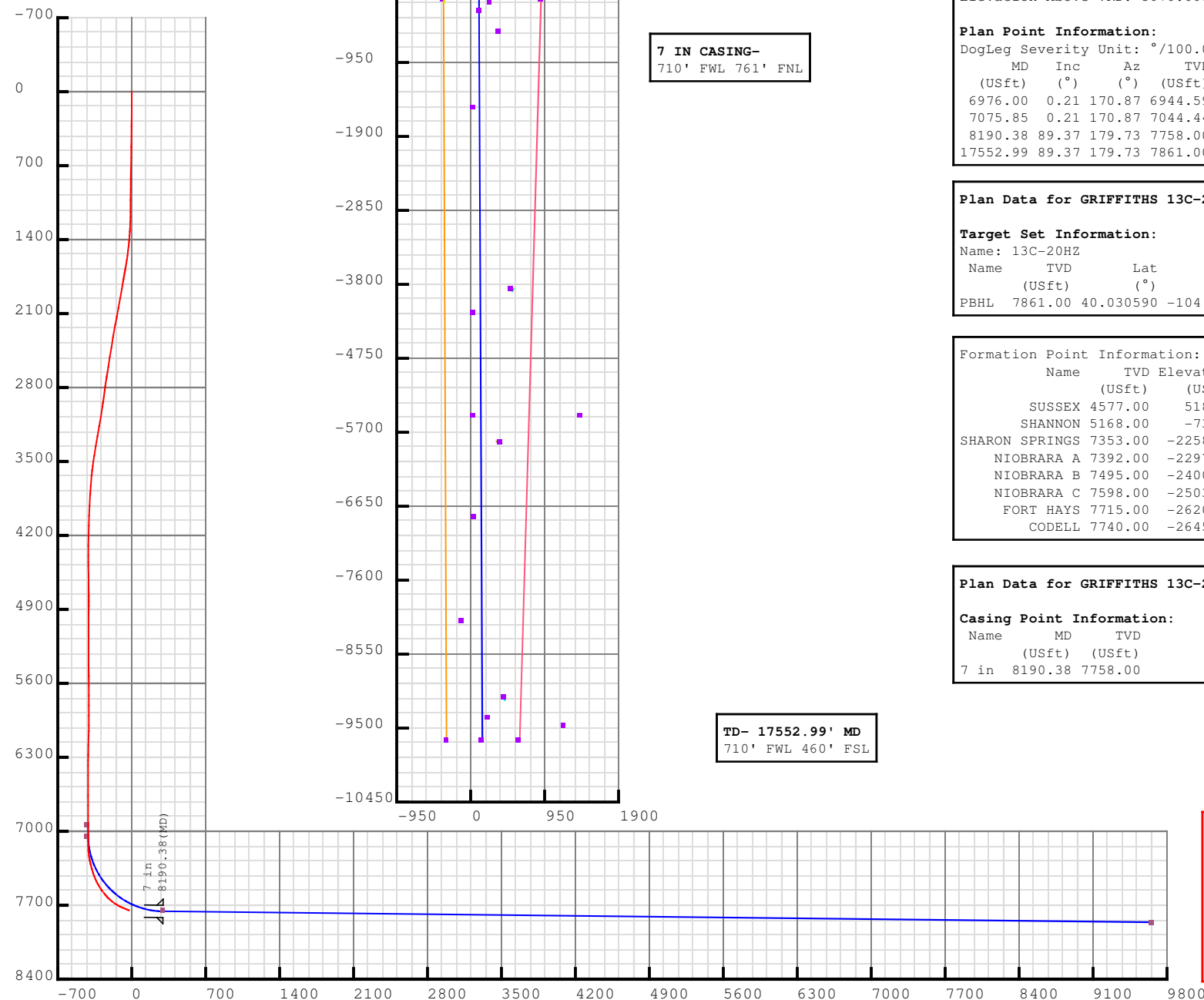


**5D Plan Report****ANADARKO**

Field Name: *WATTENBERG_ANADARKO_NAD83*
Site Name: *GRIFFITHS PAD*
Well Name: *GRIFFITHS 13C-20HZX SIDETRACK 1*
Plan: *WP05*





Plan Data for GRIFFITHS 13C-20HZX SIDETRACK 1

Field: WATTENBERG_ANADARKO_NAD83
Map Unit: USft Vertical Reference Datum (VRD): Mean Sea Level
Projected Coordinate System: NAD83 / Colorado North (ftUS)

Slot: GRIFFITHS 13C-20HZ
Position:
Offset is from Site centre
+N/-S: -0.00USft Northing: 1264176.57USft Latitude: 40.057105°
+E/-W: 30.23USft Easting: 3161871.82USft Longitude: -104.921715°
Elevation Above VRD: 5070.00USft

Plan Point Information:
DogLeg Severity Unit: °/100.00ft Position offsets from Slot centre

MD (USft)	Inc (°)	Az (°)	TVD (USft)	+N/-S (USft)	+E/-W (USft)	VSec (USft)	DLS (DLSU)	Toolface (°)
6976.00	0.21	170.87	6944.59	411.85	73.28	-412.27	0.00	0.0R
7075.85	0.21	170.87	7044.44	411.48	73.34	-411.91	0.00	0.0R
8190.38	89.37	179.73	7758.00	-296.82	77.02	296.36	8.00	8.9R
17552.99	89.37	179.73	7861.00	-9658.77	120.43	9657.88	0.00	0.0R

Plan Data for GRIFFITHS 13C-20HZX SIDETRACK 1

Target Set Information:
Name: 13C-20HZ

Name	TVD (USft)	Lat (°)	Long (°)	Shape
PBHL	7861.00	40.030590	-104.921285	Cuboid

Formation Point Information:

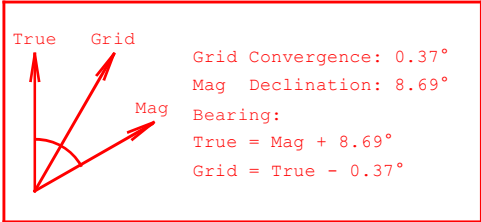
Name	TVD (USft)	Elevation (USft)	MD (USft)
SUSSEX	4577.00	518.00	4610.37
SHANNON	5168.00	-73.00	5201.37
SHARON SPRINGS	7353.00	-2258.00	7389.52
NIOBRARA A	7392.00	-2297.00	7431.17
NIOBRARA B	7495.00	-2400.00	7548.51
NIOBRARA C	7598.00	-2503.00	7685.65
FORT HAYS	7715.00	-2620.00	7919.13
CODELL	7740.00	-2645.00	8029.48

LINER TOP- 6975.85' MD
KOP- 7075.85' MD

Plan Data for GRIFFITHS 13C-20HZX SIDETRACK 1

Casing Point Information:

Name	MD (USft)	TVD (USft)
7 in	8190.38	7758.00





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Plan Surveys for the GRIFFITHS 13C-20HZX SIDETRACK 1

Site Name GRIFFITHS PAD	Units : US ft	North Reference : True	Convergence Angle : 0.37
	Position	Northing : 1264176.37 US ft	Latitude : 40.057105
		Easting : 3161841.59 US ft	Longitude : -104.921823
	Elevation above: 5071.00 US ft Comment :		
Slot Name GRIFFITHS 13C-20HZ	Position (Offsets relative to Site Centre)		
	+N / -S : -0.00 US ft	Northing : 1264176.57 US ft	Latitude : 40.057105
	+E / -W : 30.23 US ft	Easting : 3161871.82 US ft	Longitude : -104.921715
	Elevation above : 5070.00 US ft Comment :		
Well Name GRIFFITHS 13C-20HZX SIDETRACK 1	Type : Sidetrack	UWI :	Plan : WP05
	Parent : GRIFFITHS 13C-20HZ	Tie Point Method : MD	Tie Point : 6976.00 US ft
	Rig Height <i>Drill Floor</i> : 25.00 US ft	Comment :	
	Relative to : 5095.00 US ft		
	Closure Distance : 10070.7 US ft	Closure Azimuth : 179.732°	
	Vertical Section (Position of Origin Relative to Slot)		
	+N / -S : 0.00 US ft		Az : 179.73°
	Magnetic Parameters	+E / -W : 0.00 US ft	
	Model : BGGM	Dec : 8.69°	Dip : 66.67°
	Field Strength : 52701.8nT		Date : 29/May/2013

Target Set**Name :** 13C-20HZ**Number of Targets :** 1**Comment :**

TargetName:	Position (Relative to centre)			
PBHL	+N / -S : -9658.77US ft		Northing : 1254518.80 US ft	Latitude : 40°1'50.124000"
Shape:	+E / -W : 120.43 US ft		Easting : 3162055.22US ft	Longitude : -104°55'16.626000"
Cuboid	TVD (Drill Floor) : 7861.00 US ft			
	Orientation	Azimuth : 0.00°	Inclination : 0.00°	
	Dimensions	Length : 1.00 US ft	Breadth : 1.00 US ft	Height : 1.00 US ft

Casing Points (Relative to centre, TVD relative to Drill Floor)								
Name	MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N.Offset (US ft)	E.Offset (US ft)	Latitude (°)	Longitude (°)
7 in	8190.38	89.37	179.73	7758.00	-296.82	77.02	40.056290	-104.921440

Well path created using minimum curvature

Salient Points (Relative to centre, TVD relative to Drill Floor)											
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N.Offset (US ft)	E.Offset (US ft)	Northing (US ft)	Easting (US ft)	DLS (°/100 US ft)	T.Face (°)	VS (US ft)	Comment
6976.00	0.21	170.87	6944.59	411.85	73.28	1264588.89	3161942.41	0.00	0.00	-411.50	TIE ON
7075.85	0.21	170.87	7044.44	411.48	73.34	1264588.52	3161942.47	0.00	0.00	-411.13	KOP
8190.38	89.37	179.73	7758.00	-296.82	77.02	1263880.26	3161950.77	8.00	8.86	297.18	LANDING POINT; 7 in
17552.99	89.37	179.73	7861.00	-9658.77	120.43	1254518.80	3162055.22	0.00	0.00	9659.23	TD

Interpolated Points (Relative to centre, TVD relative to Drill Floor)											
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N.Offset (US ft)	E.Offset (US ft)	DLS (°/100 US ft)	T.Face (°)	VS (US ft)	Comment		
6976.00	0.21	170.87	6944.59	411.85	73.28	0.00	0.00	-411.50	TIE ON		
7075.85	0.21	170.87	7044.44	411.48	73.34	0.00	0.00	-411.13	KOP		
7076.00	0.22	171.35	7044.59	411.48	73.34	8.00	8.87	-411.13			
7176.00	8.22	179.51	7144.24	404.13	73.43	8.00	8.39	-403.78			
7276.00	16.22	179.62	7241.89	382.98	73.58	8.00	0.23	-382.63			
7376.00	24.22	179.66	7335.65	348.45	73.79	8.00	0.12	-348.10			
7476.00	32.22	179.68	7423.70	301.21	74.06	8.00	0.08	-300.85			
7576.00	40.22	179.70	7504.31	242.17	74.38	8.00	0.06	-241.81			
7676.00	48.22	179.71	7575.92	172.48	74.74	8.00	0.05	-172.13			

5D Plan Report

Interpolated Points (Relative to centre, TVD relative to Drill Floor)									
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N. Offset (US ft)	E. Offset (US ft)	DLS (°/100 US ft)	T.Face (°)	VS (US ft)	Comment
7776.00	56.22	179.71	7637.13	93.51	75.14	8.00	0.04	-93.16	
7876.00	64.22	179.72	7686.76	6.79	75.57	8.00	0.04	-6.43	
7976.00	72.22	179.72	7723.83	-85.99	76.02	8.00	0.04	86.35	
8076.00	80.22	179.73	7747.63	-183.04	76.49	8.00	0.03	183.39	
8176.00	88.22	179.73	7757.70	-282.45	76.95	8.00	0.03	282.81	
8190.38	89.37	179.73	7758.00	-296.82	77.02	8.00	0.03	297.18	LANDING POINT
8276.00	89.37	179.73	7758.94	-382.44	77.42	0.00	0.00	382.80	
8376.00	89.37	179.73	7760.04	-482.43	77.88	0.00	0.00	482.79	
8476.00	89.37	179.73	7761.14	-582.42	78.34	0.00	0.00	582.78	
8576.00	89.37	179.73	7762.24	-682.41	78.81	0.00	0.00	682.78	
8676.00	89.37	179.73	7763.34	-782.41	79.27	0.00	0.00	782.77	
8776.00	89.37	179.73	7764.44	-882.40	79.73	0.00	0.00	882.77	
8876.00	89.37	179.73	7765.54	-982.39	80.20	0.00	0.00	982.76	
8976.00	89.37	179.73	7766.64	-1082.39	80.66	0.00	0.00	1082.75	
9076.00	89.37	179.73	7767.74	-1182.38	81.12	0.00	0.00	1182.75	
9176.00	89.37	179.73	7768.84	-1282.37	81.59	0.00	0.00	1282.74	
9276.00	89.37	179.73	7769.94	-1382.36	82.05	0.00	0.00	1382.74	
9376.00	89.37	179.73	7771.04	-1482.36	82.52	0.00	0.00	1482.73	
9476.00	89.37	179.73	7772.14	-1582.35	82.98	0.00	0.00	1582.72	
9576.00	89.37	179.73	7773.24	-1682.34	83.44	0.00	0.00	1682.72	
9676.00	89.37	179.73	7774.34	-1782.34	83.91	0.00	0.00	1782.71	
9776.00	89.37	179.73	7775.44	-1882.33	84.37	0.00	0.00	1882.71	
9876.00	89.37	179.73	7776.54	-1982.32	84.83	0.00	0.00	1982.70	
9976.00	89.37	179.73	7777.64	-2082.31	85.30	0.00	0.00	2082.69	
10076.00	89.37	179.73	7778.74	-2182.31	85.76	0.00	0.00	2182.69	
10176.00	89.37	179.73	7779.84	-2282.30	86.22	0.00	0.00	2282.68	
10276.00	89.37	179.73	7780.94	-2382.29	86.69	0.00	0.00	2382.68	
10376.00	89.37	179.73	7782.04	-2482.29	87.15	0.00	0.00	2482.67	
10476.00	89.37	179.73	7783.14	-2582.28	87.61	0.00	0.00	2582.66	
10576.00	89.37	179.73	7784.24	-2682.27	88.08	0.00	0.00	2682.66	
10676.00	89.37	179.73	7785.34	-2782.27	88.54	0.00	0.00	2782.65	
10776.00	89.37	179.73	7786.44	-2882.26	89.01	0.00	0.00	2882.65	
10876.00	89.37	179.73	7787.54	-2982.25	89.47	0.00	0.00	2982.64	
10976.00	89.37	179.73	7788.65	-3082.24	89.93	0.00	0.00	3082.63	
11076.00	89.37	179.73	7789.75	-3182.24	90.40	0.00	0.00	3182.63	
11176.00	89.37	179.73	7790.85	-3282.23	90.86	0.00	0.00	3282.62	
11276.00	89.37	179.73	7791.95	-3382.22	91.32	0.00	0.00	3382.62	
11376.00	89.37	179.73	7793.05	-3482.22	91.79	0.00	0.00	3482.61	
11476.00	89.37	179.73	7794.15	-3582.21	92.25	0.00	0.00	3582.60	
11576.00	89.37	179.73	7795.25	-3682.20	92.71	0.00	0.00	3682.60	
11676.00	89.37	179.73	7796.35	-3782.19	93.18	0.00	0.00	3782.59	

5D Plan Report

Interpolated Points (Relative to centre, TVD relative to Drill Floor)									
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N.Offset (US ft)	E.Offset (US ft)	DLS (°/100 US ft)	T.Face (°)	VS (US ft)	Comment
11776.00	89.37	179.73	7797.45	-3882.19	93.64	0.00	0.00	3882.58	
11876.00	89.37	179.73	7798.55	-3982.18	94.11	0.00	0.00	3982.58	
11976.00	89.37	179.73	7799.65	-4082.17	94.57	0.00	0.00	4082.57	
12076.00	89.37	179.73	7800.75	-4182.17	95.03	0.00	0.00	4182.57	
12176.00	89.37	179.73	7801.85	-4282.16	95.50	0.00	0.00	4282.56	
12276.00	89.37	179.73	7802.95	-4382.15	95.96	0.00	0.00	4382.55	
12376.00	89.37	179.73	7804.05	-4482.14	96.42	0.00	0.00	4482.55	
12476.00	89.37	179.73	7805.15	-4582.14	96.89	0.00	0.00	4582.54	
12576.00	89.37	179.73	7806.25	-4682.13	97.35	0.00	0.00	4682.54	
12676.00	89.37	179.73	7807.35	-4782.12	97.81	0.00	0.00	4782.53	
12776.00	89.37	179.73	7808.45	-4882.12	98.28	0.00	0.00	4882.52	
12876.00	89.37	179.73	7809.55	-4982.11	98.74	0.00	0.00	4982.52	
12976.00	89.37	179.73	7810.65	-5082.10	99.21	0.00	0.00	5082.51	
13076.00	89.37	179.73	7811.75	-5182.09	99.67	0.00	0.00	5182.51	
13176.00	89.37	179.73	7812.85	-5282.09	100.13	0.00	0.00	5282.50	
13276.00	89.37	179.73	7813.95	-5382.08	100.60	0.00	0.00	5382.49	
13376.00	89.37	179.73	7815.05	-5482.07	101.06	0.00	0.00	5482.49	
13476.00	89.37	179.73	7816.15	-5582.07	101.52	0.00	0.00	5582.48	
13576.00	89.37	179.73	7817.25	-5682.06	101.99	0.00	0.00	5682.48	
13676.00	89.37	179.73	7818.35	-5782.05	102.45	0.00	0.00	5782.47	
13776.00	89.37	179.73	7819.45	-5882.04	102.91	0.00	0.00	5882.46	
13876.00	89.37	179.73	7820.55	-5982.04	103.38	0.00	0.00	5982.46	
13976.00	89.37	179.73	7821.65	-6082.03	103.84	0.00	0.00	6082.45	
14076.00	89.37	179.73	7822.75	-6182.02	104.31	0.00	0.00	6182.45	
14176.00	89.37	179.73	7823.85	-6282.02	104.77	0.00	0.00	6282.44	
14276.00	89.37	179.73	7824.95	-6382.01	105.23	0.00	0.00	6382.43	
14376.00	89.37	179.73	7826.05	-6482.00	105.70	0.00	0.00	6482.43	
14476.00	89.37	179.73	7827.15	-6581.99	106.16	0.00	0.00	6582.42	
14576.00	89.37	179.73	7828.25	-6681.99	106.62	0.00	0.00	6682.42	
14676.00	89.37	179.73	7829.35	-6781.98	107.09	0.00	0.00	6782.41	
14776.00	89.37	179.73	7830.45	-6881.97	107.55	0.00	0.00	6882.40	
14876.00	89.37	179.73	7831.55	-6981.97	108.01	0.00	0.00	6982.40	
14976.00	89.37	179.73	7832.65	-7081.96	108.48	0.00	0.00	7082.39	
15076.00	89.37	179.73	7833.75	-7181.95	108.94	0.00	0.00	7182.39	
15176.00	89.37	179.73	7834.85	-7281.94	109.40	0.00	0.00	7282.38	
15276.00	89.37	179.73	7835.95	-7381.94	109.87	0.00	0.00	7382.37	
15376.00	89.37	179.73	7837.05	-7481.93	110.33	0.00	0.00	7482.37	
15476.00	89.37	179.73	7838.15	-7581.92	110.80	0.00	0.00	7582.36	
15576.00	89.37	179.73	7839.25	-7681.92	111.26	0.00	0.00	7682.35	
15676.00	89.37	179.73	7840.35	-7781.91	111.72	0.00	0.00	7782.35	
15776.00	89.37	179.73	7841.45	-7881.90	112.19	0.00	0.00	7882.34	

5D Plan Report

Interpolated Points (Relative to centre, TVD relative to Drill Floor)									
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N.Offset (US ft)	E.Offset (US ft)	DLS (°/100 US ft)	T.Face (°)	VS (US ft)	Comment
15876.00	89.37	179.73	7842.55	-7981.89	112.65	0.00	0.00	7982.34	
15976.00	89.37	179.73	7843.65	-8081.89	113.11	0.00	0.00	8082.33	
16076.00	89.37	179.73	7844.75	-8181.88	113.58	0.00	0.00	8182.32	
16176.00	89.37	179.73	7845.85	-8281.87	114.04	0.00	0.00	8282.32	
16276.00	89.37	179.73	7846.95	-8381.87	114.50	0.00	0.00	8382.31	
16376.00	89.37	179.73	7848.05	-8481.86	114.97	0.00	0.00	8482.31	
16476.00	89.37	179.73	7849.15	-8581.85	115.43	0.00	0.00	8582.30	
16576.00	89.37	179.73	7850.25	-8681.84	115.90	0.00	0.00	8682.29	
16676.00	89.37	179.73	7851.35	-8781.84	116.36	0.00	0.00	8782.29	
16776.00	89.37	179.73	7852.45	-8881.83	116.82	0.00	0.00	8882.28	
16876.00	89.37	179.73	7853.55	-8981.82	117.29	0.00	0.00	8982.28	
16976.00	89.37	179.73	7854.65	-9081.82	117.75	0.00	0.00	9082.27	
17076.00	89.37	179.73	7855.75	-9181.81	118.21	0.00	0.00	9182.26	
17176.00	89.37	179.73	7856.85	-9281.80	118.68	0.00	0.00	9282.26	
17276.00	89.37	179.73	7857.95	-9381.79	119.14	0.00	0.00	9382.25	
17376.00	89.37	179.73	7859.05	-9481.79	119.60	0.00	0.00	9482.25	
17476.00	89.37	179.73	7860.15	-9581.78	120.07	0.00	0.00	9582.24	
17552.99	89.37	179.73	7861.00	-9658.77	120.43	0.00	0.00	9659.23	TD