

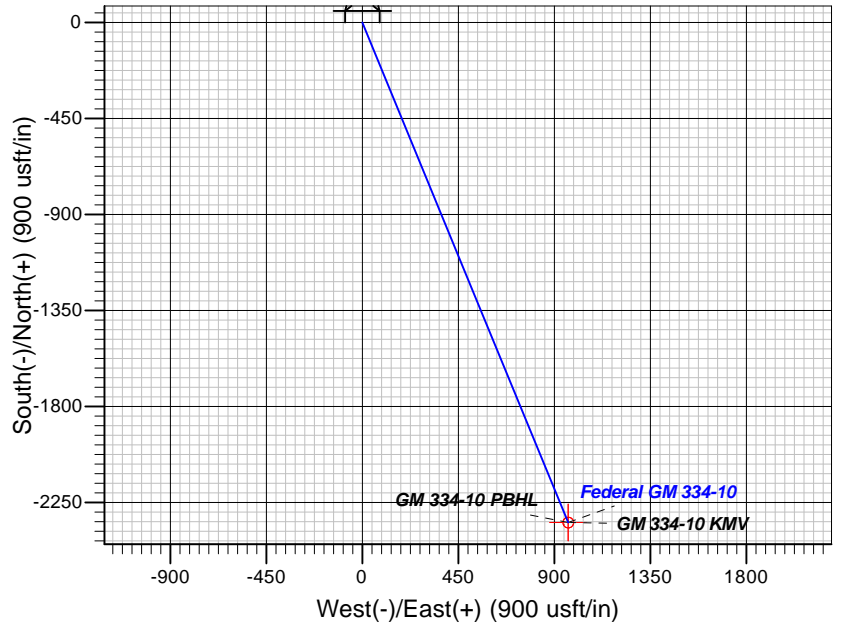
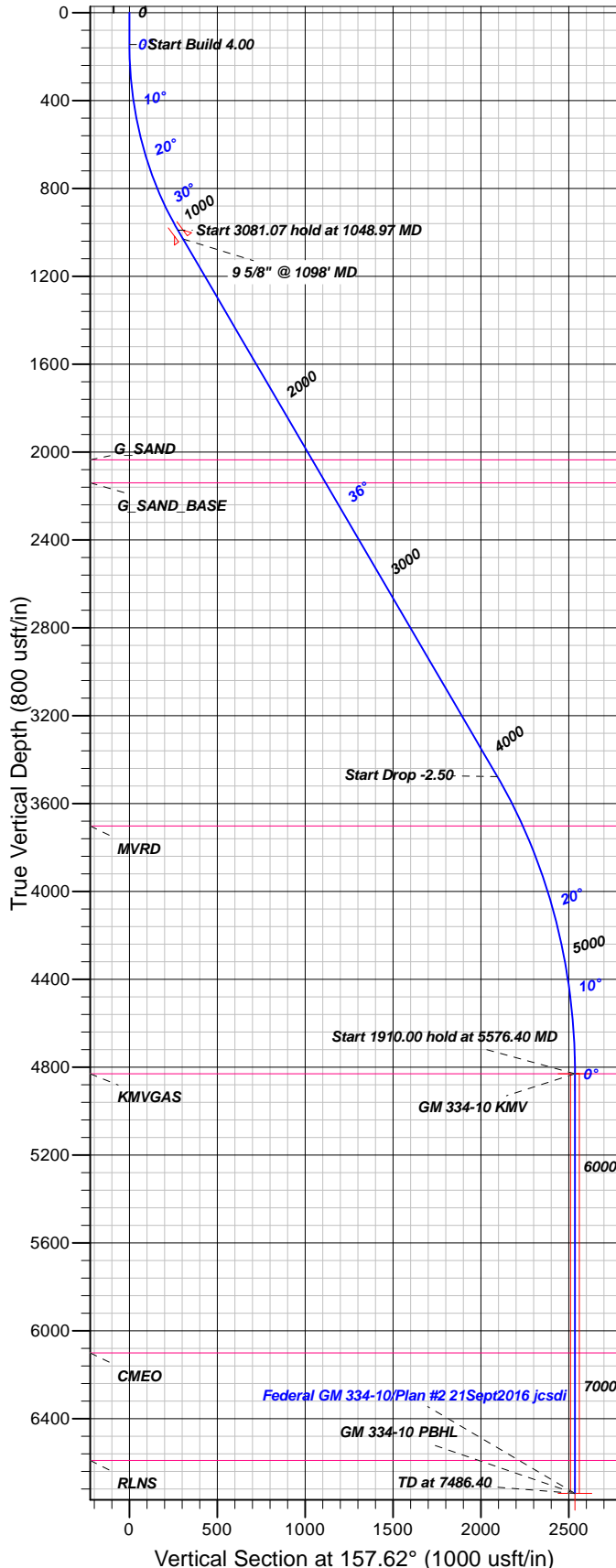
Well Details: Federal GM 334-10

GL 6148' & RKB 24' @ 6172.00usft (H&P 318)

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	1600330.70	2266838.90	39.4529091	-108.0967792	A3

T M Azimuths to True North
Magnetic North: 9.71°

Magnetic Field
Strength: 51587.4snT
Dip Angle: 65.58°
Date: 9/13/2016
Model: BGGM2016



FORMATION TOP DETAILS

TVDPath	MDPath	Formation
2035.00	2343.09	G_SAND
2140.00	2473.14	G_SAND_BASE
3702.00	4397.04	MVRD
4830.00	5576.40	KMGAS
6101.00	6847.40	CMEQ
6590.00	7336.40	RLNS

Plan: Plan #2 21Sept2016 jcsdi

10:39, September 23 2016
Created By: Janie Collins

PROJECT DETAILS: Garfield County, CO NAD83

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

System Datum: Mean Sea Level

CASING DETAILS

TVD	MD	Name	Size
1030.52	1098.97	9 5/8" @ 1098' MD	9.62

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	145.00	0.00	0.00	145.00	0.00	0.00	0.00	0.00	0.00	
3	1048.97	36.16	157.62	990.15	-255.12	105.06	4.00	157.62	275.90	
4	4130.04	36.16	157.62	3477.76	-1936.08	797.30	0.00	0.002093.82		
5	5576.40	0.00	0.00	4830.00	-2344.27	965.39	2.50	180.002535.27		GM 334-10 KMV
6	7486.40	0.00	0.00	6740.00	-2344.27	965.39	0.00	0.002535.27		GM 334-10 PBHL

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
GM 334-10 KMV	4830.00	-2344.27	965.39	1597959.80	2267736.90	39.4464729	-108.0933606	Circle (Radius: 25.00)
- plan hits target center								
GM 334-10 PBHL	6740.00	-2344.27	965.39	1597959.80	2267736.90	39.4464729	-108.0933606	Point
- plan hits target center								



TEP Rocky Mountain LLC

Garfield County, CO NAD83

MV 5-10 Pad

Federal GM 334-10 - Slot A3

OH

Plan: Plan #2 21Sept2016 jcsdi

Standard Planning Report

23 September, 2016



Database:	Grand Junction District	Local Co-ordinate Reference:	Well Federal GM 334-10 - Slot A3
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 6148' & RKB 24' @ 6172.00usft (H&P 318)
Project:	Garfield County, CO NAD83	MD Reference:	GL 6148' & RKB 24' @ 6172.00usft (H&P 318)
Site:	MV 5-10 Pad	North Reference:	True
Well:	Federal GM 334-10	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2 21Sept2016 jcsdi		

Project	Garfield County, CO NAD83		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Central Zone		

Site		MV 5-10 Pad			
Site Position:		Northing:	1,600,344.70 usft	Latitude:	39.4529509
From:	Map	Easting:	2,266,881.70 usft	Longitude:	-108.0966291
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence:	-1.64 °

Well	Federal GM 334-10 - Slot A3					
Well Position	+N/-S	-15.22 usft	Northing:	1,600,330.70 usft	Latitude:	39.4529092
	+E/-W	-42.38 usft	Easting:	2,266,838.90 usft	Longitude:	-108.0967792
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	6,148.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2016	9/13/2016	9.72	65.58	51,587

Design	Plan #2 21Sept2016 jcsdi				
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	157.62	

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	
145.00	0.00	0.00	145.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,048.97	36.16	157.62	990.15	-255.12	105.06	4.00	4.00	0.00	157.62	
4,130.04	36.16	157.62	3,477.76	-1,936.08	797.30	0.00	0.00	0.00	0.00	
5,576.40	0.00	0.00	4,830.00	-2,344.27	965.39	2.50	-2.50	0.00	180.00	GM 334-10 KMV
7,486.40	0.00	0.00	6,740.00	-2,344.27	965.39	0.00	0.00	0.00	0.00	GM 334-10 PBHL

Database:	Grand Junction District	Local Co-ordinate Reference:	Well Federal GM 334-10 - Slot A3
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 6148' & RKB 24' @ 6172.00usft (H&P 318)
Project:	Garfield County, CO NAD83	MD Reference:	GL 6148' & RKB 24' @ 6172.00usft (H&P 318)
Site:	MV 5-10 Pad	North Reference:	True
Well:	Federal GM 334-10	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2 21Sept2016 jcsdi		

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	
145.00	0.00	0.00	145.00	0.00	0.00	0.00	0.00	0.00	0.00	
200.00	2.20	157.62	199.99	-0.98	0.40	1.06	4.00	4.00	0.00	
300.00	6.20	157.62	299.70	-7.75	3.19	8.38	4.00	4.00	0.00	
400.00	10.20	157.62	398.66	-20.93	8.62	22.64	4.00	4.00	0.00	
500.00	14.20	157.62	496.38	-40.47	16.67	43.77	4.00	4.00	0.00	
600.00	18.20	157.62	592.39	-66.26	27.29	71.66	4.00	4.00	0.00	
700.00	22.20	157.62	686.22	-98.18	40.43	106.18	4.00	4.00	0.00	
800.00	26.20	157.62	777.41	-136.08	56.04	147.17	4.00	4.00	0.00	
900.00	30.20	157.62	865.52	-179.77	74.03	194.41	4.00	4.00	0.00	
1,000.00	34.20	157.62	950.13	-229.03	94.32	247.69	4.00	4.00	0.00	
1,048.97	36.16	157.62	990.15	-255.12	105.06	275.90	4.00	4.00	0.00	
1,098.97	36.16	157.62	1,030.52	-282.39	116.29	305.40	0.00	0.00	0.00	
9 5/8" @ 1098' MD										
1,100.00	36.16	157.62	1,031.35	-282.96	116.52	306.01	0.00	0.00	0.00	
1,200.00	36.16	157.62	1,112.09	-337.51	138.99	365.01	0.00	0.00	0.00	
1,300.00	36.16	157.62	1,192.83	-392.07	161.46	424.02	0.00	0.00	0.00	
1,400.00	36.16	157.62	1,273.56	-446.63	183.93	483.02	0.00	0.00	0.00	
1,500.00	36.16	157.62	1,354.30	-501.19	206.39	542.02	0.00	0.00	0.00	
1,600.00	36.16	157.62	1,435.04	-555.74	228.86	601.02	0.00	0.00	0.00	
1,700.00	36.16	157.62	1,515.78	-610.30	251.33	660.03	0.00	0.00	0.00	
1,800.00	36.16	157.62	1,596.52	-664.86	273.80	719.03	0.00	0.00	0.00	
1,900.00	36.16	157.62	1,677.26	-719.42	296.26	778.03	0.00	0.00	0.00	
2,000.00	36.16	157.62	1,757.99	-773.98	318.73	837.03	0.00	0.00	0.00	
2,100.00	36.16	157.62	1,838.73	-828.53	341.20	896.04	0.00	0.00	0.00	
2,200.00	36.16	157.62	1,919.47	-883.09	363.67	955.04	0.00	0.00	0.00	
2,300.00	36.16	157.62	2,000.21	-937.65	386.13	1,014.04	0.00	0.00	0.00	
2,343.09	36.16	157.62	2,035.00	-961.16	395.82	1,039.47	0.00	0.00	0.00	
G_SAND										
2,400.00	36.16	157.62	2,080.95	-992.21	408.60	1,073.05	0.00	0.00	0.00	
2,473.14	36.16	157.62	2,140.00	-1,032.11	425.03	1,116.20	0.00	0.00	0.00	
G_SAND_BASE										
2,500.00	36.16	157.62	2,161.69	-1,046.76	431.07	1,132.05	0.00	0.00	0.00	
2,600.00	36.16	157.62	2,242.42	-1,101.32	453.54	1,191.05	0.00	0.00	0.00	
2,700.00	36.16	157.62	2,323.16	-1,155.88	476.00	1,250.05	0.00	0.00	0.00	
2,800.00	36.16	157.62	2,403.90	-1,210.44	498.47	1,309.06	0.00	0.00	0.00	
2,900.00	36.16	157.62	2,484.64	-1,264.99	520.94	1,368.06	0.00	0.00	0.00	
3,000.00	36.16	157.62	2,565.38	-1,319.55	543.41	1,427.06	0.00	0.00	0.00	
3,100.00	36.16	157.62	2,646.12	-1,374.11	565.87	1,486.07	0.00	0.00	0.00	
3,200.00	36.16	157.62	2,726.85	-1,428.67	588.34	1,545.07	0.00	0.00	0.00	
3,300.00	36.16	157.62	2,807.59	-1,483.22	610.81	1,604.07	0.00	0.00	0.00	
3,400.00	36.16	157.62	2,888.33	-1,537.78	633.28	1,663.07	0.00	0.00	0.00	
3,500.00	36.16	157.62	2,969.07	-1,592.34	655.74	1,722.08	0.00	0.00	0.00	
3,600.00	36.16	157.62	3,049.81	-1,646.90	678.21	1,781.08	0.00	0.00	0.00	
3,700.00	36.16	157.62	3,130.55	-1,701.46	700.68	1,840.08	0.00	0.00	0.00	
3,800.00	36.16	157.62	3,211.28	-1,756.01	723.15	1,899.08	0.00	0.00	0.00	
3,900.00	36.16	157.62	3,292.02	-1,810.57	745.61	1,958.09	0.00	0.00	0.00	
4,000.00	36.16	157.62	3,372.76	-1,865.13	768.08	2,017.09	0.00	0.00	0.00	
4,100.00	36.16	157.62	3,453.50	-1,919.69	790.55	2,076.09	0.00	0.00	0.00	
4,130.04	36.16	157.62	3,477.76	-1,936.08	797.30	2,093.82	0.00	0.00	0.00	
4,200.00	34.41	157.62	3,534.86	-1,973.44	812.68	2,134.23	2.50	-2.50	0.00	

Database:	Grand Junction District	Local Co-ordinate Reference:	Well Federal GM 334-10 - Slot A3
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 6148' & RKB 24' @ 6172.00usft (H&P 318)
Project:	Garfield County, CO NAD83	MD Reference:	GL 6148' & RKB 24' @ 6172.00usft (H&P 318)
Site:	MV 5-10 Pad	North Reference:	True
Well:	Federal GM 334-10	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2 21Sept2016 jcsdi		

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)
4,300.00	31.91	157.62	3,618.57	-2,024.01	833.51	2,188.92	2.50	-2.50	0.00
4,397.04	29.48	157.62	3,702.00	-2,069.82	852.37	2,238.45	2.50	-2.50	0.00
MVRD									
4,400.00	29.41	157.62	3,704.58	-2,071.16	852.93	2,239.91	2.50	-2.50	0.00
4,500.00	26.91	157.62	3,792.74	-2,114.80	870.90	2,287.10	2.50	-2.50	0.00
4,600.00	24.41	157.62	3,882.87	-2,154.84	887.38	2,330.40	2.50	-2.50	0.00
4,700.00	21.91	157.62	3,974.80	-2,191.20	902.36	2,369.73	2.50	-2.50	0.00
4,800.00	19.41	157.62	4,068.36	-2,223.82	915.79	2,405.01	2.50	-2.50	0.00
4,900.00	16.91	157.62	4,163.37	-2,252.64	927.66	2,436.17	2.50	-2.50	0.00
5,000.00	14.41	157.62	4,259.65	-2,277.60	937.94	2,463.16	2.50	-2.50	0.00
5,100.00	11.91	157.62	4,357.02	-2,298.65	946.61	2,485.93	2.50	-2.50	0.00
5,200.00	9.41	157.62	4,455.29	-2,315.75	953.65	2,504.43	2.50	-2.50	0.00
5,300.00	6.91	157.62	4,554.27	-2,328.87	959.06	2,518.62	2.50	-2.50	0.00
5,400.00	4.41	157.62	4,653.77	-2,337.99	962.81	2,528.48	2.50	-2.50	0.00
5,500.00	1.91	157.62	4,753.61	-2,343.09	964.91	2,533.99	2.50	-2.50	0.00
5,576.40	0.00	0.00	4,830.00	-2,344.27	965.39	2,535.27	2.50	-2.50	0.00
KMVGAS - GM 334-10 KMW									
5,600.00	0.00	0.00	4,853.60	-2,344.27	965.39	2,535.27	0.00	0.00	0.00
5,700.00	0.00	0.00	4,953.60	-2,344.27	965.39	2,535.27	0.00	0.00	0.00
5,800.00	0.00	0.00	5,053.60	-2,344.27	965.39	2,535.27	0.00	0.00	0.00
5,900.00	0.00	0.00	5,153.60	-2,344.27	965.39	2,535.27	0.00	0.00	0.00
6,000.00	0.00	0.00	5,253.60	-2,344.27	965.39	2,535.27	0.00	0.00	0.00
6,100.00	0.00	0.00	5,353.60	-2,344.27	965.39	2,535.27	0.00	0.00	0.00
6,200.00	0.00	0.00	5,453.60	-2,344.27	965.39	2,535.27	0.00	0.00	0.00
6,300.00	0.00	0.00	5,553.60	-2,344.27	965.39	2,535.27	0.00	0.00	0.00
6,400.00	0.00	0.00	5,653.60	-2,344.27	965.39	2,535.27	0.00	0.00	0.00
6,500.00	0.00	0.00	5,753.60	-2,344.27	965.39	2,535.27	0.00	0.00	0.00
6,600.00	0.00	0.00	5,853.60	-2,344.27	965.39	2,535.27	0.00	0.00	0.00
6,700.00	0.00	0.00	5,953.60	-2,344.27	965.39	2,535.27	0.00	0.00	0.00
6,800.00	0.00	0.00	6,053.60	-2,344.27	965.39	2,535.27	0.00	0.00	0.00
6,847.40	0.00	0.00	6,101.00	-2,344.27	965.39	2,535.27	0.00	0.00	0.00
CMEQ									
6,900.00	0.00	0.00	6,153.60	-2,344.27	965.39	2,535.27	0.00	0.00	0.00
7,000.00	0.00	0.00	6,253.60	-2,344.27	965.39	2,535.27	0.00	0.00	0.00
7,100.00	0.00	0.00	6,353.60	-2,344.27	965.39	2,535.27	0.00	0.00	0.00
7,200.00	0.00	0.00	6,453.60	-2,344.27	965.39	2,535.27	0.00	0.00	0.00
7,300.00	0.00	0.00	6,553.60	-2,344.27	965.39	2,535.27	0.00	0.00	0.00
7,336.40	0.00	0.00	6,590.00	-2,344.27	965.39	2,535.27	0.00	0.00	0.00
RLNS									
7,400.00	0.00	0.00	6,653.60	-2,344.27	965.39	2,535.27	0.00	0.00	0.00
7,486.40	0.00	0.00	6,740.00	-2,344.27	965.39	2,535.27	0.00	0.00	0.00
GM 334-10 PBHL									

Database:	Grand Junction District	Local Co-ordinate Reference:	Well Federal GM 334-10 - Slot A3
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 6148' & RKB 24' @ 6172.00usft (H&P 318)
Project:	Garfield County, CO NAD83	MD Reference:	GL 6148' & RKB 24' @ 6172.00usft (H&P 318)
Site:	MV 5-10 Pad	North Reference:	True
Well:	Federal GM 334-10	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2 21Sept2016 jcsdi		

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
GM 334-10 KMV - plan hits target center - Circle (radius 25.00)	0.00	0.00	4,830.00	-2,344.27	965.39	1,597,959.80	2,267,736.90	39.4464730	-108.0933607
GM 334-10 PBHL - plan hits target center - Point	0.00	0.00	6,740.00	-2,344.27	965.39	1,597,959.80	2,267,736.90	39.4464730	-108.0933607

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,098.97	1,030.52	9 5/8" @ 1098' MD	9.62	9.62	

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,343.09	2,035.00	G_SAND		0.00	0.00
2,473.14	2,140.00	G_SAND_BASE		0.00	0.00
4,397.04	3,702.00	MVRD		0.00	0.00
5,576.40	4,830.00	KMVGAS		0.00	0.00
6,847.40	6,101.00	CME0		0.00	0.00
7,336.40	6,590.00	RLNS		0.00	0.00