

Project: Garfield County, CO (Nad 83)
 Site: Federal 299-23-3
 Well: RG 912-23-299D
 Wellbore: Wellbore #1
 Design: Plan 4
 Latitude: 39.860054
 Longitude: -108.478715
 Ground Level: 7033.00
 RKB @ 7063.00usft (30' kb)

PROJECT DETAILS: Garfield County, CO (Nad 83)

Geodetic System: US State Plane 1983
 Datum: North American Datum 1983
 Ellipsoid: GRS 1980
 Zone: Colorado Central Zone
 System Datum: Mean Sea Level

REFERENCE INFORMATION

Co-ordinate (N/E) Reference: Well RG 912-23-299D, True North
 Vertical (TVD) Reference: RKB @ 7063.00usft (30' kb)
 Section (VS) Reference: Slot - (0.00N, 0.00E)
 Measured Depth Reference: RKB @ 7063.00usft (30' kb)
 Calculation Method: Minimum Curvature

WELL DETAILS: RG 912-23-299D

+N/-S	+E/-W	Northing	Ground Elev:	7033.00	Latitude	Longitude
0.00	0.00	1751866.16	Easting	2163903.10	39.860054	-108.478715

WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
RG 912-23-299D - VP	4764.00	1864.11	89.82	1753726.32	2164053.98	39.865171	-108.478395
RG 912-23-299D - PBHL	6050.00	1864.11	89.82	1753726.32	2164053.98	39.865171	-108.478395

ANNOTATIONS

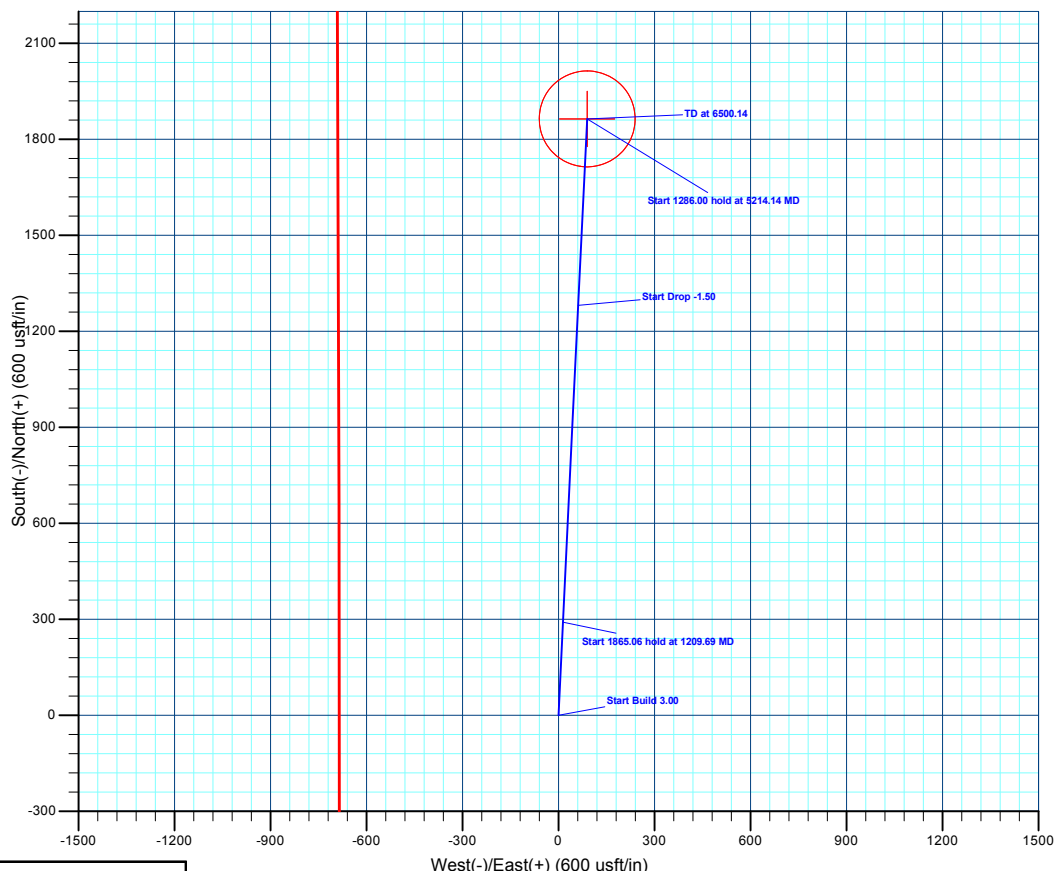
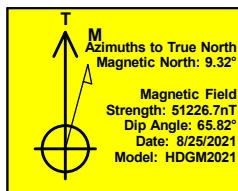
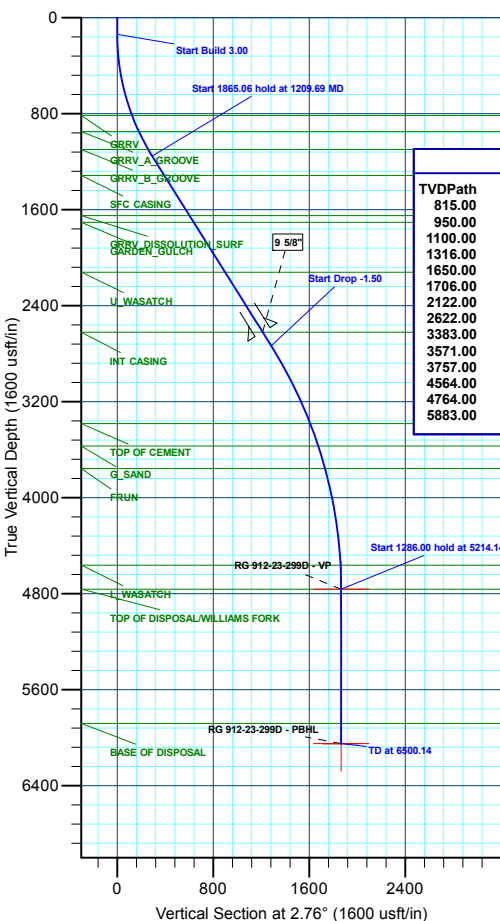
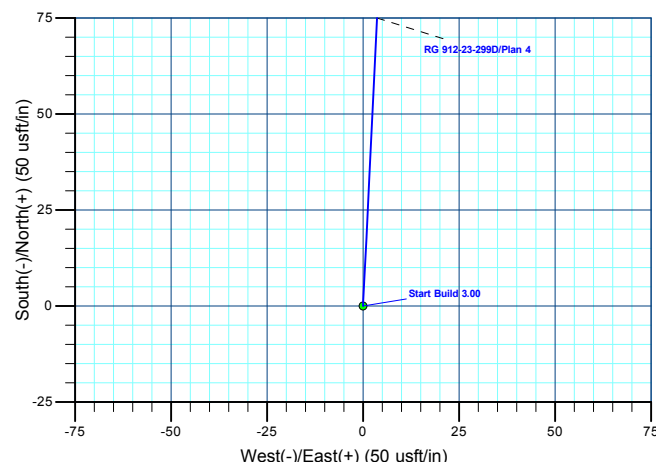
MD	Inc	Azi	TVD	+N/-S	+E/-W	V/Sect	Departure	Annotation
140.00	0.00	0.00	140.00	0.00	0.00	0.00	0.00	Build 3"/100'
1209.69	32.09	2.76	1154.63	291.47	14.04	291.81	291.81	EOB @ 32.09° Inc. / 2.76° Azm
3074.76	32.09	2.76	2734.73	1281.16	61.73	1282.65	1282.65	Drop 1.5"/100'
5214.14	0.00	0.00	4764.00	1864.11	89.82	1866.27	1866.27	EOD @ Vert.
6500.14	0.00	0.00	6050.00	1864.11	89.82	1866.27	1866.27	TD @ 6500.14' MD / 6050.00' TVD

FORMATION TOP DETAILS

TVDPPath	MDPath	Formation
815.00	829.91	GRRV
950.00	976.49	GRRV_A_GROOVE
1100.00	1145.86	GRRV_B_GROOVE
1316.00	1400.16	SFC CASING
1650.00	1794.39	GRRV DISSOLUTION_SURF
1706.00	1860.49	GARDEN_GULCH
2122.00	2351.52	U_WASATCH
2622.00	2941.69	INT CASING
3383.00	3801.13	TOP OF CEMENT
3571.00	4000.83	G_SAND
3757.00	4195.09	FRUN
4564.00	5014.04	L_WASATCH
4764.00	5214.14	TOP OF DISPOSAL/WILLIAMS FORK
5883.00	6333.14	BASE OF DISPOSAL

CASING DETAILS

TVD	MD	Name	Size
2622.00	2941.69	9 5/8"	9-5/8



Plan: Plan 4 (RG 912-23-299D/Wellbore #1)



Terra Energy Partners, LLP

Garfield County, CO (Nad 83)

Federal 299-23-3

RG 912-23-299D

Wellbore #1

Plan: Plan 4

KLX Well Planning Report

15 December, 2021



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well RG 912-23-299D
Company:	Terra Energy Partners, LLP	TVD Reference:	RKB @ 7063.00usft (30' kb)
Project:	Garfield County, CO (Nad 83)	MD Reference:	RKB @ 7063.00usft (30' kb)
Site:	Federal 299-23-3	North Reference:	True
Well:	RG 912-23-299D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan 4		

Project	Garfield County, CO (Nad 83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Central Zone		

Site	Federal 299-23-3			
Site Position:		Northing:	1,751,866.16 usft	Latitude: 39.860054
From: Map		Easting:	2,163,903.10 usft	Longitude: -108.478716
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence: -1.88 °

Well	RG 912-23-299D			
Well Position	+N/-S	0.00 usft	Northing:	1,751,866.16 usft
	+E/-W	0.00 usft	Easting:	2,163,903.10 usft
Position Uncertainty	0.00 usft		Wellhead Elevation:	Ground Level: 7,033.00 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM2021	8/25/2021	9.32	65.82	51,226.70000000

Design	Plan 4			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	2.76

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
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
140.00	0.00	0.00	140.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,209.69	32.09	2.76	1,154.63	291.47	14.04	3.00	3.00	0.00	2.76	
3,074.76	32.09	2.76	2,734.73	1,281.16	61.73	0.00	0.00	0.00	0.00	
5,214.14	0.00	0.00	4,764.00	1,864.11	89.82	1.50	-1.50	0.00	180.00	
6,500.14	0.00	0.00	6,050.00	1,864.11	89.82	0.00	0.00	0.00	0.00	RG 912-23-299D -

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well RG 912-23-299D
Company:	Terra Energy Partners, LLP	TVD Reference:	RKB @ 7063.00usft (30' kb)
Project:	Garfield County, CO (Nad 83)	MD Reference:	RKB @ 7063.00usft (30' kb)
Site:	Federal 299-23-3	North Reference:	True
Well:	RG 912-23-299D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan 4		

Planned 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
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
Build 3°/100'									
140.00	0.00	0.00	140.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	1.80	2.76	199.99	0.94	0.05	0.94	3.00	3.00	0.00
300.00	4.80	2.76	299.81	6.69	0.32	6.70	3.00	3.00	0.00
400.00	7.80	2.76	399.20	17.65	0.85	17.67	3.00	3.00	0.00
500.00	10.80	2.76	497.87	33.79	1.63	33.83	3.00	3.00	0.00
600.00	13.80	2.76	595.57	55.07	2.65	55.13	3.00	3.00	0.00
700.00	16.80	2.76	692.01	81.42	3.92	81.51	3.00	3.00	0.00
800.00	19.80	2.76	786.94	112.78	5.43	112.91	3.00	3.00	0.00
GRRV									
829.91	20.70	2.76	815.00	123.12	5.93	123.26	3.00	3.00	0.00
900.00	22.80	2.76	880.10	149.06	7.18	149.23	3.00	3.00	0.00
GRRV_A_GROOVE									
976.49	25.09	2.76	950.00	180.07	8.68	180.27	3.00	3.00	0.00
1,000.00	25.80	2.76	971.23	190.16	9.16	190.38	3.00	3.00	0.00
1,100.00	28.80	2.76	1,060.08	235.96	11.37	236.24	3.00	3.00	0.00
GRRV_B_GROOVE									
1,145.86	30.18	2.76	1,100.00	258.51	12.46	258.81	3.00	3.00	0.00
EOB @ 32.09° Inc. / 2.76° Azm									
1,209.69	32.09	2.76	1,154.63	291.47	14.04	291.81	3.00	3.00	0.00
1,300.00	32.09	2.76	1,231.15	339.40	16.35	339.79	0.00	0.00	0.00
1,400.00	32.09	2.76	1,315.87	392.46	18.91	392.92	0.00	0.00	0.00
SFC CASING									
1,400.16	32.09	2.76	1,316.00	392.54	18.91	393.00	0.00	0.00	0.00
1,500.00	32.09	2.76	1,400.59	445.52	21.47	446.04	0.00	0.00	0.00
1,600.00	32.09	2.76	1,485.31	498.59	24.02	499.17	0.00	0.00	0.00
1,700.00	32.09	2.76	1,570.03	551.65	26.58	552.29	0.00	0.00	0.00
GRRV DISSOLUTION SURF									
1,794.39	32.09	2.76	1,650.00	601.74	28.99	602.44	0.00	0.00	0.00
1,800.00	32.09	2.76	1,654.75	604.72	29.14	605.42	0.00	0.00	0.00
GARDEN_GULCH									
1,860.49	32.09	2.76	1,706.00	636.82	30.68	637.56	0.00	0.00	0.00
1,900.00	32.09	2.76	1,739.47	657.78	31.69	658.55	0.00	0.00	0.00
2,000.00	32.09	2.76	1,824.19	710.85	34.25	711.67	0.00	0.00	0.00
2,100.00	32.09	2.76	1,908.91	763.91	36.81	764.80	0.00	0.00	0.00
2,200.00	32.09	2.76	1,993.63	816.98	39.36	817.92	0.00	0.00	0.00
2,300.00	32.09	2.76	2,078.35	870.04	41.92	871.05	0.00	0.00	0.00
U_WASATCH									
2,351.52	32.09	2.76	2,122.00	897.38	43.24	898.42	0.00	0.00	0.00
2,400.00	32.09	2.76	2,163.07	923.11	44.48	924.18	0.00	0.00	0.00
2,500.00	32.09	2.76	2,247.80	976.17	47.03	977.30	0.00	0.00	0.00
2,600.00	32.09	2.76	2,332.52	1,029.23	49.59	1,030.43	0.00	0.00	0.00
2,700.00	32.09	2.76	2,417.24	1,082.30	52.15	1,083.55	0.00	0.00	0.00
2,800.00	32.09	2.76	2,501.96	1,135.36	54.71	1,136.68	0.00	0.00	0.00
2,900.00	32.09	2.76	2,586.68	1,188.43	57.26	1,189.81	0.00	0.00	0.00
INT CASING - 9 5/8"									
2,941.69	32.09	2.76	2,622.00	1,210.55	58.33	1,211.96	0.00	0.00	0.00
3,000.00	32.09	2.76	2,671.40	1,241.49	59.82	1,242.93	0.00	0.00	0.00
Drop 1.5°/100'									
3,074.76	32.09	2.76	2,734.73	1,281.16	61.73	1,282.65	0.00	0.00	0.00
3,100.00	31.71	2.76	2,756.16	1,294.49	62.37	1,295.99	1.50	-1.50	0.00

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Project:	Garfield County, CO (Nad 83)	MD Reference:	RKB @ 7063.00usft (30' kb)
Site:	Federal 299-23-3	North Reference:	True
Well:	RG 912-23-299D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan 4		

Planned 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)
3,200.00	30.21	2.76	2,841.91	1,345.87	64.85	1,347.43	1.50	-1.50	0.00
3,300.00	28.71	2.76	2,928.98	1,395.00	67.22	1,396.62	1.50	-1.50	0.00
3,400.00	27.21	2.76	3,017.30	1,441.83	69.47	1,443.50	1.50	-1.50	0.00
3,500.00	25.71	2.76	3,106.82	1,486.34	71.62	1,488.06	1.50	-1.50	0.00
3,600.00	24.21	2.76	3,197.48	1,528.49	73.65	1,530.26	1.50	-1.50	0.00
3,700.00	22.71	2.76	3,289.21	1,568.26	75.56	1,570.08	1.50	-1.50	0.00
3,800.00	21.21	2.76	3,381.95	1,605.61	77.36	1,607.48	1.50	-1.50	0.00
TOP OF CEMENT									
3,801.13	21.20	2.76	3,383.00	1,606.02	77.38	1,607.88	1.50	-1.50	0.00
3,900.00	19.71	2.76	3,475.64	1,640.53	79.05	1,642.43	1.50	-1.50	0.00
4,000.00	18.21	2.76	3,570.21	1,672.99	80.61	1,674.93	1.50	-1.50	0.00
G SAND									
4,000.84	18.20	2.76	3,571.00	1,673.25	80.62	1,675.19	1.50	-1.50	0.00
4,100.00	16.71	2.76	3,665.60	1,702.96	82.05	1,704.93	1.50	-1.50	0.00
FRUN									
4,195.09	15.29	2.76	3,757.00	1,729.13	83.32	1,731.14	1.50	-1.50	0.00
4,200.00	15.21	2.76	3,761.74	1,730.42	83.38	1,732.43	1.50	-1.50	0.00
4,300.00	13.71	2.76	3,858.57	1,755.37	84.58	1,757.40	1.50	-1.50	0.00
4,400.00	12.21	2.76	3,956.02	1,777.77	85.66	1,779.83	1.50	-1.50	0.00
4,500.00	10.71	2.76	4,054.02	1,797.62	86.62	1,799.71	1.50	-1.50	0.00
4,600.00	9.21	2.76	4,152.51	1,814.90	87.45	1,817.01	1.50	-1.50	0.00
4,700.00	7.71	2.76	4,251.42	1,829.60	88.16	1,831.72	1.50	-1.50	0.00
4,800.00	6.21	2.76	4,350.68	1,841.70	88.74	1,843.84	1.50	-1.50	0.00
4,900.00	4.71	2.76	4,450.22	1,851.21	89.20	1,853.36	1.50	-1.50	0.00
5,000.00	3.21	2.76	4,549.98	1,858.11	89.53	1,860.27	1.50	-1.50	0.00
L WASATCH									
5,014.04	3.00	2.76	4,564.00	1,858.87	89.57	1,861.03	1.50	-1.50	0.00
5,100.00	1.71	2.76	4,649.88	1,862.40	89.74	1,864.56	1.50	-1.50	0.00
5,200.00	0.21	2.76	4,749.87	1,864.08	89.82	1,866.24	1.50	-1.50	0.00
EOD @ Vert. - TOP OF DISPOSAL/WILLIAMS FORK									
5,214.14	0.00	0.00	4,764.00	1,864.11	89.82	1,866.27	1.50	-1.50	0.00
5,300.00	0.00	0.00	4,849.87	1,864.11	89.82	1,866.27	0.00	0.00	0.00
5,400.00	0.00	0.00	4,949.87	1,864.11	89.82	1,866.27	0.00	0.00	0.00
5,500.00	0.00	0.00	5,049.87	1,864.11	89.82	1,866.27	0.00	0.00	0.00
5,600.00	0.00	0.00	5,149.87	1,864.11	89.82	1,866.27	0.00	0.00	0.00
5,700.00	0.00	0.00	5,249.87	1,864.11	89.82	1,866.27	0.00	0.00	0.00
5,800.00	0.00	0.00	5,349.87	1,864.11	89.82	1,866.27	0.00	0.00	0.00
5,900.00	0.00	0.00	5,449.87	1,864.11	89.82	1,866.27	0.00	0.00	0.00
6,000.00	0.00	0.00	5,549.87	1,864.11	89.82	1,866.27	0.00	0.00	0.00
6,100.00	0.00	0.00	5,649.87	1,864.11	89.82	1,866.27	0.00	0.00	0.00
6,200.00	0.00	0.00	5,749.87	1,864.11	89.82	1,866.27	0.00	0.00	0.00
6,300.00	0.00	0.00	5,849.87	1,864.11	89.82	1,866.27	0.00	0.00	0.00
BASE OF DISPOSAL									
6,333.14	0.00	0.00	5,883.00	1,864.11	89.82	1,866.27	0.00	0.00	0.00
6,400.00	0.00	0.00	5,949.87	1,864.11	89.82	1,866.27	0.00	0.00	0.00
TD @ 6500.14' MD / 6050.00' TVD									
6,500.14	0.00	0.00	6,050.00	1,864.11	89.82	1,866.27	0.00	0.00	0.00

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Project:	Garfield County, CO (Nad 83)	MD Reference:	RKB @ 7063.00usft (30' kb)
Site:	Federal 299-23-3	North Reference:	True
Well:	RG 912-23-299D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan 4		

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
RG 912-23-299D - VF - plan hits target center - Point	0.00	0.00	4,764.00	1,864.11	89.82	1,753,726.32	2,164,053.98	39.865171	-108.478396
RG 912-23-299D - PE - plan hits target center - Point	0.00	0.00	6,050.00	1,864.11	89.82	1,753,726.32	2,164,053.98	39.865171	-108.478396

Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
2,941.69	2,622.00	9 5/8"	9-5/8	12-1/4

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
829.91	815.00	GRRV		0.00	
976.49	950.00	GRRV_A_GROOVE		0.00	
1,145.86	1,100.00	GRRV_B_GROOVE		0.00	
1,400.16	1,316.00	SFC CASING		0.00	
1,794.39	1,650.00	GRRV DISSOLUTION_SURF		0.00	
1,860.49	1,706.00	GARDEN_GULCH		0.00	
2,351.52	2,122.00	U_WASATCH		0.00	
2,941.69	2,622.00	INT CASING		0.00	
3,801.13	3,383.00	TOP OF CEMENT		0.00	
4,000.84	3,571.00	G_SAND		0.00	
4,195.09	3,757.00	FRUN		0.00	
5,014.04	4,564.00	L_WASATCH		0.00	
5,214.14	4,764.00	TOP OF DISPOSAL/WILLIAMS FOI		0.00	
6,333.14	5,883.00	BASE OF DISPOSAL		0.00	

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
140.00	140.00	0.00	0.00	Build 3°/100'
1,209.69	1,154.63	291.47	14.04	EOB @ 32.09° Inc. / 2.76° Azm
3,074.76	2,734.73	1,281.16	61.73	Drop 1.5°/100'
5,214.14	4,764.00	1,864.11	89.82	EOD @ Vert.
6,500.14	6,050.00	1,864.11	89.82	TD @ 6500.14' MD / 6050.00' TVD