

Sec 29, T6S, R96W
GM 541-30
Q210803 & RM-210683
Plan 4

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

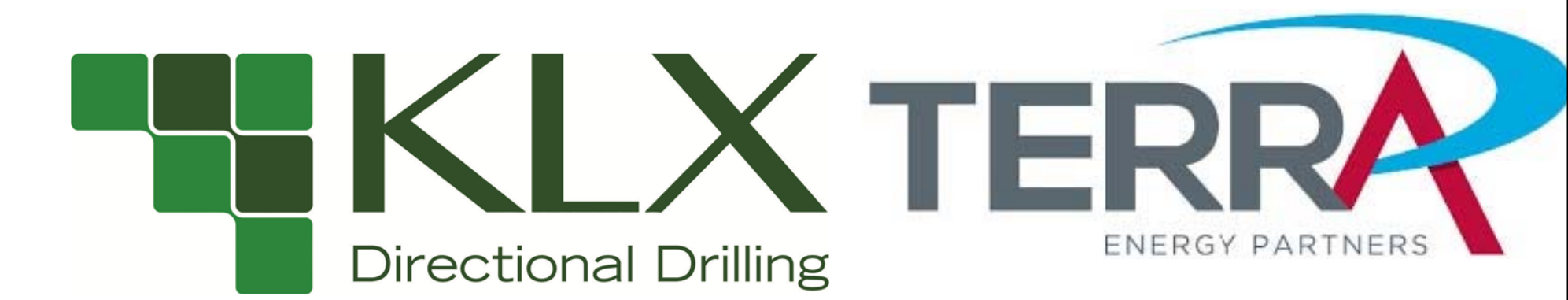
Company Name: Terra Energy Partners, LLP
GM 541-30
Garfield County, CO (Nad 83)
Rig: KB=30' @ 5879.00usft (H&P #329)
Created by: Chase Chambers
Date: 15:56, October 13 2021

WELL DETAILS: GM 541-30

+N/-S 0.00 +E/-W 0.00 Northing 1617152.14

Ground Elevation: 5849.00

Longitude 108.138960 GM 541-30 (A4)



DESIGN TARGET DETAILS							
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
GR 541-30 - VP	4770.00	26.88	-2444.24	1617250.00	2252969.49	39.498242	-108.147622
GR 541-30 - PBHL	6916.00	26.88	-2444.24	1617250.00	2252969.49	39.498242	-108.147622

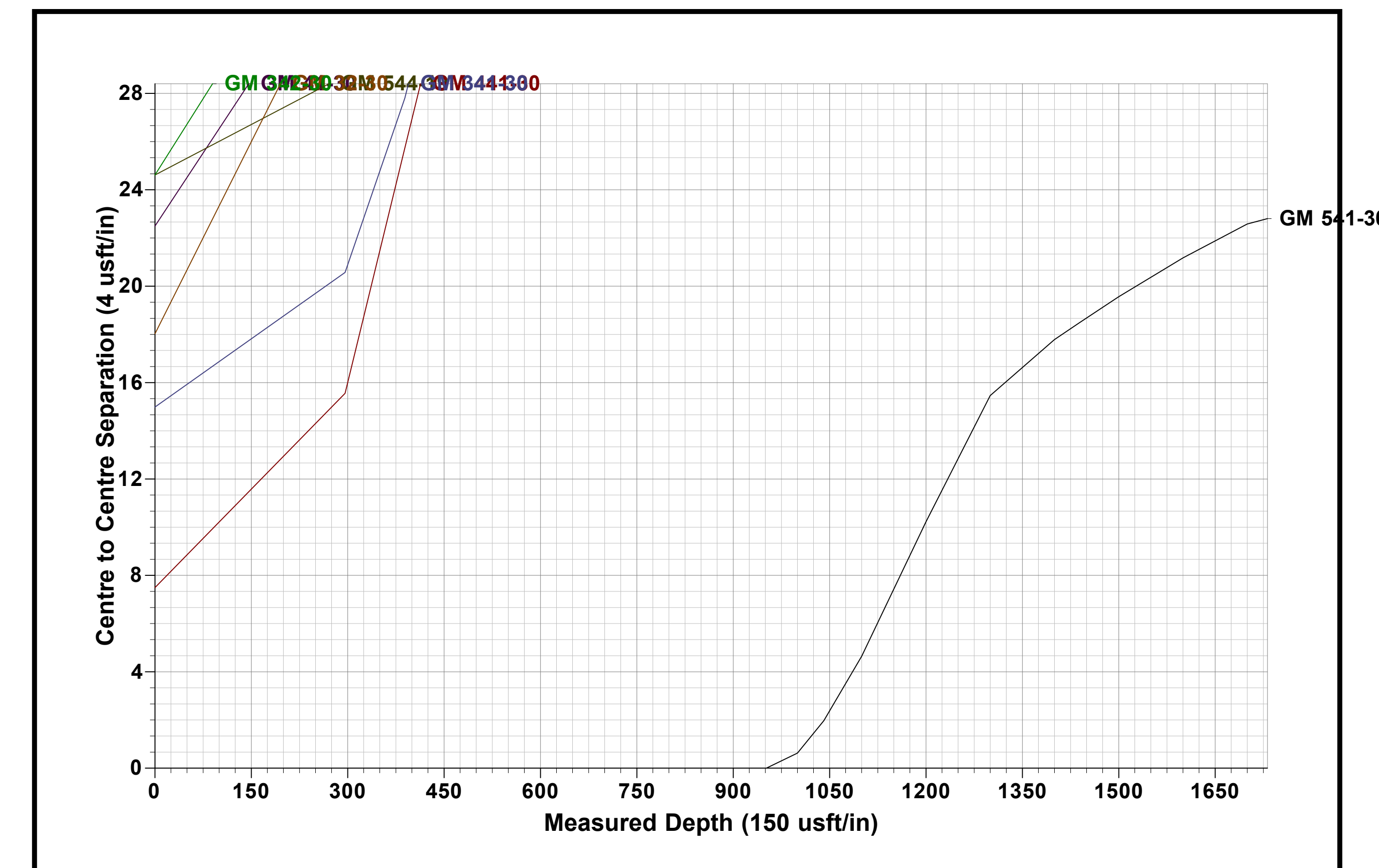
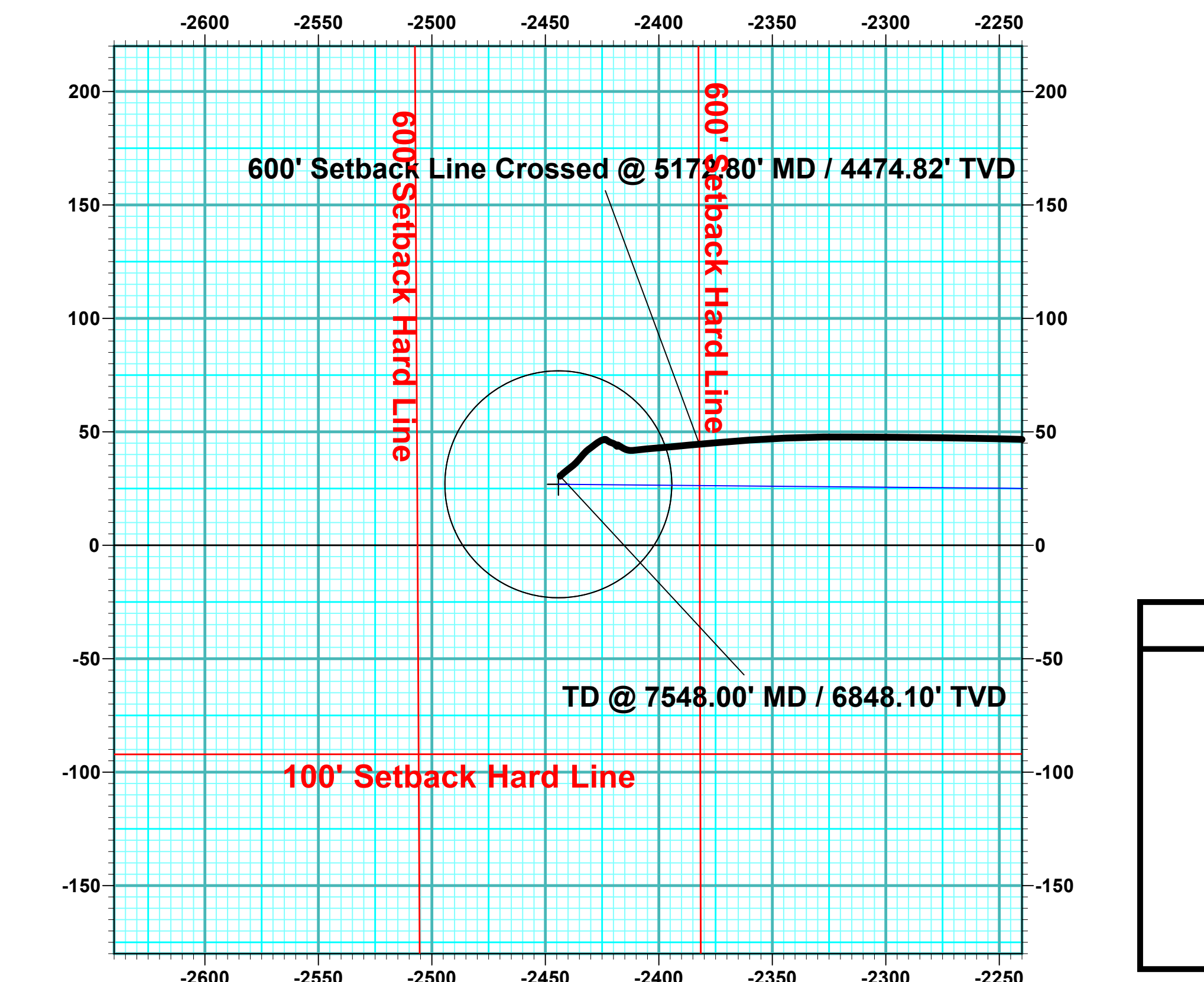
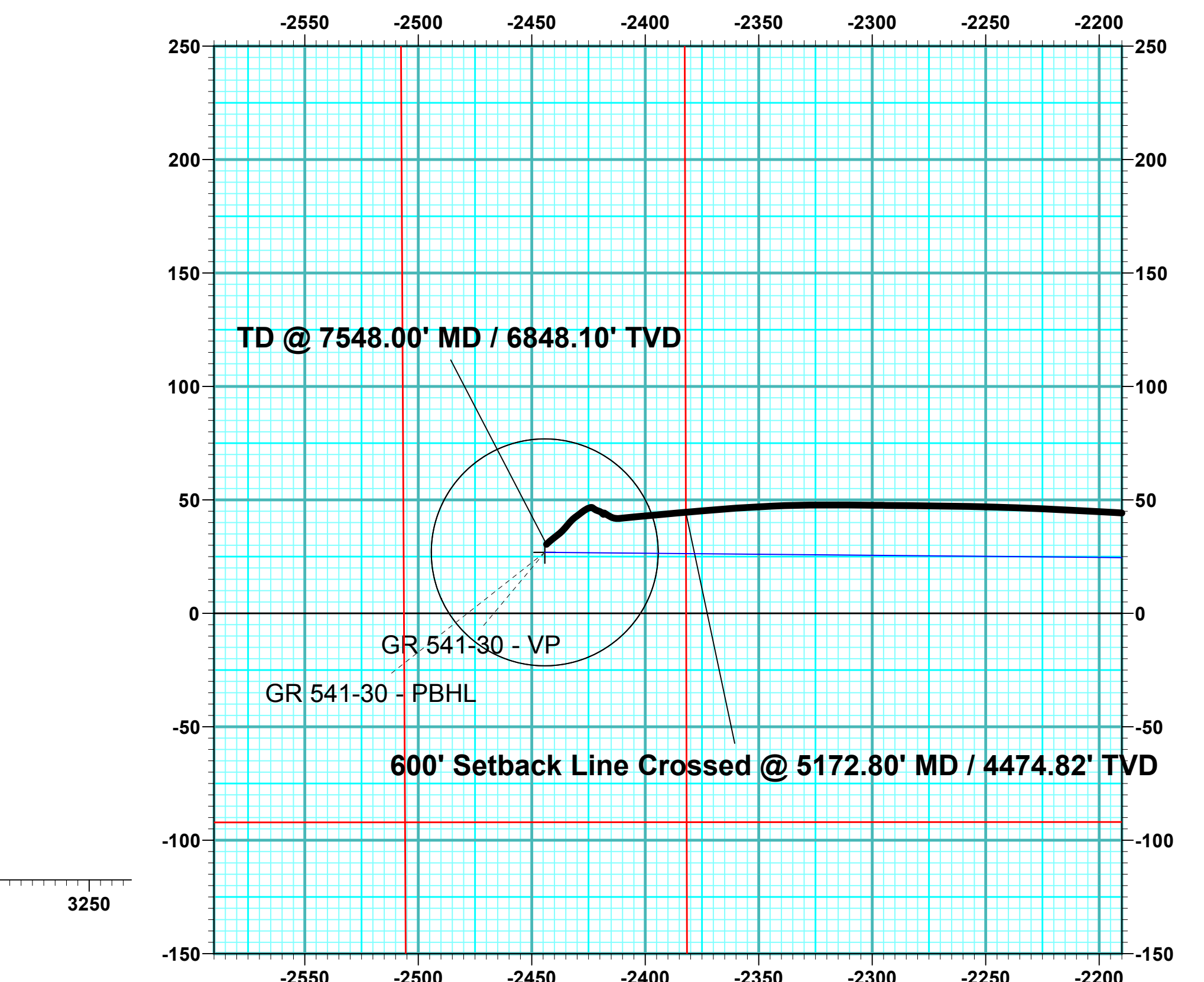
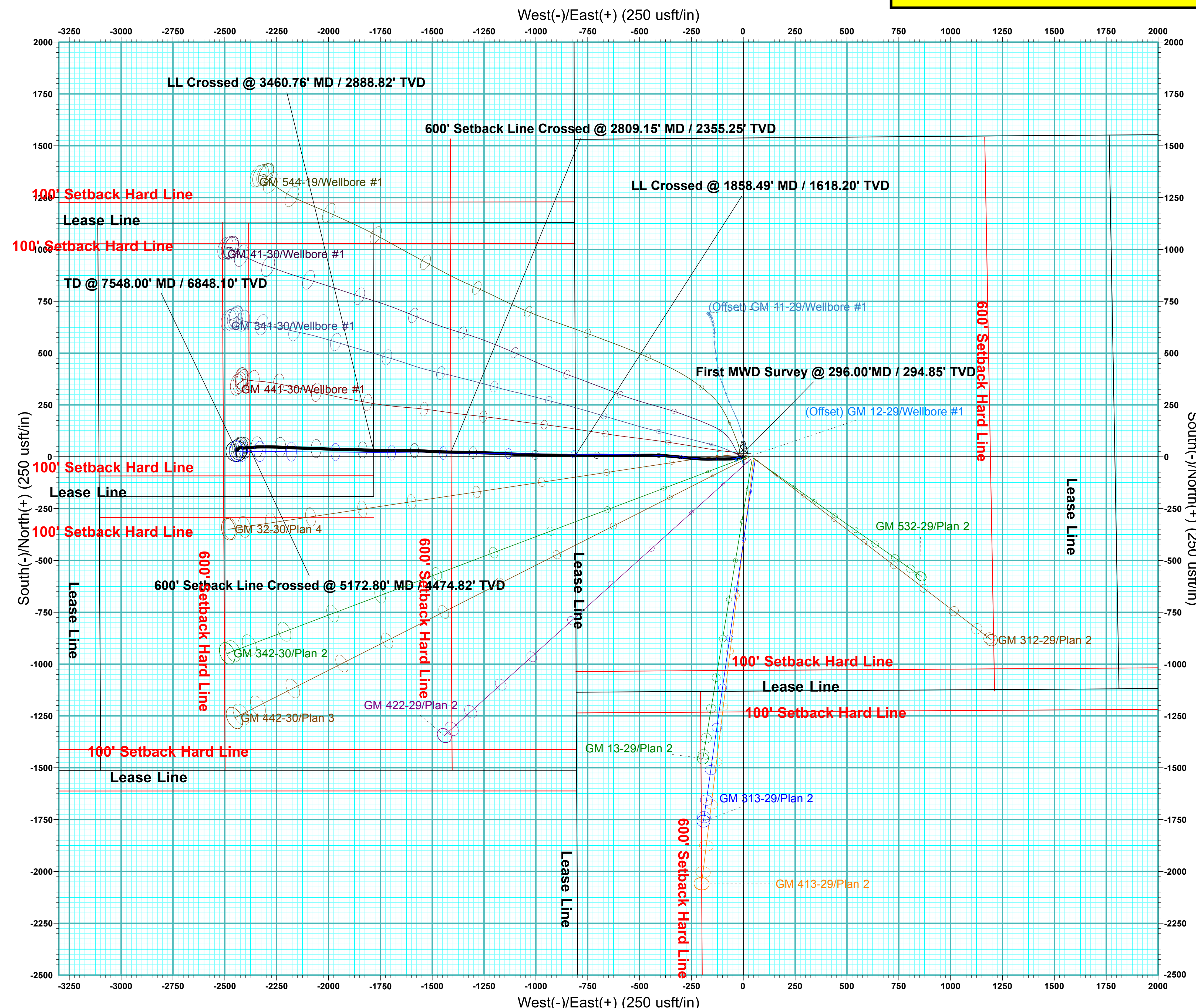
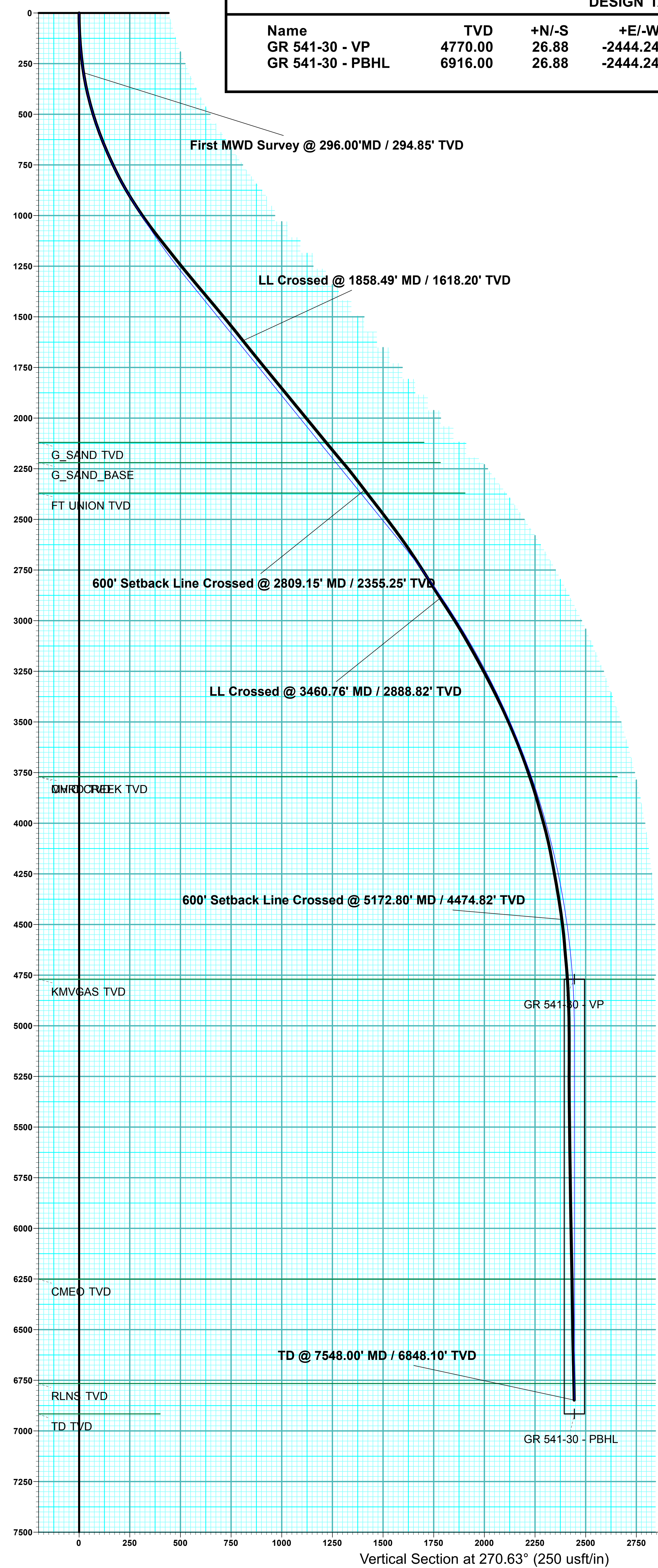
Azimuths to True North
Magnetic North: 9.18°

Magnetic Field
Strength: 51240.8nT
Dip Angle: 65.58°
Date: 10/5/2021
Model: HDGM2021

SLOTS				
Slot Name	+N/-S	+E/-W	Northing	Easting
GM 13-29 (A10)	-14.81	42.43	1617136.10	2255453.90
GM 311-29 (B4)	9.43	3.30	1617161.47	2255415.49
GM 312-29 (B11)	-7.91	52.83	1617142.70	2255464.50
GM 313-29 (A12)	-19.79	56.63	1617130.71	2255467.95
GM 32-30 (B6)	4.49	17.46	1617156.12	2255429.50
GM 341-30 (A2)	4.94	-14.15	1617157.49	2255397.92
GM 342-30 (B7)	2.01	24.53	1617153.44	2255436.50
GM 41-30 (A1)	7.42	-21.23	1617160.17	2255390.91
GM 413-29 (A11)	-17.32	49.54	1617133.39	2255460.94
GM 422-29 (A9)	-12.38	35.39	1617138.74	2255446.94
GM 441-30 (A3)	2.47	-7.07	1617154.81	2255404.92
GM 442-30 (B8)	-0.46	31.62	1617150.76	2255443.51
GM 511-29 (B2)	14.38	-10.85	1617166.83	2255401.49
GM 532-29 (B10)	-5.41	45.77	1617145.40	2255457.51
GM 541-30 (A4)	0.00	0.00	1617152.14	2255411.92
GM 544-19 (B1)	16.86	-17.94	1617169.51	2255394.48

DESIGN ANNOTATIONS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	VSecDeparture	Annotation		
947.00	31.68	275.84	901.07	-7.02	-248.15	248.06	0.00 Start 94.00 hold at 947.00 MD		
1041.00	31.68	275.84	981.06	-1.99	-297.26	297.22	49.37 Start DLS 2.00 TFO -24.99		
1438.81	39.02	270.51	1305.38	9.77	-526.77	526.85	279.27 Start 1692.21 hold at 1438.81 MD		
3131.02	39.02	270.51	2620.09	19.28	-1592.15	1592.27	1344.69 Start Drop -1.50		
5732.41	0.00	0.00	5025.00	26.88	-2444.24	2444.39	2196.81 Start 1821.00 hold at 5732.41 MD		
7553.41	0.00	0.00	6846.00	26.88	-2444.24	2444.39	2196.81 TD at 7553.41		

FORMATION TOP DETAILS		
TVDPATH	MDPATH	Formation
2120.00	2487.33	G SAND TVD
2220.00	2616.05	G SAND BASE
2370.00	2809.12	FT UNION TVD
3770.00	4453.66	MVRD TVD
3770.00	4453.66	OHIO CREEK TVD
4770.00	5477.23	KMGAS TVD
6251.00	6958.41	CMEG TVD
6766.00	7473.41	RLNS TVD



ANNOTATIONS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	VSecDeparture	Annotation		
296.00	8.75	257.73	294.85	-4.79	-22.04	21.98	22.56 First MWD Survey @ 296.00' MD / 294.85' TVD		
1858.49	38.43	270.03	1618.20	6.81	-808.97	808.99	810.77 LL Crossed @ 1858.49' MD / 1618.20' TVD		
2809.15	37.67	271.58	2355.25	22.35	-1409.04	1409.21	1411.19 600' Setback Line Crossed @ 2809.15' MD / 2355.25' TVD		
3460.76	32.91	270.81	2888.82	31.82	-1782.05	1782.31	1784.43 LL Crossed @ 3460.76' MD / 2888.82' TVD		
5172.80	7.84	265.29	4474.82	44.53	-2382.08	2382.45	2384.49 600' Setback Line Crossed @ 5172.80' MD / 4474.82' TVD		
7548.00	1.67	226.36	6848.10	30.41	-2443.45	2443.64	2455.42 TD @ 7548.00' MD / 6848.10' TVD		



Terra Energy Partners, LLP

Garfield County, CO (Nad 83)

Sec 29, T6S, R96W

GM 541-30 - Slot GM 541-30 (A4)

Wellbore #1

Design: Wellbore #1

KLX Survey Report

13 October, 2021



Company:	Terra Energy Partners, LLP	Local Co-ordinate Reference:	Well GM 541-30 - Slot GM 541-30 (A4)
Project:	Garfield County, CO (Nad 83)	TVD Reference:	KB=30' @ 5879.00usft (H&P #329)
Site:	Sec 29, T6S, R96W	MD Reference:	KB=30' @ 5879.00usft (H&P #329)
Well:	GM 541-30	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

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	Sec 29, T6S, R96W				
Site Position:		Northing:	1,617,160.17 usft	Latitude:	39.498189
From:	Map	Easting:	2,255,390.91 usft	Longitude:	-108.139036
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-1.66 °

Well	GM 541-30 - Slot GM 541-30 (A4)					
Well Position	+N/-S	0.00 usft	Northing:	1,617,152.14 usft	Latitude:	39.498169
	+E/-W	0.00 usft	Easting:	2,255,411.92 usft	Longitude:	-108.138960
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	5,849.00 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM2021	10/5/2021	9.18	65.58	51,240.80000000

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	270.71	

Survey Program	Date	10/13/2021			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
296.00	7,548.00	KLX MWD Surveys (Wellbore #1)	OWSG (REV5) MWD HDGM	OWSG 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)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First MWD Survey @ 296.00'MD / 294.85' TVD										
296.00	8.75	257.73	294.85	-4.79	-22.04	21.98	2.96	2.96	0.00	
389.00	13.23	260.72	386.12	-8.02	-39.47	39.36	4.85	4.82	3.22	
482.00	15.82	267.84	476.15	-10.21	-62.64	62.51	3.38	2.78	7.66	
573.00	19.34	270.39	562.89	-10.57	-90.12	89.98	3.96	3.87	2.80	
665.00	22.46	269.78	648.82	-10.54	-122.93	122.79	3.40	3.39	-0.66	
759.00	24.65	268.11	734.99	-11.25	-160.48	160.33	2.44	2.33	-1.78	
853.00	27.60	273.12	819.38	-10.72	-201.83	201.68	3.92	3.14	5.33	
947.00	31.68	275.84	901.07	-7.02	-248.15	248.04	4.57	4.34	2.89	
1,130.00	36.34	275.22	1,052.73	2.81	-350.01	350.02	2.55	2.55	-0.34	

Company:	Terra Energy Partners, LLP	Local Co-ordinate Reference:	Well GM 541-30 - Slot GM 541-30 (A4)
Project:	Garfield County, CO (Nad 83)	TVD Reference:	KB=30' @ 5879.00usft (H&P #329)
Site:	Sec 29, T6S, R96W	MD Reference:	KB=30' @ 5879.00usft (H&P #329)
Well:	GM 541-30	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)	
1,225.00	38.85	272.50	1,128.00	6.67	-407.82	407.87	3.17	2.64	-2.86	
1,319.00	38.06	269.07	1,201.62	7.49	-466.25	466.31	2.42	-0.84	-3.65	
1,413.00	39.46	268.72	1,274.91	6.35	-525.09	525.13	1.51	1.49	-0.37	
1,507.00	40.34	270.74	1,347.03	6.08	-585.38	585.41	1.67	0.94	2.15	
1,602.00	39.59	270.92	1,419.84	6.96	-646.39	646.43	0.80	-0.79	0.19	
1,696.00	40.08	269.95	1,492.02	7.41	-706.60	706.64	0.84	0.52	-1.03	
1,790.00	38.72	269.34	1,564.66	7.05	-766.26	766.29	1.50	-1.45	-0.65	
LL Crossed @ 1858.49' MD / 1618.20' TVD										
1,858.49	38.43	270.03	1,618.20	6.81	-808.97	808.99	0.76	-0.42	1.01	
1,885.00	38.32	270.30	1,638.99	6.86	-825.43	825.45	0.76	-0.42	1.02	
1,979.00	39.46	270.57	1,712.15	7.31	-884.44	884.46	1.23	1.21	0.29	
2,073.00	39.20	270.48	1,784.86	7.86	-944.01	944.04	0.28	-0.28	-0.10	
2,167.00	39.46	271.62	1,857.57	8.95	-1,003.58	1,003.61	0.82	0.28	1.21	
2,262.00	39.20	272.41	1,931.05	11.07	-1,063.75	1,063.80	0.59	-0.27	0.83	
2,356.00	39.68	273.12	2,003.65	13.95	-1,123.39	1,123.48	0.70	0.51	0.76	
2,450.00	39.16	272.32	2,076.27	16.78	-1,183.01	1,183.13	0.77	-0.55	-0.85	
2,544.00	39.51	271.18	2,148.97	18.60	-1,242.57	1,242.70	0.85	0.37	-1.21	
2,638.00	40.39	272.15	2,221.03	20.36	-1,302.90	1,303.05	1.15	0.94	1.03	
2,732.00	37.53	270.22	2,294.12	21.61	-1,361.98	1,362.14	3.30	-3.04	-2.05	
600' Setback Line Crossed @ 2809.15' MD / 2355.25' TVD										
2,809.15	37.67	271.58	2,355.25	22.35	-1,409.04	1,409.21	1.09	0.18	1.77	
2,826.00	37.70	271.88	2,368.58	22.66	-1,419.34	1,419.51	1.09	0.19	1.76	
2,918.00	37.62	272.24	2,441.41	24.69	-1,475.51	1,475.70	0.25	-0.09	0.39	
3,009.00	37.05	273.29	2,513.77	27.34	-1,530.63	1,530.85	0.94	-0.63	1.15	
3,101.00	35.77	271.80	2,587.81	29.78	-1,585.18	1,585.43	1.69	-1.39	-1.62	
3,193.00	34.06	271.01	2,663.25	31.08	-1,637.82	1,638.08	1.92	-1.86	-0.86	
3,284.00	32.65	269.51	2,739.26	31.32	-1,687.85	1,688.11	1.79	-1.55	-1.65	
3,376.00	31.64	270.48	2,817.15	31.31	-1,736.80	1,737.05	1.23	-1.10	1.05	
LL Crossed @ 3460.76' MD / 2888.82' TVD										
3,460.76	32.91	270.81	2,888.82	31.82	-1,782.05	1,782.31	1.51	1.49	0.39	
3,467.00	33.00	270.83	2,894.05	31.87	-1,785.44	1,785.70	1.51	1.49	0.37	
3,560.00	32.61	271.45	2,972.22	32.87	-1,835.82	1,836.09	0.55	-0.42	0.67	
3,652.00	31.03	271.09	3,050.39	33.95	-1,884.31	1,884.59	1.73	-1.72	-0.39	
3,743.00	29.05	270.57	3,129.17	34.61	-1,929.86	1,930.14	2.19	-2.18	-0.57	
3,836.00	28.83	273.12	3,210.56	36.06	-1,974.83	1,975.12	1.35	-0.24	2.74	
3,927.00	27.47	272.15	3,290.79	38.04	-2,017.71	2,018.03	1.58	-1.49	-1.07	
4,019.00	26.45	272.24	3,372.79	39.64	-2,059.39	2,059.73	1.11	-1.11	0.10	
4,111.00	24.74	271.80	3,455.76	41.04	-2,099.11	2,099.46	1.87	-1.86	-0.48	
4,202.00	23.16	271.45	3,538.92	42.09	-2,136.03	2,136.39	1.74	-1.74	-0.38	
4,294.00	21.45	272.68	3,624.04	43.34	-2,170.93	2,171.30	1.93	-1.86	1.34	
4,386.00	19.20	273.20	3,710.30	44.97	-2,202.84	2,203.23	2.45	-2.45	0.57	
4,478.00	18.41	272.24	3,797.39	46.38	-2,232.46	2,232.86	0.92	-0.86	-1.04	
4,570.00	16.00	270.92	3,885.27	47.15	-2,259.66	2,260.07	2.65	-2.62	-1.43	

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Site:	Sec 29, T6S, R96W	MD Reference:	KB=30' @ 5879.00usft (H&P #329)
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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)	
4,662.00	15.78	270.65	3,973.75	47.50	-2,284.84	2,285.26	0.25	-0.24	-0.29	
4,754.00	13.71	270.39	4,062.72	47.71	-2,308.26	2,308.67	2.25	-2.25	-0.28	
4,844.00	10.94	269.51	4,150.64	47.71	-2,327.47	2,327.88	3.08	-3.08	-0.98	
4,935.00	10.20	267.31	4,240.09	47.26	-2,344.15	2,344.56	0.93	-0.81	-2.42	
5,027.00	9.40	266.08	4,330.75	46.36	-2,359.78	2,360.18	0.90	-0.87	-1.34	
5,119.00	8.83	264.77	4,421.59	45.21	-2,374.31	2,374.69	0.66	-0.62	-1.42	
600' Setback Line Crossed @ 5172.80' MD / 4474.82' TVD										
5,172.80	7.84	265.29	4,474.82	44.53	-2,382.08	2,382.45	1.84	-1.84	0.96	
5,210.00	7.16	265.73	4,511.70	44.15	-2,386.92	2,387.29	1.84	-1.83	1.19	
5,300.00	4.22	263.10	4,601.25	43.33	-2,395.80	2,396.16	3.28	-3.27	-2.92	
5,390.00	5.49	265.91	4,690.92	42.63	-2,403.39	2,403.73	1.44	1.41	3.12	
5,482.00	3.47	261.87	4,782.64	41.92	-2,410.53	2,410.87	2.22	-2.20	-4.39	
5,573.00	2.33	297.90	4,873.52	42.40	-2,414.89	2,415.23	2.30	-1.25	39.59	
5,664.00	1.36	303.70	4,964.48	43.86	-2,417.43	2,417.79	1.08	-1.07	6.37	
5,753.00	0.31	208.43	5,053.47	44.24	-2,418.42	2,418.78	1.60	-1.18	-107.04	
5,844.00	0.18	141.46	5,144.47	43.91	-2,418.45	2,418.81	0.32	-0.14	-73.59	
5,935.00	0.18	172.57	5,235.47	43.65	-2,418.34	2,418.70	0.11	0.00	34.19	
6,027.00	0.48	316.18	5,327.47	43.79	-2,418.59	2,418.95	0.69	0.33	156.10	
6,119.00	0.75	309.94	5,419.46	44.45	-2,419.32	2,419.68	0.30	0.29	-6.78	
6,211.00	0.75	287.53	5,511.45	45.02	-2,420.35	2,420.73	0.32	0.00	-24.36	
6,302.00	0.97	296.14	5,602.44	45.54	-2,421.61	2,421.99	0.28	0.24	9.46	
6,394.00	0.92	308.18	5,694.43	46.34	-2,422.89	2,423.28	0.22	-0.05	13.09	
6,486.00	0.75	257.82	5,786.42	46.67	-2,424.06	2,424.45	0.79	-0.18	-54.74	
6,578.00	1.10	244.46	5,878.41	46.16	-2,425.45	2,425.83	0.44	0.38	-14.52	
6,669.00	1.14	235.67	5,969.39	45.27	-2,426.98	2,427.36	0.19	0.04	-9.66	
6,761.00	1.41	230.14	6,061.37	44.03	-2,428.61	2,428.97	0.32	0.29	-6.01	
6,852.00	1.49	232.95	6,152.34	42.60	-2,430.41	2,430.75	0.12	0.09	3.09	
6,944.00	1.45	229.96	6,244.31	41.13	-2,432.26	2,432.58	0.09	-0.04	-3.25	
7,034.00	1.27	212.21	6,334.28	39.56	-2,433.66	2,433.96	0.51	-0.20	-19.72	
7,125.00	1.01	225.57	6,425.27	38.14	-2,434.77	2,435.06	0.41	-0.29	14.68	
7,217.00	1.49	226.45	6,517.24	36.75	-2,436.22	2,436.48	0.52	0.52	0.96	
7,309.00	1.85	225.83	6,609.21	34.89	-2,438.15	2,438.39	0.39	0.39	-0.67	
7,400.00	1.58	236.82	6,700.16	33.18	-2,440.25	2,440.48	0.47	-0.30	12.08	
7,482.00	1.67	226.36	6,782.13	31.74	-2,442.06	2,442.27	0.38	0.11	-12.76	
TD @ 7548.00' MD / 6848.10' TVD										
7,548.00	1.67	226.36	6,848.10	30.41	-2,443.45	2,443.64	0.00	0.00	0.00	

Company:	Terra Energy Partners, LLP	Local Co-ordinate Reference:	Well GM 541-30 - Slot GM 541-30 (A4)
Project:	Garfield County, CO (Nad 83)	TVD Reference:	KB=30' @ 5879.00usft (H&P #329)
Site:	Sec 29, T6S, R96W	MD Reference:	KB=30' @ 5879.00usft (H&P #329)
Well:	GM 541-30	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
296.00	294.85	-4.79	-22.04	First MWD Survey @ 296.00' MD / 294.85' TVD
1,858.49	1,618.20	6.81	-808.97	LL Crossed @ 1858.49' MD / 1618.20' TVD
2,809.15	2,355.25	22.35	-1,409.04	600' Setback Line Crossed @ 2809.15' MD / 2355.25' TVD
3,460.76	2,888.82	31.82	-1,782.05	LL Crossed @ 3460.76' MD / 2888.82' TVD
5,172.80	4,474.82	44.53	-2,382.08	600' Setback Line Crossed @ 5172.80' MD / 4474.82' TVD
7,548.00	6,848.10	30.41	-2,443.45	TD @ 7548.00' MD / 6848.10' TVD