

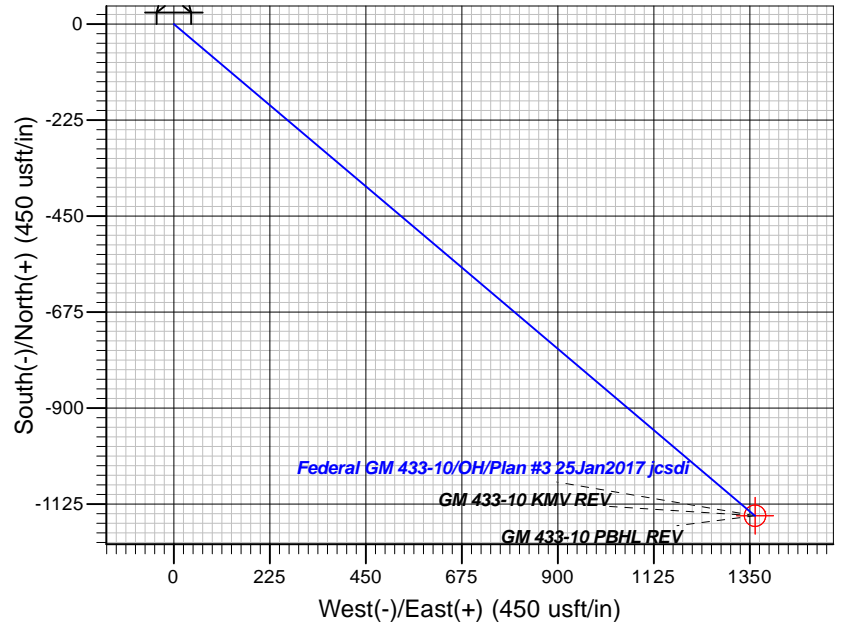
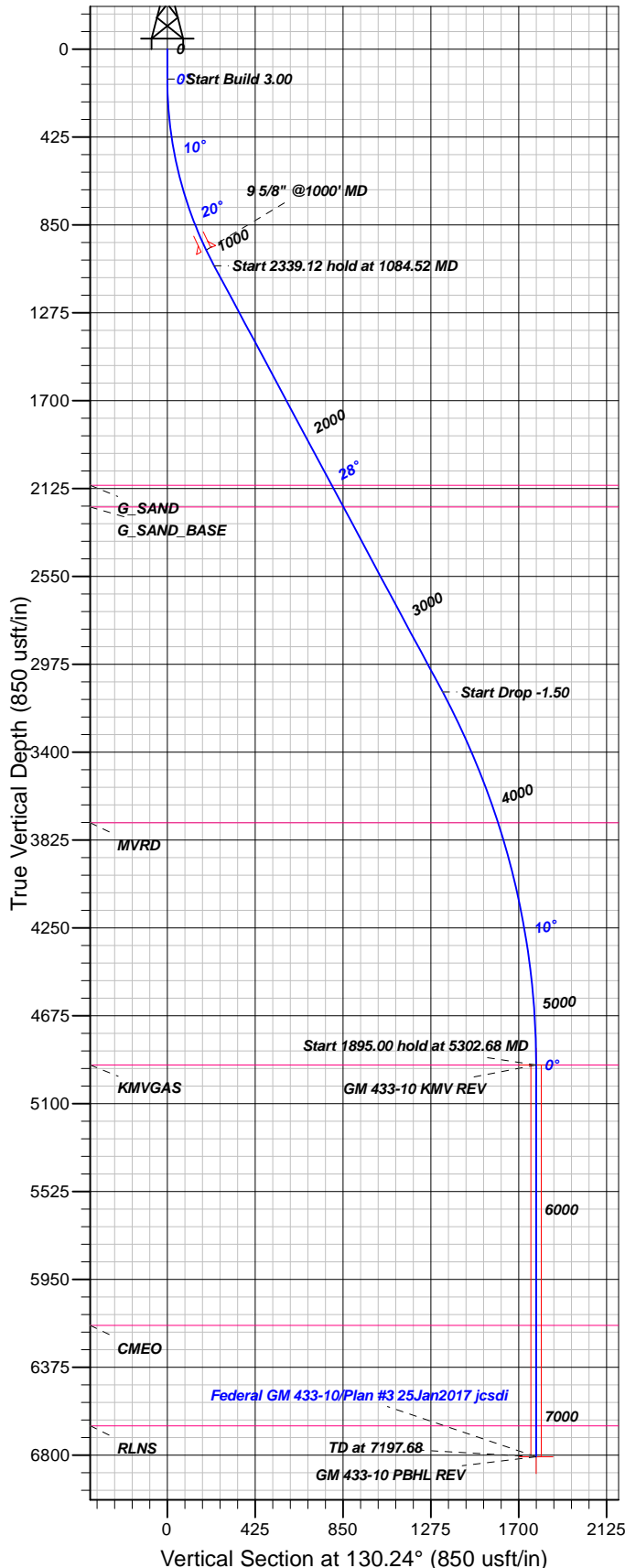
Well Details: Federal GM 433-10

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

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	1600347.20	2266857.20	39.4529558	-108.0967161	B6

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
2109.00	2289.30	G_SAND
2214.00	2408.42	G_SAND_BASE
3741.00	4111.47	MVRD
4913.00	5302.68	KMVGAS
6172.00	6561.68	CMEQ
6658.00	7047.68	RLNS

Plan: Plan #3 25Jan2017 jcsdi

11:59, January 26 2017
 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
971.73	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	145.00	0.00	0.00	145.00	0.00	0.00	0.00	0.00	0.00	
3	1084.52	28.19	130.24	1047.08	-146.28	172.88	3.00	130.24	226.47	
4	3423.64	28.19	130.24	3108.83	-859.93	1016.31	0.00	0.00	0.00	
5	5302.68	0.00	0.00	4913.00	-1152.49	1362.08	1.50	180.00	1784.24	GM 433-10 KMV REV
6	7197.68	0.00	0.00	6808.00	-1152.49	1362.08	0.00	0.00	1784.24	GM 433-10 PBHL REV

DESIGN TARGET DETAILS

Name	TVDP	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
GM 433-10 KMV REV 4913.00	-1152.49	1362.08	1599156.25	2268185.79	39.4497916	-108.0918926	Circle (Radius: 25.00)	
- plan hits target center								
GM 433-10 PBHL REV6808.00	-1152.49	1362.08	1599156.25	2268185.79	39.4497916	-108.0918926	Point	
- plan hits target center								



TEP Rocky Mountain LLC

Garfield County, CO NAD83

MV 5-10 Pad

Federal GM 433-10 - Slot B6

OH

Plan: Plan #3 25Jan2017 jcsdi

Standard Planning Report

26 January, 2017



Database:	Grand Junction District	Local Co-ordinate Reference:	Well Federal GM 433-10 - Slot B6
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 433-10	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3 25Jan2017 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 433-10 - Slot B6					
Well Position	+N/-S	1.80 usft	Northing:	1,600,347.20 usft	Latitude:	39.4529559
	+E/-W	-24.56 usft	Easting:	2,266,857.20 usft	Longitude:	-108.0967161
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 #3 25Jan2017 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	130.24

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	
1,084.52	28.19	130.24	1,047.08	-146.28	172.88	3.00	3.00	0.00	130.24	
3,423.64	28.19	130.24	3,108.83	-859.93	1,016.31	0.00	0.00	0.00	0.00	
5,302.68	0.00	0.00	4,913.00	-1,152.49	1,362.08	1.50	-1.50	0.00	180.00	GM 433-10 KMV REV
7,197.68	0.00	0.00	6,808.00	-1,152.49	1,362.08	0.00	0.00	0.00	0.00	GM 433-10 PBHL RE'

Database:	Grand Junction District	Local Co-ordinate Reference:	Well Federal GM 433-10 - Slot B6
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 433-10	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3 25Jan2017 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	1.65	130.24	199.99	-0.51	0.60	0.79	3.00	3.00	0.00	
300.00	4.65	130.24	299.83	-4.06	4.80	6.29	3.00	3.00	0.00	
400.00	7.65	130.24	399.24	-10.98	12.98	17.00	3.00	3.00	0.00	
500.00	10.65	130.24	497.96	-21.25	25.11	32.90	3.00	3.00	0.00	
600.00	13.65	130.24	595.71	-34.84	41.18	53.94	3.00	3.00	0.00	
700.00	16.65	130.24	692.22	-51.72	61.13	80.07	3.00	3.00	0.00	
800.00	19.65	130.24	787.23	-71.84	84.91	111.22	3.00	3.00	0.00	
900.00	22.65	130.24	880.49	-95.14	112.45	147.30	3.00	3.00	0.00	
1,000.00	25.65	130.24	971.73	-121.57	143.68	188.21	3.00	3.00	0.00	
9 5/8" @1000' MD										
1,084.52	28.19	130.24	1,047.08	-146.28	172.88	226.47	3.00	3.00	0.00	
1,100.00	28.19	130.24	1,060.72	-151.00	178.47	233.78	0.00	0.00	0.00	
1,200.00	28.19	130.24	1,148.87	-181.51	214.52	281.01	0.00	0.00	0.00	
1,300.00	28.19	130.24	1,237.01	-212.02	250.58	328.24	0.00	0.00	0.00	
1,400.00	28.19	130.24	1,325.15	-242.53	286.64	375.48	0.00	0.00	0.00	
1,500.00	28.19	130.24	1,413.29	-273.04	322.69	422.71	0.00	0.00	0.00	
1,600.00	28.19	130.24	1,501.44	-303.55	358.75	469.94	0.00	0.00	0.00	
1,700.00	28.19	130.24	1,589.58	-334.06	394.81	517.17	0.00	0.00	0.00	
1,800.00	28.19	130.24	1,677.72	-364.57	430.87	564.41	0.00	0.00	0.00	
1,900.00	28.19	130.24	1,765.86	-395.08	466.92	611.64	0.00	0.00	0.00	
2,000.00	28.19	130.24	1,854.00	-425.59	502.98	658.87	0.00	0.00	0.00	
2,100.00	28.19	130.24	1,942.15	-456.09	539.04	706.11	0.00	0.00	0.00	
2,200.00	28.19	130.24	2,030.29	-486.60	575.10	753.34	0.00	0.00	0.00	
2,289.30	28.19	130.24	2,109.00	-513.85	607.30	795.52	0.00	0.00	0.00	
G_SAND										
2,300.00	28.19	130.24	2,118.43	-517.11	611.15	800.57	0.00	0.00	0.00	
2,400.00	28.19	130.24	2,206.57	-547.62	647.21	847.80	0.00	0.00	0.00	
2,408.42	28.19	130.24	2,214.00	-550.19	650.25	851.79	0.00	0.00	0.00	
G_SAND_BASE										
2,500.00	28.19	130.24	2,294.71	-578.13	683.27	895.04	0.00	0.00	0.00	
2,599.99	28.19	130.24	2,382.86	-608.64	719.33	942.27	0.00	0.00	0.00	
2,699.99	28.19	130.24	2,471.00	-639.15	755.38	989.50	0.00	0.00	0.00	
2,799.99	28.19	130.24	2,559.14	-669.66	791.44	1,036.74	0.00	0.00	0.00	
2,899.99	28.19	130.24	2,647.28	-700.17	827.50	1,083.97	0.00	0.00	0.00	
2,999.99	28.19	130.24	2,735.42	-730.68	863.56	1,131.20	0.00	0.00	0.00	
3,099.99	28.19	130.24	2,823.57	-761.19	899.61	1,178.43	0.00	0.00	0.00	
3,199.99	28.19	130.24	2,911.71	-791.70	935.67	1,225.67	0.00	0.00	0.00	
3,299.99	28.19	130.24	2,999.85	-822.20	971.73	1,272.90	0.00	0.00	0.00	
3,399.99	28.19	130.24	3,087.99	-852.71	1,007.79	1,320.13	0.00	0.00	0.00	
3,423.64	28.19	130.24	3,108.83	-859.93	1,016.31	1,331.30	0.00	0.00	0.00	
3,499.99	27.04	130.24	3,176.49	-882.79	1,043.33	1,366.69	1.50	-1.50	0.00	
3,599.99	25.54	130.24	3,266.14	-911.40	1,077.14	1,410.98	1.50	-1.50	0.00	
3,699.99	24.04	130.24	3,356.93	-938.48	1,109.15	1,452.91	1.50	-1.50	0.00	
3,799.99	22.54	130.24	3,448.77	-964.02	1,139.33	1,492.45	1.50	-1.50	0.00	
3,899.99	21.04	130.24	3,541.63	-987.99	1,167.67	1,529.57	1.50	-1.50	0.00	
3,999.99	19.54	130.24	3,635.42	-1,010.39	1,194.14	1,564.24	1.50	-1.50	0.00	
4,099.99	18.04	130.24	3,730.08	-1,031.20	1,218.73	1,596.45	1.50	-1.50	0.00	
4,111.47	17.87	130.24	3,741.00	-1,033.48	1,221.43	1,599.99	1.50	-1.50	0.00	
MVRD										

Database:	Grand Junction District	Local Co-ordinate Reference:	Well Federal GM 433-10 - Slot B6
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 433-10	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3 25Jan2017 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)
4,199.99	16.54	130.24	3,825.56	-1,050.39	1,241.42	1,626.17	1.50	-1.50	0.00
4,299.99	15.04	130.24	3,921.79	-1,067.97	1,262.19	1,653.39	1.50	-1.50	0.00
4,399.99	13.54	130.24	4,018.69	-1,083.91	1,281.03	1,678.07	1.50	-1.50	0.00
4,499.99	12.04	130.24	4,116.21	-1,098.21	1,297.93	1,700.21	1.50	-1.50	0.00
4,599.99	10.54	130.24	4,214.27	-1,110.86	1,312.88	1,719.78	1.50	-1.50	0.00
4,699.99	9.04	130.24	4,312.81	-1,121.84	1,325.86	1,736.79	1.50	-1.50	0.00
4,799.99	7.54	130.24	4,411.76	-1,131.16	1,336.87	1,751.21	1.50	-1.50	0.00
4,899.99	6.04	130.24	4,511.05	-1,138.79	1,345.89	1,763.03	1.50	-1.50	0.00
4,999.99	4.54	130.24	4,610.63	-1,144.75	1,352.93	1,772.25	1.50	-1.50	0.00
5,099.99	3.04	130.24	4,710.40	-1,149.02	1,357.98	1,778.86	1.50	-1.50	0.00
5,199.99	1.54	130.24	4,810.32	-1,151.60	1,361.03	1,782.86	1.50	-1.50	0.00
5,299.99	0.04	130.24	4,910.31	-1,152.49	1,362.08	1,784.24	1.50	-1.50	0.00
5,302.58	0.00	130.21	4,912.89	-1,152.49	1,362.08	1,784.24	1.50	-1.50	-0.87
GM 433-10 KMV									
5,302.68	0.00	0.00	4,913.00	-1,152.49	1,362.08	1,784.24	1.50	-1.50	-122,970.88
KMVGAS - GM 433-10 KMV REV									
5,399.99	0.00	0.00	5,010.31	-1,152.49	1,362.08	1,784.24	0.00	0.00	0.00
5,499.99	0.00	0.00	5,110.31	-1,152.49	1,362.08	1,784.24	0.00	0.00	0.00
5,599.99	0.00	0.00	5,210.31	-1,152.49	1,362.08	1,784.24	0.00	0.00	0.00
5,699.99	0.00	0.00	5,310.31	-1,152.49	1,362.08	1,784.24	0.00	0.00	0.00
5,799.99	0.00	0.00	5,410.31	-1,152.49	1,362.08	1,784.24	0.00	0.00	0.00
5,899.99	0.00	0.00	5,510.31	-1,152.49	1,362.08	1,784.24	0.00	0.00	0.00
5,999.99	0.00	0.00	5,610.31	-1,152.49	1,362.08	1,784.24	0.00	0.00	0.00
6,099.99	0.00	0.00	5,710.31	-1,152.49	1,362.08	1,784.24	0.00	0.00	0.00
6,199.99	0.00	0.00	5,810.31	-1,152.49	1,362.08	1,784.24	0.00	0.00	0.00
6,299.99	0.00	0.00	5,910.31	-1,152.49	1,362.08	1,784.24	0.00	0.00	0.00
6,399.99	0.00	0.00	6,010.31	-1,152.49	1,362.08	1,784.24	0.00	0.00	0.00
6,499.99	0.00	0.00	6,110.31	-1,152.49	1,362.08	1,784.24	0.00	0.00	0.00
6,561.68	0.00	0.00	6,172.00	-1,152.49	1,362.08	1,784.24	0.00	0.00	0.00
CMEO									
6,599.99	0.00	0.00	6,210.31	-1,152.49	1,362.08	1,784.24	0.00	0.00	0.00
6,699.99	0.00	0.00	6,310.31	-1,152.49	1,362.08	1,784.24	0.00	0.00	0.00
6,799.99	0.00	0.00	6,410.31	-1,152.49	1,362.08	1,784.24	0.00	0.00	0.00
6,899.99	0.00	0.00	6,510.31	-1,152.49	1,362.08	1,784.24	0.00	0.00	0.00
6,999.99	0.00	0.00	6,610.31	-1,152.49	1,362.08	1,784.24	0.00	0.00	0.00
7,047.68	0.00	0.00	6,658.00	-1,152.49	1,362.08	1,784.24	0.00	0.00	0.00
RLNS									
7,099.99	0.00	0.00	6,710.31	-1,152.49	1,362.08	1,784.24	0.00	0.00	0.00
7,197.68	0.00	0.00	6,808.00	-1,152.49	1,362.08	1,784.24	0.00	0.00	0.00
GM 433-10 PBHL - GM 433-10 PBHL REV									

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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 433-10	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3 25Jan2017 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 433-10 KMV REV - plan hits target center - Circle (radius 25.00)	0.00	0.00	4,913.00	-1,152.49	1,362.08	1,599,156.25	2,268,185.79	39.4497916	-108.0918926
GM 433-10 PBHL REV - plan hits target center - Point	0.00	0.00	6,808.00	-1,152.49	1,362.08	1,599,156.25	2,268,185.79	39.4497916	-108.0918926

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,000.00	971.73	9 5/8" @1000' MD	9.62	9.62	

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,289.30	2,109.00	G_SAND		0.00	0.00
2,408.42	2,214.00	G_SAND_BASE		0.00	0.00
4,111.47	3,741.00	MVRD		0.00	0.00
5,302.68	4,913.00	KMVGAS		0.00	0.00
6,561.68	6,172.00	CME0		0.00	0.00
7,047.68	6,658.00	RLNS		0.00	0.00