



Minimum Curvature Calculation

CLIENT:	CHESAPEAKE AEC ACQUISTION, L.L.C.	MWD OPERATORS:	G. PEERY / D.DUBIENCZUK
WELL:	ALLISON HNK 3H M	DIRECTIONAL DRILLERS:	R.HALL / M.GRUETZNER
COUNTY/STATE:	HANCOCK, WV	TOOL AZIMUTH TO GRID NORTH:	-8.18
RIG:	NOMAC 39	SURVEY TOOL:	PILOT
SURF LOCATION:	LAT: 40.501514 N LONG: -80.547351 W	JOB#:	PA-12249
API NUMBER:	47-029-00141	RKB:	1293'
FINAL SVY DATE:	5/13/2012	GL:	1275'
VS DIRECTION:	327.29		

TOOL	Meas. Depth	Inc.	Azm.	T.V.D.	Ver.Sect.	+N/-S	+E/-W	DLS
TIE IN	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GYRO	100	0.76	113.42	100.00	-0.55	-0.26	0.61	0.76
GYRO	200	0.45	176.93	199.99	-1.44	-0.92	1.24	0.69
GYRO	300	0.14	174.87	299.99	-1.89	-1.43	1.27	0.31
GYRO	400	0.21	241.75	399.99	-1.99	-1.64	1.12	0.20
GYRO	500	0.17	255.68	499.99	-1.93	-1.77	0.81	0.06
GYRO	600	0.24	251.49	599.99	-1.83	-1.87	0.47	0.07
GYRO	700	0.27	244.93	699.99	-1.74	-2.03	0.06	0.04
GYRO	800	0.29	214.89	799.99	-1.81	-2.34	-0.30	0.15
GYRO	900	0.44	266.59	899.99	-1.72	-2.57	-0.83	0.35
GYRO	1000	0.46	288.96	999.98	-1.22	-2.46	-1.59	0.18
GYRO	1100	0.59	287.57	1099.98	-0.50	-2.18	-2.46	0.13
GYRO	1200	0.69	288.92	1199.97	0.36	-1.83	-3.52	0.10
GYRO	1300	0.52	281.83	1299.97	1.15	-1.54	-4.53	0.19
GYRO	1400	0.50	318.19	1399.96	1.90	-1.12	-5.27	0.32
GYRO	1500	0.97	327.16	1499.95	3.18	-0.09	-6.02	0.48
GYRO	1600	1.25	320.90	1599.94	5.11	1.47	-7.17	0.30
GYRO	1700	1.51	304.71	1699.91	7.41	3.07	-8.94	0.47
GYRO	1800	1.43	299.79	1799.87	9.73	4.44	-11.10	0.15
GYRO	1900	1.49	302.35	1899.84	12.02	5.75	-13.28	0.09
GYRO	2000	1.29	301.44	1999.81	14.21	7.04	-15.34	0.20
GYRO	2100	1.08	303.63	2099.79	16.09	8.15	-17.09	0.21
GYRO	2200	1.05	309.21	2199.77	17.82	9.25	-18.58	0.11
GYRO	2300	1.12	316.13	2299.76	19.65	10.53	-19.97	0.15
GYRO	2400	1.45	318.65	2399.73	21.86	12.19	-21.48	0.33
GYRO	2500	1.48	300.68	2499.70	24.27	13.79	-23.43	0.46
GYRO	2600	1.19	295.39	2599.67	26.30	14.90	-25.48	0.31
GYRO	2700	1.12	321.23	2699.65	28.16	16.11	-27.03	0.52
GYRO	2800	1.48	316.10	2799.63	30.40	17.80	-28.54	0.38
GYRO	2900	1.09	300.00	2899.60	32.51	19.20	-30.25	0.53
GYRO	3000	0.93	321.28	2999.58	34.16	20.31	-31.59	0.40
GYRO	3100	1.31	321.83	3099.57	36.11	21.85	-32.80	0.38
GYRO	3200	0.98	298.84	3199.55	38.00	23.16	-34.26	0.56
GYRO	3300	1.15	327.26	3299.53	39.75	24.41	-35.55	0.55
GYRO	3400	1.33	304.79	3399.51	41.83	25.92	-37.04	0.51
GYRO	3500	1.08	320.55	3499.48	43.83	27.31	-38.60	0.41
GYRO	3600	1.35	321.90	3599.46	45.94	28.96	-39.92	0.27
GYRO	3700	1.46	302.57	3699.43	48.27	30.58	-41.72	0.48
GYRO	3800	0.90	310.95	3799.41	50.18	31.78	-43.39	0.58
GYRO	3900	0.93	310.47	3899.40	51.71	32.82	-44.60	0.03
GYRO	4000	1.24	292.64	3999.38	53.38	33.76	-46.21	0.45
MWD	4033	3.10	358.10	4032.36	54.44	34.79	-46.57	8.55
MWD	4065	7.80	14.80	4064.21	56.65	37.76	-46.05	15.35
MWD	4097	12.00	9.60	4095.72	60.58	43.14	-44.94	13.41