



5125 Carroll Court, Suite 200
Evansville, WY 82636
307-233-8550

Survey Certification Sheet

Date Submitted:	July 5, 2011
Operator Name:	Chesapeake Operating Inc.
Well Name:	Cass 7-62 15-1H
API Number:	05-123-33328
Location:	Section 15-T7N-R62W
County/State:	Weld County, CO
Surveyed From a Depth of:	5941' MD to 10384' MD
Type of Survey:	Magnetic MWD
Name(s) of MWD Supervisor(s):	Lucas Medinger / Ralph Nicholson

The data and calculations for this survey have been checked by me and conform to the standards and procedures set forth by Professional Directional Ltd. This report represents a true and correct Directional Survey of this well based on the original data obtained at the well site. The survey was calculated using the minimum curvature method.

Chris Syverson / Well Planner

Project: Weld County, CO NAD 27
Site: Sec 15-T7N-R62W
Well: Cass 7-62 15-1H
Wellbore: Original Hole
Plan: Final Surveys
Rig: Cyclone 11

Surface Location:
SHL 600' FNL & 1979' FEL Sec 15-T7N-R62W

US State Plane 1927 (Exact solution)
Colorado North 501

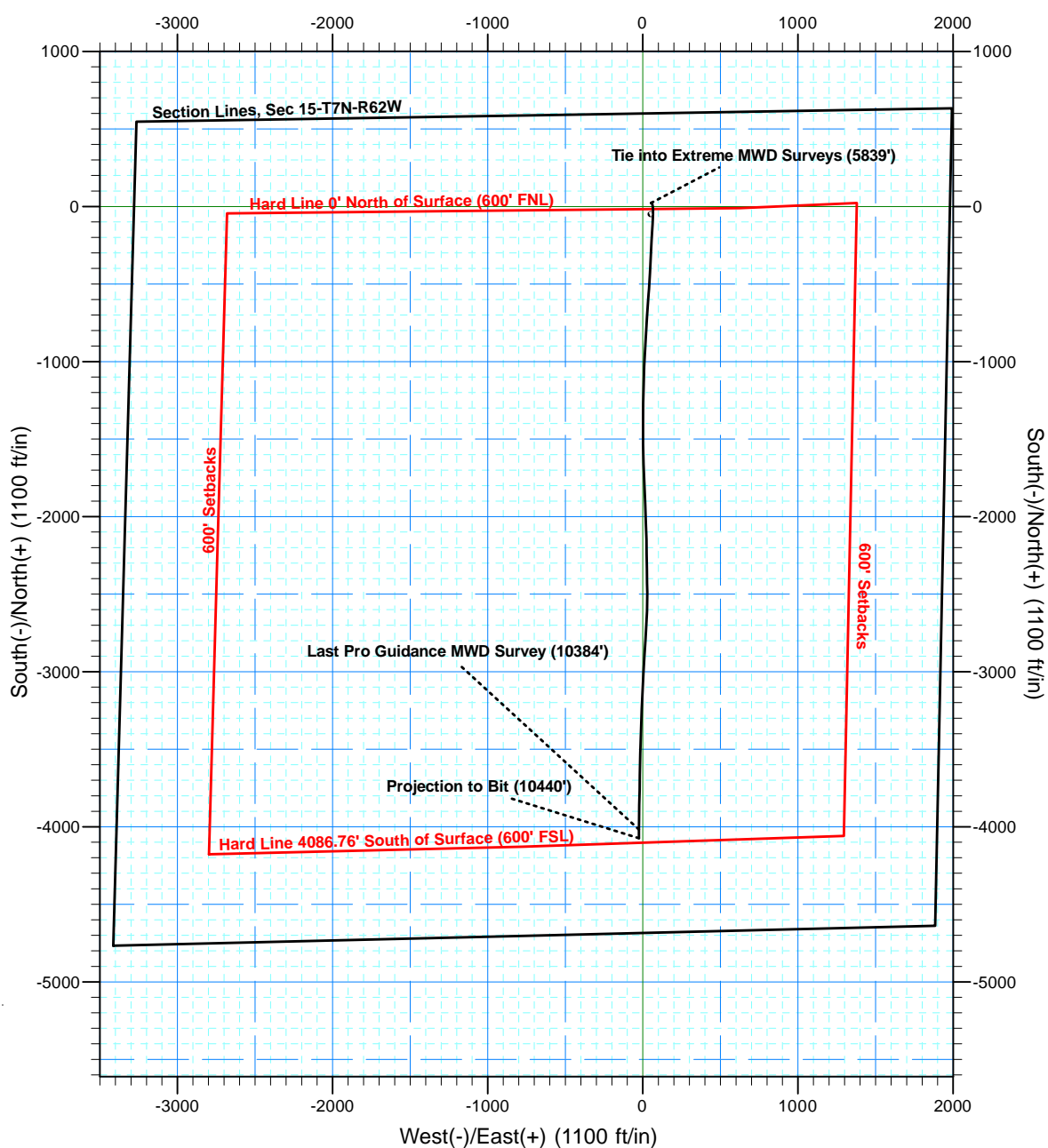
Elevation: 4875' GL + 14' KB @ 4889.00ft (Cyclone 11)

Northing	Easting	Latitude	Longitude
456276.76	2332095.29	40° 34' 47.119 N	104° 18' 15.938 W

To convert a Magnetic Direction to a Grid Direction, Add 7.86°

Magnetic Model: IGRF2010 Date: 17-Jun-11

Azimuths & Coordinates to NAD83 Grid



Chesapeake Operating Inc.



Project: Weld County, CO NAD 27
Site: Sec 15-T7N-R62W
Well: Cass 7-62 15-1H
Wellbore: Original Hole
Plan: Final Surveys
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Surface Location:
SHL 600' FNL & 1979' FEL Sec 15-T7N-R62W

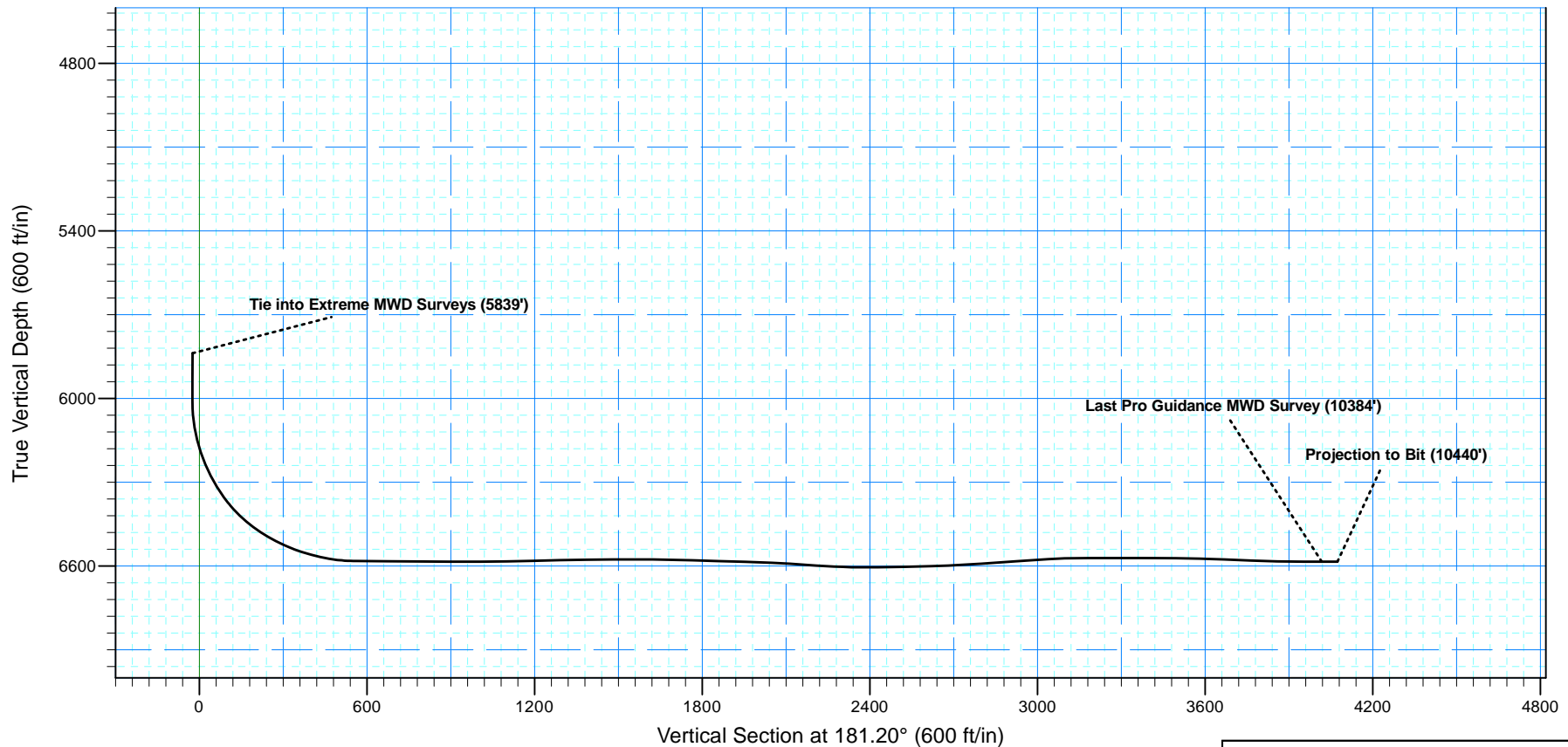
US State Plane 1927 (Exact solution)
Colorado North 501

Northing	Easting	Latitude	Longitude
456276.76	2332095.29	40° 34' 47.119 N	104° 18' 15.938 W

Elevation: 4875' GL + 14' KB @ 4889.00ft (Cyclone 11)

To convert a Magnetic Direction to a Grid Direction, Add 7.86°

Magnetic Model: IGRF2010 Date: 17-Jun-11
Azimuths & Coordinates to NAD27 Grid





Chesapeake Operating Inc.

Weld County, CO NAD 27

Sec 15-T7N-R62W

Cass 7-62 15-1H

Original Hole

Design: Final Surveys

Standard Survey Report

01 July, 2011



Company:	Chesapeake Operating Inc.	Local Co-ordinate Reference:	Well Cass 7-62 15-1H
Project:	Weld County, CO NAD 27	TVD Reference:	4875' GL + 14' KB @ 4889.00ft (Cyclone 11)
Site:	Sec 15-T7N-R62W	MD Reference:	4875' GL + 14' KB @ 4889.00ft (Cyclone 11)
Well:	Cass 7-62 15-1H	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	Final Surveys	Database:	EDM 5000.1 Single User Db

Project	Weld County, CO NAD 27		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	Colorado North 501		

Site	Sec 15-T7N-R62W		
Site Position:		Northing:	456,276.76 usft
From:	Map	Easting:	2,332,095.29 usft
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "
		Latitude:	40° 34' 47.119 N
		Longitude:	104° 18' 15.938 W
		Grid Convergence:	0.77 °

Well	Cass 7-62 15-1H		
Well Position	+N/-S	0.00 ft	Northing:
	+E/-W	0.00 ft	Easting:
Position Uncertainty	0.00 ft	Wellhead Elevation:	ft
		Latitude:	40° 34' 47.119 N
		Longitude:	104° 18' 15.938 W
		Ground Level:	4,875.00 ft

Wellbore	Original Hole				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	06/17/11	8.63	67.27	53,273

Design	Final Surveys				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.00	0.00	0.00	66.47	

Survey Program	Date	07/01/11			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
1,580.00	5,839.00	Extreme MWD Surveys (Original Hole)	MWD	MWD	
5,941.00	10,384.00	Pro Guidance MWD Surveys (Original Hol	MWD	MWD	
10,440.00	10,440.00	Projection to Bit (Original Hole)	Projection	Projection	

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)	
5,839.00	1.49	76.79	5,838.38	22.94	52.67	57.45	0.20	-0.14	-5.28	
Last Extreme MWD Survey (5839') - Tie into Extreme MWD Surveys (5839')										
5,941.00	1.70	73.20	5,940.34	23.68	55.41	60.26	0.23	0.21	-3.52	
6,005.00	1.60	87.30	6,004.32	23.99	57.21	62.03	0.65	-0.16	22.03	
6,037.00	3.00	150.70	6,036.29	23.28	58.07	62.54	8.42	4.38	198.13	
6,069.00	6.10	166.30	6,068.19	20.90	58.88	62.33	10.34	9.69	48.75	
6,101.00	9.90	167.30	6,099.87	16.56	59.89	61.52	11.88	11.88	3.13	
6,133.00	12.90	166.90	6,131.24	10.40	61.30	60.36	9.38	9.38	-1.25	
6,164.00	15.70	167.70	6,161.27	2.93	62.98	58.91	9.05	9.03	2.58	

Company:	Chesapeake Operating Inc.	Local Co-ordinate Reference:	Well Cass 7-62 15-1H
Project:	Weld County, CO NAD 27	TVD Reference:	4875' GL + 14' KB @ 4889.00ft (Cyclone 11)
Site:	Sec 15-T7N-R62W	MD Reference:	4875' GL + 14' KB @ 4889.00ft (Cyclone 11)
Well:	Cass 7-62 15-1H	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	Final Surveys	Database:	EDM 5000.1 Single User Db

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)
6,196.00	18.70	172.00	6,191.84	-6.38	64.62	56.70	10.18	9.38	13.44
6,228.00	21.50	176.30	6,221.89	-17.32	65.71	53.33	9.89	8.75	13.44
6,260.00	24.60	179.70	6,251.33	-29.83	66.12	48.71	10.54	9.69	10.63
6,291.00	27.30	182.30	6,279.21	-43.39	65.87	43.07	9.45	8.71	8.39
6,323.00	30.30	182.70	6,307.25	-58.79	65.20	36.30	9.39	9.38	1.25
6,355.00	33.50	182.50	6,334.41	-75.68	64.43	28.86	10.01	10.00	-0.63
6,386.00	36.80	183.30	6,359.75	-93.50	63.52	20.91	10.75	10.65	2.58
6,418.00	40.40	184.10	6,384.76	-113.42	62.23	11.77	11.36	11.25	2.50
6,450.00	44.00	184.10	6,408.46	-134.86	60.69	1.80	11.25	11.25	0.00
6,481.00	48.00	183.20	6,429.99	-157.11	59.28	-8.38	13.07	12.90	-2.90
6,513.00	51.20	182.30	6,450.73	-181.45	58.12	-19.16	10.23	10.00	-2.81
6,545.00	54.80	181.90	6,469.98	-206.98	57.18	-30.21	11.29	11.25	-1.25
6,577.00	58.70	183.10	6,487.52	-233.71	56.01	-41.96	12.58	12.19	3.75
6,608.00	61.60	183.60	6,502.95	-260.55	54.44	-54.12	9.46	9.35	1.61
6,640.00	64.00	183.60	6,517.58	-288.95	52.65	-67.09	7.50	7.50	0.00
6,672.00	66.30	183.30	6,531.03	-317.93	50.90	-80.27	7.24	7.19	-0.94
6,704.00	69.80	182.70	6,542.98	-347.57	49.35	-93.52	11.07	10.94	-1.88
6,735.00	73.40	182.70	6,552.77	-376.95	47.97	-106.52	11.61	11.61	0.00
6,767.00	76.00	182.90	6,561.21	-407.77	46.46	-120.21	8.15	8.13	0.63
6,799.00	77.00	182.90	6,568.68	-438.85	44.88	-134.06	3.13	3.13	0.00
6,830.00	80.30	183.20	6,574.78	-469.19	43.27	-147.66	10.69	10.65	0.97
6,861.00	84.40	183.90	6,578.91	-499.85	41.36	-161.64	13.41	13.23	2.26
6,893.00	87.10	183.90	6,581.28	-531.69	39.19	-176.34	8.44	8.44	0.00
6,924.00	89.60	184.20	6,582.17	-562.60	37.00	-190.69	8.12	8.06	0.97
6,988.00	89.80	183.70	6,582.51	-626.44	32.60	-220.22	0.84	0.31	-0.78
7,083.00	89.20	183.60	6,583.34	-721.25	26.55	-263.62	0.64	-0.63	-0.11
7,179.00	89.80	183.40	6,584.17	-817.06	20.69	-307.25	0.66	0.63	-0.21
7,274.00	89.80	183.30	6,584.50	-911.90	15.14	-350.20	0.11	0.00	-0.11
7,369.00	90.50	182.90	6,584.26	-1,006.76	10.00	-392.78	0.85	0.74	-0.42
7,464.00	91.00	182.10	6,583.01	-1,101.66	5.86	-434.47	0.99	0.53	-0.84
7,559.00	91.10	180.80	6,581.27	-1,196.61	3.45	-474.59	1.37	0.11	-1.37
7,653.00	91.30	181.30	6,579.30	-1,290.57	1.73	-513.68	0.57	0.21	0.53
7,749.00	91.10	180.10	6,577.29	-1,386.54	0.56	-553.07	1.27	-0.21	-1.25
7,844.00	89.50	180.10	6,576.80	-1,481.54	0.39	-591.15	1.68	-1.68	0.00
7,939.00	90.30	178.40	6,576.96	-1,576.53	1.64	-627.94	1.98	0.84	-1.79
8,034.00	89.00	177.60	6,577.54	-1,671.46	4.95	-662.80	1.61	-1.37	-0.84
8,128.00	88.30	177.90	6,579.76	-1,765.37	8.64	-696.91	0.81	-0.74	0.32
8,223.00	88.50	177.40	6,582.41	-1,860.25	12.53	-731.22	0.57	0.21	-0.53
8,318.00	88.10	177.80	6,585.23	-1,955.12	16.51	-765.45	0.60	-0.42	0.42
8,414.00	87.50	178.20	6,588.91	-2,050.99	19.86	-800.66	0.75	-0.63	0.42
8,509.00	86.00	178.80	6,594.30	-2,145.80	22.34	-836.24	1.70	-1.58	0.63
8,605.00	86.60	178.80	6,600.49	-2,241.58	24.35	-872.64	0.63	0.63	0.00
8,699.00	89.00	179.30	6,604.10	-2,335.49	25.90	-908.70	2.61	2.55	0.53

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Site:	Sec 15-T7N-R62W	MD Reference:	4875' GL + 14' KB @ 4889.00ft (Cyclone 11)
Well:	Cass 7-62 15-1H	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	Final Surveys	Database:	EDM 5000.1 Single User Db

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)
8,794.00	90.70	179.20	6,604.35	-2,430.48	27.15	-945.49	1.79	1.79	-0.11
8,889.00	90.90	179.70	6,603.02	-2,525.47	28.06	-982.58	0.57	0.21	0.53
8,985.00	92.10	182.70	6,600.51	-2,621.40	26.05	-1,022.72	3.36	1.25	3.13
9,080.00	92.80	182.10	6,596.45	-2,716.23	22.08	-1,064.22	0.97	0.74	-0.63
9,176.00	93.80	184.40	6,590.92	-2,811.91	16.64	-1,107.40	2.61	1.04	2.40
9,272.00	93.90	184.00	6,584.48	-2,907.43	9.63	-1,151.98	0.43	0.10	-0.42
9,367.00	94.60	182.40	6,577.44	-3,002.02	4.34	-1,194.59	1.83	0.74	-1.68
9,463.00	91.60	182.90	6,572.24	-3,097.77	-0.09	-1,236.88	3.17	-3.13	0.52
9,558.00	89.70	182.70	6,571.17	-3,192.64	-4.73	-1,279.01	2.01	-2.00	-0.21
9,653.00	89.80	182.70	6,571.58	-3,287.54	-9.21	-1,321.00	0.11	0.11	0.00
9,749.00	90.50	181.90	6,571.33	-3,383.46	-13.06	-1,362.83	1.11	0.73	-0.83
9,844.00	88.80	181.00	6,571.91	-3,478.42	-15.46	-1,402.95	2.02	-1.79	-0.95
9,940.00	89.10	181.20	6,573.67	-3,574.39	-17.31	-1,442.95	0.38	0.31	0.21
10,035.00	87.60	181.60	6,576.40	-3,669.32	-19.63	-1,482.98	1.63	-1.58	0.42
10,131.00	87.80	180.80	6,580.26	-3,765.22	-21.64	-1,523.11	0.86	0.21	-0.83
10,225.00	88.70	181.20	6,583.13	-3,859.16	-23.27	-1,562.12	1.05	0.96	0.43
10,320.00	89.50	180.60	6,584.62	-3,954.13	-24.77	-1,601.41	1.05	0.84	-0.63
10,384.00	90.40	180.70	6,584.68	-4,018.13	-25.49	-1,627.63	1.41	1.41	0.16
Last Pro Guidance MWD Survey (10384')									
10,440.00	90.40	180.70	6,584.29	-4,074.12	-26.18	-1,650.61	0.00	0.00	0.00
Projection to Bit (10440')									

Design Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,580.00	1,580.00	0.00	0.00	Assume Vertical (1580')
5,839.00	5,838.38	22.94	52.67	Last Extreme MWD Survey (5839')
5,839.00	5,838.38	22.94	52.67	Tie into Extreme MWD Surveys (5839')
10,384.00	6,584.68	-4,018.13	-25.49	Last Pro Guidance MWD Survey (10384')
10,440.00	6,584.29	-4,074.12	-26.18	Projection to Bit (10440')