

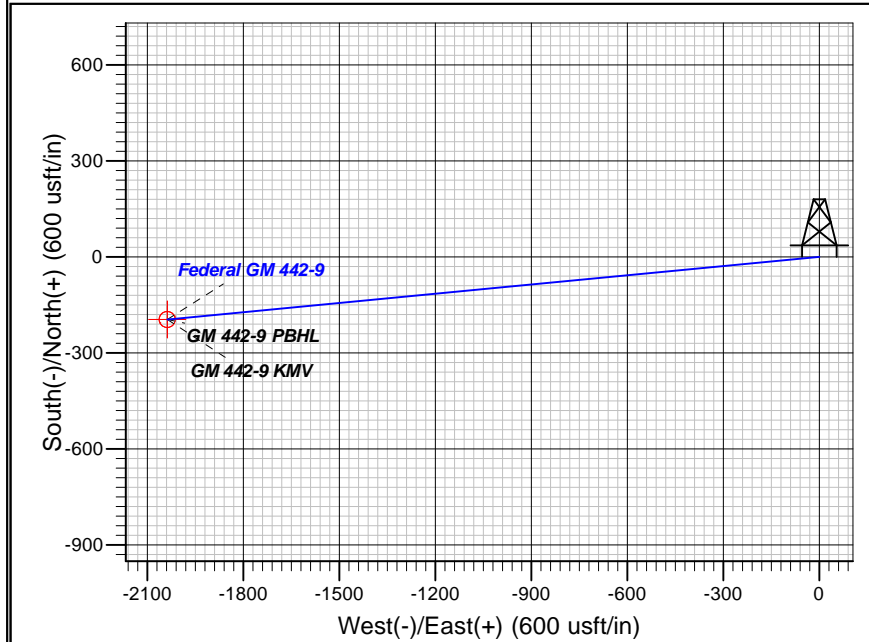
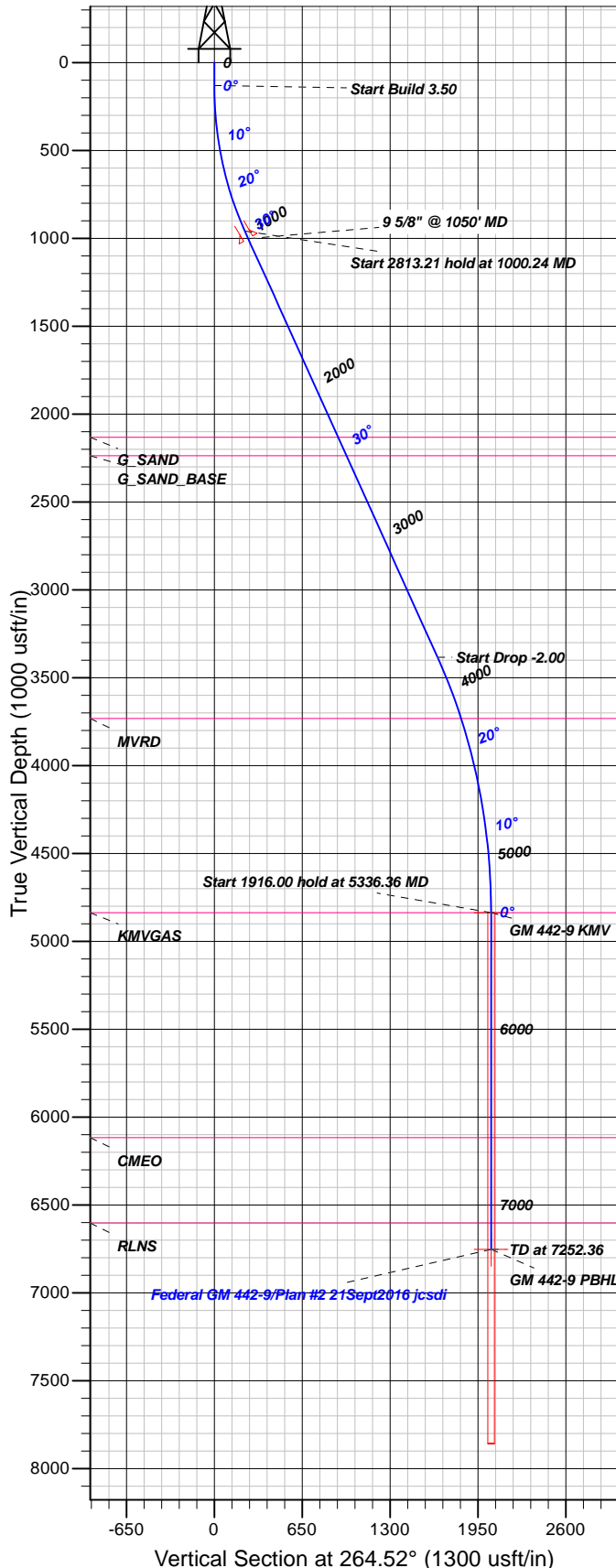
Well Details: Federal GM 442-9

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

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	1600340.20	2266835.80	39.4529349	-108.0967911	B3

T M Azimuths to True North
 Magnetic North: 9.71°

Magnetic Field
 Strength: 51587.1snT
 Dip Angle: 65.58°
 Date: 9/14/2016
 Model: BGGM2016



FORMATION TOP DETAILS

TVDPath	MDPath	Formation
2132.00	2360.07	G_SAND
2237.00	2481.88	G_SAND_BASE
3732.00	4201.95	MVRD
4837.00	5336.36	KMGAS
6117.00	6616.36	CMEQ
6603.00	7102.36	RLNS

Plan: Plan #2 21Sept2016 jcsdi

17:52, 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

TVD	MD	Name	Size
1002.93	1050.24	9 5/8" @ 1050' 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	1000.24	30.46	264.52	959.83	-21.59	-224.88	3.50	264.52	225.91	
4	3813.44	30.46	264.52	3384.80	-157.85	-1644.40	0.00	0.00	1651.96	
5	5336.36	0.00	0.00	4837.00	-195.63	-2037.94	2.00	180.00	2047.31	GM 442-9 KMV
6	7252.36	0.00	0.00	6753.00	-195.63	-2037.94	0.00	0.00	2047.31	GM 442-9 PBHL

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
GM 442-9 KMV	4837.00	-195.63	-2037.94	1600202.90	2264793.10	39.4523976	-108.1040083	Circle (Radius: 25.00)
- plan hits target center								
GM 442-9 PBHL	6753.00	-195.63	-2037.94	1600202.90	2264793.10	39.4523976	-108.1040083	Point
- plan hits target center								



TEP Rocky Mountain LLC

Garfield County, CO NAD83

MV 5-10 Pad

Federal GM 442-9 - Slot B3

OH

Plan: Plan #2 21Sept2016 jcsdi

Standard Planning Report

22 September, 2016



Database:	Grand Junction District	Local Co-ordinate Reference:	Well Federal GM 442-9 - Slot B3
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 442-9	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 442-9 - Slot B3			
Well Position	+N/-S	-5.81 usft	Northing:	1,600,340.20 usft
	+E/-W	-45.75 usft	Easting:	2,266,835.80 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	9/14/2016	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	264.52

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	
1,000.24	30.46	264.52	959.83	-21.59	-224.88	3.50	3.50	0.00	264.52	
3,813.44	30.46	264.52	3,384.80	-157.85	-1,644.40	0.00	0.00	0.00	0.00	
5,336.36	0.00	0.00	4,837.00	-195.63	-2,037.94	2.00	-2.00	0.00	180.00	GM 442-9 KMV
7,252.36	0.00	0.00	6,753.00	-195.63	-2,037.94	0.00	0.00	0.00	0.00	GM 442-9 PBHL

Database:	Grand Junction District	Local Co-ordinate Reference:	Well Federal GM 442-9 - Slot B3
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 442-9	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	2.45	264.52	199.98	-0.14	-1.49	1.50	3.50	3.50	0.00	
300.00	5.95	264.52	299.69	-0.84	-8.78	8.82	3.50	3.50	0.00	
400.00	9.45	264.52	398.78	-2.12	-22.11	22.22	3.50	3.50	0.00	
500.00	12.95	264.52	496.86	-3.98	-41.45	41.64	3.50	3.50	0.00	
600.00	16.45	264.52	593.57	-6.40	-66.70	67.01	3.50	3.50	0.00	
700.00	19.95	264.52	688.55	-9.39	-97.79	98.24	3.50	3.50	0.00	
800.00	23.45	264.52	781.45	-12.92	-134.59	135.21	3.50	3.50	0.00	
900.00	26.95	264.52	871.92	-16.99	-176.96	177.78	3.50	3.50	0.00	
1,000.00	30.45	264.52	959.62	-21.57	-224.76	225.79	3.50	3.50	0.00	
1,000.24	30.46	264.52	959.83	-21.59	-224.88	225.91	3.50	3.50	0.00	
1,050.24	30.46	264.52	1,002.93	-24.01	-250.11	251.26	0.00	0.00	0.00	
9 5/8" @ 1050' MD										
1,100.00	30.46	264.52	1,045.82	-26.42	-275.22	276.48	0.00	0.00	0.00	
1,200.00	30.46	264.52	1,132.02	-31.26	-325.68	327.17	0.00	0.00	0.00	
1,300.00	30.46	264.52	1,218.22	-36.11	-376.14	377.87	0.00	0.00	0.00	
1,400.00	30.46	264.52	1,304.42	-40.95	-426.60	428.56	0.00	0.00	0.00	
1,500.00	30.46	264.52	1,390.62	-45.79	-477.05	479.25	0.00	0.00	0.00	
1,600.00	30.46	264.52	1,476.82	-50.64	-527.51	529.94	0.00	0.00	0.00	
1,700.00	30.46	264.52	1,563.02	-55.48	-577.97	580.63	0.00	0.00	0.00	
1,800.00	30.46	264.52	1,649.22	-60.32	-628.43	631.32	0.00	0.00	0.00	
1,900.00	30.46	264.52	1,735.42	-65.17	-678.89	682.01	0.00	0.00	0.00	
2,000.00	30.46	264.52	1,821.62	-70.01	-729.35	732.70	0.00	0.00	0.00	
2,100.00	30.46	264.52	1,907.82	-74.86	-779.81	783.40	0.00	0.00	0.00	
2,200.00	30.46	264.52	1,994.02	-79.70	-830.27	834.09	0.00	0.00	0.00	
2,300.00	30.46	264.52	2,080.22	-84.54	-880.73	884.78	0.00	0.00	0.00	
2,360.07	30.46	264.52	2,132.00	-87.45	-911.04	915.23	0.00	0.00	0.00	
G_SAND										
2,400.00	30.46	264.52	2,166.42	-89.39	-931.19	935.47	0.00	0.00	0.00	
2,481.88	30.46	264.52	2,237.00	-93.35	-972.51	976.98	0.00	0.00	0.00	
G_SAND_BASE										
2,500.00	30.46	264.52	2,252.62	-94.23	-981.65	986.16	0.00	0.00	0.00	
2,600.00	30.46	264.52	2,338.82	-99.07	-1,032.11	1,036.85	0.00	0.00	0.00	
2,700.00	30.46	264.52	2,425.02	-103.92	-1,082.57	1,087.54	0.00	0.00	0.00	
2,800.00	30.46	264.52	2,511.22	-108.76	-1,133.03	1,138.23	0.00	0.00	0.00	
2,900.00	30.46	264.52	2,597.42	-113.60	-1,183.48	1,188.93	0.00	0.00	0.00	
3,000.00	30.46	264.52	2,683.62	-118.45	-1,233.94	1,239.62	0.00	0.00	0.00	
3,100.00	30.46	264.52	2,769.82	-123.29	-1,284.40	1,290.31	0.00	0.00	0.00	
3,200.00	30.46	264.52	2,856.02	-128.14	-1,334.86	1,341.00	0.00	0.00	0.00	
3,300.00	30.46	264.52	2,942.22	-132.98	-1,385.32	1,391.69	0.00	0.00	0.00	
3,400.00	30.46	264.52	3,028.41	-137.82	-1,435.78	1,442.38	0.00	0.00	0.00	
3,500.00	30.46	264.52	3,114.61	-142.67	-1,486.24	1,493.07	0.00	0.00	0.00	
3,600.00	30.46	264.52	3,200.81	-147.51	-1,536.70	1,543.76	0.00	0.00	0.00	
3,700.00	30.46	264.52	3,287.01	-152.35	-1,587.16	1,594.45	0.00	0.00	0.00	
3,800.00	30.46	264.52	3,373.21	-157.20	-1,637.62	1,645.15	0.00	0.00	0.00	
3,813.44	30.46	264.52	3,384.80	-157.85	-1,644.40	1,651.96	0.00	0.00	0.00	
3,900.00	28.73	264.52	3,460.07	-161.93	-1,686.95	1,694.70	2.00	-2.00	0.00	
4,000.00	26.73	264.52	3,548.58	-166.38	-1,733.26	1,741.23	2.00	-2.00	0.00	
4,100.00	24.73	264.52	3,638.66	-170.53	-1,776.47	1,784.63	2.00	-2.00	0.00	
4,200.00	22.73	264.52	3,730.20	-174.37	-1,816.52	1,824.87	2.00	-2.00	0.00	

Database:	Grand Junction District	Local Co-ordinate Reference:	Well Federal GM 442-9 - Slot B3
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 442-9	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)
4,201.95	22.69	264.52	3,732.00	-174.44	-1,817.27	1,825.62	2.00	-2.00	0.00
MVRD									
4,300.00	20.73	264.52	3,823.09	-177.91	-1,853.37	1,861.89	2.00	-2.00	0.00
4,400.00	18.73	264.52	3,917.22	-181.13	-1,886.97	1,895.64	2.00	-2.00	0.00
4,500.00	16.73	264.52	4,012.47	-184.04	-1,917.27	1,926.09	2.00	-2.00	0.00
4,600.00	14.73	264.52	4,108.72	-186.63	-1,944.25	1,953.19	2.00	-2.00	0.00
4,700.00	12.73	264.52	4,205.86	-188.90	-1,967.88	1,976.92	2.00	-2.00	0.00
4,800.00	10.73	264.52	4,303.76	-190.84	-1,988.11	1,997.24	2.00	-2.00	0.00
4,900.00	8.73	264.52	4,402.32	-192.46	-2,004.92	2,014.14	2.00	-2.00	0.00
5,000.00	6.73	264.52	4,501.41	-193.74	-2,018.31	2,027.59	2.00	-2.00	0.00
5,100.00	4.73	264.52	4,600.90	-194.69	-2,028.24	2,037.56	2.00	-2.00	0.00
5,200.00	2.73	264.52	4,700.69	-195.32	-2,034.71	2,044.06	2.00	-2.00	0.00
5,300.00	0.73	264.52	4,800.64	-195.60	-2,037.71	2,047.08	2.00	-2.00	0.00
5,336.36	0.00	0.00	4,837.00	-195.63	-2,037.94	2,047.31	2.00	-2.00	262.58
KMVGAS - GM 442-9 KMV									
5,400.00	0.00	0.00	4,900.64	-195.63	-2,037.94	2,047.31	0.00	0.00	0.00
5,500.00	0.00	0.00	5,000.64	-195.63	-2,037.94	2,047.31	0.00	0.00	0.00
5,600.00	0.00	0.00	5,100.64	-195.63	-2,037.94	2,047.31	0.00	0.00	0.00
5,700.00	0.00	0.00	5,200.64	-195.63	-2,037.94	2,047.31	0.00	0.00	0.00
5,800.00	0.00	0.00	5,300.64	-195.63	-2,037.94	2,047.31	0.00	0.00	0.00
5,900.00	0.00	0.00	5,400.64	-195.63	-2,037.94	2,047.31	0.00	0.00	0.00
6,000.00	0.00	0.00	5,500.64	-195.63	-2,037.94	2,047.31	0.00	0.00	0.00
6,100.00	0.00	0.00	5,600.64	-195.63	-2,037.94	2,047.31	0.00	0.00	0.00
6,200.00	0.00	0.00	5,700.64	-195.63	-2,037.94	2,047.31	0.00	0.00	0.00
6,300.00	0.00	0.00	5,800.64	-195.63	-2,037.94	2,047.31	0.00	0.00	0.00
6,400.00	0.00	0.00	5,900.64	-195.63	-2,037.94	2,047.31	0.00	0.00	0.00
6,500.00	0.00	0.00	6,000.64	-195.63	-2,037.94	2,047.31	0.00	0.00	0.00
6,600.00	0.00	0.00	6,100.64	-195.63	-2,037.94	2,047.31	0.00	0.00	0.00
6,616.36	0.00	0.00	6,117.00	-195.63	-2,037.94	2,047.31	0.00	0.00	0.00
CME0									
6,700.00	0.00	0.00	6,200.64	-195.63	-2,037.94	2,047.31	0.00	0.00	0.00
6,800.00	0.00	0.00	6,300.64	-195.63	-2,037.94	2,047.31	0.00	0.00	0.00
6,900.00	0.00	0.00	6,400.64	-195.63	-2,037.94	2,047.31	0.00	0.00	0.00
7,000.00	0.00	0.00	6,500.64	-195.63	-2,037.94	2,047.31	0.00	0.00	0.00
7,100.00	0.00	0.00	6,600.64	-195.63	-2,037.94	2,047.31	0.00	0.00	0.00
7,102.36	0.00	0.00	6,603.00	-195.63	-2,037.94	2,047.31	0.00	0.00	0.00
RLNS									
7,200.00	0.00	0.00	6,700.64	-195.63	-2,037.94	2,047.31	0.00	0.00	0.00
7,252.36	0.00	0.00	6,753.00	-195.63	-2,037.94	2,047.31	0.00	0.00	0.00
GM 442-9 PBHL									

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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 442-9	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 442-9 KMV - plan hits target center - Circle (radius 25.00)	0.00	0.00	4,837.00	-195.63	-2,037.94	1,600,202.90	2,264,793.10	39.4523977	-108.1040083
GM 442-9 PBHL - plan hits target center - Point	0.00	0.00	6,753.00	-195.63	-2,037.94	1,600,202.90	2,264,793.10	39.4523977	-108.1040083

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,050.24	1,002.93	9 5/8" @ 1050' MD	9.62	9.62	

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,360.07	2,132.00	G_SAND		0.00	0.00
2,481.88	2,237.00	G_SAND_BASE		0.00	0.00
4,201.95	3,732.00	MVRD		0.00	0.00
5,336.36	4,837.00	KMVGAS		0.00	0.00
6,616.36	6,117.00	CME0		0.00	0.00
7,102.36	6,603.00	RLNS		0.00	0.00