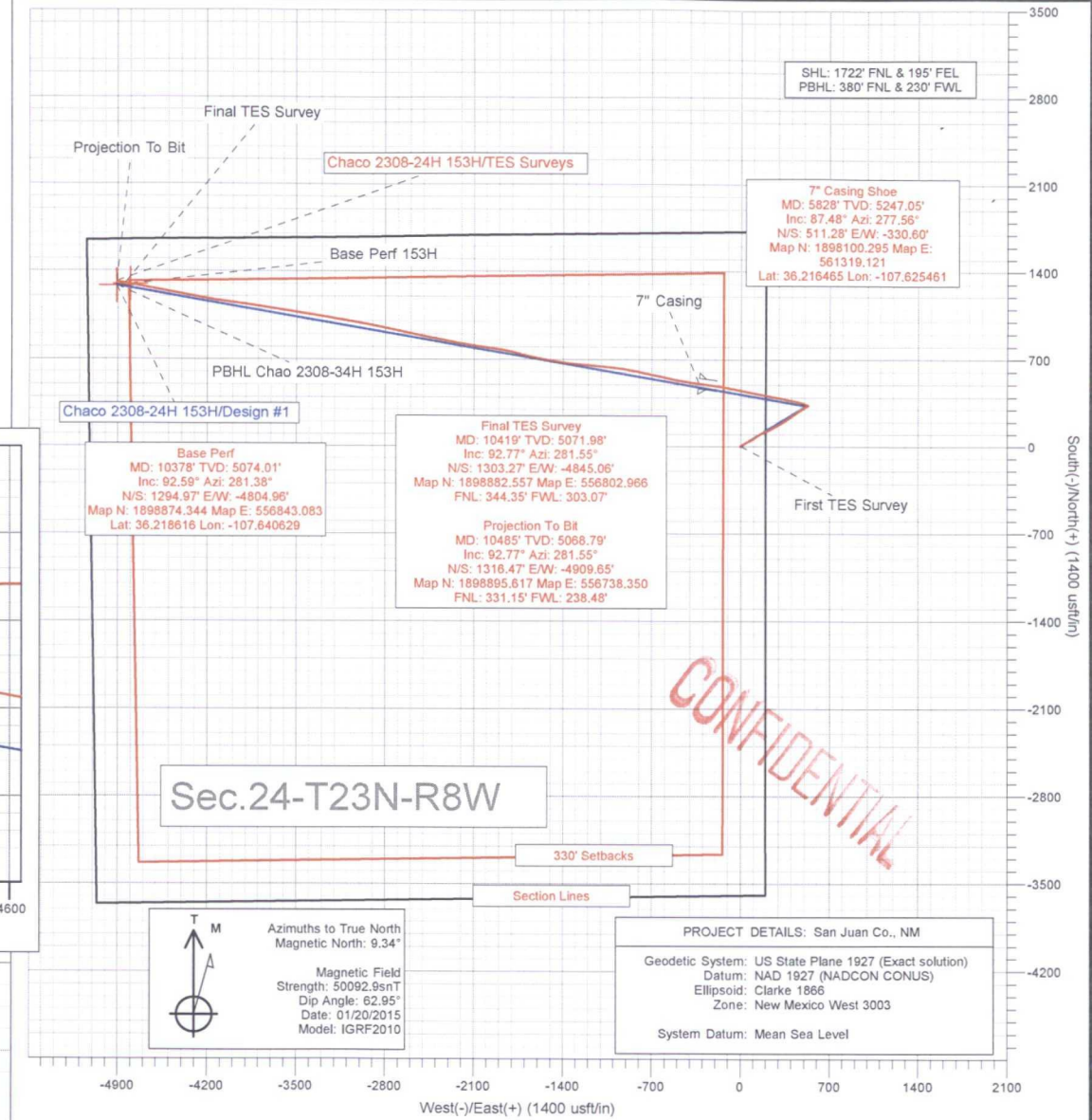
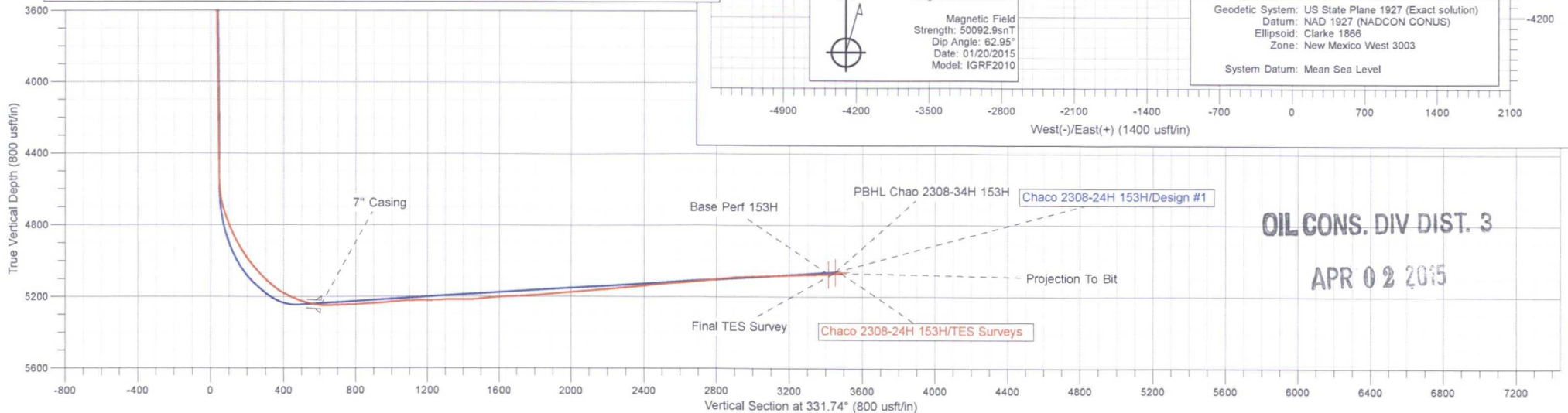
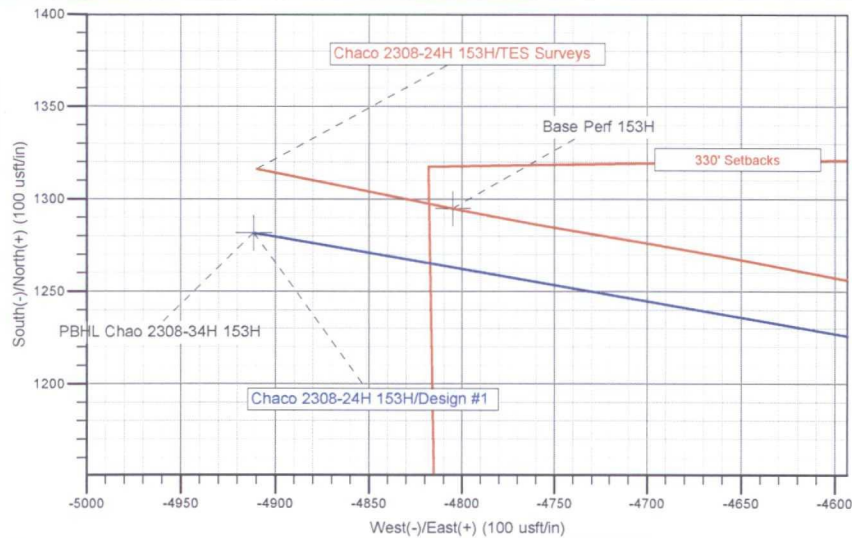
	Ground Level:					
+N/-S	6896.00	Latitude	Longitude	Slot		
+E/-W	561650.826967	36.215060	-107.624340			
Northing	561650.826967	36.215060	-107.624340			

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
PBHL Chao 2308-34H 153H	5062.36	1281.75	-4911.37	36.218580	-107.640990	Point
Base Perf 153H	5074.01	1294.97	-4804.96	36.218616	-107.640629	Point

Survey: TES Surveys (Chaco 2308-24H 153H/Wellbore #1)

Created By: M. Ramich Date: 9:43, February 05 2015



OIL CONS. DIV DIST. 3

APR 02 2015

WPXENERGY



WPX Energy Production, LLC

San Juan Co., NM

Sec.24-T23N-R8W

Chaco 2308-24H 153H

Wellbore #1

Survey: TES Surveys

CONFIDENTIAL

Standard Survey Report

05 February, 2015





Terrapin Energy Services
Survey Report



Company:	WPX Energy Production, LLC	Local Co-ordinate Reference:	Well Chaco 2308-24H 153H
Project:	San Juan Co., NM	TVD Reference:	Elev @ 6910.00usft
Site:	Sec.24-T23N-R8W	MD Reference:	Elev @ 6910.00usft
Well:	Chaco 2308-24H 153H	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

Project	San Juan Co., 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	Sec.24-T23N-R8W		
Site Position:		Northing:	1,897,589.731413 usft
From:	Lat/Long	Easting:	561,650.826967 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	36.215060
		Longitude:	-107.624340
		Grid Convergence:	0.12 °

Well	Chaco 2308-24H 153H		
Well Position	+N/-S	0.00 usft	Northing:
	+E/-W	0.00 usft	Easting:
Position Uncertainty	0.00 usft	Wellhead Elevation:	0.00 usft
		Latitude:	36.215060
		Longitude:	-107.624340
		Ground Level:	6,896.00 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	01/20/15	9.33	62.95	50,093

Design	Wellbore #1				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	331.74	

Survey Program	Date 02/05/15				
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
64.00	374.00	Surface Gyro (Wellbore #1)	GYRO	Gyro-compassing and drop	
479.00	10,485.00	TES Surveys (Wellbore #1)	MWD	MWD - Standard	

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
374.00	0.43	323.24	373.99	1.29	-0.70	1.47	0.00	0.00	0.00	
479.00	0.61	297.66	478.99	1.87	-1.43	2.32	0.28	0.17	-24.36	
First TES Survey										
539.00	0.59	303.50	538.99	2.19	-1.97	2.86	0.11	-0.03	9.73	
600.00	1.28	37.77	599.98	2.90	-1.81	3.41	2.38	1.13	154.54	
661.00	2.25	53.00	660.95	4.16	-0.44	3.87	1.75	1.59	24.97	
723.00	2.50	55.51	722.90	5.66	1.65	4.20	0.44	0.40	4.05	
783.00	2.96	58.78	782.83	7.20	4.05	4.42	0.81	0.77	5.45	
844.00	3.99	59.14	843.72	9.11	7.22	4.60	1.69	1.69	0.59	
905.00	4.79	55.25	904.54	11.65	11.14	4.98	1.40	1.31	-6.38	



Terrapin Energy Services

Survey Report



Company: WPX Energy Production, LLC
Project: San Juan Co., NM
Site: Sec.24-T23N-R8W
Well: Chaco 2308-24H 153H
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well Chaco 2308-24H 153H
TVD Reference: Elev @ 6910.00usft
MD Reference: Elev @ 6910.00usft
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
966.00	5.61	52.03	965.29	14.93	15.58	5.77	1.43	1.34	-5.28
1,025.00	6.77	52.24	1,023.94	18.84	20.60	6.83	1.97	1.97	0.36
1,086.00	8.10	55.67	1,084.43	23.46	26.99	7.88	2.30	2.18	5.62
1,147.00	9.78	61.02	1,144.69	28.40	35.07	8.40	3.07	2.75	8.77
1,208.00	11.25	63.90	1,204.66	33.52	44.95	8.24	2.56	2.41	4.72
1,269.00	11.45	63.12	1,264.47	38.88	55.70	7.87	0.41	0.33	-1.28
1,330.00	10.95	63.00	1,324.30	44.25	66.26	7.60	0.82	-0.82	-0.20
1,391.00	11.46	58.61	1,384.14	50.03	76.59	7.80	1.63	0.84	-7.20
1,452.00	11.81	56.57	1,443.89	56.63	86.98	8.69	0.89	0.57	-3.34
1,513.00	11.45	54.28	1,503.64	63.60	97.10	10.04	0.96	-0.59	-3.75
1,573.00	11.55	53.88	1,562.43	70.62	106.79	11.63	0.21	0.17	-0.67
1,634.00	12.10	51.55	1,622.14	78.20	116.73	13.60	1.19	0.90	-3.82
1,695.00	12.48	54.69	1,681.74	85.98	127.11	15.54	1.26	0.62	5.15
1,756.00	12.16	55.45	1,741.34	93.44	137.78	17.05	0.59	-0.52	1.25
1,817.00	11.07	53.89	1,801.09	100.53	147.81	18.55	1.86	-1.79	-2.56
1,877.00	10.52	60.16	1,860.03	106.65	157.21	19.49	2.16	-0.92	10.45
1,941.00	10.37	72.70	1,922.97	111.27	167.78	18.55	3.55	-0.23	19.59
2,004.00	10.47	69.50	1,984.94	114.96	178.56	16.70	0.93	0.16	-5.08
2,067.00	10.99	65.56	2,046.83	119.45	189.39	15.53	1.43	0.83	-6.25
2,131.00	10.27	65.17	2,109.74	124.37	200.12	14.78	1.13	-1.13	-0.61
2,195.00	10.48	63.47	2,172.69	129.37	210.50	14.26	0.58	0.33	-2.66
2,258.00	10.48	62.57	2,234.64	134.57	220.71	14.00	0.26	0.00	-1.43
2,322.00	10.18	61.52	2,297.60	139.94	230.85	13.94	0.55	-0.47	-1.64
2,385.00	10.37	60.87	2,359.59	145.36	240.70	14.05	0.35	0.30	-1.03
2,449.00	11.28	61.25	2,422.45	151.17	251.22	14.19	1.43	1.42	0.59
2,513.00	11.44	60.47	2,485.20	157.31	262.23	14.38	0.35	0.25	-1.22
2,577.00	11.32	61.84	2,547.94	163.40	273.29	14.51	0.46	-0.19	2.14
2,640.00	11.59	62.80	2,609.68	169.22	284.37	14.38	0.52	0.43	1.52
2,704.00	11.44	59.94	2,672.40	175.33	295.58	14.46	0.92	-0.23	-4.47
2,767.00	11.20	56.91	2,734.17	181.80	306.11	15.17	1.02	-0.38	-4.81
2,830.00	10.82	56.99	2,796.01	188.37	316.20	16.17	0.60	-0.60	0.13
2,893.00	10.58	55.29	2,857.92	194.88	325.91	17.31	0.63	-0.38	-2.70
2,957.00	10.24	53.29	2,920.86	201.63	335.30	18.81	0.78	-0.53	-3.13
3,020.00	10.03	55.23	2,982.88	208.10	344.30	20.25	0.64	-0.33	3.08
3,084.00	9.52	55.57	3,045.95	214.27	353.24	21.45	0.80	-0.80	0.53
3,149.00	9.94	54.19	3,110.02	220.60	362.22	22.76	0.74	0.65	-2.12
3,212.00	9.47	53.70	3,172.11	226.84	370.81	24.20	0.76	-0.75	-0.78
3,276.00	9.85	53.71	3,235.21	233.20	379.47	25.70	0.59	0.59	0.02
3,339.00	10.56	52.71	3,297.21	239.89	388.40	27.36	1.16	1.13	-1.59
3,403.00	10.04	52.07	3,360.18	246.87	397.47	29.22	0.83	-0.81	-1.00
3,466.00	10.65	54.15	3,422.15	253.66	406.52	30.91	1.14	0.97	3.30
3,529.00	11.22	54.87	3,484.01	260.59	416.25	32.41	0.93	0.90	1.14
3,592.00	10.93	54.37	3,545.84	267.60	426.12	33.91	0.48	-0.46	-0.79



Terrapin Energy Services
Survey Report



Company:	WPX Energy Production, LLC	Local Co-ordinate Reference:	Well Chaco 2308-24H 153H
Project:	San Juan Co., NM	TVD Reference:	Elev @ 6910.00usft
Site:	Sec.24-T23N-R8W	MD Reference:	Elev @ 6910.00usft
Well:	Chaco 2308-24H 153H	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
3,656.00	10.12	55.60	3,608.76	274.31	435.69	35.29	1.31	-1.27	1.92
3,719.00	9.50	56.38	3,670.84	280.32	444.59	36.36	1.01	-0.98	1.24
3,782.00	10.16	56.56	3,732.91	286.26	453.55	37.35	1.05	1.05	0.29
3,845.00	11.92	55.60	3,794.74	293.00	463.56	38.55	2.81	2.79	-1.52
3,908.00	11.62	55.27	3,856.42	300.29	474.14	39.96	0.49	-0.48	-0.52
3,971.00	10.15	58.80	3,918.29	306.78	484.10	40.95	2.56	-2.33	5.60
4,035.00	8.81	59.13	3,981.41	312.21	493.13	41.47	2.10	-2.09	0.52
4,098.00	8.91	57.80	4,043.66	317.29	501.40	42.02	0.36	0.16	-2.11
4,162.00	7.50	57.71	4,107.00	322.16	509.13	42.65	2.20	-2.20	-0.14
4,225.00	6.88	56.05	4,169.51	326.46	515.73	43.32	1.04	-0.98	-2.63
4,289.00	6.20	58.43	4,233.09	330.41	521.86	43.90	1.14	-1.06	3.72
4,353.00	4.94	55.76	4,296.79	333.77	527.08	44.38	2.01	-1.97	-4.17
4,416.00	2.24	45.15	4,359.66	336.17	530.20	45.02	4.40	-4.29	-16.84
4,446.00	1.74	34.69	4,389.64	336.96	530.87	45.39	2.05	-1.67	-34.87
4,509.00	0.98	359.40	4,452.62	338.28	531.41	46.30	1.74	-1.21	-56.02
4,572.00	0.75	339.44	4,515.61	339.21	531.26	47.19	0.60	-0.37	-31.68
4,635.00	3.76	292.02	4,578.56	340.37	529.20	49.19	5.24	4.78	-75.27
4,698.00	11.92	292.17	4,640.92	343.60	521.25	55.80	12.95	12.95	0.24
4,761.00	20.21	294.53	4,701.41	350.59	505.29	69.51	13.20	13.16	3.75
4,824.00	26.39	288.97	4,759.25	359.67	482.13	88.48	10.40	9.81	-8.83
4,887.00	34.16	279.18	4,813.65	367.06	451.36	109.55	14.58	12.33	-15.54
4,950.00	37.39	279.98	4,864.75	373.20	415.05	132.15	5.18	5.13	1.27
5,013.00	40.74	282.51	4,913.67	380.97	376.13	157.43	5.89	5.32	4.02
5,076.00	43.83	282.39	4,960.27	390.10	334.74	185.07	4.91	4.90	-0.19
5,140.00	49.12	281.69	5,004.33	399.77	289.37	215.07	8.30	8.27	-1.09
5,204.00	54.71	281.21	5,043.79	409.75	240.02	247.24	8.75	8.73	-0.75
5,267.00	55.74	279.64	5,079.72	419.11	189.13	279.58	2.62	1.63	-2.49
5,331.00	60.03	281.00	5,113.74	428.84	135.82	313.39	6.94	6.70	2.13
5,394.00	62.06	281.11	5,144.24	439.41	81.72	348.32	3.23	3.22	0.17
5,458.00	69.15	281.44	5,170.65	450.80	24.59	385.40	11.09	11.08	0.52
5,521.00	72.40	281.51	5,191.40	462.63	-33.70	423.43	5.16	5.16	0.11
5,584.00	75.04	280.33	5,209.06	474.08	-93.07	461.63	4.56	4.19	-1.87
5,647.00	77.33	279.78	5,224.10	484.76	-153.30	499.56	3.73	3.63	-0.87
5,711.00	81.22	278.96	5,236.01	494.99	-215.33	537.95	6.21	6.08	-1.28
5,774.00	85.05	277.77	5,243.54	504.09	-277.20	575.26	6.36	6.08	-1.89
5,889.00	90.22	277.33	5,248.28	519.18	-391.07	642.47	4.51	4.50	-0.38
5,948.00	90.79	279.26	5,247.76	527.69	-449.45	677.61	3.41	0.97	3.27
6,010.00	91.76	281.55	5,246.38	538.89	-510.41	716.34	4.01	1.56	3.69
6,071.00	91.85	282.87	5,244.46	551.78	-570.00	755.91	2.17	0.15	2.16
6,132.00	91.63	282.51	5,242.61	565.17	-629.48	795.88	0.69	-0.36	-0.59
6,193.00	91.14	282.60	5,241.13	578.43	-689.01	835.74	0.82	-0.80	0.15
6,254.00	92.37	282.87	5,239.26	591.87	-748.48	875.74	2.06	2.02	0.44
6,314.00	92.50	283.39	5,236.71	605.49	-806.85	915.38	0.89	0.22	0.87



Terrapin Energy Services
Survey Report



Company:	WPX Energy Production, LLC	Local Co-ordinate Reference:	Well Chaco 2308-24H 153H
Project:	San Juan Co., NM	TVD Reference:	Elev @ 6910.00usft
Site:	Sec.24-T23N-R8W	MD Reference:	Elev @ 6910.00usft
Well:	Chaco 2308-24H 153H	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
6,375.00	92.99	280.23	5,233.79	617.96	-866.49	954.60	5.24	0.80	-5.18
6,435.00	93.87	276.89	5,230.20	626.87	-925.70	990.49	5.75	1.47	-5.57
6,496.00	92.59	275.92	5,226.77	633.66	-986.22	1,025.13	2.63	-2.10	-1.59
6,557.00	92.37	276.36	5,224.13	640.18	-1,046.82	1,059.57	0.81	-0.36	0.72
6,618.00	92.24	276.45	5,221.67	646.98	-1,107.39	1,094.24	0.26	-0.21	0.15
6,678.00	90.83	275.39	5,220.07	653.17	-1,167.04	1,127.94	2.94	-2.35	-1.77
6,739.00	89.30	273.99	5,220.00	658.16	-1,227.84	1,161.12	3.40	-2.51	-2.30
6,800.00	89.82	275.39	5,220.46	663.14	-1,288.63	1,194.30	2.45	0.85	2.30
6,861.00	90.66	276.54	5,220.21	669.48	-1,349.30	1,228.61	2.33	1.38	1.89
6,922.00	92.29	279.17	5,218.64	677.81	-1,409.70	1,264.55	5.07	2.67	4.31
6,983.00	91.71	279.88	5,216.51	687.90	-1,469.82	1,301.91	1.50	-0.95	1.16
7,044.00	89.60	278.73	5,215.81	697.76	-1,530.01	1,339.10	3.94	-3.46	-1.89
7,105.00	89.47	280.93	5,216.31	708.18	-1,590.11	1,376.73	3.61	-0.21	3.61
7,165.00	91.14	283.39	5,215.99	720.81	-1,648.75	1,415.63	4.96	2.78	4.10
7,226.00	91.58	284.27	5,214.54	735.39	-1,707.97	1,456.51	1.61	0.72	1.44
7,286.00	94.48	286.29	5,211.37	751.18	-1,765.76	1,497.78	5.89	4.83	3.37
7,348.00	94.70	282.78	5,206.41	766.69	-1,825.57	1,539.76	5.65	0.35	-5.66
7,411.00	91.54	279.00	5,202.98	778.56	-1,887.32	1,579.47	7.81	-5.02	-6.00
7,475.00	91.10	278.21	5,201.50	788.14	-1,950.59	1,617.86	1.41	-0.69	-1.23
7,538.00	91.67	279.44	5,199.98	797.80	-2,012.82	1,655.84	2.15	0.90	1.95
7,602.00	92.02	279.79	5,197.92	808.48	-2,075.89	1,695.11	0.77	0.55	0.55
7,666.00	91.89	278.47	5,195.73	818.63	-2,139.04	1,733.96	2.07	-0.20	-2.06
7,730.00	92.50	279.88	5,193.28	828.83	-2,202.17	1,772.83	2.40	0.95	2.20
7,793.00	92.42	280.76	5,190.58	840.10	-2,264.10	1,812.09	1.40	-0.13	1.40
7,857.00	92.55	281.46	5,187.80	852.42	-2,326.84	1,852.65	1.11	0.20	1.09
7,920.00	93.65	281.37	5,184.40	864.88	-2,388.50	1,892.82	1.75	1.75	-0.14
7,983.00	93.47	281.81	5,180.49	877.51	-2,450.10	1,933.11	0.75	-0.29	0.70
8,046.00	93.12	281.28	5,176.86	890.10	-2,511.72	1,973.38	1.01	-0.56	-0.84
8,110.00	92.68	281.02	5,173.63	902.46	-2,574.43	2,013.96	0.80	-0.69	-0.41
8,173.00	92.59	281.46	5,170.73	914.72	-2,636.16	2,054.00	0.71	-0.14	0.70
8,237.00	93.65	281.90	5,167.25	927.66	-2,698.74	2,095.03	1.79	1.66	0.69
8,301.00	92.90	282.07	5,163.59	940.93	-2,761.24	2,136.31	1.20	-1.17	0.27
8,365.00	93.91	282.69	5,159.79	954.62	-2,823.64	2,177.92	1.85	1.58	0.97
8,429.00	93.16	282.34	5,155.84	968.47	-2,886.00	2,219.65	1.29	-1.17	-0.55
8,492.00	94.31	280.67	5,151.74	981.01	-2,947.60	2,259.86	3.21	1.83	-2.65
8,556.00	93.60	280.40	5,147.32	992.68	-3,010.37	2,299.87	1.19	-1.11	-0.42
8,620.00	93.12	279.79	5,143.57	1,003.88	-3,073.27	2,339.51	1.21	-0.75	-0.95
8,683.00	93.12	279.97	5,140.14	1,014.67	-3,135.24	2,378.37	0.29	0.00	0.29
8,747.00	93.78	279.70	5,136.29	1,025.58	-3,198.19	2,417.79	1.11	1.03	-0.42
8,811.00	93.60	279.97	5,132.17	1,036.49	-3,261.12	2,457.20	0.51	-0.28	0.42
8,874.00	92.90	279.17	5,128.60	1,046.95	-3,323.14	2,495.78	1.69	-1.11	-1.27
8,937.00	92.33	278.65	5,125.73	1,056.70	-3,385.31	2,533.80	1.22	-0.90	-0.83
9,001.00	91.32	278.47	5,123.69	1,066.22	-3,448.57	2,572.14	1.60	-1.58	-0.28
9,065.00	93.25	279.61	5,121.14	1,076.26	-3,511.72	2,610.90	3.50	3.02	1.78



Terrapin Energy Services

Survey Report



Company:	WPX Energy Production, LLC	Local Co-ordinate Reference:	Well Chaco 2308-24H 153H
Project:	San Juan Co., NM	TVD Reference:	Elev @ 6910.00usft
Site:	Sec.24-T23N-R8W	MD Reference:	Elev @ 6910.00usft
Well:	Chaco 2308-24H 153H	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
9,128.00	92.68	280.05	5,117.88	1,087.01	-3,573.71	2,649.71	1.14	-0.90	0.70	
9,192.00	94.13	278.65	5,114.08	1,097.39	-3,636.75	2,688.70	3.15	2.27	-2.19	
9,255.00	94.22	279.17	5,109.49	1,107.12	-3,698.82	2,726.67	0.84	0.14	0.83	
9,318.00	93.74	278.74	5,105.12	1,116.90	-3,760.90	2,764.69	1.02	-0.76	-0.68	
9,381.00	93.87	278.91	5,100.94	1,126.54	-3,823.02	2,802.59	0.34	0.21	0.27	
9,444.00	93.65	278.91	5,096.81	1,136.28	-3,885.12	2,840.58	0.35	-0.35	0.00	
9,507.00	93.12	278.21	5,093.09	1,145.64	-3,947.31	2,878.27	1.39	-0.84	-1.11	
9,571.00	91.80	277.33	5,090.34	1,154.28	-4,010.67	2,915.89	2.48	-2.06	-1.38	
9,634.00	90.31	277.59	5,089.18	1,162.46	-4,073.12	2,952.67	2.40	-2.37	0.41	
9,697.00	91.89	279.53	5,087.97	1,171.84	-4,135.40	2,990.42	3.97	2.51	3.08	
9,760.00	90.44	279.43	5,086.69	1,182.21	-4,197.53	3,028.97	2.31	-2.30	-0.16	
9,823.00	91.45	281.11	5,085.65	1,193.44	-4,259.51	3,068.21	3.11	1.60	2.67	
9,886.00	92.02	280.23	5,083.74	1,205.10	-4,321.39	3,107.79	1.66	0.90	-1.40	
9,950.00	91.63	280.05	5,081.71	1,216.36	-4,384.36	3,147.52	0.67	-0.61	-0.28	
10,014.00	90.70	280.32	5,080.40	1,227.68	-4,447.33	3,187.31	1.51	-1.45	0.42	
10,077.00	91.23	281.99	5,079.34	1,239.86	-4,509.13	3,227.31	2.78	0.84	2.65	
10,140.00	90.22	280.49	5,078.55	1,252.14	-4,570.92	3,267.38	2.87	-1.60	-2.38	
10,203.00	91.76	281.11	5,077.46	1,263.94	-4,632.79	3,307.07	2.64	2.44	0.98	
10,266.00	90.09	279.79	5,076.44	1,275.37	-4,694.73	3,346.47	3.38	-2.65	-2.10	
10,330.00	91.32	279.70	5,075.65	1,286.20	-4,757.80	3,385.88	1.93	1.92	-0.14	
10,393.00	92.99	281.90	5,073.28	1,297.99	-4,819.64	3,425.55	4.38	2.65	3.49	
10,419.00	92.77	281.55	5,071.98	1,303.27	-4,845.06	3,442.23	1.59	-0.85	-1.35	
Final TES Survey										
10,484.00	92.77	281.55	5,068.84	1,316.27	-4,908.67	3,483.81	0.00	0.00	0.00	
Projection To Bit										
10,485.00	92.77	281.55	5,068.79	1,316.47	-4,909.65	3,484.45	0.00	0.00	0.00	

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
- hit/miss target										
- Shape										
Base Perf 153H	0.00	0.00	5,074.01	1,294.97	-4,804.96	1,898,874.342605	556,843.087167	36.218616	-107.640630	
- survey hits target center										
- Point										

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
5,828.00	5,247.05	7" Casing	7	8-3/4	



Terrapin Energy Services
Survey Report



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Site:	Sec.24-T23N-R8W	MD Reference:	Elev @ 6910.00usft
Well:	Chaco 2308-24H 153H	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

Survey Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
479.00	478.99	1.87	-1.43	First TES Survey
10,419.00	5,071.98	1,303.27	-4,845.06	Final TES Survey
10,484.00	5,068.84	1,316.27	-4,908.67	Projection To Bit

Checked By: _____ Approved By: _____ Date: _____