



US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

WELD_SATER 25-8 PAD

P_SATER 21-8

P_SATER 21-8

Plan: PLAN #1 5-10-10 RHS

Standard Planning Report

10 May, 2010

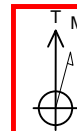




Project: COLORADO NORTHERN ZONE - 83
Site: WELD_SATER 25-8 PAD
Well: P_SATER 21-8
Wellbore: P_SATER 21-8
Section: SECTION 8 T2N R67W
SHL: 2466 FNL 2554 FEL
Design: PLAN #1 5-10-10 RHS
Latitude: 40° 9' 12.578 N
Longitude: 104° 54' 49.320 W
GL: 4908.00
KB: WELL @ 4923.00ft (Original Well Elev)



Weatherford



Azimuths to True North
Magnetic North: 9.07°

Magnetic Field
Strength: 53100.4nT
Dip Angle: 66.86°
Date: 5/10/2010
Model: IGRF2010

LEGEND

- P_SATER 24-8, P_SATER 24-8, PLAN #1 5-10-10 RHS V0
- P_SATER 2-8, P_SATER 2-8, PLAN #1 5-10-10 RHS V0
- P_SATER 28-8, P_SATER 28-8, PLAN #1 5-10-10 RHS V0
- P_SATER 7-8, P_SATER 7-8, PLAN #1 5-10-10 RHS V0
- P_SATER 8-8, P_SATER 8-8, PLAN #1 5-10-10 RHS V0
- PLAN #1 5-10-10 RHS

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
3840.00	3918.69	PARKMAN
4358.00	4454.43	SUSSEX
7148.00	7288.87	NIO
7408.00	7548.87	CODELL
7480.00	7620.87	GREEN HORN
7830.00	7970.87	JSAND

CASING DETAILS

TVD	MD	Name	Size
950.00	950.00	8 5/8"	8.62

SECTION DETAILS

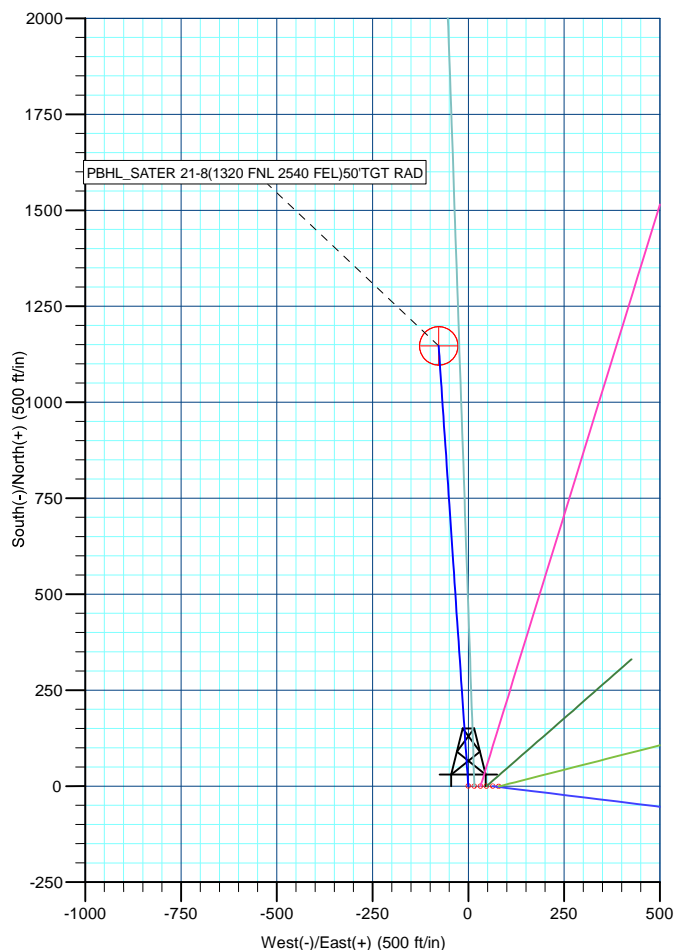
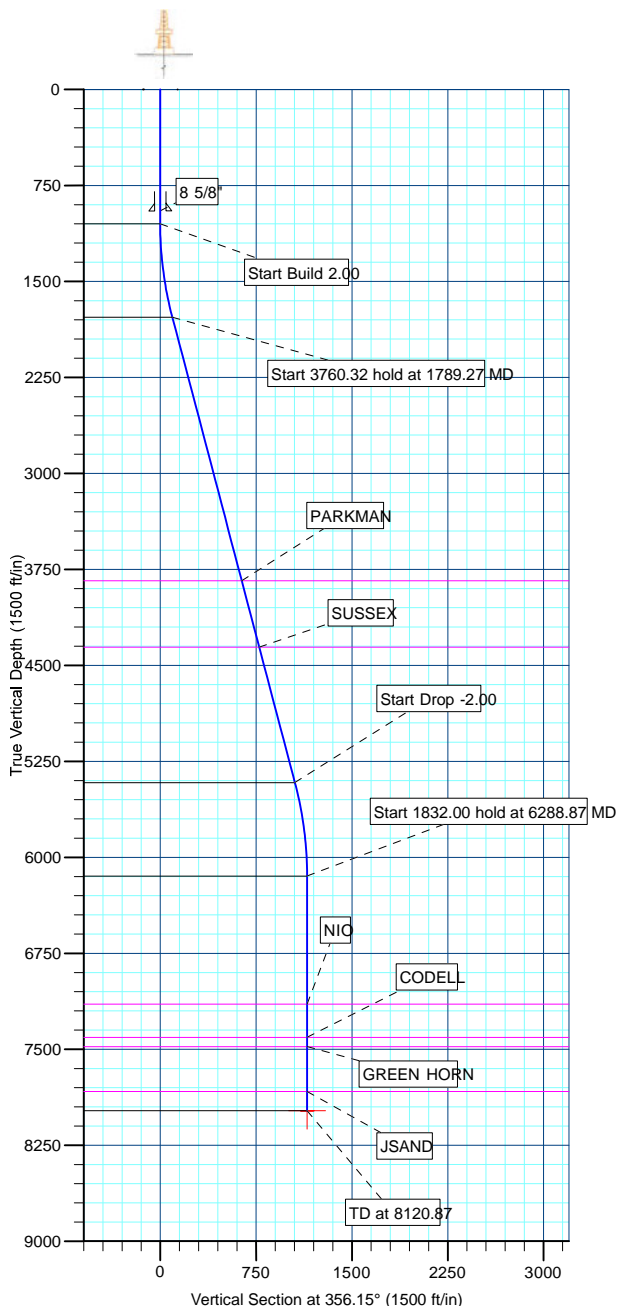
MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1050.00	0.00	0.00	1050.00	0.00	0.00	0.00	0.00	0.00	Start Build 2.00
1789.27	14.79	356.15	1781.09	94.64	-6.37	2.00	356.15	94.86	Start 3760.32 hold at 1789.27 MD
5549.59	14.79	356.15	5416.91	1052.11	-70.78	0.00	0.00	1054.49	Start Drop -2.00
6288.87	0.00	0.00	6148.00	1146.76	-77.14	2.00	180.00	1149.35	Start 1832.00 hold at 6288.87 MD
8120.87	0.00	0.00	7980.00	1146.76	-77.14	0.00	0.00	1149.35	TD at 8120.87

WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
PBHL	7980.00	1146.76	-77.14	40° 9' 23.911 N	104° 54' 50.314 W	Circle (Radius: 50.00)

WELL DETAILS: P_SATER 21-8

+N/-S	+E/-W	Northing	Ground Level:	4908.00	Latitude	Longitude	Slot
0.00	0.00	1299302.95	Easting	3163883.16	40° 9' 12.578 N	104° 54' 49.320 W	



Plan: PLAN #1 5-10-10 RHS (P_SATER 21-8/P_SATER 21-8)

Created By: Robert H. Scott Date: 11:02, May 10 2010

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_SATER 21-8
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 4923.00ft (Original Well Elev)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 4923.00ft (Original Well Elev)
Site:	WELD_SATER 25-8 PAD	North Reference:	True
Well:	P_SATER 21-8	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_SATER 21-8		
Design:	PLAN #1 5-10-10 RHS		

Project	COLORADO NORTHERN ZONE - 83, KERR MCGEE OIL & GAS ONSHORE LP		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site						WELD_SATER 25-8 PAD, SECTION 8 T2N R67W											
Site Position:			Northing:			1,299,302.95 ft			Latitude:			40° 9' 12.578 N					
From:			Lat/Long			Easting:			3,163,883.16 ft			Longitude:			104° 54' 49.320 W		
Position Uncertainty:			0.00 ft			Slot Radius:			in			Grid Convergence:			0.38 °		

Well	P_SATER 21-8					
Well Position	+N/-S	0.00 ft	Northing:	1,299,302.95 ft	Latitude:	40° 9' 12.578 N
	+E/-W	0.00 ft	Easting:	3,163,883.16 ft	Longitude:	104° 54' 49.320 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	4,908.00 ft

Wellbore	P_SATER 21-8				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	5/10/2010	9.07	66.86	53,100

Design	PLAN #1 5-10-10 RHS			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	356.15

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,050.00	0.00	0.00	1,050.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,789.27	14.79	356.15	1,781.09	94.64	-6.37	2.00	2.00	0.00	356.15	
5,549.59	14.79	356.15	5,416.91	1,052.11	-70.78	0.00	0.00	0.00	0.00	
6,288.87	0.00	0.00	6,148.00	1,146.76	-77.14	2.00	-2.00	0.00	180.00	
8,120.87	0.00	0.00	7,980.00	1,146.76	-77.14	0.00	0.00	0.00	0.00	PBHL_SATER 21-8

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_SATER 21-8
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 4923.00ft (Original Well Elev)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 4923.00ft (Original Well Elev)
Site:	WELD_SATER 25-8 PAD	North Reference:	True
Well:	P_SATER 21-8	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_SATER 21-8		
Design:	PLAN #1 5-10-10 RHS		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
Start Build 2.00									
1,050.00	0.00	0.00	1,050.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	1.00	356.15	1,100.00	0.44	-0.03	0.44	2.00	2.00	0.00
1,200.00	3.00	356.15	1,199.93	3.92	-0.26	3.93	2.00	2.00	0.00
1,300.00	5.00	356.15	1,299.68	10.88	-0.73	10.90	2.00	2.00	0.00
1,400.00	7.00	356.15	1,399.13	21.31	-1.43	21.35	2.00	2.00	0.00
1,500.00	9.00	356.15	1,498.15	35.19	-2.37	35.27	2.00	2.00	0.00
1,600.00	11.00	356.15	1,596.63	52.52	-3.53	52.63	2.00	2.00	0.00
1,700.00	13.00	356.15	1,694.44	73.26	-4.93	73.42	2.00	2.00	0.00
Start 3760.32 hold at 1789.27 MD									
1,789.27	14.79	356.15	1,781.09	94.64	-6.37	94.86	2.00	2.00	0.00
1,800.00	14.79	356.15	1,791.47	97.38	-6.55	97.60	0.00	0.00	0.00
1,900.00	14.79	356.15	1,888.16	122.84	-8.26	123.12	0.00	0.00	0.00
2,000.00	14.79	356.15	1,984.84	148.30	-9.98	148.64	0.00	0.00	0.00
2,100.00	14.79	356.15	2,081.53	173.76	-11.69	174.16	0.00	0.00	0.00
2,200.00	14.79	356.15	2,178.22	199.23	-13.40	199.68	0.00	0.00	0.00
2,300.00	14.79	356.15	2,274.91	224.69	-15.12	225.20	0.00	0.00	0.00
2,400.00	14.79	356.15	2,371.60	250.15	-16.83	250.72	0.00	0.00	0.00
2,500.00	14.79	356.15	2,468.29	275.61	-18.54	276.24	0.00	0.00	0.00
2,600.00	14.79	356.15	2,564.98	301.08	-20.25	301.76	0.00	0.00	0.00
2,700.00	14.79	356.15	2,661.67	326.54	-21.97	327.28	0.00	0.00	0.00
2,800.00	14.79	356.15	2,758.36	352.00	-23.68	352.80	0.00	0.00	0.00
2,900.00	14.79	356.15	2,855.04	377.46	-25.39	378.32	0.00	0.00	0.00
3,000.00	14.79	356.15	2,951.73	402.93	-27.11	403.84	0.00	0.00	0.00
3,100.00	14.79	356.15	3,048.42	428.39	-28.82	429.36	0.00	0.00	0.00
3,200.00	14.79	356.15	3,145.11	453.85	-30.53	454.88	0.00	0.00	0.00
3,300.00	14.79	356.15	3,241.80	479.31	-32.24	480.40	0.00	0.00	0.00
3,400.00	14.79	356.15	3,338.49	504.77	-33.96	505.92	0.00	0.00	0.00
3,500.00	14.79	356.15	3,435.18	530.24	-35.67	531.44	0.00	0.00	0.00
3,600.00	14.79	356.15	3,531.87	555.70	-37.38	556.96	0.00	0.00	0.00
3,700.00	14.79	356.15	3,628.55	581.16	-39.10	582.48	0.00	0.00	0.00
3,800.00	14.79	356.15	3,725.24	606.62	-40.81	608.00	0.00	0.00	0.00
3,900.00	14.79	356.15	3,821.93	632.09	-42.52	633.52	0.00	0.00	0.00
PARKMAN									
3,918.69	14.79	356.15	3,840.00	636.84	-42.84	638.28	0.00	0.00	0.00
4,000.00	14.79	356.15	3,918.62	657.55	-44.23	659.04	0.00	0.00	0.00
4,100.00	14.79	356.15	4,015.31	683.01	-45.95	684.56	0.00	0.00	0.00
4,200.00	14.79	356.15	4,112.00	708.47	-47.66	710.08	0.00	0.00	0.00
4,300.00	14.79	356.15	4,208.69	733.94	-49.37	735.60	0.00	0.00	0.00
4,400.00	14.79	356.15	4,305.38	759.40	-51.09	761.12	0.00	0.00	0.00
SUSSEX									
4,454.43	14.79	356.15	4,358.00	773.26	-52.02	775.00	0.00	0.00	0.00
4,500.00	14.79	356.15	4,402.07	784.86	-52.80	786.64	0.00	0.00	0.00
4,600.00	14.79	356.15	4,498.75	810.32	-54.51	812.16	0.00	0.00	0.00
4,700.00	14.79	356.15	4,595.44	835.79	-56.23	837.68	0.00	0.00	0.00
4,800.00	14.79	356.15	4,692.13	861.25	-57.94	863.20	0.00	0.00	0.00
4,900.00	14.79	356.15	4,788.82	886.71	-59.65	888.72	0.00	0.00	0.00
5,000.00	14.79	356.15	4,885.51	912.17	-61.36	914.24	0.00	0.00	0.00
5,100.00	14.79	356.15	4,982.20	937.64	-63.08	939.76	0.00	0.00	0.00
5,200.00	14.79	356.15	5,078.89	963.10	-64.79	965.28	0.00	0.00	0.00
5,300.00	14.79	356.15	5,175.58	988.56	-66.50	990.80	0.00	0.00	0.00
5,400.00	14.79	356.15	5,272.27	1,014.02	-68.22	1,016.32	0.00	0.00	0.00
5,500.00	14.79	356.15	5,368.95	1,039.49	-69.93	1,041.84	0.00	0.00	0.00

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_SATER 21-8
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 4923.00ft (Original Well Elev)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 4923.00ft (Original Well Elev)
Site:	WELD_SATER 25-8 PAD	North Reference:	True
Well:	P_SATER 21-8	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_SATER 21-8		
Design:	PLAN #1 5-10-10 RHS		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
Start Drop -2.00									
5,549.59	14.79	356.15	5,416.91	1,052.11	-70.78	1,054.49	0.00	0.00	0.00
5,600.00	13.78	356.15	5,465.75	1,064.52	-71.61	1,066.93	2.00	-2.00	0.00
5,700.00	11.78	356.15	5,563.27	1,086.59	-73.10	1,089.04	2.00	-2.00	0.00
5,800.00	9.78	356.15	5,661.50	1,105.24	-74.35	1,107.74	2.00	-2.00	0.00
5,900.00	7.78	356.15	5,760.33	1,120.47	-75.38	1,123.00	2.00	-2.00	0.00
6,000.00	5.78	356.15	5,859.62	1,132.24	-76.17	1,134.80	2.00	-2.00	0.00
6,100.00	3.78	356.15	5,959.27	1,140.55	-76.73	1,143.13	2.00	-2.00	0.00
6,200.00	1.78	356.15	6,059.15	1,145.38	-77.05	1,147.97	2.00	-2.00	0.00
Start 1832.00 hold at 6288.87 MD									
6,288.87	0.00	0.00	6,148.00	1,146.76	-77.14	1,149.35	2.00	-2.00	4.33
6,300.00	0.00	0.00	6,159.13	1,146.76	-77.14	1,149.35	0.00	0.00	0.00
6,400.00	0.00	0.00	6,259.13	1,146.76	-77.14	1,149.35	0.00	0.00	0.00
6,500.00	0.00	0.00	6,359.13	1,146.76	-77.14	1,149.35	0.00	0.00	0.00
6,600.00	0.00	0.00	6,459.13	1,146.76	-77.14	1,149.35	0.00	0.00	0.00
6,700.00	0.00	0.00	6,559.13	1,146.76	-77.14	1,149.35	0.00	0.00	0.00
6,800.00	0.00	0.00	6,659.13	1,146.76	-77.14	1,149.35	0.00	0.00	0.00
6,900.00	0.00	0.00	6,759.13	1,146.76	-77.14	1,149.35	0.00	0.00	0.00
7,000.00	0.00	0.00	6,859.13	1,146.76	-77.14	1,149.35	0.00	0.00	0.00
7,100.00	0.00	0.00	6,959.13	1,146.76	-77.14	1,149.35	0.00	0.00	0.00
7,200.00	0.00	0.00	7,059.13	1,146.76	-77.14	1,149.35	0.00	0.00	0.00
NIO									
7,288.87	0.00	0.00	7,148.00	1,146.76	-77.14	1,149.35	0.00	0.00	0.00
7,300.00	0.00	0.00	7,159.13	1,146.76	-77.14	1,149.35	0.00	0.00	0.00
7,400.00	0.00	0.00	7,259.13	1,146.76	-77.14	1,149.35	0.00	0.00	0.00
7,500.00	0.00	0.00	7,359.13	1,146.76	-77.14	1,149.35	0.00	0.00	0.00
CODELL									
7,548.87	0.00	0.00	7,408.00	1,146.76	-77.14	1,149.35	0.00	0.00	0.00
7,600.00	0.00	0.00	7,459.13	1,146.76	-77.14	1,149.35	0.00	0.00	0.00
GREEN HORN									
7,620.87	0.00	0.00	7,480.00	1,146.76	-77.14	1,149.35	0.00	0.00	0.00
7,700.00	0.00	0.00	7,559.13	1,146.76	-77.14	1,149.35	0.00	0.00	0.00
7,800.00	0.00	0.00	7,659.13	1,146.76	-77.14	1,149.35	0.00	0.00	0.00
7,900.00	0.00	0.00	7,759.13	1,146.76	-77.14	1,149.35	0.00	0.00	0.00
JSAND									
7,970.87	0.00	0.00	7,830.00	1,146.76	-77.14	1,149.35	0.00	0.00	0.00
8,000.00	0.00	0.00	7,859.13	1,146.76	-77.14	1,149.35	0.00	0.00	0.00
8,100.00	0.00	0.00	7,959.13	1,146.76	-77.14	1,149.35	0.00	0.00	0.00
PBHL_SATER 21-8(1320 FNL 2540 FEL)50'TGT RAD									
8,120.87	0.00	0.00	7,980.00	1,146.76	-77.14	1,149.35	0.00	0.00	0.00

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
PBHL_SATER 21-8(1	0.00	0.00	7,980.00	1,146.76	-77.14	1,300,449.17	3,163,798.44	40° 9' 23.911 N	104° 54' 50.314 W
- plan hits target center									
- Circle (radius 50.00)									

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_SATER 21-8
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 4923.00ft (Original Well Elev)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 4923.00ft (Original Well Elev)
Site:	WELD_SATER 25-8 PAD	North Reference:	True
Well:	P_SATER 21-8	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_SATER 21-8		
Design:	PLAN #1 5-10-10 RHS		

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
950.00	950.00	8 5/8"	8.62	11.00

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,918.69	3,840.00	PARKMAN			
4,454.43	4,358.00	SUSSEX			
7,288.87	7,148.00	NIO			
7,548.87	7,408.00	CODELL			
7,620.87	7,480.00	GREEN HORN			
7,970.87	7,830.00	JSAND			

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,050.00	1,050.00	0.00	0.00	Start Build 2.00
1,789.27	1,781.09	94.64	-6.37	Start 3760.32 hold at 1789.27 MD
5,549.59	5,416.91	1,052.11	-70.78	Start Drop -2.00
6,288.87	6,148.00	1,146.76	-77.14	Start 1832.00 hold at 6288.87 MD
8,120.87	7,980.00	1,146.76	-77.14	TD at 8120.87