



**Scientific
Drilling**

Survey Certification

7327 West Barton Road
Casper, WY 82604
(307)-472-6621 Fax (307) 472-5439

Operator	KP Kauffman Co, Inc.
Well Name & No.	Rocky Mountain Fuel 12-9
County & State	Weld County, CO
SDI Job No.	410214K111500
Rig	KPK 2
Survey Date	6-Jan-2014

I, Steven F. Gottschalk, having personal knowledge of all the facts, hereby certify that the attached directional survey run from a measured depth of 0 feet to a measured depth of 4821.74 feet is true and correct as determined from all available records.

	<u>24-Feb-2014</u>
Signature	Date

Steven F. Gottschalk
Rockies Region Well Planner
Scientific Drilling - Rocky Mountain District

KP Kauffman Co, Inc.

Weld County, CO

Rocky Mountain Fuel

Rocky Mountain Fuel 12-9

OH

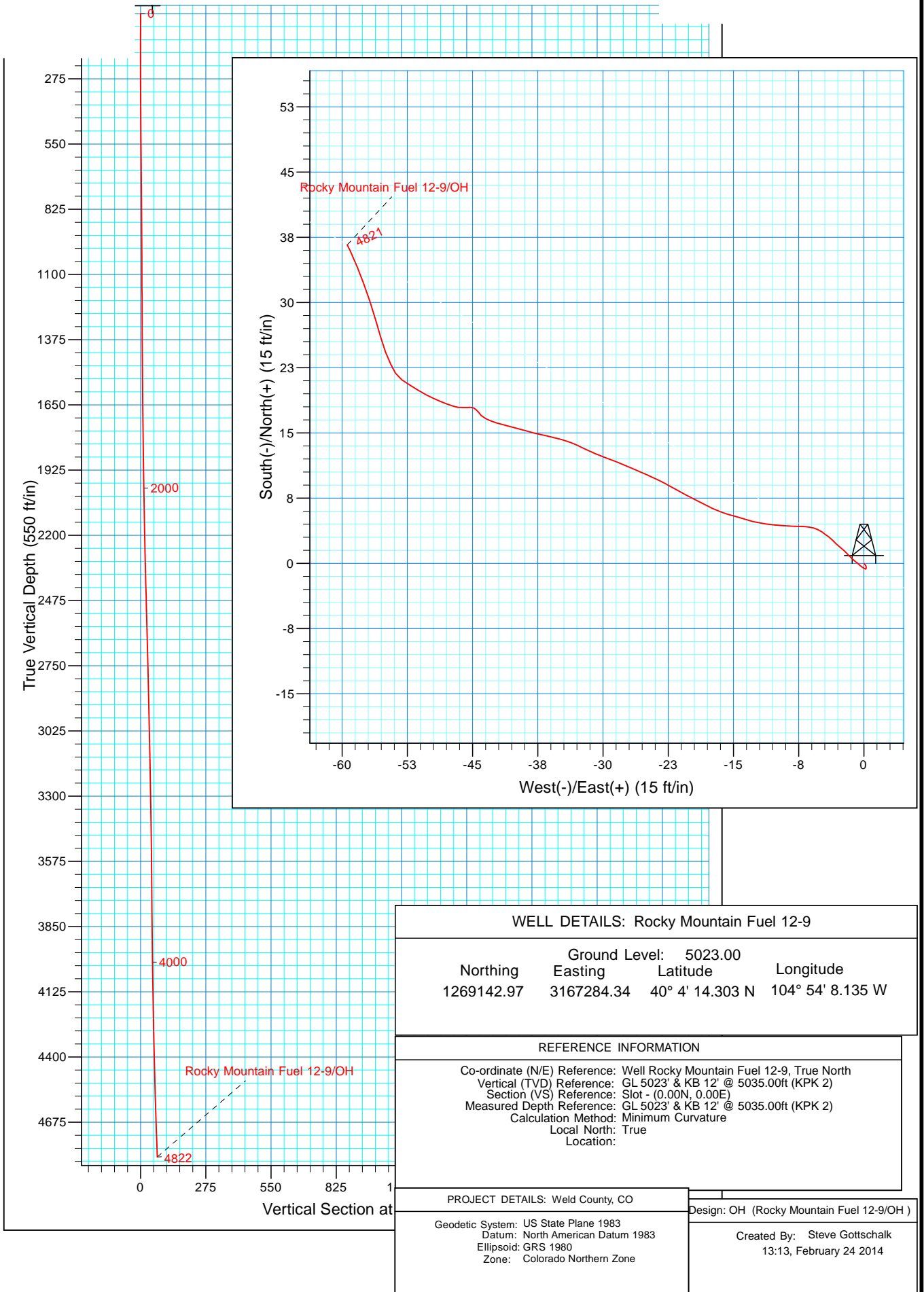
Design: OH

Standard Survey Report

24 February, 2014



Project: Weld County, CO
Site: Rocky Mountain Fuel
Well: Rocky Mountain Fuel 12-9



Scientific Drilling International

Survey Report

Company:	KP Kauffman Co, Inc.	Local Co-ordinate Reference:	Well Rocky Mountain Fuel 12-9
Project:	Weld County, CO	TVD Reference:	GL 5023' & KB 12' @ 5035.00ft (KPK 2)
Site:	Rocky Mountain Fuel	MD Reference:	GL 5023' & KB 12' @ 5035.00ft (KPK 2)
Well:	Rocky Mountain Fuel 12-9	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Casper District

Project	Weld County, CO		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site		Rocky Mountain Fuel			
Site Position:		Northing:	1,269,142.98 usft	Latitude:	40° 4' 14.303 N
From:	Lat/Long	Easting:	3,167,284.34 usft	Longitude:	104° 54' 8.135 W
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	0.39 °

Well	Rocky Mountain Fuel 12-9, 1840' FNL, 520'FWL, SEC9 T1N 67W					
Well Position	+N/-S	0.00 ft	Northing:	1,269,142.97 usft	Latitude:	40° 4' 14.303 N
	+E/-W	0.00 ft	Easting:	3,167,284.34 usft	Longitude:	104° 54' 8.135 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	0.00 ft	Ground Level:	5,023.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2013	2/6/2014	8.60	66.66	52,584

Design	OH				
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		301.64

Survey Program	Date	2/24/2014			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
50.94	4,821.74	Survey #1 Surface Gyros (OH)	SDI Standard Keeper 103	SDI Standard Wireline Keeper ver 1.0.3	

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
50.94	0.33	142.34	50.94	-0.12	0.09	-0.14	0.65	0.65	0.00
First SDI Gyro Survey									
99.21	0.23	153.57	99.21	-0.31	0.22	-0.35	0.24	-0.21	23.26
149.92	0.15	189.60	149.92	-0.47	0.25	-0.46	0.28	-0.16	71.05
199.90	0.12	187.78	199.90	-0.59	0.23	-0.51	0.06	-0.06	-3.64
249.73	0.12	240.46	249.73	-0.66	0.18	-0.50	0.21	0.00	105.72
299.12	0.36	305.61	299.12	-0.60	0.01	-0.32	0.66	0.49	131.91
349.93	0.36	306.01	349.93	-0.41	-0.25	0.00	0.00	0.00	0.79
399.52	0.37	312.37	399.52	-0.21	-0.49	0.31	0.08	0.02	12.83
449.36	0.38	309.56	449.36	0.00	-0.74	0.63	0.04	0.02	-5.64

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Site:	Rocky Mountain Fuel	MD Reference:	GL 5023' & KB 12' @ 5035.00ft (KPK 2)
Well:	Rocky Mountain Fuel 12-9	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Casper District

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)
499.99	0.47	305.41	499.98	0.23	-1.04	1.00	0.19	0.18	-8.20
549.74	0.43	318.86	549.73	0.49	-1.33	1.39	0.23	-0.08	27.04
598.77	0.53	313.10	598.76	0.78	-1.61	1.78	0.23	0.20	-11.75
649.20	0.45	314.63	649.19	1.08	-1.92	2.21	0.16	-0.16	3.03
698.87	0.52	317.99	698.86	1.38	-2.21	2.61	0.15	0.14	6.76
748.96	0.52	307.40	748.94	1.69	-2.55	3.06	0.19	0.00	-21.14
799.84	0.55	309.88	799.82	1.99	-2.92	3.53	0.07	0.06	4.87
849.47	0.50	317.37	849.45	2.30	-3.25	3.97	0.17	-0.10	15.09
899.19	0.45	307.76	899.17	2.58	-3.55	4.37	0.19	-0.10	-19.33
949.21	0.34	317.68	949.19	2.81	-3.80	4.71	0.26	-0.22	19.83
999.23	0.25	312.79	999.21	2.99	-3.98	4.96	0.19	-0.18	-9.78
1,049.56	0.39	299.10	1,049.54	3.15	-4.21	5.24	0.32	0.28	-27.20
1,098.63	0.27	312.21	1,098.61	3.31	-4.45	5.52	0.29	-0.24	26.72
1,149.32	0.22	307.37	1,149.29	3.45	-4.61	5.74	0.11	-0.10	-9.55
1,199.58	0.24	306.82	1,199.55	3.57	-4.77	5.94	0.04	0.04	-1.09
1,248.92	0.33	295.22	1,248.89	3.69	-4.98	6.18	0.22	0.18	-23.51
1,299.56	0.30	296.50	1,299.53	3.81	-5.23	6.46	0.06	-0.06	2.53
1,348.70	0.33	304.46	1,348.67	3.95	-5.47	6.73	0.11	0.06	16.20
1,399.25	0.30	274.01	1,399.22	4.04	-5.72	6.99	0.33	-0.06	-60.24
1,449.79	0.36	288.45	1,449.76	4.10	-6.00	7.26	0.20	0.12	28.57
1,499.24	0.34	272.46	1,499.21	4.16	-6.29	7.54	0.20	-0.04	-32.34
1,549.80	0.51	279.74	1,549.77	4.20	-6.67	7.88	0.35	0.34	14.40
1,599.90	0.64	273.34	1,599.87	4.26	-7.17	8.33	0.29	0.26	-12.77
1,649.65	0.56	266.36	1,649.61	4.26	-7.69	8.78	0.22	-0.16	-14.03
1,699.45	0.78	274.52	1,699.41	4.27	-8.27	9.28	0.48	0.44	16.39
1,749.24	0.80	271.78	1,749.20	4.31	-8.95	9.88	0.09	0.04	-5.50
1,798.96	0.80	276.51	1,798.91	4.36	-9.64	10.50	0.13	0.00	9.51
1,849.84	0.93	273.61	1,849.78	4.42	-10.41	11.18	0.27	0.26	-5.70
1,899.59	0.84	280.10	1,899.53	4.51	-11.17	11.88	0.27	-0.18	13.05
1,949.25	1.00	279.20	1,949.18	4.65	-11.96	12.62	0.32	0.32	-1.81
1,999.71	0.96	282.79	1,999.63	4.81	-12.80	13.42	0.15	-0.08	7.11
2,049.45	1.09	289.32	2,049.37	5.06	-13.66	14.28	0.35	0.26	13.13
2,099.11	1.09	283.97	2,099.02	5.33	-14.56	15.19	0.20	0.00	-10.77
2,149.80	0.97	288.24	2,149.70	5.58	-15.44	16.07	0.28	-0.24	8.42
2,199.40	1.15	289.38	2,199.29	5.88	-16.30	16.96	0.37	0.36	2.30
2,249.10	1.15	290.81	2,248.98	6.22	-17.24	17.94	0.06	0.00	2.88
2,299.66	1.22	299.66	2,299.53	6.67	-18.18	18.98	0.39	0.14	17.50
2,349.43	1.53	297.17	2,349.29	7.23	-19.23	20.17	0.63	0.62	-5.00
2,399.30	1.53	297.25	2,399.14	7.84	-20.42	21.50	0.00	0.00	0.16
2,449.78	1.54	299.46	2,449.60	8.48	-21.61	22.85	0.12	0.02	4.38
2,499.57	1.62	298.34	2,499.37	9.14	-22.81	24.22	0.17	0.16	-2.25
2,549.29	1.44	294.98	2,549.07	9.74	-23.99	25.54	0.40	-0.36	-6.76
2,599.04	1.38	292.74	2,598.81	10.24	-25.11	26.75	0.16	-0.12	-4.50

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Survey Report

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Project:	Weld County, CO	TVD Reference:	GL 5023' & KB 12' @ 5035.00ft (KPK 2)
Site:	Rocky Mountain Fuel	MD Reference:	GL 5023' & KB 12' @ 5035.00ft (KPK 2)
Well:	Rocky Mountain Fuel 12-9	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Casper District

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)
2,649.17	1.44	294.23	2,648.92	10.73	-26.25	27.97	0.14	0.12	2.97
2,698.90	1.50	292.96	2,698.64	11.24	-27.41	29.24	0.14	0.12	-2.55
2,749.01	1.39	291.18	2,748.73	11.72	-28.58	30.48	0.24	-0.22	-3.55
2,799.84	1.46	289.78	2,799.55	12.16	-29.77	31.72	0.15	0.14	-2.75
2,849.45	1.30	293.45	2,849.14	12.60	-30.88	32.90	0.37	-0.32	7.40
2,899.38	1.33	295.26	2,899.06	13.07	-31.92	34.03	0.10	0.06	3.63
2,949.08	1.34	295.17	2,948.74	13.56	-32.97	35.18	0.02	0.02	-0.18
2,998.96	1.31	290.04	2,998.61	14.00	-34.03	36.32	0.25	-0.06	-10.28
3,049.38	1.18	283.15	3,049.02	14.32	-35.08	37.38	0.39	-0.26	-13.67
3,099.80	1.20	283.19	3,099.43	14.56	-36.10	38.37	0.04	0.04	0.08
3,149.02	1.02	283.42	3,148.64	14.78	-37.03	39.28	0.37	-0.37	0.47
3,199.33	1.06	282.78	3,198.94	14.98	-37.92	40.14	0.08	0.08	-1.27
3,249.49	1.04	285.90	3,249.09	15.21	-38.81	41.02	0.12	-0.04	6.22
3,299.90	1.05	285.15	3,299.49	15.46	-39.69	41.90	0.03	0.02	-1.49
3,349.46	1.04	283.58	3,349.05	15.68	-40.57	42.77	0.06	-0.02	-3.17
3,399.97	0.93	288.26	3,399.55	15.92	-41.41	43.60	0.27	-0.22	9.27
3,449.26	1.00	282.43	3,448.83	16.14	-42.21	44.40	0.24	0.14	-11.83
3,499.64	0.82	295.02	3,499.20	16.38	-42.96	45.17	0.53	-0.36	24.99
3,549.26	0.78	301.02	3,548.82	16.71	-43.57	45.86	0.19	-0.08	12.09
3,599.04	0.52	308.86	3,598.60	17.02	-44.04	46.42	0.55	-0.52	15.75
3,648.67	0.44	331.59	3,648.22	17.33	-44.30	46.81	0.41	-0.16	45.80
3,699.43	0.48	309.44	3,698.98	17.64	-44.56	47.19	0.36	0.08	-43.64
3,748.91	0.36	302.87	3,748.46	17.86	-44.85	47.55	0.26	-0.24	-13.28
3,799.57	0.55	266.19	3,799.12	17.93	-45.23	47.91	0.67	0.38	-72.40
3,849.57	0.45	272.43	3,849.12	17.92	-45.66	48.28	0.23	-0.20	12.48
3,898.94	0.67	267.39	3,898.49	17.91	-46.15	48.68	0.46	0.45	-10.21
3,948.64	0.56	277.16	3,948.18	17.93	-46.68	49.15	0.31	-0.22	19.66
3,999.18	0.76	287.80	3,998.72	18.06	-47.24	49.70	0.46	0.40	21.05
4,049.69	0.82	290.73	4,049.23	18.29	-47.90	50.38	0.14	0.12	5.80
4,099.71	1.07	292.10	4,099.24	18.60	-48.67	51.19	0.50	0.50	2.74
4,149.24	0.95	296.18	4,148.76	18.95	-49.46	52.05	0.28	-0.24	8.24
4,199.09	1.35	295.42	4,198.60	19.39	-50.36	53.05	0.80	0.80	-1.52
4,248.52	1.34	304.38	4,248.02	19.96	-51.37	54.20	0.43	-0.02	18.13
4,299.34	1.04	298.99	4,298.83	20.52	-52.26	55.26	0.63	-0.59	-10.61
4,349.76	1.37	307.16	4,349.23	21.11	-53.14	56.32	0.74	0.65	16.20
4,399.40	1.07	327.75	4,398.86	21.86	-53.86	57.32	1.06	-0.60	41.48
4,448.83	1.59	334.47	4,448.28	22.87	-54.40	58.31	1.10	1.05	13.59
4,499.64	1.86	338.51	4,499.07	24.27	-55.01	59.56	0.58	0.53	7.95
4,549.46	2.21	344.53	4,548.86	25.95	-55.56	60.92	0.82	0.70	12.08
4,598.56	2.57	343.17	4,597.91	27.91	-56.13	62.43	0.74	0.73	-2.77
4,649.05	2.63	342.33	4,648.35	30.10	-56.81	64.16	0.14	0.12	-1.66
4,699.49	2.34	339.05	4,698.74	32.17	-57.53	65.85	0.64	-0.57	-6.50
4,749.56	2.26	338.74	4,748.77	34.04	-58.26	67.45	0.16	-0.16	-0.62

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Survey Report

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Project:	Weld County, CO	TVD Reference:	GL 5023' & KB 12' @ 5035.00ft (KPK 2)
Site:	Rocky Mountain Fuel	MD Reference:	GL 5023' & KB 12' @ 5035.00ft (KPK 2)
Well:	Rocky Mountain Fuel 12-9	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Casper District

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)
4,799.78	2.25	334.20	4,798.95	35.85	-59.04	69.07	0.36	-0.02	-9.04
4,821.74	2.21	333.92	4,820.90	36.62	-59.42	69.80	0.19	-0.18	-1.28
Last SDI Gyro Survey									

Design Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
50.94	50.94	-0.12	0.09	First SDI Gyro Survey
4,821.74	4,820.90	36.62	-59.42	Last SDI Gyro Survey

Checked By: _____ Approved By: _____ Date: _____