

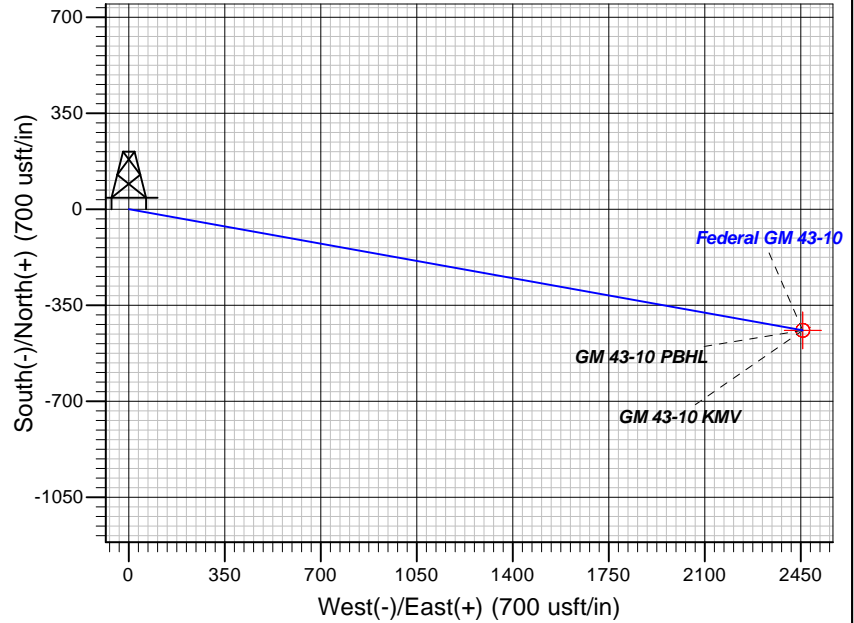
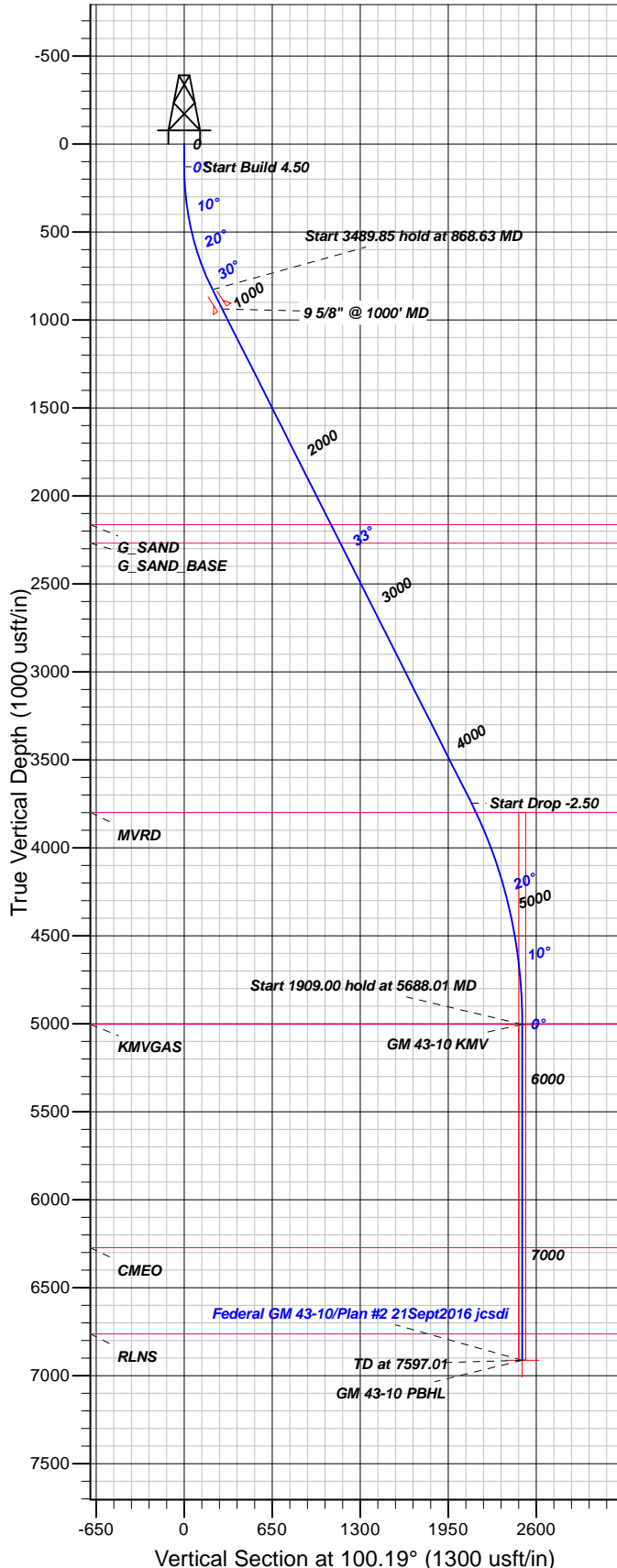
Well Details: Federal GM 43-10

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

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	1600361.00	2266931.60	39.4529995	-108.0964541	A16

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

TVDPth	MDPath	Formation
2163.00	2464.89	G_SAND
2268.00	2590.43	G_SAND_BASE
3798.00	4419.18	MVRD
5003.00	5688.01	KMVGAS
6272.00	6957.01	CMEQ
6762.00	7447.01	RLNS

Plan: Plan #2 21Sept2016 jcsdi

19:06, September 22 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

TVDP	MD	Name	Size
937.77	1000.00	9 5/8" @ 1000' 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	130.00	0.00	0.00	130.00	0.00	0.00	0.00	0.00	0.00	
3	868.63	33.24	100.19	827.89	-36.86	205.02	4.50	100.19	208.30	
4	4358.48	33.24	100.19	3746.80	-375.33	2087.70	0.00	0.002121.17		
5	5688.01	0.00	0.00	5003.00	-441.67	2456.73	2.50	180.002496.11		GM 43-10 KMV
6	7597.01	0.00	0.00	6912.00	-441.67	2456.73	0.00	0.002496.11		GM 43-10 PBHL

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
GM 43-10 KMV	5003.00	-441.67	2456.731599849.30	2269374.70		39.4517866	-108.0877540	Circle (Radius: 25.00)
- plan hits target center								
GM 43-10 PBHL	6912.00	-441.67	2456.731599849.30	2269374.70		39.4517866	-108.0877540	Circle (Radius: 25.00)
- plan hits target center								



TEP Rocky Mountain LLC

Garfield County, CO NAD83

MV 5-10 Pad

Federal GM 43-10 - Slot A16

OH

Plan: Plan #2 21Sept2016 jcsdi

Standard Planning Report

22 September, 2016



Database:	Grand Junction District	Local Co-ordinate Reference:	Well Federal GM 43-10 - Slot A16
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 43-10	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 43-10 - Slot A16			
Well Position	+N/-S	17.72 usft	Northing:	1,600,361.00 usft
	+E/-W	49.41 usft	Easting:	2,266,931.60 usft
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	100.19

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	
130.00	0.00	0.00	130.00	0.00	0.00	0.00	0.00	0.00	0.00	
868.63	33.24	100.19	827.89	-36.86	205.02	4.50	4.50	0.00	100.19	
4,358.48	33.24	100.19	3,746.80	-375.33	2,087.70	0.00	0.00	0.00	0.00	
5,688.01	0.00	0.00	5,003.00	-441.67	2,456.73	2.50	-2.50	0.00	180.00	GM 43-10 KMV
7,597.01	0.00	0.00	6,912.00	-441.67	2,456.73	0.00	0.00	0.00	0.00	GM 43-10 PBHL

Database:	Grand Junction District	Local Co-ordinate Reference:	Well Federal GM 43-10 - Slot A16
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 43-10	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
130.00	0.00	0.00	130.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	3.15	100.19	199.96	-0.34	1.89	1.92	4.50	4.50	0.00
300.00	7.65	100.19	299.50	-2.01	11.15	11.33	4.50	4.50	0.00
400.00	12.15	100.19	397.98	-5.05	28.07	28.52	4.50	4.50	0.00
500.00	16.65	100.19	494.81	-9.45	52.54	53.38	4.50	4.50	0.00
600.00	21.15	100.19	589.40	-15.18	84.41	85.77	4.50	4.50	0.00
700.00	25.65	100.19	681.15	-22.20	123.49	125.47	4.50	4.50	0.00
800.00	30.15	100.19	769.50	-30.48	169.53	172.25	4.50	4.50	0.00
868.63	33.24	100.19	827.89	-36.86	205.02	208.30	4.50	4.50	0.00
900.00	33.24	100.19	854.13	-39.90	221.94	225.50	0.00	0.00	0.00
1,000.00	33.24	100.19	937.77	-49.60	275.89	280.31	0.00	0.00	0.00
9 5/8" @ 1000' MD									
1,100.00	33.24	100.19	1,021.41	-59.30	329.84	335.12	0.00	0.00	0.00
1,200.00	33.24	100.19	1,105.05	-69.00	383.78	389.94	0.00	0.00	0.00
1,300.00	33.24	100.19	1,188.69	-78.70	437.73	444.75	0.00	0.00	0.00
1,400.00	33.24	100.19	1,272.33	-88.39	491.68	499.56	0.00	0.00	0.00
1,500.00	33.24	100.19	1,355.97	-98.09	545.62	554.37	0.00	0.00	0.00
1,600.00	33.24	100.19	1,439.61	-107.79	599.57	609.18	0.00	0.00	0.00
1,700.00	33.24	100.19	1,523.25	-117.49	653.52	664.00	0.00	0.00	0.00
1,800.00	33.24	100.19	1,606.89	-127.19	707.47	718.81	0.00	0.00	0.00
1,900.00	33.24	100.19	1,690.53	-136.89	761.41	773.62	0.00	0.00	0.00
2,000.00	33.24	100.19	1,774.17	-146.59	815.36	828.43	0.00	0.00	0.00
2,100.00	33.24	100.19	1,857.81	-156.29	869.31	883.25	0.00	0.00	0.00
2,200.00	33.24	100.19	1,941.45	-165.98	923.26	938.06	0.00	0.00	0.00
2,300.00	33.24	100.19	2,025.09	-175.68	977.20	992.87	0.00	0.00	0.00
2,400.00	33.24	100.19	2,108.73	-185.38	1,031.15	1,047.68	0.00	0.00	0.00
2,464.89	33.24	100.19	2,163.00	-191.68	1,066.15	1,083.25	0.00	0.00	0.00
G_SAND									
2,500.00	33.24	100.19	2,192.37	-195.08	1,085.10	1,102.49	0.00	0.00	0.00
2,590.43	33.24	100.19	2,268.00	-203.85	1,133.88	1,152.06	0.00	0.00	0.00
G_SAND_BASE									
2,600.00	33.24	100.19	2,276.01	-204.78	1,139.04	1,157.31	0.00	0.00	0.00
2,700.00	33.24	100.19	2,359.65	-214.48	1,192.99	1,212.12	0.00	0.00	0.00
2,800.00	33.24	100.19	2,443.29	-224.18	1,246.94	1,266.93	0.00	0.00	0.00
2,900.00	33.24	100.19	2,526.93	-233.88	1,300.89	1,321.74	0.00	0.00	0.00
3,000.00	33.24	100.19	2,610.57	-243.57	1,354.83	1,376.55	0.00	0.00	0.00
3,100.00	33.24	100.19	2,694.21	-253.27	1,408.78	1,431.37	0.00	0.00	0.00
3,200.00	33.24	100.19	2,777.85	-262.97	1,462.73	1,486.18	0.00	0.00	0.00
3,300.00	33.24	100.19	2,861.49	-272.67	1,516.67	1,540.99	0.00	0.00	0.00
3,400.00	33.24	100.19	2,945.13	-282.37	1,570.62	1,595.80	0.00	0.00	0.00
3,500.00	33.24	100.19	3,028.77	-292.07	1,624.57	1,650.61	0.00	0.00	0.00
3,600.00	33.24	100.19	3,112.41	-301.77	1,678.52	1,705.43	0.00	0.00	0.00
3,700.00	33.24	100.19	3,196.05	-311.47	1,732.46	1,760.24	0.00	0.00	0.00
3,800.00	33.24	100.19	3,279.69	-321.16	1,786.41	1,815.05	0.00	0.00	0.00
3,900.00	33.24	100.19	3,363.33	-330.86	1,840.36	1,869.86	0.00	0.00	0.00
4,000.00	33.24	100.19	3,446.97	-340.56	1,894.31	1,924.68	0.00	0.00	0.00
4,100.00	33.24	100.19	3,530.61	-350.26	1,948.25	1,979.49	0.00	0.00	0.00
4,200.00	33.24	100.19	3,614.25	-359.96	2,002.20	2,034.30	0.00	0.00	0.00
4,300.00	33.24	100.19	3,697.89	-369.66	2,056.15	2,089.11	0.00	0.00	0.00
4,358.48	33.24	100.19	3,746.80	-375.33	2,087.70	2,121.17	0.00	0.00	0.00
4,400.00	32.20	100.19	3,781.73	-379.30	2,109.78	2,143.61	2.50	-2.50	0.00

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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 43-10	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)	
4,419.18	31.72	100.19	3,798.00	-381.10	2,119.77	2,153.76	2.50	-2.50	0.00	
MVRD										
4,500.00	29.70	100.19	3,867.49	-388.40	2,160.40	2,195.03	2.50	-2.50	0.00	
4,600.00	27.20	100.19	3,955.40	-396.83	2,207.28	2,242.67	2.50	-2.50	0.00	
4,700.00	24.70	100.19	4,045.31	-404.57	2,250.35	2,286.42	2.50	-2.50	0.00	
4,800.00	22.20	100.19	4,137.04	-411.61	2,289.51	2,326.22	2.50	-2.50	0.00	
4,900.00	19.70	100.19	4,230.43	-417.94	2,324.70	2,361.97	2.50	-2.50	0.00	
5,000.00	17.20	100.19	4,325.28	-423.54	2,355.85	2,393.61	2.50	-2.50	0.00	
5,100.00	14.70	100.19	4,421.42	-428.40	2,382.89	2,421.09	2.50	-2.50	0.00	
5,200.00	12.20	100.19	4,518.67	-432.52	2,405.78	2,444.35	2.50	-2.50	0.00	
5,300.00	9.70	100.19	4,616.84	-435.88	2,424.48	2,463.35	2.50	-2.50	0.00	
5,400.00	7.20	100.19	4,715.75	-438.48	2,438.94	2,478.04	2.50	-2.50	0.00	
5,500.00	4.70	100.19	4,815.20	-440.31	2,449.14	2,488.40	2.50	-2.50	0.00	
5,600.00	2.20	100.19	4,915.01	-441.38	2,455.06	2,494.42	2.50	-2.50	0.00	
5,688.01	0.00	0.00	5,003.00	-441.67	2,456.73	2,496.11	2.50	-2.50	0.00	
KMVGAS - GM 43-10 KMW										
5,700.00	0.00	0.00	5,014.99	-441.67	2,456.73	2,496.11	0.00	0.00	0.00	
5,800.00	0.00	0.00	5,114.99	-441.67	2,456.73	2,496.11	0.00	0.00	0.00	
5,900.00	0.00	0.00	5,214.99	-441.67	2,456.73	2,496.11	0.00	0.00	0.00	
6,000.00	0.00	0.00	5,314.99	-441.67	2,456.73	2,496.11	0.00	0.00	0.00	
6,100.00	0.00	0.00	5,414.99	-441.67	2,456.73	2,496.11	0.00	0.00	0.00	
6,200.00	0.00	0.00	5,514.99	-441.67	2,456.73	2,496.11	0.00	0.00	0.00	
6,300.00	0.00	0.00	5,614.99	-441.67	2,456.73	2,496.11	0.00	0.00	0.00	
6,400.00	0.00	0.00	5,714.99	-441.67	2,456.73	2,496.11	0.00	0.00	0.00	
6,500.00	0.00	0.00	5,814.99	-441.67	2,456.73	2,496.11	0.00	0.00	0.00	
6,600.00	0.00	0.00	5,914.99	-441.67	2,456.73	2,496.11	0.00	0.00	0.00	
6,700.00	0.00	0.00	6,014.99	-441.67	2,456.73	2,496.11	0.00	0.00	0.00	
6,800.00	0.00	0.00	6,114.99	-441.67	2,456.73	2,496.11	0.00	0.00	0.00	
6,900.00	0.00	0.00	6,214.99	-441.67	2,456.73	2,496.11	0.00	0.00	0.00	
6,957.01	0.00	0.00	6,272.00	-441.67	2,456.73	2,496.11	0.00	0.00	0.00	
CMEO										
7,000.00	0.00	0.00	6,314.99	-441.67	2,456.73	2,496.11	0.00	0.00	0.00	
7,100.00	0.00	0.00	6,414.99	-441.67	2,456.73	2,496.11	0.00	0.00	0.00	
7,200.00	0.00	0.00	6,514.99	-441.67	2,456.73	2,496.11	0.00	0.00	0.00	
7,300.00	0.00	0.00	6,614.99	-441.67	2,456.73	2,496.11	0.00	0.00	0.00	
7,400.00	0.00	0.00	6,714.99	-441.67	2,456.73	2,496.11	0.00	0.00	0.00	
7,447.01	0.00	0.00	6,762.00	-441.67	2,456.73	2,496.11	0.00	0.00	0.00	
RLNS										
7,500.00	0.00	0.00	6,814.99	-441.67	2,456.73	2,496.11	0.00	0.00	0.00	
7,597.01	0.00	0.00	6,912.00	-441.67	2,456.73	2,496.11	0.00	0.00	0.00	
GM 43-10 PBHL										

Database:	Grand Junction District	Local Co-ordinate Reference:	Well Federal GM 43-10 - Slot A16
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 43-10	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2 21Sept2016 jcsdi		

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									
GM 43-10 KMV	0.00	0.00	5,003.00	-441.67	2,456.73	1,599,849.30	2,269,374.70	39.4517866	-108.0877540
- plan hits target center									
- Circle (radius 25.00)									
GM 43-10 PBHL	0.00	0.00	6,912.00	-441.67	2,456.73	1,599,849.30	2,269,374.70	39.4517866	-108.0877540
- plan hits target center									
- Circle (radius 25.00)									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,000.00	937.77	9 5/8" @ 1000' MD	9.62	9.62	

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,464.89	2,163.00	G_SAND		0.00	0.00
2,590.43	2,268.00	G_SAND_BASE		0.00	0.00
4,419.18	3,798.00	MVRD		0.00	0.00
5,688.01	5,003.00	KMVGAS		0.00	0.00
6,957.01	6,272.00	CME0		0.00	0.00
7,447.01	6,762.00	RLNS		0.00	0.00