

Project: COLORADO NORTHERN ZONE - 83
 Site: WELD_STREAR 19-10 PAD
 Well: STREAR 19-10
 Wellbore: OH
 Section: SECTION 10 T2N R67W
 SHL:
 Design: STREAR 19-10(wp01)
 Latitude: 40° 8' 56.087 N
 Longitude: 104° 52' 51.780 W
 GL: 4974.00
 KB: GL 4974' & KB 15' @ 4989.00ft (ASSUMED)

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
4314.00	4339.36	PARKMAN
4471.00	4496.44	SUSSEX
7282.00	7307.44	NIOBRARA
7549.00	7574.44	CODELL
7622.00	7647.44	GREENHORN



Scientific Drilling
 Rocky Mountain Operations



Azimuths to Grid North
 True North: -0.40°
 Magnetic North: 8.54°
 Magnetic Field
 Strength: 53011.6snT
 Dip Angle: 66.84°
 Date: 03/16/2011
 Model: IGRF2010

WELL DETAILS: STREAR 19-10

+N/-S	+E/-W	Northing	Easting	Ground Level: 4974.00	Latitude	Longitude	Slot
0.00	0.00	1297696.24	3173021.03		40° 8' 56.087 N	104° 52' 51.780 W	

CASING DETAILS

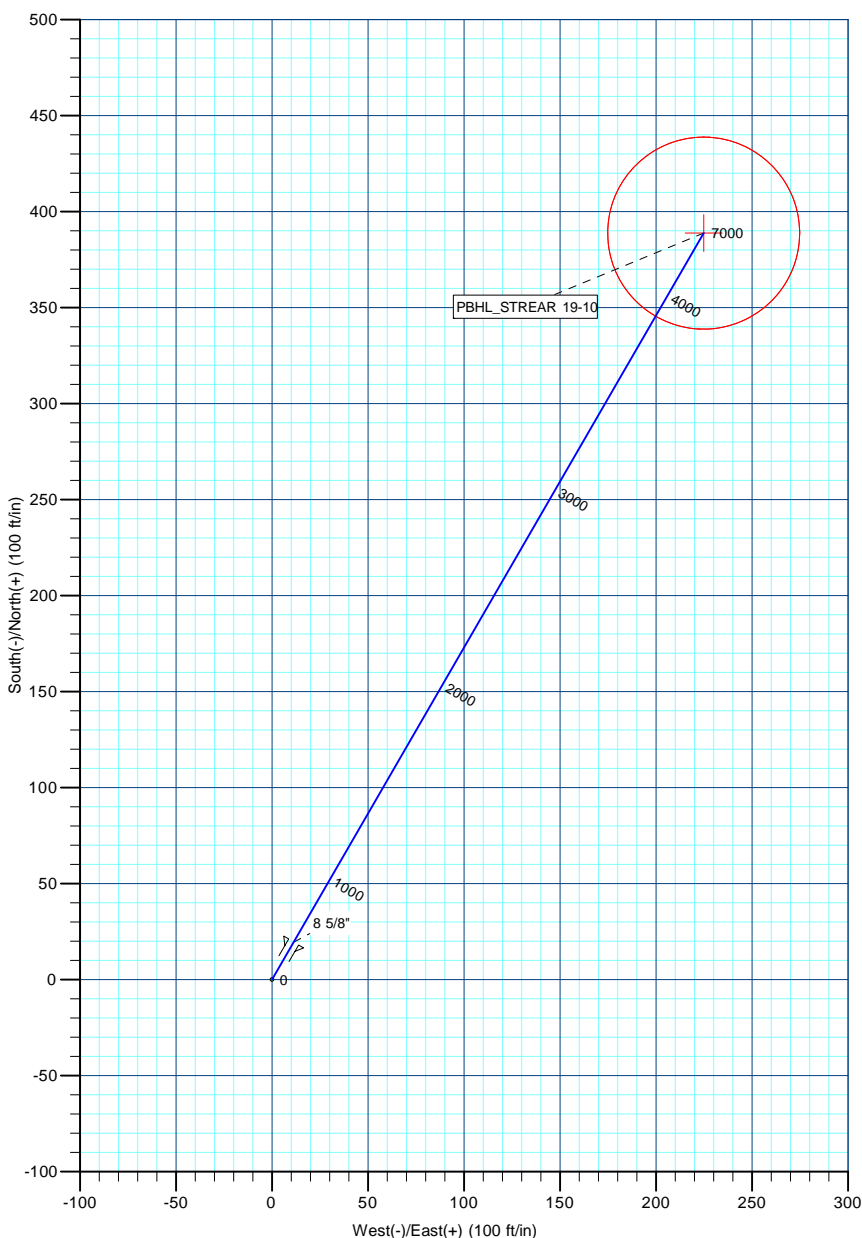
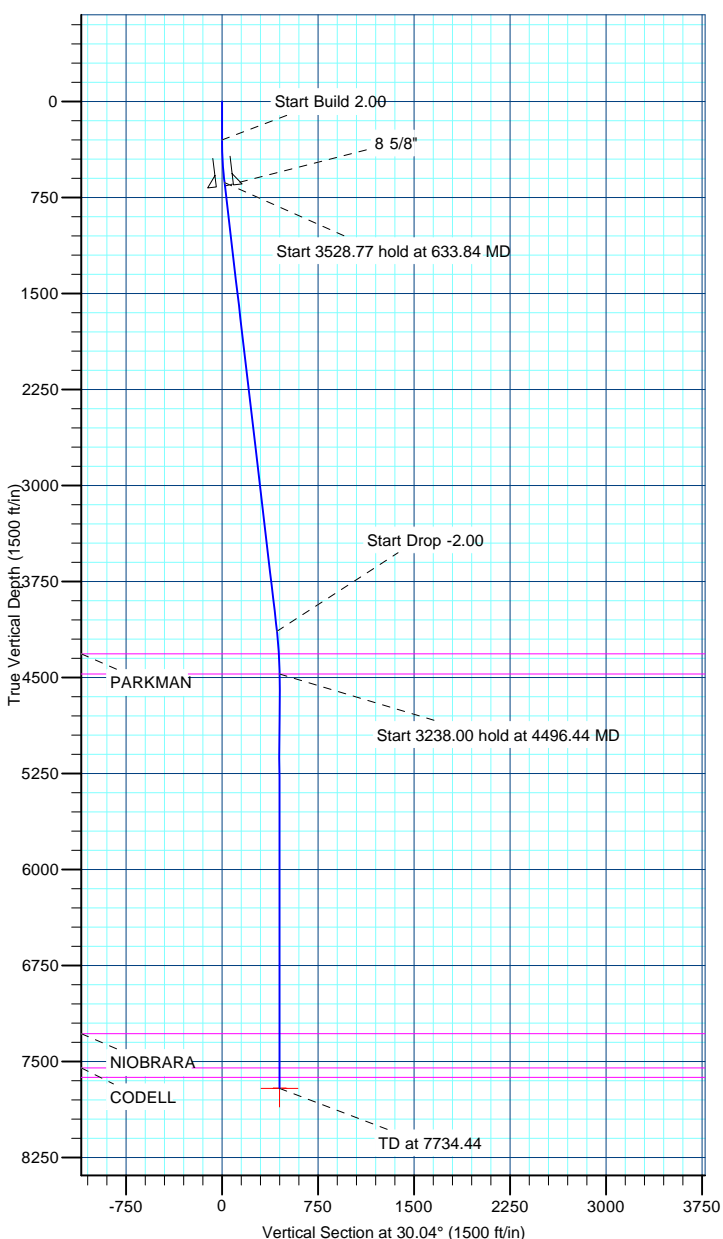
TVD	MD	Name	Size
660.00	660.94	8 5/8"	8.625

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
PBHL_STREAR 19-10	7709.00	388.81	224.84	1298085.05	3173245.86	40° 8' 59.914 N	104° 52' 48.850 W	Circle (Radius: 50.00)

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00
633.84	6.68	30.04	633.08	16.82	9.73	2.00	30.04	19.43
4162.61	6.68	30.04	4137.92	371.99	215.11	0.00	0.00	429.71
4496.44	0.00	0.00	4471.00	388.81	224.84	2.00	180.00	449.14
7734.44	0.00	0.00	7709.00	388.81	224.84	0.00	0.00	449.14



US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

WELD_STREAR 19-10 PAD

STREAR 19-10

OH

Plan: STREAR 19-10(wp01)

Standard Planning Report

16 March, 2011

Database:	EDM5000-RobertS-Local	Local Co-ordinate Reference:	Well STREAR 19-10
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 4974' & KB 15' @ 4989.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 4974' & KB 15' @ 4989.00ft (ASSUMED)
Site:	WELD_STREAR 19-10 PAD	North Reference:	Grid
Well:	STREAR 19-10	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	STREAR 19-10(wp01)		

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_STREAR 19-10 PAD, SECTION 10 T2N R67W			
Site Position:		Northing:	1,297,696.24 usft	Latitude:	40° 8' 56.087 N
From:	Lat/Long	Easting:	3,173,021.03 usft	Longitude:	104° 52' 51.780 W
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	0.40 °

Well	STREAR 19-10					
Well Position	+N/-S	0.00 ft	Northing:	1,297,696.24 usft	Latitude:	40° 8' 56.087 N
	+E/-W	0.00 ft	Easting:	3,173,021.03 usft	Longitude:	104° 52' 51.780 W
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	4,974.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	03/16/2011	8.94	66.84	53,012

Design	STREAR 19-10(wp01)			
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	30.04

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	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	
633.84	6.68	30.04	633.08	16.82	9.73	2.00	2.00	0.00	30.04	
4,162.61	6.68	30.04	4,137.92	371.99	215.11	0.00	0.00	0.00	0.00	
4,496.44	0.00	0.00	4,471.00	388.81	224.84	2.00	-2.00	0.00	180.00	
7,734.44	0.00	0.00	7,709.00	388.81	224.84	0.00	0.00	0.00	0.00	PBHL_STREAR 19-10

Database:	EDM5000-RobertS-Local	Local Co-ordinate Reference:	Well STREAR 19-10
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 4974' & KB 15' @ 4989.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 4974' & KB 15' @ 4989.00ft (ASSUMED)
Site:	WELD_STREAR 19-10 PAD	North Reference:	Grid
Well:	STREAR 19-10	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	STREAR 19-10(wp01)		

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)
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
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
400.00	2.00	30.04	399.98	1.51	0.87	1.75	2.00	2.00	0.00
500.00	4.00	30.04	499.84	6.04	3.49	6.98	2.00	2.00	0.00
600.00	6.00	30.04	599.45	13.59	7.86	15.69	2.00	2.00	0.00
633.84	6.68	30.04	633.08	16.82	9.73	19.43	2.00	2.00	0.00
Start 3528.77 hold at 633.84 MD									
660.94	6.68	30.04	660.00	19.55	11.30	22.58	0.00	0.00	0.00
8 5/8"									
700.00	6.68	30.04	698.80	23.48	13.58	27.12	0.00	0.00	0.00
800.00	6.68	30.04	798.12	33.54	19.40	38.75	0.00	0.00	0.00
900.00	6.68	30.04	897.44	43.61	25.22	50.38	0.00	0.00	0.00
1,000.00	6.68	30.04	996.76	53.67	31.04	62.00	0.00	0.00	0.00
1,100.00	6.68	30.04	1,096.08	63.74	36.86	73.63	0.00	0.00	0.00
1,200.00	6.68	30.04	1,195.41	73.80	42.68	85.26	0.00	0.00	0.00
1,300.00	6.68	30.04	1,294.73	83.87	48.50	96.88	0.00	0.00	0.00
1,400.00	6.68	30.04	1,394.05	93.93	54.32	108.51	0.00	0.00	0.00
1,500.00	6.68	30.04	1,493.37	104.00	60.14	120.14	0.00	0.00	0.00
1,600.00	6.68	30.04	1,592.69	114.06	65.96	131.76	0.00	0.00	0.00
1,700.00	6.68	30.04	1,692.01	124.13	71.78	143.39	0.00	0.00	0.00
1,800.00	6.68	30.04	1,791.34	134.19	77.60	155.02	0.00	0.00	0.00
1,900.00	6.68	30.04	1,890.66	144.26	83.42	166.64	0.00	0.00	0.00
2,000.00	6.68	30.04	1,989.98	154.32	89.24	178.27	0.00	0.00	0.00
2,100.00	6.68	30.04	2,089.30	164.39	95.06	189.90	0.00	0.00	0.00
2,200.00	6.68	30.04	2,188.62	174.45	100.88	201.52	0.00	0.00	0.00
2,300.00	6.68	30.04	2,287.95	184.52	106.70	213.15	0.00	0.00	0.00
2,400.00	6.68	30.04	2,387.27	194.58	112.52	224.78	0.00	0.00	0.00
2,500.00	6.68	30.04	2,486.59	204.65	118.34	236.40	0.00	0.00	0.00
2,600.00	6.68	30.04	2,585.91	214.71	124.16	248.03	0.00	0.00	0.00
2,700.00	6.68	30.04	2,685.23	224.78	129.98	259.66	0.00	0.00	0.00
2,800.00	6.68	30.04	2,784.55	234.84	135.80	271.28	0.00	0.00	0.00
2,900.00	6.68	30.04	2,883.88	244.91	141.62	282.91	0.00	0.00	0.00
3,000.00	6.68	30.04	2,983.20	254.97	147.44	294.54	0.00	0.00	0.00
3,100.00	6.68	30.04	3,082.52	265.04	153.26	306.16	0.00	0.00	0.00
3,200.00	6.68	30.04	3,181.84	275.10	159.08	317.79	0.00	0.00	0.00
3,300.00	6.68	30.04	3,281.16	285.17	164.90	329.42	0.00	0.00	0.00
3,400.00	6.68	30.04	3,380.48	295.23	170.72	341.04	0.00	0.00	0.00
3,500.00	6.68	30.04	3,479.81	305.30	176.54	352.67	0.00	0.00	0.00
3,600.00	6.68	30.04	3,579.13	315.36	182.36	364.30	0.00	0.00	0.00
3,700.00	6.68	30.04	3,678.45	325.43	188.18	375.92	0.00	0.00	0.00
3,800.00	6.68	30.04	3,777.77	335.49	194.00	387.55	0.00	0.00	0.00
3,900.00	6.68	30.04	3,877.09	345.56	199.83	399.18	0.00	0.00	0.00
4,000.00	6.68	30.04	3,976.42	355.62	205.65	410.80	0.00	0.00	0.00
4,100.00	6.68	30.04	4,075.74	365.69	211.47	422.43	0.00	0.00	0.00
4,162.61	6.68	30.04	4,137.92	371.99	215.11	429.71	0.00	0.00	0.00
Start Drop -2.00									
4,200.00	5.93	30.04	4,175.09	375.55	217.16	433.81	2.00	-2.00	0.00
4,300.00	3.93	30.04	4,274.71	382.98	221.47	442.41	2.00	-2.00	0.00
4,339.36	3.14	30.04	4,314.00	385.08	222.68	444.83	2.00	-2.00	0.00
PARKMAN									
4,400.00	1.93	30.04	4,374.58	387.41	224.02	447.51	2.00	-2.00	0.00

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Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 4974' & KB 15' @ 4989.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 4974' & KB 15' @ 4989.00ft (ASSUMED)
Site:	WELD_STREAR 19-10 PAD	North Reference:	Grid
Well:	STREAR 19-10	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	STREAR 19-10(wp01)		

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)
4,496.44	0.00	0.00	4,471.00	388.81	224.84	449.14	2.00	-2.00	-31.15
Start 3238.00 hold at 4496.44 MD - SUSSEX									
4,500.00	0.00	0.00	4,474.56	388.81	224.84	449.14	0.00	0.00	0.00
4,600.00	0.00	0.00	4,574.56	388.81	224.84	449.14	0.00	0.00	0.00
4,700.00	0.00	0.00	4,674.56	388.81	224.84	449.14	0.00	0.00	0.00
4,800.00	0.00	0.00	4,774.56	388.81	224.84	449.14	0.00	0.00	0.00
4,900.00	0.00	0.00	4,874.56	388.81	224.84	449.14	0.00	0.00	0.00
5,000.00	0.00	0.00	4,974.56	388.81	224.84	449.14	0.00	0.00	0.00
5,100.00	0.00	0.00	5,074.56	388.81	224.84	449.14	0.00	0.00	0.00
5,200.00	0.00	0.00	5,174.56	388.81	224.84	449.14	0.00	0.00	0.00
5,300.00	0.00	0.00	5,274.56	388.81	224.84	449.14	0.00	0.00	0.00
5,400.00	0.00	0.00	5,374.56	388.81	224.84	449.14	0.00	0.00	0.00
5,500.00	0.00	0.00	5,474.56	388.81	224.84	449.14	0.00	0.00	0.00
5,600.00	0.00	0.00	5,574.56	388.81	224.84	449.14	0.00	0.00	0.00
5,700.00	0.00	0.00	5,674.56	388.81	224.84	449.14	0.00	0.00	0.00
5,800.00	0.00	0.00	5,774.56	388.81	224.84	449.14	0.00	0.00	0.00
5,900.00	0.00	0.00	5,874.56	388.81	224.84	449.14	0.00	0.00	0.00
6,000.00	0.00	0.00	5,974.56	388.81	224.84	449.14	0.00	0.00	0.00
6,100.00	0.00	0.00	6,074.56	388.81	224.84	449.14	0.00	0.00	0.00
6,200.00	0.00	0.00	6,174.56	388.81	224.84	449.14	0.00	0.00	0.00
6,300.00	0.00	0.00	6,274.56	388.81	224.84	449.14	0.00	0.00	0.00
6,400.00	0.00	0.00	6,374.56	388.81	224.84	449.14	0.00	0.00	0.00
6,500.00	0.00	0.00	6,474.56	388.81	224.84	449.14	0.00	0.00	0.00
6,600.00	0.00	0.00	6,574.56	388.81	224.84	449.14	0.00	0.00	0.00
6,700.00	0.00	0.00	6,674.56	388.81	224.84	449.14	0.00	0.00	0.00
6,800.00	0.00	0.00	6,774.56	388.81	224.84	449.14	0.00	0.00	0.00
6,900.00	0.00	0.00	6,874.56	388.81	224.84	449.14	0.00	0.00	0.00
7,000.00	0.00	0.00	6,974.56	388.81	224.84	449.14	0.00	0.00	0.00
7,100.00	0.00	0.00	7,074.56	388.81	224.84	449.14	0.00	0.00	0.00
7,200.00	0.00	0.00	7,174.56	388.81	224.84	449.14	0.00	0.00	0.00
7,300.00	0.00	0.00	7,274.56	388.81	224.84	449.14	0.00	0.00	0.00
7,307.44	0.00	0.00	7,282.00	388.81	224.84	449.14	0.00	0.00	0.00
NIOBRARA									
7,400.00	0.00	0.00	7,374.56	388.81	224.84	449.14	0.00	0.00	0.00
7,500.00	0.00	0.00	7,474.56	388.81	224.84	449.14	0.00	0.00	0.00
7,574.44	0.00	0.00	7,549.00	388.81	224.84	449.14	0.00	0.00	0.00
CODELL									
7,600.00	0.00	0.00	7,574.56	388.81	224.84	449.14	0.00	0.00	0.00
7,647.44	0.00	0.00	7,622.00	388.81	224.84	449.14	0.00	0.00	0.00
GREENHORN									
7,700.00	0.00	0.00	7,674.56	388.81	224.84	449.14	0.00	0.00	0.00
7,734.44	0.00	0.00	7,709.00	388.81	224.84	449.14	0.00	0.00	0.00
PBHL_STREAR 19-10									

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Site:	WELD_STREAR 19-10 PAD	North Reference:	Grid
Well:	STREAR 19-10	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	STREAR 19-10(wp01)		

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
PBHL_STREAR 19-10	0.00	0.00	7,709.00	388.81	224.84	1,298,085.05	3,173,245.86	40° 8' 59.914 N	104° 52' 48.850 W
- plan hits target center									
- Circle (radius 50.00)									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
660.94	660.00	8 5/8"	8.625	11.000	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
4,339.36	4,314.00	PARKMAN				
4,496.44	4,471.00	SUSSEX				
7,307.44	7,282.00	NIOBRARA				
7,574.44	7,549.00	CODELL				
7,647.44	7,622.00	GREENHORN				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
300.00	300.00	0.00	0.00	Start Build 2.00	
633.84	633.08	16.82	9.73	Start 3528.77 hold at 633.84 MD	
4,162.61	4,137.92	371.99	215.11	Start Drop -2.00	
4,496.44	4,471.00	388.81	224.84	Start 3238.00 hold at 4496.44 MD	
7,734.44	7,709.00	388.81	224.84	TD at 7734.44	