



# Shell Gulf of Mexico Inc.

Off Shore Zone 3

Posey

OCS-Y-2321\_BJ001\_ST00BP00

OCS-Y-2321\_BJ001\_ST00BP00

55-352-00004-00

## **Sperry Drilling** Definitive Survey Report

02 November, 2015



**HALLIBURTON**

Sperry Drilling



### REFERENCE INFORMATION

Co-ordinate (N/E) Reference: Well OCS-Y-2321\_BJ001\_ST00BP00, Grid North  
 Vertical (TVD) Reference: Burger J @ 76.0ft (Polar Pioneer)  
 Measured Depth Reference: Burger J @ 76.0ft (Polar Pioneer)  
 Geodetic Datum: North American Datum 1983  
 Calculation Method: Minimum Curvature

### WELL DETAILS: OCS-Y-2321\_BJ001\_ST00BP00

+N/-S	+E/-W	Northing	Easting	Water Depth:146.0	Longitude	Slot
0.0	0.0	7897425.31	555034.55	Latitude 71° 10' 24.059 N	163° 28' 18.666 W	

### COMPANY DETAILS: Shell Gulf of Mexico Inc.

Calculation Method: Minimum Curvature  
 Error System: ISCWSA  
 Scan Method: Closest Approach 3D  
 Error Surface: Elliptical Conic  
 Warning Method: Error Ratio

### Project: Off Shore Zone 3

Site: Posey

Well: OCS-Y-2321\_BJ001\_ST00BP00

Wellbore: OCS-Y-2321\_BJ001\_ST00BP00

Design: Burger J

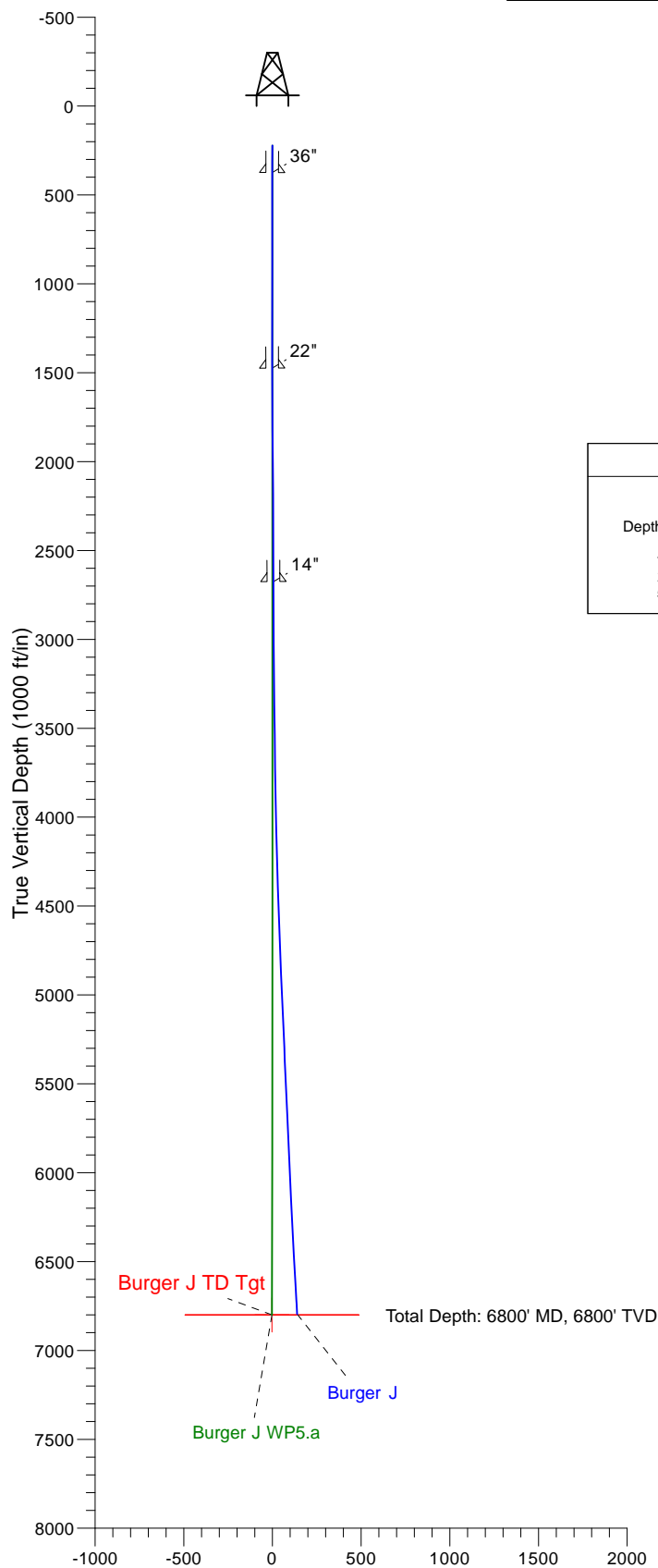
### CASING DETAILS

TVD	TVDSS	MD	Size	Name
375.0	299.0	375.0	36.000	36"
1475.0	1399.0	1475.0	22.000	22"
2675.9	2599.9	2676.0	14.000	14"

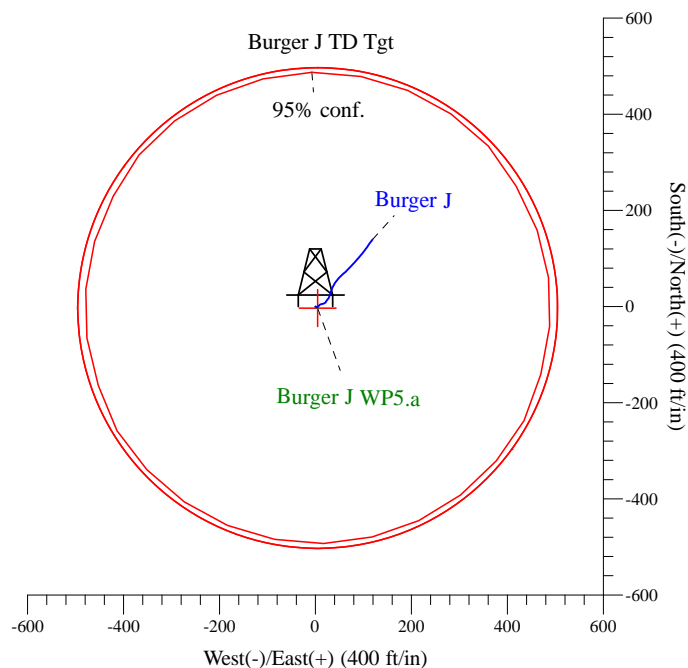
### SURVEY PROGRAM

Date: 2012-09-28T00:00:00 Validated: Yes Version:

Depth From	Depth To	Survey/Plan	Tool
320.9	1378.5	Burger J Surveys (OCS-Y-2321_BJ001_ST00BP00)	MWD+SC
1540.2	2646.2	Burger J Surveys (OCS-Y-2321_BJ001_ST00BP00)	MWD+SC
2743.0	5364.2	Burger J Surveys (OCS-Y-2321_BJ001_ST00BP00)	MWD+SC
5429.2	6745.1	Burger J Surveys (OCS-Y-2321_BJ001_ST00BP00)	MWD+SC



Vertical Section at 0.00° (1000 ft/in)



West(-)/East(+) (400 ft/in)

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## Definitive Survey Report

<b>Company:</b>	Shell Gulf of Mexico Inc.	<b>Local Co-ordinate Reference:</b>	Well OCS-Y-2321_BJ001_ST00BP00
<b>Project:</b>	Off Shore Zone 3	<b>TVD Reference:</b>	Burger J @ 76.0ft (Polar Pioneer)
<b>Site:</b>	Posey	<b>MD Reference:</b>	Burger J @ 76.0ft (Polar Pioneer)
<b>Well:</b>	OCS-Y-2321_BJ001_ST00BP00	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	OCS-Y-2321_BJ001_ST00BP00	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Burger J	<b>Database:</b>	Sperry EDM - NORTH US + CANADA

<b>Project</b>	Off Shore Zone 3		
<b>Map System:</b>	Universal Transverse Mercator	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		Using Well Reference Point
<b>Map Zone:</b>	Zone 03N (168 W to 162 W)		Using geodetic scale factor

<b>Well</b>	OCS-Y-2321_BJ001_ST00BP00, Exploration Well (Burger J)				
<b>Well Position</b>	<b>+N/-S</b>	0.0 ft	<b>Northing:</b>	7,897,425.31 m	<b>Latitude:</b> 71° 10' 24.059 N
	<b>+E/-W</b>	0.0 ft	<b>Easting:</b>	555,034.55 m	<b>Longitude:</b> 163° 28' 18.666 W
<b>Position Uncertainty</b>		0.0 ft	<b>Wellhead Depth:</b>	-76.0 ft	<b>Water Depth:</b> 146.0 ft

<b>Wellbore</b>	OCS-Y-2321_BJ001_ST00BP00				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	BGGM2015	7/25/2015	12.40	80.32	57,374

<b>Design</b>	Burger J				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	222.0
<b>Vertical Section:</b>	<b>Depth From (TVD)</b>	<b>+N/-S</b>	<b>+E/-W</b>	<b>Direction</b>	
	(ft)	(ft)	(ft)	(°)	
	222.0	0.0	0.0	0.00	

<b>Survey Program</b>	<b>Date</b>	10/7/2015			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	<b>Survey Date</b>
320.9	1,378.5	Burger J Surveys (OCS-Y-2321_BJ001_	MWD+SC	Fixed:v2:standard dec & axial correction	09/30/2015
1,540.2	2,646.2	Burger J Surveys (OCS-Y-2321_BJ001_	MWD+SC	Fixed:v2:standard dec & axial correction	09/30/2015
2,743.0	5,364.2	Burger J Surveys (OCS-Y-2321_BJ001_	MWD+SC	Fixed:v2:standard dec & axial correction	09/30/2015
5,429.2	6,745.1	Burger J Surveys (OCS-Y-2321_BJ001_	MWD+SC	Fixed:v2:standard dec & axial correction	09/30/2015

<b>Survey</b>												
<b>MD (ft)</b>	<b>Inc (°)</b>	<b>Azi (°)</b>	<b>TVD (ft)</b>	<b>TVDSS (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Map Northing (ft)</b>	<b>Map Easting (ft)</b>	<b>DLS (°/100')</b>	<b>Vertical Section (ft)</b>	<b>Survey Tool Name</b>	
222.0	0.00	0.00	222.0	146.0	0.0	0.0	7,897,425.3	555,034.6	0.0	0.00	UNDEFINED	
320.9	0.51	129.60	320.9	244.9	-0.3	0.3	7,897,425.2	555,034.7	0.5	-0.28	MWD+SC (1)	
406.8	0.31	89.93	406.8	330.8	-0.5	0.9	7,897,425.2	555,034.8	0.4	-0.52	MWD+SC (1)	
495.3	0.99	122.22	495.2	419.2	-0.9	1.8	7,897,425.0	555,035.1	0.8	-0.93	MWD+SC (1)	
590.4	0.31	82.72	590.4	514.4	-1.3	2.7	7,897,424.9	555,035.4	0.8	-1.34	MWD+SC (1)	
684.1	0.64	327.24	684.0	608.0	-0.9	2.7	7,897,425.0	555,035.4	0.9	-0.86	MWD+SC (1)	
866.1	0.28	101.20	866.1	790.1	-0.1	2.6	7,897,425.3	555,035.3	0.5	-0.10	MWD+SC (1)	
958.0	0.00	269.46	958.0	882.0	-0.1	2.8	7,897,425.3	555,035.4	0.3	-0.14	MWD+SC (1)	
1,051.7	0.14	176.72	1,051.6	975.6	-0.3	2.8	7,897,425.2	555,035.4	0.1	-0.25	MWD+SC (1)	
1,144.5	0.26	120.65	1,144.5	1,068.5	-0.5	3.0	7,897,425.2	555,035.5	0.2	-0.47	MWD+SC (1)	
1,235.7	0.41	134.11	1,235.6	1,159.6	-0.8	3.4	7,897,425.1	555,035.6	0.2	-0.81	MWD+SC (1)	

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## Definitive Survey Report

<b>Company:</b>	Shell Gulf of Mexico Inc.	<b>Local Co-ordinate Reference:</b>	Well OCS-Y-2321_BJ001_ST00BP00
<b>Project:</b>	Off Shore Zone 3	<b>TVD Reference:</b>	Burger J @ 76.0ft (Polar Pioneer)
<b>Site:</b>	Posey	<b>MD Reference:</b>	Burger J @ 76.0ft (Polar Pioneer)
<b>Well:</b>	OCS-Y-2321_BJ001_ST00BP00	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	OCS-Y-2321_BJ001_ST00BP00	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Burger J	<b>Database:</b>	Sperry EDM - NORTH US + CANADA

Survey											
MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (ft)	Map Easting (ft)	DLS (°/100')	Vertical Section (ft)	Survey Tool Name
1,328.6	0.51	59.75	1,328.6	1,252.6	-0.8	4.0	7,897,425.1	555,035.8	0.6	-0.83	MWD+SC (1)
1,378.5	0.25	111.62	1,378.5	1,302.5	-0.8	4.3	7,897,425.1	555,035.9	0.8	-0.76	MWD+SC (1)
1,540.2	0.12	50.83	1,540.2	1,464.2	-0.8	4.7	7,897,425.1	555,036.0	0.1	-0.78	MWD+SC (2)
1,723.7	0.39	34.99	1,723.7	1,647.7	-0.1	5.2	7,897,425.3	555,036.1	0.2	-0.15	MWD+SC (2)
1,818.6	0.58	50.01	1,818.6	1,742.6	0.4	5.8	7,897,425.4	555,036.3	0.2	0.42	MWD+SC (2)
2,003.2	1.06	39.81	2,003.1	1,927.1	2.3	7.6	7,897,426.0	555,036.9	0.3	2.34	MWD+SC (2)
2,095.9	0.87	35.51	2,095.9	2,019.9	3.6	8.6	7,897,426.4	555,037.2	0.2	3.57	MWD+SC (2)
2,186.2	0.69	72.12	2,186.1	2,110.1	4.3	9.5	7,897,426.6	555,037.4	0.6	4.29	MWD+SC (2)
2,373.3	0.75	76.36	2,373.3	2,297.3	4.9	11.7	7,897,426.8	555,038.1	0.0	4.93	MWD+SC (2)
2,463.9	0.78	75.65	2,463.8	2,387.8	5.2	12.9	7,897,426.9	555,038.5	0.0	5.22	MWD+SC (2)
2,555.3	0.79	70.25	2,555.2	2,479.2	5.6	14.1	7,897,427.0	555,038.8	0.1	5.59	MWD+SC (2)
2,646.2	0.79	76.51	2,646.1	2,570.1	5.9	15.3	7,897,427.1	555,039.2	0.1	5.95	MWD+SC (2)
2,743.0	0.70	74.08	2,742.9	2,666.9	6.3	16.5	7,897,427.2	555,039.6	0.1	6.27	MWD+SC (3)
2,837.4	0.74	67.59	2,837.3	2,761.3	6.7	17.6	7,897,427.3	555,039.9	0.1	6.66	MWD+SC (3)
2,875.4	0.64	69.95	2,875.3	2,799.3	6.8	18.1	7,897,427.4	555,040.1	0.3	6.82	MWD+SC (3)
2,978.3	0.74	64.69	2,978.2	2,902.2	7.3	19.2	7,897,427.5	555,040.4	0.1	7.30	MWD+SC (3)
3,074.6	0.58	52.33	3,074.4	2,998.4	7.9	20.2	7,897,427.7	555,040.7	0.2	7.87	MWD+SC (3)
3,169.0	0.67	47.05	3,168.9	3,092.9	8.5	20.9	7,897,427.9	555,040.9	0.1	8.54	MWD+SC (3)
3,258.9	0.77	27.36	3,258.8	3,182.8	9.4	21.6	7,897,428.2	555,041.1	0.3	9.43	MWD+SC (3)
3,351.8	0.94	33.05	3,351.6	3,275.6	10.6	22.3	7,897,428.5	555,041.3	0.2	10.62	MWD+SC (3)
3,445.4	0.89	33.34	3,445.2	3,369.2	11.9	23.1	7,897,428.9	555,041.6	0.1	11.87	MWD+SC (3)
3,537.9	0.88	39.68	3,537.7	3,461.7	13.0	24.0	7,897,429.3	555,041.9	0.1	13.02	MWD+SC (3)
3,630.3	0.86	29.57	3,630.1	3,554.1	14.2	24.8	7,897,429.6	555,042.1	0.2	14.17	MWD+SC (3)
3,724.1	1.05	46.97	3,723.9	3,647.9	15.4	25.7	7,897,430.0	555,042.4	0.4	15.37	MWD+SC (3)
3,815.5	1.16	37.46	3,815.2	3,739.2	16.7	26.9	7,897,430.4	555,042.8	0.2	16.67	MWD+SC (3)
3,910.0	1.11	27.77	3,909.7	3,833.7	18.2	27.9	7,897,430.9	555,043.1	0.2	18.24	MWD+SC (3)
4,002.0	1.54	18.87	4,001.7	3,925.7	20.2	28.7	7,897,431.5	555,043.3	0.5	20.20	MWD+SC (3)
4,095.2	1.55	21.22	4,094.9	4,018.9	22.6	29.6	7,897,432.2	555,043.6	0.1	22.56	MWD+SC (3)
4,189.2	1.52	19.27	4,188.8	4,112.8	24.9	30.5	7,897,432.9	555,043.8	0.1	24.92	MWD+SC (3)
4,280.7	1.73	13.84	4,280.3	4,204.3	27.4	31.2	7,897,433.7	555,044.1	0.3	27.41	MWD+SC (3)
4,373.3	2.11	22.24	4,372.8	4,296.8	30.3	32.2	7,897,434.6	555,044.4	0.5	30.35	MWD+SC (3)
4,465.7	1.69	19.56	4,465.2	4,389.2	33.2	33.3	7,897,435.4	555,044.7	0.5	33.21	MWD+SC (3)
4,559.0	2.02	19.56	4,558.5	4,482.5	36.0	34.3	7,897,436.3	555,045.0	0.4	36.05	MWD+SC (3)
4,651.2	2.19	23.91	4,650.6	4,574.6	39.2	35.6	7,897,437.3	555,045.4	0.3	39.19	MWD+SC (3)
4,743.3	2.64	25.07	4,742.6	4,666.6	42.7	37.2	7,897,438.3	555,045.9	0.5	42.72	MWD+SC (3)
4,836.9	3.09	32.03	4,836.1	4,760.1	46.8	39.4	7,897,439.6	555,046.6	0.6	46.81	MWD+SC (3)
4,929.2	3.15	34.87	4,928.3	4,852.3	51.0	42.2	7,897,440.8	555,047.4	0.2	51.00	MWD+SC (3)
5,021.5	3.28	37.85	5,020.5	4,944.5	55.2	45.3	7,897,442.1	555,048.3	0.2	55.17	MWD+SC (3)
5,113.6	3.34	39.69	5,112.4	5,036.4	59.3	48.6	7,897,443.4	555,049.4	0.1	59.32	MWD+SC (3)
5,206.2	3.59	47.76	5,204.8	5,128.8	63.3	52.5	7,897,444.6	555,050.5	0.6	63.34	MWD+SC (3)

# Halliburton

## Definitive Survey Report

<b>Company:</b>	Shell Gulf of Mexico Inc.	<b>Local Co-ordinate Reference:</b>	Well OCS-Y-2321_BJ001_ST00BP00
<b>Project:</b>	Off Shore Zone 3	<b>TVD Reference:</b>	Burger J @ 76.0ft (Polar Pioneer)
<b>Site:</b>	Posey	<b>MD Reference:</b>	Burger J @ 76.0ft (Polar Pioneer)
<b>Well:</b>	OCS-Y-2321_BJ001_ST00BP00	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	OCS-Y-2321_BJ001_ST00BP00	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Burger J	<b>Database:</b>	Sperry EDM - NORTH US + CANADA

Survey											
MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (ft)	Map Easting (ft)	DLS (°/100')	Vertical Section (ft)	Survey Tool Name
5,299.1	3.70	48.27	5,297.5	5,221.5	67.3	56.8	7,897,445.8	555,051.9	0.1	67.29	MWD+SC (3)
5,364.2	3.45	52.11	5,362.5	5,286.5	69.9	60.0	7,897,446.6	555,052.8	0.5	69.89	MWD+SC (3)
5,429.8	3.65	46.91	5,428.0	5,352.0	72.5	63.0	7,897,447.4	555,053.8	0.6	72.53	MWD+SC (4)
5,518.3	3.73	45.18	5,516.3	5,440.3	76.5	67.1	7,897,448.6	555,055.0	0.2	76.49	MWD+SC (4)
5,612.7	3.58	42.26	5,610.5	5,534.5	80.8	71.3	7,897,449.9	555,056.3	0.3	80.83	MWD+SC (4)
5,704.1	3.56	42.97	5,701.7	5,625.7	85.0	75.2	7,897,451.2	555,057.4	0.1	85.02	MWD+SC (4)
5,795.2	3.47	41.51	5,792.6	5,716.6	89.1	78.9	7,897,452.5	555,058.6	0.1	89.15	MWD+SC (4)
5,889.3	3.48	42.48	5,886.6	5,810.6	93.4	82.7	7,897,453.8	555,059.8	0.1	93.40	MWD+SC (4)
5,980.7	3.42	42.67	5,977.8	5,901.8	97.4	86.4	7,897,455.0	555,060.9	0.1	97.44	MWD+SC (4)
6,075.1	3.43	41.69	6,072.0	5,996.0	101.6	90.2	7,897,456.3	555,062.0	0.1	101.62	MWD+SC (4)
6,167.8	3.55	39.12	6,164.6	6,088.6	105.9	93.9	7,897,457.6	555,063.2	0.2	105.92	MWD+SC (4)
6,259.6	3.53	39.52	6,256.2	6,180.2	110.3	97.5	7,897,458.9	555,064.3	0.0	110.31	MWD+SC (4)
6,346.6	3.75	37.26	6,343.0	6,267.0	114.6	100.9	7,897,460.2	555,065.3	0.3	114.64	MWD+SC (4)
6,445.4	3.99	34.54	6,441.5	6,365.5	120.0	104.8	7,897,461.9	555,066.5	0.3	120.04	MWD+SC (4)
6,536.5	3.96	35.37	6,532.5	6,456.5	125.2	108.4	7,897,463.5	555,067.6	0.1	125.22	MWD+SC (4)
6,628.6	3.92	37.01	6,624.4	6,548.4	130.3	112.2	7,897,465.0	555,068.7	0.1	130.33	MWD+SC (4)
6,721.6	3.89	35.41	6,717.2	6,641.2	135.4	115.9	7,897,466.6	555,069.9	0.1	135.44	MWD+SC (4)
6,745.1	3.99	35.86	6,740.5	6,664.5	136.7	116.8	7,897,467.0	555,070.2	0.4	136.74	MWD+SC (4)
6,800.0	3.99	35.86	6,795.4	6,719.4	139.8	119.1	7,897,467.9	555,070.8	0.0	139.84	PROJECTED to TD

Checked By: _____	Approved By: _____	Date: _____
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