

DISTRICT I
1625 N. French Dr., Hobbs, N.M. 88240
Phone: (575) 393-6161 Fax: (575) 393-0720

DISTRICT II
811 S. First St., Artesia, N.M. 88210
Phone: (575) 748-1283 Fax: (575) 748-9720

DISTRICT III
1000 Rio Brancos Rd., Aztec, N.M. 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
Energy, Minerals & Natural Resources Department

DEC 22 2015

Form C-102
Revised August 1, 2011

Submit one copy to appropriate
District Office

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

☐ AMENDED REPORT
☒ AS-DRILLED

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-045-35646		² Pool Code 97232	³ Pool Name BASIN MANCOS GAS POOL
⁴ Property Code 315301	⁵ Property Name CHACO 23-08-3		⁶ Well Number 2H
⁷ OGRID No. 162928	⁸ Operator Name ENERGEN RESOURCES CORPORATION		⁹ Elevation 6912.3'

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	3	23N	8W		2057'	NORTH	187'	EAST	SAN JUAN

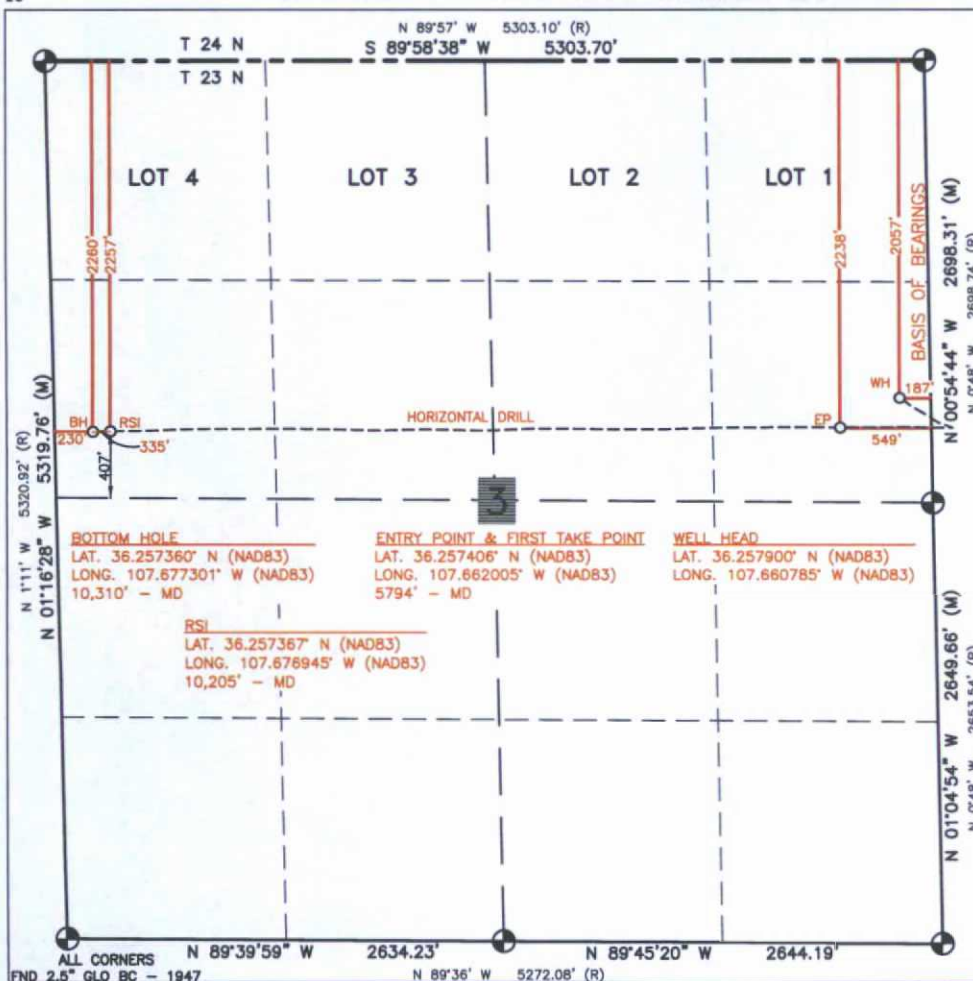
¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
E	3	23N	8W		2260'	NORTH	230'	WEST	SAN JUAN

¹² Dedicated Acres 323.20 ACRES - S/2 N/2 LOTS 1 THRU 4 OF SECTION 3	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No. NSL 7246-A
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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

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¹⁷ OPERATOR CERTIFICATION

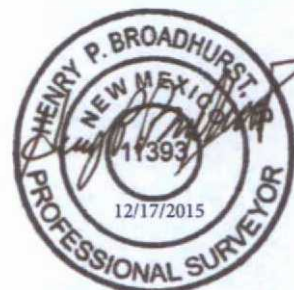
I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unless mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location 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: *Anna Stotts* Date: 12/21/15
Printed Name: Anna Stotts
E-mail Address: astotts@energen.com

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.

OCTOBER, 2015
Date of Survey
Signature and Seal of Professional Surveyor:



Certificate Number 11393

AV

RV

17



Energen Resources Corp.

San Juan County, NM (NAD83)

Chaco 23-08-3

Chaco 23-08-3 #2H

OH

Design: OH

Standard Survey Report

18 December, 2015





Company Name: Energen Resources Corp.
Project: San Juan County, NM (NAD83)
Site: Chaco 23-08-3
Well: Chaco 23-08-3 #2H

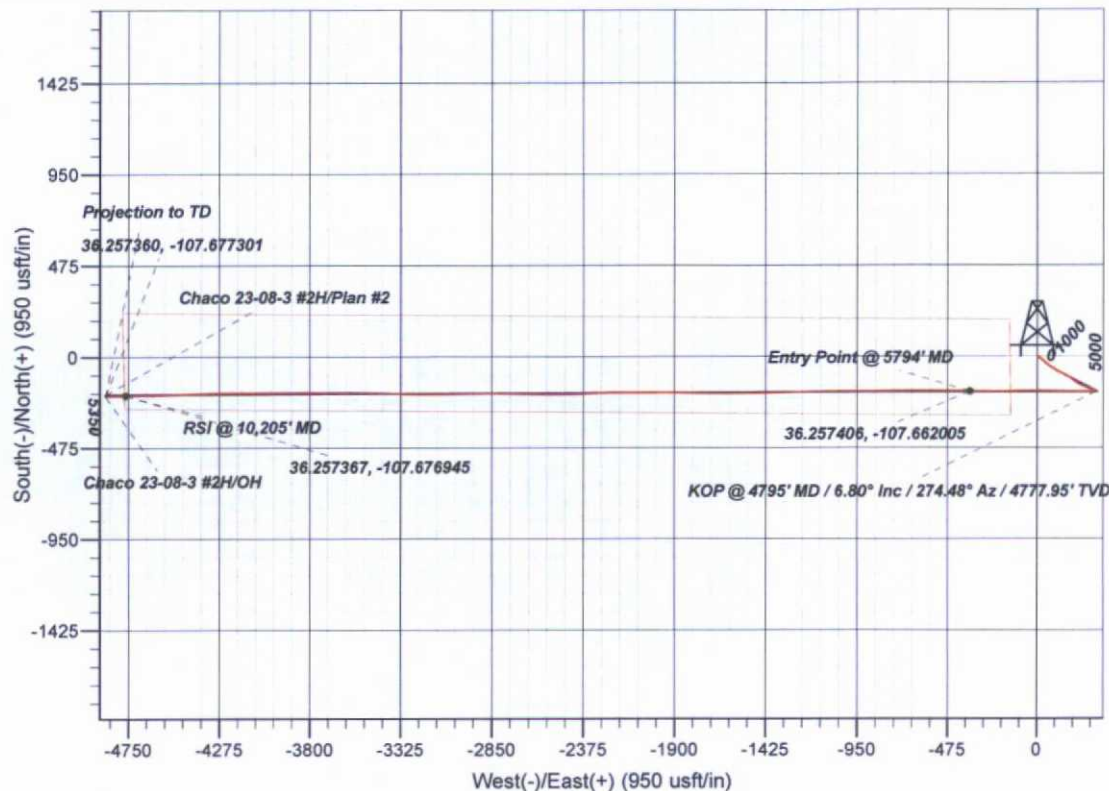
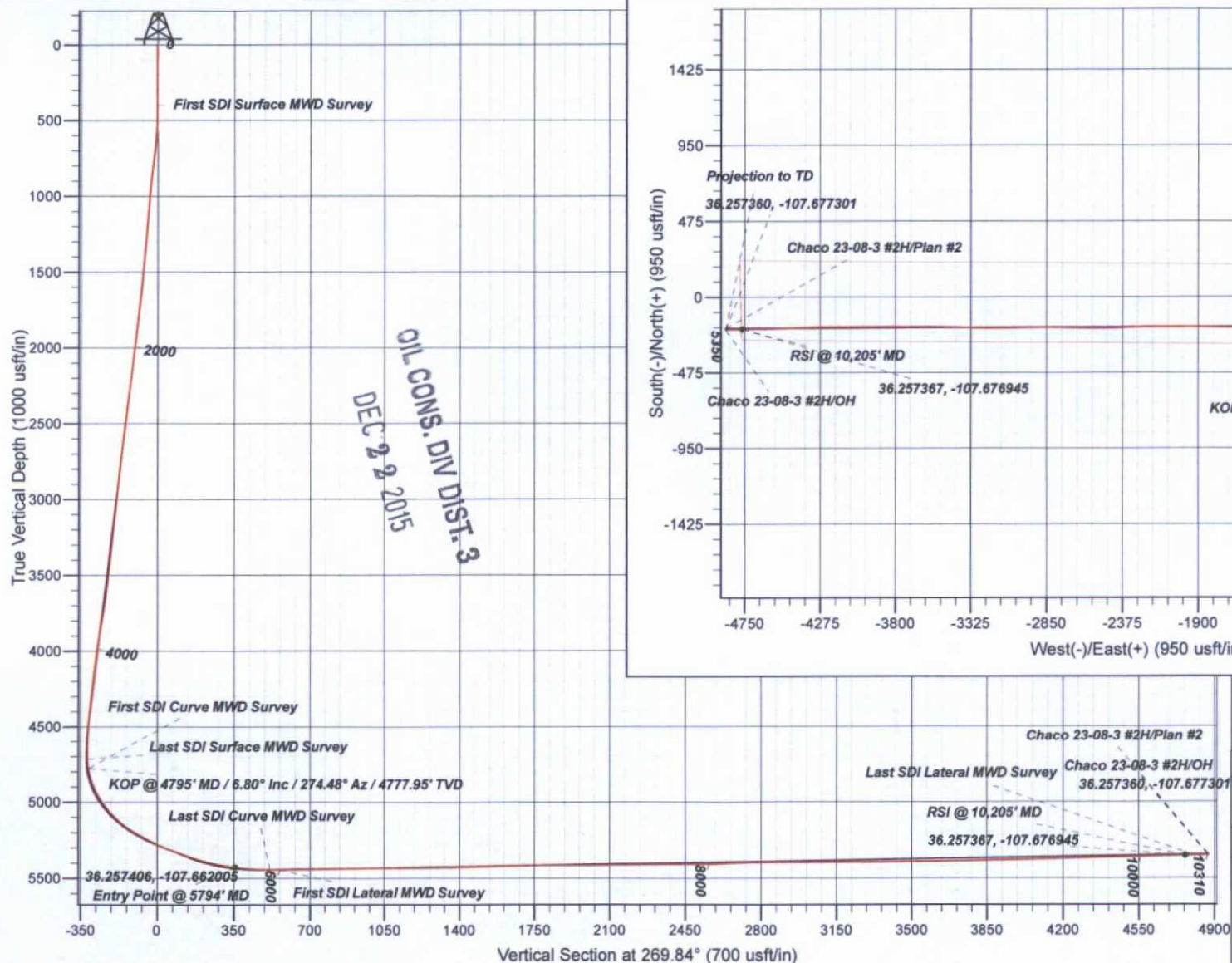


Azimuths to True North
Magnetic North: 9.10°

Magnetic Field
Strength: 49851.4snT
Dip Angle: 62.93°
Date: 10/29/2015
Model: HDGM

WELL DETAILS: Chaco 23-08-3 #2H

+N/-S	+E/-W	GL 6911.80' & RKB 17' @ 6928.80usft (Key 881)	6911.80		
		Northing	Easting	Latitude	Longitude
0.00	0.00	1913219.60	2773962.62	36.2579000	-107.6607850



Design: OH (Chaco 23-08-3 #2H/OH)
Created By: Janie Collins Date: 10:45, December 18 2015
PROJECT DETAILS: San Juan County, NM (NAD83)
Geodetic System: US State Plane 1983 Datum: North American Datum 1983 Ellipsoid: GRS 1980 Zone: New Mexico Western Zone
System Datum: Mean Sea Level Local North: True

CONFIDENTIAL
TIGHT HOLE

Company:	Energgen Resources Corp.	Local Co-ordinate Reference:	Well Chaco 23-08-3 #2H
Project:	San Juan County, NM (NAD83)	TVD Reference:	GL 6911.80' & RKB 17' @ 6928.80usft (Key 881)
Site:	Chaco 23-08-3	MD Reference:	GL 6911.80' & RKB 17' @ 6928.80usft (Key 881)
Well:	Chaco 23-08-3 #2H	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Grand Junction District

Project	San Juan County, NM (NAD83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Western Zone		

Site	Chaco 23-08-3				
Site Position:		Northing:	1,913,284.76 usft	Latitude:	36.2580790
From:	Lat/Long	Easting:	2,773,962.50 usft	Longitude:	-107.6607850
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence:	0.10 °

Well	Chaco 23-08-3 #2H					
Well Position	+N/-S	0.00 usft	Northing:	1,913,219.60 usft	Latitude:	36.2579000
	+E/-W	0.00 usft	Easting:	2,773,962.62 usft	Longitude:	-107.6607850
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	6,911.80 usft

Wellbore	OH				
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	10/29/2015	9.10	62.93	49,851

Design	OH				
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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	269.84

Survey Program	Date 12/18/2015				
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
397.00	4,733.00	Survey #1 - Surface MWD Survey (OH)	SDI MWD	SDI MWD - Standard ver 1.0.1	
4,795.00	5,953.00	Survey #2 - Curve MWD Survey (OH)	SDI MWD	SDI MWD - Standard ver 1.0.1	
5,995.00	10,310.00	Survey #3 - Lateral MWD Survey (OH)	SDI MWD	SDI MWD - Standard ver 1.0.1	

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)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
397.00	0.15	80.78	397.00	0.08	0.51	-0.51	0.04	0.04	0.00
First SDI Surface MWD Survey									
460.00	0.11	40.78	460.00	0.14	0.63	-0.63	0.15	-0.06	-63.49
524.00	1.67	137.04	523.99	-0.49	1.31	-1.31	2.63	2.44	150.41
586.00	3.62	134.06	585.92	-2.52	3.33	-3.32	3.15	3.15	-4.81
649.00	5.05	123.14	648.74	-5.42	7.08	-7.07	2.61	2.27	-17.33
710.00	5.52	120.16	709.48	-8.36	11.87	-11.84	0.89	0.77	-4.89
771.00	5.62	119.19	770.19	-11.29	17.01	-16.98	0.23	0.16	-1.59

Company:	Energen Resources Corp.	Local Co-ordinate Reference:	Well Chaco 23-08-3 #2H
Project:	San Juan County, NM (NAD83)	TVD Reference:	GL 6911.80' & RKB 17' @ 6928.80usft (Key 881)
Site:	Chaco 23-08-3	MD Reference:	GL 6911.80' & RKB 17' @ 6928.80usft (Key 881)
Well:	Chaco 23-08-3 #2H	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Grand Junction District

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)
833.00	5.58	117.98	831.90	-14.18	22.32	-22.28	0.20	-0.06	-1.95
895.00	4.77	126.34	893.64	-17.12	27.06	-27.02	1.78	-1.31	13.48
955.00	4.59	133.73	953.45	-20.26	30.81	-30.75	1.05	-0.30	12.32
1,017.00	4.40	133.43	1,015.25	-23.61	34.33	-34.26	0.31	-0.31	-0.48
1,079.00	4.47	133.77	1,077.07	-26.92	37.80	-37.72	0.12	0.11	0.55
1,140.00	4.33	132.10	1,137.89	-30.11	41.22	-41.14	0.31	-0.23	-2.74
1,201.00	4.59	129.06	1,198.70	-33.19	44.83	-44.74	0.58	0.43	-4.98
1,263.00	4.38	130.43	1,260.51	-36.29	48.56	-48.46	0.38	-0.34	2.21
1,324.00	4.53	128.55	1,321.33	-39.30	52.21	-52.10	0.34	0.25	-3.08
1,385.00	4.69	126.58	1,382.13	-42.29	56.10	-55.98	0.37	0.26	-3.23
1,446.00	4.47	125.44	1,442.94	-45.15	60.04	-59.91	0.39	-0.36	-1.87
1,508.00	4.49	126.99	1,504.75	-48.01	63.95	-63.81	0.20	0.03	2.50
1,569.00	4.13	126.25	1,565.58	-50.75	67.62	-67.48	0.60	-0.59	-1.21
1,630.00	4.88	122.92	1,626.39	-53.46	71.57	-71.42	1.30	1.23	-5.46
1,692.00	5.38	120.39	1,688.14	-56.36	76.30	-76.14	0.88	0.81	-4.08
1,752.00	5.42	119.94	1,747.87	-59.20	81.18	-81.01	0.10	0.07	-0.75
1,813.00	5.29	121.03	1,808.61	-62.08	86.08	-85.91	0.27	-0.21	1.79
1,906.00	4.96	120.19	1,901.23	-66.32	93.23	-93.05	0.36	-0.35	-0.90
1,969.00	4.88	120.66	1,964.00	-69.05	97.89	-97.70	0.14	-0.13	0.75
2,032.00	5.62	120.26	2,026.74	-71.97	102.86	-102.66	1.18	1.17	-0.63
2,095.00	6.04	120.73	2,089.41	-75.22	108.37	-108.16	0.67	0.67	0.75
2,158.00	5.59	116.93	2,152.09	-78.31	113.96	-113.74	0.94	-0.71	-6.03
2,221.00	5.85	119.57	2,214.77	-81.28	119.49	-119.26	0.59	0.41	4.19
2,284.00	5.84	119.60	2,277.45	-84.45	125.07	-124.83	0.02	-0.02	0.05
2,347.00	5.59	119.50	2,340.13	-87.54	130.52	-130.28	0.40	-0.40	-0.16
2,410.00	5.57	116.70	2,402.83	-90.43	135.93	-135.67	0.43	-0.03	-4.44
2,473.00	5.41	116.98	2,465.55	-93.15	141.30	-141.04	0.26	-0.25	0.44
2,535.00	5.46	116.57	2,527.27	-95.79	146.55	-146.28	0.10	0.08	-0.66
2,598.00	5.23	118.40	2,589.99	-98.50	151.75	-151.48	0.45	-0.37	2.90
2,660.00	5.36	116.11	2,651.73	-101.12	156.84	-156.56	0.40	0.21	-3.69
2,723.00	5.15	117.33	2,714.46	-103.71	161.99	-161.70	0.38	-0.33	1.94
2,786.00	5.13	118.55	2,777.21	-106.35	166.98	-166.68	0.18	-0.03	1.94
2,849.00	5.05	119.01	2,839.96	-109.05	171.88	-171.57	0.14	-0.13	0.73
2,911.00	4.71	116.05	2,901.74	-111.49	176.55	-176.24	0.68	-0.55	-4.77
2,974.00	5.22	123.36	2,964.50	-114.20	181.27	-180.95	1.29	0.81	11.60
3,037.00	6.19	130.91	3,027.19	-118.00	186.23	-185.90	1.94	1.54	11.98
3,099.00	5.94	129.82	3,088.84	-122.24	191.22	-190.88	0.44	-0.40	-1.76
3,162.00	5.54	128.87	3,151.53	-126.24	196.09	-195.74	0.65	-0.63	-1.51
3,225.00	5.32	129.81	3,214.24	-130.02	200.70	-200.34	0.38	-0.35	1.49
3,288.00	5.08	131.80	3,276.98	-133.75	205.03	-204.65	0.48	-0.38	3.16
3,351.00	4.72	128.00	3,339.75	-137.20	209.15	-208.76	0.77	-0.57	-6.03
3,413.00	5.28	118.16	3,401.52	-140.12	213.67	-213.28	1.65	0.90	-15.87
3,476.00	5.10	116.71	3,464.26	-142.74	218.73	-218.33	0.35	-0.29	-2.30

Company:	Energien Resources Corp.	Local Co-ordinate Reference:	Well Chaco 23-08-3 #2H
Project:	San Juan County, NM (NAD83)	TVD Reference:	GL 6911.80' & RKB 17' @ 6928.80usft (Key 881)
Site:	Chaco 23-08-3	MD Reference:	GL 6911.80' & RKB 17' @ 6928.80usft (Key 881)
Well:	Chaco 23-08-3 #2H	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Grand Junction District

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)
3,540.00	5.17	116.14	3,528.00	-145.29	223.86	-223.45	0.14	0.11	-0.89
3,602.00	5.21	116.71	3,589.75	-147.79	228.88	-228.47	0.11	0.06	0.92
3,666.00	5.85	114.30	3,653.45	-150.44	234.45	-234.03	1.06	1.00	-3.77
3,729.00	7.16	111.72	3,716.05	-153.21	241.02	-240.60	2.13	2.08	-4.10
3,792.00	7.05	111.51	3,778.56	-156.08	248.27	-247.83	0.18	-0.17	-0.33
3,854.00	6.89	110.94	3,840.10	-158.81	255.28	-254.84	0.28	-0.26	-0.92
3,917.00	6.62	111.41	3,902.67	-161.48	262.19	-261.74	0.44	-0.43	0.75
3,979.00	6.17	112.36	3,964.28	-164.05	268.60	-268.14	0.75	-0.73	1.53
4,042.00	5.60	112.13	4,026.95	-166.50	274.58	-274.11	0.91	-0.90	-0.37
4,104.00	5.32	111.71	4,088.67	-168.70	280.05	-279.58	0.46	-0.45	-0.68
4,167.00	5.04	111.64	4,151.41	-170.80	285.34	-284.86	0.44	-0.44	-0.11
4,230.00	5.27	112.54	4,214.15	-172.93	290.58	-290.10	0.39	0.37	1.43
4,293.00	5.12	113.73	4,276.90	-175.17	295.83	-295.34	0.29	-0.24	1.89
4,356.00	4.62	113.44	4,339.67	-177.31	300.73	-300.23	0.79	-0.79	-0.46
4,419.00	4.38	114.97	4,402.47	-179.34	305.24	-304.74	0.43	-0.38	2.43
4,481.00	3.93	113.03	4,464.31	-181.17	309.34	-308.83	0.76	-0.73	-3.13
4,544.00	2.83	105.00	4,527.20	-182.42	312.83	-312.32	1.90	-1.75	-12.75
4,606.00	2.02	103.83	4,589.14	-183.07	315.37	-314.86	1.31	-1.31	-1.89
4,670.00	1.10	103.73	4,653.12	-183.49	317.06	-316.55	1.44	-1.44	-0.16
4,733.00	0.98	251.02	4,716.12	-183.81	317.14	-316.62	3.17	-0.19	233.79
Last SDI Surface MWD Survey									
4,795.00	6.80	274.48	4,777.95	-183.69	312.97	-312.46	9.54	9.39	37.84
First SDI Curve MWD Survey - KOP @ 4795' MD / 6.80° Inc / 274.48° Az / 4777.95' TVD									
4,858.00	12.13	272.64	4,840.07	-183.10	302.64	-302.12	8.47	8.46	-2.92
4,921.00	17.21	269.89	4,900.99	-182.81	286.69	-286.18	8.14	8.06	-4.37
4,984.00	22.36	270.73	4,960.26	-182.68	265.38	-264.86	8.19	8.17	1.33
5,047.00	27.13	270.13	5,017.45	-182.49	239.01	-238.50	7.58	7.57	-0.95
5,110.00	31.18	269.03	5,072.46	-182.73	208.33	-207.82	6.48	6.43	-1.75
5,173.00	37.92	270.44	5,124.32	-182.86	172.62	-172.11	10.77	10.70	2.24
5,235.00	46.40	272.49	5,170.24	-181.74	131.07	-130.56	13.85	13.68	3.31
5,299.00	50.68	271.81	5,212.61	-179.95	83.15	-82.65	6.73	6.69	-1.06
5,361.00	52.97	270.24	5,250.92	-179.09	34.42	-33.92	4.20	3.69	-2.53
5,424.00	57.20	269.32	5,286.98	-179.30	-17.22	17.72	6.82	6.71	-1.46
5,487.00	61.40	268.98	5,319.13	-180.10	-71.38	71.88	6.68	6.67	-0.54
5,550.00	63.19	268.71	5,348.42	-181.23	-127.14	127.64	2.87	2.84	-0.43
5,613.00	65.39	269.49	5,375.75	-182.12	-183.89	184.40	3.67	3.49	1.24
5,676.00	71.38	270.57	5,398.95	-182.07	-242.43	242.94	9.64	9.51	1.71
5,739.00	75.40	270.67	5,416.95	-181.42	-302.79	303.29	6.38	6.38	0.16
5,794.00	79.38	270.75	5,428.96	-180.76	-356.45	356.95	7.24	7.24	0.14
Entry Point @ 5794' MD - 36.257406, -107.662005									
5,802.00	79.96	270.76	5,430.39	-180.65	-364.32	364.82	7.24	7.24	0.14
5,865.00	83.80	270.78	5,439.29	-179.81	-426.67	427.17	6.10	6.10	0.03
5,880.00	85.15	271.13	5,440.73	-179.57	-441.60	442.10	9.29	9.00	2.33
5,953.00	90.50	270.65	5,443.50	-178.43	-514.51	515.00	7.36	7.33	-0.66

Company:	Energen Resources Corp.	Local Co-ordinate Reference:	Well Chaco 23-08-3 #2H
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Site:	Chaco 23-08-3	MD Reference:	GL 6911.80' & RKB 17' @ 6928.80usft (Key 881)
Well:	Chaco 23-08-3 #2H	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Grand Junction District

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)
Last SDI Curve MWD Survey									
5,995.00	90.34	270.19	5,443.19	-178.13	-556.51	557.00	1.16	-0.38	-1.10
First SDI Lateral MWD Survey									
6,057.00	91.51	269.88	5,442.19	-178.09	-618.50	618.99	1.95	1.89	-0.50
6,117.00	91.92	269.48	5,440.40	-178.42	-678.47	678.96	0.95	0.68	-0.67
6,179.00	91.41	269.17	5,438.60	-179.15	-740.44	740.93	0.96	-0.82	-0.50
6,240.00	91.27	268.92	5,437.17	-180.17	-801.41	801.91	0.47	-0.23	-0.41
6,300.00	91.85	269.61	5,435.54	-180.94	-861.38	861.89	1.50	0.97	1.15
6,361.00	91.65	270.01	5,433.67	-181.14	-922.36	922.86	0.73	-0.33	0.66
6,422.00	90.74	269.90	5,432.40	-181.19	-983.34	983.84	1.50	-1.49	-0.18
6,484.00	90.60	269.49	5,431.68	-181.52	-1,045.34	1,045.84	0.70	-0.23	-0.66
6,545.00	90.40	268.84	5,431.14	-182.41	-1,106.33	1,106.83	1.11	-0.33	-1.07
6,606.00	90.44	268.42	5,430.70	-183.87	-1,167.31	1,167.82	0.69	0.07	-0.69
6,667.00	90.60	269.33	5,430.14	-185.06	-1,228.29	1,228.80	1.51	0.26	1.49
6,729.00	89.43	267.71	5,430.13	-186.66	-1,290.27	1,290.79	3.22	-1.89	-2.61
6,790.00	91.58	268.53	5,429.59	-188.67	-1,351.23	1,351.75	3.77	3.52	1.34
6,851.00	93.64	269.16	5,428.81	-189.89	-1,412.15	1,412.68	3.53	3.38	1.03
6,913.00	92.18	270.37	5,423.66	-190.15	-1,474.07	1,474.59	3.06	-2.35	1.95
6,973.00	91.68	269.59	5,421.64	-190.17	-1,534.03	1,534.56	1.54	-0.83	-1.30
7,035.00	91.98	269.20	5,419.66	-190.82	-1,596.00	1,596.52	0.79	0.48	-0.63
7,097.00	91.58	270.45	5,417.74	-191.01	-1,657.97	1,658.49	2.12	-0.65	2.02
7,158.00	91.55	270.49	5,416.07	-190.51	-1,718.94	1,719.47	0.08	-0.05	0.07
7,219.00	90.50	270.68	5,414.98	-189.89	-1,779.93	1,780.45	1.75	-1.72	0.31
7,280.00	90.20	271.20	5,414.61	-188.89	-1,840.92	1,841.44	0.98	-0.49	0.85
7,340.00	90.30	270.97	5,414.35	-187.75	-1,900.91	1,901.42	0.42	0.17	-0.38
7,402.00	89.93	270.39	5,414.22	-187.02	-1,962.90	1,963.42	1.11	-0.60	-0.94
7,463.00	90.10	270.00	5,414.21	-186.81	-2,023.90	2,024.41	0.70	0.28	-0.64
7,524.00	90.84	270.11	5,413.71	-186.75	-2,084.90	2,085.41	1.23	1.21	0.18
7,587.00	91.55	270.32	5,412.39	-186.51	-2,147.88	2,148.40	1.18	1.13	0.33
7,648.00	92.25	270.14	5,410.37	-186.27	-2,208.85	2,209.36	1.18	1.15	-0.30
7,709.00	90.13	267.41	5,409.10	-187.57	-2,269.81	2,270.33	5.67	-3.48	-4.48
7,770.00	89.97	266.75	5,409.05	-190.68	-2,330.73	2,331.26	1.11	-0.26	-1.08
7,832.00	91.11	267.67	5,408.46	-193.70	-2,392.66	2,393.19	2.36	1.84	1.48
7,893.00	89.50	267.58	5,408.14	-196.23	-2,453.60	2,454.14	2.64	-2.64	-0.15
7,956.00	90.54	270.27	5,408.12	-197.41	-2,516.58	2,517.12	4.58	1.65	4.27
8,018.00	92.09	271.22	5,406.70	-196.60	-2,578.56	2,579.10	2.93	2.50	1.53
8,081.00	93.40	271.89	5,403.68	-194.89	-2,641.46	2,641.99	2.33	2.08	1.06
8,143.00	93.00	271.17	5,400.22	-193.24	-2,703.34	2,703.87	1.33	-0.65	-1.16
8,206.00	92.93	270.64	5,396.96	-192.25	-2,766.25	2,766.78	0.85	-0.11	-0.84
8,269.00	90.50	270.70	5,395.07	-191.51	-2,829.21	2,829.74	3.86	-3.86	0.10
8,331.00	89.90	269.82	5,394.86	-191.23	-2,891.21	2,891.73	1.72	-0.97	-1.42
8,394.00	89.60	268.98	5,395.13	-191.89	-2,954.21	2,954.73	1.42	-0.48	-1.33
8,457.00	90.03	268.69	5,395.33	-193.17	-3,017.19	3,017.72	0.82	0.68	-0.46
8,520.00	89.93	268.30	5,395.36	-194.83	-3,080.17	3,080.70	0.64	-0.16	-0.62

Company:	Energen Resources Corp.	Local Co-ordinate Reference:	Well Chaco 23-08-3 #2H
Project:	San Juan County, NM (NAD83)	TVD Reference:	GL 6911.80' & RKB 17' @ 6928.80usft (Key 881)
Site:	Chaco 23-08-3	MD Reference:	GL 6911.80' & RKB 17' @ 6928.80usft (Key 881)
Well:	Chaco 23-08-3 #2H	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Grand Junction District

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)
8,583.00	90.10	269.35	5,395.34	-196.12	-3,143.16	3,143.69	1.69	0.27	1.67
8,646.00	90.54	270.93	5,394.99	-195.96	-3,206.15	3,206.69	2.60	0.70	2.51
8,710.00	90.70	271.54	5,394.30	-194.58	-3,270.13	3,270.66	0.99	0.25	0.95
8,773.00	90.71	271.84	5,393.52	-192.73	-3,333.10	3,333.63	0.48	0.02	0.48
8,836.00	90.87	271.47	5,392.65	-190.91	-3,396.07	3,396.59	0.64	0.25	-0.59
8,899.00	90.74	270.86	5,391.77	-189.63	-3,459.05	3,459.57	0.99	-0.21	-0.97
8,962.00	90.50	270.60	5,391.09	-188.82	-3,522.04	3,522.55	0.56	-0.38	-0.41
9,026.00	91.14	270.76	5,390.17	-188.06	-3,586.03	3,586.54	1.03	1.00	0.25
9,089.00	91.37	270.66	5,388.79	-187.28	-3,649.01	3,649.52	0.40	0.37	-0.16
9,152.00	91.48	270.61	5,387.22	-186.59	-3,711.99	3,712.49	0.19	0.17	-0.08
9,215.00	91.11	269.62	5,385.80	-186.46	-3,774.97	3,775.47	1.68	-0.59	-1.57
9,278.00	91.31	269.65	5,384.47	-186.86	-3,837.95	3,838.46	0.32	0.32	0.05
9,340.00	91.71	269.89	5,382.83	-187.11	-3,899.93	3,900.44	0.75	0.65	0.39
9,403.00	91.88	269.57	5,380.86	-187.41	-3,962.90	3,963.41	0.57	0.27	-0.51
9,467.00	92.99	270.00	5,378.14	-187.65	-4,026.84	4,027.35	1.86	1.73	0.67
9,530.00	92.12	270.00	5,375.33	-187.65	-4,089.78	4,090.28	1.38	-1.38	0.00
9,592.00	92.09	269.79	5,373.06	-187.76	-4,151.73	4,152.24	0.34	-0.05	-0.34
9,655.00	91.95	269.23	5,370.84	-188.30	-4,214.69	4,215.20	0.92	-0.22	-0.89
9,718.00	92.12	269.15	5,368.60	-189.19	-4,277.65	4,278.16	0.30	0.27	-0.13
9,781.00	90.97	267.67	5,366.90	-190.94	-4,340.60	4,341.11	2.97	-1.83	-2.35
9,844.00	92.35	268.29	5,365.08	-193.16	-4,403.53	4,404.05	2.40	2.19	0.98
9,906.00	92.01	267.35	5,362.72	-195.51	-4,465.44	4,465.97	1.61	-0.55	-1.52
9,969.00	92.79	267.48	5,360.08	-198.35	-4,528.32	4,528.86	1.26	1.24	0.21
10,032.00	92.25	270.17	5,357.31	-199.64	-4,591.24	4,591.78	4.35	-0.86	4.27
10,095.00	91.91	269.30	5,355.02	-199.93	-4,654.20	4,654.74	1.48	-0.54	-1.38
10,158.00	91.51	268.72	5,353.14	-201.02	-4,717.16	4,717.70	1.12	-0.63	-0.92
10,205.00	91.44	268.74	5,351.93	-202.06	-4,764.13	4,764.68	0.15	-0.15	0.04
36.257367, -107.676945 - RSI @ 10,205' MD									
10,211.52	91.43	268.74	5,351.77	-202.21	-4,770.65	4,771.19	0.15	-0.15	0.04
10,221.00	91.41	268.74	5,351.53	-202.42	-4,780.12	4,780.67	0.21	-0.21	0.00
10,247.00	91.28	268.45	5,350.92	-203.05	-4,806.11	4,806.66	1.22	-0.50	-1.12
Last SDI Lateral MWD Survey									
10,310.00	91.28	268.45	5,349.52	-204.76	-4,869.07	4,869.62	0.00	0.00	0.00
Projection to TD - 36.257360, -107.677301									

Company:	Energgen Resources Corp.	Local Co-ordinate Reference:	Well Chaco 23-08-3 #2H
Project:	San Juan County, NM (NAD83)	TVD Reference:	GL 6911.80' & RKB 17' @ 6928.80usft (Key 881)
Site:	Chaco 23-08-3	MD Reference:	GL 6911.80' & RKB 17' @ 6928.80usft (Key 881)
Well:	Chaco 23-08-3 #2H	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Grand Junction District

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
397.00	397.00	0.08	0.51	First SDI Surface MWD Survey
4,733.00	4,716.12	-183.81	317.14	Last SDI Surface MWD Survey
4,795.00	4,777.95	-183.69	312.97	First SDI Curve MWD Survey
4,795.00	4,777.95	-183.69	312.97	KOP @ 4795' MD / 6.80° Inc / 274.48° Az / 4777.95' TVD
5,794.00	5,428.96	-180.76	-356.45	Entry Point @ 5794' MD
5,794.00	5,428.96	-180.76	-356.45	36.257406, -107.662005
5,953.00	5,443.50	-178.43	-514.51	Last SDI Curve MWD Survey
5,995.00	5,443.19	-178.13	-556.51	First SDI Lateral MWD Survey
10,205.00	5,351.93	-202.06	-4,764.13	36.257367, -107.676945
10,205.00	5,351.93	-202.06	-4,764.13	RSI @ 10,205' MD
10,247.00	5,350.92	-203.05	-4,806.11	Last SDI Lateral MWD Survey
10,310.00	5,349.52	-204.76	-4,869.07	Projection to TD
10,310.00	5,349.52	-204.76	-4,869.07	36.257360, -107.677301

Checked By: _____ Approved By: _____ Date: _____



CONFIDENTIAL
TIGHT HOLE

D & D Services
P. O. Box 336
Flora Vista, NM 87415
505-215-4600 Fax: 505-334-9508
nowdrilling@yahoo.com

DEVIATION REPORT

Chaco

23-08-3 #2H

S3 T23N R 08W

150' 1 ¼

325' ½

To the best of my knowledge I believe these numbers to be true and accurate.

Glen Davis

Sworn to and subscribed before me

this 13 day of November 2015.

Kia Cordell

My commission expires: 4-10-17





Directional Survey Certification

2948 I-70 Business Loop
Grand Junction, CO 81504
(970)-245-9447 Fax (970)-245-9454

Operator	Energen
Well Name & No.	Chaco 23-08-3 #2H
County & State	San Juan County, NM
SDI Job No.	331115HEF28591
Rig	Key 881

I, Janie Collins, having personal knowledge of all the facts, hereby certify that the attached directional survey run from a measured depth of 397 feet to a measured depth of 10,310 feet is true and correct as determined from all available records.


Signature

10-Dec-15
Date

Janie Collins
Colorado District Well Planner
Scientific Drilling International

Company:	Energen Resources Corp.	Local Co-ordinate Reference:	Well Chaco 23-08-3 #2H
Project:	San Juan County, NM (NAD83)	TVD Reference:	GL 6911.80' & RKB 17' @ 6928.80usft (Key 881)
Site:	Chaco 23-08-3	MD Reference:	GL 6911.80' & RKB 17' @ 6928.80usft (Key 881)
Well:	Chaco 23-08-3 #2H	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Grand Junction District

Project	San Juan County, NM (NAD83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Western Zone		

Site	Chaco 23-08-3		
Site Position:		Northing:	1,913,284.76 usft
From:	Lat/Long	Easting:	2,773,962.50 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in
		Latitude:	36.2580790
		Longitude:	-107.6607850
		Grid Convergence:	0.10 °

Well	Chaco 23-08-3 #2H		
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:	36.2579000
		Longitude:	-107.6607850
		Ground Level:	6,911.80 usft

Wellbore	OH		
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	10/29/2015	9.10	62.93	49,851

Design	OH		
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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	269.84

Survey Program	From (usft)	To (usft)	Date	Survey (Wellbore)	Tool Name	Description
	397.00	4,733.00	12/18/2015	Survey #1 - Surface MWD Survey (OH)	SDI MWD	SDI MWD - Standard ver 1.0.1
	4,795.00	5,953.00		Survey #2 - Curve MWD Survey (OH)	SDI MWD	SDI MWD - Standard ver 1.0.1
	5,995.00	10,310.00		Survey #3 - Lateral MWD Survey (OH)	SDI MWD	SDI MWD - Standard ver 1.0.1

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)
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	397.00	0.15	80.78	397.00	0.08	0.51	-0.51	0.04	0.04	0.00
First SDI Surface MWD Survey										
	460.00	0.11	40.78	460.00	0.14	0.63	-0.63	0.15	-0.06	-63.49
	524.00	1.67	137.04	523.99	-0.49	1.31	-1.31	2.63	2.44	150.41
	586.00	3.62	134.06	585.92	-2.52	3.33	-3.32	3.15	3.15	-4.81
	649.00	5.05	123.14	648.74	-5.42	7.08	-7.07	2.61	2.27	-17.33
	710.00	5.52	120.16	709.48	-8.36	11.87	-11.84	0.89	0.77	-4.89
	771.00	5.62	119.19	770.19	-11.29	17.01	-16.98	0.23	0.16	-1.59



Company:	Energen Resources Corp.	Local Co-ordinate Reference:	Well Chaco 23-08-3 #2H
Project:	San Juan County, NM (NAD83)	TVD Reference:	GL 6911.80' & RKB 17' @ 6928.80usft (Key 881)
Site:	Chaco 23-08-3	MD Reference:	GL 6911.80' & RKB 17' @ 6928.80usft (Key 881)
Well:	Chaco 23-08-3 #2H	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Grand Junction District

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)	
833.00	5.58	117.98	831.90	-14.18	22.32	-22.28	0.20	-0.06	-1.95	
895.00	4.77	126.34	893.64	-17.12	27.06	-27.02	1.78	-1.31	13.48	
955.00	4.59	133.73	953.45	-20.26	30.81	-30.75	1.05	-0.30	12.32	
1,017.00	4.40	133.43	1,015.25	-23.61	34.33	-34.26	0.31	-0.31	-0.48	
1,079.00	4.47	133.77	1,077.07	-26.92	37.80	-37.72	0.12	0.11	0.55	
1,140.00	4.33	132.10	1,137.89	-30.11	41.22	-41.14	0.31	-0.23	-2.74	
1,201.00	4.59	129.06	1,198.70	-33.19	44.83	-44.74	0.58	0.43	-4.98	
1,263.00	4.38	130.43	1,260.51	-36.29	48.56	-48.46	0.38	-0.34	2.21	
1,324.00	4.53	128.55	1,321.33	-39.30	52.21	-52.10	0.34	0.25	-3.08	
1,385.00	4.69	126.58	1,382.13	-42.29	56.10	-55.98	0.37	0.26	-3.23	
1,446.00	4.47	125.44	1,442.94	-45.15	60.04	-59.91	0.39	-0.36	-1.87	
1,508.00	4.49	126.99	1,504.75	-48.01	63.95	-63.81	0.20	0.03	2.50	
1,569.00	4.13	126.25	1,565.58	-50.75	67.62	-67.48	0.60	-0.59	-1.21	
1,630.00	4.88	122.92	1,626.39	-53.46	71.57	-71.42	1.30	1.23	-5.46	
1,692.00	5.38	120.39	1,688.14	-56.36	76.30	-76.14	0.88	0.81	-4.08	
1,752.00	5.42	119.94	1,747.87	-59.20	81.18	-81.01	0.10	0.07	-0.75	
1,813.00	5.29	121.03	1,808.61	-62.08	86.08	-85.91	0.27	-0.21	1.79	
1,906.00	4.96	120.19	1,901.23	-66.32	93.23	-93.05	0.36	-0.35	-0.90	
1,969.00	4.88	120.66	1,964.00	-69.05	97.89	-97.70	0.14	-0.13	0.75	
2,032.00	5.62	120.26	2,026.74	-71.97	102.86	-102.66	1.18	1.17	-0.63	
2,095.00	6.04	120.73	2,089.41	-75.22	108.37	-108.16	0.67	0.67	0.75	
2,158.00	5.59	116.93	2,152.09	-78.31	113.96	-113.74	0.94	-0.71	-6.03	
2,221.00	5.85	119.57	2,214.77	-81.28	119.49	-119.26	0.59	0.41	4.19	
2,284.00	5.84	119.60	2,277.45	-84.45	125.07	-124.83	0.02	-0.02	0.05	
2,347.00	5.59	119.50	2,340.13	-87.54	130.52	-130.28	0.40	-0.40	-0.16	
2,410.00	5.57	116.70	2,402.83	-90.43	135.93	-135.67	0.43	-0.03	-4.44	
2,473.00	5.41	116.98	2,465.55	-93.15	141.30	-141.04	0.26	-0.25	0.44	
2,535.00	5.46	116.57	2,527.27	-95.79	146.55	-146.28	0.10	0.08	-0.66	
2,598.00	5.23	118.40	2,589.99	-98.50	151.75	-151.48	0.45	-0.37	2.90	
2,660.00	5.36	116.11	2,651.73	-101.12	156.84	-156.56	0.40	0.21	-3.69	
2,723.00	5.15	117.33	2,714.46	-103.71	161.99	-161.70	0.38	-0.33	1.94	
2,786.00	5.13	118.55	2,777.21	-106.35	166.98	-166.68	0.18	-0.03	1.94	
2,849.00	5.05	119.01	2,839.96	-109.05	171.88	-171.57	0.14	-0.13	0.73	
2,911.00	4.71	116.05	2,901.74	-111.49	176.55	-176.24	0.68	-0.55	-4.77	
2,974.00	5.22	123.36	2,964.50	-114.20	181.27	-180.95	1.29	0.81	11.60	
3,037.00	6.19	130.91	3,027.19	-118.00	186.23	-185.90	1.94	1.54	11.98	
3,099.00	5.94	129.82	3,088.84	-122.24	191.22	-190.88	0.44	-0.40	-1.76	
3,162.00	5.54	128.87	3,151.53	-126.24	196.09	-195.74	0.65	-0.63	-1.51	
3,225.00	5.32	129.81	3,214.24	-130.02	200.70	-200.34	0.38	-0.35	1.49	
3,288.00	5.08	131.80	3,276.98	-133.75	205.03	-204.65	0.48	-0.38	3.16	
3,351.00	4.72	128.00	3,339.75	-137.20	209.15	-208.76	0.77	-0.57	-6.03	
3,413.00	5.28	118.16	3,401.52	-140.12	213.67	-213.28	1.65	0.90	-15.87	
3,476.00	5.10	116.71	3,464.26	-142.74	218.73	-218.33	0.35	-0.29	-2.30	

Company:	Energen Resources Corp.	Local Co-ordinate Reference:	Well Chaco 23-08-3 #2H
Project:	San Juan County, NM (NAD83)	TVD Reference:	GL 6911.80' & RKB 17' @ 6928.80usft (Key 881)
Site:	Chaco 23-08-3	MD Reference:	GL 6911.80' & RKB 17' @ 6928.80usft (Key 881)
Well:	Chaco 23-08-3 #2H	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Grand Junction District

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)
3,540.00	5.17	116.14	3,528.00	-145.29	223.86	-223.45	0.14	0.11	-0.89
3,602.00	5.21	116.71	3,589.75	-147.79	228.88	-228.47	0.11	0.06	0.92
3,666.00	5.85	114.30	3,653.45	-150.44	234.45	-234.03	1.06	1.00	-3.77
3,729.00	7.16	111.72	3,716.05	-153.21	241.02	-240.60	2.13	2.08	-4.10
3,792.00	7.05	111.51	3,778.56	-156.08	248.27	-247.83	0.18	-0.17	-0.33
3,854.00	6.89	110.94	3,840.10	-158.81	255.28	-254.84	0.28	-0.26	-0.92
3,917.00	6.62	111.41	3,902.67	-161.48	262.19	-261.74	0.44	-0.43	0.75
3,979.00	6.17	112.36	3,964.28	-164.05	268.60	-268.14	0.75	-0.73	1.53
4,042.00	5.60	112.13	4,026.95	-166.50	274.58	-274.11	0.91	-0.90	-0.37
4,104.00	5.32	111.71	4,088.67	-168.70	280.05	-279.58	0.46	-0.45	-0.68
4,167.00	5.04	111.64	4,151.41	-170.80	285.34	-284.86	0.44	-0.44	-0.11
4,230.00	5.27	112.54	4,214.15	-172.93	290.58	-290.10	0.39	0.37	1.43
4,293.00	5.12	113.73	4,276.90	-175.17	295.83	-295.34	0.29	-0.24	1.89
4,356.00	4.62	113.44	4,339.67	-177.31	300.73	-300.23	0.79	-0.79	-0.46
4,419.00	4.38	114.97	4,402.47	-179.34	305.24	-304.74	0.43	-0.38	2.43
4,481.00	3.93	113.03	4,464.31	-181.17	309.34	-308.83	0.76	-0.73	-3.13
4,544.00	2.83	105.00	4,527.20	-182.42	312.83	-312.32	1.90	-1.75	-12.75
4,606.00	2.02	103.83	4,589.14	-183.07	315.37	-314.86	1.31	-1.31	-1.89
4,670.00	1.10	103.73	4,653.12	-183.49	317.06	-316.55	1.44	-1.44	-0.16
4,733.00	0.98	251.02	4,716.12	-183.81	317.14	-316.62	3.17	-0.19	233.79
Last SDI Surface MWD Survey									
4,795.00	6.80	274.48	4,777.95	-183.69	312.97	-312.46	9.54	9.39	37.84
First SDI Curve MWD Survey - KOP @ 4795' MD / 6.80° Inc / 274.48° Az / 4777.95' TVD									
4,858.00	12.13	272.64	4,840.07	-183.10	302.64	-302.12	8.47	8.46	-2.92
4,921.00	17.21	269.89	4,900.99	-182.81	286.69	-286.18	8.14	8.06	-4.37
4,984.00	22.36	270.73	4,960.26	-182.68	265.38	-264.86	8.19	8.17	1.33
5,047.00	27.13	270.13	5,017.45	-182.49	239.01	-238.50	7.58	7.57	-0.95
5,110.00	31.18	269.03	5,072.46	-182.73	208.33	-207.82	6.48	6.43	-1.75
5,173.00	37.92	270.44	5,124.32	-182.86	172.62	-172.11	10.77	10.70	2.24
5,235.00	46.40	272.49	5,170.24	-181.74	131.07	-130.56	13.85	13.68	3.31
5,299.00	50.68	271.81	5,212.61	-179.95	83.15	-82.65	6.73	6.69	-1.06
5,361.00	52.97	270.24	5,250.92	-179.09	34.42	-33.92	4.20	3.69	-2.53
5,424.00	57.20	269.32	5,286.98	-179.30	-17.22	17.72	6.82	6.71	-1.46
5,487.00	61.40	268.98	5,319.13	-180.10	-71.38	71.88	6.68	6.67	-0.54
5,550.00	63.19	268.71	5,348.42	-181.23	-127.14	127.64	2.87	2.84	-0.43
5,613.00	65.39	269.49	5,375.75	-182.12	-183.89	184.40	3.67	3.49	1.24
5,676.00	71.38	270.57	5,398.95	-182.07	-242.43	242.94	9.64	9.51	1.71
5,739.00	75.40	270.67	5,416.95	-181.42	-302.79	303.29	6.38	6.38	0.16
5,794.00	79.38	270.75	5,428.96	-180.76	-356.45	356.95	7.24	7.24	0.14
Entry Point @ 5794' MD - 36.257406, -107.662005									
5,802.00	79.96	270.76	5,430.39	-180.65	-364.32	364.82	7.24	7.24	0.14
5,865.00	83.80	270.78	5,439.29	-179.81	-426.67	427.17	6.10	6.10	0.03
5,880.00	85.15	271.13	5,440.73	-179.57	-441.60	442.10	9.29	9.00	2.33
5,953.00	90.50	270.65	5,443.50	-178.43	-514.51	515.00	7.36	7.33	-0.66

Company:	Energen Resources Corp.	Local Co-ordinate Reference:	Well Chaco 23-08-3 #2H
Project:	San Juan County, NM (NAD83)	TVD Reference:	GL 6911.80' & RKB 17' @ 6928.80usft (Key 881)
Site:	Chaco 23-08-3	MD Reference:	GL 6911.80' & RKB 17' @ 6928.80usft (Key 881)
Well:	Chaco 23-08-3 #2H	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Grand Junction District

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)
Last SDI Curve MWD Survey									
5,995.00	90.34	270.19	5,443.19	-178.13	-556.51	557.00	1.16	-0.38	-1.10
First SDI Lateral MWD Survey									
6,057.00	91.51	269.88	5,442.19	-178.09	-618.50	618.99	1.95	1.89	-0.50
6,117.00	91.92	269.48	5,440.40	-178.42	-678.47	678.96	0.95	0.68	-0.67
6,179.00	91.41	269.17	5,438.60	-179.15	-740.44	740.93	0.96	-0.82	-0.50
6,240.00	91.27	268.92	5,437.17	-180.17	-801.41	801.91	0.47	-0.23	-0.41
6,300.00	91.85	269.61	5,435.54	-180.94	-861.38	861.89	1.50	0.97	1.15
6,361.00	91.65	270.01	5,433.67	-181.14	-922.36	922.86	0.73	-0.33	0.66
6,422.00	90.74	269.90	5,432.40	-181.19	-983.34	983.84	1.50	-1.49	-0.18
6,484.00	90.60	269.49	5,431.68	-181.52	-1,045.34	1,045.84	0.70	-0.23	-0.66
6,545.00	90.40	268.84	5,431.14	-182.41	-1,106.33	1,106.83	1.11	-0.33	-1.07
6,606.00	90.44	268.42	5,430.70	-183.87	-1,167.31	1,167.82	0.69	0.07	-0.69
6,667.00	90.60	269.33	5,430.14	-185.06	-1,228.29	1,228.80	1.51	0.26	1.49
6,729.00	89.43	267.71	5,430.13	-186.66	-1,290.27	1,290.79	3.22	-1.89	-2.61
6,790.00	91.58	268.53	5,429.59	-188.67	-1,351.23	1,351.75	3.77	3.52	1.34
6,851.00	93.64	269.16	5,428.81	-189.89	-1,412.15	1,412.68	3.53	3.38	1.03
6,913.00	92.18	270.37	5,423.66	-190.15	-1,474.07	1,474.59	3.06	-2.35	1.95
6,973.00	91.68	269.59	5,421.64	-190.17	-1,534.03	1,534.56	1.54	-0.83	-1.30
7,035.00	91.98	269.20	5,419.66	-190.82	-1,596.00	1,596.52	0.79	0.48	-0.63
7,097.00	91.58	270.45	5,417.74	-191.01	-1,657.97	1,658.49	2.12	-0.65	2.02
7,158.00	91.55	270.49	5,416.07	-190.51	-1,718.94	1,719.47	0.08	-0.05	0.07
7,219.00	90.50	270.68	5,414.98	-189.89	-1,779.93	1,780.45	1.75	-1.72	0.31
7,280.00	90.20	271.20	5,414.61	-188.89	-1,840.92	1,841.44	0.98	-0.49	0.85
7,340.00	90.30	270.97	5,414.35	-187.75	-1,900.91	1,901.42	0.42	0.17	-0.38
7,402.00	89.93	270.39	5,414.22	-187.02	-1,962.90	1,963.42	1.11	-0.60	-0.94
7,463.00	90.10	270.00	5,414.21	-186.81	-2,023.90	2,024.41	0.70	0.28	-0.64
7,524.00	90.84	270.11	5,413.71	-186.75	-2,084.90	2,085.41	1.23	1.21	0.18
7,587.00	91.55	270.32	5,412.39	-186.51	-2,147.88	2,148.40	1.18	1.13	0.33
7,648.00	92.25	270.14	5,410.37	-186.27	-2,208.85	2,209.36	1.18	1.15	-0.30
7,709.00	90.13	267.41	5,409.10	-187.57	-2,269.81	2,270.33	5.67	-3.48	-4.48
7,770.00	89.97	266.75	5,409.05	-190.68	-2,330.73	2,331.26	1.11	-0.26	-1.08
7,832.00	91.11	267.67	5,408.46	-193.70	-2,392.66	2,393.19	2.36	1.84	1.48
7,893.00	89.50	267.58	5,408.14	-196.23	-2,453.60	2,454.14	2.64	-2.64	-0.15
7,956.00	90.54	270.27	5,408.12	-197.41	-2,516.58	2,517.12	4.58	1.65	4.27
8,018.00	92.09	271.22	5,406.70	-196.60	-2,578.56	2,579.10	2.93	2.50	1.53
8,081.00	93.40	271.89	5,403.68	-194.89	-2,641.46	2,641.99	2.33	2.08	1.06
8,143.00	93.00	271.17	5,400.22	-193.24	-2,703.34	2,703.87	1.33	-0.65	-1.16
8,206.00	92.93	270.64	5,396.96	-192.25	-2,766.25	2,766.78	0.85	-0.11	-0.84
8,269.00	90.50	270.70	5,395.07	-191.51	-2,829.21	2,829.74	3.86	-3.86	0.10
8,331.00	89.90	269.82	5,394.86	-191.23	-2,891.21	2,891.73	1.72	-0.97	-1.42
8,394.00	89.60	268.98	5,395.13	-191.89	-2,954.21	2,954.73	1.42	-0.48	-1.33
8,457.00	90.03	268.69	5,395.33	-193.17	-3,017.19	3,017.72	0.82	0.68	-0.46
8,520.00	89.93	268.30	5,395.36	-194.83	-3,080.17	3,080.70	0.64	-0.16	-0.62

Company:	Energen Resources Corp.	Local Co-ordinate Reference:	Well Chaco 23-08-3 #2H
Project:	San Juan County, NM (NAD83)	TVD Reference:	GL 6911.80' & RKB 17' @ 6928.80usft (Key 881)
Site:	Chaco 23-08-3	MD Reference:	GL 6911.80' & RKB 17' @ 6928.80usft (Key 881)
Well:	Chaco 23-08-3 #2H	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Grand Junction District

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)
8,583.00	90.10	269.35	5,395.34	-196.12	-3,143.16	3,143.69	1.69	0.27	1.67
8,646.00	90.54	270.93	5,394.99	-195.96	-3,206.15	3,206.69	2.60	0.70	2.51
8,710.00	90.70	271.54	5,394.30	-194.58	-3,270.13	3,270.66	0.99	0.25	0.95
8,773.00	90.71	271.84	5,393.52	-192.73	-3,333.10	3,333.63	0.48	0.02	0.48
8,836.00	90.87	271.47	5,392.65	-190.91	-3,396.07	3,396.59	0.64	0.25	-0.59
8,899.00	90.74	270.86	5,391.77	-189.63	-3,459.05	3,459.57	0.99	-0.21	-0.97
8,962.00	90.50	270.60	5,391.09	-188.82	-3,522.04	3,522.55	0.56	-0.38	-0.41
9,026.00	91.14	270.76	5,390.17	-188.06	-3,586.03	3,586.54	1.03	1.00	0.25
9,089.00	91.37	270.66	5,388.79	-187.28	-3,649.01	3,649.52	0.40	0.37	-0.16
9,152.00	91.48	270.61	5,387.22	-186.59	-3,711.99	3,712.49	0.19	0.17	-0.08
9,215.00	91.11	269.62	5,385.80	-186.46	-3,774.97	3,775.47	1.68	-0.59	-1.57
9,278.00	91.31	269.65	5,384.47	-186.86	-3,837.95	3,838.46	0.32	0.32	0.05
9,340.00	91.71	269.89	5,382.83	-187.11	-3,899.93	3,900.44	0.75	0.65	0.39
9,403.00	91.88	269.57	5,380.86	-187.41	-3,962.90	3,963.41	0.57	0.27	-0.51
9,467.00	92.99	270.00	5,378.14	-187.65	-4,026.84	4,027.35	1.86	1.73	0.67
9,530.00	92.12	270.00	5,375.33	-187.65	-4,089.78	4,090.28	1.38	-1.38	0.00
9,592.00	92.09	269.79	5,373.06	-187.76	-4,151.73	4,152.24	0.34	-0.05	-0.34
9,655.00	91.95	269.23	5,370.84	-188.30	-4,214.69	4,215.20	0.92	-0.22	-0.89
9,718.00	92.12	269.15	5,368.60	-189.19	-4,277.65	4,278.16	0.30	0.27	-0.13
9,781.00	90.97	267.67	5,366.90	-190.94	-4,340.60	4,341.11	2.97	-1.83	-2.35
9,844.00	92.35	268.29	5,365.08	-193.16	-4,403.53	4,404.05	2.40	2.19	0.98
9,906.00	92.01	267.35	5,362.72	-195.51	-4,465.44	4,465.97	1.61	-0.55	-1.52
9,969.00	92.79	267.48	5,360.08	-198.35	-4,528.32	4,528.86	1.26	1.24	0.21
10,032.00	92.25	270.17	5,357.31	-199.64	-4,591.24	4,591.78	4.35	-0.86	4.27
10,095.00	91.91	269.30	5,355.02	-199.93	-4,654.20	4,654.74	1.48	-0.54	-1.38
10,158.00	91.51	268.72	5,353.14	-201.02	-4,717.16	4,717.70	1.12	-0.63	-0.92
10,205.00	91.44	268.74	5,351.93	-202.06	-4,764.13	4,764.68	0.15	-0.15	0.04
36.257367, -107.676945 - RSI @ 10,205' MD									
10,211.52	91.43	268.74	5,351.77	-202.21	-4,770.65	4,771.19	0.15	-0.15	0.04
10,221.00	91.41	268.74	5,351.53	-202.42	-4,780.12	4,780.67	0.21	-0.21	0.00
10,247.00	91.28	268.45	5,350.92	-203.05	-4,806.11	4,806.66	1.22	-0.50	-1.12
Last SDI Lateral MWD Survey									
10,310.00	91.28	268.45	5,349.52	-204.76	-4,869.07	4,869.62	0.00	0.00	0.00
Projection to TD - 36.257360, -107.677301									



Survey Report

Company:	Energen Resources Corp.	Local Co-ordinate Reference:	Well Chaco 23-08-3 #2H
Project:	San Juan County, NM (NAD83)	TVD Reference:	GL 6911.80' & RKB 17' @ 6928.80usft (Key 881)
Site:	Chaco 23-08-3	MD Reference:	GL 6911.80' & RKB 17' @ 6928.80usft (Key 881)
Well:	Chaco 23-08-3 #2H	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Grand Junction District

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
397.00	397.00	0.08	0.51	First SDI Surface MWD Survey	
4,733.00	4,716.12	-183.81	317.14	Last SDI Surface MWD Survey	
4,795.00	4,777.95	-183.69	312.97	First SDI Curve MWD Survey	
4,795.00	4,777.95	-183.69	312.97	KOP @ 4795' MD / 6.80° Inc / 274.48° Az / 4777.95' TVD	
5,794.00	5,428.96	-180.76	-356.45	Entry Point @ 5794' MD	
5,794.00	5,428.96	-180.76	-356.45	36.257406, -107.662005	
5,953.00	5,443.50	-178.43	-514.51	Last SDI Curve MWD Survey	
5,995.00	5,443.19	-178.13	-556.51	First SDI Lateral MWD Survey	
10,205.00	5,351.93	-202.06	-4,764.13	36.257367, -107.676945	
10,205.00	5,351.93	-202.06	-4,764.13	RSI @ 10,205' MD	
10,247.00	5,350.92	-203.05	-4,806.11	Last SDI Lateral MWD Survey	
10,310.00	5,349.52	-204.76	-4,869.07	Projection to TD	
10,310.00	5,349.52	-204.76	-4,869.07	36.257360, -107.677301	

Checked By: _____	Approved By: _____	Date: _____
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