MOUNT KLAPPAN COAL PROJECT
LOST - FOX AREA
GEOLOGICAL REPORT
1985

APPENDIX III

DIAMOND DRILL HOLE DATA
VOLUME I

KPNLRDDH 85 001
TO
KPNLRDDH 85 007

707

Gulf

GULF CANADA LIMITED
COAL DIVISION

APPENDIX III

Lost-Fox Area
1985 Diamond Drill Hole Data

GULF CANADA RESOURCES INC. - COAL DIVISION

13/JAN/86 PROJECT DATA SOURCE SUMMARY PAGE 1

DATA SOURCE	LOCATION NORTHING	EASTING	ELEVATION	LENGTH	ANGLE	AZIMUTH	LOG TYPE
KPNLRDDH85001	6345720.4	507254.8	1480.4	233.3	90.0		COCC.UU*
KPNLRDDH85002	6344198.8	505875.1	1836.4	103.0	90.0		
KPNLRDDH85003	6344438.8	506328.3	1798.1	176.6	70.0	45.0	COCC.UU*
KPNLRDDH85004	6344198.8	505875.1	1836.4	252.8	85.0	225.0	COCC.UU*
KPNLRDDH85005	6344398.2	506691.7	1758.0	344.9	80.0	45.0	COCC.UU*
KPNLRDDH85006	6343993.4	506101.0	1764.9	262.5	90.0		COCC.UU*
KPNLRDDH85007	6344168.8	506330.4	1761.9	102.4	60.0	45.0	
KPNLRDDH85008	6343920.6	506349.6	1732.1	153.0	60.0	225.0	COCC.UU*
KPNLRDDH85009	6344168.8	506330.4	1761.9	343.7	65.0	45.0	COCC.UU*
KPNLRDDH85010	6344570.7	506920.9	1752.7	231.8	90.0		COCC.UU*
KPNLRDDH85011	6344833.4	507124.5	1625.7	162.5	75.0	45.0	COCC.UU*
KPNLRDDH85012	6344660.5	506131.4	1666.4	262.7	80.0	10.0	COCC.UU*
KPNLRDDH85013	6344850.2	506377.5	1643.9	279.0	75.0	10.0	COCC.UU*
KPNLRDDH85014	6344886.3	505606.7	1605.4	253.9	70.0	20.0	COCC.UU*
KPNLRDDH85015	6344509.5	505423.0	1669.4	197.8	65.0	45.0	COCC.UU*
KPNLRDDH85016	6344868.5	505928.5	1633.8	324.2	75.0	10.0	COCC.UU*

GULF CANADA RESOURCES INC. - COAL DIVISION

13/JAN/86 PROJECT DATA SOURCE SUMMARY PAGE 2

DATA SOURCE	LOCATION NORTHING	EASTING	ELEVATION	LENGTH	ANGLE	AZIMUTH	LOG TYPE
KPNLRDDH85017	6344834.3	506805.1	1635.0	274.7	75.0	360.0	COCC.UU*
KPNLRDDH85018	6344973.2	505469.9	1592.7	274.8	60.0	10.0	COCC.UU*
KPNLRDDH85019	6345160.8	506845.0	1573.5	156.0	75.0	360.0	COCC.UU*
KPNLRDDH85020	6344003.3	505449.6	1820.1	162.2	75.0	225.0	COCC.UU*
KPNLRDDH85021	6345237.6	505628.3	1540.4	165.3	80.0	120.0	COCC.UU*
KPNLRDDH85022	6343550.0	506630.1	1678.4	178.3	90.0		COCC.UU*
KPNLRDDH85023	6344164.8	506617.0	1741.6	299.1	60.0	45.0	COCC.UU*
KPNLRDDH85024	6343684.8	506360.3	1709.5	152.9	90.0		COCC.UU*
KPNLRDDH85025	6343436.2	506419.9	1684.3	111.3	90.0		COCC.UU*
KPNLRDDH85026	6343430.8	506857.1	1641.9	90.0	90.0		COCC.UU*
KPNLRDDH85027	6343062.9	506959.4	1629.7	275.7	90.0		COCC.UU*
KPNLRDDH85028	6343175.5	506256.6	1668.6	79.1	90.0		COCC.UU*
KPNLRDDH85029	6343261.2	506524.0	1661.7	1[illegible]4.3	90.0		COCC.UU*
KPNLRDDH85030	6344306.4	505778.3	1826.2	31.2	90.0		COCC.UU*
KPNLRDDH85031	6344324.9	505717.5	1827.4	22.1	90.0		COCC.UU*
KPNLRDDH85032	6344291.9	505843.6	1825.0	40.9	90.0		COCC.UU*

FORM 9999

GULF CANADA RESOURCES INC. - COAL DIVISION

13/JAN/86 PROJECT DATA SOURCE SUMMARY

DATA SOURCE	LOCATION NORTHING	EASTING	ELEVATION	LENGTH	ANGLE	AZIMUTH	LOG TYPE
KPNLRDDH85033	6344258.5	506019.1	1809.1	22.2	90.0		COCC.UU*
KPNLRDDH85034	6344261.4	505908.2	1820.0	40.4	90.0		COCC.UU*

GULF CANADA RESOURCES INC. - COAL DIVISION

13/JAN/86 SIMPLE SAMPLE SUMMARY PAGE 1

TRUE THICKNESS

KLAPPAN PROJECT

DATA SOURCE	SEAM	SAMPLE ID	DEPTH FROM	DEPTH TO	PERCENT REC	RECOVERED COAL	RECOVERED ROCK	MISSING COAL	MISSING ROCK	TOTAL COAL - ROCK
DDH85001										
		7251	22.00	22.10	100.00		0.062			0.000- 0.062
	J	7252	22.10	22.68	100.00	0.356				0.356- 0.000
		7253	22.68	23.38	100.00		0.423			0.000- 0.423
		7254	118.90	119.13	100.00		0.230			0.000- 0.230
	I	7255	119.13	120.53	100.00	1.360	0.040			1.360- 0.040
	I	7256	120.53	121.65	100.00	0.170	0.949			0.170- 0.949
	I	7257	121.65	123.51	100.00	1.848	0.010			1.848- 0.010
		7258	123.51	123.95	100.00		0.439			0.000- 0.439
		7259	157.16	158.65	100.00	0.009	1.400			0.009- 1.400
	H	7260	158.65	159.09	100.00	0.225	0.187			0.225- 0.187
	H	7261	159.09	160.98	88.36	1.352	0.183	0.167	0.037	1.519- 0.220
		7262	160.98	162.11	100.00		1.016			0.000- 1.016
		7263	213.77	214.70	75.27		0.700		0.230	0.000- 0.930
	G	7264	214.70	215.64	96.81	0.820	0.090	0.030		0.850- 0.090
		7265	215.64	217.58	100.00		1.939			0.000- 1.939
	PHANTOM	7266	175.78	176.00	100.00	0.220				0.220- 0.000
DDH85002										
		7267	59.18	59.45	100.00		0.270			0.000- 0.270
	I	7268	59.45	60.26	86.42	0.550	0.150	0.110		0.660- 0.150
	I	7269	60.26	62.68	90.50	2.110	0.080	0.230		2.340- 0.080
		7270	62.68	63.29	100.00		0.610			0.000- 0.610
		7271	100.04	101.62	100.00		1.580			0.000- 1.580
	H	7272	101.62	102.97	100.00	1.090	0.260			1.090- 0.260
DDH85003										
		7276	35.21	35.71	100.00		0.383			0.000- 0.383
	M	7277	35.71	36.81	81.82	0.630	0.061	0.153		0.783- 0.061
	M	7278	36.81	38.07	86.51	0.468	0.369	0.077	0.054	0.545- 0.423
	M	7279	38.07	41.05	81.88	1.592	0.275	0.245	0.169	1.837- 0.444

GULF CANADA RESOURCES INC. - COAL DIVISION

13/JAN/86 SIMPLE SAMPLE SUMMARY

TRUE THICKNESS

KLAPPAN PROJECT

DATA SOURCE	SEAM	SAMPLE ID	DEPTH FROM	DEPTH TO	PERCENT REC	RECOVERED COAL	RECOVERED ROCK	MISSING COAL	MISSING ROCK	TOTAL COAL - ROCK
	M	7280	41.05	42.63	100.00	0.744	0.467			0.744- 0.467
		7281	42.63	42.95	100.00		0.245			0.000- 0.245
		7282	99.93	100.20	100.00		0.213			0.000- 0.213
	N OVERTURNED	7283	100.20	101.35	100.00	0.409	0.495			0.409- 0.495
	N OVERTURNED	7284	101.35	102.39	100.00	0.759	0.055			0.759- 0.055
		7285	102.39	102.69	100.00		0.234			0.000- 0.234
		7286	169.18	170.59	100.00		1.178			0.000- 1.178
	N UPRIGHT	7287	170.59	172.29	86.47	0.887	0.355	0.194		1.081- 0.355
		7288	172.29	172.49	100.00		0.170			0.000- 0.170
	M/N	99999	91.30	92.00	87.14	0.485		0.072		0.557- 0.000
DDH85004										
		7289	58.81	59.02	100.00		0.210			0.000- 0.210
	I	7290	59.02	61.34	50.43	1.140	0.030	1.150		2.290- 0.030
	I	7291	61.34	62.72	84.06	0.960	0.200	0.220		1.180- 0.200
		7292	62.72	64.25	100.00		1.530			0.000- 1.530
		7294	100.24	101.65	100.00		1.396			0.000- 1.396
	H	7295	101.65	102.66	85.15	0.853		0.149		1.002- 0.000
	H	7296	102.66	103.84	64.41	0.387	0.368	0.208	0.208	0.595- 0.576
	H	7297	103.84	105.64	85.00	1.462	0.060	0.139	0.129	1.601- 0.189
		7298	105.64	106.06	100.00		0.419			0.000- 0.419
		7299	160.09	160.32	100.00		0.229			0.000- 0.229
	G	7300	160.32	161.69	86.13	0.932	0.238		0.188	0.932- 0.426
	G	7301	161.69	162.44	100.00	0.030	0.709			0.030- 0.709
	G	7302	162.44	163.78	100.00	1.135	0.176			1.135- 0.176
	G	7303	163.78	165.35	87.90	0.337	0.993		0.182	0.337- 1.175
		7304	165.35	165.75	100.00		0.381			0.000- 0.381
		7305	203.02	204.19	100.00		1.152			0.000- 1.152
	F	7306	204.19	205.02	73.49	0.591	0.010	0.217		0.808- 0.010
	F	7307	205.02	206.57	100.00	0.918	0.611			0.918- 0.611

GULF CANADA RESOURCES INC. - COAL DIVISION

13/JAN/86 SIMPLE SAMPLE SUMMARY

TRUE THICKNESS

KLAPPAN PROJECT

DATA SOURCE	SEAM	SAMPLE ID	DEPTH FROM	DEPTH TO	PERCENT REC	RECOVERED COAL	RECOVERED ROCK	MISSING COAL	MISSING ROCK	TOTAL COAL - ROCK
		7308	206.57	207.13	100.00		0.552			0.000- 0.552
		7342	223.32	223.68	100.00		0.310			0.000- 0.310
	E	7343	223.68	226.75	86.32	1.835	0.105	0.206	0.087	2.041- 0.192
		7345	236.94	237.89	100.00		0.545			0.000- 0.545
	E(REPEAT)	7346	237.89	239.64	54.86	0.260	0.034	0.178	0.029	0.438- 0.063
		7347	239.64	241.39	100.00		0.875			0.000- 0.875
DDH85005										
		7314	51.13	51.60	100.00		0.338			0.000- 0.338
	O	7315	51.60	52.33	53.42	0.094	0.150	0.156	0.070	0.250- 0.220
	O	7316	52.33	53.25	93.48	0.800		0.056		0.856- 0.000
		7317	53.25	53.65	100.00		0.333			0.000- 0.333
		7318	98.01	98.55	100.00		0.431			0.000- 0.431
	N UPPER	7319	98.55	99.65	62.73	0.044		0.128		0.172- 0.000
		7320	99.65	99.90	100.00		0.129			0.000- 0.129
		7321	105.92	106.13	100.00		0.105			0.000- 0.105
	N LOWER	7322	106.13	108.28	100.00	1.023	0.206			1.023- 0.206
	N LOWER	7323	108.28	110.71	97.12	0.375	1.304	0.047		0.422- 1.304
	N LOWER	7324	110.71	111.87	100.00	0.981				0.981- 0.000
	N LOWER	7325	111.87	112.12	100.00		0.004			0.000- 0.004
		7327	210.42	210.91	100.00		0.460			0.000- 0.460
	M	7328	210.91	214.17	89.57	1.888	0.745		0.300	1.888- 1.045
		7329	214.17	214.42	100.00		0.223			0.000- 0.223
		7348	255.19	255.98	100.00		0.747			0.000- 0.747
	L	7349	255.98	256.63	100.00	0.406	0.208			0.406- 0.208
		7350	256.63	257.00	100.00		0.349			0.000- 0.349
	K/L	7362	310.83	310.97	100.00	0.127				0.127- 0.000
	K/L	7363	310.97	311.56	100.00	0.497	0.036			0.497- 0.036
		7364	311.56	311.88	100.00		0.291			0.000- 0.291
		7365	315.82	316.12	100.00		0.276			0.000- 0.276

GULF CANADA RESOURCES INC. - COAL DIVISION

13/JAN/86 SIMPLE SAMPLE SUMMARY PAGE 4

TRUE THICKNESS

KLAPPAN PROJECT

DATA SOURCE	SEAM	SAMPLE ID	DEPTH FROM	DEPTH TO	PERCENT REC	RECOVERED COAL	RECOVERED ROCK	MISSING COAL	MISSING ROCK	TOTAL COAL - ROCK
	K	7366	316.12	318.54	100.00	2.196	0.036			2.196- 0.036
	K	7367	318.54	319.17	100.00	0.009	0.573			0.009- 0.573
	K	7369	319.17	319.48	100.00	0.287				0.287- 0.000
		7370	319.48	320.83	100.00		1.254			0.000- 1.254
		7371	320.83	320.99	100.00		0.149			0.000- 0.149
	K	7372	320.99	321.62	100.00	0.467	0.121			0.467- 0.121
	K	7373	321.62	322.20	100.00		0.541			0.000- 0.541
		7374	243.32	243.46	100.00	0.010	0.128			0.010- 0.128
	L/M	7375	243.46	243.86	100.00	0.316	0.079			0.316- 0.079
	L/M	7376	243.86	244.07	100.00		0.207			0.000- 0.207
		7540	26.65	26.90	100.00		0.067			0.000- 0.067
	O OVERTURNED	7541	26.90	30.13	100.00	0.642	0.030			0.642- 0.030
	O OVERTURNED	7542	30.13	31.24	100.00		0.380			0.000- 0.380
DDH85006										
		7330	81.64	81.93	100.00		0.286			0.000- 0.286
	G	7331	81.93	83.42	74.50	0.857	0.236	0.375		1.232- 0.236
	G	7332	83.42	84.51	100.00		1.074			0.000- 1.074
	G	7333	84.51	85.47	75.00	0.680	0.030	0.236		0.916- 0.030
	G	7334	85.47	88.08	87.74	0.373	1.879	0.314		0.687- 1.879
		7335	88.08	88.20	100.00		0.118			0.000- 0.118
		7336	153.13	153.47	100.00		0.335			0.000- 0.335
	F	7337	153.47	156.65	76.10	1.555	0.807	0.388	0.348	1.943- 1.155
		7338	156.65	157.02	100.00		0.356			0.000- 0.356
		7339	176.29	178.13	100.00		1.824			0.000- 1.824
	E	7340	178.13	179.04	84.62	0.477	0.289	0.140		0.617- 0.289
		7341	179.04	179.29	100.00		0.249			0.000- 0.249
		7351	22.67	23.32	100.00		0.648			0.000- 0.648
	H	7352	23.32	26.09	50.54	1.088	0.309	1.046	0.319	2.134- 0.628
		7353	26.09	26.61	100.00		0.518			0.000- 0.518

GULF CANADA RESOURCES INC. - COAL DIVISION

13/JAN/86 SIMPLE SAMPLE SUMMARY

TRUE THICKNESS

KLAPPAN PROJECT

DATA SOURCE	SEAM	SAMPLE ID	DEPTH FROM	DEPTH TO	PERCENT REC	RECOVERED COAL	RECOVERED ROCK	MISSING COAL	MISSING ROCK	TOTAL COAL - ROCK
DDH85007										
	I	7354	95.50	102.30	82.79	3.633	0.346		0.827	3.633- 1.173
DDH85008										
		7355	47.82	48.00	100.00		0.100			0.000- 0.100
	G LOWER	7356	48.00	48.73	50.68	0.212		0.205		0.417- 0.000
	G LOWER	7357	48.73	49.16	41.86		0.105	0.148		0.148- 0.105
		7358	49.16	49.28	100.00		0.072			0.000- 0.072
		7359	80.28	80.87	100.00		0.488			0.000- 0.488
	F	7360	80.87	81.71	100.00	0.633	0.031			0.633- 0.031
		7361	81.71	81.88	100.00		0.130			0.000- 0.130
DDH85009										
		7451	102.02	102.85	100.00		0.522			0.000- 0.522
	I	7452	102.85	106.22	72.40	1.260		0.483		1.743- 0.000
	I	7453	106.22	111.00	68.41	1.615	0.556	0.917	0.068	2.532- 0.624
		7454	111.00	111.11	100.00		0.075			0.000- 0.075
	L	7455	241.14	242.16	82.35	0.248	0.363	0.052	0.079	0.300- 0.442
	J	7456	166.20	166.23	100.00	0.020				0.020- 0.000
		7457	204.19	204.40	100.00		0.130			0.000- 0.130
	K	7458	204.40	205.37	87.63	0.497	0.024	0.077		0.574- 0.024
	K	7459	205.37	206.79	83.80	0.282	0.463	0.106	0.038	0.388- 0.501
	K	7460	206.79	209.51	86.03	1.482	0.043	0.259		1.741- 0.043
		7461	209.51	209.96	100.00		0.344			0.000- 0.344
	L	7462	242.16	246.55	96.58	1.639	1.157	0.098		1.737- 1.157
	L	7463	246.55	247.93	85.51	0.582	0.129	0.115		0.697- 0.129
		7464	321.77	322.62	100.00		0.015			0.000- 0.015
	M	7465	322.62	328.06	83.64	1.413	0.718	0.678		2.091- 0.718
		7466	328.06	329.96	100.00		1.722			0.000- 1.722
DDH85010										
		7377	129.43	130.04	100.00		0.597			0.000- 0.597

GULF CANADA RESOURCES INC. - COAL DIVISION

13/JAN/86 SIMPLE SAMPLE SUMMARY PAGE 6

TRUE THICKNESS

KLAPPAN PROJECT

DATA SOURCE	SEAM	SAMPLE ID	DEPTH FROM	DEPTH TO	PERCENT REC	RECOVERED COAL	RECOVERED ROCK	MISSING COAL	MISSING ROCK	TOTAL COAL - ROCK
	O	7378	130.04	132.07	85.71	0.510	1.199	0.284		0.794- 1.199
	O	7379	132.07	134.76	86.62	1.701	0.553	0.107	0.243	1.808- 0.796
	O	7380	134.76	135.90	86.84	0.219	0.697	0.136		0.355- 0.697
		7381	135.90	136.34	77.27		0.305		0.090	0.000- 0.395
		7382	158.78	159.22	45.45		0.193		0.231	0.000- 0.424
	N	7383	159.22	161.13	79.06	1.194	0.236		0.380	1.194- 0.616
		7384	161.13	161.82	100.00	0.019	0.627			0.019- 0.627
		7386	222.11	222.56	100.00		0.307			0.000- 0.307
	M	7387	222.56	225.95	71.98	1.449	0.243	0.519	0.140	1.968- 0.383
	M	7388	225.95	227.08	100.00	0.092	0.706			0.092- 0.706
	M	7389	227.08	228.22	84.21	0.633	0.050	0.128		0.761- 0.050
		7390	228.22	228.58	100.00		0.258			0.000- 0.258
	P	7400	73.40	73.62	100.00	0.219				0.219- 0.000
DDH85011										
		7391	35.84	36.49	100.00		0.532			0.000- 0.532
	K	7392	36.49	38.87	85.29	0.882	0.830	0.251	0.043	1.133- 0.873
	K	7393	38.87	40.55	97.62	1.036	0.394	0.034		1.070- 0.394
	K	7394	40.55	42.02	100.00		1.310			0.000- 1.310
	K	7395	42.02	42.68	100.00	0.506	0.090			0.506- 0.090
		7396	42.68	42.74	100.00		0.055			0.000- 0.055
		7397	101.42	101.44	100.00		0.019			0.000- 0.019
	I	7398	101.44	103.34	76.32	0.986	0.350	0.230	0.185	1.216- 0.535
		7954	26.53	27.95	100.00		1.287			0.000- 1.287
DDH85012										
		7467	23.15	23.24	100.00		0.078			0.000- 0.078
	L	7468	23.24	24.84	35.00	0.481		0.892		1.373- 0.000
		7470	49.82	50.16	100.00	0.019	0.311			0.019- 0.311
	K/L	7471	50.16	51.69	75.16	0.780	0.342	0.372		1.152- 0.342
		7472	51.69	52.12	41.86		0.177		0.245	0.000- 0.422

GULF CANADA RESOURCES INC. - COAL DIVISION

13/JAN/86 SIMPLE SAMPLE SUMMARY

TRUE THICKNESS

KLAPPAN PROJECT

DATA SOURCE	SEAM	SAMPLE ID	DEPTH FROM	DEPTH TO	PERCENT REC	RECOVERED COAL	RECOVERED ROCK	MISSING COAL	MISSING ROCK	TOTAL COAL - ROCK
		7473	69.66	69.89	100.00		0.221			0.000- 0.221
	K	7474	69.89	71.73	81.52	1.292	0.122	0.323		1.615- 0.122
	K	7475	71.73	73.09	96.32	0.094	1.138		0.047	0.094- 1.185
	K	7476	73.09	73.63	100.00	0.357	0.150			0.357- 0.150
		7477	73.63	74.40	100.00		0.725			0.000- 0.725
	K (REPEAT)	7478	151.37	151.54	100.00		0.145			0.000- 0.145
	K (REPEAT)	7479	151.54	153.01	100.00	0.587	0.637			0.587- 0.637
	K (REPEAT)	7480	153.01	153.56	100.00		0.409			0.000- 0.409
		7481	204.86	205.78	100.00		0.870			0.000- 0.870
	I	7482	205.78	206.33	87.27	0.453		0.066		0.519- 0.000
	I	7483	206.33	207.27	81.91	0.009	0.716		0.160	0.009- 0.876
	I	7484	207.27	209.20	100.00	1.528	0.281			1.528- 0.281
		7485	209.20	210.57	100.00		1.276			0.000- 1.276
DDH85013										
		7486	21.89	22.90	100.00		0.984			0.000- 0.984
	K	7487	22.90	23.91	100.00	0.681	0.302			0.681- 0.302
		7488	23.91	24.49	100.00		0.565			0.000- 0.565
		7489	91.10	91.24	100.00		0.137			0.000- 0.137
	I	7490	91.24	94.62	73.08	2.093	0.323	0.842	0.049	2.935- 0.372
	I	7491	94.62	95.18	100.00	0.108	0.441			0.108- 0.441
	I	7492	95.18	97.53	84.26	1.924	0.020	0.363		2.287- 0.020
	H	7493	146.55	149.17	100.00	1.178	1.418			1.178- 1.418
	H	7494	149.17	150.96	93.85	1.356	0.307	0.069	0.040	1.425- 0.347
		7495	150.96	151.14	100.00		0.178			0.000- 0.178
	PHANTOM	7496	176.56	176.65	100.00	0.089				0.089- 0.000
	G UPPER	7497	185.65	185.90	100.00	0.222				0.222- 0.000
		7498	210.90	211.17	100.00		0.268			0.000- 0.268
	G LOWER	7499	211.17	211.82	96.92	0.558	0.070		0.020	0.558- 0.090
	G LOWER	7500	211.82	215.32	88,57	0.338	2.735		0.396	0.338- 3.131

GULF CANADA RESOURCES INC. - COAL DIVISION

13/JAN/86 SIMPLE SAMPLE SUMMARY

TRUE THICKNESS

KLAPPAN PROJECT

DATA SOURCE	SEAM	SAMPLE ID	DEPTH FROM	DEPTH TO	PERCENT REC	RECOVERED COAL	RECOVERED ROCK	MISSING COAL	MISSING ROCK	TOTAL COAL - ROCK
		7501	235.25	235.70	100.00		0.424			0.000- 0.424
	F/G	7502	235.70	236.11	100.00	0.178	0.207			0.178- 0.207
		7503	236.11	238.36	100.00	0.047	2.055			0.047- 2.055
		7504	240.28	242.26	85.86		1.556		0.266	0.000- 1.822
	F/G	7505	242.26	242.59	96.97	0.174	0.135		0.010	0.174- 0.145
	F/G	7506	242.59	242.78	100.00	0.010	0.175			0.010- 0.175
		7507	270.98	271.23	100.00		0.248			0.000- 0.248
	F	7508	271.23	272.18	100.00	0.864	0.079			0.864- 0.079
	F	7509	272.18	273.20	100.00		1.006			0.000- 1.006
	F	7510	273.20	275.51	96.10	1.710	0.459	0.088		1.798- 0.459
DDH85014										
		7511	101.66	102.59	100.00		0.841			0.000- 0.841
	I	7512	102.59	108.37	78.89	4.086	0.222	1.151		5.237- 0.222
		7513	108.37	108.73	100.00		0.351			0.000- 0.351
		7514	155.10	155.53	100.00		0.417			0.000- 0.417
	H	7515	155.53	156.16	100.00	0.428	0.185			0.428- 0.185
	H	7516	156.16	157.20	78.85	0.234	0.568		0.215	0.234- 0.783
	H	7517	157.20	157.67	91.49	0.344	0.078	0.039		0.383- 0.078
		7518	157.67	159.07	100.00		1.382			0.000- 1.382
		7519	246.54	247.19	100.00		0.607			0.000- 0.607
	F	7520	247.19	248.32	81.42	0.700	0.158	0.196		0.896- 0.158
	F	7521	248.32	249.32	95.00	0.627	0.261		0.047	0.627- 0.308
	F	7522	249.32	250.10	84.62	0.586	0.027	0.112		0.698- 0.027
		7523	250.10	250.55	100.00		0.420			0.000- 0.420
DDH85015										
		7469	185.47	185.62	100.00	0.147				0.147- 0.000
		7524	31.47	32.54	100.00		0.688			0.000- 0.688
	E	7525	32.54	34.89	83.40	0.745	0.084	0.102	0.015	0.847- 0.099
		7526	34.89	36.40	100.00		0.731			0.000- 0.731

GULF CANADA RESOURCES INC. - COAL DIVISION

13/JAN/86 SIMPLE SAMPLE SUMMARY

TRUE THICKNESS

KLAPPAN PROJECT

DATA SOURCE	SEAM	SAMPLE ID	DEPTH FROM	DEPTH TO	PERCENT REC	RECOVERED COAL	RECOVERED ROCK	MISSING COAL	MISSING ROCK	TOTAL COAL - ROCK
		7527	77.52	78.00	100.00		0.203			0.000- 0.203
	F	7528	78.00	80.13	90.14	1.004	0.400	0.158		1.162- 0.400
	F	7529	80.13	82.28	87.44	0.635	0.406	0.125		0.760- 0.406
		7530	82.28	83.00	100.00		0.360			0.000- 0.360
		7531	156.73	157.52	100.00		0.655			0.000- 0.655
	G	7532	157.52	160.92	87.94	0.255	0.177	0.045	0.085	0.300- 0.262
	G	7533	160.92	164.29	70.33	0.209	1.216	0.371	0.209	0.580- 1.425
	G	7534	164.29	166.01	79.07	0.707		0.152		0.859- 0.000
		7535	166.01	166.56	61.82		0.201		0.109	0.000- 0.310
		7536	176.01	176.39	100.00		0.374			0.000- 0.374
	G	7537	176.39	177.38	100.00	0.976				0.976- 0.000
	G	7538	177.38	177.71	100.00	0.207	0.118			0.207- 0.118
		7539	177.71	178.76	74.29		0.768		0.266	0.000- 1.034
DDH85016										
		6485	79.01	80.80	100.00		1.765			0.000- 1.765
	I	6486	80.80	82.64	80.43	1.432	0.030	0.355		1.787- 0.030
	I	6487	82.64	83.61	100.00	0.593	0.366			0.593- 0.366
	I	6488	83.61	86.41	100.00	2.731	0.040			2.731- 0.040
		6489	86.41	87.02	100.00	0.010	0.594			0.010- 0.594
		6490	126.79	127.12	100.00		0.309			0.000- 0.309
	H	6491	127.12	129.52	100.00	1.632	0.617			1.632- 0.617
	H	6492	129.52	132.47	100.00	1.518	1.246			1.518- 1.246
	H	6493	132.47	134.33	91.40	1.422	0.168		0.150	1.422- 0.318
		6494	134.33	134.54	100.00		0.196			0.000- 0.196
		6495	141.65	141.86	100.00		0.168			0.000- 0.168
	PHANTOM	6496	141.86	142.93	98.13	0.462	0.388	0.016		0.478- 0.388
	PHANTOM	6497	142.93	144.38	100.00	0.275	0.924			0.275- 0.924
		6498	144.38	145.14	100.00		0.641			0.000- 0.641
		6499	182.44	182.72	100.00		0.247			0.000- 0.247

GULF CANADA RESOURCES INC. - COAL DIVISION

13/JAN/86 SIMPLE SAMPLE SUMMARY

TRUE THICKNESS

KLAPPAN PROJECT

DATA SOURCE	SEAM	SAMPLE ID	DEPTH FROM	DEPTH TO	PERCENT REC	RECOVERED COAL	RECOVERED ROCK	MISSING COAL	MISSING ROCK	TOTAL COAL - ROCK
	G LOWER 7	6500	182.72	183.64	28.26	0.225		0.561		0.786- 0.000
		6501	183.64	184.19	100.00		0.450			0.000- 0.450
		6502	204.53	205.20	100.00		0.569			0.000- 0.569
	F	6503	205.20	206.12	100.00	0.732	0.070			0.732- 0.070
	F	6504	206.12	207.59	85.03	1.037	0.091		0.201	1.037- 0.292
		6505	207.59	209.22	100.00		1.530			0.000- 1.530
		6506	230.63	231.45	100.00		0.780			0.000- 0.780
	E	6507	231.45	232.70	91.20	1.075	0.010	0.057	0.048	1.132- 0.058
	E	6508	232.70	233.78	100.00	0.989	0.038			0.989- 0.038
		6509	233.78	234.54	100.00		0.723			0.000- 0.723
		6510	261.14	261.44	100.00		0.284			0.000- 0.284
	D	6511	261.44	263.00	94.87	0.236	1.171		0.076	0.236- 1.247
	D	6512	263.00	265.51	100.00	2.298	0.116			2.298- 0.116
		6513	265.51	267.07	100.00		1.514			0.000- 1.514
		6514	285.49	285.71	100.00		0.202			0.000- 0.202
	C	6515	285.71	286.08	100.00	0.341				0.341- 0.000
		6516	286.08	286.99	100.00		0.838			0.000- 0.838
DDH85017										
	I	6451	101.36	104.58	80.12	2.199	0.301		0.621	2.199- 0.922
	I	6452	104.58	106.87	100.00	2.207	0.040			2.207- 0.040
	H	6453	152.36	154.01	89.70	1.418	0.039	0.168		1.586- 0.039
	H	6454	154.01	154.35	100.00	0.010	0.325			0.010- 0.325
	H	6455	154.35	155.53	100.00	0.936	0.227			0.936- 0.227
	H	6456	155.53	157.10	89.81	1.262	0.129		0.158	1.262- 0.287
	PHANTOM	6457	184.56	185.83	74.02	0.304	0.617	0.167	0.157	0.471- 0.774
	PHANTOM	6458	185.83	186.92	100.00		1.069			0.000- 1.069
	PHANTOM	6459	186.92	187.31	100.00	0.382				0.382- 0.000
	PHANTOM	6460	187.31	188.18	100.00	0.226,	0.628			0.226- 0.628
	PHANTOM	6461	188.18	189.06	100.00	0.470	0.393			0.470- 0.393

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KLAPPAN PROJECT

DATA SOURCE	SEAM	SAMPLE ID	DEPTH FROM	DEPTH TO	PERCENT REC	RECOVERED COAL	RECOVERED ROCK	MISSING COAL	MISSING ROCK	TOTAL COAL - ROCK
		6462	100.42	101.36	100.00		0.904			0.000- 0.904
		6463	106.87	107.33	100.00		0.453			0.000- 0.453
		6464	151.15	152.36	100.00		1.192			0.000- 1.192
		6465	157.10	157.91	88.89		0.709		0.089	0.000- 0.798
		6466	183.44	184.56	100.00		1.098			0.000- 1.098
		6467	189.06	189.41	100.00		0.343			0.000- 0.343
		6468	203.02	204.72	100.00		1.617			0.000- 1.617
	G UPPER	6469	204.72	205.74	88.24	0.583	0.307		0.118	0.583- 0.425
	G UPPER	6470	205.74	205.99	100.00		0.249			0.000- 0.249
	G UPPER	6471	207.83	208.08	100.00		0.249			0.000- 0.249
	G UPPER	6472	208.08	208.53	100.00	0.379	0.070			0.379- 0.070
		6473	208.53	208.98	100.00		0.448			0.000- 0.448
		6474	219.95	221.21	100.00		1.214			0.000- 1.214
	G LOWER	6475	221.21	221.59	100.00	0.344	0.019			0.344- 0.019
	G LOWER	6476	221.59	222.23	42.19	0.019	0.238	0.351		0.370- 0.238
		6477	241.10	241.48	100.00		0.369			0.000- 0.369
	F	6478	241.48	243.47	92.46	1.564	0.224		0.146	1.564- 0.370
		6479	243.47	244.47	100.00		0.977			0.000- 0.977
		6480	259.81	261.48	100.00		1.592			0.000- 1.592
	E	6481	261.48	263.92	94.67	2.146	0.067	0.125		2.271- 0.067
	E	6482	263.92	264.99	89.72	0.029	0.894	0.106		0.135- 0.894
	E	6483	264.99	265.51	86.54	0.405	0.029		0.067	0.405- 0.096
		6484	265.51	265.91	100.00		0.386			0.000- 0.386
DDH85018										
		6542	67.91	69.08	100.00		1.113			0.000- 1.113
	I	6543	69.08	70.30	72.13	0.796	0.058	0.327		1.123- 0.058
	I	6544	70.30	71.75	87.59	1.241	0.010	0.176		1.417- 0.010
		6545	71.75	72.07	100.00		0.317			0.000- 0.317
		6546	108.28	109.90	100.00		1.560			0.000- 1.560

DATA SOURCE	SEAM	SAMPLE ID	DEPTH FROM	DEPTH TO	PERCENT REC	RECOVERED COAL	RECOVERED ROCK	MISSING COAL	MISSING ROCK	TOTAL COAL - ROCK
	H	6547	109.90	111.29	100.00	1.282	0.038			1.282- 0.038
	H	6548	111.29	112.58	100.00	0.869	0.337			0.869- 0.337
	H	6549	112.58	113.78	100.00	1.084	0.018			1.084- 0.018
		6550	113.78	114.19	100.00		0.373			0.000- 0.373
		6551	211.70	212.26	100.00		0.547			0.000- 0.547
	F	6552	212.26	214.03	100.00	1.522	0.194			1.522- 0.194
	F	6553	214.03	218.60	86.43	2.982	0.740	0.389	0.192	3.371- 0.932
		6554	218.80	219.85	100.00		0.954			0.000- 0.954
		6555	238.06	238.76	100.00		0.639			0.000- 0.639
	E	6556	238.76	239.00	75.00	0.165		0.055		0.220- 0.000
		6557	239.00	239.33	100.00		0.304			0.000- 0.304
		6558	260.22	260.40	100.00		0.127			0.000- 0.127
	D	6559	260.40	261.79	88.49	0.559	0.312	0.113		0.672- 0.312
	D	6560	261.79	263.07	57.03	0.509	0.007	0.389		0.898- 0.007
		6561	263.07	263.32	100.00		0.177			0.000- 0.177
DDH85019										
		6517	25.37	26.21	100.00		0.832			0.000- 0.832
	G UPPER	6518	26.21	27.51	70.00	0.526	0.378		0.387	0.526- 0.765
		6519	27.51	27.74	100.00	.	0.229			0.000- 0.229
		6520	27.74	30.50	99.64		2.739		0.010	0.000- 2.749
	G LOWER	6521	30.50	31.26	67.11	0.070	0.440		0.249	0.070- 0.689
	G LOWER	6522	31.26	31.78	100.00	0.450	0.070			0.450- 0.070
		6523	31.78	31.86	100.00		0.080			0.000- 0.080
		6524	45.91	46.16	100.00		0.247			0.000- 0.247
	F/G	6525	46.16	46.68	69.23	0.355		0.158		0.513- 0.000
		6526	46.68	47.28	100.00		0.590			0.000- 0.590
		6527	62.83	63.14	100.00		0.306			0.000- 0.306
	F	6528	63.14	63.67	100.00	0.473	0.049			0.473- 0.049
	F	6529	63.67	65.65	95.45		1.840		0.087	0.000- 1.927

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TRUE THICKNESS

KLAPPAN PROJECT

DATA SOURCE	SEAM	SAMPLE ID	DEPTH FROM	DEPTH TO	PERCENT REC	RECOVERED COAL	RECOVERED ROCK	MISSING COAL	MISSING ROCK	TOTAL COAL - ROCK
	F	6530	65.65	66.19	72.22	0.288	0.086		0.143	0.288- 0.229
	F	6531	66.19	70.20	85.04	3.125	0.018	0.203	0.347	3.328- 0.365
		6532	70.20	71.20	100.00		0.872			0.000- 0.872
		6533	86.50	87.36	100.00		0.700			0.000- 0.700
	E	6534	87.36	87.78	100.00	0.329				0.329- 0.000
		6535	87.78	88.44	100.00		0.498			0.000- 0.498
		6536	121.13	121.53	100.00		0.272			0.000- 0.272
	D	6537	121.53	122.29	97.37	0.355	0.066		0.012	0.355- 0.078
		6538	122.29	122.50	100.00		0.098			0.000- 0.098
		6539	137.26	139.06	100.00		1.445			0.000- 1.445
	C	6540	139.06	139.69	87.30	0.290	0.154	0.065		0.355- 0.154
		6541	139.69	140.77	100.00		0.877			0.000- 0.877
DDH85020										
		6652	53.69	53.87	100.00		0.172			0.000- 0.172
	E	6653	53.87	55.83	69.90	1.326		0.580		1.906- 0.000
		6654	55.83	56.12	100.00		0.287			0.000- 0.287
		6655	90.33	91.92	100.00		1.377			0.000- 1.377
	D	6656	91.92	92.67	76.00	0.398	0.074	0.146		0.544- 0.074
	D	6657	92.67	93.25	100.00		0.464			0.000- 0.464
	D	6658	93.25	94.32	93.46		0.766		0.056	0.000- 0.822
	D	6659	94.32	98.12	95.00	1.441	1.737	0.107	0.064	1.548- 1.801
	D	6660	98.12	100.35	100.00	0.789	0.109			0.789- 0.109
	D	6661	100.35	101.82	68.71	0.157	0.136		0.210	0.157- 0.346
	D	6662	101.82	104.21	100.00	1.274	0.046			1.274- 0.046
	D	6663	104.21	106.40	100.00	1.294	0.721			1.294- 0.721
		6664	106.40	107.76	100.00		1.218			0.000- 1.218
	C	6665	148.51	148.72	100.00	0.014	0.129			0.014- 0.129
	C	6666	148.72	150.41	95.27	0.965	0.168	0.055		1.020- 0.168
	C	6667	150.41	150.66	100.00		0.181			0.000- 0.181

GULF CANADA RESOURCES INC. - COAL DIVISION

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TRUE THICKNESS

KLAPPAN PROJECT

DATA SOURCE	SEAM	SAMPLE ID	DEPTH FROM	DEPTH TO	PERCENT REC	RECOVERED COAL	RECOVERED ROCK	MISSING COAL	MISSING ROCK	TOTAL COAL - ROCK
	C	6668	151.37	152.19	75.61		0.465		0.152	0.000- 0.617
	C	6669	152.19	153.84	82.42	0.561	0.495	0.078	0.149	0.639- 0.644
		6670	153.84	154.14	100.00		0.239			0.000- 0.239
DDH85021										
		6572	32.02	32.18	100.00		0.147			0.000- 0.147
	I	6573	32.18	33.89	51.46	0.815	0.019	0.482	0.295	1.297- 0.314
	I	6574	33.89	34.32	100.00		0.416			0.000- 0.416
		6575	38.27	40.00	96.53		1.618		0.058	0.000- 1.676
	H	6576	40.00	41.59	100.00	1.544				1.544- 0.000
	H	6577	41.59	45.03	77.03	1.901	0.681	0.603	0.165	2.504- 0.846
	H	6578	45.03	45.70	53.73	0.351		0.303		0.654- 0.000
		6579	45.70	46.36	100.00		0.645			0.000- 0.645
		6580	123.27	124.40	100.00		1.081			0.000- 1.081
	F	6581	124.40	125.44	69.23	0.679		0.302		0.981- 0.000
	F	6582	125.44	127.17	86.13	1.200	0.177	0.223		1.423- 0.177
	F	6583	127.17	128.11	97.87	0.735	0.100		0.018	0.735- 0.118
		6584	128.11	128.80	100.00		0.617			0.000- 0.617
		6585	149.02	150.22	100.00		1.088			0.000- 1.088
	E	6586	150.22	152.19	57.87	1.030	0.018	0.766		1.796- 0.018
		6587	152.19	152.60	100.00		0.382			0.000- 0.382
DDH85022										
		6562	48.31	49.04	100.00		0.719			0.000- 0.719
	I	6563	49.04	50.55	81.46	1.050	0.157	0.275		1.325- 0.157
	I	6564	50.55	52.00	91.72	1.267	0.029	0.116		1.383- 0.029
	I	6565	52.00	53.87	100.00	1.796				1.796- 0.000
		6566	53.87	54.25	100.00		0.361			0.000- 0.361
	H	6567	90.19	90.46	74.07	0.124	0.067		0.067	0.124- 0.134
	H	6568	90.46	91.40	100.00	0.906				0.906- 0.000
	H	6569	91.40	92.59	100.00	0.799	0.362			0.799- 0.362

GULF CANADA RESOURCES INC. - COAL DIVISION

13/JAN/86 SIMPLE SAMPLE SUMMARY

TRUE THICKNESS

KLAPPAN PROJECT

DATA SOURCE	SEAM	SAMPLE ID	DEPTH FROM	DEPTH TO	PERCENT REC	RECOVERED COAL	RECOVERED ROCK	MISSING COAL	MISSING ROCK	TOTAL COAL - ROCK
	H	6570	92.59	94.20	81.99	1.233	0.069	0.148	0.139	1.381- 0.208
		6571	94.20	94.68	100.00		0.476			0.000- 0.476
DDH85023										
	M UPRIGHT	5151	288.42	290.26	92.93	1.202	0.483	0.128		1.330- 0.483
		5152	290.26	290.53	100.00		0.266			0.000- 0.266
		6718	26.68	26.93	100.00		0.211			0.000- 0.211
	K OVERTURNED	6719	26.93	28.79	64.52	0.660	0.341	0.268	0.282	0.928- 0.623
	K OVERTURNED	6720	28.79	32.42	62.26	1.800		1.118		2.918- 0.000
	K OVERTURNED	6721	32.42	34.30	50.00		0.720		0.731	0.000- 1.451
	L OVERTURNED	6722	62.46	63.18	100.00		0.537			0.000- 0.537
	L OVERTURNED	6723	63.18	66.03	62.11	0.923	0.415	0.174	0.642	1.097- 1.057
	L OVERTURNED	6724	66.03	69.04	55.48	1.152	0.171	1.095		2.247- 0.171
		6725	69.04	69.25	100.00		0.147			0.000- 0.147
		6726	124.05	125.84	100.00		0.978			0.000- 0.978
	M	6727	125.84	127.43	18.87	0.020	0.130	0.544	0.121	0.564- 0.251
	M	6728	127.43	129.38	100.00	0.970	0.005			0.970- 0.005
	M	6729	129.38	130.62	81.45	0.009	0.011		0.004	0.009- 0.015
	M	6730	130.62	131.97	100.00	0.419				0.419- 0.000
	M	6731	131.97	133.43	100.00	0.909	0.269			0.909- 0.269
	M	6732	133.43	135.83	37.08	0.297	0.220	0.847		1.144- 0.220
	M	6733	135.83	140.94	100.00	0.594	2.793			0.594- 2.793
	M	6734	140.94	141.44	100.00	0.300	0.170			0.300- 0.170
	M	6735	141.44	145.84	52.05	0.981	0.384	1.663	0.257	2.644- 0.641
		6736	145.84	147.66	100.00		1.666			0.000- 1.666
	M OVERTURNED	6737	213.78	214.32	38.89		0.190		0.279	0.000- 0.469
	M OVERTURNED	6738	214.32	216.03	95.32	0.664	0.775	0.063		0.727- 0.775
	M OVERTURNED	6739	216.03	220.58	82.64	2.652	0.427	0.452	0.199	3.104- 0.626
	M OVERTURNED	6740	220.58	221.29	78.87	0.035	0.460		0.130	0.035- 0.590
	M OVERTURNED	6741	221.29	223.34	78.05	0.961	0.518	0.207	0.216	1.168- 0.734

GULF CANADA RESOURCES INC. - COAL DIVISION

TRUE THICKNESS

KLAPPAN PROJECT

DATA SOURCE	SEAM	SAMPLE ID	DEPTH FROM	DEPTH TO	PERCENT REC	RECOVERED COAL	RECOVERED ROCK	MISSING COAL	MISSING ROCK	TOTAL COAL - ROCK
	M OVERTURNED	6742	223.34	228.72	80.86	3.142	0.885	0.758	0.207	3.900- 1.092
	M OVERTURNED	6743	228.72	229.52	100.00	0.003	0.344			0.003- 0.344
	M OVERTURNED	6744	229.52	230.86	32.09	0.353	0.026	0.382	0.382	0.735- 0.408
	M OVERTURNED	6745	230.86	232.48	100.00	0.057	1.187			0.057- 1.187
		6746	270.32	270.74	100.00		0.333			0.000- 0.333
	M UPRIGHT	6747	270.74	273.59	89.82	0.382	0.772	0.242		0.624- 0.772
	M UPRIGHT	6748	273.59	276.19	91.92	1.245	0.438	0.125		1.370- 0.438
	M UPRIGHT	6749	282.70	284.85	96.74	1.477	0.486		0.069	1.477- 0.555
	M UPRIGHT	6750	284.85	288.42	84.87	2.602	0.396	0.533		3.135- 0.396
DDH85024										
		6588	10.95	12.68	100.00		1.698			0.000- 1.698
	I	6589	12.68	14.40	81.98	0.883	0.486	0.302		1.185- 0.486
	I	6590	14.40	16.40	56.50	0.143	0.924	0.597	0.225	0.740- 1.149
	I	6591	16.40	18.64	100.00	1.749	0.259			1.749- 0.259
	I	6592	18.64	19.68	53.85	0.200	0.269	0.411		0.611- 0.269
		6593	19.68	19.87	100.00		0.157			0.000- 0.157
		6594	90.93	91.08	100.00		0.144			0.000- 0.144
	H	6595	91.08	92.84	80.11	1.210	0.144	0.336		1.546- 0.144
	H	6596	92.84	94.14	100.00	0.984	0.270			0.984- 0.270
	H	6597	94.14	95.87	100.00	1.546	0.126			1.546- 0.126
		6598	95.87	96.39	100.00		0.504			0.000- 0.504
DDH85025										
		6599	35.08	36.40	100.00		1.320			0.000- 1.320
	I	6600	36.40	37.73	75.94	0.970	0.040	0.320		1.290- 0.040
	I	6601	37.73	39.29	87.82	1.220	0.150		0.190	1.220- 0.340
	I	6602	39.29	40.82	100.00	1.529				1.529- 0.000
		6603	40.82	41.53	100.00		0.709			0.000- 0.709
		6604	73.87	75.74	100.00		1.865			0.000- 1.865
	H	6605	75.74	76.81	100.00	1.038	0.030			1.038- 0.030

GULF CANADA RESOURCES INC. - COAL DIVISION

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TRUE THICKNESS

KLAPPAN PROJECT

DATA SOURCE	SEAM	SAMPLE ID	DEPTH FROM	DEPTH TO	PERCENT REC	RECOVERED COAL	RECOVERED ROCK	MISSING COAL	MISSING ROCK	TOTAL COAL - ROCK
	H	6606	76.81	77.81	68.00	0.310	0.370	0.319		0.629- 0.370
	H	6607	77.81	79.47	100.00	1.587	0.070			1.587- 0.070
		6608	79.47	79.99	100.00		0.519			0.000- 0.519
DDH85026										
		6609	19.42	19.68	100.00		0.256			0.000- 0.256
	I	6610	19.68	25.41	14.49	0.714	0.109	3.853	1.001	4.567- 1.110
		6611	25.41	25.79	100.00		0.378			0.000- 0.378
		6612	62.10	62.60	100.00		0.499			0.000- 0.499
	H	6613	62.60	63.51	100.00	0.879	0.030			0.879- 0.030
	H	6614	63.51	64.32	49.38	0.180	0.220	0.410		0.590- 0.220
	H	6615	64.32	65.53	88.43	0.949	0.120		0.140	0.949- 0.260
	H	6616	65.53	66.03	80.00	0.400		0.100		0.500- 0.000
		6617	66.03	67.04	100.00		1.009			0.000- 1.009
DDH85027										
		6621	43.03	44.06	100.00		0.986			0.000- 0.986
	O	6622	44.06	44.71	95.38	0.363	0.229		0.029	0.363- 0.258
	O	6623	44.71	45.64	88.17	0.780			0.105	0.780- 0.105
		6624	45.64	46.00	100.00		0.341			0.000- 0.341
		6625	74.74	75.26	100.00		0.469			0.000- 0.469
	N	6626	75.26	76.57	100.00	0.962	0.215			0.962- 0.215
	N	6627	76.57	77.68	80.18	0.786	0.009	0.196		0.982- 0.009
		6628	77.68	78.65	100.00		0.861			0.000- 0.861
		6629	92.97	94.32	100.00		1.224			0.000- 1.224
	M/N	6630	94.32	95.63	81.68	0.508	0.432	0.211		0.719- 0.432
		6631	95.63	95.78	100.00		0.129			0.000- 0.129
		6632	108.92	109.24	100.00		0.284			0.000- 0.284
	M UPPER	6633	109.24	111.30	100.00	1.811	0.036			1.811- 0.036
	M UPPER	6634	111.30	114.88	89.39	0.200	2.740	0.346		0.546- 2.740
	M LOWER	6635	114.88	116.16	74.22	0.842	0.047	0.308		1.150- 0.047

GULF CANADA RESOURCES INC. - COAL DIVISION

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TRUE THICKNESS

KLAPPAN PROJECT

DATA SOURCE	SEAM	SAMPLE ID	DEPTH FROM	DEPTH TO	PERCENT REC	RECOVERED COAL	RECOVERED ROCK	MISSING COAL	MISSING ROCK	TOTAL COAL - ROCK
		6636	116.16	117.05	100.00		0.838			0.000- 0.838
		6637	126.92	127.56	100.00		0.596			0.000- 0.596
	L	6638	127.56	129.29	94.80	1.422	0.112		0.084	1.422- 0.196
		6639	129.29	129.72	83.72		0.338		0.066	0.000- 0.404
		6640	147.23	147.78	100.00		0.396			0.000- 0.396
	K/L	6641	147.78	148.87	100.00	0.741	0.091			0.741- 0.091
	K/L	6642	148.87	150.81	80.93	1.238	0.067	0.186	0.119	1.424- 0.186
	K/L	6643	150.81	151.69	100.00	0.302	0.477			0.302- 0.477
		6644	151.69	152.62	100.00		0.852			0.000- 0.852
		6645	163.48	163.80	100.00		0.309			0.000- 0.309
	K	6646	163.80	164.56	80.26	0.437	0.156	0.146		0.583- 0.156
	K	6647	164.56	164.91	100.00	0.341				0.341- 0.000
		6648	164.91	166.13	100.00		1.201			0.000- 1.201
		6649	216.04	216.16	100.00		0.111			0.000- 0.111
	I	6650	216.16	218.07	90.58	1.305	0.297	0.166		1.471- 0.297
	I	6671	218.07	219.50	78.32	0.981	0.065	0.289		1.270- 0.065
	I	6672	219.50	221.55	100.00	1.931				1.931- 0.000
		6673	221.55	222.04	100.00		0.464			0.000- 0.464
		6674	265.07	265.98	100.00		0.887			0.000- 0.887
	H	6675	265.98	267.66	85.12	1.373	0.020	0.244		1.617- 0.020
	H	6676	267.66	268.29	100.00	0.604	0.010			0.604- 0.010
		6677	268.29	268.70	100.00		0.399			0.000- 0.399
DDH85028										
		6709	10.45	10.80	100.00		0.339			0.000- 0.339
	I	6710	10.80	12.47	35.93	0.455	0.126	0.930	0.107	1.385- 0.233
	I	6711	12.47	15.68	17.45	0.505	0.039	2.576		3.081- 0.039
		6712	15.68	16.58	100.00		0.877			0.000- 0.877
		6713	56.40	56.96	100.00		0.541			0.000- 0.541
	H	6714	56.96	58.08	91.07	0.975	0.010		0.097	0.975- 0.107

GULF CANADA RESOURCES INC. - COAL DIVISION

13/JAN/86 SIMPLE SAMPLE SUMMARY

TRUE THICKNESS

KLAPPAN PROJECT

DATA SOURCE	SEAM	SAMPLE ID	DEPTH FROM	DEPTH TO	PERCENT REC	RECOVERED COAL	RECOVERED ROCK	MISSING COAL	MISSING ROCK	TOTAL COAL - ROCK
	H	6715	58.08	59.43	88.15	0.813	0.338		0.155	0.813- 0.493
	H	6716	59.43	61.18	73.14	1.143	0.096	0.455		1.598- 0.096
	H	6717	61.18	61.96	100.00		0.756			0.000- 0.756
DDH85029										
		6618	74.71	75.00	100.00		0.251			0.000- 0.251
	J	6619	75.00	75.53	100.00	0.427				0.427- 0.000
		6620	75.53	76.78	100.00		0.803			0.000- 0.803
DDH85030										
		6678	19.05	20.48	100.00		1.357			0.000- 1.357
	I	6679	20.48	21.98	92.67	1.250	0.066		0.104	1.250- 0.170
	I	6680	21.98	22.36	100.00	0.283	0.075			0.283- 0.075
	I	6681	22.36	24.69	100.00	2.198				2.198- 0.000
		6682	24.69	25.33	100.00		0.602			0.000- 0.602
DDH85031										
		6683	7.53	8.12	100.00		0.554			0.000- 0.554
	I	6684	8.12	9.72	68.75	0.975	0.066	0.476		1.451- 0.066
	I	6685	9.72	10.01	51.72	0.105	0.038		0.134	0.105- 0.172
	I	6686	10.01	12.85	80.28	2.155	0.049	0.365	0.173	2.520- 0.222
		6687	12.85	13.38	100.00		0.517			0.000- 0.517
DDH85032										
		6688	26.09	27.54	100.00		1.449			0.000- 1.449
	I	6689	27.54	29.06	85.53	1.268	0.030	0.120	0.100	1.388- 0.130
	I	6690	29.06	29.39	100.00	0.240	0.090			0.240- 0.090
	I	6691	29.39	30.95	53.85	0.757	0.080	0.428	0.289	1.185- 0.369
	I	6692	30.95	31.21	100.00	0.219	0.040			0.219- 0.040
	I	6693	31.21	33.03	100.00	1.798	0.010			1.798- 0.010
		6694	33.03	34.38	100.00		1.337			0.000- 1.337
DDH85033										
		6695	10.26	10.96	100.00		0.673			0.000- 0.673

GULF CANADA RESOURCES INC. - COAL DIVISION

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TRUE THICKNESS

KLAPPAN PROJECT

DATA SOURCE	SEAM	SAMPLE ID	DEPTH FROM	DEPTH TO	PERCENT REC	RECOVERED COAL	RECOVERED ROCK	MISSING COAL	MISSING ROCK	TOTAL COAL - ROCK
	I	6696	10.96	12.62	46.99	0.705	0.048	0.598	0.251	1.303- 0.299
	I	6697	12.62	12.88	53.85	0.010	0.126		0.116	0.010- 0.242
	I	6698	12.88	14.28	66.43	0.880	0.019	0.455		1.335- 0.019
	I	6699	14.28	14.46	100.00	0.155	0.020			0.155- 0.020
	I	6700	14.46	16.62	100.00	2.100				2.100- 0.000
		6701	16.62	17.14	100.00		0.506			0.000- 0.506
DDH85034										
		6702	29.46	30.32	100.00		0.852			0.000- 0.852
	I	6703	30.32	31.87	83.23	1.248	0.030	0.158	0.099	1.406- 0.129
	I	6704	31.87	32.20	100.00	0.207	0.118			0.207- 0.118
	I	6705	32.20	33.28	61.11	0.652		0.415		1.067- 0.000
	I	6706	33.28	33.43	100.00	0.090	0.060			0.090- 0.060
	I	6707	33.43	35.52	87.56	1.806		0.256		2.062- 0.000
		6708	35.52	37.66	100.00		2.108			0.000- 2.108

GULF CANADA RESOURCES INC. - COAL DIVISION

13/JAN/86 COMPOSITE SAMPLE SUMMARY

APPARENT THICKNESS

KLAPPAN PROJECT

DATA SOURCE	SEAM	COMP ID	SAMPLE FROM	SAMPLE TO	DEPTH FROM	DEPTH TO	PERCENT REC	RECOVERED COAL	RECOVERED ROCK	MISSING COAL	MISSING ROCK	TOTAL COAL-ROCK
DDH85001												
	I	1	7255	7257	119.13	123.51	100.00	3.38	1.00	0.00	0.00	3.38- 1.00
	H	2	7260	7261	158.65	160.98	90.55	1.71	0.40	0.18	0.04	1.89- 0.44
	G	3	7264	7264	214.70	215.64	96.80	0.82	0.09	0.03	0.00	0.85- 0.09
	J	7252	7252	7252	22.10	22.68	100.00	0.58	0.00	0.00	0.00	0.58- 0.00
	PHANTOM	7266	7266	7266	175.78	176.00	100.00	0.22	0.00	0.00	0.00	0.22- 0.00
DDH85002												
	I	4	7268	7269	59.45	62.68	89.47	2.66	0.23	0.34	0.00	3.00- 0.23
	H	61	7272	7272	101.62	102.97	100.00	1.09	0.26	0.00	0.00	1.09- 0.26
DDH85003												
	M	5	7277	7278	35.71	38.07	84.32	1.43	0.56	0.30	0.07	1.73- 0.63
	M	6	7279	7280	38.07	42.63	88.15	3.05	0.97	0.32	0.22	3.37- 1.19
	N OVERTURNED	7	7283	7284	100.20	102.39	100.00	1.49	0.70	0.00	0.00	1.49- 0.70
	N UPRIGHT	8	7287	7287	170.59	172.29	86.47	1.05	0.42	0.23	0.00	1.28- 0.42
	M/N	99999	99999	99999	91.30	92.00	87.14	0.61	0.00	0.09	0.00	0.70- 0.00
DDH85004												
	H	9	7295	7295	101.65	102.66	85.14	0.86	0.00	0.15	0.00	1.01- 0.00
	H	10	7296	7296	102.66	103.84	64.40	0.39	0.37	0.21	0.21	0.60- 0.58
	H	11	7297	7297	103.84	105.64	85.00	1.47	0.06	0.14	0.13	1.61- 0.19
	G	12	7300	7303	160.32	165.35	92.44	2.48	2.17	0.00	0.38	2.48- 2.55
	F	13	7306	7307	204.19	206.57	90.75	1.53	0.63	0.22	0.00	1.75- 0.63
	E	14	7343	7343	223.68	226.75	86.31	2.51	0.14	0.30	0.12	2.81- 0.26
	E (REPEAT)	15	7346	7346	237.89	239.64	54.85	0.86	0.10	0.69	0.10	1.55- 0.20
	I	7290	7290	7291	59.02	62.72	62.97	2.10	0.23	1.37	0.00	3.47- 0.23
DDH85005												
	O	16	7315	7316	51.60	53.25	75.75	1.04	0.21	0.32	0.08	1.36- 0.29
	N UPPER	17	7319	7319	98.55	99.65	62.72	0.69	0.00	0.41	0.00	1.10- 0.00
	N LOWER	18	7322	7324	106.13	111.87	98.78	3.49	2.18	0.07	0.00	3.56- 2.18
	M	19	7328	7328	210.91	214.17	89.57	2.09	0.83	0.00	0.34	2.09- 1.17

GULF CANADA RESOURCES INC. - COAL DIVISION

13/JAN/86 COMPOSITE SAMPLE SUMMARY

APPARENT THICKNESS

KLAPPAN PROJECT

DATA SOURCE	SEAM	COMP ID	SAMPLE FROM	SAMPLE TO	DEPTH FROM	DEPTH TO	PERCENT REC	RECOVERED COAL	RECOVERED ROCK	MISSING COAL	MISSING ROCK	TOTAL COAL-ROCK
	L	20	7349	7349	255.98	256.63	100.00	0.43	0.22	0.00	0.00	0.43- 0.22
	K	21	7366	7369	316.12	319.48	100.00	2.70	0.66	0.00	0.00	2.70- 0.66
	O OVERTURNED	63	7541	7541	26.90	30.13	100.00	3.19	0.04	0.00	0.00	3.19- 0.04
	K/L	7362	7362	7362	310.83	310.97	100.00	0.14	0.00	0.00	0.00	0.14- 0.00
	K/L	7363	7363	7363	310.97	311.56	100.00	0.55	0.04	0.00	0.00	0.55- 0.04
	L/M	7375	7375	7375	243.46	243.86	100.00	0.32	0.08	0.00	0.00	0.32- 0.08
DDH85006												
	H	22	7352	7352	23.32	26.09	50.54	1.09	0.31	1.05	0.32	2.14- 0.63
	G	23	7331	7333	81.93	85.47	82.48	1.56	1.36	0.62	0.00	2.18- 1.36
	G	24	7334	7334	85.47	88.08	87.73	0.38	1.91	0.32	0.00	0.70- 1.91
	F	25	7337	7337	153.47	156.65	76.10	1.59	0.83	0.40	0.36	1.99- 1.19
	E	26	7340	7340	178.13	179.04	86.81	0.48	0.31	0.12	0.00	0.60- 0.31
DDH85007												
	I	27	7354	7354	95.50	102.30	82.79	5.14	0.49	0.00	1.17	5.14- 1.66
DDH85008												
	G LOWER	28	7356	7357	48.00	49.16	47.41	0.37	0.18	0.61	0.00	0.98- 0.18
	F	29	7360	7360	80.87	81.71	100.00	0.80	0.04	0.00	0.00	0.80- 0.04
DDH85009												
	I	0	7452	7453	102.85	111.00	70.06	4.87	0.84	2.33	0.11	7.20- 0.95
	K	30	7458	7460	204.40	209.51	85.71	3.53	0.85	0.67	0.06	4.20- 0.91
	L	31	7455	7463	241.14	247.93	92.19	3.79	2.47	0.42	0.11	4.21- 2.58
	M	32	7465	7465	322.62	328.06	83.63	2.91	1.64	0.89	0.00	3.80- 1.64
	J	7456	7456	7456	166.20	166.23	100.00	0.03	0.00	0.00	0.00	0.03- 0.00
DDH85010												
	O	33	7378	7378	130.04	132.07	85.71	0.52	1.22	0.29	0.00	0.81- 1.22
	O	34	7379	7379	132.07	134.76	86.61	1.76	0.57	0.11	0.25	1.87- 0.82
	O	35	7380	7380	134.76	135.90	86.84	0.24	0.75	0.15	0.00	0.39- 0.75
	N	36	7383	7383	159.22	161.13	79.05	1.26	0.25	0.00	0.40	1.26- 0.65
	M	37	7387	7389	222.56	228.22	80.03	3.11	1.42	0.93	0.20	4.04- 1.62

GULF CANADA RESOURCES INC. - COAL DIVISION

13/JAN/86 COMPOSITE SAMPLE SUMMARY

APPARENT THICKNESS

KLAPPAN PROJECT

DATA SOURCE	SEAM	COMP ID	SAMPLE FROM	SAMPLE TO	DEPTH FROM	DEPTH TO	PERCENT REC	RECOVERED COAL	RECOVERED ROCK	MISSING COAL	MISSING ROCK	TOTAL COAL-ROCK
	P	7400	7400	7400	73.40	73.62	100.00	0.22	0.00	0.00	0.00	0.22- 0.00
DDH85011												
	K	38	7392	7393	36.49	40.55	90.39	2.24	1.43	0.34	0.05	2.58- 1.48
	I	39	7398	7398	101.44	103.34	76.31	1.07	0.38	0.25	0.20	1.32- 0.58
DDH85012												
	L	40	7468	7468	23.24	24.84	35.00	0.56	0.00	1.04	0.00	1.60- 0.00
	K/L	41	7471	7471	50.16	51.69	75.16	0.80	0.35	0.38	0.00	1.18- 0.35
	K	42	7474	7474	69.89	71.73	81.52	1.37	0.13	0.34	0.00	1.71- 0.13
	K	43	7475	7476	71.73	73.63	97.36	0.48	1.37	0.00	0.05	0.48- 1.42
	K (REPEAT)	44	7479	7479	151.54	153.01	100.00	0.70	0.77	0.00	0.00	0.70- 0.77
	I	45	7482	7482	205.78	206.33	87.27	0.48	0.00	0.07	0.00	0.55- 0.00
	I	46	7483	7483	206.33	207.27	81.91	0.01	0.76	0.00	0.17	0.01- 0.93
	I	47	7484	7484	207.27	209.20	100.00	1.63	0.30	0.00	0.00	1.63- 0.30
DDH85013												
	I	48	7490	7492	91.24	97.53	79.65	4.21	0.80	1.23	0.05	5.44- 0.85
	H	49	7493	7494	146.55	150.96	97.87	1.65	1.58	0.07	0.00	1.72- 1.58
	F	50	7508	7508	271.23	272.18	100.00	0.87	0.08	0.00	0.00	0.87- 0.08
	F	51	7509	7509	272.18	273.20	100.00	0.00	1.02	0.00	0.00	0.00- 1.02
	F	52	7510	7510	273.20	275.51	96.10	1.75	0.47	0.09	0.00	1.84- 0.47
	K	62	7487	7487	22.90	23.91	100.00	0.70	0.31	0.00	0.00	0.70- 0.31
	PHANTOM	7496	7496	7496	176.56	176.65	100.00	0.09	0.00	0.00	0.00	0.09- 0.00
	G UPPER	7497	7497	7497	185.65	185.90	100.00	0.25	0.00	0.00	0.00	0.25- 0.00
	G LOWER	7499	7499	7499	211.17	211.82	96.92	0.56	0.07	0.00	0.02	0.56- 0.09
	F/G	7502	7502	7502	235.70	236.11	100.00	0.19	0.22	0.00	0.00	0.19- 0.22
	F/G	7505	7505	7505	242.26	242.59	96.96	0.18	0.14	0.00	0.01	0.18- 0.15
DDH85014												
	I	53	7512	7512	102.59	108.37	78.89	4.32	0.24	1.22	0.00	5.54- 0.24
	H	54	7515	7517	155.53	157.67	87.85	1.03	0.85	0.04	0.22	1.07- 1.07
	F	55	7520	7522	247.19	250.10	86.94	2.05	0.48	0.33	0.05	2.38- 0.53

Gulf

GULF CANADA RESOURCES INC. - COAL DIVISION

13/JAN/86 COMPOSITE SAMPLE SUMMARY PAGE 4

APPARENT THICKNESS

KLAPPAN PROJECT

DATA SOURCE	SEAM	COMP ID	SAMPLE FROM	SAMPLE TO	DEPTH FROM	DEPTH TO	PERCENT REC	RECOVERED COAL	RECOVERED ROCK	MISSING COAL	MISSING ROCK	TOTAL COAL-ROCK
DDH85015												
	E	56	7525	7525	32.54	34.89	87.65	1.69	0.37	0.16	0.13	1.85- 0.50
	F	57	7528	7529	78.00	82.28	88.78	2.84	0.96	0.48	0.00	3.32- 0.96
	G	58	7532	7532	157.52	160.92	94.11	2.14	1.06	0.20	0.00	2.34- 1.06
	G	59	7533	7534	160.92	166.01	73.28	1.68	2.05	0.96	0.40	2.64- 2.45
	G	60	7537	7538	176.39	177.71	100.00	1.20	0.12	0.00	0.00	1.20- 0.12
	G	7469	7469	7469	185.47	185.62	100.00	0.15	0.00	0.00	0.00	0.15- 0.00
DDH85016												
	I	64	6486	6488	80.80	86.41	93.58	4.81	0.44	0.36	0.00	5.17- 0.44
	H	65	6491	6493	127.12	134.33	97.78	4.88	2.17	0.00	0.16	4.88- 2.33
	PHANTOM	66	6496	6497	141.86	144.38	99.20	0.90	1.60	0.02	0.00	0.92- 1.60
	F	67	6503	6504	205.20	207.59	90.79	1.99	0.18	0.00	0.22	1.99- 0.40
	E	68	6507	6508	231.45	233.78	95.27	2.17	0.05	0.06	0.05	2.23- 0.10
	D	69	6512	6512	263.00	265.51	100.00	2.39	0.12	0.00	0.00	2.39- 0.12
	G LOWER ?	6500	6500	6500	182.72	183.64	28.26	0.26	0.00	0.66	0.00	0.92- 0.00
	C	6515	6515	6515	285.71	286.08	100.00	0.37	0.00	0.00	0.00	0.37- 0.00
DDH85017												
	I	70	6451	6452	101.36	106.87	88.38	4.52	0.35	0.00	0.64	4.52- 0.99
	H	71	6453	6456	152.36	157.10	93.03	3.68	0.73	0.17	0.16	3.85- 0.89
	F	72	6478	6478	241.48	243.47	92.46	1.61	0.23	0.00	0.15	1.61- 0.38
	E	73	6481	6481	261.48	263.92	94.67	2.24	0.07	0.13	0.00	2.37- 0.07
	E	74	6482	6483	263.92	265.51	88.67	0.45	0.96	0.11	0.07	0.56- 1.03
	PHANTOM	6457	6457	6457	184.56	185.83	74.01	0.31	0.63	0.17	0.16	0.48- 0.79
	PHANTOM	6458	6458	6458	185.83	186.92	100.00	0.00	1.09	0.00	0.00	0.00- 1.09
	PHANTOM	6459	6459	6459	186.92	187.31	100.00	0.39	0.00	0.00	0.00	0.39- 0.00
	PHANTOM	6460	6460	6460	187.31	188.18	100.00	0.23	0.64	0.00	0.00	0.23- 0.64
	PHANTOM	6461	6461	6461	188.18	189.06	100.00	0.48	0.40	0.00	0.00	0.48- 0.40
	G UPPER	6469	6469	6469	204.72	205.74	88.23	0.59	0.31	0.00	0.12	0.59- 0.43
	G UPPER	6470	6470	6470	205.74	205.99	100.00	0.00	0.25	0.00	0.00	0.00- 0.25

GULF CANADA RESOURCES INC. - COAL DIVISION

13/JAN/86 COMPOSITE SAMPLE SUMMARY

APPARENT THICKNESS

KLAPPAN PROJECT

DATA SOURCE	SEAM	COMP ID	SAMPLE FROM	SAMPLE TO	DEPTH FROM	DEPTH TO	PERCENT REC	RECOVERED COAL	RECOVERED ROCK	MISSING COAL	MISSING ROCK	TOTAL COAL-ROCK
	G UPPER	6471	6471	6471	207.83	208.08	100.00	0.00	0.25	0.00	0.00	0.00- 0.25
	G UPPER	6472	6472	6472	208.08	208.53	100.00	0.38	0.07	0.00	0.00	0.38- 0.07
	G LOWER	6475	6475	6475	221.21	221.59	100.00	0.36	0.02	0.00	0.00	0.36- 0.02
	G LOWER	6476	6476	6476	221.59	222.23	42.18	0.02	0.25	0.37	0.00	0.39- 0.25
DDH85018												
	I	75	6543	6544	69.08	71.75	80.52	2.08	0.07	0.52	0.00	2.60- 0.07
	H	76	6547	6549	109.90	113.78	100.00	3.46	0.42	0.00	0.00	3.46- 0.42
	F	77	6552	6553	212.26	218.60	90.22	4.74	0.98	0.42	0.20	5.16- 1.18
	D	78	6559	6560	260.40	263.07	73.40	1.51	0.45	0.71	0.00	2.22- 0.45
	E	6556	6556	6556	238.76	239.00	75.00	0.18	0.00	0.06	0.00	0.24- 0.00
DDH85019												
	F	79	6530	6531	65.65	70.20	83.51	3.69	0.11	0.22	0.53	3.91- 0.64
	G LOWER	110	6521	6522	30.50	31.78	80.46	0.52	0.51	0.00	0.25	0.52- 0.76
	G UPPER	6518	6518	6518	26.21	27.51	70.00	0.53	0.38	0.00	0.39	0.53- 0.77
	G LOWER	6522	6522	6522	31.26	31.78	100.00	0.45	0.07	0.00	0.00	0.45- 0.07
	F/G	6525	6525	6525	46.16	46.68	69.23	0.36	0.00	0.16	0.00	0.52- 0.00
	E	6534	6534	6534	87.36	87.78	100.00	0.42	0.00	0.00	0.00	0.42- 0.00
	D	6537	6537	6537	121.53	122.29	97.36	0.63	0.11	0.00	0.02	0.63- 0.13
	C	6540	6540	6540	139.06	139.69	87.30	0.36	0.19	0.08	0.00	0.44- 0.19
DDH85020												
	E	80	6653	6653	53.87	55.83	69.89	1.37	0.00	0.59	0.00	1.96- 0.00
	D	81	6660	6663	98.12	106.40	94.44	6.16	1.66	0.00	0.46	6.16- 2.12
	C	82	6666	6666	148.72	150.41	95.26	1.37	0.24	0.08	0.00	1.45- 0.24
	D	6656	6656	6656	91.92	92.67	76.00	0.48	0.09	0.18	0.00	0.66- 0.09
	D	6657	6657	6657	92.67	93.25	100.00	0.00	0.58	0.00	0.00	0.00- 0.58
	D	6658	6658	6658	93.25	94.32	93.45	0.00	1.00	0.00	0.07	0.00- 1.07
	D	6659	6659	6659	94.32	98.12	95.00	1.64	1.97	0.12	0.07	1.76- 2.04
	C	6667	6667	6667	150.41	150.66	100.00	0.00	0.25	0.00	0.00	0.00- 0.25
	C	6668	6668	6668	151.37	152.19	75.60	0.00	0.62	0.00	0.20	0.00- 0.82

GULF CANADA RESOURCES INC. - COAL DIVISION

13/JAN/86 COMPOSITE SAMPLE SUMMARY PAGE 6

APPARENT THICKNESS

KLAPPAN PROJECT

DATA SOURCE	SEAM	COMP ID	SAMPLE FROM	SAMPLE TO	DEPTH FROM	DEPTH TO	PERCENT REC	RECOVERED COAL	RECOVERED ROCK	MISSING COAL	MISSING ROCK	TOTAL COAL-ROCK
	C	6669	6669	6669	152.19	153.84	82.42	0.72	0.64	0.10	0.19	0.82- 0.83
DDH85021												
	I	83	6573	6573	32.18	33.89	51.46	0.86	0.02	0.52	0.31	1.38- 0.33
	H	84	6576	6578	40.00	45.70	80.70	3.90	0.70	0.93	0.17	4.83- 0.87
	F	85	6581	6583	124.40	128.11	84.36	2.83	0.30	0.56	0.02	3.39- 0.32
	E	86	6586	6586	150.22	152.19	57.86	1.12	0.02	0.83	0.00	1.95- 0.02
DDH85022												
	I	87	6563	6565	49.04	53.87	91.71	4.24	0.19	0.40	0.00	4.64- 0.19
	H	88	6568	6570	90.46	94.20	92.24	3.01	0.44	0.15	0.14	3.16- 0.58
DDH85023												
	K OVERTURNED	89	6719	6720	26.93	32.42	63.02	3.05	0.41	1.69	0.34	4.74- 0.75
	L OVERTURNED	90	6723	6724	63.18	69.04	58.70	2.68	0.76	1.57	0.85	4.25- 1.61
	M	91	6727	6731	125.84	133.43	79.97	4.87	1.20	1.05	0.47	5.92- 1.67
	M	92	6734	6735	140.94	145.84	56.93	2.11	0.68	1.84	0.27	3.95- 0.95
	M OVERTURNED	93	6738	6744	214.32	230.86	79.38	9.03	4.10	2.09	1.32	11.12- 5.42
	M UPRIGHT	94	5151	6750	270.74	290.26	88.01	11.53	5.65	2.01	0.33	13.54- 5.98
	M	6732	6732	6732	133.43	135.83	37.08	0.49	0.40	1.51	0.00	2.00- 0.40
	M	6733	6733	6733	135.83	140.94	100.00	0.82	4.29	0.00	0.00	0.82- 4.29
	M OVERTURNED	6745	6745	6745	230.86	232.48	100.00	0.07	1.55	0.00	0.00	0.07- 1.55
DDH85024												
	I	95	6589	6592	12.68	19.68	76.28	3.25	2.09	1.42	0.24	4.67- 2.33
	H	96	6595	6597	91.08	95.87	92.69	3.88	0.56	0.35	0.00	4.23- 0.56
DDH85025												
	I	97	6600	6602	36.40	40.82	88.46	3.72	0.19	0.32	0.19	4.04- 0.38
	H	98	6605	6607	75.74	79.47	91.42	2.94	0.47	0.32	0.00	3.26- 0.47
DDH85026												
	H	99	6613	6616	62.60	66.03	81.04	2.41	0.37	0.51	0.14	2.92- 0.51
	I	6610	6610	6610	19.68	25.41	14.48	0.72	0.11	3.89	1.01	4.61- 1.12
DDH85027												

GULF CANADA RESOURCES INC. - COAL DIVISION

13/JAN/86 COMPOSITE SAMPLE SUMMARY

APPARENT THICKNESS

KLAPPAN PROJECT

DATA SOURCE	SEAM	COMP ID	SAMPLE FROM	SAMPLE TO	DEPTH FROM	DEPTH TO	PERCENT REC	RECOVERED COAL	RECOVERED ROCK	MISSING COAL	MISSING ROCK	TOTAL COAL-ROCK
	O	100	6622	6623	44.06	45.64	91.13	1.20	0.24	0.00	0.14	1.20- 0.38
	N	101	6626	6627	75.26	77.68	90.90	1.95	0.25	0.22	0.00	2.17- 0.25
	M/N	102	6630	6630	94.32	95.63	81.67	0.58	0.49	0.24	0.00	0.82- 0.49
	M UPPER	103	6633	6633	109.24	111.30	100.00	2.02	0.04	0.00	0.00	2.02- 0.04
	L	104	6638	6638	127.56	129.29	94.79	1.52	0.12	0.00	0.09	1.52- 0.21
	K/L	105	6641	6643	147.78	151.69	90.53	2.80	0.74	0.22	0.15	3.02- 0.89
	K	106	6646	6647	163.80	164.91	86.48	0.80	0.16	0.15	0.00	0.95- 0.16
	I	107	6650	6672	216.16	221.55	90.90	4.51	0.39	0.49	0.00	5.00- 0.39
	H	108	6675	6676	265.98	268.29	89.17	2.03	0.03	0.25	0.00	2.28- 0.03
	M LOWER	6635	6635	6635	114.88	116.16	74.21	0.90	0.05	0.33	0.00	1.23- 0.05
DDH85028												
	H	109	6714	6716	56.96	61.18	82.70	3.03	0.46	0.47	0.26	3.50- 0.72
	I	111	6710	6711	10.80	15.68	23.77	0.99	0.17	3.61	0.11	4.60- 0.28
DDH85029												
	J	6619	6619	6619	75.00	75.53	100.00	0.53	0.00	0.00	0.00	0.53- 0.00
DDH85030												
	I	0	6679	6681	20.48	24.69	97.38	3.95	0.15	0.00	0.11	3.95- 0.26
DDH85031												
	I	0	6684	6686	8.12	12.85	74.63	3.37	0.16	0.88	0.32	4.25- 0.48
DDH85032												
	I	0	6689	6693	27.54	33.03	82.87	4.30	0.25	0.55	0.39	4.85- 0.64
DDH85033												
	I	0	6696	6700	10.96	16.62	74.02	3.97	0.22	1.09	0.38	5.06- 0.60
DDH85034												
	I	0	6703	6707	30.32	35.52	81.92	4.05	0.21	0.84	0.10	4.89- 0.31

KPNLRDDH85001

GULF CANADA RESOURCES INC.

- D A T A   S O U R C E   S U M M A R Y -

DATA SOURCE - KPNLRDDH85001   DATE - 01/09/86

- H I S T O R Y -

START DATE - 03/05/85
END DATE - 03/11/85

CONTRACTOR - J.T. THOMAS   OPERATOR - GCRI
GEOLOGIST - M. BARKER   SURVEYOR - MWG & ASS.

REMARKS - SITE P

- L O C A T I O N -

PROVINCE - BC   ZONE - 9
ELEVATION - 1480.40   NORTHING - 6345720.00
                EASTING - 507254.75

LICENCE/LEASE NUMBER - 7169

                LATITUDE - 571523
                LONGITUDE - 1285247

- O R I E N T A T I O N -

LENGTH - 233.28   INCLINATION - 90.0
                AZIMUTH - 0.0

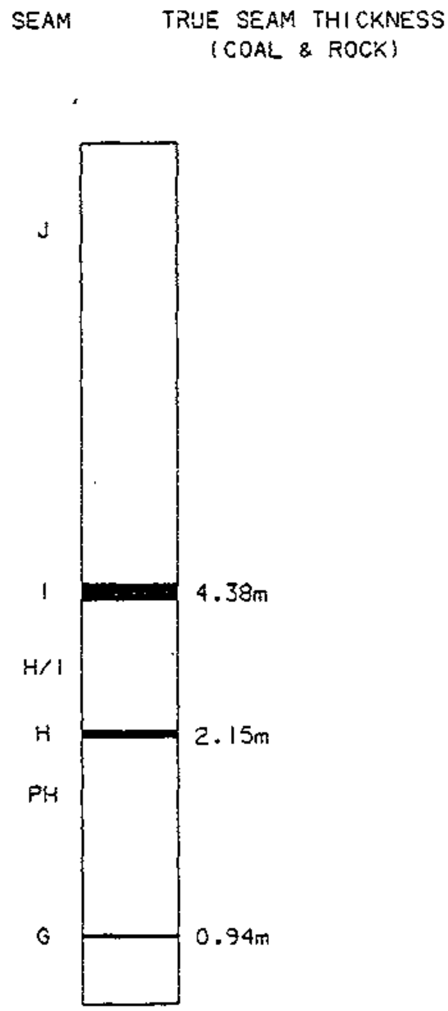
CORE SIZE - 0.0

CEMENT -   CASING DEPTH(M) - 6.97
PLUG -   AQUIFER DEPTHS(M) - 0.00
PIEZ -   0.00
                LOST CIRC. DEPTHS(M) - 0.00
                0.00

*** NOTE *** 0 INDICATES NO VALUE

MT. KLAPPAN COAL PROPERTY

1985 DIAMOND DRILL HOLES
DDH85001



NOTE: SCHEMATIC PROFILE.
NO THICKNESSES SHOWN
FOR SEAMS CONTAINING
LESS THAN 50cm COAL.

SCALE: 1:2000	GULF CANADA RESOURCES INC. 15/01/86

86/01/03 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 1

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85001

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
03	0.00	6.94	6.94			OVERBURDEN	CASING TO 3.96 METRES
03	6.94	11.94	5.00			ROCK LOSS	INSERTED TO COMPENSATE FOR POOR FIELD C OPY OF THE GEOPHYSICAL LOG; CORE SHOULD BE REVIEWED ASAP.
* 03	11.94	12.60	0.66			SILTSTONE	CLYY.PR.M.GY.LAM.VBRKN WEATHERED,BREAKS EASILY, IRON STAINED O N FRACTURE SURFACES, ZONES WITH FERRIGI NOUS MATRIX AND SUB- ROUNDED CLASTS. AL TERNATING LAYERS OF VERY FINELY LAMINAT ED AND NON-LAMINATED MUDDY SILTSTONE.
03	12.60	12.86	0.26			ROCK LOSS	
* 03	12.86	13.50	0.64			SILTSTONE	CLYY.PR.DK.GY.LAM.SSD.VBRKN LITHOLOGY AS ABOVE. FERRUGINOUS STAININ G ENDS AT 8.32 METRES.
* 02	13.50	14.54	1.04			MUDSTONE	SLTY.PR.DK.GY.LAM.XBDG.VBRKN DISTURBED LAMINATIONS, POSSIBLE BIOTURB ATION, OCCASIONAL ANKERITE VEINING, COR E IS CRUSHED

* DENOTES MEASURED BCA

86/01/03 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 2

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85001

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
29	14.54	15.90	1.36			ROCK LOSS	
* 45	15.90	16.02	0.12			MUDSTONE	SLTY.PR.DK.GY.MAS.VBRKN HOMOGENEOUS, CORE TOTALLY CRUSHED
44	16.02	18.12	2.10			ROCK LOSS	
42	18.12	18.95	0.83			MUDSTONE	CARB.DK.GY.MAS.VSHRD CORE CRUSHED, FOLIATED AT 5 DEGREES TO CORE, NUMEROUS ANKERITE VEINS WITH EN E CHELON DISPLACEMENT
42	18.95	19.00	0.05			MUDSTONE	CARB.PR.DK.GY.MAS.VBRKN FERRUGINOUS STAINING
41	19.00	20.50	1.50			MUDSTONE	CARB.PR.DK.GY.MAS.VBRKN SILTY,NUMEROUS WIDE ANKERITE VEINS 2MM-30MM WIDE, EN ECHELON DISPLACEMENT,280 MM SECTION OF VERY SHEARED MATERIAL.
40	20.50	21.08	0.58			ROCK LOSS	
39	21.08	22.00	0.92			MUDSTONE	CARB.PR.M.GY.VBRKN LOCALLY SILTY

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85001

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
38	22.00	22.10	0.10	07251		MUDSTONE	LITHOLOGY AS ABOVE
38	22.10	22.68	0.58	07252	J	COAL	C-4.PHRD COAL VERY SHEARED, SOME LISTRIC SURFACE S
37	22.68	23.38	0.70	07253		SILTSTONE	CLYY.PR.M.GY.VBRKN EXTENSIVELY CRUSHED WITH ANKERITE VEINI NG AND SOMECOALY STREAKS, 200 MM SAMPLE D
36	23.38	24.40	1.02			SILTSTONE	LITHOLOGY AS ABOVE WITH INCREASED VEINI NG
35	24.40	24.70	0.30			MUDSTONE	CARB.VPR.BLK.LAM.PWRD CRUSHED AND SHEARED, NUMEROUS QUARTZ AN D ANKERITE VEINS, BEDDING TOTALLY DISRU PTED BY VEINS AND SHEARING, SLICKENSIDE S.
35	24.70	25.22	0.52			ROCK LOSS	
34	25.22	26.53	1.31			MUDSTONE	CARB.VPR.BLK.LAM.VSHRD LITHOLOGY AS ABOVE

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85001

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
32	26.53	28.00	1.47			MUDSTONE	CARB.VPR.BLK.MAS.VSHRD LITHOLOGY AS ABOVE, S-SHAPED FOLDS IN Q UARTZ VEINS PYRITE CRYSTALS (1MM) WITHI N THE QUARTZ
32	28.00	28.27	0.27			ROCK LOSS	
31	28.27	28.58	0.31			MUDSTONE	CARB.VPR.BLK.MAS.VSHRD LITHOLOGY AS ABOVE
* 30	28.58	30.40	1.82			MUDSTONE	CARB.VPR.BLK.LAM.VSHRD LITHOLOGY AS ABOVE, SLICKENSIDES, SILTY , GOUGE LAYER 360 MM WIDE WITH BLACK FI NE GRAINED CLASTS.
29	30.40	31.40	1.00			MUDSTONE	CARB.BLK.MAS.BIOTR.BRKN LITHOLOGY AS ABOVE, SILTY OCCASIONAL AN KERITEVEIN , SLICKENSIDES.
28	31.40	31.79	0.39			ROCK LOSS	
27	31.79	33.02	1.23			MUDSTONE	CARB.BLK.MAS.BRKN NUMEROUS COAL STRINGERS WITH ASSOCIATED ANKERITE VEINLETS

* DENOTES MEASURED BCA

FORM 4001

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85001

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
26	33.02	34.59	1.57			MUDSTONE	CARB LITHOLOGY AS ABOVE
25	34.59	35.01	0.42			MUDSTONE	CARB LITHOLOGY AS ABOVE
* 25	35.01	35.06	0.05			COAL	C-2
* 27	35.06	36.86	1.80			SILTSTONE	CARB.DK.GY.LAM.SSD.SLD BIOTURBATED, COAL CLASTS 5-7MM, OCCASIO NAL QUARTZ VEINS. CLAYEY.
* 25	36.86	37.18	0.32			SANDSTONE	FG.MOD.M.GY.VTHNB.BIOTR.SLD UPPER CONTACT BIOTURBATED
* 27	37.18	37.66	0.48			SANDSTONE	FG.MOD.M.GY.VTHNB.SSD.SLD FINE BLACK SILTY LAYERS THROUGHOUT, GRA DED BEDS AND LOAD CASTS INDICATE UNIT I S TOPS DOWN.
* 27	37.66	39.10	1.44			SANDSTONE	FG.MOD.M.GY.VTHNB.XBDG.BRKN SOFT SEDIMENT DEFORMATION AND CROSS BED S INDICATE UNIT IS TOPS DOWN, ALTERNATI NG LAYERS OF BLACK SILT AND VERY FINE G RAINED TO FINE GRAINED SAND. OCCASIONAL ANKERITE VEINS.

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85001

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 34	39.10	40.51	1.41			SANDSTONE	FG.WEL.LT.GY.VTHNB.SSD.SLD GRADES TO MEDIUM GRAINED SANDSTONE BELO W. OCCASIONAL SILTY LAYERS WITH ABRUPT CONTACTS.
* 35	40.51	41.02	0.51			SANDSTONE	MG.WEL.LT.GY.VTHNB.SSD.BRKN OCCASIONAL QUARTZ AND ANKERITE VEINS
* 30	41.02	43.10	2.08			SANDSTONE	FG-.WEL.LT-M.GY.VTHNB.WRMBU.BRKN ALTERNATING BEDS OF FINE AND MEDIUM GRA INED SANDSTONE. WORM BURROWS SHOW TOPS DOWN. OCCASIONAL ANKERITE VEINS AND SIL TY STRINGERS
22	43.10	43.29	0.19			SANDSTONE	FG.WEL.LT-M.GY.VTHNB.BIOTR.BRKN BIOTURBATED BLACK SILTY LAYERS
* 15	43.29	45.03	1.74			SANDSTONE	VFG.MOD.M.GY.MAS.WRMBU.BRKN LITHOLOGY AS ABOVE, ABRUPT CONTACT WITH ABOVE SANDSTONE, WORMBURROWS INDICATE TOPS DOWN, FOLD AXIS LIKELY AT THE BOTT OM OF THIS BOX
* 23	45.03	45.27	0.24			SANDSTONE	MG.MOD.LT.GY.LAM.SSD.BRKN ABRUPT CONTACT

* DENOTES MEASURED BCA

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86/01/03 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 7

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85001

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 23	45.27	45.58	0.31			SANDSTONE	VFG.PR.M.GY.LAM.SSD.BRKN ABRUPT CONTACT, VERY FINELEY LAMINATED, BLACK SILTY LAYERS
* 23	45.58	46.04	0.46			SANDSTONE	MG.MOD.LT.GY.LAM.SSD.BRKN ABRUPT CONTACT
* 10	46.04	46.91	0.87			SANDSTONE	SLTY.VFG.PR.M.GY.LAM.SSD.BRKN SHARP CONTACT, WORM BURROWS AT CONTACT INDICATE TOPS UP, CROSS BEDDED, VERY FI NELY LAMINATED
15	46.91	47.43	0.52			SANDSTONE	SLTY.VFG.PR.M.GY.LAM.SSD.BRKN BIOTURBATED
* 24	47.43	49.44	2.01			SANDSTONE	SLTY.VFG.PR.DK.GY.LAM.BIOTR.BRKN BLACK SILTY BANDS, BIOTURBATED, MINOR F INE GRAINED SANDSTONE BAND WITH SHARP C ONTACTS, OCCASIONAL QUARTZ VEINS.
19	49.44	49.82	0.38			SANDSTONE	SLTY.VFG.PR.LT-M.GY.LAM.SSD.BRKN ABRUPT CONTACT WITH MEDIUM GRAINED SAND STONE, BIOTURBATED
* 15	49.82	51.13	1.31			SANDSTONE	MG.WEL.LT-M.GY.MAS.BRKN BLACK ROUNDED MUDSTONE CLASTS 20 MM WID E, OCCASIONAL QUARTZ VEINS, SLICKENSIDE S

* DENOTES MEASURED BCA

86/01/03 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 8

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85001

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
16	51.13	52.43	1.30			SANDSTONE	MG.WEL.LT-M.GY.MAS.VBRKN
17	52.43	52.60	0.17			SANDSTONE	FG.MOD.LT-M.GY.MAS.SLD
18	52.60	53.61	1.01			SANDSTONE	FG.MOD.LT-M.GY.MAS.BRKN
19	53.61	54.40	0.79			SANDSTONE	FG.MOD.LT-M.GY.MAS.BRKN 170MM CRUSHED WITH INTENSE QUARTZ VEINI NG
20	54.40	55.60	1.20			SANDSTONE	FG.MOD.M.GY.MAS.SLD OCCASIONAL QUARTZ VEIN.
21	55.60	56.53	0.93			SANDSTONE	FG.MOD.M.GY.MAS.SLD
* 23	56.53	58.56	2.03			SANDSTONE	FG.MOD.M.GY.VTHNB.SLD VERY FAINT BEDDING. VARIABLE BCA'S.

* DENOTES MEASURED BCA

ORM 4001

86/01/03 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 9

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85001

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
19	58.56	58.60	0.06			SANDSTONE	FG.MOD.M.GY.MAS.SLD
* 15	58.60	60.34	1.74			SANDSTONE	FG.MOD.M.GY.VTHNB.VBRKN FAINT BEDDING. OCCASIONAL ANKERITE AND QUARTZ VEINS WITH EN ECHELON DISPLACEME NT. SLICKENSIDES.
* 25	60.34	61.30	0.96			SANDSTONE	FG.MOD.M.GY.LAM.SLD TROUGH BEDDING. SLICKENSIDES, OCCASIONA L QUARTZ AND ANKERITE VEINS, WITH EN EC HELON DISPLACEMENT
23	61.30	62.27	0.97			SANDSTONE	FG.MOD.M.GY.MAS.SLD OCCASIONAL QUARTZ VEIN.
22	62.27	63.30	1.03			SANDSTONE	FG.MOD.M.GY.LAM.VBRKN GRADED BEDDING. UNIT BOUNDED AT BASE BY FRACTURE WITH SLICKENSIDES.
* 20	63.30	64.13	0.83			SILTSTONE	PR.DK.GY.LAM.SSD.VBRKN BIOTURBATED. GRADES TO VERY FINE GRAINE D SANDSTONE. TOPS UP INDICATED BY GRADE D BEDDING AND LOAD STRUCTURES.
* 20	64.13	64.17	0.04			SILTSTONE	PR.DK.GY.LAM.BRKN INTERLAMINATED FINE BLACK SILTSTONE AND FINE GRAINED SANDSTONE.

* DENOTES MEASURED BCA

86/01/03 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 10

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85001

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 15	64.17	65.65	1.48			SILTSTONE	CLYY.PR.DK.GY.LAM.SSD.VBRKN MUDDY SILTSTONE. WORMBURROWS AND LOAD C ASTS SHOW TOPS UP. INTERLAYERED SILTSTO NE AND FINE GRAINED SANDSTONE
* 24	65.65	66.28	0.63			SILTSTONE	PR.DK.GY.LAM.SSD.BRKN TOPS UP. ABRUPT CONTACT WITH FINE GRAIN ED SANDSTONE. SLICKENSIDES
* 20	66.28	66.83	0.55			SANDSTONE	FG.PR.M.GY.LAM.WRMBU.BRKN WORM BURROWS AT CONTACT INDICATE TOPS U P. SLICKENSIDES
* 27	66.83	67.58	0.75			SILTSTONE	PR.DK.GY.LAM.SSD.SLD ABRUPT CONTACT WITH FINE GRAINED SANDST ONE BELOW. FINELY LAMINATED. TOPS UP.
* 30	67.58	69.72	2.14			SANDSTONE	FG.PR.M.GY.LAM.SSD.BRKN BIOTURBATED. VERTICAL WORMBURROWS. TOPS UP.
30	69.72	70.37	0.65			SANDSTONE	FG.PR.M.GY.LAM.SSD.SLD

* DENOTES MEASURED BCA

86/01/03 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 11

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85001

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
30	70.37	71.63	1.26			SANDSTONE	FG.PR.M.GY.LAM.SSD.BRKN CONTAINS VERY FINE GRAINED SANDSTONE . GRADES TO BLACK SILTY LAYERS IN PLACES. TOPS UP. OCCASIONAL QUARTZ VEIN. SOME FRACTURES INFILLED BY QUARTZ AND COAL 1 0-30 MM LONG BY 2-4 MM WIDE
* 30	71.63	72.84	1.21			SANDSTONE	SLTY.VFG.PR.M.GY.LAM.SSD.BRKN GRADES FROM SILTY LAYERS ABOVE. ALTERNA TING LAYERSOF FINE BLACK SILT AND FINE GRAINED SANDSTONE. BIOTURBATEDUP IN PLA CES. LARGE QUARTZ AND COAL FILLEDFRACTU RES. TOPS UP.
* 32	72.84	73.64	0.80			SANDSTONE	SLTY.VFG.PR.M.GY.LAM.SSD.BRKN
* 27	73.64	74.98	1.34			SANDSTONE	SLTY.VFG.PR.DK.GY.LAM.SSD.BRKN VERY FINE GRAINEDSILTY SANDSTONE GRADES TO MUDDY SILTSTONE. FINE BLACK SILTY L AYERS. OCCASIONAL QUARTZ AND COAL FILLE D FRACTURES, SOME S-SHAPED. BIOTURBATED BLACK SILTY LAYERS. .5-1 MM ROUND QUAR TZ CLASTS IN VERTICAL WRMBURS. TOPS UP.

* DENOTES MEASURED BCA

86/01/03 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 12

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85001

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 30	74.98	75.11	0.13			SILTSTONE	CLYY.PR.DK.GY.LAM.BIOTR.SLD MUDDY SILTSTONE, BIOTURBATED.
* 30	75.11	77.04	1.93			SILTSTONE	CLYY.PR.DK.GY.LAM.BIOTR.BRKN MUDDY SILTSTONE, BIOTURBATED. TOPS UP(?). LIGHT GREY MOTTLED STRUCTURES 10-20 MM WIDE, MODERATE QUARTZ VEINING, IRREG ULARLY SHAPED VEINS WITH COAL. LAST 50 MM VERY SHEARED. SLICKENSIDES
15	77.04	78.02	0.98			MUDSTONE	CARB.BLK.MAS.BRKN SOME CRUSHED AND SHEARED ZONES. INTENSE ANKERITE VEINING ASSOCIATED WITH COAL.
* 05	78.02	78.89	0.87			MUDSTONE	CARB.BLK.LAM.SLD TINY WAVEY CALCITE STRINGERS.
* 40	78.89	80.76	1.87			MUDSTONE	CARB.BLK.LAM.VBRKN INTENSE ANKERITE VEINING ASSOCIATED WIT H COAL. VERY SHEARED IN PLACES, SOME Z-SHAPED VEINS. SLICKENSIDES.
54	80.76	82.39	1.63			MUDSTONE	CARB.BLK.VSHRD VEINING AND COAL STRINGERS TO 1.19M. HI GHLY SHEARED. SLICKENSIDES.

* DENOTES MEASURED BCA

ORM 4001

86/01/03 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 13

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85001

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 65	82.39	83.47	1.08			MUDSTONE	SLTY.DK.GY.LAM.SSD.VBRKN SILTY MUDSTONE GRADING TO SILTSTONE. FOSSIL SHELLS, LOAD CASTS. TOPS UP. SLICKENSIDES.
57	83.47	83.86	0.39			SILTSTONE	CLYY.M.GY.MAS.VBRKN MUDDY.
* 45	83.86	85.49	1.63			SILTSTONE	M.GY.SSD.VBRKN MUDDY SILTSTONE GRADING TO FINE GRAIN SANDSTONEAT 690 MM. FINE BLACK MUDDY LAYERS. WORM BURROWS SHOW TOPS UP. QUARTZ VEINING WITH SOME COAL.
* 35	85.49	86.63	1.14			MUDSTONE	CARB.BLK.LAM.VBRKN COAL AND PYRITE ASSOCIATED WITH QUARTZ VEINS. VERYCARBONACEOUS. SHEARING, SLICKENSIDES
33	86.63	87.16	0.53			MUDSTONE	CARB.BLK.MAS.VSHRD VERY CARBONACEOUS.
31	87.16	88.59	1.43			MUDSTONE	CARB.BLK.MAS.VSHRD VERY SHEARED AND CRUSHED.
29	88.59	88.66	0.07			MUDSTONE	CARB.BLK.MAS.VSHRD VERY SHEARED AND CRUSHED.

* DENOTES MEASURED BCA

86/01/03 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 14

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85001

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
29	88.66	89.09	0.43			MUDSTONE	CARB.BLK.MAS.VSHRD WIDE QUARTZ VEINS 10-30MM.
27	89.09	90.20	1.11			SANDSTONE	FG.LT.GY.MAS.VBRKN SLICKENSIDES. SHARP CONTACT WITH ABOVE MUDSTONE (SHEAR ZONE).
* 24	90.20	91.93	1.73			SANDSTONE	FG.PR.LT.GY.LAM.VBRKN RANDOM COAL STRINGERS. INTENSELY VEINED AND BRECCIATED ALONG POSSIBLE REMNANT BEDDING IN WHICH CASE BCA=24. OCCASIONAL MUDDY LAYERS.
* 30	91.93	93.21	1.28			SANDSTONE	FG.LT.GY.VTHNB.VBRKN MUCH LESS VEINING. VERY FAINT BEDDING. LAST 150 CM CRUSHED.
38	93.21	93.51	0.30			SANDSTONE	FG.LT.GY.MAS.VBRKN
43	93.51	94.23	0.72			SANDSTONE	FG.LT.GY.MAS.VBRKN FINE TO MEDIUM GRAINED. OCCASIONAL VEIN .
* 50	94.23	94.86	0.63			SANDSTONE	FG.WEL.LT.GY.MAS.VBRKN FINE TO MEDIUM GRAINED. WIDE QUARTZ VEINS (20-30MM).

* DENOTES MEASURED BCA

FORM 4001

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85001

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
56	94.86	95.19	0.33			SANDSTONE	FG.WEL.LT.GY.MAS.VBRKN FINE TO MEDIUM GRAINED.
59	95.19	95.46	0.27			SANDSTONE	FG.WEL.LT.GY.MAS.VBRKN FINE TO MEDIUM GRAINED.
66	95.46	96.40	0.94			SANDSTONE	FG.WEL.LT.GY.MAS.VBRKN FINE TO MEDIUM GRAINED.
* 77	96.40	97.37	0.97			SANDSTONE	FG.WEL.LT.GY.MAS.XBDG.VBRKN FAINT CROSS BEDDING SHOW TOPS UP. ONE T HICK QUARTZ VEIN. ONE SHELL FOSSIL.
78	97.37	97.87	0.50			SANDSTONE	FG.WEL.LT.GY.MAS.VBRKN
* 80	97.87	99.62	1.75			SANDSTONE	FG.WEL.LT.GY.MAS.BRKN QUARTZ VEINS WITH MINOR COAL AT 520MM. FINE TO MEDIUM GRAINED.
85	99.62	100.55	0.93			SANDSTONE	FG.WEL.LT.GY.MAS.VBRKN FINE TO MEDIUM GRAINED. OCCASIONAL QUAR TZ VEINS.
87	100.55	101.09	0.54			SANDSTONE	FG.WEL.LT.GY.MAS.VBRKN FINE TO MEDIUM GRAINED.

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85001

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	101.09	102.25	1.16			SANDSTONE	FG.WEL.LT.GY.MAS.VBRKN
* 65	102.25	104.05	1.80			SANDSTONE	FG.WEL.LT.GY.MAS.BRKN OCCASIONAL 1MM BY 10MM MOD SILT STRINGE RS. OCCASIONAL ANKERITE FILLED FRACTURE S. FINE TO MEDIUM GRAINED.
76	104.05	104.13	0.08			SANDSTONE	FG.WEL.LT.GY.MAS.VBRKN FINE TO MEDIUM GRAINED.
* 85	104.13	105.70	1.57			SANDSTONE	FG.WEL.LT.GY.MAS.BRKN FINE TO MEDIUM GRAINED. CORE TWIST OFF AND POSSIBLY CORE LOSS.
* 60	105.70	107.29	1.59			SANDSTONE	MG.WEL.LT.GY.MAS.BRKN OCCASIONAL FINE SILTY LAMINAE. OCCASION AL WIDE ANKERITE VEINS PARALLEL TO CORE .
72	107.29	107.49	0.20			SANDSTONE	MG.WEL.LT.GY.MAS.VBRKN ANKERITE VEIN WITH MINOR COAL. SLICKENS IDES AT 90 DEGREES TO CORE.
* 80	107.49	108.55	1.06			SANDSTONE	MG.WEL.LT.GY.MAS.BRKN 1MM BY 10MM MEDIUM GREY SILT STRINGERS THROUGHOUTANKERITE FILLED FRACTURES. OC CASIONAL FINE SILTY LAMINAE, FLASER BED DING.

* DENOTES MEASURED BCA

FORM 4001

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PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85001

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 80	108.55	110.32	1.77			SANDSTONE	MG.WEL.LT.GY.MAS.BRKN LITHOLOGY AS ABOVE.
* 70	110.32	112.22	1.90			SANDSTONE	SLTY.FG.MOD.M.GY.MB.XBDG.BRKN CROSS AND GRADED BEDDING SHOW TOPS UP. LAYERS GRADE FROM SILT TO MEDIUM GRAINE D SANDSTONE.
80	112.22	112.37	0.15			SANDSTONE	SLTY.VFG.PR.M.GY.VTHNB.XBDG.BRKN VERY THIN BEDDED TO LAMINATED. GRADING TO SILTSTONE.
* 88	112.37	113.92	1.55			SILTSTONE	CARB.PR.DK.GY.MAS.XBDG CORE TWISTOFF AT 0.00M. CARBONACEOUS MU DDY SILTSTONE GRADING IN PLACES TO VERY FINE GRAINED SANDSTONE. COAL IN CARBON ACEOUS MUDSTONE 112.02 TO 112.31M.
84	113.92	114.49	0.57			MUDSTONE	SLTY.PR.DK.GY.LAM.VBRKN CORE TWIST OFF @ 0.44M. GRADED BEDDING.
* 82	114.49	115.39	0.90			SILTSTONE	CLYY.VPR.DK.GY.LAM.XBDG.VBRKN GRADING FROM CARBONACEOUS BLACK SILTY L AYERS TO FINE GRAINED SANDSTONE. XBDG S HOWS TOPS UP.

* DENOTES MEASURED BCA

86/01/03 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 18

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85001

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 87	115.39	117.16	1.77			SILTSTONE	CLYY.VPR.M-DK.GY.LAM.XBDG.BRKN LAMINATIONS GRADING FROM FINE GRAINED S ANDSTONE TOCARBONACEOUS MUDSTONE. CROSS BEDDING AND BIOTURBATION IN FINER LAYE RS. MRMBURS, SSD, XBDG, SHOW TOPS UP.
* 87	117.16	117.20	0.04			SILTSTONE	CLYY.VPR.M-DK.GY.LAM.VBRKN
* 90	117.20	118.90	1.70			MUDSTONE	CARB.BLK.MAS.VBRKN
89	118.90	119.13	0.23	07254		MUDSTONE	CARB.BLK.MAS.SLD TINY COALY VEINS. PLANT FRAGMENT FOSSIL S ON BEDDING SURFACES. 50. MM ANKERITE BAND AT BOTTOM.
89	119.13	119.14	0.01	07255	I	COAL	C-3.SLD WITH ANKERITE.
89	119.14	119.30	0.16	07255	I	COAL	C-3.BRKN BANDS OF C-2.

* DENOTES MEASURED BCA

FORM 4001

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85001

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
89	119.30	119.34	0.04	07255	I	MUDSTONE	CARB,DK,GY,BRKN
89	119.34	119.46	0.12	07255	I	COAL	C-4,PWRD VERY LISTRIC. INTENSLEY SHEARED.
89	119.46	119.62	0.16	07255	I	COAL	C-3,BRKN MAY BE WEATHERED.
89	119.62	119.96	0.34	07255	I	COAL	C-2,BRKN FEW ANKERITE VEINS.
88	119.96	120.47	0.51	07255	I	COAL	C-1,BRKN
88	120.47	120.53	0.06	07255	I	COAL	C-1,SLD
88	120.53	120.64	0.11	07256	I	MUDSTONE	CARB,DK,BN,BRKN SILTY.
88	120.64	120.68	0.04	07256	I	COAL	C-2,SLD
88	120.68	120.69	0.01	07256	I	COAL	C-3,BRKN
88	120.69	121.43	0.74	07256	I	MUDSTONE	CARB,DK,GY LISTRIC SURFACES.

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85001

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
88	121.43	121.48	0.05	07256	I	COAL	C-2,SLD
88	121.48	121.52	0.04	07256	I	MUDSTONE	CARB,DK,GY
87	121.52	121.59	0.07	07256	I	COAL	C-2,SLD
87	121.59	121.65	0.06	07256	I	MUDSTONE	CARB,DK,GY,SLD COAL BAND.
87	121.65	121.68	0.03	07257	I	COAL	C-3,SLD CLAYSTONE LAMINAE.
87	121.68	122.05	0.37	07257	I	COAL	C-2,SHRD
87	122.05	122.21	0.16	07257	I	COAL	C-1,BRKN
87	122.21	122.22	0.01	07257	I	MUDSTONE	CARB,M,BN
87	122.22	122.33	0.11	07257	I	COAL	C-1,SLD
87	122.33	122.70	0.37	07257	I	COAL	C-2,PWRD

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85001

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
87	122.70	122.85	0.15	07257	I	COAL	C-1.PHRD
87	122.85	122.89	0.04	07257	I	COAL	C-1.SLD
86	122.89	123.43	0.54	07257	I	COAL	C-1.VBRKN
86	123.43	123.51	0.08	07257	I	COAL	C-6.PHRD
86	123.51	123.64	0.13	07258		MUDSTONE	MOD.DK.GY.MAS.SLD
86	123.64	123.95	0.31	07258		MUDSTONE	SLTY.MOD.DK.GY.MAS.SLD BECOMING MORE SILTY DOWNWARDS.
86	123.95	124.25	0.30			SILTSTONE	SSY.PR.DK.GY.SSD.SLD MINOR BURROWS. COARSENING DOWNWARD.
85	124.25	124.65	0.40			SANDSTONE	PBLY.WEL.M.GY.MAS.SLD FEW BANDS CHERT PEBBLES 1 CM WIDE AND S MALLER. ANKERITE VEIN.

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85001

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
85	124.65	124.86	0.21			SANDSTONE	PBLY.FG.MOD.LT.GY.VTHNB.BRKN ROUNDED QUARTZ, SILTSTONE, AND MUDSTONE CLASTS 3 TO 8 MM IN DIAMETER. FINE TO MEDIUM GRAINED.
* 85	124.86	125.10	0.24			CONGLOMERATE	VPR.LT.GY.VTHNB.BRKN CLAST SUPPORTED, 3 TO 8 MM IN SIZE. FIN E GRAINED SANDSTONE MATRIX. ROUNDED CLA STS. POLYMICTIC.
79	125.10	126.37	1.27			SANDSTONE	PBLY.FG-.MOD.LT.GY.VTHNB.BRKN ROUNDED QUARTZ AND MUDSTONE CLASTS 3-8 MM IN DIA. FINE TO MEDIUM GRAINED SANDS TONE.
73	126.37	126.56	0.19			SANDSTONE	PBLY.FG-.MOD.LT.GY.MAS.BRKN AS ABOVE BUT WITH SLIGHTLY LARGER CLAST S 4 TO 10 MM IN SIZE. FINE TO MEDIUM GR AINED SANDSTONE
* 70	126.56	127.19	0.63			SANDSTONE	PBLY.FG-.MOD.LT.GY.VTHNB.BRKN CLASTS 5 TO 20 MM IN DIAMETER. MUDSTONE RIPUP CLASTS 4MM WIDE BY 30 MM LONG. F INE TO MEDIUM GRAINED SANDSTONE.
68	127.19	127.64	0.45			SANDSTONE	FG.WEL.LT.GY.MAS

* DENOTES MEASURED BCA

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PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85001

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
67	127.64	127.71	0.07			ROCK LOSS	
* 65	127.71	128.39	0.68			MUDSTONE	CARB.PR.DK.GY.LAM.XBDG CARBONACEOUS SILTY MUDSTONE. SOME VERY FINE GRAINED LAMINAE. CORE TWIST OFF AT 40 MM. OCCASIONAL ANKERITE AND COAL FI LLED FRACTURES.
* 60	128.39	129.57	1.18			SILTSTONE	CLYY.M-DK.GY.LAM.SSD.BRKN MUDDY CARBONACEOS SILTSTONE ALTERNATING WITH BANDS THAT GRADE TO VERY FINE GRA INED SANDSTONE. WRMBUR, SSD, INDICATE T OPS UP.
66	129.57	129.69	0.12			ROCK LOSS	
* 70	129.69	130.43	0.74			MUDSTONE	CARB.DK.GY.LAM.BIOTR.SLD FINE CARBONACEOU SILTSTONE LAMINAE. COR E TWIST OFFAT 40 MM.
70	130.43	131.38	0.95			MUDSTONE	CARB.M-DK.GY.MAS.SLD GRADING DOWNWARD TO FINE GRAINED SANDST ONE.

* DENOTES MEASURED BCA

86/01/03 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 24

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85001

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 70	131.38	132.54	1.16			SANDSTONE	SLTY.VFG.PR.LT-M.GY.LAM.SSD.BRKN FINE SILTY MUDSTONE LAYERS THROUGHOUT. XBDG, SSD, WORMBURROWS INDICATE TOPS UP .
65	132.54	132.74	0.20			ROCK LOSS	
* 60	132.74	134.09	1.35			SANDSTONE	SLTY.VFG.PR.LT-M.GY.LAM.SSD.BRKN CORE TWIST OFF AT TOP. MUCH QUARTZ VEIN ING IN BROKEN PIECES IN UPPER 50 MM. WO RMBURROWS. FINE SILTY MUDSTONE LAYERS T HROUGHOUT.
* 80	134.09	134.39	0.30			SANDSTONE	MG.WEL.LT.GY.VTHNB.BRKN OCCASIONAL DARK SILTY LAYERS. SILTSTONE RIPUP CLASTS 7-30 MM LONG BY 5-10MM WI DE AND LARGER. SLICKENSIDES ON UPPER CO NTACT.
76	134.39	134.93	0.54			SANDSTONE	MG.PR.M.GY.VTHNB.WRMBU.VBRKN LITHOLOGY AS ABOVE, BUT NO RIP UP CLAST S. OCCASIONAL DISTURBED BLACK SILTY LAY ERS.
71	134.93	135.49	0.56			SANDSTONE	VCG.VPR.LT.GY.VTHNB.BRKN SLIGHTLY GRADED. OCCASIONAL QUARTZ VEIN .

* DENOTES MEASURED BCA

FORM 4001

86/01/03 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 25

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85001

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
68	135.49	135.56	0.07			SANDSTONE	VCG.VPR.LT.GY.VTHNB.BRKN LITHOLOGY AS ABOVE. SHARP CONTACT (SCOU R?) WITH SANDSTONE BELOW.
65	135.56	136.15	0.59			SANDSTONE	SLTY.FG-.VPR.LT.GY.LAM.BRKN FINE SILTY LAYERS BUT VERY DISTURBED. S LICKENSIDES AT BASE. FINE TO MEDIUM GRA INED SANDSTONE.
62	136.15	136.27	0.12			CONGLOMERATE	VCG.VPR.LT.GY.VTHNB.SLD PREDOMINANTLY ROUNDED SILTY MUDSTONE CL ASTS IN A VERY COARSE GRAINED MATRIX GR ADING DOWNWARD TO FINE GRAINED SANDSTON E. DISTURBED SILTY LAYERS WITHIN THIS S ANDSTONE. ABRUPT CONTACT AT BASE OF UNI T.
* 60	136.27	136.50	0.23			SILTSTONE	CLYY.M.GY.LAM FINE BLACK MUDDY LAYERS.
* 75	136.50	138.06	1.56			SANDSTONE	FG-.VPR.M.GY.VTHNB.BRKN ALTERNATING BEDS GRADING FROM BLACK SIL TSTONE TO VERY COARSE GRAINED SANDSTONE WITH ROUNDED MUDSTONECLASTS 10 - 15MM IN DIAMETER. OCCASIONAL QUARTZ VIEN. FI NE SILTY LAYERS ARE DISRUPTED. SOME SLI CKENSIDES.

* DENOTES MEASURED BCA

86/01/03 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 26

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85001

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
68	138.06	138.57	0.51			SANDSTONE	FG-.VPR.M.GY.VTHNB.VSHRD LITHOLOGY AS ABOVE. FINE GRAINED TO COA RSE GRAINED.
66	138.57	138.62	0.05			ROCK LOSS	
64	138.62	139.14	0.52			SANDSTONE	FG-.VPR.M.GY.VTHNB.VBRKN LITHOLOGY AS ABOVE. ABRUPT CONTACT (SCO UR?) AT BASE. FINE GRAINED TO COARSE GR AINED.
60	139.14	139.84	0.70			SANDSTONE	SLTY.FG.VPR.LT.GY.MAS.BRKN UPPER 90 MM BLACK CARBONACEOUS SILTSTON E. OCCASIONAL QUARTZ STRINGER. OCCASION AL FINE SILTY BLACK LAYER. PREDOMINANTL Y MASSIVE SANDSTONE.
* 55	139.84	140.50	0.66			SANDSTONE	FG-.PR.LT.GY.LAM.WRMBU.BRKN FINE GRAINED SANDSTONE AT TOP COARSENIN G DOWNWARD TO COURSE GRAINED SANDSTONE AT BASE. FINE BLACK SILTY LAYERS THROUG HOUT. WORMBURROWS INDICATE TOPS UP.
54	140.50	140.58	0.08			SILTSTONE	SSY.M.GY.BRKN FINING DOWNWARD.
53	140.58	141.01	0.43			MUDSTONE	CARB.DK.GY.BRKN VERY LISTRIC.

* DENOTES MEASURED BCA

FORM 4001

86/01/03 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 27

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85001

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
52	141.01	141.07	0.06		H/I	COAL	C-2.SLD WITH CLAYSTONE AND PYRITE BLEBS.
51	141.07	141.19	0.12			ROCK LOSS	
51	141.19	141.52	0.33			MUDSTONE	CARB.DK.GY.VBRKN AS ABOVE. LISTRIC SURFACES.
50	141.52	141.72	0.20			ROCK LOSS	
49	141.72	141.94	0.22			MUDSTONE	CARB.DK.GY.VBRKN LISTRIC. OCCASIONAL ANKERITE BANDS.
48	141.94	142.14	0.20			ROCK LOSS	
* 45	142.14	143.54	1.40			MUDSTONE	SLTY.M.GY.LAM.VSHRD SLICKENSIDES . OCCASIONAL COAL STRINGER S AS WELL AS COARSER SILTY LAYERS.
* 45	143.54	144.56	1.02			SILTSTONE	CARB.VPR.M-DK.GY.LAM.SSD.VSHRD GRADED BEDDING FROM FINE CARBONACEOUS S ILTY LAYER TO FINE GRAINED SANDSTONE. L OADING, WORM BURROWS INDICATE TOPS UP. SLICKENSIDES.
48	144.56	144.86	0.30			ROCK LOSS	

* DENOTES MEASURED BCA

86/01/03 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 28

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85001

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 50	144.86	145.86	1.00			SILTSTONE	CLYY.VPR.M-DK.GY.LAM.SSD.SHRD LITHOLOGY AS ABOVE.
53	145.86	146.15	0.29			ROCK LOSS	
56	146.15	146.95	0.80			CLAYSTONE	CARB.M-DK.GY.MAS.VSHRD CRENULATION CLEAVAGE IN ADDITION TO SLI CKENSIDES, VERY SOFT.
* 60	146.95	147.61	0.66			SILTSTONE	CLYY.PR.M.GY.LAM.BRKN CARBONACEOUS. VERY FAINT BEDDING.
* 65	147.61	148.83	1.22			SILTSTONE	PR.DK.GY.LAM.XBDG.VBRKN FINE ALTERNATING LAYERS OF BLACK SILTST ONE AND VERY FINE GRAINED SANDSTONE. CR OSS BEDDING AND SSD INDICATE TOPS UP.
67	148.83	150.65	1.82			MUDSTONE	SLTY.DK.GY.LAM.SSD SILTY AND CARBONACEOUS WITH NUMEROUS BA NDS GRADING TO FINE GRAIN SANDSTONE, WO RM BURROWS SHOW TOPS UP.
68	150.65	150.86	0.21			ROCK LOSS	

* DENOTES MEASURED BCA

FORM 4001

86/01/03 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 29

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85001

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 68	150.86	151.07	0.21			MUDSTONE	SLTY.DK.GY.LAM LITHOLOGY AS ABOVE. EXTREMELY FINE UNIF ORM LIGHT GREY SILTY LAMINAE 0.5 MM WID E WITHIN MUDSTONE LAYERS. "VARVE-LIKE".
* 76	151.07	152.98	1.91			SILTSTONE	VPR.M-DK.GY.LAM.SSD LITHOLOGY AS ABOVE. SOME LAYERS GRADING TO FINE GRAIN SANDSTONE. GRAINSIZE GRA DUALLY INCREASING DOWNWARD TO PREDOMINA NTLY FINE GRAINED SANDSTONE LAYERS AT B ASE. UPPER 140 MM CARBONACEOUS MUDSTONE . SLICKENSIDES. WRMBUR TOPS UP.
* 80	152.98	153.71	0.73			SILTSTONE	VPR.M-DK.GY.LAM.XBDG.BRKN LITHOLOGY AS ABOVE. NUMEROUS ALTERNATIN G LAYERS GRADING FROM CARBONACEOUS MUDS TONE TO FINE GRAINED SANDSTONE. PLANT H ASH.
80	153.71	153.85	0.14			ROCK LOSS	
* 80	153.85	155.08	1.23			SILTSTONE	VPR.M-DK.GY.LAM.XBDG.BRKN LITHOLOGY AS ABOVE. WORM BURROWS, SSD, XBDG SHOW TOPS UP.

* DENOTES MEASURED BCA

86/01/03 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 30

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85001

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 75	155.08	156.75	1.67			SILTSTONE	CLYY.PR.DK.GY.LAM.XBDG.SLD MUDDY SILTSTONE AS ABOVE, GRADING TO SI LTY MUDSTONE AT BASE. TOPS UP.
73	156.75	157.16	0.41			MUDSTONE	SLTY.PR.GY.LAM.SSD.BRKN CORE TWIST OFF. VERY FAINT LAMINATIONS.
71	157.16	158.61	1.45	07259		MUDSTONE	C-1.WEL.DK.GY.MAS.BRKN VERY HOMOGENEOUS CLAYSTONE. FEW PLANT F OSSILS. COAL STRINGERS.
70	158.61	158.62	0.01	07259		COAL	C-1.SLD BAND
70	158.62	158.65	0.03	07259		MUDSTONE	WEL.DK.GY.MAS.SLD AS ABOVE.
69	158.65	158.89	0.24	07260	H	COAL	C-4.BRKN BANDED WITH C-2. CLEAT FILLED ANKERITE.
69	158.89	158.95	0.06	07260	H	MUDSTONE	CARB.DK.BN.BRKN UNCONSOLIDATED WITH POWDERED LISTRIC CO AL FRAGS. CRENULATION CLEAVAGE.
69	158.95	159.09	0.14	07260	H	MUDSTONE	CARB.DK.GY.BRKN MINOR COAL LAMINAE.
69	159.09	159.26	0.17	07261	H	COAL	C-6.BRKN FEW COAL LAMINAE.

* DENOTES MEASURED BCA

FORM 4001

86/01/03 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 31

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85001

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
68	159.26	159.36	0.10	07261	H	COAL LOSS	
68	159.36	159.44	0.08	07261	H	COAL LOSS	
68	159.44	159.73	0.29	07261	H	COAL	C-2.VBRKN
67	159.73	159.85	0.12	07261	H	COAL	C-2.BRKN
67	159.85	159.90	0.05	07261	H	COAL	C-1.SLD
67	159.90	159.94	0.04	07261	H	COAL	C-1.VBRKN
67	159.94	159.96	0.02	07261	H	MUDSTONE	CARB.DK.GY.SLD
67	159.96	160.34	0.38	07261	H	COAL	C-1.BRKN
66	160.34	160.38	0.04	07261	H	ROCK LOSS	
66	160.38	160.48	0.10	07261	H	MUDSTONE	CARB.DK.GY.MAS.VBRKN LISTRIC SURFACES.
66	160.48	160.56	0.08	07261	H	MUDSTONE	SLTY.M.GY.MAS

* DENOTES MEASURED BCA

86/01/03 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 32

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85001

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
66	160.56	160.96	0.40	07261	H	COAL	C-2.VBRKN WEATHERED (?)
65	160.96	160.98	0.02	07261	H	COAL	C-2 ANKERITE BAND BENEATH
64	160.98	162.11	1.13	07262		MUDSTONE	CARB.DK.GY.MAS.SLD SILTY. FEW 5.0MM COALY BANDS. DISSEMINA TED PYRITE.
63	162.11	162.15	0.04			ROCK LOSS	
63	162.15	162.26	0.11			COAL	C-3.BRKN
63	162.26	162.30	0.04			COAL	C-6.SLD
62	162.30	162.48	0.18			MUDSTONE	CARB.DK.GY.BRKN BECOMING LESS CARBONACEOUS AND MORE BRO KEN DOWNWARDS.
62	162.48	162.61	0.13			ROCK LOSS	

* DENOTES MEASURED BCA

FORM 4001

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85001

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
62	162.61	162.72	0.11			MUDSTONE	CARB.M.GY.BRKN SILTY AND CRUSHED.
62	162.72	162.93	0.21			SANDSTONE	SLTY.MG.MOD.M.GY.SLD FEW MUDSTONE STREAKS, ANKERITE VEINS, C LAYSTONE CLAST.
* 60	162.93	164.33	1.40			SILTSTONE	SSY.VPR.DK.GY.LAM.SSD.VBRKN ALTERNATING LAYERS GRADING FROM MUDDY S ILTSTONE TO FINE GRAINED SANDSTONE. OCC ASIONAL QUARTZ VEINS. LISTRIC SURFACES.
63	164.33	164.78	0.45			SANDSTONE	MG.VPR.M.GY.THNB.BRKN FINE MUDSTONE LAYERS GRADING TO CCOURSE GRAINED SANDSTONE AT BASE. MODERATE QU ARTZ VEINING.
64	164.78	164.89	0.11			SANDSTONE	CG.VPR.LT.GY.VTHNB.VBRKN OCCASIONAL FINE MUDSTONE LAYERS AT BASE .
* 65	164.89	165.49	0.60			SILTSTONE	CLYY.M.GY.LAM.SSD.BRKN ALTERNATING LAYERS GRADING FROM BLACK S ILTY MUDSTONE TO VERY FINE GRAINED SAND STONE. VERTICAL WRMBUR INDICATE TOPS UP .

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85001

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
66	165.49	165.64	0.15			ROCK LOSS	
67	165.64	166.75	1.11			SILTSTONE	CLYY.VPR.M.GY.LAM.SSD.BRKN LITHOLOGY AS ABOVE, WRMBURS. INTENSE QU ARTZ VEINING IN LAST 90.0 MM. SLICKENSI DES.
* 70	166.75	168.54	1.79			SANDSTONE	SLTY.VFG.VPR.M.GY.LAM.WRMBU.BRKN SILTY AND CARBONACEOUS MUDSTONE LAYERS. OCCASIONAL COAL STRINGER. UPPER 110 MM INTENSELY VEINED. VERY LARGE VERTICAL WORM BURROW 70 MM LONG BY 10 MM WIDE PE NETRATIONG WIDTH OF CORE AT 1.57M. TOPS UP.
68	168.54	168.63	0.09			ROCK LOSS	

* DENOTES MEASURED BCA

FORM 4001

86/01/03 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 35

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85001

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
68	168.63	168.77	0.14			SANDSTONE	SLTY.VFG.VPR.M.GY.LAM.WRMBU.BRKN LITHOLOGY AS ABOVE. VERY LARGE VERTICAL WORM BURROW CROSS SECTION. (20MM IN DI AMETER).
* 65	168.77	170.88	2.11			SILTSTONE	CARB.BLK.LAM.SSD.SLD VERY MUDDY AND CARBONACEOUS. NUMEROUS S ILTSTONE AND MUDSTONE LAYERS, SOME GRAD ING TO VERY FINE GRAINED SANDSTONE. OCC ASIONAL ANKERITE FILLED FRACTURES PARAL LEL TO BEDDING.
* 85	170.88	171.59	0.71			MUDSTONE	SLTY.BLK.LAM.SSD CARBONACEOUS. LITHOLOGY AS ABOVE.
87	171.59	171.81	0.22			ROCK LOSS	
* 90	171.81	173.07	1.26			MUDSTONE	CARB.BLK.LAM VERY FINE UNIFORM SILTY LAMINAE LESS TH AN 0.25MM THICK. VARVE-LIKE. NO SSD.
89	173.07	174.64	1.57			MUDSTONE	CARB.BLK.MAS.VBRKN SLICKENSIDES 260MM TO 420MM GREY SILTST ONE WITH CARBONACEOUS MUD FILLED DENDRI TIC FRACTURES. OCCASIONAL QUARTZ VEIN. OCCASIONAL COAL FRAGMENTS.

* DENOTES MEASURED BCA

86/01/03 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 36

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85001

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
89	174.64	174.74	0.10			ROCK LOSS	
89	174.74	174.93	0.19			MUDSTONE	CARB.BLK.MAS.VBRKN OCCASIONAL COAL FRAGMENTS AND QUARTZ VE INS.
89	174.93	175.78	0.85			MUDSTONE	CARB.DK.GY.BRKN OCCASIONAL QUARTZ AND ANKERITE VEINS.
89	175.78	176.00	0.22	07266	PHANTOM	COAL	C-3.BRKN MUDSTONE LAMINAE, ANKERITE VEINS.
89	176.00	176.28	0.28			MUDSTONE	CARB.DK.GY.BRKN COALY LAMINAE, LISTRIC SURFACES.
89	176.28	176.70	0.42			MUDSTONE	CARB.DK.GY.BRKN LESS CARBONACEOUS ABOVE, BECOMING MORE CARBONACEOUS WITH COAL LAMINAE BELOW.
88	176.70	176.95	0.25			ROCK LOSS	
88	176.95	177.69	0.74			MUDSTONE	CARB.BLK.MAS.VSHRD OCCASIONAL VERY FINE SILTY LAYERS. OCCA SIONAL COAL STRINGERS.

* DENOTES MEASURED BCA

FORM 4001

86/01/03 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 37

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85001

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 88	177.69	178.30	0.61			MUDSTONE	CARB.BLK.LAM.VSHRD LITHOLOGY AS ABOVE. GRADES TO CROSS BED DED FINE GRAINED SANDSTONE WITH FINE MU DSTONE LAYERS. OCCASIONAL QUARTZ VEIN, PYRITE.
* 80	178.30	180.33	2.03			SANDSTONE	SLTY.VFG.VPR.LT-M.GY.LAM.XBDG.BRKN NUMEROUS FINE LAYERS OF ALTERNATING MUD DY SILTSTONE AND SANDSTONE GRADING TO M EDIUM GRAINED SANDSTONE. QUARTZ FILLED FRACTURE ZONE WITH SUB-ANGULAR CLASTS A T 1240MM, TOPS UP INDICATED BY XBDG, SS D, AND WRMBUR. SLICKENSIDES.
81	180.33	180.73	0.40			SANDSTONE	SLTY.VFG-.VPR.LT-M.GY.LAM.XBDG VBRKN LITHOLOGY AS ABOVE. CORE TWIST OFF AT 4 00MM. SSD, AND WRMBUR INDICATE TOPS UP. VERY FINE GRAINED T O MEDIUM GRAINED S ANDSTONE.
81	180.73	180.99	0.26			ROCK LOSS	

* DENOTES MEASURED BCA

86/01/03 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 38

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85001

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 82	180.99	182.49	1.50			SANDSTONE	SLTY.VFG-.VPR.LT-M.GY.LAM.XBDG.SLD LITHOLOGY AS ABOVE. VERY FINE TO COURSE GRAINED SANDSTONE.SSD,WRMBUR INDICATE TOPS UP.
81	182.49	183.78	1.29			SANDSTONE	SLTY.VFG-.VPR.LT-M.GY.LAM.XBDG.BRKN LITHOLOGY AS ABOVE. OCCASIONAL QUARTZ V EINS WITH EN ECHELON DISPLACEMENT. SSD, WRMBUR, INDICATE TOPS UP. VERY FINE GR AINED TO COURSE GRAINED SANDSTONE.
* 80	183.78	184.47	0.69			SANDSTONE	SLTY.VFG-.VPR.LT-M.GY.LAM.XBDG.SLD LITHOLOGY AS ABOVE. OCCASIONAL QUARTZ V EINS WITHE EN ECHELON DISPLACEMENT.
* 80	184.47	186.52	2.05			SANDSTONE	SLTY.VFG-.VPR.LT-M.GY.LAM.WRMBU.SLD VERY FINE GRAIN TO MEDIUM GRAINED. MUCH MUDDIER AND SILTIER. MANY MORE AND WID ER BLACK SILTY LAYERS. OCCASIONAL QUART Z VEIN. SLICKENSIDES.
* 87	186.52	186.79	0.27			SANDSTONE	SLTY.VFG.VPR.LT-M.GY.LAM.SSD.SLD LITHOLOGY AS ABOVE. WRMBURS, INDICATE T OPS UP.
87	186.79	187.01	0.22			ROCK LOSS	

* DENOTES MEASURED BCA

FORM 4001

86/01/03 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 39

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85001

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 88	187.01	188.79	1.78			SANDSTONE	SLTY.VFG-.VPR.LT-M.GY.LAM.SSD.BRKN FEWER SILTY LAYERS. OCCASIONAL QUARTZ V EIN. VERY FINE TO COURSE GRAINED SANDST ONE. XBDG AND WRMBURS. TOPS UP.
* 82	188.79	189.88	1.09			SANDSTONE	SLTY.VFG-.VPR.LT-M.GY.LAM.XBDG VBRKN LITHOLOGY AS ABOVE. VERY FINE GRAINED T O COURSE GRAINED SANDSTONE. SSD, WRMBUR .
80	189.88	190.39	0.51			SANDSTONE	SLTY.VFG-.VPR.LT-M.GY.LAM.XBDG VBRKN LITHOLOGY AS ABOVE. VERY FINE GRAINED T O COURSE GRAINED SANDSTONED . SSD, WRMB UR.
* 78	190.39	191.99	1.60			SANDSTONE	SLTY.VFG-.VPR.LT-M.GY.LAM.SSD.VBRKN ALTERNATING LAYERS AS ABOVE. XBDG, WRMB URS. SLICKENSIDES. VERY FINE GRAINED TO FINE GRAINED SANDSTONE.
* 70	191.99	192.59	0.60			SANDSTONE	SLTY.VFG-.VPR.LT-M.GY.LAM.SSD.BRKN SLICKENSIDES. VERY FINE GRAINED TO FINE GRAINED SANDSTONE. XBDG, WRMBURS.
71	192.59	193.12	0.53			ROCK LOSS	

* DENOTES MEASURED BCA

86/01/03 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 40

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85001

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
73	193.12	194.31	1.19			SANDSTONE	SLTY.FG-.VPR.LT.GY.MAS.SHRD VERY BRECCIATED AND RECEMENTED. FINE GR AINED TO COURSE GRAINED SANDSTONE. SLIC KENSIDES.
* 75	194.31	195.06	0.75			SANDSTONE	MG.MOD.LT-M.GY.MAS.VBRKN OCCASIONAL FAINT SILTY BANDS. OCCASIONA L QUARTZ VEIN, SLICKENSIDES.
83	195.06	195.47	0.41			ROCK LOSS	
* 90	195.47	196.06	0.59			SANDSTONE	MG.MOD.LT-M.GY.MAS.VBRKN VERY FAINT BEDDING.
83	196.06	196.33	0.27			ROCK LOSS	
* 70	196.33	197.57	1.24			SANDSTONE	FG-.VPR.LT-M.GY.MAS.VBRKN FINE GRAINED TO MEDIUM GRAINED SANDSTON E.
72	197.57	197.87	0.30			SANDSTONE	PBLY.FG-.VPR.LT-M.GY.MAS.BRKN QUARTZ, SILTSTONE, AND MUDSTONE CLASTS 1-5MM IN SIZE. UPPER CONTACT ABRUPT WIT H COAL STRINGERS PRESENT IN FRACTURES. FINE GRAINED TO MEDIUM GRAINED SANDSTON E.

* DENOTES MEASURED BCA

FORM 4001

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85001

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
74	197.87	199.05	1.18			SANDSTONE	FG.VPR.M.GY.THNB.BRKN NUMEROUS QUARTZ AND COAL FILLED FRACTUR ES. VERY FAINT BEDDING, IN PLACES GRADI NG TO COURSE GRAINED SANDSTONE. ONE MUD STONE RIPUP CLAST 15MM IN DIAMETER.
75	199.05	199.11	0.06			SANDSTONE	VCG.VPR.LT.GY.MAS.SLD ABRUPT UPPER CONTACT.
76	199.11	199.32	0.21			ROCK LOSS	
76	199.32	199.38	0.06			SANDSTONE	VCG.VPR.LT.GY.MAS.SLD ABRUPT LOWER CONTACT. OCCASIONAL QUARTZ VEIN.
* 77	199.38	200.03	0.65			SANDSTONE	SLTY.VFG.VPR.LT-M.GY.LAM.BRKN FINE SILTY LAMINAE. MUCH SILTIER AT BAS E. SMALL COAL/QUARTZ STRINGER 2MM WIDE BY 35MM LONG. OCCASIONAL SMALL EN ECHEL ON FRACTURES 0.5MM WIDE BY 15MM LONG.
* 84	200.03	201.68	1.65			SANDSTONE	FG.MOD.LT.GY.LAM.BRKN FINE SLTY LAYERS. FLASER BEDDING. OCCAS IONAL QUARTZ VEIN. SLICKENSIDES.
86	201.68	202.16	0.48			SANDSTONE	FG.MOD.LT.GY.VTHNB.BRKN VERY FAINT BEDDING. OCCASIONAL FINE BLA CK SILTY LAYERS.

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85001

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 88	202.16	203.64	1.48			SANDSTONE	FG.MOD.LT.GY.MAS.BRKN OCCASIONAL MUDSTONE RIP UP CLASTS 5-40M M LONG BY 5-20MM WIDE. OCCASIONAL VERY FAINT SILTY LAYERS.
88	203.64	203.77	0.13			ROCK LOSS	
88	203.77	205.24	1.47			SANDSTONE	FG-.MOD.LT.GY.THNB.BRKN VERY FAINT BEDDING IN SANDSTONE, WIDE M UDSTONE LAYERS (35MM WIDE) WITH NUMEROU S MUDSTONE RIP UP CLASTS.
* 88	205.24	205.67	0.43			SANDSTONE	FG.MOD.LT.GY.VTHNB.BRKN OCCASIONAL FINE WISPY BLACK SILT LAYERS .
* 86	205.67	206.50	0.83			SANDSTONE	FG.MOD.LT.GY.VTHNB.BRKN LITHOLOGY AS ABOVE. OCCASIONAL QUARTZ L AYERS. OCCASIONAL BLACK SILT BANDS 2-15 MM WIDE.
88	206.50	207.43	0.93			SANDSTONE	VCG.VPR.LT.GY.LAM.BRKN VERY FAINT BEDDING. OCCASIONAL QUARTZ V EINS. ABRUPT UPPER CONTACT, GRADATIONAL LOWER CONTACT. ONE VERY LARGE SUB ROUN DED MUDSTONE CLAST 40MM LONG BY 15 MM W IDE.

* DENOTES MEASURED BCA

FORM 4001

86/01/03 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 43

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85001

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	207.43	207.70	0.27			SANDSTONE	SLTY.VFG.VPR.M.GY.LAM.SSD.BRKN FLAME STRUCTURES INDICATE TOPS UP. FINE BLACK SILTY LAMINAE.
* 82	207.70	208.25	0.55			SANDSTONE	SLTY.FG.VPR.M.GY.LAM.WRMBU.BRKN FINE BLACK SILTY LAYERS. FINELY DISSEMI NATED ORGANIC MATERIAL @ 180.0 MM.
* 88	208.25	209.71	1.46			SILTSTONE	CARB.DK.GY.LAM.WRMBU.BRKN FINELY INTERLAYERED SILTSTONE AND BLACK CARBONACEOUS MUDSTONE. NEEDLE - LIKE P LANT FRAGMENTS.XBDG A ND SSD INDICATE T OPS UP.
88	209.71	211.21	1.50			SILTSTONE	CARB.DK.GY.LAM.WRMBU.BRKN LITHOLOGY AS ABOVE. SSD AND XBDG. TOPS UP.
88	211.21	211.70	0.49			MUDSTONE	CARB.DK.GY.LAM.WRMBU.BRKN MORE MUDDY AND CARBONACEOUS THAN ABOVE.
88	211.70	213.14	1.44			SILTSTONE	CLYY.DK.GY.MAS.SLD FINING DOWN TO CARBONACEOUS CLAYSTONE.
88	213.14	213.19	0.05			MUDSTONE	CARB.BLK.VBRKN LISTRIC SURFACES.
88	213.19	213.32	0.13			ROCK LOSS	

* DENOTES MEASURED BCA

86/01/03 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 44

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85001

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
88	213.32	213.64	0.32			MUDSTONE	CARB.BLK.VBRKN COALY LISTRIC SURFACES.
88	213.64	213.77	0.13			ROCK LOSS	
88	213.77	214.37	0.60	07263		MUDSTONE	CARB.BLK.VBRKN COALY, LISTRIC SURFACES, QUARTZ.
88	214.37	214.47	0.10	07263		MUDSTONE	CARB.DK.GY.BRKN LISTRIC SURFACES WELL DISPLAYED.
88	214.47	214.70	0.23	07263		ROCK LOSS	
88	214.70	215.10	0.40	07264	G	COAL	C-2.VBRKN SOMEWHAT DULL. - WEATHERED?
88	215.10	215.13	0.03	07264	G	COAL LOSS	
88	215.13	215.16	0.03	07264	G	MUDSTONE	CARB.DK.GY.SLD LISTRIC.
88	215.16	215.48	0.32	07264	G	COAL	C-2.VBRKN
88	215.48	215.52	0.04	07264	G	MUDSTONE	CARB.BLK.BRKN VERY COALY; LISTRIC SURFACES.
88	215.52	215.62	0.10	07264	G	COAL	C-2.BRKN QUARTZ VEINS

* DENOTES MEASURED BCA

FORM 4001

86/01/03 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 45

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85001

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
88	215.62	215.64	0.02	07264	G	MUDSTONE	CARB.BLK.BRKN C-2 COAL BAND. LISTRIC.
* 88	215.64	217.58	1.94	07265		MUDSTONE	SLTY.BLK.LAM.XBDG.VBRKN CARBONACEOUS. FINE SILTY LAYERS MORE FR EQUENT NEARBASE. SSD, WRMBURS SHOW TOPS UP, OCCASIONAL QUARTZ VEIN.
* 82	217.58	218.15	0.57			SANDSTONE	SLTY.FG.MOD.LT-M.GY.VTHNB.XBDG.BRKN NUMEROUS SHARP ALTERNATING LAYERS OF BL ACK SILTY CARBONACEOUS MUDSTONE AND SAN DSTONE.
82	218.15	218.37	0.22			SANDSTONE	FG-.PR.LT.GY.MAS.VBRKN OCCASIONAL MUDSTONE RIP UP CLASTS.FINE GRAINED TO MEDIUM GRAINED SANDSTONE.
82	218.37	218.46	0.09			ROCK LOSS	
81	218.46	218.80	0.34			MUDSTONE	CLYY.DK.GY.MAS.SHRD CLOSED BIVALVE 10MM LONG.

* DENOTES MEASURED BCA

86/01/03 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 46

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85001

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
81	218.80	219.56	0.76			SANDSTONE	SLTY.VFG.M-DK.GY.VTHNB.BRKN OPEN SHELLS BOTH CONCAVE UP AND DOWN. B IVALVE S WITHIN A BIOTURBATED SANDY LAY ER AT 0.12 TO 0.26M. BIVALVES 15MM LONG BY 5MM WIDE. 50% OPEN OR DISARTICULATE D. SILTY VERY FINE GRAINED SANDSTONE WI TH FINE BLACK SILTY LAYERS.
* 80	219.56	220.62	1.06			SANDSTONE	FG.MOD.LT.GY.LAM.SSD.BRKN BLACK MUDDY SILTY LAYERS GRADING FROM B LACK MUDSTONE TO FINE GRAINED SANDSTONE . OCCASIONAL QUARTZ VEIN.
81	220.62	220.70	0.08			SANDSTONE	FG.MOD.LT.GY.MAS.SLD
82	220.70	221.58	0.88			MUDSTONE	SLTY.DK.GY.LAM.WRMBU.BRKN GRADATIONAL UPPER CONTACT. VERY FINE UN IFORM SILTY LAYERS IN BLACK CARBONACEOU S MUDSTONE.OCCASIONAL LAYERS GRADING TO FINE GRAINED SANDSTONE.
* 85	221.58	223.49	1.91			SILTSTONE	CLYY.DK.GY.LAM.WRMBU.VBRKN INTERLAYERED MUDDY CARBONACEOUS SILTSTO NE GRADING TO FINE GRAINED SANDSTONE. O CCASIONAL QUARTZ VEIN WRMBUR, XBDG, SSD , BIOTRB, AND SLICKENSIDES.

* DENOTES MEASURED BCA

FORM 4001

86/01/03 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 47

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85001

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 88	223.49	225.37	1.88			MUDSTONE	CLYY.BLK.MAS.SHRD EXTREMELY FINE GRAINED. SLIGHTLY SILTY IN PLACES WITH PLANT HASH. VERY UNIFORM . OCCASIONAL QUARTZ VEINS, SLICKENSIDES .
70	225.37	225.97	0.60			ROCK LOSS	
60	225.97	226.73	0.76			MUDSTONE	CLYY.BLK.MAS.VBRKN LITHOLOGY AS ABOVE. SLICKENSIDES.
52	226.73	227.08	0.35			ROCK LOSS	
42	227.08	228.06	0.98			CLAYSTONE	CARB.BLK.MAS.VBRKN EXTREMELY FINE GRAINED AND UNIFORM.
33	228.06	228.41	0.35			ROCK LOSS	
28	228.41	228.66	0.25			CLAYSTONE	CARB.BLK.MAS.VSHRD LITH AS ABOVE.

* DENOTES MEASURED BCA

86/01/03 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 48

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85001

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
17	228.66	229.91	1.25			SANDSTONE	MG.VPR.S-P.GY.MAS.VBRKN VERY COURSE GRAINED SUB ANGULAR, SUBROU NDED CLASTS IN A SILTY MUDSTONE MATRIX. EDGE OF SLUMP? IRREGULAR QUARTZ VEINS THROUGHOUT, ONE PYRITIZED CLAST. GRADAT IONAL UPPER CONTACT, BIOTRB? VARIABLE B CA'S:40-85. VFG SS to VCG SS.
* 05	229.91	230.36	0.45			SANDSTONE	SLTY.VFG.VPR.M.GY.LAM.WRMBU.BRKN OCC BLACK SILTY LAYERS. WRMBURS.
* 14	230.36	232.38	2.02			SILTSTONE	CARB.DK.GY.LAM.SSD.BRKN INTERLAYERED SILTSTONES AND BLACK MUDST ONES, IN PLACES GRADING TO FG SS. WRMBU RS, SSD. SKS.
* 60	232.38	233.28	0.90			SILTSTONE	CARB.DK.GY.LAM.SSD.VBRKN LITH AS ABOVE, SKS. BIOTURBATED. EDGE O F SLUMP? SANDY IN PLACES. WRMBURS. END OF HOLE. DRILLER'S MARKER 233.47M.

FORM 4001

GULF CANADA RESOURCES INC.

COAL DIVISION
MOUNT KLAPPAN PROJECT

SEAM DETAIL | **TRUE THICKNESS**

DATA SOURCE: KPN LR DDH85001 | SEAM : J | INTERVAL(M) : 22.00 - 23.38 | ELEVATION(M) : 1480.4

GEOLOGIST : M BARKER | SCALE: | DATE : JAN 06/86 | DRAWING NO. :

SEAM COMP. 1 2 3 4 5 6	DRILL DEPTH METRES	COAL SEAM LOG	INTERVAL METRES ROCK	COAL	% REC.	SAMPLE ID SIMP	COMP	COAL/ROCK TOTAL COMPOS	MINING SECTION	COAL QUALITY A.D.B. RES MOIST	ASH	VM	FC	TS	CAL.VAL MJ/KG	
	22.00		[illegible]		100.0	7251										
	22.10			0.36	100.0	7252	7252	0.38/ 0.00 0.38		—	—	—	—	—	—	—
	22.68		0.42		100.0	7253										
	23.38															

GULF CANADA RESOURCES INC.

SEAM DETAIL — COAL DIVISION — MOUNT KLAPPAN PROJECT — **TRUE THICKNESS**

DATA SOURCE:	KPN LR 00H85001	SEAM :	INTERVAL(M) : 118.90 – 123.95	ELEVATION(M) :	1480.4
GEOLOGIST :	M. BARKER	SCALE:	DATE : JAN 06/86	DRAWING NO. :	

SEAM COMP. 1 2 3 4 5 6	DRILL DEPTH METRES	COAL SEAM LOG	INTERVAL METRES ROCK	INTERVAL METRES COAL	% REC.	SAMPLE ID SIMP	SAMPLE ID COMP	COAL/ROCK TOTAL COMPOS	MINING SECTION	RES MOIST	ASH	VM	FC	TS	CAL.VAL MJ/KG	
	118.90		0.23		100.0	7254										
	119.13			0.17												
			[illegible]													
				1.19	100.0	7255										
	120.53		0.11													
				[illegible]												
			0.74		100.0	7256	1	3.38/1.00 4.38		0.85	20.89	6.35	71.85	0.38	27.12	—
				[illegible]												
			[illegible]													
				[illegible]												
			[illegible]													
	121.65			0.56												
			[illegible]													
				1.29	100.0	7257										
	123.51		0.13													
			0.31		100.0	7258										
	123.95															

GULF CANADA RESOURCES INC.

SEAM DETAIL

COAL DIVISION
MOUNT KLAPPAN PROJECT

TRUE THICKNESS

DATA SOURCE: KPN LR DDH85001 SEAM : H INTERVAL(M) : 157.16 - 162.11 ELEVATION(M) : 1480.4

GEOLOGIST : M. BARKER SCALE: -- DATE : JAN 06/86 DRAWING NO. :

SEAM COMP.	DRILL DEPTH METRES	COAL SEAM LOG	INTERVAL METRES ROCK	INTERVAL METRES COAL	% REC.	SAMPLE ID SIMP	SAMPLE ID COMP	COAL/ROCK TOTAL COMPOS	COAL/ROCK TOTAL MINING SECTION	COAL QUALITY A.D.B. RES MOIST	ASH	VM	FC	TS	CAL.VAL MJ/KG
	157.16		1.41		100.0	7258									
	158.65			0.23	100.0	7260									
			0.19												
	159.09			0.14											
				(0.17)											
				0.46			2	1.74 / 0.41 2.15		1.20	28.45	8.58	62.89	0.33	23.65
			0.02												
				0.35	88.3	7261									
			0.04												
			0.06												
			0.07												
				0.38											
	160.98		1.02		100.0	7262									
	162.11														

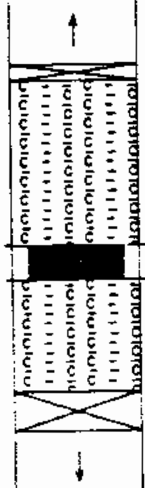
GULF CANADA RESOURCES INC.

SEAM DETAIL — COAL DIVISION — MOUNT KLAPPAN PROJECT — **TRUE THICKNESS**

DATA SOURCE: KPN LR DDH85001 SEAM : PHANTOM INTERVAL(M) : 175.78 - 176.00 ELEVATION(M) : 1480.4

GEOLOGIST : M. BARKER SCALE: DATE : JAN 06/86 DRAWING NO. :

SEAM COMP. 1 2 3 4 5 6	DRILL DEPTH METRES	COAL SEAM LOG	INTERVAL METRES ROCK	INTERVAL METRES COAL	% REC.	SAMPLE ID SIMP	SAMPLE ID COMP	COAL/ROCK TOTAL COMPOS	COAL/ROCK TOTAL MINING SECTION	COAL QUALITY A.D.B. RES MOIST	ASH	VM	FC	TS	CAL.VAL MJ/KG
	175.78 – 176.00			0.22	100.0	7288	7266	0.22 / 0.00 0.22		1.19	31.01	—	—	—	—



SEAM DETAIL

GULF CANADA RESOURCES INC.

COAL DIVISION
MOUNT KLAPPAN PROJECT

TRUE THICKNESS

DATA SOURCE: KPN LR DDH85001	SEAM : G	INTERVAL(M) :	213.77 – 217.58	ELEVATION(M) :	1480.4
GEOLOGIST : M. BARKER	SCALE:	DATE :	JAN 06/86	DRAWING NO. :	

SEAM COMP. 1 2 3 4 5 6	DRILL DEPTH METRES	COAL SEAM LOG	INTERVAL METRES ROCK	INTERVAL METRES COAL	% REC.	SAMPLE ID SIMP	SAMPLE ID COMP	COAL/ROCK TOTAL COMPOS	COAL/ROCK TOTAL MINING SECTION	COAL QUALITY A.D.B. RES MOIST	ASH	VM	FC	TS	CAL.VAL MJ/KG
	213.77		0.70		75.3	7263									
			(0.23)												
	214.70			0.40	84.8	7264	3	0.85/0.09		0.96	38.88	8.05	5· 31	0.37	19.01
			[illegible]	([illegible])				0.94							
				0.32											
			[illegible]												
			0.02	0.10											
	215.64		1.94		100.0	7265									
	217.58														

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Gulf Canada Resources Inc.
Coal Division
Geophysical Log

Datasource:	KPNLRRDH85001	Province:	BC	Northing:	6347520.00	Lat:	571621
Log Date:	85–03–12	Zone:	9	Easting:	505750.00	Long:	1285417
Company:	CENTURY	Measuring Point:				Elevation:	0.0
Geologist:	M. BARKER						

Scale: 1 to 100.0

Depth Range: 0.0 to 108.0

True Thickness: NO

Comments:
1.
2.

Logs Plotted:

Description	Axis Range	Axis Length	Smoothing Points	Tool	Comments
1 .GAMMA CPS	0.0 to 600.0	24.0	23	9067	IN PIPE
2 .N–N CPS	0.0 to 2000.0	20.0	7	9067	IN PIPE

707

GULF CANADA RESOURCES INC.
COAL DIVISION
KLAPPAN PROJECT
STRATIGRAPHIC LOG
KPN LR DDH85001

GEOLOGIST : M. BARKER	DATE : JAN 08/86	DRAWING NO. :

SCALE : 1:200 1:40

NORTHING: 6345720.0 N
EASTING: 507254.7 E
INCLINATION: 90.0°

LITHOLOGIC SYMBOLS

SANDSTONE	BENTONITE
SILTSTONE	BRECCIA
COAL	CARBONACEOUS
OVERBURDEN	QUARTZ
MUDSTONE, CLAYSTONE	PYRITE
TUFF	FERRUGINOUS
LIMESTONE	CONGLOMERATE
CORE LOSS	FOSSIL BED

KPNLRDDH85002

GULF CANADA RESOURCES INC.

- D A T A   S O U R C E   S U M M A R Y -

DATA SOURCE - KPNLRDDH85002 DATE - 01/09/86

- H I S T O R Y -

START DATE - 03/09/85
END DATE - 03/14/85

CONTRACTOR - J.T. THOMAS
GEOLOGIST - M. BARKER

OPERATOR - GCRI
SURVEYOR - MWG & ASS.

REMARKS - TWISTED RODS OFF AT 102.0M BEGAN HOLE AGAIN AS DDH 85004 IN SAME LOCATION, INCLINATION 85 DEGREES, CORE LOSS DETERMINED FROM BOX MARKERS AND DRILLERS DEPTH INDICATORS

- L O C A T I O N -

PROVINCE - BC
ELEVATION - 1836.40

ZONE - 9
NORTHING - 6344198.00
EASTING - 505875.06

LICENCE/LEASE NUMBER - 7152

LATITUDE - 571434
LONGITUDE - 1285410

- O R I E N T A T I O N -

LENGTH - 102.97

INCLINATION - 90.0
AZIMUTH - 0.0

CORE SIZE - 0.0

CEMENT -
PLUG -
PIEZ -

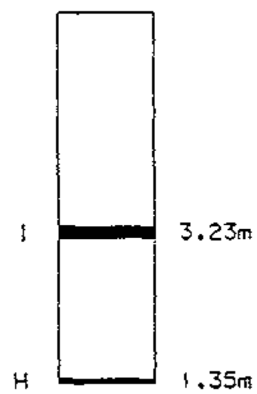
CASING DEPTH (M) - 6.10
AQUIFER DEPTHS (M) - 0.00
0.00
LOST CIRC. DEPTHS (M) - 0.00
0.00

*** NOTE *** 0 INDICATES NO VALUE

MT. KLAPPAN COAL PROPERTY

1985 DIAMOND DRILL HOLES
DDH85002

SEAM — TRUE SEAM THICKNESS (COAL & ROCK)



NOTE: SCHEMATIC PROFILE.
NO THICKNESSES SHOWN
FOR SEAMS CONTAINING
LESS THAN 50cm COAL.

SCALE: 1:2000

GULF CANADA RESOURCES INC.
15/01/86

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 1

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85002

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
45	0.00	6.10	6.10			OVERBURDEN	CASING TO 6.10 METRES
45	6.10	7.21	1.11			SILTSTONE	CLYY.DK.BN.MAS.VBRKN BLACK CARBONACEOUS SILTSTONE, VERY WEATHERED. FERRUGINOUS STAINING ON ALL FRACTURE SURFACES. CORE "TWIST OFF" AT BEGINNING OF CORE
45	7.21	7.34	0.13			SILTSTONE	CLYY.DK.GY.LAM.VBRKN AS ABOVE. FINE BLACK SILTY STRINGERS THROUGHOUT. FERRUGINOUS STAINING.
45	7.34	8.19	0.85			ROCK LOSS	
45	8.19	8.58	0.39			SILTSTONE	CLYY.DK.GY.LAM.VBRKN VERY WEATHERED. FERRUGINOUS STAINING AS ABOVE.
* 45	8.58	9.62	1.04			SILTSTONE	CLYY.DK.GY.LAM.VBRKN AS ABOVE. GRADES TO FINE TO MEDIUM GRAINED SANDSTONE AT 580 MM. VERY WEATHERED IN SANDSTONE. OCCASIONAL QUARTZ VEIN CROSS CUTTING BEDDING. EN ECHELON DISPLACEMENT. FERRUGINOUS STAINING ON ALL FRACTURE SURFACES.

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 2

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85002

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
52	9.62	10.28	0.66			ROCK LOSS	
56	10.28	10.60	0.32			SILTSTONE	CARB.M.GY.LAM.VBRKN VERY WEATHERED. FINE GRAINED SANDSTONE AT TOP GRADING TO MUDDY SILTSTONE AT 290 MM.
* 60	10.60	11.22	0.62			SILTSTONE	CLYY.DK.GY.LAM.VBRKN VERY WEATHERED. FERRUGINOUS STAINING ON ALL FRACTURED SURFACES AND THROUGHOUT CORE (ALONG BEDDING).
60	11.22	12.21	0.99			ROCK LOSS	
60	12.21	13.38	1.17			SANDSTONE	CLYY.FG.VPR.ORNG.LAM.VBRKN EXTREMELY WEATHERED. OCCASIONAL QUARTZ VEINS. UPPER AND LOWER CONTACTS GRADATIONAL. SILTY STRINGERS THROUGHOUT.
* 60	13.38	14.93	1.55			CLAYSTONE	BN.LAM.VBRKN EXTREMELY WEATHERED.

* DENOTES MEASURED BCA

FORM 4001

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85002

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
53	14.93	15.23	0.30			ROCK LOSS	
51	15.23	15.34	0.11			CLAYSTONE	BN.BRKN VERY WEATHERED. FERRUGINOUS STAINING TH ROUGHOUT.
* 45	15.34	16.68	1.34			MUDSTONE	CLYY.DK.BN.LAM.VBRKN VERY FISSILE ALONG BEDDING PLANES. VERY WEATHERED EXTREMELY WEATHERED SANDY CO NGLOMERATE(?) ALMOST POWDERED AT 700-11 10 MM. FERRUGINOUS STAINING THROUGHOUT
60	16.68	17.23	0.55			ROCK LOSS	
* 70	17.23	17.92	0.69			MUDSTONE	CLYY.DK.BN.LAM.VBRKN AS ABOVE, VERY FISSILE. VERY WEATHERED. UPPER 130 MM SANDY AND EXTREMELY WEATH ERED.
74	17.92	18.24	0.32			MUDSTONE	DK.GY.LAM.VBRKN VERY FISSILE. SLIGHTLY WEATHERED. FERRU GINOUS STAINING ON SOME FRACTURED SURFA CES.

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85002

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
79	18.24	19.14	0.90			ROCK LOSS	
* 85	19.14	19.85	0.71			MUDSTONE	CARB.DK.GY.LAM.VBRKN VERY CARBONACEOUS SHALEY MUDSTONE. VERY FISSILE. MODERATE AMOUNTS OF COAL ALON G FRACTURES.
82	19.85	21.15	1.30			MUDSTONE	CARB.BLK.MAS.VBRKN VERY CARBONACEOUS COALY MUDSTONE.
78	21.15	21.77	0.62			MUDSTONE	CARB.BLK.LAM.VBRKN VERY CARBONACEOUS COALY MUDSTONE.
77	21.77	22.07	0.30			ROCK LOSS	
76	22.07	22.34	0.27			MUDSTONE	SLTY.DK.BN.LAM.VBRKN MUCH LESS CARBONACEOUS, SILTIER
* 74	22.34	22.97	0.63			MUDSTONE	SLTY.DK.GY.LAM.SSD.BRKN SILTY MUDSTONE GRADING TO VERY FINE GRA IN SANDSTONE. SOME FINE BLACK MUDDY STR INGERS. WHITE UNCONSOLIDATED CLAY @ 120 -160 MM. INFILLS WORMBURROWS @ BASE.

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 5

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85002

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 85	22.97	25.07	2.10			MUDSTONE	SLTY.DK.GY.LAM.SSD.BRKN TOPS UP. LAMINAE GRADING FROM FINE BLAC K MUDSTONE TO VERY FINE GRAINED SANDSTO NE. HRMBUR, XBDNG, BIOTRB.
77	25.07	25.34	0.27			MUDSTONE	CARB.DK.GY.VTHNB.BRKN UNIFORM BLACK CARBONACEOUS MUDSTONE
76	25.34	25.48	0.14			ROCK LOSS	
* 70	25.48	26.98	1.50			MUDSTONE	CARB.DK.GY.LAM.VBRKN PLANT(FERN?) FOSSILS ON FRACTURE SURFAC ES, OPALESCENT OR PEARLY STAIN, FILLING FOSSILS ON FRACTURE SURFACES. MINOR FE RRUGINOUS STAINING.
* 70	26.98	28.33	1.35			MUDSTONE	CARB.DK.GY.LAM.BRKN MOSTLY UNIFORM SILTY CARBONACEOUS MUDST ONE, WITH OCCASIONAL LIGHTER GREY, COA RSER SILTSTONE LAMINAE. MINOR FERRUGINO US STAINING ALONG SOME FRACTURE SURFACE S.
71	28.33	29.02	0.69			MUDSTONE	CARB.DK.GY.LAM.BRKN AS ABOVE.
72	29.02	31.04	2.02			MUDSTONE	CARB.DK.GY.LAM.BRKN AS ABOVE.

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 6

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85002

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
72	31.04	31.28	0.24			MUDSTONE	SLTY.DK.BN.LAM.VBRKN AS ABOVE. LESS CARBONACEOUS, PARTLY WEA THERED.
* 73	31.28	32.69	1.41			SILTSTONE	CLYY.DK.BN.LAM.VBRKN PARTLY WEATHERED. SILTIER THAN ABOVE.
* 85	32.69	33.17	0.48			SILTSTONE	CLYY.DK.BN.LAM.VBRKN AS ABOVE. FERRUGINOUS STAINING. IN SOME AREAS, STAINING PENETRATES THROUGH ENT IRE WIDTH OF CORE.
* 80	33.17	34.36	1.19			SILTSTONE	CLYY.M-DK.GY.LAM.WRMBU.VBRKN INTER LAYERED FINE SILTY BLACK MUDSTONE S AND SANDY SILTSTONES. GRADED BEDDING, HRMBUR, BIOTRB, FERRUGINOUS STAINING O N SOME FRACTURE SURFACES.
* 75	34.36	36.09	1.73			SILTSTONE	CLYY.M-DK.GY.LAM.WRMBU.VBRKN AS ABOVE.
* 89	36.09	38.18	2.09			SANDSTONE	SLTY.VFG-.VPR.LT-M.GY.LAM.WRMBU BRKN INTERLAYERED SILTSTONES AND VERY FINE G RAINED SANDSTONE, HRMBUR NUMEROUS, FINE R LAMINAE AND MUCH MUDDIER NEAR TOP. MU CH SANDIER AND WIDER LAMINAE TOWARDS BA SE. FERRUGINOUS STAINS ON SOME FRACTURE S.

* DENOTES MEASURED BCA

FORM 4001

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85002

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 80	38.18	38.89	0.71			SILTSTONE	SSY.DK.BN.LAM.VBRKN VERY WEATHERED. SILTY LAYERS IN VERY FI NE GRAINED SANDSTONE AS ABOVE. FERRUGIN OUS STAINING. OCCASIONAL QUARTZ VEIN.
82	38.89	39.50	0.61			SILTSTONE	CLYY.DK.BN.LAM.VBRKN VERY WEATHERED. UNCONSOLIDATED SUBROUND ED GRANULES(UP-HOLE?) TO 510. MM.
83	39.50	39.91	0.41			SILTSTONE	CLYY.DK.BN.LAM.WRMBU.VBRKN VERY WEATHERED. FINE MUDDY LAYERS. FERR UGINOUS STAINING ON FRACTURE SURFACES A ND ALONG BEDDING PLANES
* 85	39.91	41.16	1.25			SILTSTONE	CLYY.DK.BN.LAM.WRMBU.VBRKN AS ABOVE. PARTLY WEATHERED.
* 90	41.16	42.20	1.04			SILTSTONE	CLYY.DK.BN.LAM.SSD.VBRKN AS ABOVE.
* 84	42.20	43.14	0.94			SILTSTONE	CLYY.DK.BN.LAM.SSD.VBRKN AS ABOVE. OCCASIONAL QUARTZ VEIN. WITH EN ECHELON DISPLACEMENT. FERRUGINOUS ST AINING (FAINT) THROUGHOUT CORE.

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85002

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 88	43.14	45.13	1.99			SILTSTONE	CLYY.DK.GY.LAM.SSD.VBRKN AS ABOVE. OCCASIONAL QUARTZ VEIN WITH E N ECHELON DISPLACEMENT. FAINT FERRUGINO US STAINING THROUGHOUT CORE. PARTLY WEA THERED AT BASE. VERY FINE GRAINED MUDDY LAMINAE GRADING TO LIGHTER COLOURED SI LTY LAMINAE.
89	45.13	45.18	0.05			SILTSTONE	CLYY.DK.GY.LAM.BRKN AS ABOVE. WIDE QUARTZ VEIN. ACROSS BEDD ING. FERRUGINOUS STAINING ON FRACTURE S URFACES.
* 89	45.18	46.35	1.17			SILTSTONE	CLYY.DK.BN.LAM.VBRKN VERY WEATHERED. AS ABOVE.
89	46.35	46.50	0.15			SANDSTONE	SLTY.FG.VPR.LY.GY.LAM.XBDG.BRKN CORE TWIST OFF @ 0.00 ORANGE FE STAININ G PARALLEL TO CORE. "TIGER STRIPE". FAI NT SILTY STRINGERS WITHIN XBDG. TOPS UP .
89	46.50	47.15	0.65			ROCK LOSS	

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 9

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85002

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
89	47.15	48.17	1.02			SANDSTONE	SLTY.FG.VPR.LT.BN.LAM.XBDG.VBRKN AS ABOVE. VERY WEATHERED.
* 89	48.17	49.02	0.85			SILTSTONE	CLYY.DK.GY.LAM.VBRKN FINE LAMINAE. FERRUGINOUS STAINING THRO UGHOUT CORE. UNCONSOLIDATED CLAY (LIGHT GREY) @ 80.-320. MM. INFILLING SSD IN CONSOLIDATED MUDDY SILTSTONE BELOW.
* 85	49.02	51.10	2.08			SILTSTONE	CLYY.VPR.M-DK.GY.LAM.SSD.VBRKN GRADED BEDDING. MRMBURS FINELY LAMINATE D, GRADING FROM BLACK SILTY MUDSTONE TO VERY FINE GRAINED SANDSTONE. FERRUGINO US STAINING ON FRACTURE SURFACES AND TH ROUGHOUT CORE NEAR TOP.
* 80	51.10	53.09	1.99			MUDSTONE	SLTY.VPR.DK.GY.LAM.VBRKN FINE FAINT SILTY LAMINAE. QUITE UNIFORM . FERRUGINOUS STAINING ON SOME FRACTURE SURFACES.
86	53.09	54.18	1.09			MUDSTONE	SLTY.VPR.DK.GY.LAM.VBRKN AS ABOVE.
* 90	54.18	55.11	0.93			MUDSTONE	SLTY.VPR.DK.GY.LAM.VBRKN AS ABOVE.

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 10

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85002

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 89	55.11	57.22	2.11			MUDSTONE	CARB.DK.GY.LAM.BRKN VERY FAINT FINE LAMINAE. AS ABOVE. MODE RATELY SILTY.
* 90	57.22	57.27	0.05			MUDSTONE	CARB.DK.GY.LAM.SLD AS ABOVE.
* 89	57.27	59.18	1.91			MUDSTONE	CARB.DK.GY.LAM.BRKN AS ABOVE. FERRUGINOUS STAINING ON SOME FRACTURE SURFACES. PLANT FOSSILS (FERN?) ON CLEAN FRACTURE SURFACES
89	59.18	59.45	0.27	07267		MUDSTONE	M.GY.SLD CARBONACEOUS. PLANT FOSSILS.
89	59.45	59.71	0.26	07268	I	COAL	C-1.SLD ANKERITE VEIN.
89	59.71	59.76	0.05	07268	I	MUDSTONE	CARB.DK.BN.SLD COALY LAMINAE.
89	59.76	59.85	0.09	07268	I	COAL	C-1.SLD VERY BRIGHT.
89	59.85	59.88	0.03	07268	I	MUDSTONE	CARB.DK.BN.SLD AS ABOVE
89	59.88	59.98	0.10	07268	I	COAL	C-1.BRKN

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 11

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85002

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
89	59.98	60.09	0.11	07268	I	COAL LOSS	
89	60.09	60.11	0.02	07268	I	MUDSTONE	CARB.DK.GY.SLD
89	60.11	60.16	0.05	07268	I	COAL	C-1.SLD
89	60.16	60.21	0.05	07268	I	COAL	C-1.SLD
89	60.21	60.26	0.05	07268	I	MUDSTONE	CARB.BLK.BRKN VERY COALY.
89	60.26	60.38	0.12	07269	I	COAL LOSS	
89	60.38	60.96	0.58	07269	I	COAL	C-1.BRKN
89	60.96	60.98	0.02	07269	I	COAL	C-1.SLD 5.0MM MUDST BAND AT TOP.
89	60.98	61.02	0.04	07269	I	MUDSTONE	CARB.BLK.SLD QUITE COALY.
89	61.02	61.13	0.11	07269	I	COAL LOSS	
89	61.13	61.37	0.24	07269	I	COAL	C-1.BRKN

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 12

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85002

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
89	61.37	61.64	0.27	07269	I	COAL	C-1.BRKN
89	61.64	61.68	0.04	07269	I	MUDSTONE	CARB.BLK.PNRD VERY SOFT AND COALY.
89	61.68	61.89	0.21	07269	I	COAL	C-1.SLD
89	61.89	62.68	0.79	07269	I	COAL	C-1.BRKN RUST IN CLEAT INCREASING DOWNWARD.
89	62.68	62.74	0.06	07270		MUDSTONE	CARB.BLK.VBRKN C-1 LAMINAE.
89	62.74	63.29	0.55	07270		MUDSTONE	SLTY.DK.GY.VBRKN FRACTURED WITH RUSTY FRACTURE LINING WE ATHERED AREA BELOW.
* 89	63.29	64.01	0.72			SANDSTONE	SLTY.FG.PR.M.GY.LAM.WRMBU.VBRKN FINE MUDDY AND SILTY LAMINATIONS WITHIN CORE. FERRUGINOUS STAINING ALONG FRACT URE SURFACES. XBD.
* 85	64.01	65.22	1.21			SANDSTONE	SLTY.FG.PR.M.GY.LAM.XBDG.VBRKN AS ABOVE. GRADES TO ALMOST MEDIUM GRAIN SANDSTONE NEAR BASE. MORE FERRUGINOUS STAINING THOUGHOUT CORE. WRMBURS.

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 13

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85002

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
86	65.22	66.27	1.05			SANDSTONE	FG-,PR,LT-M.GY.LAM.XBDG.VBRKN AS ABOVE. MUDSTONE CLASTS 1MM WIDE BY 5 MM LONG NEAR BASE. FERRUGINOUS STAINING ON FRACTURE SURFACES. FINE TO MEDIUM G RAINED SANDSTONE.
87	66.27	66.97	0.70			ROCK LOSS	
88	66.97	67.22	0.25			SANDSTONE	FG.MOD.LT-M.GY.VTHNB.BRKN AS ABOVE. VERY FAINT BEDDING. ALMOST MA SSIVE.
* 89	67.22	68.64	1.42			SANDSTONE	FG-,MOD.LT.GY.THNB.BRKN ALTERNATING BANDS OF FINE TO MEDIUM GRA INED SANDSTONE. WIDE SILTIER BANDS AT B ASE. FERRUGINOUS STAINING ON SOME FRACT URE SURFACES.
88	68.64	68.94	0.30			ROCK LOSS	

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 14

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85002

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
88	68.94	69.21	0.27			SILTSTONE	CLYY.VPR.LT-M.GY.LAM.XBDG.BRKN CORE TWIST OFF @ 0.00M FINE BLACK MUDDY LAMINAE GRADING TO VERY FINE GRAINED S ANDSTONE. FERRUGINOUS STAINING ON FRACT URE SURFACES, PENETRATING 40 MM IN CORE .
* 87	69.21	71.26	2.05			MUDSTONE	CARB.DK.GY.LAM.WRMBU.VBRKN SILTIER AND FINELY LAMINATED NEAR TOP. WRMBURS AND SSD. MASSIVE AND VERY CARBO NACEOUS NEAR BASE. EXTREMELY FINE GRAIN ED NEAR BASE ALSO.
* 86	71.26	71.99	0.73			MUDSTONE	CARB.DK.GY.LAM.BRKN AS ABOVE. BUT SILTIER. FAINT SILTY LAMI NAE.
* 86	71.99	73.18	1.19			SANDSTONE	SLTY.FG.VPR.LT.GY.VTHNB.VBRKN LAMINAE GRADING FROM VERY POORLY SORTED SILTY VERY FINE GRAINED SANDSTONE TO C LEANER FINE GRAINED SANDSTONE. OCCASION AL QUARTZ VEIN PERPENDICULAR TO BEDDING . MUCH FERRUGINOUS STAINING ON ALL FRAC TURE SURFACES.

* DENOTES MEASURED BCA

FORM 4001

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85002

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 89	73.18	74.94	1.76			SANDSTONE	FG-.PR.LT.GY.LAM.HRMBU.BRKN LAMINAE GRADING FROM SILTSTONE TO MEDIU M GRAINED SANDSTONE. OCCASIONAL QUARTZ VEIN PARALLEL TO BEDDING. OCCASIONAL MU DSTONE CLAST 4-14 MM LONG BY 3-5 MM WID E. FERRUGINOUS STAINING ON SOME FRACTUR E SURFACES.
89	74.94	75.24	0.30			ROCK LOSS	
89	75.24	75.34	0.10			SANDSTONE	FG-.PR.LT.GY.LAM.SLD AS ABOVE. CORE TWIST OFF AT TOP OF INTE RVAL. FINE TO MEDIUM GRAINED.
* 89	75.34	77.20	1.86			SILTSTONE	CLYY.VPR.DK.GY.LAM.SSD.VBRKN FINELY LAMINATED. GRADING FROM MUDDY SI LTSTONE AT TOP TO SILTY MUDSTONE AT BAS E. MUCH FERRUGINOUS STAINING ON SOME FR ACTURE SURFACES. TOPS UP. WRMBURS, XBDG .

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85002

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
89	77.20	77.50	0.30			ROCK LOSS	
89	77.50	77.66	0.16			MUDSTONE	SLTY.M-DK.GY.LAM.SSD.VBRKN AS ABOVE. VERY FINELY LAMINATED. WRMBUR S, XBDNG.
* 89	77.66	78.99	1.33			MUDSTONE	SLTY.DK.GY.LAM.SSD.VBRKN AS ABOVE. SOME VERY FINE LAMINAE. FERRU GINOUS STAINING ON SOME FRACTURE SURFAC ES. WRMBURS.
89	78.99	79.49	0.50			ROCK LOSS	
89	79.49	79.93	0.44			MUDSTONE	SLTY.DK.GY.LAM.SSD.VBRKN MUCH FERRUGINOUS STAINING ON FRACTURES. WRMBURS.
90	79.93	81.43	1.50			MUDSTONE	CARB.DK.GY.LAM.SSD.VBRKN AS ABOVE. VERY CARBONACEOUS. NUMEROUS P LANT FOSSILS ON BEDDING SURFACES NEAR B ASE. WRMBURS.

* DENOTES MEASURED BCA

CRM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 17

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85002

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
90	81.43	81.61	0.18			MUDSTONE	CARB.DK.GY.LAM.SSD.SLD AS ABOVE.
90	81.61	81.91	0.30			ROCK LOSS	
* 90	81.91	83.59	1.68			MUDSTONE	CARB.DK.GY.THNB.SSD.VBRKN Y.CARB. FAINT FINE LAMINATIONS. AS ABOV E. NUMEROUS PLANT FOSSILS(FERN?) ON BED DING PLANES. PYRITIZED BIVALVES 81.8 - 82.0
88	83.59	84.74	1.15			MUDSTONE	CARB.DK.GY.THNB.VBRKN AS ABOVE.
87	84.74	85.48	0.74			SANDSTONE	SLTY.FG-.VPR.LT.GY.LAM.XBDG.VBRKN LAMINAE GRADING FROM FINE BLACK SILTY L AYERS TO MEDIUM GRAINED SANDSTONE. SOME SILT STRINGERS WITHIN SANDSTONE BEDS. SOME UNCONSOLIDATED SANDS IN SANDSTONE LAYERS. SSD, WRMBURS.
86	85.48	85.88	0.40			ROCK LOSS	

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 18

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85002

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 85	85.88	87.70	1.82			SANDSTONE	SLTY.FG-.VPR.LT.GY.VTHNB.XBDG.VBRKN AS ABOVE. SOME VERY CLAYEY LAYERS. BOTT OM 110 MM UNCONSOLIDATED CLAY(?) WRMBUR , SSD, FINE TO MEDIUM GRAINED SANDSTONE .
83	87.70	87.95	0.25			ROCK LOSS	
* 80	87.95	89.94	1.99			SANDSTONE	CLYY.FG.VPR.LT-M.GY.LAM.XBDG.BRKN SPECKLED WITH ORGANIC MATERIAL.FINE SIL TY STRINGERS WITHIN SANDSTONE. SOME ARE AS BIOTURBATED. UPPER 350 MM UNCONSLIDA TED CLAY(?) AS IN ABOVE BOX.
* 90	89.94	90.05	0.11			SANDSTONE	CLYY.FG.VPR.LT-M.GY.LAM.VBRKN AS ABOVE.
88	90.05	90.96	0.91			SANDSTONE	CLYY.FG.VPR.LT-M.GY.LAM.SSD.BRKN AS ABOVE. GRADING TO VERY FINELY LAMINA TED SILTSTONE IN LAST 190 MM.
* 85	90.96	91.93	0.97			SILTSTONE	SSY.VPR.LT-M.GY.LAM.SSD.BRKN VERY FINELY LAMINATED WITH BLACK SILTY CARBONACEOUS STRINGERS. MINOR COAL STRI NGERS.

* DENOTES MEASURED BCA

FORM 4001

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85002

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 89	91.93	93.87	1.94			SILTSTONE	CARB.DK.GY.VTHNB.VBRKN CARBONACEOUS CLAYEY SILTSTONE.
89	93.87	93.97	0.10			ROCK LOSS	
* 89	93.97	96.05	2.08			MUDSTONE	CARB.GY.LAM.VBRKN VERY UNIFORM, SILTSTONE TO VERY FINE GR AINED SAN DSTONE , LAMINAE NEAR TOP. MA SSIVE NEAR BASE.
90	96.05	96.48	0.43			MUDSTONE	CARB.BLK.MAS.VBRKN OCCASIONAL SILTY AREAS WITH CROSS BEDDI NG. UNIFORM AND BERY CARBONACEOUS OVERA LL. OCCASIONAL CLAYEY LAYERS. NUMEROUS PLANT FOSSILS.
* 90	96.48	98.01	1.53			MUDSTONE	CARB.BLK.MAS.VBRKN AS ABOVE.
90	98.01	99.19	1.18			MUDSTONE	CARB.BLK.MAS.VBRKN AS ABOVE.
90	99.19	99.69	0.50			ROCK LOSS	
90	99.69	100.04	0.35			MUDSTONE	CARB.BLK.MAS.VBRKN AS ABOVE.

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85002

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
90	100.04	101.62	1.58	07271		MUDSTONE	CARB.BLK.MAS.SLD MUDST DRYING AND BREAKING DOWN VERY QUI CKLY (EXPOSED TO AIR) PYRITE BAND AT BA SE.
90	101.62	101.84	0.22	07272	H	COAL	C-6.BRKN BANDS OF C-1
90	101.84	102.10	0.26	07272	H	COAL	C-1.SLD FISSURES FILLED WITH ANKERITE.
90	102.10	102.24	0.14	07272	H	COAL	C-1.SLD
90	102.24	102.27	0.03	07272	H	MUDSTONE	CARB.BLK.SLD
90	102.27	102.32	0.05	07272	H	MUDSTONE	CARB.BLK VERY MUSHY (DRILLING MATERIAL?)
90	102.32	102.36	0.04	07272	H	COAL	C-2.SLD
90	102.36	102.41	0.05	07272	H	MUDSTONE	CARB.BLK BLACK MUSH.
90	102.41	102.46	0.05	07272	H	COAL	C-3.SLD

* DENOTES MEASURED BCA

FORM 4001

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85002

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
90	102.46	102.49	0.03	07272	H	MUDSTONE	CARB.BLK BLACK MUSH
90	102.49	102.53	0.04	07272	H	COAL	C-6.SLD
90	102.53	102.56	0.03	07272	H	MUDSTONE	CARB.BLK.SLD COALY
90	102.56	102.86	0.30	07272	H	COAL	C-2.BRKN
90	102.86	102.89	0.03	07272	H	MUDSTONE	CARB.BLK.SLD VERY SOFT
90	102.89	102.93	0.04	07272	H	COAL	C-3.BRKN
90	102.93	102.97	0.04	07272	H	MUDSTONE	CARB.DK.GY.SLD END OF CORE IN MIDDLE OF SEAM RODS TWISTED OFF AND HOLE ABANDONED. T.D. 102.97 . ENDED IN H SEAM.

* DENOTES MEASURED BCA

NEWPAGE

GULF CANADA RESOURCES INC.

COAL DIVISION
MOUNT KLAPPAN PROJECT

SEAM DETAIL

TRUE THICKNESS

DATA SOURCE: KPN LR DDH85002 SEAM : 1 INTERVAL(M) : 59.18 - 63.29 ELEVATION(M) : 1836.4

GEOLOGIST : M. BARKER SCALE: DATE : DEC 19/85 DRAWING NO. :

SEAM COMP. 1 2 3 4 5 6	DRILL DEPTH METRES	COAL SEAM LOG	INTERVAL METRES ROCK	COAL	% REC.	SAMPLE ID SIMP	COMP	COAL/ROCK TOTAL COMPOS.	MINING SECTION	COAL QUALITY A.D.B. RES MOIST	ASH	VM	FC	TS	CAL.VAL MJ/KG
	59.18		0.27		100.0	7287									
	59.45			0.26	86.4	7288	4	3.00/ 0.23 3.23		1.66	14.07	6.57	78.71	0.50	29.46
			[illegible]												
				[illegible]											
			[illegible]												
				0.10											
				(0.11)											
			[illegible]												
				0.10											
	60.26		[illegible]												
				(0.13)	90.5	7289									
				0.60											
			[illegible]												
				(0.11)											
				0.51											
			[illegible]												
				1.00											
	62.68		[illegible]												
			0.55		100.0	7270									
	63.29														

GULF CANADA RESOURCES INC.
COAL DIVISION
MOUNT KLAPPAN PROJECT

SEAM DETAIL — **TRUE THICKNESS**

DATA SOURCE: KPN LR DDH85002 SEAM : H INTERVAL(M) : 100.04 – 102.97 ELEVATION(M) : 1836.4

GEOLOGIST : M. BARKER SCALE: 1:47 DATE : DEC 19/85 DRAWING NO. :

SEAM COMP.	DRILL DEPTH (METRES)	COAL SEAM LOG	INTERVAL (METRES) ROCK	INTERVAL (METRES) COAL	% REC.	SAMPLE ID SIMP	SAMPLE ID COMP	COAL/ROCK TOTAL COMPOS	COAL/ROCK TOTAL MINING SECTION	COAL QUALITY A.D.B. RES MOIST	ASH	VM	FC	TS	CAL.VAL MJ/KG
	100.04		1.58		100.0	7271									
	101.62			0.62 0.30	100.0	7272	81	1.09 / 0.26 1.35		1.51	28.31	8.25	61.93	0.70	23.42
	102.97														

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Gulf Canada Resources Inc.
Coal Division
Geophysical Log

Datasource:	KPNLRRDH85002	Province: BC	Northing: 6347170.00	Lat:	571610
Log Date:	85-03-14	Zone: 9	Easting: 506060.00	Long:	1285358
Company:	CENTURY	Measuring Point:		Elevation:	0.0
Geologist:	BARKER				

Scale: 1 to 100.0

Depth Range: 0.0 to 105.0

True Thickness: NO

Comments:
1.
2.

Logs Plotted:

Description	Axis Range	Axis Length	Smoothing Points	Tool	Comments
1. GAMMA CPS	0.0 to 600.0	24.0	23	9067	IN PIPE
2. N-N CPS	0.0 to 2000.0	20.0	7	9067	IN PIPE

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GULF CANADA RESOURCES INC.
COAL DIVISION
KLAPPAN PROJECT
STRATIGRAPHIC LOG
KPN LR DDH85002

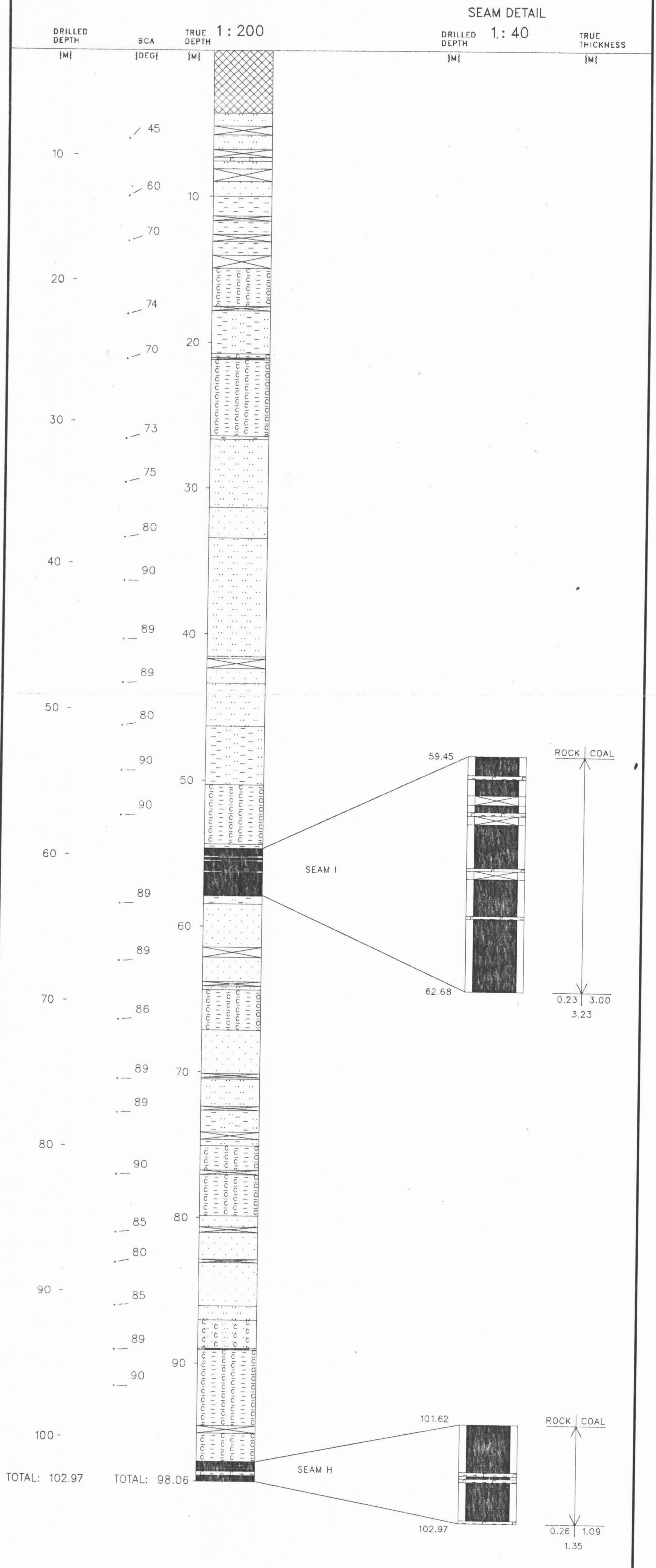
GEOLOGIST : M. BARKER	DATE : JAN 08/86	DRAWING NO. :

SCALE : 1:200 1:40

NORTHING: 6344198.0 N
EASTING: 505875.0 E
INCLINATION: 90.0°

LITHOLOGIC SYMBOLS

SANDSTONE	BENTONITE
SILTSTONE	BRECCIA
COAL	CARBONACEOUS
OVERBURDEN	QUARTZ
MUDSTONE, CLAYSTONE	PYRITE
TUFF	FERRUGINOUS
LIMESTONE	CONGLOMERATE
CORE LOSS	FOSSIL BED



KPNLRDDH85003

==================== GULF CANADA RESOURCES INC. ====================

- D A T A S O U R C E S U M M A R Y -

DATA SOURCE - KPNLRDDH85003 DATE - 01/09/86

- H I S T O R Y -

START DATE - 03/14/85
END DATE - 03/17/85

CONTRACTOR - J.T. THOMAS OPERATOR - GCRI
GEOLOGIST - E. LEGRESLEY SURVEYOR - MWG & ASS.

REMARKS - SITE J

- L O C A T I O N -

PROVINCE - BC ZONE - 9
ELEVATION - 1798.10 NORTHING - 6344438.00
EASTING - 506328.25

LICENCE/LEASE NUMBER - 7151

LATITUDE - 571442
LONGITUDE - 1285343

- O R I E N T A T I O N -

LENGTH - 176.64 INCLINATION - 70.0
AZIMUTH - 45.0

CORE SIZE - 0.0

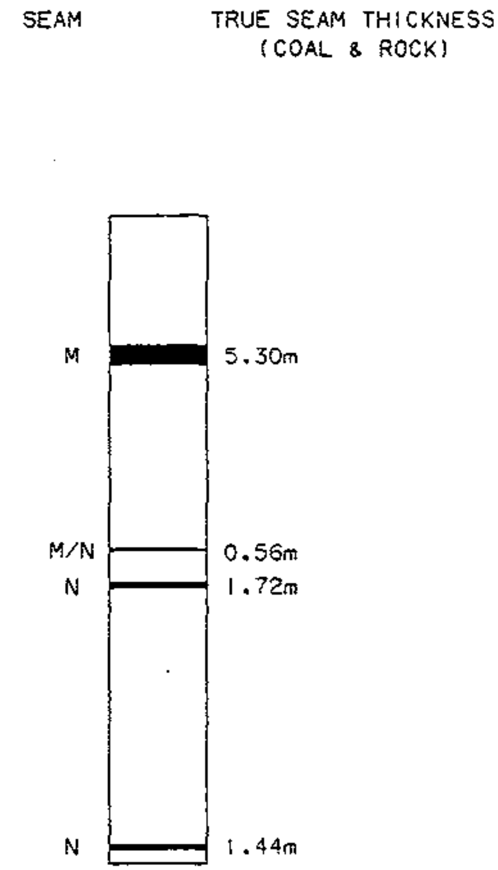
CEMENT - CASING DEPTH (M) - 15.55
PLUG - AQUIFER DEPTHS (M) - 0.00
PIEZ - 0.00
LOST CIRC. DEPTHS (M) - 0.00
0.00

*** NOTE *** 0 INDICATES NO VALUE

==

MT. KLAPPAN COAL PROPERTY

1985 DIAMOND DRILL HOLES
DDH85003



NOTE: SCHEMATIC PROFILE.
NO THICKNESSES SHOWN
FOR SEAMS CONTAINING
LESS THAN 50cm COAL.

SCALE: 1:2000	GULF CANADA RESOURCES INC. 15/01/86

FILE NAME ZEO:[205,57]85]D48024.LOG

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 1

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85003

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
70	0.00	15.55	15.55			OVERBURDEN	CASING TO 15.55 METRES
70	15.55	15.80	0.25			CLAYSTONE	SLTY.PR.M.GY.LAM.BRKN ABUNDANT FERRIGUNOUS STAINING
* 70	15.80	16.54	0.74			CLAYSTONE	WEL.DK.GY.SLD INCREASING QUARTZ VEINING TO BASE
68	16.54	16.97	0.43			CLAYSTONE	WEL.DK.GY.SLD AS ABOVE WITH EXTENSIVE QUARTZ VEINING (30%), BRECCIATED
67	16.97	17.42	0.45			CLAYSTONE	SLTY.MOD.LAM.SLD SLIGHTLY FISSILE WITH MINOR QUARTZ VEIN ING ON BEDDING, INDURATED. NON CARBONAC EOUS
66	17.42	17.78	0.36			CLAYSTONE	SLTY.MOD.DK.GY.LAM.SLD AS ABOVE
65	17.78	18.02	0.24			CLAYSTONE	WEL.M.GY.BRKN VERY FISSILE, POSSIBLY MISPLACED
64	18.02	18.11	0.09			CLAYSTONE	SLTY.MOD.DK.GY.LAM AS AT START OF BOX 2
64	18.11	18.22	0.11			CLAYSTONE	SLTY.MOD.DK.GY.LAM.BRKN AS ABOVE

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 2

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85003

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
62	18.22	19.26	1.04			CLAYSTONE	CARB.MOD.DK.GY INCREASING CARBONACEOUS CONTENT TOWARDS THE BASE, CONTORTED BEDDING, MINOR SIL TY BANDS
58	19.26	21.27	2.01			CLAYSTONE	CARB.PR.M.GY.VBRKN SLIGHTLY SILTY, STRIATIONS ON CARBONACE OUS BEDDING PLANES, BRIGHT YELLOW COLOU RATION IN CALCITE ON BEDDING PLANES, SS ILTSTONE IS RYTHMICALLY INTERBANDED. MI NOR CALCITE VEINING.
53	21.27	22.30	1.03			SILTSTONE	CLYY.PR.M.GY.THNB.SLD GRADUAL CONTACT WITH SILTSTONE ABOVE, 2 0% CLAYSTONE
* 50	22.30	23.28	0.98			SILTSTONE	SSY.PR.M.GY.THNB.SLD LOAD CASTS, MORE SILTSTONE RICH, VERY F INE GRAINED SANDSTONE BANDS, TOPS UP, I NTENSE FERRUGINOUS STAINING
* 40	23.28	25.27	1.99			SILTSTONE	CLYY.MOD.DK.GY.LAM.XBDG.SLD GRADUAL CONTACT WITH SILTSTONE ABOVE, T OPS UP ON CROSS BEDDING, CARBONACEOUS I N CLAY BANDS
42	25.27	25.35	0.08			SILTSTONE	CLYY.MOD.DK.GY.LAM AS ABOVE

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 3

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85003

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
43	25.35	26.80	1.45			SILTSTONE	SSY.PR.M.GY.THNB GRADUAL CONTACTS
45	26.80	27.21	0.41			SILTSTONE	CLYY CONVOLUTED BEDDING, MINOR COAL STRINGER S
46	27.21	28.39	1.18			CLAYSTONE	SLTY.MOD.DK.GY.LAM.BRKN MINOR COAL FLECKS, CARBONACEOUS
48	28.39	29.04	0.65			CLAYSTONE	SLTY.MOD.M.GY.SLD MORE SILTY THAN ABOVE, MINOR COAL BANDS
* 50	29.04	31.09	2.05			CLAYSTONE	CARB.MOD.DK.GY.LAM.SLD AS ABOVE
50	31.09	31.49	0.40			CLAYSTONE	CARB.MOD.DK.GY.SLD AS ABOVE
50	31.49	32.09	0.60			CLAYSTONE	CARB.MOD.DK.GY.VBRKN AS ABOVE
50	32.09	33.07	0.98			SILTSTONE	CLYY.PR.M.GY INTERBEDDED CLAYSTONE WITH MINOR CARBON ACEOUS ZONES, GRADUAL CONTACT WITH ABOV E.

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 4

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85003

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
50	33.07	34.10	1.03			SILTSTONE	CLYY.LT.GY.LAM.BRKN SILTSTONE GRADES DOWN TO CLAYSTONE BECO MING DARKER AND MORE CARBONACEOUS
50	34.10	34.11	0.01			COAL	C-1.SLD SINGLE BAND, ANKERITE VEINING ABOVE
50	34.11	34.30	0.19			CLAYSTONE	CARB.DK.GY.MAS.BRKN
50	34.30	34.41	0.11			ROCK LOSS	
50	34.41	34.60	0.19			COAL LOSS	
50	34.60	34.62	0.02			COAL	C-2.BRKN
50	34.62	34.97	0.35			CLAYSTONE	CARB.DK.GY.MAS.VBRKN FEW COAL VEINS, SOME APPARENT CORE LOSS
50	34.97	35.15	0.18			ROCK LOSS	
50	35.15	35.21	0.06			COAL LOSS	
50	35.21	35.71	0.50	07276		CLAYSTONE	CARB.BRKN CORE SPUN OFF AT TOP, FEW LISTRIC SURFA CES

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 5

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85003

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
50	35.71	35.88	0.17	07277	M	COAL LOSS	
50	35.88	35.95	0.07	07277	M	COAL	C-6.BRKN
50	35.95	36.01	0.06	07277	M	COAL	C-5.BRKN
50	36.01	36.09	0.08	07277	M	COAL	C-3.SLD MINOR ANKERITE BAND (5 MM) AT TOP
50	36.09	36.19	0.10	07277	M	COAL	C-6.SLD DAMP AND SOFT
50	36.19	36.26	0.07	07277	M	COAL	C-3.SLD
50	36.26	36.38	0.12	07277	M	COAL	C-6
50	36.38	36.46	0.08	07277	M	CLAYSTONE	CARB.DK.GY.BRKN
50	36.46	36.53	0.07	07277	M	COAL	C-6.BRKN

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 6

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85003

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
50	36.53	36.57	0.04	07277	M	COAL	C-4.SLD
50	36.57	36.73	0.16	07277	M	COAL	C-6.BRKN
50	36.73	36.75	0.02	07277	M	COAL	C-4.SLD
50	36.75	36.78	0.03	07277	M	COAL LOSS	
50	36.78	36.81	0.03	07277	M	COAL	C-6.SLD SOFT
50	36.81	36.92	0.11	07278	M	CLAYSTONE	CARB.BLK.VBRKN
50	36.92	36.97	0.05	07278	M	COAL	C-5.BRKN
50	36.97	37.01	0.04	07278	M	CLAYSTONE	CARB.SLD
50	37.01	37.07	0.06	07278	M	CLAYSTONE	CARB.M.GY.SLD NOT VERY CARBONACEOUS, PYRITE
50	37.07	37.17	0.10	07278	M	CLAYSTONE	CARB.BLK.BRKN

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 7

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85003

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
50	37.17	37.30	0.13	07278	M	COAL	C-6.BRKN SOME BRIGHT BANDS
50	37.30	37.60	0.30	07278	M	COAL	C-4.BRKN SOME BRIGHT BANDS
50	37.60	37.67	0.07	07278	M	ROCK LOSS	
50	37.67	37.77	0.10	07278	M	COAL LOSS	
50	37.77	37.90	0.13	07278	M	COAL	C-4.VBRKN
50	37.90	38.00	0.10	07278	M	CLAYSTONE	CARB.DK.BN.BRKN
50	38.00	38.07	0.07	07278	M	CLAYSTONE	CARB.DK.BN.SLD
50	38.07	38.09	0.02	07279	M	COAL	C-6.SLD
50	38.09	38.28	0.19	07279	M	COAL	C-3.SLD CLAYSTONE BANDS
50	38.28	38.60	0.32	07279	M	COAL LOSS	
50	38.60	38.71	0.11	07279	M	COAL	C-5.BRKN LARGE PYRITE BANDS

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 8

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85003

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
50	38.71	38.79	0.08	07279	M	COAL	C-3.SLD CLAYSTONE BANDS
50	38.79	38.81	0.02	07279	M	CLAYSTONE	CARB.SLD COALY BANDS
50	38.81	38.93	0.12	07279	M	COAL	C-3.BRKN
50	38.93	38.96	0.03	07279	M	COAL	C-6.SLD SOFT
50	38.96	39.02	0.06	07279	M	CLAYSTONE	CARB
50	39.02	39.13	0.11	07279	M	COAL	C-3.BRKN
50	39.13	39.16	0.03	07279	M	COAL	C-3.SLD
50	39.16	39.38	0.22	07279	M	ROCK LOSS	
50	39.38	39.40	0.02	07279	M	COAL	C-6.SLD
50	39.40	39.45	0.05	07279	M	CLAYSTONE	CARB.DK.BN.SLD

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 9

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85003

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
50	39.45	39.53	0.08	07279	M	COAL	C-3,SLD
50	39.53	39.75	0.22	07279	M	COAL	C-2,BRKN
50	39.75	39.83	0.08	07279	M	COAL	C-6,SLD
50	39.83	39.84	0.01	07279	M	COAL	C-2,SLD
50	39.84	39.92	0.08	07279	M	COAL	C-6,BRKN
50	39.92	40.04	0.12	07279	M	COAL	C-3,BRKN
50	40.04	40.22	0.18	07279	M	COAL	C-2
50	40.22	40.33	0.11	07279	M	CLAYSTONE	CARB,BLK,SLD
50	40.33	40.43	0.10	07279	M	COAL	C-6,SLD
50	40.43	40.49	0.06	07279	M	CLAYSTONE	CARB,DK,BN,BRKN

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 10

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85003

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
50	40.49	40.60	0.11	07279	M	COAL	C-3,BRKN CLAYSTONE LENSES HERE AND BELOW
50	40.60	40.65	0.05	07279	M	COAL	C-6,BRKN
50	40.65	40.93	0.28	07279	M	COAL	C-2,SLD
50	40.93	40.99	0.06	07279	M	CLAYSTONE	CARB,DK,BN,SLD
50	40.99	41.05	0.06	07279	M	COAL	C-3,SLD CLAYSTONE BANDS
50	41.05	41.10	0.05	07280	M	CLAYSTONE	CARB,BLK,SLD
50	41.10	41.16	0.06	07280	M	CLAYSTONE	CARB,DK,BN,SLD
50	41.16	41.49	0.33	07280	M	CLAYSTONE	CARB,BLK,BRKN
50	41.49	41.66	0.17	07280	M	COAL	C-2,BRKN FEW CLAYSTONE BANDS
50	41.66	41.69	0.03	07280	M	COAL	C-6

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 11

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85003

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
50	41.69	41.86	0.17	07280	M	COAL	C-3.BRKN
50	41.86	41.95	0.09	07280	M	COAL	C-4.BRKN
50	41.95	42.02	0.07	07280	M	COAL	C-5.SLD
50	42.02	42.19	0.17	07280	M	CLAYSTONE	CARB.BLK.BRKN BRIGHT COAL BANDS
50	42.19	42.43	0.24	07280	M	COAL	C-5.BRKN CLAYEY
50	42.43	42.59	0.16	07280	M	COAL	C-3.SLD
50	42.59	42.63	0.04	07280	M	COAL	C-4.SLD
50	42.63	42.95	0.32	07281		CLAYSTONE	CARB.DK.GY.BRKN ABUNDANT ANKERITE VEINING
50	42.95	43.63	0.68			CLAYSTONE	M.GY.MAS.BRKN SLIGHTLY CARBONACEOUS
50	43.63	43.92	0.29			ROCK LOSS	

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 12

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85003

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
50	43.92	44.66	0.74			CLAYSTONE	M.GY.MAS.BRKN
* 50	44.66	45.58	0.92			CLAYSTONE	SLTY.PR.DK.GY.LAM.BRKN
47	45.58	46.47	0.89			CLAYSTONE	CARB.MOD.DK.GY.LAM MINOR CARBONACEOUS PLANT FRAGMENTS, CAR BONACEOUS MATERIAL DECREASING DOWNHOLE
44	46.47	47.23	0.76			CLAYSTONE	CARB.MOD.DK.GY.LAM AS ABOVE
* 40	47.23	48.53	1.30			CLAYSTONE	CARB.MOD.DK.GY.LAM AS ABOVE, BECOMING SILTY, 20 MM QUARTZ VEIN INCLUDED
44	48.53	48.82	0.29			CLAYSTONE	SLTY.MOD.DK.GY.LAM
* 48	48.82	50.20	1.38			CLAYSTONE	CARB.MEL.BLK NO APPARENT BEDDING
47	50.20	50.37	0.17			CLAYSTONE	CARB.MEL.BLK AS ABOVE

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 13

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85003

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 46	50.37	52.04	1.67			CLAYSTONE	SLTY.MOD.DK.GY LONG GRADATIONAL CONTACT WITH SILTSTONE BELOW
* 40	52.04	52.27	0.23			SILTSTONE	CLYY.MOD.DK.GY.LAM
* 45	52.27	53.66	1.39			SILTSTONE	CLYY.MOD.DK.GY.LAM.SLD GRADUAL CONTACT WITH CLAYSTONE BELOW
43	53.66	54.21	0.55			CLAYSTONE	WEL.DK.GY.SLD NO BEDDING
* 42	54.21	55.40	1.19			CLAYSTONE	CARB.WEL.DK.GY.BRKN ALMOST BLACK, FE STAINED, TRACES OF DIS SEMINATED PYRITE.
42	55.40	56.17	0.77			CLAYSTONE	CARB.WEL.DK.GY.SLD AS ABOVE
43	56.17	57.09	0.92			CLAYSTONE	CARB.MOD.DK.GY.SLD AS ABOVE WITH A SLIGHT INCREASE IN SILT CONTENT
* 43	57.09	58.12	1.03			SILTSTONE	CLYY.PR.DK.GY.LAM.SLD MINOR CALCITE VEINING, AMBIGUOUS TOPS, VERY FINELY LAMINATED WITH CLAYSTONE.

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 14

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85003

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
46	58.12	59.33	1.21			SILTSTONE	CLYY.PR.DK.GY.LAM.SLD AS ABOVE
* 49	59.33	60.09	0.76			SILTSTONE	CLYY.PR.DK.GY.LAM AS ABOVE, MINOR PLANT FRAGMENTS
* 46	60.09	62.06	1.97			SILTSTONE	CLYY.PR.DK.GY.LAM.SLD MORE CLAY RICH THAN ABOVE
43	62.06	62.22	0.16			CLAYSTONE	MOD.DK.GY
43	62.22	62.37	0.15			CLAYSTONE	SLTY.MOD.DK.GY.LAM.SLD THIN SILTSTONE BANDS
* 40	62.37	64.12	1.75			CLAYSTONE	SLTY.PR.DK.GY.LAM.VBRKN VARIABLE SILTSTONE CONTENT
* 40	64.12	65.42	1.30			CLAYSTONE	SLTY.PR.DK.GY.LAM.SLD AS ABOVE, SILTSTONE INCREASES DOWNHOLE, GRADUALCO NTACT.
43	65.42	66.11	0.69			SILTSTONE	CLYY.PR.DK.GY.LAM.SLD CONTAINS NUMEROUS THIN CLAY BANDS
* 46	66.11	68.15	2.04			SILTSTONE	CLYY.PR.DK.GY.LAM.SLD AS ABOVE

• DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 15

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85003

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
48	68.15	68.36	0.21			SILTSTONE	CLYY.PR.DK.GY.LAM.SLD AS ABOVE
* 49	68.36	70.13	1.77			SILTSTONE	CLYY.PR.DK.GY.LAM.BIOTR.SLD AS ABOVE MINOR FE STAINING
* 56	70.13	71.33	1.20			SILTSTONE	CLYY.PR.DK.GY.LAM.SLD AS ABOVE
54	71.33	72.19	0.86			SILTSTONE	BIOTR.SLD AS ABOVE, CROSS-BEDDING, TOPS DOWN, BIO TRB, WRMBURS.
* 50	72.19	74.38	2.19			SILTSTONE	CLYY.PR.DK.GY.LAM.BIOTR.VBRKN COARSENS SLIGHTLY DOWNHOLE, MINOR BIOTR B.
48	74.38	74.49	0.11			SILTSTONE	CLYY.PR.DK.GY.LAM.SLD AS ABOVE
* 47	74.49	76.38	1.89			SILTSTONE	CLYY.PR.DK.GY.LAM.BIOTR.SLD AS ABOVE, SLIGHTLY CLAYEY, TOPS DOWN ON WRMBURS
47	76.38	77.40	1.02			SILTSTONE	MOD.DK.GY.LAM.BIOTR.VBRKN

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 16

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85003

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 47	77.40	78.45	1.05			SILTSTONE	MOD.DK.GY.LAM
* 49	78.45	80.43	1.98			SILTSTONE	CLYY.PR.DK.GY.LAM.SLD BECOMING MORE CLAY RICH
49	80.43	80.59	0.16			SILTSTONE	CLYY.PR.DK.GY.LAM.BIOTR.SLD AS ABOVE
* 50	80.59	82.73	2.14			SILTSTONE	CLYY.PR.DK.GY.LAM.BIOTR.SLD AS ABOVE
48	82.73	83.37	0.64			SILTSTONE	CLYY.PR.DK.GY.LAM.BIOTR.SLD WORM BURROWS, CLAY RICH, MINOR FE STAIN ING
* 46	83.37	84.71	1.34			SILTSTONE	CLYY.DK.GY.LAM.BIOTR.SLD AS ABOVE, GRADATIONAL CONTACT WITH CLAY STONE BELOW
* 53	84.71	86.29	1.58			CLAYSTONE	SLTY.PR.DK.GY.LAM.BIOTR.SLD WORM BURROWS, VERY SILTY, PLANT FRAGMEN TS, TOPS DOWN
47	86.29	86.69	0.40			CLAYSTONE	SLTY.PR.DK.GY.LAM.SLD COALIFIED PLANT FRAGMENTS

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 17

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85003

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 40	86.69	88.77	2.08			CLAYSTONE	SLTY.PR.DK.GY.LAM.BIOTR.SLD WORM BURROWS, AS ABOVE
* 60	88.77	90.82	2.05			CLAYSTONE	CARB.MOD.DK.GY.BIOTR.BRKN THIN COALY STRINGERS IN LOWER PORTION, CARBONACEO US PLANT FRAGMENTS ON BEDDIN G SURFACE
55	90.82	91.30	0.48			CLAYSTONE	CARB.WEL.BLK.BRKN COALY LENSES THROUGHOUT
54	91.30	91.41	0.11		M/N	COAL	C-3.BLK
53	91.41	91.60	0.19		M/N	COAL	C-5.BRKN
53	91.60	91.69	0.09		M/N	COAL LOSS	
* 52	91.69	92.00	0.31		M/N	COAL	C-6 WITH LOTS OF FINE CARBONACEOUS CLAYSTON E BANDS MIXED IN
52	92.00	92.50	0.50			CLAYSTONE	CARB.WEL.BLK.LAM.BRKN CARBONACEOUS PLANT FRAGMENTS
51	92.50	92.82	0.32			CLAYSTONE	CARB.WEL.BLK.LAM.SLD AS ABOVE

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 18

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85003

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 50	92.82	94.90	2.08			CLAYSTONE	CARB.MOD.DK.GY.LAM.BIOTR.SLD SLIGHTLY MORE SILTY, COALIFIED MATERIAL ON BEDS
51	94.90	95.00	0.10			CLAYSTONE	SLTY.PR.DK.GY.LAM.BRKN GRADUAL CONTACT WITH SILTSTONE BELOW
52	95.00	95.48	0.48			SILTSTONE	CLYY.PR.DK.GY.LAM.SLD SLIGHTLY SANDY IN PLACES
* 53	95.48	96.79	1.31			SILTSTONE	SSY.PR.M.GY.THNB.XBDG.SLD CROSS-BEDDING INDICATES TOPS DOWN
* 53	96.79	98.23	1.44			SILTSTONE	SSY.PR.M.GY.THNB.SLD AS ABOVE, GRADATIONAL CONTACT WITH CLAY STONE BELOW
53	98.23	98.83	0.60			CLAYSTONE	CARB.BLK.LAM.BRKN INCREASINGLY CARBONACEOUS TO BOTTOM, CO AL STRINGERS, CARBONACEOUS PLANT FRAGME NTS, MINOR SILTSTONE
52	98.83	99.00	0.17			CLAYSTONE	CARB.DK.GY.SLD COAL STRINGERS
52	99.00	99.13	0.13			COAL	C-6.SLD ANKERITE VEIN AT TOP

* DENOTES MEASURED BCA

FORM 4001

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85003

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
52	99.13	99.34	0.21			CLAYSTONE	CARB.M.GY.SLD THIN COAL AND ANKERITE VEINS
52	99.34	99.47	0.13			CLAYSTONE	CARB.DK.BN.BRKN SOFT
52	99.47	99.67	0.20			CLAYSTONE	CARB.DK.GY.SLD AS ABOVE, PLANT FOSSILS, ANKERITE VEINI NG
52	99.67	99.93	0.26			CLAYSTONE	CARB.BLK.SLD VERY COALY, BRIGHT BANDS, INTENSIVE ANK ERITE VEINING
52	99.93	100.20	0.27	07282		CLAYSTONE	CARB.DK.GY INTENSIVE ANKERITE VEINING
52	100.20	100.26	0.06	07283	N OVERTURNED	COAL	C-4.SLD
52	100.26	100.43	0.17	07283	N OVERTURNED	CLAYSTONE	CARB.BLK.BRKN COALY
52	100.43	100.59	0.16	07283	N OVERTURNED	COAL	C-3.SLD
52	100.59	100.65	0.06	07283	N OVERTURNED	CLAYSTONE	CARB.BLK.SLD VERY LISTRIC, FETID

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85003

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
52	100.65	100.81	0.16	07283	N OVERTURNED	COAL	C-2.SLD
52	100.81	100.87	0.06	07283	N OVERTURNED	COAL	C-3
52	100.87	100.95	0.08	07283	N OVERTURNED	COAL	C-4
52	100.95	101.27	0.32	07283	N OVERTURNED	CLAYSTONE	CARB.BLK.BRKN SHEARED, LISTRIC SURFACES, FETID SMELL
52	101.27	101.35	0.08	07283	N OVERTURNED	CLAYSTONE	CARB.BLK.SLD
52	101.35	101.42	0.07	07284	N OVERTURNED	COAL	C-6.SLD
52	101.42	101.50	0.08	07284	N OVERTURNED	COAL	C-6
52	101.50	101.57	0.07	07284	N OVERTURNED	CLAYSTONE	CARB.DK.BN.SLD SOFT AND DAMP
51	101.57	101.87	0.30	07284	N OVERTURNED	COAL	C-4.BRKN WEATHERED, DAMP, FETID
51	101.87	102.18	0.31	07284	N OVERTURNED	COAL	C-2.BRKN STILL QUITE DAMP BUT BRIGHTER

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 21

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85003

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
51	102.18	102.25	0.07	07284	M OVERTURNED	COAL	C-5.BRKN AS ABOVE
51	102.25	102.39	0.14	07284	M OVERTURNED	COAL	C-3.SLD BRIGHT WITH MUCH PYRITE AND ANKERITE VE INING
51	102.39	102.69	0.30	07285		CLAYSTONE	CARB.BLK.SLD DAMP, SLIGHTLY SOFT
51	102.69	104.34	1.65			CLAYSTONE	CARB.DK.GY.LAM.BRKN SILTSTONE INCREASES DOWNHOLE, STRUCTURE LESS
50	104.34	104.84	0.50			CLAYSTONE	CARB.DK.GY.LAM.BRKN AS ABOVE
* 50	104.84	106.86	2.02			CLAYSTONE	CARB.DK.GY.LAM.SLD AS ABOVE, A FEW WISPS OF SILTSTONE, FIS SILE, ALMOST BLACK
50	106.86	107.32	0.46			CLAYSTONE	DK.GY.LAM.VBRKN MORE SILTY THAN ABOVE
* 50	107.32	108.87	1.55			CLAYSTONE	SLTY.DK.GY.LAM.VBRKN AS ABOVE, FRACTURED, SOME QUARTZ VEININ G

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 22

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85003

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 51	108.87	110.24	1.37			CLAYSTONE	SLTY.MOD.DK.GY.LAM.VBRKN SLIGHTLY SILTY, MOLLUSK FOSSILS, INTENS ELY FRACTURED
50	110.24	110.95	0.71			CLAYSTONE	SLTY.MOD.DK.GY.LAM.VBRKN AS ABOVE
49	110.95	112.85	1.90			CLAYSTONE	WEL.DK.GY.BIOTR.VBRKN AS ABOVE, BEDDING OBSCURED, SLIGHTLY SI LTY
48	112.85	112.96	0.11			CLAYSTONE	WEL.DK.GY.SLD AS ABOVE
* 47	112.96	115.05	2.09			CLAYSTONE	MOD.DK.GY.BIOTR.SLD AS ABOVE, MARINE MOLLUSK FOSSILS
53	115.05	115.97	0.92			CLAYSTONE	MOD.DK.GY.BRKN AS ABOVE, MORE SILTY, MARINE MOLLUSK FO SSILS
56	115.97	117.13	1.16			CLAYSTONE	MOD.DK.GY.SLD AS ABOVE, MINOR QUARTZ VEINS, NO APPARE NT BEDDING
* 62	117.13	119.03	1.90			CLAYSTONE	MOD.DK.GY.VBRKN SLIGHTLY SILTY, AS ABOVE, CARBONACEOUS PLANT FRAGMENTS

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 23

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85003

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
61	119.03	119.12	0.09			CLAYSTONE	MOD.DK.GY.SLD AS ABOVE
60	119.12	120.52	1.40			CLAYSTONE	SLTY.PR.DK.GY.BRKN AS ABOVE BUT MORE SILT, NO APPARENT BED DING, SILT INCREASES DOWNWARD
59	120.52	121.12	0.60			BENTONITE	WH SOFT BENTONITIC MATERIAL, STRUCTURELESS , GRADES INTO SILTSTONE, "CREST HORIZON ", KAOLINITE?
59	121.12	121.25	0.13			SILTSTONE	LT.GY.VBRKN MIXED WITH MATERIAL ABOVE
58	121.25	122.37	1.12			SILTSTONE	M.GY.BIOTR.SLD OVERTURNED ON WORM BURROWS (GOOD TOPS), NO BEDDING, EXTENSIVE BIOTRB
57	122.37	123.28	0.91			SILTSTONE	M.GY.BIOTR.VBRKN AS ABOVE
* 56	123.28	125.27	1.99			SILTSTONE	M.GY.BIOTR.VBRKN RARE PLANT FRAGMENTS
53	125.27	127.24	1.97			SILTSTONE	M.GY.BIOTR.SLD HORIZONTAL WORM BURROWS, NO BEDDING, MA RINE MOLLUSK FOSSILS

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 24

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85003

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
51	127.24	128.26	1.02			SILTSTONE	M.GY.BIOTR.SLD AS ABOVE, TOTALLY HOMOGENEOUS
49	128.26	128.75	0.49			SILTSTONE	M.GY.BIOTR.SLD AS ABOVE
49	128.75	128.83	0.08			CLAY	LT.GY.VBRKN INTRICATE VEIN FILLING OF SOFT GREY (BE NTONITE) MATERIAL AND CALCITE
49	128.83	129.25	0.42			SILTSTONE	M.GY AS ABOVE, SILTSTONE
47	129.25	131.30	2.05			SILTSTONE	SSY.PR.M.GY.BIOTR.SLD BECOMING SANDY (VERY FINE GRAINED), BED DING OBLITERED
* 45	131.30	131.37	0.07			SILTSTONE	SSY.PR.M.GY.LAM.BIOTR.SLD AS ABOVE
* 40	131.37	133.47	2.10			SILTSTONE	MOD.M.GY.LAM.BIOTR.SLD AS ABOVE BUT BETTER BEDDING
* 35	133.47	134.36	0.89			SILTSTONE	SSY.PR.DK.GY.LAM.BIOTR.SLD THIN VERY FINE GRAINED SANDSTONE BANDS, MINOR BIOTRB.

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 25

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85003

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
42	134.36	135.45	1.09			SILTSTONE	SSY.PR.DK.GY.LAM.BIOTR.SLD WORM BURROWS SHOW TOPS DOWN, LITHOLOGY AS ABOVE.
* 53	135.45	137.30	1.85			SILTSTONE	SSY.PR.DK.GY.LAM.BIOTR.BRKN WORM BURROWS SHOW TOPS DOWN, AS ABOVE
56	137.30	137.40	0.10			SILTSTONE	SSY.PR.DK.GY.LAM.BIOTR.VBRKN AS ABOVE
* 60	137.40	139.40	2.00			SILTSTONE	SSY.PR.DK.GY.LAM.BIOTR.VBRKN AS ABOVE, EXTENSIVE CALCITE FILLED VEIN ING (POSSIBLE FOLD AXIS)
60	139.40	140.28	0.88			SILTSTONE	MOD.M.GY.LAM.BIOTR.BRKN EXTENSIVE VEINING AND FRACTURED CORE. C ARBONACEOUS IN PLACES (POSSIBLE FOLD AX IS)
60	140.28	141.28	1.00			SILTSTONE	CARB.MOD.DK.GY.LAM.BIOTR.BRKN MINOR SILTSTONE LAMINAE, NO GOOD BEDDIN. G. CARBONACEOUS ZONES SHOW SLIPPAGE
60	141.28	143.35	2.07			SILTSTONE	CLYY.MOD.DK.GY.BIOTR.SLD QUITE CARBONACEOUS. QUARTZ VEINED TO A LESSER EXTENT THAN ABOVE, BEDDING OBLIT ERATED

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 26

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85003

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
61	143.35	145.29	1.94			SILTSTONE	CLYY.MOD.DK.GY.BIOTR.BRKN AS ABOVE
61	145.29	146.62	1.33			SILTSTONE	CLYY.MEL.DK.GY.BIOTR.BRKN AS ABOVE, VERY HOMOGENEOUS
61	146.62	147.32	0.70			SILTSTONE	CLYY.MEL.DK.GY.BIOTR.BRKN AS ABOVE
61	147.32	148.55	1.23			SILTSTONE	CLYY.MEL.DK.GY.BIOTR.SLD AS ABOVE, NO BEDDING DISTINGUISHABLE
61	148.55	149.59	1.04			SILTSTONE	CLYY.MEL.DK.GY.BIOTR.SLD AS ABOVE
61	149.59	150.61	1.02			SILTSTONE	CLYY.MEL.DK.GY.BIOTR.SLD AS ABOVE
62	150.61	152.75	2.14			SILTSTONE	CLYY.MEL.DK.GY.BIOTR.SLD AS ABOVE, NO APPARENT BEDDING. TOTALLY BIOTURBATED
62	152.75	154.79	2.04			SILTSTONE	MOD.DK.GY.LAM.BIOTR.SLD LESS CLAY THAN ABOVE, TOPS UP (BASED ON WORM BURROWS AND LOAD CAST INDICATORS) , BEDDING CONTORTED, MINOR QUARTZ VEINI NG

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 27

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85003

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 62	154.79	155.92	1.13			SILTSTONE	CLYY.PR.DK.GY.LAM.BIOTR.SLD GOOD TOPS UP ON LOAD CASTS, FINE CLAYST ONE AND SILTSTONE LAMINAE.
61	155.92	156.79	0.87			SILTSTONE	CLYY.PR.DK.GY.LAM.BIOTR.SLD AS ABOVE
* 60	156.79	158.83	2.04			SILTSTONE	CLYY.PR.DK.GY.LAM.BIOTR.SLD AS ABOVE
60	158.83	158.97	0.14			SILTSTONE	CLYY.MOD.DK.GY.LAM.BIOTR.SLD BECOMING MORE CLAY RICH
59	158.97	160.91	1.94			SILTSTONE	MOD.DK.GY.BIOTR.SLD BEDDING OBLITERATED
59	160.91	162.05	1.14			SILTSTONE	CLYY.MOD.DK.GY.BIOTR.SLD AS ABOVE, NO APPARENT BEDDING
58	162.05	162.90	0.85			SILTSTONE	CLYY.MOD.DK.GY.BIOTR.SLD AS ABOVE
58	162.90	163.94	1.04			SILTSTONE	CLYY.MOD.DK.GY.BIOTR.SLD AS ABOVE, GRADES RAPIDLY INTO THE UNIT BELOW
58	163.94	164.20	0.26			BENTONITE	WH CREST HORIZON, PASTEY KAOLINITE, MATERI AL SEEN ABOVE

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 28

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85003

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
57	164.20	165.02	0.82			CLAYSTONE	CARB.MOD.DK.GY.BIOTR.BRKN MINOR AMOUNT OF SILT
57	165.02	167.10	2.08			CLAYSTONE	MOD.DK.GY.BIOTR.SLD AS ABOVE
56	167.10	168.06	0.96			CLAYSTONE	CARB.MOD.DK.GY.BIOTR.BRKN
* 56	168.06	169.18	1.12			CLAYSTONE	CARB.MOD.DK.GY.LAM.BIOTR.BRKN SLIGHTLY SILTY
57	169.18	170.47	1.29	07286		CLAYSTONE	DK.GY.MAS.BRKN LARGE CLAM FOSSILS AT SEVERAL INTERVALS IN THE SAMPLE
57	170.47	170.53	0.06	07286		CLAYSTONE	PYR.YEL.SLD VERY CARBONACEOUS, ANKERITE VEINS AND M ASSIVE PYRITE
57	170.53	170.59	0.06	07286		CLAYSTONE	PYR.YEL.SLD
57	170.59	170.73	0.14	07287	N UPRIGHT	COAL	C-2.BRKN

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 29

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85003

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
57	170.73	171.00	0.27	07287	N UPRIGHT	COAL	C-2.VBRKN
57	171.00	171.19	0.19	07287	N UPRIGHT	COAL LOSS	
57	171.19	171.23	0.04	07287	N UPRIGHT	CLAYSTONE	CARB.DK.BN.SLD
57	171.23	171.28	0.05	07287	N UPRIGHT	COAL	C-4.BRKN
57	171.28	171.32	0.04	07287	N UPRIGHT	COAL	C-4
57	171.32	171.39	0.07	07287	N UPRIGHT	CLAYSTONE	M.BN.SLD
58	171.39	171.43	0.04	07287	N UPRIGHT	COAL	C-2.SLD
58	171.43	171.47	0.04	07287	N UPRIGHT	CLAYSTONE	CARB.M.GY

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 30

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85003

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
58	171.47	171.52	0.05	07287	N UPRIGHT	COAL	C-3.SLD ANKERITE VEINING
58	171.52	171.59	0.07	07287	N UPRIGHT	CLAYSTONE	CARB.BLK.SLD PYRITE BAND AT THE TOP
58	171.59	171.68	0.09	07287	N UPRIGHT	CLAYSTONE	CARB.BLK.BRKN LISTRIC SURFACES, CORE DAMP AND SOFT
58	171.68	171.72	0.04	07287	N UPRIGHT	COAL LOSS	
58	171.72	172.02	0.30	07287	N UPRIGHT	COAL	C-1.BRKN SLIGHTLY DULLED BY WEATHERING
58	172.02	172.05	0.03	07287	N UPRIGHT	CLAYSTONE	CARB.BLK.SLD VERY SOFT, DAMP AND SHEARED
58	172.05	172.19	0.14	07287	N UPRIGHT	COAL	C-1.BRKN
58	172.19	172.27	0.08	07287	N UPRIGHT	CLAYSTONE	CARB.DK.GY.SLD
58	172.27	172.29	0.02	07287	N UPRIGHT	COAL	C-1.BRKN
58	172.29	172.49	0.20	07288		CLAYSTONE	DK.GY.MAS.SLD

* DENOTES MEASURED BCA

FORM 4001

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85003

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
58	172.49	173.29	0.80			CLAYSTONE	CARB.BLK.BRKN NUMEROUS ANKERITE AND COAL VEINS
59	173.29	173.61	0.32			CLAYSTONE	CARB.DK.GY.SLD FEW COAL LAMINAE, SOME LISTRIC SURFACES
59	173.61	173.70	0.09			COAL	C-2.BRKN ANKERITE AT BASE OF THE UNIT
59	173.70	173.87	0.17			CLAYSTONE	CARB.DK.GY.SLD BECOMING LESS CARBONACEOUS DOWNWARDS
59	173.87	175.30	1.43			SILTSTONE	SSY.M.GY.LAM.SLD CLAYSTONE LAMINAE AND CROSS LAMINAE. CO ARSENING DOWNWARD
* 60	175.30	176.64	1.34			CLAYSTONE	CARB.MOD.DK.GY.LAM.BIOTR.VBRKN AS ABOVE, END OF HOLE, GEOPHYSICALLY LO GGED, DRILLER'S MARKER 178.0 METRES

* DENOTES MEASURED BCA
NEWPAGE

FORM 4001

GULF CANADA RESOURCES INC.

SEAM DETAIL | COAL DIVISION | MOUNT KLAPPAN PROJECT | **TRUE THICKNESS**

DATA SOURCE:	KPN LR DDH85003	SEAM : M	INTERVAL(M) :	35.71 - 42.63	ELEVATION(M) :	1798.1
GEOLOGIST :	E. LEGRESLEY	SCALE:	DATE :	DEC 19/85	DRAWING NO. :	

SEAM COMP. 1 2 3 4 5 6	DRILL DEPTH METRES	INTERVAL METRES ROCK	INTERVAL METRES COAL	% REC.	SAMPLE ID SIMP	SAMPLE ID COMP	COAL/ROCK TOTAL COMPOS	MINING SECTION	RES MOIST	ASH	VM	FC	TS	CAL.VAL MJ/KG
	35.71		([illegible])											
			0.34	81.9	7277									
		[illegible]												
			0.22											
			([illegible])											
	36.81	0.06	[illegible]			5	1.33 / 0.48 1.81		2.73	50.06	9.54	27.65	0.42	10.88
		0.15												
			0.33	84.5	7278									
		[illegible]												
			(0.08)											
			0.10											
		0.13												
	38.07		0.18											
			(0.25)											
			0.15											
		[illegible]												
			0.12											
		[illegible]												
			0.11											
		(0.17)												
		[illegible]	[illegible]											
			0.59	81.9	7279									
		0.04												
			[illegible]			6	2.58 / 0.91 3.49		3.08	39.62	7.68	49.62	0.47	18.72
		[illegible]												
			0.34											
		[illegible]	[illegible]											
	41.05	0.34												
			0.41	100.0	7280									
		0.13												
			0.34											
	42.63													

GULF CANADA RESOURCES INC.

SEAM DETAIL | COAL DIVISION | MOUNT KLAPPAN PROJECT | TRUE THICKNESS

DATA SOURCE: KPN LR DDH85003 SEAM : M/N INTERVAL(M) : 91.30 – 92.00 ELEVATION(M) : 1798.1

GEOLOGIST : E. LEGRESLEY SCALE: 1:40 DATE : JAN 09/86 DRAWING NO. :

SEAM COMP. 1 2 3 4 5 6	DRILL DEPTH METRES	COAL SEAM LOG	INTERVAL METRES ROCK	INTERVAL METRES COAL	% REC.	SAMPLE ID SIMP	SAMPLE ID COMP	COAL/ROCK TOTAL COMPOS	COAL/ROCK TOTAL MINING SECTION	COAL QUALITY A.D.B. RES MOIST	ASH	VM	FC	TS	CAL.VAL MJ/KG	
	91.30			0.24												
				(0.07)	87.1	99999	99999	0.56/0.00		—	—	—	—	—	—	—
	92.00			0.24				0.56								

GULF CANADA RESOURCES INC.

SEAM DETAIL COAL DIVISION MOUNT KLAPPAN PROJECT **TRUE THICKNESS**

DATA SOURCE: KPN LR DDH85003 SEAM : N OVERTURNED INTERVAL(M) : 99.93 – 102.69 ELEVATION(M) : 1798.1

GEOLOGIST : E. LEGRESLEY SCALE: DATE : DEC 19/85 DRAWING NO. :

SEAM COMP.	DRILL DEPTH (METRES)	COAL SEAM LOG	INTERVAL (METRES) ROCK	INTERVAL (METRES) COAL	% REC.	SAMPLE ID SIMP	SAMPLE ID COMP	COAL/ROCK TOTAL COMPOS	COAL/ROCK TOTAL MINING SECTION	COAL QUALITY A.D.B. RES MOIST	ASH	VM	FC	TS	CAL.VAL MJ/KG
	99.93		0.21		100.0	7282									
	100.20			[illegible]			7	1.17 / 0.55 1.72		1.24	38.07	6.17	54.52	2.18	20.27
			0.13												
				0.13											
			[illegible]												
				0.24	100.0	7283									
			0.31												
	101.35			0.12											
			[illegible]												
				0.64	100.0	7284									
	102.39		0.23		100.0	7285									
	102.69														

GULF CANADA RESOURCES INC.

SEAM DETAIL — COAL DIVISION — MOUNT KLAPPAN PROJECT — **TRUE THICKNESS**

DATA SOURCE: KPN LR DDH85003 SEAM : N UPRIGHT INTERVAL(M) : 169.18 - 172.49 ELEVATION(M) : 1798.1

GEOLOGIST : E. LEGRESLEY SCALE: . DATE : DEC 19/85 DRAWING NO. :

SEAM COMP. (1 2 3 4 5 6)	DRILL DEPTH (METRES)	COAL SEAM LOG	INTERVAL (METRES) ROCK	INTERVAL (METRES) COAL	% REC.	SAMPLE ID SIMP	SAMPLE ID COMP	COAL/ROCK TOTAL COMPOS	COAL/ROCK TOTAL MINING SECTION	COAL QUALITY A.D.B. RES MOIST	ASH	VM	FC	TS	CAL.VAL MJ/KG	
	169.18		1.08		100.0	7288										
			0.10													
	170.59			0.35												
				(0.16)												
			[illegible]	[illegible]												
			[illegible]	[illegible]	88.5	7287	8	1.06 / 0.38 1.44		1.17	38.93	8.75	55.15	1.04	20.73	—
			0.14	(0.42)												
				0.25												
			0.04	0.12												
			0.07	0.03												
	172.29		0.17		100.0	7288										
	172.49															

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CENTURY GEOPHYSICAL CORPORATION

* * * * * * * * VERTICAL DEVIATION * * * * * * * *

COMPU-LOG V8L1 DEVIATION

CLIENT : GULF CANADA INC.

HOLE ID : DDH 85003 OPEN HOLE

LOCATION : MT. KLAPPAN

DATE OF LOG : 03-18-85

DATA FROM : V8L2*A

PROBE : 9055A 0039

TD = TOTAL DEPTH
T = TOP OF ZONE
B = BOTTOM OF ZONE

DEPTH	TRUE DEPTH	NORTH DEV	EAST DEV	DISTANCE	AZIMUTH	SA	SAB
.00	.00	.00	.00	.00	.0	.0	.0
10.00	9.49	1.93	-1.95	2.75	314.8	16.1	314.8
20.00	18.97	3.51	-4.43	5.65	308.4	17.2	302.5
30.00	28.50	6.20	-4.44	7.63	324.4	15.7	359.7
40.00	37.95	7.92	-1.82	8.12	347.0	18.3	56.7
50.00	47.40	10.68	-.89	10.71	355.2	17.1	18.5
60.00	56.81	14.02	-.50	14.03	357.9	19.6	6.6
70.00	66.17	17.39	.29	17.39	1.0	20.3	13.3
80.00	75.49	20.46	2.21	20.58	6.2	21.2	32.1
90.00	84.79	23.43	4.35	23.83	10.5	21.5	35.7
100.00	94.08	26.58	6.29	27.32	13.3	21.6	31.5
110.00	103.35	29.80	8.14	30.89	15.3	21.8	29.9
120.00	112.61	33.04	10.07	34.54	17.0	22.1	30.8
130.00	121.87	36.16	12.18	38.16	18.6	22.1	33.9
140.00	131.16	39.14	14.31	41.68	20.1	21.5	35.5
150.00	140.42	41.90	16.88	45.17	21.9	22.1	42.9
160.00	149.64	44.71	19.56	48.80	23.6	22.8	43.6
TD 164.80	154.06	46.12	20.77	50.59	24.2	22.8	40.6

VERTICAL DEVIATION

COMPU-LOG VBL1 DEVIATION
DATA FROM : VBL2*A

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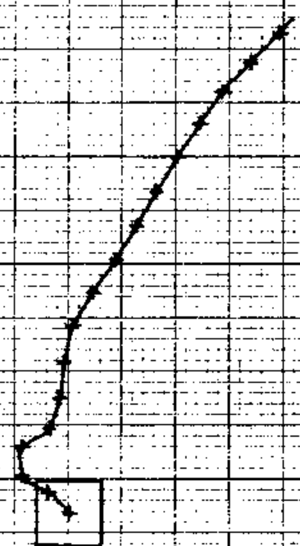
CLIENT : GULF CANADA INC.
LOCATION : MT. KLAPPAN
HOLE ID : DDH 85003 OPEN HOLE
DATE OF LOG : 03-18-85
PROBE : 9055A 0039

SCALE: 5.00 M/DIV
MAG DECL: 29.0
TRUE DEPTH: 154.1 M
AZIMUTH: 24.2
DISTANCE: 50.59 M

+ = 10.0 M INCR
△ = TOP OF ZONE
○ = BOTTOM OF ZONE

TRUE NORTH ↑



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CENTURY GEOPHYSICAL CORP. PART NO. 786-0040

CENTURY G

707

Gulf Canada Resources Inc.
Coal Division
Geophysical Log

Datasource:	KPNLRDDH85003	Province: BC	Northing: 6344440.00	Lat:	571442
Log Date:	85–03–18	Zone: 9	Easting: 506328.00	Long:	1285343
Company:	CENTURY	Measuring Point:		Elevation:	1798.10
Geologist:	E. LEGRESLEY				

Scale: 1 to 100.0

Depth Range: 0.0 to 182.0

True Thickness: NO

Comments:
1. LOGGED THROUGH THE RODS
2.

Logs Plotted:

Description	Axis Range	Axis Length	Smoothing Points	Tool	Comments
1 .GAMMA API	0.0 to 150.0	10.0	31	9055A	IN PIPE
2 .NEUTRON–NEUTRON CPS	0.0 to 2500.0	10.0	9	9055A	IN PIPE
3 .DENSITY G/CC	1.0 to 3.0	10.0	15	9030A1	IN PIPE

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GULF CANADA RESOURCES INC.
COAL DIVISION
KLAPPAN PROJECT
STRATIGRAPHIC LOG
KPN LR DDH85003

GEOLOGIST : E. LEGRESLEY	DATE : JAN 08/86	DRAWING NO. :

SCALE : 1:200 1:40

NORTHING: 6344438.0 N INCLINATION: 70.0°
EASTING: 506328.2 E BEARING: 45.0°

LITHOLOGIC SYMBOLS

	SANDSTONE	B B B B	BENTONITE
	SILTSTONE		BRECCIA
	COAL	C C C	CARBONACEOUS
	OVERBURDEN	Q Q Q	QUARTZ
	MUDSTONE,CLAYSTONE	P P P	PYRITE
	TUFF	FE FE FE	FERRUGINOUS
	LIMESTONE		CONGLOMERATE
	CORE LOSS	F	FOSSIL BED

KPNLRDDH85004

==================== GULF CANADA RESOURCES INC. ====================

- D A T A   S O U R C E   S U M M A R Y -

DATA SOURCE - KPNLRDDH85004 DATE - 01/09/86

- H I S T O R Y -

START DATE - 03/13/85
END DATE - 03/19/85

CONTRACTOR - J.T. THOMAS OPERATOR - GCRI
GEOLOGIST - M. BARKER SURVEYOR - MWG & ASS.

REMARKS - SAME LOCATION AS DDH85002 WHICH TWISTED OFF AT 102 METERS, SITE F

- L O C A T I O N -

PROVINCE - BC ZONE - 9
ELEVATION - 1836.40 NORTHING - 6344198.00
EASTING - 505875.06

LICENCE/LEASE NUMBER - 7152

LATITUDE - 571434
LONGITUDE - 1285410

- O R I E N T A T I O N -

LENGTH - 252.77 INCLINATION - 85.0
AZIMUTH - 225.0

CORE SIZE - 0.0

CEMENT - CASING DEPTH(M) - 18.29
PLUG - AQUIFER DEPTHS(M) - 0.00
PIEZ - 0.00
LOST CIRC. DEPTHS(M) - 0.00
0.00

*** NOTE *** 0 INDICATES NO VALUE

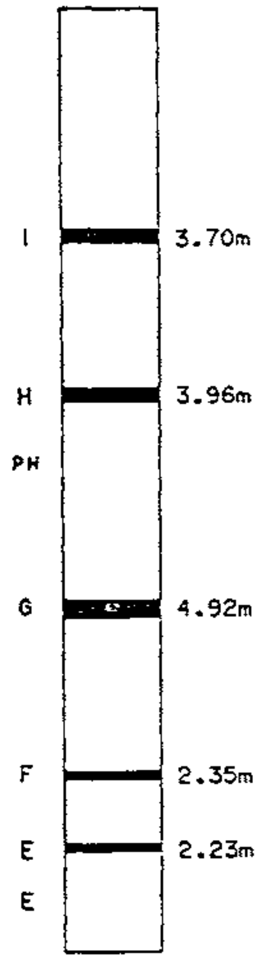
==

MT. KLAPPAN COAL PROPERTY

1985 DIAMOND DRILL HOLES
DDH85004

SEAM

TRUE SEAM THICKNESS
(COAL & ROCK)



NOTE: SCHEMATIC PROFILE.
NO THICKNESSES SHOWN
FOR SEAMS CONTAINING
LESS THAN 50cm COAL.

SCALE: 1:2000

GULF CANADA RESOURCES INC.
15/01/86

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 1

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85004

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
75	0.00	18.29	18.29			OVERBURDEN	CASING TO 18.29 METRES
75	18.29	19.55	1.26			ROCK LOSS	
* 75	19.55	20.73	1.18			MUDSTONE	CARB.BLK.MAS.VBRKN SILTY, LARGE PORTIONS CRUSHED, FE STAIN ING ON SOME FRACTURE SURFACES, LIGHT GR EY CLAYSTONE AT 440 TO 710 MM.
* 80	20.73	22.64	1.91			MUDSTONE	CARB.BLK.VTHNB.SSD.BRKN SILTY LAYTERS, WORM BURROWS INDICATE UN IT TOPS UP, BIOTURBATED
80	22.64	22.86	0.22			MUDSTONE	CARB.BLK.VTHNB.BRKN LITHOLOGY AS ABOVE, VERY FAINT BEDDING
* 80	22.86	23.97	1.11			MUDSTONE	CARB.BLK.VTHNB.VBRKN LITHOLOGY AS ABOVE, VERY FAINT BEDDING, PROMINANT IRON STAINING THROUGHOUT THE CORE
* 80	23.97	24.74	0.77			MUDSTONE	CARB.BLK.VTHNB.VBRKN VERY FAINT BEDDING, VERY UNIFORM, OCCAS IONAL ANKERITE VEINING, PLANT FOSSILS O N BEDDING PLANE
79	24.74	25.61	0.87			ROCK LOSS	

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 2

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85004

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 78	25.61	26.52	0.91			MUDSTONE	CARB.BLK.VTHNB.VBRKN LITHOLOGY AS ABOVE, FAINT IRON STAINING THROUGHOUT THE CORE, PLANT FOSSILS ON BEDDING PLANES
* 90	26.52	28.27	1.75			MUDSTONE	SLTY.DK.GY.LAM.VBRKN IRON STAINING THROUGHOUT, GRADES TO MUD STONE ABOVE. VERY FINELY LAMINATED,
* 90	28.27	28.64	0.37			MUDSTONE	SLTY.DK.BN.LAM.VBRKN CRUSHED IN MANY PLACES, VERY WEATHERED, PROMINENT IRON STAINING
* 80	28.64	29.48	0.84			MUDSTONE	SLTY.DK.BN.LAM.VBRKN LITHOLOGY AS ABOVE, VERY UNIFORM BEDDIN G AS ABOVE
80	29.48	29.71	0.23			MUDSTONE	SLTY.DK.BN.LAM.VBRKN CRUSHED, LITHOLOGY AS ABOVE, VERY WEATH ERED
80	29.71	30.16	0.45			ROCK LOSS	
* 80	30.16	31.40	1.24			SILTSTONE	CLYY.DK.GY.LAM.VBRKN PARTLY WEATHERED, FAINT IRON STAINING T HROUGHOUT, GRADED BEDDING IN FINE LAMIN AE

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 3

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85004

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
80	31.40	31.66	0.26			SILTSTONE	CLYY.DK.GY.LAM.VBRKN LITHOLOGY AS ABOVE, IRON STAINING ON FR ACTURE SURFACES
80	31.66	31.99	0.33			ROCK LOSS	
* 80	31.99	33.73	1.74			SILTSTONE	CLYY.M-DK.GY.LAM.BIOTR.BRKN PROMINANT BANDING, BLACK MUDSTONE GRADI NG TO VERY FINE GRAINED SANDSTONE BANDS , MINOR SLUMP FEATURE, CORE TWIST OFF A † 000 MM.
* 80	33.73	34.92	1.19			SILTSTONE	CLYY.LT-DK.GY.LAM.XBDG.VBRKN LITHOLOGY AS ABOVE, IRON STAINING THROU GHOUT, WRMBURS INDICATE TOPS UP, NO BAN DING REAR TOP
83	34.92	35.35	0.43			ROCK LOSS	
* 85	35.35	35.88	0.53			SILTSTONE	CLYY.M-DK.GY.LAM.WRMBU.BRKN LITHOLOGY AS ABOVE, SOFT SEDIMENT DEFOR MATION

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 4

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85004

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	35.88	37.97	2.09			SILTSTONE	M-DK.GY.LAM.WRMBU.BRKN LITHOLOGY AS ABOVE, SOME LAMINAE GRADIN G FROM BLACK SILTY MUDSTONE TO FINE GRA INED SANDSTONE. WRMBURS INDICATE TOPS U P, BROAD BANDS OF IRONSTAINING P PARALL EL TO BEDDING
87	37.97	38.27	0.30			SILTSTONE	CLYY.M-DK.GY.LAM.WRMBU.VBRKN LITHOLOGY AS ABOVE, ABUNDANT IRON STAIN ING ON FRACTURE SURFACES
84	38.27	39.79	1.52			SILTSTONE	CLYY.M-DK.GY.LAM.XBDG.VBRKN AS ABOVE, BUT MUDDIER AND SLIGHTLY FINE R GRAINED.
* 80	39.79	41.33	1.54			SILTSTONE	CLYY.M-DK.GY.LAM.SSD.BRKN LITHOLOGY AS ABOVE, NUMEROUS WORM BURRO WS, IRON STAINED ON FRACTURE SURFACES
80	41.33	41.76	0.43			SILTSTONE	CLYY.M-DK.GY.LAM.WRMBU.SLD LITHOLOGY AS ABOVE, NO IRON STAINING, S OFT SEDIMENT DEFORMATION.
* 80	41.76	43.84	2.08			SILTSTONE	CLYY.M-DK.GY.LAM.WRMBU.BRKN LITHOLOGY AS ABOVE, SSD, LAMINAE GRADIN G FROM MUDSTONE TO FINE GRAINEDG SANDST ONE.

* DENOTES MEASURED BCA

FORM 4001

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85004

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
84	43.84	44.29	0.45			SILTSTONE	CLYY.M-DK.GY.LAM.XBDG.VBRKN LITHOLOGY AS ABOVE, SSD, WORM BURROWS, DEEP PENETRATING IRON STAINING PARALLEL TO BEDDING, TIGER STRIPE?
* 87	44.29	45.85	1.56			SILTSTONE	CLYY.M-DK.GY.LAM.XBDG.BRKN LITHOLOGY AS ABOVE, SSD, WORM BURROWS, XBDG. CORE TWIST OF AT 00.0 MM.
80	45.85	46.29	0.44			SILTSTONE	CLYY.M-DK.GY.LAM.XBDG.BRKN LITHOLOGY AS ABOVE, OCCASSIONAL QUARTZ VEINING PARALLEL TO BEDDING.
* 75	46.29	47.34	1.05			SANDSTONE	VFG-.PR.LT.GY.LAM.XBDG.BRKN IRON STAINING ON FRACTURE SURFACES, ORG ANIC STRINGERS NEAR BASE
* 85	47.34	47.79	0.45			SANDSTONE	VFG.LT.GY.LAM.XBDG.BRKN NUMEROUS ORGANIC STRINGERS, IRON STAINI NG ALONG FRACTURE SURFACES. "TIGER STRI PE".
* 80	47.79	48.09	0.30			SANDSTONE	VFG.VPR.LT.GY.LAM.XBDG.BRKN LITHOLOGY AS ABOVE, NO IRONSTAINING.
81	48.09	48.37	0.28			BENTONITE	LT.GY.LAM.XBDG.BRKN PARTLY UNCONSOLIDATED

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85004

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
83	48.37	48.83	0.46			SILTSTONE	CLYY.VPR.DK.GY.LAM.VBRKN SHATTERED CORE, ABUNDANT IRON STAINING ON ALL FRACTURE SURFACES
85	48.83	49.23	0.40			SILTSTONE	CLYY.VPR.DK.BN.LAM.VBRKN LITHOLOGY AS ABOVE, IRON STAINING THROU GHOUT THE CORE
87	49.23	49.57	0.34			ROCK LOSS	
* 90	49.57	50.42	0.85			SILTSTONE	CLYY.VPR.DK.BN.LAM.XBDG.VBRKN VERY MUDDY, IRON STAINING THROUGHOUT TH E CORE
87	50.42	51.36	0.94			SILTSTONE	CARB.VPR.DK.GY.LAM.BRKN FAINT BANDING, UNIFORM GRAINSIZE, LIGHT IRONSTAIN ING THROUGHOUT THE CORE,
83	51.36	52.66	1.30			SILTSTONE	CARB.DK.GY.LAM.VBRKN CLAYEY, LITHOLOGY AS ABOVE
81	52.66	52.72	0.06			ROCK LOSS	
* 80	52.72	52.97	0.25			SILTSTONE	CARB.DK.GY.LAM.BRKN CLAYEY, LITHOLOGY AS ABOVE

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 7

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85004

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 80	52.97	54.98	2.01			MUDSTONE	CARB.DK.GY.VTHNB.WRMBU.BRKN SILTY, XBDG, VERY FAINT BANDING, IRON S TAINING ON FRACTURE SURFACES
86	54.98	55.75	0.77			MUDSTONE	CARB.DK.GY.VTHNB.VBRKN AS ABOVE. VERY FAINT BEDDING.
* 90	55.75	57.03	1.28			MUDSTONE	CARB.DK.GY.VTHNB.VBRKN LITHOLOGY AS ABOVE, SILTY
90	57.03	58.35	1.32			MUDSTONE	CARB.BLK.VTHNB.VBRKN LITHOLOGY AS ABOVE, VERY FAINT BEDDING, IRON STAINING ON ALL FRACTURE SURFACES
90	58.35	58.81	0.46			MUDSTONE	CARB.BLK.VTHNB.VBRKN LITHOLOGY AS ABOVE
90	58.81	59.02	0.21	07289		MUDSTONE	DK.GY.LAM.BRKN
90	59.02	59.20	0.18	07290	I	COAL	C-1.SLD
90	59.20	59.23	0.03	07290	I	MUDSTONE	CARB.DK.BN.BRKN SOFT AND DAMP.
90	59.23	59.55	0.32	07290	I	COAL	C-1.BRKN

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 8

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85004

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
90	59.55	59.63	0.08	07290	I	COAL	C-6.BRKN STREAKS OF C-1
90	59.63	59.81	0.18	07290	I	COAL LOSS	
90	59.81	60.37	0.56	07290	I	COAL	C-1.BRKN LENSOID.
90	60.37	61.34	0.97	07290	I	COAL LOSS	
90	61.34	61.39	0.05	07291	I	MUDSTONE	DK.GY.SLD LENSOID
90	61.39	61.48	0.09	07291	I	COAL	C-1.BRKN
90	61.48	61.57	0.09	07291	I	MUDSTONE	CARB.DK.BN.BRKN SOFT IN PART
90	61.57	61.70	0.13	07291	I	COAL	C-3.BRKN ANKERITE IN CLEAT
90	61.70	61.78	0.08	07291	I	COAL	C-2.BRKN
90	61.78	61.81	0.03	07291	I	MUDSTONE	CARB.BLK SOFT

* DENOTES MEASURED BCA

FORM 4001

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85004

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
90	61.81	61.87	0.06	07291	I	COAL	C-3.BRKN
90	61.87	61.90	0.03	07291	I	MUDSTONE	CARB.BRKN
90	61.90	62.12	0.22	07291	I	COAL LOSS	
90	62.12	62.14	0.02	07291	I	COAL	C-4.BRKN
90	62.14	62.66	0.52	07291	I	COAL	C-1.BRKN RUST IN CLEAT
90	62.66	62.72	0.06	07291	I	COAL	C-1.VBRKN LIKELY LOSS IN THIS ZONE
90	62.72	63.59	0.87	07292		SILTSTONE	SSY.MOD.M.GY.LAM COARSENING TO FINE GRAINEDG SANDSTONE. LOCALLY RUSTY IN FRACTURES.
90	63.59	63.64	0.05	07292		SANDSTONE	SLTY.MOD.M.BN.VBRKN UNCONSOLIDATED PIECES
90	63.64	64.25	0.61	07292		MUDSTONE	SLTY.WEL.M.GY.LAM.BRKN

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85004

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
90	64.25	64.91	0.66			COAL	C-2.PWRD COAL COMPLETELY POWDERED, PROBABLY REWO RKED FROM LOSS ABOVE
90	64.91	65.05	0.14			MUDSTONE	SLTY.M.GY.VBRKN SHATTERED FRAGMENTS ONLY, LOSS IN THIS ZONE
90	65.05	65.48	0.43			SANDSTONE	FG.WEL.M.GY.SLD CONTAINS RUSTY CLAYSTONE CLASTS
90	65.48	65.99	0.51			SANDSTONE	SLTY.FG.VPR.GY FAINTLY BEDDED, FE STAINING THROUGHOUT.
90	65.99	66.43	0.44			ROCK LOSS	
90	66.43	67.75	1.32			SANDSTONE	SLTY.FG.VPR.M.GY.VTHNB.VBRKN LITHOLOGY AS ABOVE, FAINTLY BEDDED,BLAC K SILTYSTR INGER AND ROUNDED MUDSTONE C LAST NEAR BASE, PARTLY WEATHERED. PARTL Y WEATHERED.
* 90	67.75	68.82	1.07			SANDSTONE	FG.MOD.LT-M.GY.VTHNB.BRKN FE STAINING ON ALL FRACTURE SURFACES

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 11

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85004

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
90	68.82	69.82	1.00			SANDSTONE	SLTY.VPR.M.GY.THNB.WRMBU.BRKN SSD, XBDG, CONTAINS MUDDY SILTSTONE LAYERS, FINER GRAINSIZE AND LAMINATIONS TOWARDS THE BASE, SEDIMENTARY STRUCTURES ARE MORE PREDOMINATE TOWARDS THE BASE.
90	69.82	71.85	2.03			SILTSTONE	CARB.DK.GY.LAM.SSD.BRKN FINELY LAMINATED, MORE MASSIVE AND CARBONACEOUS NEAR BASE, MINOR PLANT HASH ON BEDDING SURFACES NEAR BASE, WORMBURROWS
90	71.85	72.84	0.99			ROCK LOSS	
* 90	72.84	74.97	2.13			SANDSTONE	SLTY.FG.PR.LT.GY.VTHNB.BRKN GRADES FROM MUDSTONE TO FINE GRAINED SANDSTONE, OCCASIONAL SILTY STRINGERS AND MUDSTONE CLASTS 1.0 MM WIDE AND 20 MM LONG, OCCASIONALY QUARTZ VEINS PERPENDICULAR TO BEDDING. FE STAINING ON SOME FRACTURE SURFACES.
87	74.97	75.74	0.77			SANDSTONE	SLTY.FG.PR.LT.GY.VTHNB.BRKN LITHOLOGY AS ABOVE
86	75.74	75.91	0.17			ROCK LOSS	

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 12

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85004

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 85	75.91	76.98	1.07			SANDSTONE	SLTY.VFG.VPR.LT-M.GY.LAM.BRKN SILTY LAMINAE INCREASING IN NUMBER AND THICKNESS, OVERALL GRAINSIZE DECREASING TOWARDS BASE, IRON STAINING ALONG FINER SILTY LAMINAE, OCCASIONAL QUARTZ VEINS PARALLEL TO BEDDING
* 80	76.98	78.66	1.68			SILTSTONE	CLYY.DK.GY.LAM.XBDG.VBRKN IRON STAINING ON FRACTURE SURFACES, CARBONACEOUS, SSD, VERY FINELY LAMINATED MUDDY SILTSTONE.
82	78.66	78.96	0.30			ROCK LOSS	
83	78.96	79.13	0.17			SILTSTONE	CLYY.DK.GY.LAM.SSD.BRKN LITHOLOGY AS ABOVE, XBDG, WORMBURROWS, CARBONACEOUS
* 85	79.13	81.15	2.02			SILTSTONE	CLYY.DK.GY.LAM.WRMBU.VBRKN LITHOLOGY AS ABOVE, SOME LAYERS GRADING TO FINE GRAINED SANDSTONE, GRADED BEDDING AND WRMBUR INDICATE TOPS UP.
87	81.15	81.61	0.46			SILTSTONE	CLYY.DK.GY.LAM.SSD.VBRKN LITHOLOGY AS ABOVE, WORM BURROWS
88	81.61	82.01	0.40			ROCK LOSS	

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 13

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85004

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
88	82.01	82.61	0.60			SILTSTONE	CLYY.DK.GY.LAM.SSD.VBRKN AS ABOVE.
89	82.61	82.83	0.22			MUDSTONE	SLTY.DK.GY.LAM.VBRKN
* 90	82.83	83.87	1.04			MUDSTONE	SLTY.DK.GY.LAM.VBRKN CORE TWIST OFF AT TOP, OCCASIONAL PLANT FOSSILS.
89	83.87	83.99	0.12			ROCK LOSS	
88	83.99	84.38	0.39			MUDSTONE	SLTY.DK.GY.LAM.VBRKN
87	84.38	85.05	0.67			MUDSTONE	SLTY.DK.GY.THNB.VBRKN SILTIER TOWARDS BASE
85	85.05	87.04	1.99			ROCK LOSS	
* 82	87.04	87.79	0.75			SILTSTONE	SSY.M.GY.LAM.SSD.VBRKN LAMINAE GRADING FROM SILTY MUDSTONE TO FINE GRAINED SANDSTONE. XBDG, GRADED BE DDING, GRADING TO FINE GRAINED SANDSTON E AT BASE.

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 14

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85004

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 85	87.79	89.57	1.78			SANDSTONE	SLTY.VFG.VPR.LT-M.GY.LAM.BIOTR.BRKN FINE HAIRLIKE WISPY ORGANIC LAMINAE, DI SSEMINATED PLANT HASH, BIOTRB WITH WRMB UR NEAR TOP, OCCASIONAL FINE SILTY LAMI NAE.
84	89.57	90.09	0.52			ROCK LOSS	
83	90.09	90.30	0.21			SANDSTONE	SLTY.VFG.VPR.LT-M.GY.LAM.BRKN LITHOLOGY AS ABOVE, OCCASIONAL QUARTZ V EINING PERPENDICULAR TO BEDDING. GRADED BEDDING.
* 82	90.30	92.42	2.12			SILTSTONE	LT-DK.GY.LAM.XBDG.BRKN WORM BURROWS, SSD, VERY FINELY LAMINATE D, SILTSTONES GRADING FROM BLACK SILTY MUDDY LAMINAE TO VERY FINE GRAINED SAND STONE AT TOP. WRMBURS AND XBDG, INDICAT E TOPS UP. LESS SANDY NEAR BASE. OCCASI ONAL FINE WISPY COALY STRINGERS.
81	92.42	93.05	0.63			SILTSTONE	CLYY.DK.GY.LAM.BRKN VERY FAINT BEDDING

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 15

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85004

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 80	93.05	94.44	1.39			SILTSTONE	CLYY.DK.GY.LAM.XBDG.BRKN WORM BURROWS, SSD, LOCAL PLANT HASH. VE RY FINELY LAMINATED MUDDY TO COARSER SI LTSTONES.
* 90	94.44	95.98	1.54			MUDSTONE	CARB.BLK.THNB.VBRKN VERY UNIFORM. PLANT FOSSIL(FERNS?) AND PLANT HASH ON BEDDING PLANES.
86	95.98	96.02	0.04			ROCK LOSS	
86	96.02	96.19	0.17			MUDSTONE	CARB.BLK.THNB.BRKN LITHOLOGY AS ABOVE
* 80	96.19	98.28	2.09			MUDSTONE	CARB.BLK.MAS.BRKN LITHOLOGY AS ABOVE, RARE FINE SILTY LAM INAE
81	98.28	98.95	0.67			MUDSTONE	CARB.BLK.MAS.BRKN NO LAMINAE. MASSIVE
81	98.95	100.24	1.29			MUDSTONE	CARB.BLK.MAS.BRKN LITHOLOGY AS ABOVE
82	100.24	101.65	1.41	07294		MUDSTONE	NEL.DK.GY.MAS.BRKN MINOR COAL STREAKS, PYRITE BAND AT BASE

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 16

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85004

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
82	101.65	101.67	0.02	07295	H	COAL	C-5.SLD
82	101.67	101.76	0.09	07295	H	COAL	C-3.SLD CLAY BANDS
82	101.76	102.13	0.37	07295	H	COAL	C-2.BRKN HARD AND BRIGHT
82	102.13	102.28	0.15	07295	H	COAL LOSS	
82	102.28	102.39	0.11	07295	H	COAL	C-3.SLD
83	102.39	102.66	0.27	07295	H	COAL	C-2.SLD
83	102.66	102.83	0.17	07296	H	MUDSTONE	CARB.M.BN.BRKN SILTY, SOFT IN PLACES
83	102.83	103.04	0.21	07296	H	ROCK LOSS	
83	103.04	103.25	0.21	07296	H	COAL LOSS	
83	103.25	103.31	0.06	07296	H	COAL	C-6.SLD
83	103.31	103.41	0.10	07296	H	COAL	C-3.SLD QUARTZ VEINING NORMAL TO BEDDING

* DENOTES MEASURED BCA

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86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 17

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85004

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
83	103.41	103.64	0.23	07296	H	COAL	C-4.BRKN FEW MUDSTONE BANDS, DAMP, SOFT AND WEAT HERED
83	103.64	103.84	0.20	07296	H	MUDSTONE	CARB.BLK.BRKN LOCALLY VERY CARBONACEOUS WITH SOME BRO WN BANDS
83	103.84	103.90	0.06	07297	H	COAL	C-4.SLD
83	103.90	104.20	0.30	07297	H	COAL	C-3.BRKN SOMEWHAT WEATHERED
84	104.20	104.73	0.53	07297	H	COAL	C-2.BRKN
84	104.73	104.81	0.08	07297	H	COAL	C-2.BRKN
84	104.81	105.00	0.19	07297	H	COAL	C-3.BRKN SOME MUDSTONE BANDS
84	105.00	105.09	0.09	07297	H	COAL	C-2.BRKN
84	105.09	105.15	0.06	07297	H	SILTSTONE	M.GY.SLD

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 18

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85004

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
84	105.15	105.28	0.13	07297	H	ROCK LOSS	
84	105.28	105.42	0.14	07297	H	COAL LOSS	
84	105.42	105.64	0.22	07297	H	COAL	C-1.BRKN SLIGHTLY WEATHERED.
84	105.64	105.70	0.06	07298		MUDSTONE	PYR.DK.GY.SLD CORE LOSS IN THIS ZONE
84	105.70	105.78	0.08	07298		MUDSTONE	CARB.VBRKN SOFT AND MUSHY
84	105.78	106.06	0.28	07298		MUDSTONE	CARB.DK.GY.SLD SILTY, SOME COALY STREAKS
84	106.06	106.19	0.13			MUDSTONE	CARB.DK.GY.SLD PYRITE BAND
85	106.19	106.71	0.52			MUDSTONE	CARB.DK.GY.BRKN FEW COALY STREAKS
* 85	106.71	108.18	1.47			MUDSTONE	CARB.BLK.THNB.VBRKN VERY CARBONACEOUS, COAL RICH, PYRITE BA NDS, SLICKENSIDES, C-5 COAL 720-810 MM.
83	108.18	108.58	0.40			MUDSTONE	CARB.BLK.MAS.VBRKN VERY CARBONACEOUS

* DENOTES MEASURED BCA

FORM 4001

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85004

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
82	108.58	109.07	0.49			MUDSTONE	CARB.BLK.MAS.BRKN VERY CARBONACEOUS
* 80	109.07	110.65	1.58			SILTSTONE	M-DK.GY.LAM.SSD.VBRKN FINELY LAMINATED SILTSTONES GRADING FRO M BLACK MUDSTONES TO FINE GRAINED SANDS TONE. WRMBURS. GRADATIONAL CONTACTS AT TOP AND BOTTOM.
80	110.65	110.83	0.18			ROCK LOSS	
* 80	110.83	111.23	0.40			SANDSTONE	SLTY.VFG.VPR.LT-M.GY.THNB.WRMBU VBRKN SILTY, PEBBLEY SANDSTONE, WITH OCCASION AL BLACK MUDSTONE LAMINAE. LAYER OF ROU NDED MUDSTONE PEBBLES 4-30 MM IN DIAMET ER, NEAR BASE.
81	111.23	112.50	1.27			SANDSTONE	SLTY.FG.VPR.M.GY.THNB.VBRKN OCCASIONAL MUDSTONE PEBBLES: ROUNDED, E LONGATED, 3-5 MM WIDE BY 5-35 MM LONG. CLEANER SANDSTONE NEAR BASE.

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85004

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
83	112.50	114.22	1.72			SANDSTONE	SLTY.FG.MOD.LT-M.GY.THNB.WRMBU VBRKN MUCH QUARTZ VEINING PERPENDICULAR TO BE DDING.NUMEROUS MUDSTONE PEBBLES NEAR TO P. OCCASIONAL SILTY MUDSTONE LAMINAE.
85	114.22	114.27	0.05			ROCK LOSS	
* 85	114.27	114.47	0.20			SANDSTONE	SLTY.FG.MOD.LT-M.GY.VTHNB.SLD OCCASIONAL MUDSTONE CLASTS 3MM WIDE BY 12MM LONG. OCCASIONAL QUARTZ VEIN PERPE NDICULAR TO BEDDING
85	114.47	114.95	0.48			SANDSTONE	PBLY.FG.MOD.M.GY.VTHNB.VBRKN FINE GRAINED SILTY SANDSTONE WITH OCCAS IONAL MUDDY LAMINAE. ROUNDED MUDSTONE C LASTS THROUGHOUT.
* 85	114.95	116.53	1.58			SILTSTONE	CLYY.DK.GY.LAM.WRMBU.BRKN MUDDY SILTSTONE WITH LIGHTER SLIGHTLY C OARSER LAMINAE. OVERALL, MORE MUDDY NEA R BASE. OCCASIONAL ANKERITE VEIN PARALL EL TO BEDDING. QUARTZ VEIN PERPENDICULA R TO BEDDING.

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 21

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85004

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
85	116.53	117.25	0.72			MUDSTONE	SLTY.DK.GY.MAS.BRKN CARBONACEOUS, SILTY MUDSTONE, BECOMING SILTIER TOWARDS THE BASE.
* 85	117.25	118.59	1.34			SILTSTONE	CARB.M.GY.LAM.WRMBU.BRKN FINELY LAMINATED SILTSTONE GRADING TO F INE GRAINED SANDSTONE NEAR BASE, XBDG.
* 85	118.59	120.19	1.60			SILTSTONE	M-DK.GY.LAM.WRMBU.BRKN AS ABOVE, GOOD PARTING PARALLEL SO(WIDE LY SPACED) ,SSD.
85	120.19	120.30	0.11			ROCK LOSS	
85	120.30	120.68	0.38			SILTSTONE	M-DK.GY.LAM.WRMBU.BRKN AS ABOVE, CORE TWIST OFF AT 0.00M, SSD.
* 85	120.68	122.68	2.00			MUDSTONE	CARB.DK.GY.MAS FAINT SILTY LAMINAE NEAR TOP. OVER ALL, MASSIVE. CARBONACEOUS AT BASE. BROKEN SHELL FRAGMENTS ON FRESH BROKEN SURFACE S (BIVALVES), CONCHOIDAL FRACTURES.
84	122.68	123.13	0.45			MUDSTONE	CARB.BLK.MAS.VBRKN VERY CARBONACEOUS MUDSTONE AS ABOVE. OC CASIONAL FAINT SILTY LAMINAE.

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 22

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85004

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
84	123.13	123.73	0.60			ROCK LOSS	
84	123.73	125.28	1.55			MUDSTONE	CARB.BLK.MAS.VBRKN AS ABOVE, SLICKENSIDES AND SHEARING PAR ALLEL TO CORE.
83	125.28	125.92	0.64			MUDSTONE	PYR.WHEL.M.GY.MAS.SLD PYRITE BLEBS AT BASE
83	125.92	125.97	0.05			MUDSTONE	CARB.DK.GY.SLD ANKERITE AND COAL VEINS.
83	125.97	126.02	0.05		THE PHANTOM	COAL	C-6.SLD PYRITE BANDS, BRIGHT COAL AND ANKERITE
83	126.02	126.12	0.10		THE PHANTOM	COAL	C-5.BRKN DAMP AND WEATHERED
83	126.12	126.20	0.08		THE PHANTOM	COAL	C-3.SLD
83	126.20	126.32	0.12			MUDSTONE	CARB.SLD THIN ANKERITE LINING OF CARBONACEOUS PL ANT FRAGMENTS.
82	126.32	127.27	0.95			MUDSTONE	SLTY.M.GY.SLD BECOMING LESS CARBONACEOUS UPWARDS. FEW SILT BANDS.

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 23

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85004

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
82	127.27	129.41	2.14			MUDSTONE	CARB.BLK.THNB.SSD.BRKN FLAME STRUCTURES, LOADING INDICATE TOPS UP. FAINT SILTY LAMINAE, GRADING NEAR BASE TO FINE GRAINED SANDSTONE. PLANT H ASH ON FRACTURED SURFACES.
81	129.41	129.62	0.21			SANDSTONE	PBLY.FG.VPR.LT.GY.THNB.BRKN SUBROUNDED MUDSTONE , SILTSTONE, CHERT, AND QUARTZ PEBBLES, IN FINE GRAINED SA NDSTONE MATRIX. CLASTS 3-15 MM IN DIAME TER.
81	129.62	129.82	0.20			ROCK LOSS	
81	129.82	131.54	1.72			SANDSTONE	PBLY.FG.VPR.LT.GY.THNB.VBRKN PEBBLEY SANDSTONE AS ABOVE GRADING TO D ENSER MATRIX SUPPORTED POLYMICTIC CONGL OMERATE. FROM 500- 890 MM. SOFT YELLOW FILLING BETWEEN PEBBLES IN CONGLOMERATE . CLASTS 3-25 MM IN DIAMETER GRADES TO WELL SORTED FINE GRAINED SANDSTONE AT B ASE.

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 24

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85004

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 80	131.54	132.12	0.58			SANDSTONE	PBLY.FG.WEL.LT.GY.MAS.BRKN OCCASIONAL FINE COALY STRINGERS THROUGH OUT CORE (.5 MM WIDE). ROUNDED MUDSTONE , CHERT, SILTSTONE PEBBLES 3-20 MM IN S IZE THROUGHOUT. OCCASIONAL QUARTZ VEINS .
80	132.12	132.26	0.14			ROCK LOSS	
80	132.26	132.74	0.48			SANDSTONE	PBLY.FG.WEL.LT.GY.MAS.BRKN AS ABOVE. OCCASIONAL COAL CLASTS ON SLI CKENSIDE SURFACES.
80	132.74	134.42	1.68			SANDSTONE	PBLY.FG.WEL.LT.GY.MAS.VBRKN AS ABOVE. FAINT YELLOW STAIN ON SOME FR ACTURE SURFACES.
80	134.42	135.31	0.89			ROCK LOSS	
80	135.31	135.46	0.15			SANDSTONE	PBLY.FG.WEL.LT.GY.MAS.SLD AS ABOVE

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 25

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85004

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 80	135.46	137.44	1.98			SANDSTONE	PBLY.FG.WEL.LT.GY.THNB.BRKN WIDE(100 MM) BANDS OF CONGLOMERATE, THROUGHOUT FINE GRAINED SANDSTONE. CLAST SUPPORTED, SUBROUNDED-ROUNDED POLYMICTIC: QUARTZ, CHERT, MUDSTONE, SILTSTONE. NO YELLOW CREAMY FILLING AS IN ABOVE CONGLOMERATE. OCCASIONAL QUARTZ VEIN PARALLEL TO CORE.
80	137.44	138.27	0.83			SANDSTONE	PBLY.FG.WEL.LT.GY.THNB.VBRKN ALTERNATING WIDE PEBBLEY SANDSTONE AND CONGLOMERATE BANDS AS ABOVE.
* 80	138.27	139.09	0.82			SANDSTONE	PBLY.FG.WEL.LT.GY.THNB.VBRKN AS ABOVE
81	139.09	141.18	2.09			CONGLOMERATE	LT.GY.MAS.BRKN PREDOMINANTLY MATRIX SUPPORTED CONGLOMERATE. SUBROUNDED PEBBLES 2-20 MM IN DIAMETER. FINE GRAINED,WELL SORTED SANDSTONE MATRIX. POLYMICTIC. OCCASIONAL 50-100MM WIDE SANDSTONE BANDS THROUGHOUT CORE. UNIFORM CONGLOMERATE.
82	141.18	141.29	0.11			SANDSTONE	PBLY.FG.MOD.LT-M.GY.MAS.SLD AS ABOVE: SAND RICH BAND. OCCASIONAL MUDSTONE CLASTS.

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 26

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85004

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
83	141.29	143.06	1.77			SANDSTONE	PBLY.FG.MOD.LT-M.GY.THNB.BRKN INTERBEDDED CONGLOMERATE AND PEBBLEY SANDSTONE, CONGLOMERATE BANDS ARE PREDOMINANTLY MATRIX SUPPORTED, AS ABOVE, POLMICTIC, SUBROUNDED CLASTS. FAINT FE STAINING ON SOME FRACTURE SURFACES.
84	143.06	144.23	1.17			SANDSTONE	PBLY.FG.MOD.LT-M.GY.THNB.BRKN INTERLAYERED AS ABOVE. MATRIX GRAINSIZE DECREASES NEAR BASE.
85	144.23	144.64	0.41			ROCK LOSS	
* 85	144.64	144.83	0.19			SILTSTONE	CLYY.DK.GY.LAM FINELY LAMINATED MUDDY SILTSTONE.
84	144.83	145.22	0.39			SILTSTONE	CLYY.DK.GY.LAM.VBRKN FINELY LAMINATED MUDDY SILTSTONE AS ABOVE. COAL RICH LAMINAE 5MM WIDE AT 100MM GRADES TO VERY FINE GRAINED SILTY SANDSTONE NEAR BASE WITH OCCASIONAL MUDSTONE CLASTS 15MM LONG BY 8MM WIDE. CORE TWIST OFF AT BASE.

* DENOTES MEASURED BCA

FORM 4001

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85004

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
82	145.22	145.90	0.68			ROCK LOSS	
* 80	145.90	146.60	0.70			SANDSTONE	SLTY.VFG.MOD.M.GY.MAS.VBRKN UNIFORM. BAND OF ELONGATED MUDSTONE CLA STS (310-380 MM). GRADES TO FINE GRAINE D SANDSTONE NEAR BASE.
83	146.60	146.78	0.18			SANDSTONE	SLTY.FG.MOD.M.GY.MAS.BRKN VERY UNIFORM.
85	146.78	147.42	0.64			ROCK LOSS	
* 90	147.42	148.49	1.07			SANDSTONE	SLTY.FG.MOD.M.GY.THNB.VBRKN BANDED SILTSTONE RIP-UP CLASTS AT 10 MM . VERY FAINTLY BANDED. OCCASIONAL QUART Z VEIN PERPENDICULAR TO BEDDING.
88	148.49	148.94	0.45			ROCK LOSS	

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85004

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
87	148.94	149.09	0.15			SANDSTONE	SLTY.FG.MOD.M.GY.MAS.VBRKN AS ABOVE. ONE LARGE CONGLOMERATE CHUNK (FALLEN FROM ABOVE).
84	149.09	151.09	2.00			SANDSTONE	FG.WEL.LT.GY.MAS.BRKN VERY UNIFORM. OCCASIONAL QUARTZ BAND PA RALLEL TO CORE.
81	151.09	151.13	0.04			SANDSTONE	FG.WEL.LT.GY.MAS.BRKN AS ABOVE. SHARP BOTTOM CONTACT.
* 80	151.13	152.15	1.02			SILTSTONE	CLYY.DK.GY.LAM.BRKN VERY FINELY LAMINATED MUDDY SILTSTONE.
* 80	152.15	153.72	1.57			SILTSTONE	CARB.DK.GY.LAM.XBDG.VBRKN FINELY LAMINATED PLANT HASH ON BEDDING PLANES.
82	153.72	153.92	0.20			SILTSTONE	CARB.DK.GY.LAM.XBDG.SLD AS ABOVE. CLAYEY.
* 85	153.92	155.92	2.00			SILTSTONE	CARB.DK.GY.LAM.XBDG.BRKN AS ABOVE.
* 90	155.92	156.71	0.79			SILTSTONE	CARB.DK.GY.VTHNB.VBRKN BEDDING VERY FAINT. MUCHMORE CLAYEY THA N ABOVE. MUCH FINER OVERALL GRAINSIZE.

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 29

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85004

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	156.71	157.85	1.14			MUDSTONE	CARB.BLK.VTHNB.VBRKN BEDDING VERY FAINT.
89	157.85	158.01	0.16			MUDSTONE	CARB.DK.GY.MAS.SLD AS ABOVE
88	158.01	158.17	0.16			SILTSTONE	CLYY.LT.GY.MAS.SLD SHARP UPPER AND LOWER CONTACTS. UNCONSO LIDATED CLAYSTONE AT BOTTOM CONTACT.
87	158.17	159.33	1.16			MUDSTONE	CARB.DK.GY.MAS.BRKN VERY UNIFORM. 10 MM BANDS AT 210 MM AND 1150MM.
85	159.33	159.76	0.43			MUDSTONE	CARB.BLK.VTHNB.VBRKN COAL BANDS C-1, 10MM WIDE ARE NUMEROUS. LIGHT GRE Y CLAYSTONE 40 MM TO 100 MM.
85	159.76	159.78	0.02			COAL	C-3.SLD
84	159.78	160.09	0.31			CLAYSTONE	FER.M.GY.BRKN GRADING FROM ABOVE, COAL-FOSSIL PLANT N EEDLES ONB EDDING.
84	160.09	160.32	0.23	07299		CLAYSTONE	CARB.BLK.BRKN COALY STREAKS.

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 30

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85004

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
84	160.32	160.34	0.02	07300	G	COAL	C-4.BRKN
83	160.34	160.40	0.06	07300	G	CLAYSTONE	CARB.BLK.SHRD VERY LISTIC.
83	160.40	160.43	0.03	07300	G	COAL	C-5.SLD
83	160.43	160.79	0.36	07300	G	COAL	C-1.BRKN ANKERITE IN CLEAT AT TOP
82	160.79	160.96	0.17	07300	G	COAL	C-4.BRKN
82	160.96	161.00	0.04	07300	G	COAL	C-2.VBRKN
82	161.00	161.19	0.19	07300	G	ROCK LOSS	
82	161.19	161.35	0.16	07300	G	CLAYSTONE	CARB.BRKN SMALL EUHEDRAL PYRITE CRYSTALS AND SPEC KLED PYRITE BAND AT BASE
81	161.35	161.46	0.11	07300	G	COAL	C-1.BRKN

* DENOTES MEASURED BCA

FORM 4001

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85004

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
81	161.46	161.49	0.03	07300	G	COAL	C-4.SLD BRIGHT BANDS
81	161.49	161.59	0.10	07300	G	COAL	C-1.BRKN INTENSIVE ANKERITE IN CLEAT
81	161.59	161.61	0.02	07300	G	CLAYSTONE	CARB.BLK.SLD
81	161.61	161.69	0.08	07300	G	COAL	C-1.BRKN ANKERITE VEINING
81	161.69	161.79	0.10	07301	G	CLAYSTONE	CARB.SLD
80	161.79	161.80	0.01	07301	G	COAL	C-1.SLD
80	161.80	161.90	0.10	07301	G	CLAYSTONE	CARB.SLD
80	161.90	162.02	0.12	07301	G	CLAYSTONE	CARB.BRKN AS ABOVE WITH LARGE QUARTZ VEIN.
80	162.02	162.37	0.35	07301	G	CLAYSTONE	CARB.DK.GY.BRKN COAL VEINS
79	162.37	162.39	0.02	07301	G	COAL	C-1.SLD

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85004

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
79	162.39	162.44	0.05	07301	G	CLAYSTONE	CARB.DK.GY.SLD
79	162.44	162.52	0.08	07302	G	COAL	C-2.BRKN VERY BRIGHT BANDS WITH SOME CLAYSTONE.
79	162.52	162.56	0.04	07302	G	CLAYSTONE	CARB.DK.GY
78	162.56	162.96	0.40	07302	G	COAL	C-2.BRKN
78	162.96	163.01	0.05	07302	G	COAL	C-6.BRKN
78	163.01	163.03	0.02	07302	G	COAL	C-1.SLD
78	163.03	163.04	0.01	07302	G	COAL	C-5.SLD
78	163.04	163.06	0.02	07302	G	COAL	C-1.SLD
78	163.06	163.07	0.01	07302	G	COAL	C-5.SLD
78	163.07	163.13	0.06	07302	G	COAL	C-3.SLD

* DENOTES MEASURED BCA

FORM 4001

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PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85004

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
78	163.13	163.16	0.03	07302	G	COAL	C-6.SLD
77	163.16	163.21	0.05	07302	G	CLAYSTONE	CARB.DK.GY.MAS.SLD
77	163.21	163.27	0.06	07302	G	COAL	C-3.SLD BRIGHT AND DULL
77	163.27	163.36	0.09	07302	G	CLAYSTONE	CARB.SLD MATTED LENTICULAR CLAYSTONE BODIES.
77	163.36	163.52	0.16	07302	G	COAL	C-4.SLD BANDED
77	163.52	163.54	0.02	07302	G	COAL	C-1.SLD ANKERITE IN CLEAT
77	163.54	163.60	0.06	07302	G	COAL	C-4.SLD
76	163.60	163.78	0.18	07302	G	COAL	C-5.SLD BRIGHT BANDS-INTENSIVE VERTICAL ANKERIT E BANDING.
76	163.78	163.95	0.17	07303	G	CLAYSTONE	CARB.DK.GY.BRKN COAL AND ANKERITE VEINS.

* DENOTES MEASURED BCA

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PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85004

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
76	163.95	163.96	0.01	07303	G	COAL	C-1.SLD
76	163.96	164.15	0.19	07303	G	CLAYSTONE	CARB.M.GY.BRKN
75	164.15	164.17	0.02	07303	G	COAL	C-2.SLD ANKERITE VEINS.
75	164.17	164.22	0.05	07303	G	CLAYSTONE	CARB.DK.GY.BRKN
75	164.22	164.29	0.07	07303	G	COAL	C-3.SLD
75	164.29	164.33	0.04	07303	G	CLAYSTONE	CARB.DK.GY.SLD
75	164.33	164.49	0.16	07303	G	CLAYSTONE	CARB.BLK.BRKN VERY COALY WITH BRIGHT BANDS.
75	164.49	164.56	0.07	07303	G	CLAYSTONE	CARB.DK.GY.VBRKN SOFT
74	164.56	164.79	0.23	07303	G	CLAYSTONE	CARB.BLK.SLD VERY COALY AS ABOVE
74	164.79	164.80	0.01	07303	G	COAL	C-2.BRKN

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 35

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85004

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
74	164.80	164.82	0.02	07303	G	CLAYSTONE	CARB.SLD VERY COALY
74	164.82	164.90	0.08	07303	G	COAL	C-5.SLD
74	164.90	164.94	0.04	07303	G	COAL	C-2.BRKN
74	164.94	165.05	0.11	07303	G	ROCK LOSS	
73	165.05	165.07	0.02	07303	G	CLAYSTONE	CARB.M.GY.BRKN
73	165.07	165.10	0.03	07303	G	COAL	C-3.SLD
73	165.10	165.18	0.08	07303	G	CLAYSTONE	CARB.SLD COALY ANKERITE VEINS ALONG BEDDING
73	165.18	165.21	0.03	07303	G	COAL	C-6.SLD
73	165.21	165.27	0.06	07303	G	COAL	C-4.SLD
73	165.27	165.35	0.08	07303	G	ROCK LOSS	

* DENOTES MEASURED BCA

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PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85004

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
72	165.35	165.75	0.40	07304		CLAYSTONE	CARB.BRKN COALY ANKERITE VEINS AS ABOVE.
* 70	165.75	167.63	1.88			MUDSTONE	CARB.BLK.VTHNB.BRKN NUMEROUS COAL STRINGERS. NUMEROUS PLANT FOSSILS (GINGKO?)
76	167.63	168.17	0.54			MUDSTONE	CARB.BLK.MAS.SLD AS ABOVE. PLANT HASH ON FRACTURE SURFACES.
* 80	168.17	169.54	1.37			MUDSTONE	CARB.BLK.MAS.SLD AS ABOVE. SLIGHTLY SILTIER AT BASE.
* 85	169.54	171.13	1.59			SILTSTONE	CARB.DK.GY.LAM.BRKN VERY FINELY LAMINATED CARBONACEOUS SILTSTONE.
87	171.13	171.20	0.07			ROCK LOSS	
88	171.20	171.47	0.27			SILTSTONE	CARB.DK.GY.LAM.WRMBU.SLD AS ABOVE, SILTY.
* 90	171.47	172.53	1.06			SILTSTONE	DK.GY.LAM.WRMBU VERY FINE LAMINATED CARBONACEOUS SILTSTONE AS ABOVE. WRMBURS AND SCOURS INDICATE TOPS UP. SSD. SHARP CONTACT WITH BOTTOM.

* DENOTES MEASURED BCA

FORM 4001

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85004

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 80	172.53	173.15	0.62			SANDSTONE	MG.PR.LT.GY.VTHNB.XBDG.SLD OCCASIONAL SILTY LAMINAE. BLACK MUDSTONE RIP-UP CLASTS 30 MM IN DIAMETER AT 80 MM. OCCASIONAL QUARTZ VEIN PARALLEL TO CORE.
86	173.15	173.34	0.19			ROCK LOSS	
* 90	173.34	173.59	0.25			SANDSTONE	FG.MOD.LT.GY.VTHNB.SLD OCCASIONAL SILTY LAYER. GRADED BEDDING. RAINED & COARSE GRAINED
88	173.59	174.77	1.18			SANDSTONE	VCG.MOD.LT.GY.THNB.NRMBU.SLD FINELY LAMINATED SILTSTONE BANDS 1-20MM THICK. GRADING TO FINE GRAINED SANDSTONE AT 430 MM.
86	174.77	174.86	0.09			ROCK LOSS	

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85004

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
84	174.86	175.74	0.88			SANDSTONE	FG.MOD.LT.GY.THNB.NRMBU.SLD AS ABOVE. FINELY LAMINATED SILTY BANDS. OCCASIONAL BANDS OF ELONGATED MUDSTONE CLASTS 3-10MM LONG BY 3MM WIDE. MORE LAMINAE TOWARDS BOTTOM. SSD, BIOTRB, AND ROOTLET BED.
* 80	175.74	177.81	2.07			SILTSTONE	CLYY.DK.GY.VTHNB.SLD VERY UNIFORM, FAINTLY LAMINATED CLAYEY SILTSTONE, ALTERNATING WITH FINE GRAINED SANDSTONE AT 0.0-260 MM. OCCASIONAL PYRITE BLEBS. CONCHOIDAL FRACTURE. ONE QUARTZ VEIN PARALLEL TO BEDDING.
81	177.81	177.91	0.10			ROCK LOSS	
81	177.91	178.65	0.74			SILTSTONE	CLYY.DK.GY.VTHNB.SLD AS ABOVE, GRADING BACK TO INTERLAYED SANDSTONE AND SILTSTONE AT THE BOTTOM.
82	178.65	179.88	1.23			SANDSTONE	FG.MOD.LT.GY.THNB.SLD SILTSTONE BANDS RARE NEAR BASE. SANDSTONE GRADING IN PLACES TO MEDIUM GRAINED SANDSTONE.

* DENOTES MEASURED BCA

FORM 4001

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PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85004

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
82	179.88	180.92	1.04			SANDSTONE	FG.MOD.LT.GY.MAS.SLD VERY FAINT BEDDING RARE SILTY LAMINAE.
83	180.92	181.95	1.03			SANDSTONE	SLTY.FG.PR.LT-M.GY.VTHNB.SLD INTERLAYERED SANDSTONE AND FINELY LAMIN ATED SILTSTONE.
84	181.95	183.97	2.02			SANDSTONE	SLTY.FG.PR.LT-M.GY.SLD AS ABOVE. GRAINSIZE GRADING FROM SILT T O ALMOST COURSE GRAINED SANDSTONE. OCCA SIONAL DARK ROUNDED SILTSTONE CLASTS 3- 30 MM LONG BY 3-10 MM WIDE. CYCLES OF G RADED BEDDING 50-150 MM WIDE.
* 85	183.97	186.11	2.14			SILTSTONE	SSY.LT-M.GY.LAM.HRMBU.SLD FINELY LAMINATED SANDY SILTSTONE. SILTS TONE LAMINAE NUMEROUS. PLANT HASH ON SI LTY BEDDING SURFACES. ONE CARBONACEOUS CLAY FILLED V-SHAPED FRACTURE (ALONG BI OTURBATED FEATURE) 410 MM FROM BASE.
87	186.11	186.98	0.87			SILTSTONE	SSY.M-DK.GY.LAM.HRMBU.SLD AS ABOVE. FINELY LAMINATED SANDY SILTST ONE. CORE TWIST OFF AT 870 MM. SSD.
88	186.98	188.20	1.22			SILTSTONE	DK.GY.LAM.HRMBU.SLD AS ABOVE. VERY FINELY LAMINATED, SSD.

* DENOTES MEASURED BCA

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PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85004

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	188.20	189.78	1.58			SILTSTONE	CLYY.DK.GY.LAM.HRMBU.SLD MORE CARBONACEOUS TOWARDS BASE. PLANT H ASH ON SOMECLAYEY BEDDING PLANES. OCCAS IONAL PYRITE BLEBS AND SSD.
89	189.78	190.04	0.26			ROCK LOSS	
89	190.04	190.52	0.48			MUDSTONE	SLTY.DK.GY.LAM.SLD VERY CLAYEY, OCCASIONAL SILTY LAMINAE.
88	190.52	192.61	2.09			MUDSTONE	CARB.BLK.MAS.SLD VERY UNIFORM. EXTREMELY FINE GRAINED. N O PLANT HASH. BIVALVES.
86	192.61	193.09	0.48			ROCK LOSS	
86	193.09	193.60	0.51			MUDSTONE	CARB.BLK.MAS.SLD AS ABOVE. BIVALVE SHELLS. SCATTERED ANG ULAR MEDIUM GRAINED SAND GRAINS NEAR 19 4.16 M MARKER.
* 85	193.60	195.04	1.44			SILTSTONE	CLYY.BLK.LAM.XBDG.SLD FINELY LAMINATED, ANGULAR MEDIUM-COURSE SAND GRAINS IN MUDSTONE TO .13M. ONE R OUNDED PYRITE BLEB 30MM BY 15MM. SSD AN D CARBONACEOUS.

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 41

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85004

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
85	195.04	196.34	1.30			SILTSTONE	CLYY.M-DK.GY.LAM.WRMBU.SLD FINELY LAMINATED CLAYEY SILTSTONE. RARE PYRITE, RICH BAND. PLANT HASH THROUGHOUT. SSD.
85	196.34	196.64	0.30			ROCK LOSS	
85	196.64	197.37	0.73			SILTSTONE	CLYY.M-DK.GY.LAM.WRMBU.BRKN AS ABOVE, SOFT SEDIMENT DEFORMATION
* 85	197.37	199.40	2.03			SILTSTONE	CLYY.M-DK.GY.LAM.SLD AS ABOVE. VERY UNIFORM.
87	199.40	199.52	0.12			SILTSTONE	CLYY.M-DK.GY.LAM.VBRKN AS ABOVE
87	199.52	199.56	0.04			ROCK LOSS	
88	199.56	200.93	1.37			MUDSTONE	CARB.DK.GY.LAM.WRMBU.VBRKN AS ABOVE, BUT MUCH MORE CLAY AND MORE CARBONACEOUS AND SILTY
* 90	200.93	202.46	1.53			MUDSTONE	SLTY.DK.GY.LAM.WRMBU.SLD AS ABOVE. XBDG SHOWS TOPS UP.
85	202.46	203.02	0.56			MUDSTONE	SLTY.DK.GY.LAM.SLD AS ABOVE.

* DENOTES MEASURED BCA

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PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85004

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 80	203.02	204.19	1.17	07305		CLAYSTONE	CARB.WEL.DK.GY.MAS.SLD COALY LAMINATION AT BASE.
80	204.19	204.22	0.03	07306	F	COAL	C-6.SLD ANKERITE IN CLEAT, SOME PYRITE
80	204.22	204.23	0.01	07306	F	CLAYSTONE	CARB.DK.GY.SLD
80	204.23	204.27	0.04	07306	F	COAL	C-3.SLD PYRITE BANDS
80	204.27	204.80	0.53	07306	F	COAL	C-2.BRKN
80	204.80	205.02	0.22	07306	F	COAL LOSS	
* 80	205.02	205.27	0.25	07307	F	CLAYSTONE	CARB.BLK.BRKN VERY COALY, LISTRIC SURFACES.
80	205.27	205.35	0.08	07307	F	CLAYSTONE	CARB
80	205.35	205.41	0.06	07307	F	CLAYSTONE	CARB.BLK.BRKN COALY, WITH ANKERITE VEINS.
80	205.41	205.44	0.03	07307	F	COAL	C-2.SLD

* DENOTES MEASURED BCA

FORM 4003

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85004

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
80	205.44	205.49	0.05	07307	F	CLAYSTONE	
80	205.49	205.50	0.01	07307	F	COAL	C-2.SLD BRIGHT WITH ANKERITE CLEAT.
80	205.50	205.57	0.07	07307	F	CLAYSTONE	CARB
80	205.57	205.58	0.01	07307	F	COAL	C-2.SLD
80	205.58	205.71	0.13	07307	F	COAL	C-6.BRKN
80	205.71	205.74	0.03	07307	F	COAL	C-3.BRKN
80	205.74	205.83	0.09	07307	F	COAL	C-6.BRKN
80	205.83	205.84	0.01	07307	F	COAL	C-2.BRKN
80	205.84	205.92	0.08	07307	F	COAL	C-6.SLD
80	205.92	205.96	0.04	07307	F	COAL	C-2.SLD

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85004

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
80	205.96	206.05	0.09	07307	F	CLAYSTONE	CARB.BLK.VBRKN LISTRIC SURFACES
80	206.05	206.10	0.05	07307	F	COAL	C-6.SLD
80	206.10	206.13	0.03	07307	F	COAL	C-1.SLD
80	206.13	206.17	0.04	07307	F	COAL	C-6.SLD
80	206.17	206.18	0.01	07307	F	COAL	C-1.SLD
80	206.18	206.44	0.26	07307	F	COAL	C-6.BRKN
80	206.44	206.46	0.02	07307	F	COAL	C-2.SLD ANKERITE VEINS IN CLEAT
80	206.46	206.48	0.02	07307	F	CLAYSTONE	CARB.SLD
80	206.48	206.49	0.01	07307	F	COAL	C-1.SLD ANKERITE IN CLEAT
80	206.49	206.57	0.08	07307	F	COAL	C-6.SLD

* DENOTES MEASURED BCA

FORM 4001

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85004

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
80	206.57	206.66	0.09	07308		CLAYSTONE	M.GY.SLD
80	206.66	207.13	0.47	07308		CLAYSTONE	CARB.BLK.BRKN BRIGHT COAL BANDS
80	207.13	207.19	0.06			CLAYSTONE	CARB.BLK.SLD NO COAL, SOFT & DAMP
* 80	207.19	207.33	0.14			CLAYSTONE	CARB.BLK.BRKN COALY VEINS
76	207.33	208.48	1.15			CLAYSTONE	DK.GY.BRKN FEW COALY VEINS
69	208.48	209.12	0.64			CLAYSTONE	SLTY.PR.M.GY.LAM.BRKN ANKERITE IN FRACTURES, LESS CARBONACEOU S DOWNWARDS. CROSS LAMINATIONS AT BOTTO M.
* 60	209.12	211.17	2.05			SANDSTONE	SLTY.VFG.VPR.M.GY.LAM.WRMBU.BRKN VERY FINELY LAMINATED SILTY SANDSTONES. INTENSIVELY BROKEN UP BY QUARTZ VEINS. GRAIN SIZE RANGES FROM MUDDY SILTSTONE TO FINE GRAINED SANDSTONE. SLICKENSIDE S.

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85004

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
60	211.17	211.48	0.31			SANDSTONE	SLTY.FG.PR.M.GY.LAM.BRKN AS ABOVE
60	211.48	212.47	0.99			ROCK LOSS	
* 60	212.47	214.07	1.60			SANDSTONE	SLTY.FG.PR.M.GY.LAM.WRMBU.VBRKN MUCH FEWER SILTY LAMINAE. PREDOMINANTLY VERY FINE TO FINE GRAINED SANDSTONE. O CCASIONAL QUARTZ VEINS PERPENDICULAR TO BEDDING.
* 50	214.07	215.35	1.28			SANDSTONE	SLTY.FG.MOD.LT-M.GY.LAM.BRKN PREDOMINANTLY MOD SORTED SANDSTONE WITH VERY FINE WISPY SILTY LAMINAE. OCCASIO NAL WIDER SILTSTONE BANDS, BUT ARE RARE TOWARDS BASE. OCCASIONAL QUARTZ VEINSA T VARIED ANGLES. SLICKENSIDES ON SOME F RACTURES.
* 45	215.35	216.03	0.68			SANDSTONE	SLTY.FG.MOD.LT-M.GY.LAM.WRMBU.BRKN AS ABOVE. OCCASIONAL QUARTZ VEINS.MENT DEFORMATION
* 55	216.03	217.83	1.80			SANDSTONE	SLTY.FG.MOD.LT-M.GY.LAM.WRMBU.VBRKN AS ABOVE. WIDER SILTSTONE BANDS MORE CO MMON.MANY QUARTZ VEINS NEAR-PARALLEL TO CORE

* DENOTES MEASURED BCA

FORM 4001

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85004

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
57	217.83	218.12	0.29			SANDSTONE	SLTY.VFG.VPR.LT.GY.LAM.VBRKN AS ABOVE, LAMINATED SILTY SANDSTONE. GRADES FROM MUDDY SILTSTONE TO FINE GRAINED SANDSTONE. MODERATE QUARTZ VEINING PERPENDICULAR TO BEDDING.
58	218.12	218.72	0.60			ROCK LOSS	
* 60	218.72	219.96	1.24			SANDSTONE	SLTY.VFG.VPR.LT.GY.LAM.VBRKN AS ABOVE
* 90	219.96	220.68	0.72			SANDSTONE	SLTY.VFG.VPR.LT-M.GY.LAM.WRMBU VBRKN AS ABOVE. VERY FINELY LAMINATED, BIOTRB, TOPS UP.
78	220.68	221.30	0.62			SANDSTONE	SLTY.VFG.VPR.M.GY.LAM.WRMBU SSD.XBDG, AND VERY FINELY LAMINATED AS ABOVE.
* 60	221.30	222.71	1.41			SILTSTONE	CLYY.M.GY.LAM.WRMBU.VBRKN SANDY LAMINATED SILTSTONE AT TOP GRADING TO VERY CLAYEY SILTSTONE DOWNWARD. SLICKENSIDES. BEDDING VERY FAINT NEAR BOTTOM. TOPS UP. GRADED BEDDING AND BIOTRB.

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85004

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
60	222.71	223.32	0.61			CLAYSTONE	MEL.M.GY.BRKN
* 60	223.32	223.62	0.30	07342		CLAYSTONE	CARB.BRKN ANKERITE VEINING AT TOP
57	223.62	223.68	0.06	07342		CLAYSTONE	CARB.DK.BN.SLD SOFT
56	223.68	223.75	0.07	07343	E	COAL	C-6.SLD ANKERITE VEINING. HEAVY
* 50	223.75	224.41	0.66	07343	E	COAL	C-2.BRKN WEATHERED
* 50	224.41	224.95	0.54	07343	E	COAL	C-2.BRKN AS ABOVE
50	224.95	225.00	0.05	07343	E	CLAYSTONE	CARB.VBRKN
50	225.00	225.55	0.55	07343	E	COAL	C-2.BRKN VERY SOFT AND WEATHERED

* DENOTES MEASURED BCA

LRM 4001

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PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85004

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 50	225.55	225.60	0.05	07343	E	COAL	C-4.BRKN
49	225.60	225.68	0.08	07343	E	COAL	C-2.SLD WEATHERED
48	225.68	225.77	0.09	07343	E	CLAYSTONE	CARB.BRKN SOFT
46	225.77	225.89	0.12	07343	E	ROCK LOSS	
43	225.89	226.19	0.30	07343	E	COAL LOSS	
39	226.19	226.49	0.30	07343	E	COAL	C-3.PWRD COAL VERY WEATHERED
* 35	226.49	226.75	0.26	07343	E	COAL	C-3.BLK.LAM.BRKN INTENSELY QUARTZ VEINED. OCCASIONAL PYR ITE-RICH BAND. BOTTOM CONTACT IS SHARP AT 35 DEGREES.
31	226.75	228.31	1.56			MUDSTONE	CARB.BLK.MAS.BRKN VERY FINE GRAINED AND UNIFORM. OCCASION AL PYRITE LAMINAE. FINE COAL STRINGERS 1MM BY 20 MM LONG THROUGHOUT. NUMEROUS SLICKENSIDES WITH OCCASIONAL QUARTZ VEI NS.

* DENOTES MEASURED BCA

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PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85004

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
26	228.31	229.05	0.74			MUDSTONE	CARB.BLK.MAS.VBRKN AS ABOVE
24	229.05	229.54	0.49			ROCK LOSS	
* 20	229.54	230.68	1.14			MUDSTONE	CARB.BLK.MAS.BRKN AS ABOVE. NUMEROUS WIDE QUARTZ VEINS AT 0.07M. COAL STRINGERS AS ABOVE ARE NUM EROUS. PYRITE BLEBS
* 30	230.68	231.41	0.73			CLAYSTONE	CARB.DK.GY.BRKN
* 01	231.41	231.92	0.51			CLAYSTONE	CARB.DK.GY.BRKN HEAVILY VEINED WITH QUARTZ AND BRIGHT C OAL, PYRITE AS ABOVE.
* 15	231.92	232.57	0.65			CLAYSTONE	CARB.DK.GY AS ABOVE
* 25	232.57	233.05	0.48			CLAYSTONE	CARB.M.GY.BRKN BRIGHT COAL VEINS, PYRITE AT BASE
18	233.05	233.15	0.10			COAL	C-2.VBRKN

* DENOTES MEASURED BCA

FORM 4001

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PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85004

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 01	233.15	234.43	1.28			CLAYSTONE	CARB.M.GY MINOR COAL AND ANKERITE VEINING. PYRITE BLEBS.
19	234.43	235.51	1.08			MUDSTONE	CARB.BLK.MAS.BRKN VERY UNIFORM. NUMEROUS WIDE QUARTZ VEIN S. COAL STINGERS RANGE IN THICKNESS FRO M 1-12MM.
28	235.51	235.61	0.10			ROCK LOSS	
* 35	235.61	236.37	0.76			MUDSTONE	CARB.BLK.MAS.VBRKN AS ABOVE. INTENSELY QUARTZ VEINED.
35	236.37	236.94	0.57			ROCK LOSS	
* 35	236.94	237.89	0.95	07345		CLAYSTONE	DK.GY.MAS.BRKN MINOR ANKERITE AND COAL VEINS
25	237.89	238.10	0.21	07346	E(REPEAT)	COAL	C-3.SLD SOFT AND WEATHERED
23	238.10	238.16	0.06	07346	E(REPEAT)	CLAYSTONE	CARB.BLK.BRKN SHEARED LISTRIC
22	238.16	238.23	0.07	07346	E(REPEAT)	COAL	C-2.BRKN WEATHERED

* DENOTES MEASURED BCA

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PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85004

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
20	238.23	238.33	0.10	07346	E(REPEAT)	COAL	C-2.BRKN
19	238.33	238.40	0.07	07346	E(REPEAT)	COAL LOSS	
17	238.40	238.50	0.10	07346	E(REPEAT)	ROCK LOSS	
16	238.50	238.54	0.04	07346	E(REPEAT)	CLAYSTONE	CARB.BLK.BRKN
13	238.54	238.79	0.25	07346	E(REPEAT)	COAL	C-2.BRKN STRUCTURAL DEFORMATION (ANGULAR UNCONFO RMITY IN COAL) QUARTZ VEINING
* 10	238.79	238.93	0.14	07346	E(REPEAT)	COAL	C-2.SLD
15	238.93	239.55	0.62	07346	E(REPEAT)	COAL LOSS	
19	239.55	239.64	0.09	07346	E(REPEAT)	COAL	C-6.BRKN
* 30	239.64	241.39	1.75	07347		CLAYSTONE	M.GY.BRKN VERY MINOR COAL LAMINATION

* DENOTES MEASURED BCA

ICRM 4001

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85004

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
30	241.39	241.57	0.18			COAL	C-3.BLK.BRKN CARBONACEOUS CLAY, WITH OCCASIONAL QUAR TZ VEIN.
* 30	241.57	243.22	1.65			MUDSTONE	CARB.BLK.MAS.BRKN VERY UNIFORM. SMALL COAL STRINGERS THRO UGHOUT, 1MMWIDE BY 10MM LONG. SLICKENSI DES COMMON.
25	243.22	243.94	0.72			MUDSTONE	CARB.BLK.MAS.SLD VERY UNIFORM
* 20	243.94	245.23	1.29			MUDSTONE	CARB.DK.GY.VTHNB.BRKN VERY FAINT BEDDING. SILTIER TOWARDS BAS E.
* 30	245.23	246.91	1.68			SILTSTONE	CLYY.DK.GY.LAM.WRMBU.VBRKN FINELY LAMINATED CLAYEY SILTSTONE. ONE QUARTZ VEIN PARALLEL TO BEDDING. TOPS D OWN, SSD.
* 20	246.91	247.07	0.16			SILTSTONE	CLYY.DK.GY.LAM.WRMBU.SLD AS ABOVE. SOFT SEDIMENT DEFORMATION, TO PS DOWN.
25	247.07	247.68	0.61			SILTSTONE	CLYY.M-DK.GY.LAM.BRKN AS ABOVE. NUMEROUS QUARTZ VEINS AT VARI ED ORIENTATIONS .

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85004

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
30	247.68	247.82	0.14			CLAYSTONE	CARB.DK.GY.BRKN VERY SOFT CLAYSTONE, VERY CARBONACEOUS, WITH QUARTZ VEINS
* 40	247.82	249.15	1.33			SILTSTONE	CLYY.M-DK.GY.LAM.WRMBU.BRKN VERY FINELY LAMINATED CLAYEY SILTSTONE, WITH GRAINSIZE SPORADICALLY GRADING TO FINE GRAINED SANDSTONE. QUARTZ VEINS I N VARIED ORIENTATIONS. WRMBURS, FLAME S TRUCTURES SHOW TOPS DOWN.
34	249.15	249.82	0.67			SILTSTONE	CLYY.M-DK.GY.LAM.BIOTR.BRKN AS ABOVE. INTENSELY QUARTZ VEINED. MOST ARE ABOUT PARALLEL TO BEDDING. VERY BR ECCIATED BY VEINING IN THE LAST 110MM
* 28	249.82	251.02	1.20			SILTSTONE	CLYY.M-DK.GY.LAM.WRMBU.BRKN AS ABOVE. VERY BRECCIATED BY INTENSE QU ARTZ VEINING AT .86 TO 1.10M. BIOTURBAT ED
28	251.02	252.77	1.75			SILTSTONE	CLYY.M-DK.GY.LAM.WRMBU.SLD AS ABOVE. VERY FINELY LAMINATED CLAYEY SILTSTON. SSD, FLAME STRUCTURE, AND WRM BR INDICATE TOPS DOWN.

* DENOTES MEASURED BCA
NEWPAGE

FORM 4001

GULF CANADA RESOURCES INC.

SEAM DETAIL — COAL DIVISION — MOUNT KLAPPAN PROJECT — **TRUE THICKNESS**

DATA SOURCE:	KPN LR DDH85004	SEAM : 1	INTERVAL(M) : 58.81 – 62.72	ELEVATION(M) :	1836.4
GEOLOGIST :	M BARKER	SCALE: -	DATE : DEC 19/85	DRAWING NO. :	

DRILL DEPTH (METRES)	INTERVAL (METRES) ROCK	INTERVAL (METRES) COAL	% REC.	SAMPLE ID SIMP	SAMPLE ID COMP	COAL/ROCK TOTAL COMPOS	MINING SECTION	RES MOIST	ASH	VM	FC	TS	CAL. VAL
58.81	0.21		100.0	7289									
59.02		0.18	50.4	7290	0	3.47 / 0.23 3.70		—	—	—	—	—	—
	[illegible]												
		0.40											
		(0.18)											
		0.56											
		(0.97)											
61.34	[illegible]		84.1	7291									
		[illegible]											
	[illegible]												
		0.21											
	[illegible]	[illegible]											
	[illegible]												
		(0.22)											
		0.60											
62.72													

GULF CANADA RESOURCES INC.

COAL DIVISION
MOUNT KLAPPAN PROJECT

SEAM DETAIL — **TRUE THICKNESS**

DATA SOURCE: KPN LR DDH85004	SEAM : H	INTERVAL(M) :	100.24 – 106.06	ELEVATION(M) :	1836.4
GEOLOGIST : M. BARKER	SCALE:	DATE :	DEC 19/85	DRAWING NO. :	

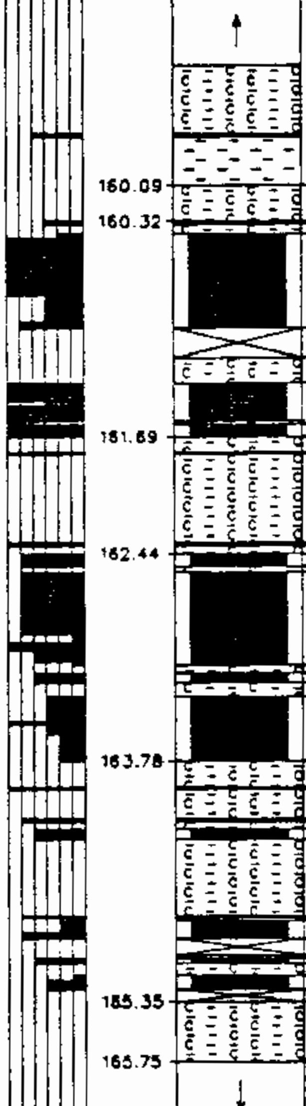
SEAM COMP.	DRILL DEPTH METRES	COAL SEAM LOG	INTERVAL METRES ROCK	INTERVAL METRES COAL	% REC.	SAMPLE ID SIMP	SAMPLE ID COMP	COAL/ROCK TOTAL COMPOS	COAL/ROCK TOTAL MINING SECTION	COAL QUALITY A.D.B. RES MOIST	ASH	VM	FC	TS	CAL.VAL MJ/KG	
	100.24		1.40		100.0	7284										
	101.65			0.48	85.1	7285	9	1.00 / 0.00 1.00		1.48	22.18	8.22	70.11	0.82	26.70	—
				([illegible])												
				0.38												
	102.66		0.17		84.5	7286	10	0.60 / 0.58 1.17		1.67	53.55	8.49	36.39	0.27	13.63	—
			(0.21)													
				(0.21)												
				0.39												
			0.20													
	103.84			1.24	85.0	7287	11	1.60 / 0.19 1.79		1.33	21.17	8.18	69.32	0.38	29.89	—
			[illegible]													
			(0.13)													
				(0.14)												
				0.22												
	105.64		[illegible]													
			0.36		100.0	7288										
	106.06															

GULF CANADA RESOURCES INC.

SEAM DETAIL — COAL DIVISION — MOUNT KLAPPAN PROJECT — **TRUE THICKNESS**

DATA SOURCE: KPN LR DDH85004 SEAM : G INTERVAL(M) : 160.09 – 165.75 ELEVATION(M) : 1836.4

GEOLOGIST : M. BARKER SCALE: DATE : DEC 19/85 DRAWING NO. :



SEAM COMP. 1 2 3 4 5 6	DRILL DEPTH METRES	COAL SEAM LOG	INTERVAL METRES ROCK	INTERVAL METRES COAL	% REC.	SAMPLE ID SIMP	SAMPLE ID COMP
	160.09		0.23		100.0	7299	
				[illegible]			
	160.32		[illegible]				
				0.60	84.2	7300	12
			(0.19)				
			0.16				
				0.24			
			[illegible]	[illegible]			
	161.69		0.14	[illegible]			
			0.56		100.0	7301	
			[illegible]	[illegible]			
	162.44		[illegible]	[illegible]			
				0.59	100.0	7302	
			[illegible]	[illegible]			
			[illegible]				
				0.41			
	163.78		0.17	[illegible]			
			0.18	[illegible]			
			[illegible]	[illegible]			
			0.48		88.8	7303	
			[illegible]	[illegible]			
				0.12			
			([illegible])	[illegible]			
			[illegible]				
				[illegible]			
	165.35		([illegible])				
			0.38		100.0	7304	
	165.75						

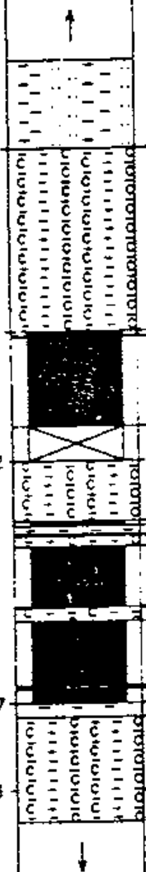
COAL/ROCK TOTAL COMPOS	MINING SECTION	COAL QUALITY A.D.B. RES MOIST	ASH	VM	FC	TS	CAL.VAL MJ/KG
2.43 / 2.46 4.82		2.10	51.88	6.07	39.87	0.47	14.30

GULF CANADA RESOURCES INC.
COAL DIVISION
MOUNT KLAPPAN PROJECT

SEAM DETAIL **TRUE THICKNESS**

DATA SOURCE: KPN LR DDH85004 SEAM : F INTERVAL(M) : 203.02 – 207.13 ELEVATION(M) : 1836.4

GEOLOGIST : M. BARKER SCALE: DATE : DEC 19/85 DRAWING NO. :



SEAM COMP.	DRILL DEPTH (METRES)	COAL SEAM LOG	INTERVAL (METRES) ROCK	COAL	% REC.	SAMPLE ID SIMP	COMP	COAL/ROCK TOTAL COMPOS	MINING SECTION	COAL QUALITY A.D.B. RES MOIST	ASH	VM	FC	TS	CALVAL (MJ/KG)
	203.02		1.15		100.0	7305									
	204.19			[illegible]											
				0.56	73.5	7306	13	1.73 / 0.82 2.35		2.89	42.15	5.87	46.09	1.07	18.09
				(0.22)											
	205.02		0.38												
			[illegible]	[illegible] [illegible]											
				0.39	100.0	7307									
			[illegible]												
				0.40											
			[illegible]	[illegible]											
	206.57		[illegible]												
			0.48		100.0	7308									
	207.13														

GULF CANADA RESOURCES INC.

COAL DIVISION
MOUNT KLAPPAN PROJECT

SEAM DETAIL

TRUE THICKNESS

DATA SOURCE: KPN LR DDH85004 SEAM : E INTERVAL(M) : 223.32 – 226.75 ELEVATION(M) : 1838.4

GEOLOGIST : M. BARKER SCALE: DATE : DEC 19/85 DRAWING NO. :

SEAM COMP.	DRILL DEPTH (METRES)	COAL SEAM LOG	INTERVAL (METRES) ROCK	INTERVAL (METRES) COAL	% REC.	SAMPLE ID SIMP	SAMPLE ID COMP	COAL/ROCK TOTAL COMPOS	COAL/ROCK TOTAL MINING SECTION	COAL QUALITY A.D.B. RES MOIST	ASH	VM	FC	TS	CAL.VAL MJ/KG
	223.32		0.31		100.0	7342									
	223.68			0.98	86.9	7343	14	2.04 / 0.19 2.23		1.00	13.78	6.68	78.58	0.46	29.56
			0.04												
				0.52											
			0.07												
			(0.08)												
				(0.21)											
				0.34											
	226.75														

GULF CANADA RESOURCES INC.

COAL DIVISION

MOUNT KLAPPAN PROJECT

SEAM DETAIL | **TRUE THICKNESS**

DATA SOURCE: KPN LR DDH85004 | SEAM : E (REPEAT) | INTERVAL(M) : 236.94 – 241.39 | ELEVATION(M) : 1838.4

GEOLOGIST : M. BARKER | SCALE: | DATE : DEC 19/85 | DRAWING NO. :

SEAM COMP. 1 2 3 4 5 6	DRILL DEPTH METRES	COAL SEAM LOG	INTERVAL (METRES) ROCK	INTERVAL (METRES) COAL	% REC.	SAMPLE ID SIMP	SAMPLE ID COMP	COAL/ROCK TOTAL COMPOS	COAL/ROCK TOTAL MINING SECTION	COAL QUALITY A.D.B. RES MOIST.	ASH	VM	FC	TS	CAL.VAL MJ/KG	
	236.94		0.35		100.0	7345										
	237.89		[illegible]	[illegible]	56.7	7346	15	0.44 / 0.06 0.50		1.07	28.92	6.17	63.84	0.45	23.82	—
	239.64		0.88		100.0	7347										
	241.39															

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Gulf Canada Resources Inc.
Coal Division
Geophysical Log

Datasource: KPNLRDDH85004	Province: BC	Northing: 6344200.00	Lat: 571434
Log Date: 85-03-19	Zone: 9	Easting: 505875.00	Long: 1285410
Company: CENTURY	Measuring Point:		Elevation: 1836.4
Geologist: M. BARKER			

Scale: 1 to 100.0

Depth Range: 0.0 to 255.0

True Thickness: NO

Comments:
1. LOGGED THROUGH THE RODS
2.

Logs Plotted:

Description	Axis Range	Axis Length	Smoothing Points	Tool	Comments
1. GAMMA API	0.0 to 150.0	10.0	31	9055A	IN PIPE
2. NEUTRON-NEUTRON CPS	0.0 to 2500.0	10.0	9	9055A	IN PIPE
3. DENSITY G/CC	1.0 to 3.0	10.0	15	9030A1	IN PIPE

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GULF CANADA RESOURCES INC.
COAL DIVISION
KLAPPAN PROJECT
STRATIGRAPHIC LOG
KPN LR DDH85004

GEOLOGIST : M. BARKER	DATE : JAN 08/86	DRAWING NO. :

SCALE : 1:200 1:40

NORTHING: 6344199.0 N INCLINATION: 89.0°
EASTING: 505875.0 E BEARING: 225.0°

LITHOLOGIC SYMBOLS

SANDSTONE		BENTONITE	
SILTSTONE		BRECCIA	
COAL		CARBONACEOUS	
OVERBURDEN		QUARTZ	
MUDSTONE,CLAYSTONE		PYRITE	
TUFF		FERRUGINOUS	
LIMESTONE		CONGLOMERATE	
CORE LOSS		FOSSIL BED	

KPNLRDDH85005

============================== GULF CANADA RESOURCES INC. ==========================

- D A T A S O U R C E S U M M A R Y -

DATA SOURCE - KPNLRDDH85005 DATE - 01/09/86

- H I S T O R Y -

START DATE - 03/18/85
END DATE - 03/23/85

CONTRACTOR - J.T. THOMAS
GEOLOGIST - E. LEGRESLEY

OPERATOR - GCRI
SURVEYOR - MWG & ASS.

REMARKS - SITE K, GEOPHYSICALLY LOGGED TO 333.40 METRES ONLY

- L O C A T I O N -

PROVINCE - BC
ELEVATION - 1758.00

LICENCE/LEASE NUMBER - 7151

ZONE - 9
NORTHING - 6344398.00
EASTING - 506691.69

LATITUDE - 571440
LONGITUDE - 1285321

- O R I E N T A T I O N -

LENGTH - 344.90

CORE SIZE - 0.0

INCLINATION - 80.0
AZIMUTH - 45.0

CEMENT -
PLUG -
PIEZ -

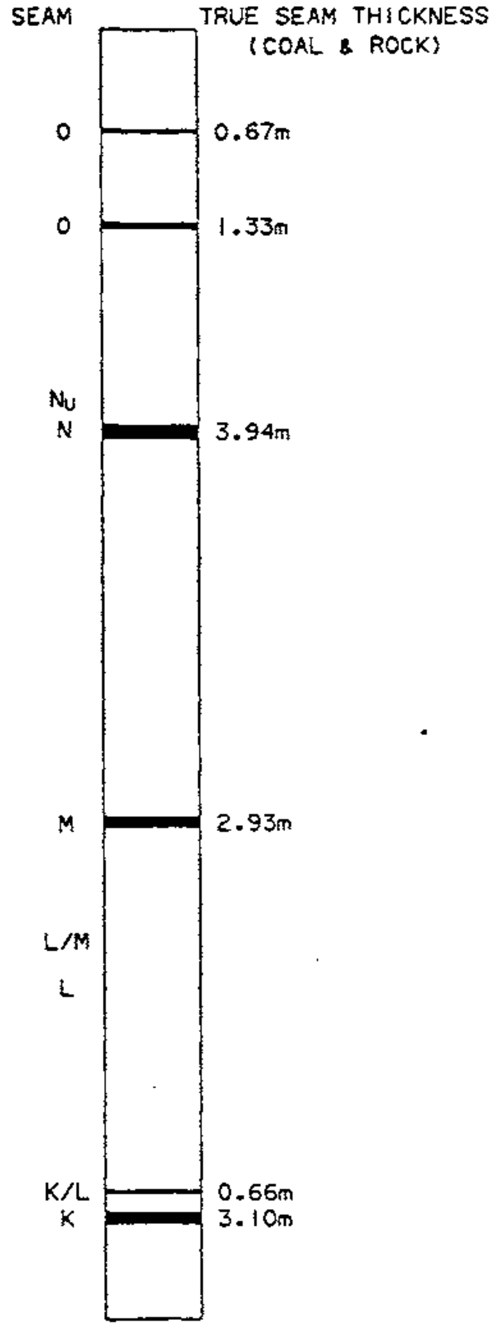
CASING DEPTH(M) - 6.09
AQUIFER DEPTHS(M) - 0.00
0.00
LOST CIRC. DEPTHS(M) - 0.00
0.00

*** NOTE *** 0 INDICATES NO VALUE

==

MT. KLAPPAN COAL PROPERTY

1985 DIAMOND DRILL HOLES
DDH85005



NOTE: SCHEMATIC PROFILE.
NO THICKNESSES SHOWN
FOR SEAMS CONTAINING
LESS THAN 50cm COAL.

SCALE: 1:2000	GULF CANADA RESOURCES INC. 15/01/86

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 1

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85005

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
31	0.00	5.74	5.74			OVERBURDEN	CASING TO 6.07 METRES
* 31	5.74	7.57	1.83			SANDSTONE	SLTY.FG.MOD.M.GY.MB.BIOTR.BRKN HEAVY FE STAINING, MUCH CALCITIC VEININ G, MINOR SILTSTONE BANDS, VEINS ROUGHLY NORMAL TO BEDDING. INCREASED SILT DOWN HOLE.
* 45	7.57	7.92	0.35			SANDSTONE	SLTY.FG.MOD.M.GY.LAM.BIOTR.SLD SILTIER THAN ABOVE, HEAVY BIOTRB.WRMBUR INDICATES TOPS DOWN,MINOR CALCITE VEIN ING, BEDDING IS HIGHLY CONTORTED, GRADE S INTO SILTSTONE BELOW.
39	7.92	9.57	1.65			SILTSTONE	SSY.PR.DK.GY.LAM.BIOTR.BRKN
* 30	9.57	10.69	1.12			SILTSTONE	MOD.DK.GY.LAM.BIOTR.BRKN MINOR TRACES OF VERY FINE GRAINED SAND
27	10.69	11.64	0.95			SILTSTONE	MOD.DK.GY.LAM.BIOTR.SLD AS ABOVE, FE STAINED
26	11.64	12.10	0.46			SILTSTONE	MOD.DK.GY.LAM.BIOTR.SLD AS ABOVE, GRADES RAPIDLY INTO SANDSTONE BELOW.

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 2

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85005

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 23	12.10	13.73	1.63			SANDSTONE	SLTY.FG.PR.M.GY.LAM.BIOTR.SLD TOPS DOWN, LOADING AND VERTICAL WRMBURS , CONTORTED BEDDING.
24	13.73	13.85	0.12			SANDSTONE	SLTY.FG.PR.M.GY.LAM.SLD GRADES RAPIDLY INTO SILTSTONE BELOW.
24	13.85	15.83	1.98			SILTSTONE	SSY.PR.DK.GY.BIOTR.SLD RARE CARBONACEOUS PLANT FRAGMENTS. BEDD ING NOT APPARENT. MINOR FE STAINING.
26	15.83	16.68	0.85			SILTSTONE	SSY.PR.DK.GY.BIOTR.SLD AS ABOVE
26	16.68	17.88	1.20			SILTSTONE	MOD.DK.GY.BIOTR.SLD SAND CONTENT DECREASING. BEDDING OBLITE RATED.
28	17.88	19.76	1.88			SILTSTONE	MOD.DK.GY.BIOTR.SLD AS ABOVE
28	19.76	19.91	0.15			SILTSTONE	MOD.DK.GY.BIOTR.SLD AS ABOVE
29	19.91	22.01	2.10			SILTSTONE	MOD.DK.GY.BIOTR.SLD AS ABOVE, HEAVY FE STAINING
30	22.01	22.68	0.67			SILTSTONE	MOD.DK.GY.BIOTR.SLD AS ABOVE

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 3

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85005

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
31	22.68	24.02	1.34			SILTSTONE	MOD.DK.GY.BIOTR.SLD AS ABOVE, MOLLUSK(?) & PLANT FOSSILS WI TH DISSEMINATED PYRITE NUCLEATED ON THE M.
* 32	24.02	25.31	1.29			SILTSTONE	MOD.DK.GY.LAM.BIOTR.SLD AS ABOVE, LONG GRADATION INTO CLAYSTONE BELOW. BCA IS ROUGH.
28	25.31	25.71	0.40			CLAYSTONE	CARB.PR.BLK.LAM.BRKN COAL STRINGERS BECOME MORE COMMON DOWNH OLE, FE STAINED
* 27	25.71	25.97	0.26			CLAYSTONE	CARB.PR.BLK.LAM.SLD AS ABOVE BUT WITH MANY MORE COAL STRING ERS BEDDING VARIES SLIGHTLY
* 25	25.97	26.65	0.68			CLAYSTONE	CARB.BLK.LAM.BRKN NUMEROUS COALY LAMINAE. SOME ANKERITE V EIN.
* 01	26.65	26.80	0.15	07540		CLAYSTONE	CARB.BLK.BRKN
* 40	26.80	26.90	0.10	07540		CLAYSTONE	CARB.BLK.BRKN COALY LAMINAE.

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 4

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85005

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 01	26.90	27.13	0.23	07541	O	OVERTURNED COAL	C-5.SLD FEW ANKERITE VEINS.
* 55	27.13	27.39	0.26	07541	O	OVERTURNED COAL	C-5.BRKN SOFT
50	27.39	27.42	0.03	07541	O	OVERTURNED COAL	C-2.BRKN
48	27.42	27.46	0.04	07541	O	OVERTURNED CLAYSTONE	CARB.BLK.SLD
* 40	27.46	27.86	0.40	07541	O	OVERTURNED COAL	C-3.BRKN WEATHERED, SOFT SAND.
* 01	27.86	28.11	0.25	07541	O	OVERTURNED COAL	C-2.BRKN HARD, DRY.
* 01	28.11	28.81	0.70	07541	O	OVERTURNED COAL	C-2.BRKN AS ABOVE
* 15	28.81	29.13	0.32	07541	O	OVERTURNED COAL	C-6.BRKN
* 01	29.13	29.93	0.80	07541	O	OVERTURNED COAL	C-3.BRKN
09	29.93	30.13	0.20	07541	O	OVERTURNED COAL	C-3.SLD AS ABOVE

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 5

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85005

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 20	30.13	31.24	1.11	07542	0 OVERTURNED	CLAYSTONE	CARB.DK.GY.BRKN GAPS IN SAMPLE.
22	31.24	31.35	0.11			CLAYSTONE	CARB.BLK.BRKN LISTRIC SURFACES
22	31.35	31.73	0.38			COAL	C-4.VBRKN BANDED WITH CLAYSTONE.
23	31.73	31.80	0.07			CLAYSTONE	CARB.BLK.VBRKN VERY COALY.
* 25	31.80	33.25	1.45			CLAYSTONE	CARB.PR.BLK.LAM.BRKN VERY CARBONACEOUS, COALY BANDS, MINOR C ALCITE VEIN, CONTAINS MINOR BNADS OF SO FT BENTONITIC MATERIAL 130 MM.
* 20	33.25	33.52	0.27			SILTSTONE	CLYY.PR.DK.GY.LAM.BIOTR.BRKN MUCH LESS CARBON THAN ABOVE SIMILAR "BE NTONITE" HORIZONS.
* 16	33.52	34.77	1.25			SILTSTONE	MOD.DK.GY.THNB.BIOTR.SLD
16	34.77	35.32	0.55			CLAY	SOFT CLAYEY PASTE, PARALLEL BEDDING AND CALCITE SIMILIAR TO MATERIAL SEEN ABOV E. COULD BE OROGENIC/DIAGENIC AND NOT D EPOSITIONAL.

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 6

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85005

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
17	35.32	35.68	0.36			CLAYSTONE	VWEL.DK.GY.BIOTR.BRKN WELL INDURATED, BEDDING NOT APPARENT
17	35.68	36.35	0.67			CLAYSTONE	WEL.DK.GY.BIOTR.SLD AS ABOVE
17	36.35	37.50	1.15			CLAYSTONE	WEL.DK.GY.BIOTR.SLD AS ABOVE, 20MM SOFT MATERIAL AS ABOVE.
18	37.50	39.29	1.79			CLAYSTONE	WEL.DK.GY.BIOTR.BRKN AS ABOVE
18	39.29	39.91	0.62			CLAYSTONE	MOD.DK.GY.BIOTR.BRKN AS ABOVE, SLIGHTLY SILTY.
19	39.91	41.32	1.41			CLAYSTONE	MOD.DK.GY.BIOTR.BRKN AS ABOVE, CUT BY LARGE CALCITE VEIN.
19	41.32	43.22	1.90			CLAYSTONE	MOD.DK.GY.BIOTR.BRKN AS ABOVE, NO OBSERVABLE BEDDING, MINOR LAMINATED CALCITE VEINS.
20	43.22	43.39	0.17			CLAYSTONE	MOD.DK.GY.BIOTR.SLD AS ABOVE GRADES INTO SILTSTONE BELOW.
* 20	43.39	44.91	1.52			SILTSTONE	CLYY.PR.M.GY.BIOTR.SLD MODERATE CALCITE VEINING.

* DENOTES MEASURED BCA

FORM 4001

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85005

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
24	44.91	45.18	0.27			CLAYSTONE	CARB.MOD.DK.GY.BIOTR.BRKN
26	45.18	46.30	1.12			CLAYSTONE	CARB.PR.DK.GY.BIOTR.BRKN SLIGHTLY SOFT AND CLAYEY IN PARTS.
* 30	46.30	47.05	0.75			CLAYSTONE	CLYY.PR.M.GY.LAM.BIOTR.SLD APPARENT CORE LOSS ABOVE THIS, BCA APPR OXIMATE. MODERATE CALCITE VEINING.
* 50	47.05	48.95	1.90			SILTSTONE	CLYY.PR.M.GY.LAM.BRKN UPRIGHT ON NUMEROUS GRADED BEDS, MINOR BIOTRB MINOR FE STAINING, YELLOW STAINI NG ON FRACTURE PLANES
52	48.95	49.32	0.37			SILTSTONE	CLYY.PR.DK.GY.LAM.SLD AS ABOVE
53	49.32	50.87	1.55			SILTSTONE	CLYY.PR.DK.GY.LAM.BRKN AS ABOVE BECOMING LESS CLAY RICH DOWNWA RDS.
* 55	50.87	51.13	0.26			SILTSTONE	SSY.MOD.M.GY.THKB.SLD DISSEMINATED PYRITE THROUGH SILT AT BAS E.
46	51.13	51.60	0.47	07314		SILTSTONE	CARB.DK.BN.BRKN

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85005

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
37	51.60	51.86	0.26	07315	0	COAL LOSS	
32	51.86	51.97	0.11	07315	0	COAL	C-6.VBRKN
* 30	51.97	52.04	0.07	07315	0	COAL	C-6.BRKN
44	52.04	52.22	0.18	07315	0	CLAYSTONE	CARB.VBRKN VERY LISTRIC.
56	52.22	52.25	0.03	07315	0	CLAYSTONE	CARB.DK.GN.SLD SOFT
62	52.25	52.33	0.08	07315	0	ROCK LOSS	
69	52.33	52.39	0.06	07316	0	COAL LOSS	
* 80	52.39	52.52	0.13	07316	0	COAL	C-6
76	52.52	52.67	0.15	07316	0	COAL	C-5.BRKN WEATHERED
69	52.67	53.02	0.35	07316	0	COAL	C-1

* DENOTES MEASURED BCA

RM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 9

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85005

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
61	53.02	53.19	0.17	07316	0	COAL	C-2.BRKN
* 58	53.19	53.25	0.06	07316	0	COAL	C-5
56	53.25	53.65	0.40	07317		CLAYSTONE	CARB.BLK.BRKN LISTRIC
53	53.65	54.19	0.54			CLAYSTONE	CARB.DK.GY.VBRKN UNRELIABLE MEASUREMENT
51	54.19	54.26	0.07			CLAYSTONE	CARB.VBRKN AS ABOVE
44	54.26	56.23	1.97			SILTSTONE	CLYY.PR.M.GY.BIOTR.SLD BEDDING NOT APPARENT
36	56.23	56.34	0.11			SILTSTONE	CLYY.PR.M.GY.BIOTR.SLD AS ABOVE GRADES TO CLAYSTONE WITH SOME APPARENT CORE LOSS.
* 30	56.34	58.00	1.66			CLAYSTONE	SLTY.PR.M.GY.LAM.BIOTR.BRKN VERY HIGHLY BROKEN, FISSILE, SLIGHTLY C ARBONACEOUS

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 10

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85005

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
30	58.00	58.07	0.07			CLAYSTONE	SLTY.PR.M.GY.LAM.BIOTR.BRKN VERY BROKEN, APPARENT CORE LOSS AS THER E IS NO APPARENT TRANSITION INTO THE SO LID SILTSTONE BELOW
* 30	58.07	59.98	1.91			SILTSTONE	CLYY.PR.M.GY.LAM.BIOTR.SLD SLIGHTLY CARBONACEOUS. FRACTURES ALONG BEDDING PLANE.
* 27	59.98	61.24	1.26			SILTSTONE	CLYY.MOD.M.GY.LAM.BIOTR.SLD SLIGHTLY CLEANER THAN SILTSTONE ABOVE.
37	61.24	61.88	0.64			SILTSTONE	CLYY.MOD.M.GY.LAM.BIOTR.SLD AS ABOVE MINOR CALCITE VEINS.
51	61.88	63.93	2.05			SILTSTONE	CLYY.MOD.M.GY.LAM.BIOTR.SLD MINOR CALCITE VEINING
* 70	63.93	65.64	1.71			SILTSTONE	MOD.M.GY.LAM.BIOTR.BRKN BEDDING HIGHLY CONTORTED AS ABOVE. TOPS UP. VERTICAL WORM BURROWS.
* 60	65.64	67.44	1.80			SILTSTONE	SSY.PR.M.GY.LAM.BIOTR.SLD SUBSTANTIAL VERY FINE GRAINED SAND COMP ONENT. TOPS UP, VERTICAL; WRMBURS. MINO R CALCITE VEINING.

* DENOTES MEASURED BCA

FORM 4001

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85005

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
66	67.44	67.51	0.07			SILTSTONE	CLYY.PR.DK.GY.BRKN
* 71	67.51	69.16	1.65			SILTSTONE	CLYY.PR.M.GY.LAM.BRKN COARSENS SLIGHTLY DOWNHOLE
70	69.16	70.21	1.05			SILTSTONE	SSY.PR.M.GY.LAM.BIOTR.BRKN TOPS UP. VERTICAL WRMBURS, GRADED BEDS.
* 70	70.21	70.92	0.71			SILTSTONE	SSY.PR.M.GY.LAM.BIOTR.SLD TOPS UP, ON GRADED BED.
60	70.92	72.91	1.99			SILTSTONE	MOD.M.GY.LAM.BIOTR.SLD LOWER SAND CONTENT THAN ABOVE
51	72.91	73.26	0.35			SILTSTONE	MOD.M.GY.LAM.BIOTR.SLD
* 44	73.26	74.83	1.57			SILTSTONE	MOD.M.GY.LAM.BIOTR.SLD SLIGHTLY SANDY
* 35	74.83	76.19	1.36			SILTSTONE	MOD.M.GY.BRKN FISSILE, AS ABOVE
37	76.19	76.63	0.44			SILTSTONE	MOD.M.GY.SLD AS ABOVE

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85005

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 40	76.63	78.45	1.82			SILTSTONE	CLYY.PR.M.GY.LAM.BRKN AS ABOVE, FISSILE
45	78.45	79.27	0.82			SILTSTONE	CLYY.PR.M.GY.LAM.BRKN AS ABOVE
47	79.27	79.57	0.30			ROCK LOSS	
48	79.57	80.15	0.58			SILTSTONE	CLYY.PR.M.GY.LAM.BRKN AS ABOVE GRADES INTO SOFT CLAY BELOW
50	80.15	80.58	0.43			CLAY	WH SOFT, (KAOLINITE/BENTONITE) NO STRUCTUR E, POROUS, CALCAREOUS CONTAINS A FEW OY STERS (WEATHERED SHELLS?)
51	80.58	80.80	0.22			CLAY	AS ABOVE, GRADES DOWN INTO SILTSTONE
52	80.80	80.90	0.10			ROCK LOSS	
* 55	80.90	82.56	1.66			SILTSTONE	CLYY.PR.M.GY.LAM.BRKN FISSILE, CARBONACEOUS IN PART
53	82.56	82.76	0.20			SILTSTONE	CLYY.PR.M.GY.LAM.BRKN AS ABOVE
52	82.76	82.96	0.20			ROCK LOSS	

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 13

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85005

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 50	82.96	84.54	1.58			SILTSTONE	CLYY.PR.M.GY.LAM.BRKN AS ABOVE
50	84.54	85.98	1.44			SILTSTONE	CLYY.PR.M.GY.LAM.BRKN AS ABOVE. LOCAL ZONES OF DISSEMINATED P YRITE.
* 50	85.98	86.58	0.60			SILTSTONE	CLYY.PR.M.GY.LAM.BRKN AS ABOVE
* 54	86.58	88.35	1.77			SILTSTONE	CLYY.PR.M.GY.LAM.BRKN AS ABOVE SLIGHTLY CARBONACEOUS
50	88.35	89.13	0.78			SILTSTONE	CLYY.PR.M.GY.LAM.BRKN AS ABOVE
49	89.13	89.23	0.10			ROCK LOSS	
* 47	89.23	90.37	1.14			SILTSTONE	CLYY.PR.M.GY.LAM.BRKN CARBONACEOUS IN PART MODERATE CALCITE V EINING.
40	90.37	92.30	1.93			SILTSTONE	CLYY.PR.M.GY.LAM.BRKN AS ABOVE. EXTENSIVE CALCITE VEINING
36	92.30	92.42	0.12			SILTSTONE	CLYY.PR.M.GY.LAM.BRKN AS ABOVE

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 14

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85005

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 32	92.42	94.06	1.64			SILTSTONE	CLYY.PR.M.GY.LAM.BRKN AS ABOVE FISSILE
* 40	94.06	95.55	1.49			SILTSTONE	CLYY.PR.M.GY.LAM.BRKN MORE CARBONACEOUS THAN ABOVE
43	95.55	95.80	0.25			SILTSTONE	CLYY.PR.M.GY.LAM.BRKN AS ABOVE, VERY HIGHLY BROKEN
47	95.80	97.40	1.60			SILTSTONE	CLYY.PR.M.GY.LAM.BRKN FISSILE, MINOR VEINING BCA'S FROM 30 TO 5
50	97.40	97.59	0.19			SILTSTONE	CLYY.PR.M.GY.LAM.SLD BRECCIATED, EXTENSIVELY VEINED, CORE LO SS ABOVE(?)
51	97.59	97.85	0.26			CLAYSTONE	CARB.DK.GY.BRKN SOFT
52	97.85	98.01	0.16			CLAYSTONE	M.GY.SLD VERY HEAVILY VEINED WITH ANKERITE OVER 60%
* 53	98.01	98.55	0.54	07318		CLAYSTONE	GY.BRKN ROCK SHEARED TOWARD BOTTOM FEW ANKERITE VEINS TOP AND BOTTOM

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 15

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85005

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
28	98.55	98.82	0.27	07319	N UPPER	COAL LOSS	
15	98.82	98.95	0.13	07319	N UPPER	COAL	C-5.VBRKN
* 01	98.95	99.28	0.33	07319	N UPPER	COAL	C-2.BRKN
01	99.28	99.51	0.23	07319	N UPPER	COAL	C-6.VBRKN
01	99.51	99.65	0.14	07319	N UPPER	COAL LOSS	
01	99.65	99.70	0.05	07320		CLAYSTONE	CARB.BLK.BRKN
* 01	99.70	99.76	0.06	07320		CLAYSTONE	CARB.BLK.BRKN LISTRIC SURFACE
* 65	99.76	99.90	0.14	07320		CLAYSTONE	CARB.BRKN SHEARED

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 16

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85005

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 01	99.90	101.32	1.42			CLAYSTONE	M.GY.MAS.BRKN
* 80	101.32	101.45	0.13			CLAYSTONE	VBRKN
* 32	101.45	103.42	1.97			SILTSTONE	CLYY.PR.M.GY.LAM.SLD AS ABOVE SILTSTONES
40	103.42	104.42	1.00			ROCK LOSS	
* 47	104.42	105.92	1.50			SILTSTONE	CLYY.PR.M.GY.LAM.SLD
* 30	105.92	106.13	0.21	07321		CLAYSTONE	M.GY.SLD
31	106.13	106.44	0.31	07322	N LOWER	COAL	C-6.BRKN TOTALLY SHEARED-EXTREMELY LISTRIC.
32	106.44	106.47	0.03	07322	N LOWER	CLAYSTONE	M.BN.SLD
33	106.47	106.83	0.36	07322	N LOWER	COAL	C-6.BRKN AS ABOVE
33	106.83	106.91	0.08	07322	N LOWER	CLAYSTONE	CARB.BLK.BRKN SLIGHTLY SOFT

* DENOTES MEASURED BCA

ICRM 4001

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85005

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
34	106.91	107.00	0.09	07322	N LOWER	CLAYSTONE	CARB.BLK.SLD PYRITE
35	107.00	107.42	0.42	07322	N LOWER	COAL	C-6.BRKN AS ABOVE, SCATTERED PYRITE BLEBS AND AN KERITE VEINS.
36	107.42	107.57	0.15	07322	N LOWER	COAL	C-6.BRKN
37	107.57	107.73	0.16	07322	N LOWER	CLAYSTONE	CARB.M.GY.SLD ANKERITE VEINS (DEFORMED),PYRITE AT BAS E IN BAND.
37	107.73	107.84	0.11	07322	N LOWER	COAL	C-5.BRKN
38	107.84	108.12	0.28	07322	N LOWER	COAL	C-6.VBRKN AS ABOVE TO PYRITE BANDS
39	108.12	108.28	0.16	07322	N LOWER	COAL	C-6.SHRD VERY LISTRIC.
39	108.28	108.35	0.07	07323	N LOWER	CLAYSTONE	CARB.BLK.BRKN

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85005

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 40	108.35	108.55	0.20	07323	N LOWER	CLAYSTONE	CARB.BLK.VBRKN AS ABOVE
41	108.55	108.64	0.09	07323	N LOWER	COAL	C-6.SLD
41	108.64	108.69	0.05	07323	N LOWER	CLAYSTONE	M.BN.SLD
41	108.69	108.84	0.15	07323	N LOWER	COAL	C-6.BRKN
42	108.84	108.91	0.07	07323	N LOWER	COAL LOSS	
43	108.91	109.45	0.54	07323	N LOWER	CLAYSTONE	CARB.BLK.SHRD SECTION O' HERE - MAY BE TOPS DOWN.
45	109.45	109.54	0.09	07323	N LOWER	COAL	C-6.BRKN
* 45	109.54	109.64	0.10	07323	N LOWER	CLAYSTONE	CARB.M.GY.SLD ANKERITE VEIN.
46	109.64	109.72	0.08	07323	N LOWER	COAL	C-6.SLD
47	109.72	110.00	0.28	07323	N LOWER	CLAYSTONE	CARB.BLK.BRKN

* DENOTES MEASURED BCA

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86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 19

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85005

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
49	110.00	110.13	0.13	07323	N LOWER	COAL	C-6.BRKN
51	110.13	110.71	0.58	07323	N LOWER	CLAYSTONE	CARB.BLK.SHRD
54	110.71	110.78	0.07	07324	N LOWER	COAL	C-6.BRKN
56	110.78	111.28	0.50	07324	N LOWER	COAL	C-3.BRKN
* 60	111.28	111.87	0.59	07324	N LOWER	COAL	C-6.BRKN BCA. MAY BE SHEARING AND NOT BEDDING
* 01	111.87	112.12	0.25	07325	N LOWER	CLAYSTONE	DK.BN.BRKN S-FOLD, CAUSED BY SEDIMENT DEFORMATION?
06	112.12	112.25	0.13		N LOWER	CLAYSTONE	CARB.DK.GY.BRKN ANKERITE VEINING.
08	112.25	112.28	0.03			COAL	C-3.BRKN
09	112.28	112.31	0.03			CLAYSTONE	CARB.M.GY.BRKN SOFT
11	112.31	112.42	0.11			CLAYSTONE	CARB.BLK.VBRKN VERY LISTRIC.

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 20

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85005

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
14	112.42	112.57	0.15			CLAYSTONE	CARB.DK.GY.BRKN LISTRIC
16	112.57	112.61	0.04			COAL	C-6.BRKN
20	112.61	112.86	0.25			CLAYSTONE	CARB.BLK.PHRD VERY SHEARED
27	112.86	113.16	0.30			CLAYSTONE	CARB.BLK.BRKN SOFT
32	113.16	113.23	0.07			CLAYSTONE	M.GY.BRKN
36	113.23	113.46	0.23			CLAYSTONE	CARB.BLK.PHRD VERY LISTRIC
* 40	113.46	113.55	0.09			CLAYSTONE	M.GY.SLD ANKERITE VEINS
40	113.55	113.75	0.20			CLAYSTONE	CARB.BLK.SHRD EXTREMELY LISTRIC
40	113.75	113.83	0.08			CLAYSTONE	CARB.DK.BN.BRKN SOFT
40	113.83	113.89	0.06			CLAYSTONE	CARB.BLK.SHRD

* DENOTES MEASURED BCA

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86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 21

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85005

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
41	113.89	114.70	0.81			CLAYSTONE	M.GY.BRKN SOFT S-FOLDS ON SMALL SCALE
41	114.70	115.42	0.72			CLAYSTONE	CARB.DK.GY.BRKN LISTRIC SURFACES
41	115.42	115.68	0.26			CLAYSTONE	CARB.M.GY.BRKN
42	115.68	115.79	0.11			SILTSTONE	CLYY.PR.M.GY.SLD MINOR VEINING, CORELOSS BELOW(?)
42	115.79	116.41	0.62			CLAYSTONE	CARB.PR.DK.GY.LAM.BRKN SOFT, HIGHLY VARIABLE BCA'S
42	116.41	117.66	1.25			CLAYSTONE	MIX OF THE TWO ABOVE LITHOLOGIES AS THE BCA VARIES+\-30 AROUND 0', HEAVILY VEI NED
44	117.66	119.58	1.92			CLAYSTONE	AS ABOVE, MOSTLY SILTSTONE, VERY HEAVIL Y QUARTZ VEINED, BRECCIATED IN PARTS.
44	119.58	119.64	0.06			SILTSTONE	CLYY.PR.M.GY.SLD

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 22

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85005

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 45	119.64	121.66	2.02			SILTSTONE	CLYY.PR.M.GY.LAM.BIOTR.BRKN BRECCIATED, MANY VARIABLE BCA'S(DOWN TO 0)
* 45	121.66	122.79	1.13			SILTSTONE	CLYY.PR.M.GY.LAM.BIOTR.BRKN AS ABOVE, SLIGHTLY CARBONACEOUS HEAVILY VEINED,TO PS UP, WRMBURS.
* 45	122.79	123.60	0.81			SILTSTONE	CLYY.PR.M.GY.LAM.BIOTR.SLD AS ABOVE
59	123.60	125.50	1.90			SILTSTONE	MOD.M.GY.LAM.BRKN TOTALLY BRECCIATED BY QUARTZ VEINS, BED DING WILDLYDISTORTED, BECOMES MORE CLAY RICH DOWN SECTION.
* 70	125.50	125.82	0.32			SILTSTONE	MOD.M.GY.LAM.BRKN
65	125.82	127.28	1.46			SILTSTONE	CLYY.PR.M.GY.LAM MINOR VEINING, BEDDING NOT OBTAINABLE, MORE CARBONACEOUS TOWARDS BASE
61	127.28	127.39	0.11			SILTSTONE	CLYY.MOD.M.GY AS ABOVE, GRADES TO CLAYSTONE.

* DENOTES MEASURED BCA

FORM 4001

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85005

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
60	127.39	127.70	0.31			CLAYSTONE	VWEL.DK.GY.LAM.BRKN SOFT, FRIABLE, SMASHED
55	127.70	129.23	1.53			CLAYSTONE	CARB.VWEL.DK.GY.LAM.BRKN AS ABOVE, CUT BY VERY LARGE QUARTZ VEIN S WHICH CUT PARLLLEL TO BEDS. VEINING A BSENT IN LOWER 800MM. INCREASING CARBON ACEOUS MATERIAL DOWNHOLE, GRADES TO SIL TSTONE BELOW.
* 45	129.23	131.25	2.02			SILTSTONE	CLYY.PR.M.GY.LAM.BIOTR.BRKN MODERATE QUARTZ VEINING,CARBONACEOUS IN PLACES. CARBONACEOUS HORIZONS SHOW SLI PPAGE HORIZONS.
* 46	131.25	132.12	0.87			SILTSTONE	CLYY.PR.M.GY.LAM.BRKN AS ABOVE, MINOR VEINING.
48	132.12	133.25	1.13			SILTSTONE	CLYY.PR.M.GY.LAM.BIOTR.BRKN MORE CLAY RICH THAN ABOVE, MINOR VEININ G
* 52	133.25	135.25	2.00			SILTSTONE	CLYY.PR.M.GY.LAM.BIOTR.BRKN AS ABOVE, GRADES TO CLAYSTONE FOR SMALL PATCHES, LARGE VEIN PARALLEL TO BEDDIN G, LOCALLY CARBONACEOUS
* 40	135.25	135.57	0.32			SILTSTONE	CLYY.PR.M.GY.LAM.BRKN AS ABOVE, VERY MINOR VEINING

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85005

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
47	135.57	137.10	1.53			SILTSTONE	CLYY.PR.M.GY.LAM.BRKN CARB IN PART WITH SLIPPAGE STRIATIONS
* 60	137.10	138.74	1.64			SILTSTONE	CLYY.PR.M.GY.LAM.BRKN MODERATE QUARTZ VEINING, STRIATED CARBO NACEOUS PLANES, (SLICKENSIDES?).
55	138.74	138.87	0.13			SILTSTONE	CLYY.PR.M.GY.LAM.SLD AS ABOVE
* 50	138.87	140.89	2.02			SILTSTONE	CLYY.PR.M.GY.LAM.BIOTR.BRKN AS ABOVE HIGHLY FRACTURED, CARBONACEOUS
* 20	140.89	141.86	0.97			SILTSTONE	CLYY.PR.M.GY.LAM.BRKN AS ABOVE
24	141.86	142.86	1.00			SILTSTONE	CLYY.PR.M.GY.LAM.BRKN EXTENSIVELY VEINED AS ABOVE
* 29	142.86	144.76	1.90			SILTSTONE	CLYY.PR.M.GY.LAM.BIOTR.BRKN SLIGHTLY CLEANER THAN ABOVE
38	144.76	144.88	0.12			SILTSTONE	CLYY.PR.M.GY.LAM.SLD AS ABOVE

* DENOTES MEASURED BCA

ORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 25

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85005

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 46	144.88	146.61	1.73			SILTSTONE	CLYY.PR.M.GY.LAM.BIOTR.BRKN AS ABOVE, TOPS DOWN.GRADED BED, MINOR V EINING
46	146.61	147.83	1.22			SILTSTONE	CLYY.PR.M.GY.LAM.BRKN VERY CLAY RICH HEAVY VEINING, MINOR SLI CKENSIDES, CARBONACEOUS IN PARTS.
46	147.83	148.46	0.63			SILTSTONE	CLYY.PR.M.GY.LAM.BRKN CARBONACEOUS, AS ABOVE, MINOR PLASTERED CALCITE
* 46	148.46	150.30	1.84			SILTSTONE	CLYY.PR.M.GY.LAM.BRKN HEAVILY VEINED, BRECCIATED IN PART, AMB IGUOUS TOPS MORE CLAY RICH TOWARDS BASE , SLIGHTLY CARBONACEOUS.
48	150.30	150.40	0.10			SILTSTONE	CLYY.PR.M.GY.LAM.BRKN AS ABOVE, CARBONACEOUS.
* 50	150.40	152.15	1.75			CLAYSTONE	SLTY.PR.M.GY.LAM.BRKN FISSILE, TOPS UP, GRADED BED, VEINING A BSENT
50	152.15	152.67	0.52			CLAYSTONE	SLTY.PR.M.GY.LAM.BRKN AS ABOVE
* 50	152.67	153.63	0.96			CLAYSTONE	SLTY.PR.M.GY.LAM.BRKN CARBONACEOUS,TOPS UP, GRADED BED.

* DENOTES MEASURED BCA

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PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85005

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
51	153.63	153.83	0.20			CLAYSTONE	SLTY.PR.M.GY.LAM.BRKN AS ABOVE
* 52	153.83	155.57	1.74			CLAYSTONE	SLTY.PR.M.GY.LAM.BRKN AS ABOVE, AMBIGUOUS TOPS, MINOR VEINING
54	155.57	156.18	0.61			CLAYSTONE	SLTY.PR.M.GY.LAM.BRKN AS ABOVE, TOPS UP, GRADED BED, RARE PLA NT FOSSILS.
* 56	156.18	157.49	1.31			CLAYSTONE	SLTY.PR.M.GY.LAM.BRKN AS ABOVE, MINOR VEINING
* 60	157.49	159.27	1.78			CLAYSTONE	SLTY.PR.M.GY.LAM.BRKN AS ABOVE
48	159.27	159.50	0.23			CLAYSTONE	SLTY.PR.M.GY.LAM.BRKN AS ABOVE
* 34	159.50	161.47	1.97			CLAYSTONE	SLTY.PR.M.GY.LAM.BRKN AS ABOVE, TOPS UP, GRADED BED, MINOR VE INING
* 44	161.47	162.21	0.74			CLAYSTONE	SLTY.PR.M.GY.LAM.BRKN AS ABOVE, BEDDING SLIGHTLY UNDULATORY
* 70	162.21	163.55	1.34			CLAYSTONE	SLTY.PR.M.GY.LAM.BRKN AS ABOVE, CUT BY SINGLE LARGE CALCITE V EIN PARALLEL TO BEDDING

* DENOTES MEASURED BCA

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PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85005

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
52	163.55	165.41	1.86			CLAYSTONE	SLTY.PR.M.GY.LAM.BRKN TOPS UP, GRADED BED
40	165.41	165.60	0.19			CLAYSTONE	SLTY.PR.M.GY.LAM.BRKN AS ABOVE
* 28	165.60	167.63	2.03			CLAYSTONE	SLTY.PR.M.GY.LAM.BIOTR.BRKN AS ABOVE, BCA'S VARY SOMEWHAT, TOPS UP, N GRADED BED, MINOR BIOTRB.
* 25	167.63	169.51	1.88			CLAYSTONE	SLTY.PR.M.GY.LAM.BIOTR.BRKN MODERATE VEINING, CONTAINS CARBONACEOUS ZONES WITH SLIPPAGE SURFACES AND A VEI N OF LINEATED TALC
* 50	169.51	170.46	0.95			CLAYSTONE	SLTY.PR.M.GY.LAM.BIOTR.BRKN AS ABOVE
41	170.46	171.46	1.00			CLAYSTONE	SLTY.PR.M.GY.LAM.BIOTR.BRKN CARBONACEOUS, MINOR VEINING, SLIPPAGE S URFACES ON CARBONACEOUS PLANES
30	171.46	172.69	1.23			CLAYSTONE	SLTY.PR.M.GY.LAM.BRKN AS ABOVE, MODERATE VEINING
24	172.69	172.76	0.07			COAL	BLK.BRKN VERY HIGHLY FRACTURED

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 28

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85005

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 20	172.76	173.46	0.70			CLAYSTONE	CARB.LAM.BRKN VARIABLE BCA'S VERY CARBONACEOUS, MODER ATE VEINING.
23	173.46	173.57	0.11			CLAYSTONE	SLTY.PR.M.GY.LAM.SLD AS ABOVE
32	173.57	175.45	1.88			CLAYSTONE	SLTY.PR.M.GY.LAM.BRKN AS ABOVE, MINOR VEINING, CARBONACEOUS, SILTIER THAN ABOVE.
41	175.45	175.69	0.24			CLAYSTONE	SLTY.PR.M.GY.LAM.BRKN AS ABOVE
43	175.69	175.88	0.19			COAL	C-2.BLK.BRKN MANY CALCITE VEINLETS
47	175.88	176.74	0.86			SILTSTONE	CLYY.PR.M.GY.LAM.BIOTR.BRKN CARBONACEOUS IN PARTS.
54	176.74	177.44	0.70			SILTSTONE	CLYY.PR.M.GY.LAM.BIOTR.BRKN AS ABOVE
* 60	177.44	178.18	0.74			SILTSTONE	CLYY.PR.M.GY.LAM.BIOTR.BRKN AS ABOVE
56	178.18	179.62	1.44			CLAYSTONE	CARB.MOD.DK.GY.LAM.BRKN COAL LENSES 10MM THICK, FOUND IN LOWER 200MM, FISSILE, SILTY.

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 29

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85005

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
53	179.62	180.04	0.42			CLAYSTONE	CARB.MOD.DK.GY.LAM.BRKN AS ABOVE
52	180.04	180.24	0.20			CLAYSTONE	CARB.MOD.DK.GY.LAM.BRKN AS ABOVE, BEDDING DISTORTED
* 50	180.24	181.49	1.25			CLAYSTONE	SLTY.PR.M.GY.LAM.BIOTR.BRKN MINOR VEINING, CARBONACEOUS SLIPPAGE SU RFACES
58	181.49	183.34	1.85			CLAYSTONE	SLTY.PR.M.GY.LAM.BIOTR.BRKN TOPS DOWN, VERTICAL WRMBUR.
63	183.34	183.56	0.22			CLAYSTONE	SLTY.PR.M.GY.LAM.BIOTR.BRKN AS ABOVE
* 69	183.56	185.66	2.10			CLAYSTONE	SLTY.PR.M.GY.LAM.BRKN AS ABOVE, TOPS UP, GRADED BED
71	185.66	186.45	0.79			CLAYSTONE	SLTY.PR.M.GY.LAM.BRKN AS ABOVE
* 72	186.45	187.76	1.31			CLAYSTONE	SLTY.PR.M.GY.LAM.BRKN MINOR CALCITE VEINING
* 80	187.76	189.79	2.03			CLAYSTONE	SLTY.PR.M.GY.LAM.SLD VERY SILTY

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 30

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85005

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 76	189.79	191.86	2.07			CLAYSTONE	SLTY.PR.M.GY.LAM.BRKN MINOR CALCITE VEINING TO BEDDING AS ABO VE, PARALLEL AND PERPENDICULAR
* 80	191.86	192.65	0.79			CLAYSTONE	SLTY.PR.M.GY.LAM.SLD AS ABOVE, SMALL CALCITE VEIN WITH VERY WELL DEVELOPED SLICKENSIDES.
77	192.65	193.88	1.23			CLAYSTONE	SLTY.PR.M.GY.LAM.SLD AS ABOVE, TOPS UP,XBDG, GRADES TO SILTS TONE BELOW.
* 73	193.88	195.86	1.98			SILTSTONE	CLYY.MOD.M.GY.LAM.XBDG.SLD VERY FINE LAMINATIONS, TOPS UP, XBDG, G RADED BED.
75	195.86	195.96	0.10			SILTSTONE	CLYY.MOD.M.GY.LAM.SLD AS ABOVE
77	195.96	197.68	1.72			SILTSTONE	CLYY.MOD.M.GY.LAM.XBDG.BRKN AS ABOVE, GRADES TO CLAYSTONE BELOW, TO PS UP, XBDG.
78	197.68	197.96	0.28			CLAYSTONE	SLTY.PR.DK.GY.LAM.BRKN VERY WELL DEVELOPED CARBONACEOUS SLIPPA GE SURFACESWITH EXCELLENT STEPS
79	197.96	198.50	0.54			CLAYSTONE	SLTY.PR.DK.GY.LAM.SLD AS ABOVE, GRADES TO SILTYSTONE.

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 31

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85005

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 80	198.50	198.95	0.45			SILTSTONE	CLYY.PR.M.GY.LAM.SLD
* 80	198.95	200.20	1.25			SILTSTONE	CLYY.MOD.M.GY.LAM.XBDG.BRKN AS ABOVE, TOPS UP, XBDG. SLIGHTLY CARBO - NACEOUS.
80	200.20	202.08	1.88			SILTSTONE	CLYY.MOD.M.GY.LAM.SLD AS ABOVE, MINOR VEINING PARALLEL TO BED DING.
80	202.08	202.27	0.19			SILTSTONE	CLYY.MOD.M.GY.LAM.SLD AS ABOVE
* 80	202.27	203.81	1.54			SILTSTONE	CLYY.MOD.M.GY.LAM.BRKN AS ABOVE, GRADES TO CLAYSTONE.
80	203.81	204.25	0.44			CLAYSTONE	SLTY.MOD.DK.GY.LAM.SLD VERY FINE LAMINATIONS
80	204.25	205.11	0.86			CLAYSTONE	SLTY.MOD.DK.GY.LAM.BRKN AS ABOVE
80	205.11	206.28	1.17			CLAYSTONE	SLTY.MOD.DK.GY.LAM.BRKN AS ABOVE, CARBONACEOUS PLANT FRAGMENTS ON BEDDING PLANE.
* 80	206.28	208.30	2.02			CLAYSTONE	SLTY.MOD.DK.GY.LAM.BRKN CARBONACEOUS, AS ABOVE

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 32

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85005

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
77	208.30	208.36	0.06			CLAYSTONE	SLTY.MOD.DK.GY.LAM.SLD AS ABOVE
74	208.36	210.42	2.06			CLAYSTONE	CARB.VHEL.DK.GY.LAM.SLD INCREASINGLY CARBONACEOUS DOWN SECTION. ABUNDANT PLANT FOSSILS, VERY THIN, 2-3 MM. COAL STRINGERS INLOWER 150 MM.
* 70	210.42	210.91	0.49	07327		CLAYSTONE	CARB.DK.GY.SLD COALY LAMINAE AND ANKERITE VEINS
69	210.91	211.01	0.10	07328	M	COAL	C-6.SLD ANKERITE IN CLEAT.
69	211.01	211.02	0.01	07328	M	COAL	C-6.SLD
69	211.02	211.05	0.03	07328	M	COAL	C-3.SLD ANKERITE IN CLEAT
69	211.05	211.09	0.04	07328	M	CLAYSTONE	CARB.DK.GY.BRKN NUMEROUS LISTRIC SURFACES
68	211.09	211.21	0.12	07328	M	COAL	C-5.VBRKN LISTRIC
68	211.21	211.24	0.03	07328	M	CLAYSTONE	CARB.BLK.BRKN COALY

* DENOTES MEASURED BCA

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PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85005

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
68	211.24	211.29	0.05	07328	M	COAL	C-4,BRKN
68	211.29	211.32	0.03	07328	M	COAL	C-5,SLD
67	211.32	211.63	0.31	07328	M	COAL	C-4,BRKN ANKERITE VEINS-LISTRIC
67	211.63	211.75	0.12	07328	M	COAL	C-5,VBRKN QUITE SHEARED
67	211.75	211.81	0.06	07328	M	CLAYSTONE	CARB,DK,BN,BRKN SLIGHTLY SOFT
66	211.81	211.96	0.15	07328	M	CLAYSTONE	CARB,BLK,SHRD VERY LISTRIC.
66	211.96	212.03	0.07	07328	M	COAL	C-4,PHRD
66	212.03	212.18	0.15	07328	M	COAL	C-3,VBRKN
65	212.18	212.25	0.07	07328	M	CLAYSTONE	CARB,BLK,SLD SLIGHTLY SOFT
65	212.25	212.30	0.05	07328	M	COAL	C-6,SLD PYRITE VEINING

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 34

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85005

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
65	212.30	212.41	0.11	07328	M	COAL	C-3,VBRKN
65	212.41	212.44	0.03	07328	M	COAL	C-5,BRKN
64	212.44	212.53	0.09	07328	M	CLAYSTONE	CARB,SLD
64	212.53	212.57	0.04	07328	M	COAL	C-4,VBRKN
64	212.57	212.60	0.03	07328	M	COAL	C-3,BRKN
64	212.60	212.69	0.09	07328	M	COAL	C-6,SLD
64	212.69	212.75	0.06	07328	M	CLAYSTONE	CARB,SLD
63	212.75	212.80	0.05	07328	M	COAL	C-6,SLD ANKERITE IN CLEAT
63	212.80	212.83	0.03	07328	M	CLAYSTONE	CARB,BLK,SLD
63	212.83	212.87	0.04	07328	M	COAL	C-5,SLD ANKERITE VEINING

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 35

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85005

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
63	212.87	212.96	0.09	07328	M	COAL	C-6.SLD VERY CLAYEY
63	212.96	213.03	0.07	07328	M	CLAYSTONE	CARB.M.GY
62	213.03	213.37	0.34	07328	M	ROCK LOSS	
61	213.37	213.58	0.21	07328	M	COAL	C-6.BRKN BRIGHT BANDS
61	213.58	213.69	0.11	07328	M	CLAYSTONE	CARB.BLK.SLD
60	213.69	213.74	0.05	07328	M	COAL	C-6.BRKN
60	213.74	213.77	0.03	07328	M	COAL	C-2.SLD ANKERITE IN CLEAT
60	213.77	213.85	0.08	07328	M	COAL	C-6.BRKN ANKERITE VEINS
60	213.85	213.86	0.01	07328	M	COAL	C-2.BRKN
* 60	213.86	213.88	0.02	07328	M	CLAYSTONE	CARB.BLK.SLD

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 36

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85005

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
60	213.88	213.91	0.03	07328	M	COAL	C-4.SLD
61	213.91	214.01	0.10	07328	M	CLAYSTONE	CARB.SLD
62	214.01	214.16	0.15	07328	M	COAL	C-5.SLD ANKERITE IN CLEAT
62	214.16	214.17	0.01	07328	M	COAL	C-2.SLD ANKERITE IN CLEAT
62	214.17	214.19	0.02	07329		CLAYSTONE	M.GY.SLD
62	214.19	214.24	0.05	07329		CLAYSTONE	CARB
63	214.24	214.32	0.08	07329		CLAYSTONE	M.GY
63	214.32	214.38	0.06	07329		CLAYSTONE	CARB.DK.GY.BRKN
64	214.38	214.42	0.04	07329		CLAYSTONE	DK.BN
65	214.42	214.58	0.16			CLAYSTONE	CARB.BLK.SLD NUMEROUS BRIGHT COAL BANDS

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 37

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85005

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
68	214.58	215.50	0.92			CLAYSTONE	SLTY.DK.GY.SLD LIGHTER AND COARSER DOWNWARD
73	215.50	215.76	0.26			CLAYSTONE	SLTY.M.GY.BRKN
75	215.76	216.18	0.42			SILTSTONE	CLYY.LT-M.GY.LAM.SLD WAVY LAMINAE, VAGUE X-LAMINAE.
80	216.18	217.01	0.83			CLAYSTONE	CARB.MOD.DK.GY.LAM.SLD CONTAINS FINE COAL STRINGERS IN UPPER P ORTION AND RAPIDLY GRADES TO SILTSTONE.
84	217.01	217.31	0.30			SILTSTONE	CLYY.PR.M.GY.LAM.BRKN
* 88	217.31	218.19	0.88			SILTSTONE	VWEL.M.GY.LAM.SLD ABUNDANT PLANT FOSSILS
88	218.19	220.33	2.14			SILTSTONE	SSY.PR.M.GY.LAM.SLD CONTAINS LENSES OF VERY FINE GRAINED SA ND AND COAL STRINGERS. TOPS DOWN, GRADE D BEDS.
88	220.33	220.38	0.05			SANDSTONE	SLTY.VFG.MOD.LT.GY.SLD

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 38

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85005

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 88	220.38	222.31	1.93			SANDSTONE	SLTY.VFG.PR.M.GY.THNB.XBDG.SLD SILTSTONE CONTENT DECREASES DOWN SECTIO N.VARIES FROM VERY FINE GRAINED TO FINE GRAINED. SILTSTONE RIP-UP CLASTS. CUT BY LARGE QUARTZ VEIN. GRADES TO SILTSTO NE BELOW. MINOR UNDULATIONS IN BEDDING, TOPS DOWN, CROSS-BEDDING.
* 80	222.31	222.40	0.09			SILTSTONE	SSY.PR.M.GY.LAM.SLD
80	222.40	222.57	0.17			SILTSTONE	SSY.PR.M.GY.LAM.SLD AS ABOVE
80	222.57	223.37	0.80			SANDSTONE	SLTY.FG.PR.LT.GY.MB.BRKN WITH SILTY BAND
* 80	223.37	224.38	1.01			SANDSTONE	MG.MOD.LT.GY.MB.BRKN VERY FRIABLE SALT AND PEPPER COLOR, SLI GHTLY SILTY BANDS.
74	224.38	226.35	1.97			SANDSTONE	MG.MOD.LT.GY.MAS.BRKN AS ABOVE, SALT AND PEPPER, SILTY BANDS, MINOR VEINING.

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 39

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85005

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
70	226.35	226.62	0.27			ROCK LOSS	
69	226.62	226.74	0.12			SANDSTONE	MG.MOD.LT.GY.MAS.BRKN AS ABOVE
* 65	226.74	228.64	1.90			SANDSTONE	MG.MOD.LT.GY.MAS.BRKN AS ABOVE, TOPS DOWN, GRADED BEDDING.,
77	228.64	229.24	0.60			SANDSTONE	MG.VWEL.LT.GY.MAS.BRKN MINOR SILT INCLUSIONS
* 86	229.24	230.67	1.43			SANDSTONE	MG.VWEL.LT.GY.MAS.SLD AS ABOVE
83	230.67	232.39	1.72			SANDSTONE	MG.MOD.LT.GY.MAS.BRKN AS ABOVE, SLIGHTLY SILTIER
82	232.39	232.73	0.34			SANDSTONE	SLTY.MG.MOD.LT.GY.MAS.BRKN AS ABOVE
* 80	232.73	234.74	2.01			SANDSTONE	SLTY.FG.PR.M.GY.MAS.BRKN AS ABOVE, SILT LAMINATIONS INCREASING D OWNHOLE, SILTSTONE LAMINATIONS ARE CARB ONACEOUS AND STRIATED.
75	234.74	235.17	0.43			SANDSTONE	SLTY.FG.PR.M.GY.MAS.BRKN AS ABOVE

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 40

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85005

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
74	235.17	235.37	0.20			ROCK LOSS	
73	235.37	235.90	0.53			SANDSTONE	SLTY.FG.PR.M.GY.MAS.BRKN AS ABOVE, SILTSTONE RIP- UP CLASTS, RAP ID TRANSITION TO SANDSTONE BELOW.
* 70	235.90	236.99	1.09			SANDSTONE	SLTY.VFG.PR.M.GY.LAM.BRKN SILTY LAMINATIONS ARE CARBONACEOUS. SIL TSTONE RIP-UP CLASTS AT TOP
* 80	236.99	238.43	1.44			SANDSTONE	SLTY.VFG.VWEL.LT.GY.THNB.SLD
80	238.43	239.10	0.67			SANDSTONE	SLTY.VFG.VWEL.LT.GY.THNB.XBDG.SLD TOPS UP, CROSS BEDDED, COARSENS DOWNWAR D
80	239.10	241.19	2.09			SANDSTONE	SLTY.FG.VWEL.LT.GY.THNB.SLD SILTSTONE INCREASES DOWNHOLE. FAN SHAPE D PLANT FOSSILS
80	241.19	241.46	0.27			SANDSTONE	SLTY.FG.VWEL.LT.GY.THNB.SLD GRADES TO MUDSTONE BELOW.
80	241.46	243.32	1.86			CLAYSTONE	SLTY.MOD.DK.GY.LAM.SLD

* DENOTES MEASURED BCA

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86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 41

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85005

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
80	243.32	243.36	0.04	07374		CLAYSTONE	CARB.BLK.BRKN
80	243.36	243.37	0.01	07374		COAL	C-2.BRKN ANKERITE VEINS
80	243.37	243.46	0.09	07374		CLAYSTONE	CARB.BLK.VBRKN VERY LISTRIC
80	243.46	243.55	0.09	07375	L/M	COAL	C-3.VBRKN
80	243.55	243.57	0.02	07375	L/M	CLAYSTONE	CARB.DK.GY.SLD
80	243.57	243.62	0.05	07375	L/M	COAL	C-4.VBRKN
80	243.62	243.63	0.01	07375	L/M	COAL	C-6.SLD
80	243.63	243.66	0.03	07375	L/M	COAL	C-3.VBRKN
80	243.66	243.72	0.06	07375	L/M	CLAYSTONE	CARB.DK.GY.PWRD VERY LISTRIC
80	243.72	243.86	0.14	07375	L/M	COAL	C-3.BRKN

* DENOTES MEASURED BCA

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PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85005

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
80	243.86	244.07	0.21	07376	L/M	CLAYSTONE	CARB.BLK.BRKN BRIGHT LAMINAE
80	244.07	244.08	0.01			COAL	C-2.SLD ANKERITE IN CLEAT
80	244.08	244.60	0.52			CLAYSTONE	DK.GY.SLD NUMEROUS BRIGHT LAMINAE
80	244.60	244.77	0.17			CLAYSTONE	SAMPLE R. HAMES
80	244.77	244.95	0.18			CLAYSTONE	SLTY.M.GY.MAS.BRKN SILTIER ABOVE
80	244.95	246.01	1.06			MUDSTONE	CARB.MOD.DK.GY.LAM.BRKN COAL STRINGERS IN TOP 300MM, GRADES TO NON CARBONACEOUS SANDSTONE BELOW. TALC ON STRIATED CARBONACEOUS SURFACES.
* 80	246.01	246.99	0.98			MUDSTONE	SLTY.MOD.M.GY.LAM.SLD SLIGHTLY CARBONACEOUS, STRIATED
80	246.99	247.93	0.94			MUDSTONE	SLTY.MOD.M.GY.LAM.SLD AS ABOVE
80	247.93	248.06	0.13			MUDSTONE	SLTY.MOD.M.GY.LAM.SLD AS ABOVE

* DENOTES MEASURED BCA

FORM 4001

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PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85005

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
79	248.06	248.94	0.88			MUDSTONE	CARB.PR.BLK.LAM.BRKN MANY COAL STRINGERS AND MINOR BAND 100M M, MINOR VEINING.
* 79	248.94	250.55	1.61			MUDSTONE	CARB.PR.BLK.LAM.BRKN AS ABOVE, COAL STRINGERS LESS COMMON BU T PRESENT DOWN TO THE BOTTOM OF SECTION
76	250.55	250.97	0.42			SILTSTONE	SSY.PR.M.GY.LAM.SLD
75	250.97	251.14	0.17			SILTSTONE	SSY.PR.M.GY.LAM.SLD
75	251.14	251.42	0.28			SILTSTONE	SSY.PR.M.GY.LAM.SLD SLOW GRADATION TO SANDSTONE BELOW, MINO R VEINING.
* 72	251.42	253.09	1.67			SANDSTONE	SLTY.FG.PR.LT.GY.THNB.BIOTR.SLD TOPS UP, WRMBUR.
72	253.09	253.83	0.74			SANDSTONE	SLTY.FG.PR.M.GY.LAM.BIOTR.SLD VERY SILTY
71	253.83	254.19	0.36			MUDSTONE	SLTY.PR.DK.GY.LAM

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 44

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85005

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
71	254.19	255.19	1.00			MUDSTONE	CARB.MOD.DK.GY.LAM.SLD VERY THIN COALY STRINGERS
71	255.19	255.83	0.64	07348		CLAYSTONE	M.GY.LAM.BRKN
71	255.83	255.98	0.15	07348		CLAYSTONE	CARB.BLK.VBRKN SOFT
71	255.98	256.00	0.02	07349	L	COAL	C-4.BRKN SOFT AND WEATHERED
71	256.00	256.06	0.06	07349	L	CLAYSTONE	CARB.BLK.SLD
71	256.06	256.10	0.04	07349	L	COAL	C-4.PWRD
71	256.10	256.18	0.08	07349	L	CLAYSTONE	CARB.BLK.PWRD SOFT
71	256.18	256.34	0.16	07349	L	COAL	C-4.PWRD WEATHERED
71	256.34	256.40	0.06	07349	L	CLAYSTONE	CARB.BLK
71	256.40	256.56	0.16	07349	L	COAL	C-4.PWRD

* DENOTES MEASURED BCA

LRM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 45

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85005

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
71	256.56	256.58	0.02	07349	L	CLAYSTONE	CARB.BLK
71	256.58	256.63	0.05	07349	L	COAL	C-4.PHRD
71	256.63	256.69	0.06	07350		CLAYSTONE	CARB.BLK.SLD HARD
70	256.69	256.71	0.02	07350		CLAYSTONE	LT.GY.SLD BENTONITE TENDENCIES?
70	256.71	257.00	0.29	07350		CLAYSTONE	M.GY.SLD
70	257.00	257.35	0.35			MUDSTONE	SLTY.PR.M.GY.LAM.SLD
70	257.35	257.40	0.05			MUDSTONE	HEL.DK.GY.SLD
70	257.40	257.99	0.59			MUDSTONE	SLTY.MOD.DK.GY.LAM.SLD BECOMING SILTIER TOWARDS BASE
* 70	257.99	258.36	0.37			SILTSTONE	MOD.M.GY.LAM.SLD SOME DARK GREY MUDSTONE LAMINAE, MINOR TALC ALONG FRACTURE SURFACES,QUARTZ VEI N 2.0 MM PERPENDICULAR TO BEDDDING.

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 46

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85005

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
72	258.36	258.83	0.47			SANDSTONE	VFG.MOD.M.GY.THNB.SLD MINOR SILTY LAMINATIONS TOWARDS TOP
75	258.83	259.47	0.64			CLAYSTONE	M.GY.LAM.WRMBU.BRKN
76	259.47	259.62	0.15			CLAYSTONE	CARB.BLK.VBRKN SOFT
78	259.62	260.25	0.63			SANDSTONE	FG.WEL.M.GY.MAS.SLD COAL BAND 1CM SURROUNDED BY ANKERITE. V ERY UNIFORM
* 82	260.25	261.19	0.94			SANDSTONE	FG.WEL.M.GY.MAS.SLD
81	261.19	262.26	1.07			SANDSTONE	FG.WEL.M.GY.MAS.SLD COAL BAND 1MM PARALELL TO BEDDING SILTS TONE CLASTS TOWARDS BASE. RIP-UP CLASTS ?
* 80	262.26	263.97	1.71			SANDSTONE	FG.WEL.M.GY.MAS.SLD VERY MINOR COAL INCLUDING SILTSTONE AND RIP UP CLASTS. UNIFORM

* DENOTES MEASURED BCA

FORM 4001

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85005

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
80	263.97	264.18	0.21			SANDSTONE	FG.PR.M.GY.SLD SILTY INTERBEDS, UNCONSOLIDATED MUDSTON E HOSTING ANKERITE VEINS AT BASE. VERY MINOR COAL INCLUDED.
79	264.18	264.46	0.28			QUARTZITE	MP.SLD SUBANGULAR BRECCIA, SANDSTONE FRAGMENTS WITHIN CALCITE AND QUARTZ VEIN, EUHEDR AL CRYSTALS.
* 79	264.46	266.37	1.91			SANDSTONE	FG.MOD.M.GY.THKB.SLD DEPOSITIONAL QUARTZ AND CALCITE VEINING 30 MM IN 3 LOCATIONS. VERY MINOR SILTS TONE RIP-UP CLASTS WITH 1 COAL INCLUDED , SURROUNDED BY ANKERITE.
76	266.37	267.23	0.86			SANDSTONE	FG.WEL.M.GY.THKB.SLD UNIFORM, MINOR ANKERITE VEINING 3MM CON TAINING COAL INCLUSIONS.
74	267.23	268.45	1.22			SANDSTONE	FG.MOD.M.GY.MB.SLD CONTAINING DARK GREY SILTSTONE BANDS LE SS THAN 5 MM TOWARDS BASE.
* 72	268.45	268.89	0.44			SANDSTONE	FG.MOD.M.GY.MB.SLD

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85005

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
72	268.89	269.05	0.16			SANDSTONE	SLTY.VPR.M.GY.VTHNB.SLD SILTY DARK GREY LAMINAE.
72	269.05	269.10	0.05			QUARTZITE	WH.SLD MINOR ASSOCIATED CALCITE, DEPOSITIONAL
73	269.10	269.65	0.55			SANDSTONE	FG.PR.M.GY.THNB.SLD DEPOSITIONAL CALCAREOUS SANDSTONE UNITS < 110 MM THROUGHOUT. SILTIER TOWARDS B ASE.
73	269.65	270.28	0.63			SANDSTONE	FG.WEL.M.GY.MAS.SLD UNIFORM
73	270.28	270.45	0.17			SANDSTONE	FG.WEL.M.GY.MAS.SLD UNIFORM
* 74	270.45	272.25	1.80			SANDSTONE	FG.MOD.M.GY.THKB.SLD MINOR DARK GREY SILTSTONE LAMINAE
76	272.25	272.64	0.39			SANDSTONE	FG.MOD.M.GY.BRKN ABUNDANT FRACTURED SURFACES CONTAINING TALC
77	272.64	273.35	0.71			SANDSTONE	FG.WEL.M.GY.SLD MODERATE CALCITE AND ANKERITE VEINING 2 MM PERPENDICULAR TO BEDDING.

* DENOTES MEASURED BCA

FORM 4001

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85005

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 79	273.35	274.61	1.26			SANDSTONE	FG.MOD.M.GY.SLD MINOR DARK GREY MUDSTONE INTERBEDS TOWA RDS BASE. TALC ALONG FRACTURED SURFACES S. CALCITE VEIN 2MM PERPENDICULAR TO BE DDING.
77	274.61	274.70	0.09			MUDSTONE	SSY.VPR.DK.GY.LAM.SLD SANDSTONE UNIT MODERATELY UNCONSOLIDATE D, CONTAINING MINOR TALC.
76	274.70	274.88	0.18			MUDSTONE	SSY.VPR.DK.GY.SLD SANDSTONE UNIT CONTAINS SILTSTONE RIP-U P CLASTS AND MINOR QUARTZ VEIN 2MM. MUD STONE MODERATELY UNCONSOLIDATED.
* 74	274.88	275.91	1.03			SANDSTONE	FG.VPR.M.GY.MB.SLD SANDSTONE GRADATIONAL WITHIN UNIT TO 60 MM. COARSE GRAINED SANDSTONE AND DARK GREY MUDSTONE INTERBEDS. COAL BAND 2MM SURROUNDED BY QUARTZ 3MM.
74	275.91	276.42	0.51			SANDSTONE	FG.HEL.M.GY.MAS.SLD COALY BAND AND ASSOCIATED ANKERITE 40 M M AT TOP. CALCAREOUS SANDSTONE 70 MM BE NEATH THIS.
73	276.42	276.78	0.36			SANDSTONE	MG.PR.LT-M.GY.BRKN MINOR COURSE GRAINED INTERBEDS. COALY B AND 2MM.

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85005

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
73	276.78	277.40	0.62			SANDSTONE	FG.PR.M.GY.MB.BRKN UNIT MODERATELY CALCAREOUS
73	277.40	278.01	0.61			SANDSTONE	FG.MOD.M.GY.SLD MINOR CALCITE VEINING, 2MM PERENDICULAR TO BEDDING. COAL INCLUSIONS AND ASSOCI ATED ANKERITE 10MM.
73	278.01	278.73	0.72			SANDSTONE	MG.MOD.M.GY.SLD COAL INCLUSIONS, 4MM AND ASSOCIATED ANK ERITE
72	278.73	279.54	0.81			SANDSTONE	SLTY.FG.PR.M.GY.THNB.BRKN SILTY LAMINAE AND RIP-UPS IN COARSER LA YERS. POSSIBLE BENTONITE.
* 72	279.54	280.79	1.25			SANDSTONE	SLTY.FG.PR.M.GY.MB.SLD AS ABOVE, SLIGHTLY COARSER AND LESS SIL TY
* 65	280.79	282.19	1.40			SANDSTONE	SLTY.FG.PR.M.GY.THNB.BRKN VERY POOR SORTING. COARSER UNITS CONTAI N A GARBLED MESS OF SILTSTONE RIP-UPS
71	282.19	282.63	0.44			SANDSTONE	SLTY.FG.PR.M.GY.THNB.BRKN AS ABOVE, EXTENSIVELY FRACTURED AND MUD RICH, FAULT ZONE?

* DENOTES MEASURED BCA

FORM 4001

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PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85005

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
74	282.63	282.79	0.16			MUDSTONE	VPR DISJOINTED SOFT MESS OF VARIABLE MATERI AL. FAULT?
74	282.79	282.90	0.11			MUDSTONE	VPR.DK.GY.BRKN VERY SOFT.BROKEN MUDDY MATERIAL, APPEAR S GROUNDUP WITH QUITE VARIED MATERIAL. TALC
* 82	282.90	284.93	2.03			SANDSTONE	MG.PR.M.GY.THKB.SLD SANDSTONE FINES DOWNHOLE TO FINE GRAINE D WITH A FEW SILTSTONE BANDS TO 100MM. HIGHLY FRACTURED AT TOP. LONG VEINS PER PENDICULAR TO BEDDING AT BASE.
79	284.93	285.80	0.87			SANDSTONE	MG.PR.M.GY.THKB.BRKN A FEW SILTSTONE RIP UP CLASTS AND FINE SILT LAMINAE.
77	285.80	286.93	1.13			SANDSTONE	MG.PR.M.GY.THKB.BRKN MANY SILTY LAMINAE
75	286.93	287.67	0.74			SANDSTONE	FG.MOD.M.GY.MAS.BRKN VERY MINOR VEINING, SLICKENSIDES ABRUPT TRANSITIONTO SILTSTONE, BELOW MINOR CO ALIFIED PLANT MATERIAL

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 52

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85005

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 74	287.67	288.20	0.53			SILTSTONE	SSY.MOD.DK.GY.LAM.SLD 20-50MM FINE GRAINED SANDSTONE BANDS , UPRIGHT ON GRADED BED
74	288.20	288.78	0.58			SANDSTONE	FG.MOD.M.GY.MAS.BRKN AS SAND ABOVE
73	288.78	288.98	0.20			SANDSTONE	FG.MOD.M.GY.MAS.BRKN AS ABOVE
72	288.98	291.12	2.14			SANDSTONE	SLTY.FG.MOD.M.GY.THKB.BRKN PREDOMINATELY FINE TO MEDIUM GRAINED WI TH MINOR COURSE GRAINED ZONES WITH ABUN DANT SILTSTONE RIP-UP CLASTS. COARSER D OWNHOLE
71	291.12	291.43	0.31			SANDSTONE	SLTY.MG.PR.M.GY.THNB.XBDG.SLD UPRIGHT ON XBDG, SILTSTONE LAMINAE.
71	291.43	291.76	0.33			SANDSTONE	SLTY.FG.PR.M.GY.THNB.BRKN MORE SILTSTONE THAN ABOVE, SILTY LAYERS ARE CARBONACEOUS.
71	291.76	291.89	0.13			SANDSTONE	SLTY.FG.PR.M.GY.THNB.BRKN AS ABOVE
* 70	291.89	293.04	1.15			SILTSTONE	CLYY.MOD.DK.GY.LAM.SLD CARBONACEOUS STRIATED.MINOR VEINING

* DENOTES MEASURED BCA

FORM 4001

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PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85005

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
70	293.04	294.87	1.83			SILTSTONE	CLYY.MOD.DK.GY.LAM.BRKN AS ABOVE
71	294.87	294.96	0.09			SILTSTONE	CLYY.MOD.DK.GY.LAM.BRKN AS ABOVE
* 71	294.96	297.06	2.10			SILTSTONE	CLYY.MOD.DK.GY.LAM.BRKN VERY CARBONACEOUS, AS ABOVE, MINOR DISS EMINATED PYRITE, RAPID TRANSITION TO SA NDSTONE BELOW.
75	297.06	297.10	0.04			SANDSTONE	SLTY.VFG.PR.DK.GY.LAM.SLD
76	297.10	297.98	0.88			SANDSTONE	SLTY.FG.PR.M.GY.THNB.SLD SILSTONE RIP-UPS AND LAMINAE, COARSENS SLIGHTLY DOWNHOLE
* 80	297.98	299.12	1.14			SANDSTONE	SLTY.FG.PR.M.GY.THNB.SLD AS ABOVE
73	299.12	300.96	1.84			SANDSTONE	MG.VWEL.M.GY.MAS.SLD THIN SILTSTONE LAMINAE AND RIP-UPS IN T OP 300 MM, COALIFIED PLANT FRAGMENTS.
68	300.96	301.18	0.22			SANDSTONE	MG.VWEL.M.GY.MAS.SLD AS ABOVE

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 54

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85005

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 63	301.18	303.28	2.10			SANDSTONE	MG.VWEL.M.GY.MAS.SLD AS ABOVE
69	303.28	303.94	0.66			SANDSTONE	MG.VWEL.M.GY.MAS.SLD LARGE CALCITE VEIN. AS ABOVE, SOME FINE GRAINED SANDSTONE.
73	303.94	305.33	1.39			SANDSTONE	FG.VWEL.M.GY.MAS.SLD MINOR SSILTSTONE RIP-UPS, AS ABOVE, SIL TS ARE STRATED, SOMEWHAT FINER GRAINED THAN ABOVE.
* 79	305.33	306.96	1.63			SANDSTONE	FG.VWEL.M.GY.MAS.SLD AS ABOVE, MINOR SILTSTONE RIP-UPS IN SL IGHTLY COARSER PORTIONS
72	306.96	307.36	0.40			SANDSTONE	FG.VWEL.M.GY.MAS.SLD AS ABOVE
* 64	307.36	309.46	2.10			SANDSTONE	FG.VWEL.M.GY.MAS.SLD AS ABOVE
64	309.46	310.02	0.56			SANDSTONE	FG.WEL.M.GY.MAS.SLD FEW CARBONACEOUS WISPS.
65	310.02	310.59	0.57			SANDSTONE	FG.WEL.M.GY.SLD AS ABOVE

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 55

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85005

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
65	310.59	310.83	0.24			SANDSTONE	FG.WEL.M.GY.MAS.SLD WITH INCREASING CLAYSTONE CLASTS DOWNWA RD.
65	310.83	310.97	0.14	07362	K/L	COAL	
65	310.97	311.00	0.03	07363	K/L	COAL	C-1.BRKN
65	311.00	311.01	0.01	07363	K/L	COAL	C-6.SLD
65	311.01	311.06	0.05	07363	K/L	COAL	C-4.SLD
65	311.06	311.08	0.02	07363	K/L	CLAYSTONE	CARB.SLD
65	311.08	311.17	0.09	07363	K/L	COAL	C-2.SLD
65	311.17	311.19	0.02	07363	K/L	CLAYSTONE	CARB.SLD

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 56

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85005

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
65	311.19	311.25	0.06	07363	K/L	COAL	C-1.BRKN
65	311.25	311.32	0.07	07363	K/L	COAL	C-4.BRKN
65	311.32	311.50	0.18	07363	K/L	COAL	C-3.BRKN
65	311.50	311.56	0.06	07363	K/L	COAL	C-5.VBRKN
65	311.56	311.88	0.32	07364		CLAYSTONE	CARB.BLK.BRKN COALY LAMINAE
65	311.88	311.89	0.01			COAL	C-1.BRKN
65	311.89	311.93	0.04			CLAYSTONE	CARB.BLK.SLD AS ABOVE
65	311.93	311.95	0.02			COAL	C-1.SLD

* DENOTES MEASURED BCA

FORM 4001

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85005

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
65	311.95	312.21	0.26			CLAYSTONE	CARB.BLK.BRKN AS ABOVE
65	312.21	312.28	0.07			CLAYSTONE	CARB AS ABOVE
66	312.28	312.86	0.58			CLAYSTONE	CARB.DK.GY.SLD AS ABOVE, LESS COAL THAN ABOVE
66	312.86	312.87	0.01			COAL	C-1
66	312.87	314.66	1.79			CLAYSTONE	DK.GY.MAS.SLD FEW COALY LAMINAE, LIGHTER CLAYSTONE CL ASTS INCLUDED AT BASE.
66	314.66	314.71	0.05			CLAYSTONE	CARB.DK.GY LARGE ANKERITE VEIN WITH BOUDINAGED COA L.
66	314.71	314.89	0.18			CLAYSTONE	DK.GY.MAS.SLD AS ABOVE
66	314.89	314.95	0.06			COAL	C-1.PHRD
66	314.95	315.02	0.07			CLAYSTONE	DK.GY.SLD

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85005

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
66	315.02	315.05	0.03			CLAYSTONE	DK.GY.SLD
66	315.05	315.08	0.03			COAL	C-1.VBRKN
66	315.08	315.20	0.12			CLAYSTONE	CARB.LT.GY.SLD CLAYSTONE AS ABOVE BUT RIDDLED WITH DIS SEMINATED ANKERITE SURROUNDING COAL PAR TICLES.
67	315.20	315.25	0.05			COAL	C-1
67	315.25	315.45	0.20			CLAYSTONE	CARB.BLK.BRKN FEW COAL VEINS
67	315.45	315.72	0.27			CLAYSTONE	CARB.BLK.BRKN AS ABOVE WITH FEW ANKERITE VEINS
67	315.72	315.77	0.05			COAL	C-1.SLD
67	315.77	315.80	0.03			CLAYSTONE	CARB.BRKN

* DENOTES MEASURED BCA

FORM 4001

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85005

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
67	315.80	315.82	0.02			COAL	C-1.VBRKN
67	315.82	316.12	0.30	07365		CLAYSTONE	CARB.DK.GY.SLD ANKERITE VEINS ALONG BEDDING
67	316.12	316.52	0.40	07366	K	COAL	C-1.BRKN MINOR CLAYSTONE BANDS
67	316.52	316.53	0.01	07366	K	CLAYSTONE	CARB.DK.GY.SLD
67	316.53	316.71	0.18	07366	K	COAL	C-1.BRKN
67	316.71	317.03	0.32	07366	K	COAL	C-1.BRKN GAS ESCAPING FROM ALL COAL
67	317.03	317.04	0.01	07366	K	CLAYSTONE	CARB.SLD
67	317.04	317.21	0.17	07366	K	COAL	C-1.BRKN
67	317.21	317.39	0.18	07366	K	COAL	C-4.SLD
67	317.39	317.52	0.13	07366	K	COAL	C-3.BRKN

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85005

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
67	317.52	317.54	0.02	07366	K	CLAYSTONE	CARB.SLD
67	317.54	317.76	0.22	07366	K	COAL	C-1.BRKN
67	317.76	317.88	0.12	07366	K	COAL	C-4.BRKN
67	317.88	317.93	0.05	07366	K	COAL	C-3.SLD
68	317.93	318.00	0.07	07366	K	COAL	C-2.BRKN 0
68	318.00	318.11	0.11	07366	K	COAL	C-3.BRKN
68	318.11	318.13	0.02	07366	K	COAL	C-1.SLD
68	318.13	318.15	0.02	07366	K	COAL	C-6.SLD
68	318.15	318.27	0.12	07366	K	COAL	C-3.SLD
68	318.27	318.44	0.17	07366	K	COAL	C-4.BRKN

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 61

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85005

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
68	318.44	318.54	0.10	07366	K	COAL	C-3,BRKN
68	318.54	318.62	0.08	07367	K	CLAYSTONE	CARB,BLK,SLD GAS ESCAPING THROUGH THIS BOX
68	318.62	318.76	0.14	07367	K	CLAYSTONE	CARB,BLK,BRKN BANDS C-2
68	318.76	318.81	0.05	07367	K	CLAYSTONE	CARB,DK,BN,SLD SOFT
68	318.81	318.86	0.05	07367	K	CLAYSTONE	M,GY,SLD HARD
68	318.86	319.03	0.17	07367	K	CLAYSTONE	CARB,BLK,SLD VERY COALY-MANY BRIGHT BANDS
68	319.03	319.04	0.01	07367	K	COAL	C-1,SLD
68	319.04	319.12	0.08	07367	K	CLAYSTONE	CARB,BLK,SLD VERY COALY
68	319.12	319.17	0.05	07367	K	CLAYSTONE	CARB,BLK,BRKN
68	319.17	319.22	0.05	07369	K	COAL	C-6,BRKN DAMP AND SOFT

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 62

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85005

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
68	319.22	319.48	0.26	07369	K	COAL	C-1,BRKN
68	319.48	319.56	0.08	07370		CLAYSTONE	CARB,BLK,BRKN
68	319.56	320.40	0.84	07370		CLAYSTONE	DK,GY,MAS,SLD VERY MONOTONOUS
68	320.40	320.83	0.43	07370		CLAYSTONE	M,GY,VBRKN
69	320.83	320.93	0.10	07371		CLAYSTONE	DK,GY,BRKN
69	320.93	320.99	0.06	07371		CLAYSTONE	CARB,BLK,BRKN SOFT
69	320.99	321.14	0.15	07372	K	COAL	C-2,PHRD
69	321.14	321.26	0.12	07372	K	COAL	C-1,VBRKN
69	321.26	321.33	0.07	07372	K	CLAYSTONE	CARB,SLD ANKERITE VEINING
69	321.33	321.37	0.04	07372	K	COAL	C-2,VBRKN

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 63

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85005

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
69	321.37	321.45	0.08	07372	K	COAL	C-1.VBRKN
69	321.45	321.49	0.04	07372	K	CLAYSTONE	CARB.BRKN
69	321.49	321.54	0.05	07372	K	COAL	C-2.BRKN
69	321.54	321.56	0.02	07372	K	CLAYSTONE	CARB.DK.GY
69	321.56	321.62	0.06	07372	K	COAL	C-2.VBRKN
69	321.62	322.20	0.58	07373	K	CLAYSTONE	M.GY.BRKN FEW COAL, MANY ANKERITE VEINS AT TOP DE CREASING DOWN
69	322.20	323.90	1.70			MUDSTONE	SLTY.MOD.DK.GY.LAM.BRKN MINOR COALIFIED PLANT FRAGMENTS. SILTY BANDS BECOMING MORE PROMINENT N LOWER 3 00 MM. SILT CONTAINS NUMEROUS NEEDLE LI KE PLANT FRAGMENTS, CARBONACEOUS AT BAS E.

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 64

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85005

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
70	323.90	324.05	0.15			MUDSTONE	CARB.MOD.DK.GY.LAM.BRKN
70	324.05	324.31	0.26			MUDSTONE	SLTY.MOD.M.GY.LAM.SLD
* 70	324.31	325.22	0.91			SILTSTONE	CLYY.PR.M.GY.LAM.BRKN FINER BANDS ARE CARBONACEOUS
73	325.22	325.73	0.51			MUDSTONE	CARB.MOD.BLK.LAM.BRKN VERY CARBONACEOUS
74	325.73	326.01	0.28			MUDSTONE	CARB.MOD.BLK.LAM.BRKN AS ABOVE
76	326.01	327.00	0.99			SILTSTONE	CLYY.PR.M.GY.LAM.BRKN BRECCIATED INPART BECOMES SLIGHTLY SAND Y TOWARDS BASE, FAULT ZONES?

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 65

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85005

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
79	327.00	327.27	0.27			SILTSTONE	SSY.PR.M.GY.LAM.BRKN SLIGHTLY CARBONACEOUS, GRADES TO SANDST ONE
* 80	327.27	327.63	0.36			SANDSTONE	SLTY.FG.PR.M.GY.THNB.BRKN MINOR TALC ON FRACTURE SURFACES. FAULT ZONE?
77	327.63	329.56	1.93			SANDSTONE	SLTY.FG.MOD.M.GY.THNB.BRKN EXTENSIVELY FRACTURED AND BRECCIATED. Z ONE OF SOFTBROKEN MATERIAL. FAULT ZONE IN CENTRAL PORTION SILTY BAND.
74	329.56	330.05	0.49			SANDSTONE	SLTY.VFG.MOD.M.GY.THNB.BRKN
* 72	330.05	330.91	0.86			SANDSTONE	FG.MOD.M.GY.THKB.BRKN SHARP CONTACT WITH SILTSTONE BELOW, SIN GLE GRADATIONAL BED FROM MEDIUM GRAINED TO VERY FINE GRAINED WITH VERY MINOR S ILTSTONE LAMINAE. MINOR VERTICAL FRACTU RES.

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 66

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85005

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
74	330.91	331.40	0.49			SILTSTONE	VWEL.M.GY.LAM.BRKN
78	331.40	333.30	1.90			SILTSTONE	VWEL.M.GY.LAM.BRKN
* 82	333.30	333.51	0.21			SILTSTONE	VWEL.M.GY.LAM.BRKN
* 85	333.51	335.44	1.93			SILTSTONE	CLYY.MOD.M.GY.LAM.BRKN

* DENOTES MEASURED BCA

FORM 4001

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85005

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
84	335.44	336.44	1.00			SILTSTONE	CLYY.MOD.M.GY.LAM.BRKN AS ABOVE
83	336.44	337.49	1.05			MUDSTONE	SLTY.MOD.DK.GY.LAM.BRKN AS ABOVE, VERY FISSILE BREAKS ON BEDDIN G PLANES TRACE FOSSILS
82	337.49	338.64	1.15			MUDSTONE	SLTY.MOD.DK.GY.LAM.BRKN VERTICLE VEINING. INTENSELY FRACTURED, EESRIONL CONTACT WITH SILTSTONE BELOW, TOPS UP, FROM GRADED BEDDING
81	338.64	339.38	0.74			SILTSTONE	CLYY.MOD.M.GY.LAM.BRKN
81	339.38	339.88	0.50			SILTSTONE	CLYY.MOD.M.GY.LAM.BRKN AS ABOVE, GRADATIONAL CONTACT WITH MUDS TONE BELOW
* 80	339.88	341.51	1.63			MUDSTONE	SLTY.MOD.DK.GY.LAM.BRKN MINOR VERTICAL VEINING, AS IN MUDSTONE ABOVE
80	341.51	341.93	0.42			MUDSTONE	SLTY.MOD.DK.GY.LAM.BRKN AS ABOVE

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85005

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
80	341.93	343.51	1.58			MUDSTONE	SLTY.MOD.DK.GY.LAM.BRKN AS ABOVE
80	343.51	344.90	1.39			MUDSTONE	VNEL.DK.GY.LAM.BRKN FISSILE, AS ABOVE

* DENOTES MEASURED BCA
NEWPAGE

FORM 4001

GULF CANADA RESOURCES INC.

SEAM DETAIL

COAL DIVISION
MOUNT KLAPPAN PROJECT

TRUE THICKNESS

DATA SOURCE: KPN LR DDH85005 SEAM : O OVERTURNED INTERVAL(M) : 26.90 – 30.13 ELEVATION(M) : 1758.C

GEOLOGIST : E LEGRESLEY SCALE: DATE : DEC 19/85 DRAWING NO. :

SEAM COMP.	DRILL DEPTH (METRES)	COAL SEAM LOG	INTERVAL (METRES) ROCK	INTERVAL (METRES) COAL	% REC.	SAMPLE ID SIMP	SAMPLE ID COMP	COAL/ROCK TOTAL COMPOS	COAL/ROCK TOTAL MINING SECTION	RES MOIST	ASH	VM	FC	TS	CAL.VAL MJ/KG	
	26.90			0.24												
			0.03		100.0	7541	83	0.64 / 0.03		0.76	26.70	5.80	66.74	0.54	25.38	—
				0.40				0.67								
	30.13															

GULF CANADA RESOURCES INC.

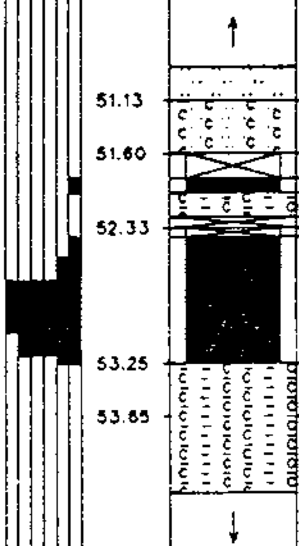
SEAM DETAIL

COAL DIVISION
MOUNT KLAPPAN PROJECT

TRUE THICKNESS

DATA SOURCE: KPN LR DDH85005 SEAM : O INTERVAL(M) : 51.13 – 53.65 ELEVATION(M) : 1758.0

GEOLOGIST : E. LEGRESLEY SCALE: DATE : DEC 19/85 DRAWING NO. :



DRILL DEPTH METRES	INTERVAL METRES ROCK	INTERVAL METRES COAL	% REC.	SAMPLE ID SIMP	SAMPLE ID COMP	COAL/ROCK TOTAL COMPOS	COAL/ROCK TOTAL MINING SECTION	RES MOIST	ASH	VM	FC	TS	CAL.VAL MJ/KG
51.13	0.34		100.0	7314									
51.60		(0.14)											
		0.08	81.9	7315									
	0.18												
	(0.07)												
52.33		(0.06)			16	1.11 / 0.22 1.33		2.32	39.02	5.31	53.35	0.93	20.08
		0.80	93.5	7316									
53.25	0.33		100.0	7317									
53.65													

GULF CANADA RESOURCES INC.

SEAM DETAIL — COAL DIVISION — MOUNT KLAPPAN PROJECT — **TRUE THICKNESS**

DATA SOURCE:	XPN LR DDH85005	SEAM : N UPPER	INTERVAL(M) : 98.01 – 99.90	ELEVATION(M) :	1758.0
GEOLOGIST :	E. LEGRESLEY	SCALE:	DATE : DEC 19/85	DRAWING NO. :	

SEAM COMP. (1 2 3 4 5 6)	DRILL DEPTH (METRES)	COAL SEAM LOG	INTERVAL (METRES) ROCK	INTERVAL (METRES) COAL	% REC.	SAMPLE ID SIMP	SAMPLE ID COMP	COAL/ROCK TOTAL COMPOS	COAL/ROCK TOTAL MINING SECTION	RES MOIST	ASH	VM	FC	TS	CAL.VAL MJ/KG	
	98.01		0.43		100.0	7318										
	98.55			(0.13)	26.7	7319	17	0.17 / 0.00		1.68	22.17	8.07	70.10	3.84	26.81	—
	99.85		0.13		100.0	7320		0.17								
	99.90															

GULF CANADA RESOURCES INC.

SEAM DETAIL — COAL DIVISION, MOUNT KLAPPAN PROJECT — **TRUE THICKNESS**

DATA SOURCE: KPN LR DDH85005 SEAM : N LOWER INTERVAL(M) : 105.92 - 112.12 ELEVATION(M) : 1758.0

GEOLOGIST : E. LEGRESLEY SCALE: DATE : DEC 19/85 DRAWING NO. :

DRILL DEPTH (METRES)	INTERVAL (METRES) ROCK	INTERVAL (METRES) COAL	% REC.	SAMPLE ID S'MP	SAMPLE ID COMP	COAL/ROCK TOTAL COMPOS	COAL/ROCK TOTAL MINING SECTION	COAL QUALITY A.D.B. RES MOIST	ASH	VM	FC	TS	CAL.VAL MJ/KG
105.92	[illegible]		100.0	7321									
106.13		0.18											
	[illegible]												
		0.19											
	[illegible]												
		0.33	100.0	7322									
	[illegible]												
		0.34											
108.28	0.17												
		[illegible]											
	[illegible]												
		0.10											
		[illegible]											
	0.37												
		[illegible]	97.3	7323	18	2.43 / 1.51 3.94		1.82	40.71	8.89	48.48	2.85	18.54
	[illegible]												
		[illegible]											
	0.21												
		0.16											
	0.45												
110.71		0.99	100.0	7324									
112.82			100.0	7325									

GULF CANADA RESOURCES INC.

SEAM DETAIL — COAL DIVISION — MOUNT KLAPPAN PROJECT — **TRUE THICKNESS**

DATA SOURCE:	KPN LR DDH85005	SEAM : M	INTERVAL(M) : 210.42 – 214.42	ELEVATION(M) :	1758.0
GEOLOGIST :	E. LEGRESLEY	SCALE:	DATE : DEC 19/85	DRAWING NO. :	

DRILL DEPTH (METRES)	INTERVAL (METRES) ROCK	INTERVAL (METRES) COAL	% REC.	SAMPLE ID SIMP	SAMPLE ID COMP	COAL/ROCK TOTAL COMPOS	MINING SECTION	RES MOIST	ASH	VM	FC	TS	CAL.VAL MJ/KG
210.42	0.46		100.0	7327									
210.91		0.10	88.8	7328	19	1.89 / 1.04 2.93		1.07	51.84	8.05	38.04	0.33	14.14
	0.04												
		0.11											
	0.03												
		0.47											
	0.18												
		0.20											
	[illegible]												
		0.17											
	[illegible]												
		0.14											
	[illegible]	[illegible]											
	[illegible]												
		0.12											
	[illegible]												
	(0.30)												
		0.18											
	0.16												
		0.16											
	[illegible]	[illegible]											
	[illegible]												
		0.14											
214.17	[illegible]		100.0	7329									
214.42													

GULF CANADA RESOURCES INC.

SEAM DETAIL — COAL DIVISION, MOUNT KLAPPAN PROJECT — **TRUE THICKNESS**

DATA SOURCE: KPN LR DDH85005	SEAM : L/M	INTERVAL(M) : 243.32 - 244.07	ELEVATION(M) : 1758.0
GEOLOGIST : E LEGRESLEY	SCALE:	DATE : DEC 19/85	DRAWING NO. :

DRILL DEPTH (METRES)	INTERVAL (METRES) ROCK	INTERVAL (METRES) COAL	% REC.	SAMPLE ID SIMP	SAMPLE ID COMP	COAL/ROCK TOTAL COMPOS	MINING SECTION	RES MOIST	ASH	VM	FC	TS	CAL VAL MJ/KG	
243.32	[illegible]	[illegible]	100.0	7374										
243.46	[illegible]	[illegible]												
	[illegible]	[illegible]	100.0	7375	7375	0.32/ 0.08		—	—	—	—	—	—	—
	[illegible]	[illegible]				0.40								
243.86	0.21		100.0	7376										
244.07														

SEAM COMP. 1 2 3 4 5 6

GULF CANADA RESOURCES INC.

SEAM DETAIL — COAL DIVISION — MOUNT KLAPPAN PROJECT — **TRUE THICKNESS**

DATA SOURCE: KPN LR DDH85005 SEAM : L INTERVAL(M) : 255.19 - 257.00 ELEVATION(M) : 1758.0

GEOLOGIST : E LEGRESLEY SCALE: DATE : DEC 19/85 DRAWING NO. :

SEAM COMP.	DRILL DEPTH (METRES)	COAL SEAM LOG	INTERVAL (METRES) ROCK	INTERVAL (METRES) COAL	% REC.	SAMPLE ID SIMP	SAMPLE ID COMP	COAL/ROCK TOTAL COMPOS	COAL/ROCK TOTAL MINING SECTION	COAL QUALITY A.D.B. RES MOIST	ASH	VM	FC	TS	CAL.VAL MJ/KG	
	255.19		0.81		100.0	7348										
			0.14													
	255.98			0.03												
				0.04												
				0.18	100.0	7349	20	0.41 / 0.21		0.88	34.45	8.05	58.64	1.38	21.87	—
				0.75				0.81								
	256.63		0.29		100.0	7350										
	257.00															

GULF CANADA RESOURCES INC.

SEAM DETAIL — COAL DIVISION — MOUNT KLAPPAN PROJECT — **TRUE THICKNESS**

DATA SOURCE: KPN LR DDH85005 SEAM : K/L INTERVAL(M) : 310.83 - 311.88 ELEVATION(M) : 1758.0

GEOLOGIST : E LEGRESLEY SCALE: DATE : DEC 19/85 DRAWING NO. :

SEAM COMP. 1 2 3 4 5 6	DRILL DEPTH METRES	COAL SEAM LOG	INTERVAL METRES: ROCK	INTERVAL METRES: COAL	% REC.	SAMPLE ID: SIMP	SAMPLE ID: COMP	COAL/ROCK TOTAL: COMPOS	COAL/ROCK TOTAL: MINING SECTION	COAL QUALITY A.D.B.: RES MOIST	ASH	VM	FC	TS	CAL.VAL MJ/KG
	310.83			0.21	100.0	7362	7362	0.13/0.00		1.83	71.81	—	—	—	—
	310.97		[illegible]	[illegible]				0.13							
			[illegible]		100.0	7363	7363	0.50/0.04		—	—	—	—	—	—
				0.33				0.53							
	311.56		0.29		100.0	7364									
	311.88														

GULF CANADA RESOURCES INC.

COAL DIVISION

MOUNT KLAPPAN PROJECT

SEAM DETAIL

TRUE THICKNESS

INTERVAL(M) : 315.82 – 322.20 ELEVATION(M) : 1758.0

DATA SOURCE: KPH LR DDH85005 SEAM : K DRAWING NO. :

DATE : DEC 19/85

GEOLOGIST : E. LEGRESLEY SCALE:

SEAM COMP. 1 2 3 4 5 6	DRILL DEPTH METRES	COAL SEAM LOG	INTERVAL METRES ROCK	INTERVAL METRES COAL	% REC.	SAMPLE ID SIMP	SAMPLE ID COMP	COAL/ROCK TOTAL COMPOS	COAL/ROCK TOTAL MINING SECTION	COAL QUALITY A.D.B. RES MOIST	ASH	VM	FC	TS	CAL.VAL MJ/KG
	315.82		0.28		100.0	7365									
	316.12			1.29	100.0	7366	21	2.48 / 0.61 3.10		2.65	22.48	5.73	69.19	0.50	25.13
			[illegible]												
				0.82											
	318.54		0.25		100.0	7367									
			[illegible]												
			0.29												
	319.17			0.29	100.0	7369									
	319.48		[illegible]												
			1.27		100.0	7370									
	320.83		[illegible]		100.0	7371									
	320.99			0.25	100.0	7372									
			[illegible]	0.11											
			[illegible]	[illegible]											
			[illegible]	[illegible]											
	321.62		0.54		100.0	7373									
	322.20														

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Gulf Canada Resources Inc.
Coal Division
Geophysical Log

Datasource:	KPNLRDDH85005	Province: BC	Northing: 6344400.00	Lat:	571440
Log Date:	85-03-23	Zone: 9	Easting: 506692.00	Long:	1285321
Company:	CENTURY	Measuring Point:		Elevation:	1752.0
Geologist:	E. LEGRESLEY				

Scale: 1 to 100.0

Depth Range: 0.0 to 338.0

True Thickness: NO

Comments:
1. LOGGED THROUGH THE RODS
2.

Logs Plotted:

Description	Axis Range	Axis Length	Smoothing Points	Tool	Comments
1 .GAMMA API	0.0 to 150.0	10.0	31	9055A	IN PIPE
2 .NEUTRON-NEUTRON CPS	0.0 to 2500.0	10.0	9	9055A	IN PIPE
3 .DENSITY G/CC	1.0 to 3.0	10.0	15	9030A1	IN PIPE

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GULF CANADA RESOURCES INC.
COAL DIVISION

KLAPPAN PROJECT

STRATIGRAPHIC LOG

KPN LR DDH85005

GEOLOGIST : E. LEGRESLEY	DATE : JAN 08/86	DRAWING NO. :

SCALE : 1:200 1:40

NORTHING: 6344388.0 N INCLINATION: 60.0°
EASTING: 508651.6 E BEARING: 45.0°

LITHOLOGIC SYMBOLS

SANDSTONE	BENTONITE
SILTSTONE	BRECCIA
COAL	CARBONACEOUS
OVERBURDEN	QUARTZ
MUDSTONE,CLAYSTONE	PYRITE
TUFF	FERRUGINOUS
LIMESTONE	CONGLOMERATE
CORE LOSS	FOSSIL BED

TOTAL: 344.90 TOTAL: 270.06

KPNLRDDH85006

GULF CANADA RESOURCES INC.

- D A T A S O U R C E S U M M A R Y -

DATA SOURCE - KPNLRDDH85006 DATE - 01/09/86

- H I S T O R Y -

START DATE - 03/19/85
END DATE - 03/24/85

CONTRACTOR - J.T. THOMAS
GEOLOGIST - M. BARKER

OPERATOR - GCRI
SURVEYOR - MWG & ASS.

REMARKS - SITE H

- L O C A T I O N -

PROVINCE - BC
ELEVATION - 1764.90

LICENCE/LEASE NUMBER - 7151

ZONE - 9
NORTHING - 6343993.00
EASTING - 506101.00

LATITUDE - 571427
LONGITUDE - 1285356

- O R I E N T A T I O N -

LENGTH - 262.45

CORE SIZE - 0.0

INCLINATION - 90.0
AZIMUTH - 0.0

CEMENT -
PLUG -
PIEZ -

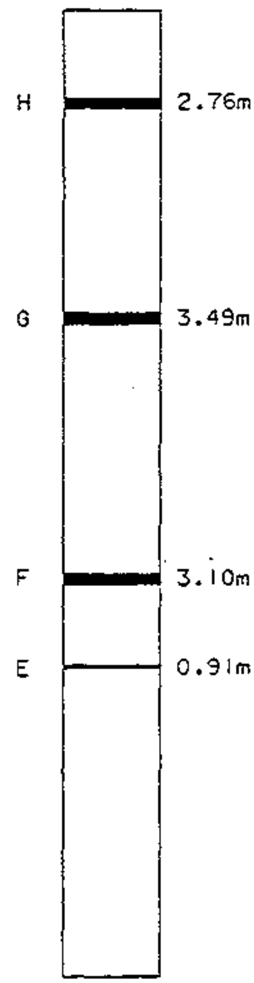
CASING DEPTH(M) - 6.10
AQUIFER DEPTHS(M) - 0.00
0.00
LOST CIRC. DEPTHS(M) - 0.00
0.00

*** NOTE *** 0 INDICATES NO VALUE

MT. KLAPPAN COAL PROPERTY

1985 DIAMOND DRILL HOLES
DDH85006

SEAM TRUE SEAM THICKNESS (COAL & ROCK)



NOTE: SCHEMATIC PROFILE.
NO THICKNESSES SHOWN
FOR SEAMS CONTAINING
LESS THAN 50cm COAL.

SCALE: 1:2000

GULF CANADA RESOURCES INC.
15/01/86

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 1

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85006

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
80	0.00	17.98	17.98			OVERBURDEN	
* 80	17.98	18.97	0.99			SANDSTONE	SLTY.FG.VPR.M.GY.LAM.VBRKN 0.00 - 0.72M FINE DARK SILTY LAMINAE
82	18.97	19.01	0.04			MUDSTONE	SLTY.DK.GY.VBRKN GROUND UP
* 85	19.01	20.46	1.45			SILTSTONE	CLYY.VPR.LT-M.GY.LAM.VBRKN FINE CLAYEY LAMINAE IN VERY POORLY SORT ED CLAYEY SILTSTONE, VERY CLAYEY TOWARD S BASE
85	20.46	21.45	0.99			ROCK LOSS	
85	21.45	22.15	0.70			MUDSTONE	CARB.DK.GY.MAS.VBRKN VERY CLAYEY, UNIFORM
85	22.15	22.67	0.52			ROCK LOSS	
85	22.67	23.32	0.65	07351		MUDSTONE	CARB.DK.GY.MAS.VBRKN LITHOLOGY AS ABOVE
85	23.32	23.44	0.12	07352	H	COAL	C-4.BLK.MAS.VBRKN

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 2

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85006

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
85	23.44	23.47	0.03	07352	H	COAL	C-2.BRKN DAMP AND WEATHERED
85	23.47	23.65	0.18	07352	H	CLAYSTONE	CARB.DK.GY.SLD SOFT
85	23.65	23.97	0.32	07352	H	ROCK LOSS	
85	23.97	25.02	1.05	07352	H	COAL LOSS	
85	25.02	25.11	0.09	07352	H	COAL	C-4.PHRD SOFT, COAL CRUSHED
85	25.11	25.41	0.30	07352	H	COAL	C-4.PHRD SOFT, AS ABOVE
85	25.41	25.43	0.02	07352	H	COAL	C-2.BRKN
85	25.43	25.47	0.04	07352	H	COAL	C-4.PHRD
85	25.47	25.59	0.12	07352	H	COAL	C-3.BRKN SOFT AND DAMP
85	25.59	25.70	0.11	07352	H	COAL	C-4.BRKN QUITE WEATHERED, SOFT

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 3

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85006

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
85	25.70	25.75	0.05	07352	H	COAL	C-3.BRKN
85	25.75	25.88	0.13	07352	H	CLAYSTONE	CARB.BLK.SLD SOFT
85	25.88	26.09	0.21	07352	H	COAL	C-1.BRKN
85	26.09	26.18	0.09	07353		CLAYSTONE	CARB.DK.GY.SLD
85	26.18	26.61	0.43	07353		SILTSTONE	CLYY.LT.GY.SLD
85	26.61	26.74	0.13			CLAYSTONE	CARB.DK.GY.THNB.SLD
85	26.74	26.79	0.05			COAL	C-2.LAM.BRKN HEAVILY VEINED WITH ANKERITE PARALLEL T O BEDDING
85	26.79	27.16	0.37			SILTSTONE	CLYY.WEL.M.GY.MAS.BRKN PYRITE AT TOP
85	27.16	27.21	0.05			CLAYSTONE	CARB.BLK.BRKN

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 4

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85006

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
85	27.21	27.42	0.21			CLAYSTONE	CARB.DK.GY.BRKN SILTY
85	27.42	28.34	0.92			ROCK LOSS	
85	28.34	28.40	0.06			CLAYSTONE	CARB.BLK.BRKN SOFT, PLANT HASH, OCCASIONAL SILTY LAMI NAE
85	28.40	29.37	0.97			CLAYSTONE	CARB.DK.GY.MAS.BIOTR.BRKN FINELY LAMINATED, GRADING TO FINE GRAIN ED SANDSTONE TOWARDS BASE, OCCASIONAL P YRITE CLAST 4.0 MM IN DIAMETER, WORM BU RROWS
85	29.37	31.33	1.96			ROCK LOSS	
85	31.33	32.14	0.81			SANDSTONE	SLTY.FG.VPR.LT-DK.GY.LAM.XBDG.BRKN FINELY LAMINATED, GRAINSIZE FROM MUDDY SILTSTONE TO FINE GRAINED SANDSTONE, OC CASIONAL MUDSTONE CLAST

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 5

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85006

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 85	32.14	33.33	1.19			SANDSTONE	FG-.VPR.LT.GY.MAS.SLD FINE GRAINED TO MEDIUM GRAINED VERY POO RLY SORTED SANDSTONE, OCCASIONAL WISPY SILTSTONE LAMINAE, OCCASIONAL ROUNDED M UDSTONE CLAST 7.0 MM IN DIAMETER
85	33.33	33.68	0.35			SANDSTONE	FG.VPR.LT.GY.MAS.SLD LITHOLOGY AS ABOVE
85	33.68	33.83	0.15			CONGLOMERATE	VPR.DK.GY.BRKN ELONGATED SUBROUNDED(3MMX15MM) MUDSTONE CLASTS, MATRIX SUPPORTED, SHARP UPPER AND LOWER CONTACTS
85	33.83	33.93	0.10			SANDSTONE	SLTY.FG.VPR.LT.GY.LAM.SLD SILTY LAMINAE
85	33.93	34.12	0.19			CONGLOMERATE	VPR.DK.GY.VTHNB.SLD AS CONGLOMERATE ABOVE
* 85	34.12	34.39	0.27			SANDSTONE	MG.MOD.M.GY.LAM.BRKN SILTY LAMINAE
84	34.39	34.66	0.27			ROCK LOSS	

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 6

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85006

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
83	34.66	35.51	0.85			SANDSTONE	SLTY.FG-.VPR.M.GY.LAM.BRKN FINE SILTY LAMINAE, OCCASIONAL ANKERITE VEIN PARALLEL TO BEDDING, FINE GRAINED TO MEDIUM GRAINED SANDSTONE
* 80	35.51	37.50	1.99			SANDSTONE	SLTY.FG-.PR.M.GY.THNB.BRKN OCCASIONAL DARK SILTY LAMINAE, OCCASION AL ANKERITE VEIN PARALLEL TO BEDDING, F INE GRAINED TO COARSE GRAINED SANDSTONE
84	37.50	37.83	0.33			ROCK LOSS	
87	37.83	38.85	1.02			SANDSTONE	SLTY.FG-.PR.M.GY.THNB.BRKN LITHOLOGY AS ABOVE, FINE GRAINED TO COA RSE GRAINED SANDSTONE
* 90	38.85	39.66	0.81			SILTSTONE	CLYY.PR.M-DK.GY.LAM.WRMBU.VBRKN TOPS UP, SOFT SEDIMENT DEFORMATION, WOR M BURROWS
90	39.66	40.05	0.39			SILTSTONE	CLYY.PR.M-DK.GY.LAM.VBRKN LITHOLOGY AS ABOVE
90	40.05	41.27	1.22			SILTSTONE	PR.LT.GY.LAM.VBRKN LAMINAE CONSIST MOSTLY OF VERY FINE CAR BONACEOUS OR SILTY LAMINAE 1.0 MM WIDE THROUGHOUT

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 7

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85006

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	41.27	42.86	1.59			SILTSTONE	CLYY.M-DK.GY.LAM.XBDG.VBRKN LAMINAE RANGING FROM VERY FINE GRAINED MUDSTONE FINE GRAINED SANDSTONE, MORE C LAYEY AND MASSIVE TOWARDS BASE
89	42.86	43.09	0.23			ROCK LOSS	
89	43.09	43.17	0.08			SILTSTONE	CLYY.DK.GY.LAM.BRKN LITHOLOGY AS ABOVE
* 87	43.17	45.23	2.06		PHANTOM	MUDSTONE	CARB.DK.GY.VTHNB.BRKN OCCASIONAL SILTY LAMINAE, MORE CARBONAC EOUS TOWARDS BASE, PLANT HASH ON BEDDIN G SURFACES
76	45.23	46.10	0.87		PHANTOM	MUDSTONE	CARB.DK.GY.MAS.VBRKN VERY UNIFORM
72	46.10	46.45	0.35		PHANTOM	ROCK LOSS	
68	46.45	47.34	0.89		PHANTOM	MUDSTONE	CARB.DK.GY.MAS.BRKN VERY UNIFORM
57	47.34	49.25	1.91		PHANTOM	MUDSTONE	CARB.DK.GY.MAS.VBRKN VERY UNIFORM
50	49.25	49.49	0.24		PHANTOM	ROCK LOSS	

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 8

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85006

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
47	49.49	50.04	0.55		PHANTOM	MUDSTONE	CARB.DK.GY.MAS.SLD LITHOLOGY AS ABOVE
45	50.04	50.08	0.04		PHANTOM	MUDSTONE	CARB.BLK.BRKN MUCH COALY MATERIAL, NUMEROUS QUARTZ VE INS
44	50.08	50.13	0.05		PHANTOM	MUDSTONE	CARB.DK.GY.MAS.SLD VERY UNIFORM, OCCASIONAL COAL LAMINAE
* 40	50.13	51.29	1.16		PHANTOM	MUDSTONE	CARB.DK.GY.LAM.SSD.BRKN FLAME STRUCTURES, TOPS DOWN(?), VERY FA INT LAMINATIONS
* 50	51.29	51.80	0.51			SILTSTONE	SSY.VPR.DK.GY.VTHNB.BIOTR.VBRKN LAMINAE GRADING FROM MUDSTONE TO FINE G RAINED SANDSTONE
67	51.80	52.30	0.50			ROCK LOSS	
* 90	52.30	53.13	0.83			SILTSTONE	SSY.VPR.M-DK.GY.VTHNB.VBRKN OCCASIONAL COAL STRINGER 2.0 MM WIDE, O CCASIONAL QUARTZ VEIN PARALLEL TO BEDDI NG

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 9

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85006

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	53.13	54.88	1.75			SANDSTONE	SLTY.FG-.MOD.M.GY.THNB.VBRKN OCCASIONAL QUARTZ AND COAL STRINGERS 2.0 TO 5.0 MM WIDE, COARSE TOWARDS BASE, PEBBLE LAMINAE AT 1.14M, 40.0 MM WIDE PEBBLE LAYER AT 1.30M
89	54.88	54.98	0.10			CONGLOMERATE	VPR.M.GY.SLD SUB ROUNDED, POLYMICTIC, MATRIX SUPPORTED, CLASTS 3.0 TO 5.0 MM IN DIAMETER, FINE GRAINED SANDSTONE MATRIX
89	54.98	55.13	0.15			SANDSTONE	SLTY.FG.PR.M.GY.LAM.VBRKN FINE SILTY LAMINAE
89	55.13	55.60	0.47			SANDSTONE	PBLY.MG-.PR.M.GY.THNB.VBRKN OCCASIONAL SCATTERED PEBBLES AS WELL AS OCCASIONAL PEBBLE BANDS 10.0 TO 40.0 MM WIDE
89	55.60	55.79	0.19			SANDSTONE	FG-.VPR.M.GY.MAS.VBRKN ONE QUARTZ AND COAL LENS 5.0 MM WIDE
89	55.79	56.53	0.74			ROCK LOSS	
88	56.53	57.42	0.89			CONGLOMERATE	MG-.VPR.M.GY.VBRKN ROUNDED TO SUBROUNDED, POLYMICTIC, MATRIX SUPPORTED, MEDIUM GRAINED TO COARSE GRAINED SANDSTONE MATRIX, CLASTS 3.0 TO 15.0 MM IN DIAMETER

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 10

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85006

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
88	57.42	57.62	0.20			ROCK LOSS	
88	57.62	57.85	0.23			CONGLOMERATE	MG-.VPR.M.GY.VBRKN LITHOLOGY AS ABOVE, MEDIUM GRAINED TO COARSE GRAINED
88	57.85	58.15	0.30			SANDSTONE	PBLY.MG-.VPR.M.GY.THNB.VBRKN INTERBEDDED CONGLOMERATE (AS ABOVE) AND PEBBLE SANDSTONE, CONGLOMERATE BANDS RANGE FROM 40.0 TO 100.0 MM WIDE
87	58.15	58.61	0.46			SANDSTONE	PBLY.MG-.VPR.M.GY.THNB.VBRKN LITHOLOGY AS ABOVE, MEDIUM GRAINED TO COARSE GRAINED
87	58.61	60.11	1.50			SANDSTONE	PBLY.MG-.VPR.M.GY.THNB.VBRKN LITHOLOGY AS ABOVE, CONGLOMERATE BANDS RANGE FROM 40 TO 210 MM WIDE, MORE SANDY TOWARDS BASE, SOME UNCONSOLIDATED SAND AT BASE
86	60.11	60.62	0.51			ROCK LOSS	

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 11

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85006

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
86	60.62	61.94	1.32			SANDSTONE	FG.MOD.M.GY.MAS.VBRKN CONGLOMERATE SANDSTONE, CONGLOMERATE BA NDS 30 MM THICK, MINOR QUARTZ VEINING
85	61.94	62.45	0.51			ROCK LOSS	
85	62.45	63.01	0.56			SANDSTONE	FG.PR.M.GY.MAS.VBRKN CONGLOMERATIC SANDSTONE, CONGLOMERATE B ANDS UP TO 120 MM THICK, PEBBLES GREY T O WHITE CHERT 5.0 TO 10.0 MM DIAMETER, WELL ROUNDED, MATRIX SUPPORTED, SANDIER TOWARDS BASE
85	63.01	63.75	0.74			SANDSTONE	FG.PR.M.GY.MAS.VBRKN LITHOLOGY AS ABOVE
84	63.75	65.11	1.36			SANDSTONE	FG LITHOLOGY AS ABOVE
83	65.11	65.93	0.82			SANDSTONE	FG.VPR.M.GY.MAS.SLD CONGLOMERATE SANDSTONE, MATRIX SUPPORTE D, PEBBLE BANDS THROUGHOUT UP TO 220 MM THICK, PEBBLES LESS THAN 10.0 MM DIAME TER, WELL ROUNDED, BLACK AND WHITE CHER T
83	65.93	66.98	1.05			SANDSTONE	FG.VPR.M.GY.MAS.SLD AS ABOVE

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 12

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85006

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
82	66.98	67.40	0.42			CONGLOMERATE	VPR.M.GY.MAS.SLD MATRIX SUPPORTED, MATRIX FINE GRAINED S ANDSTONE, PEBBLES WELL ROUNDED 2.5 TO 2 0.0 MM DIAMETER, BLACK AND WHITE CHERT, MINOR QUARTZ VEINING PERPENDICULAR TO BEDDING
82	67.40	67.57	0.17			SANDSTONE	FG.WEL.M.GY.MB.SLD
* 82	67.57	68.15	0.58			SANDSTONE	VFG.WEL.M.GY.MB.SLD THIN SILTSTONE LENSES DARK 2.0 MM THICK , COAL BAND 3.0 MM THICK AT BASE
79	68.15	68.99	0.84			SILTSTONE	SSY.M.GY.LAM.SLD MINOR TALC ALONG FRACTURE SURFACE, QUAR TZ VEIN 2.5 MM WIDE
75	68.99	69.86	0.87			SILTSTONE	SSY.M.GY.LAM.BRKN MINOR ANKERITE? ALONG FRACTURE SURFACE
72	69.86	70.01	0.15			ROCK LOSS	
* 70	70.01	70.90	0.89			SILTSTONE	SSY.M.GY.LAM.BRKN MINOR PYRITE ALONG FRACTURE SURFACE

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 13

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85006

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 74	70.90	72.91	2.01			SILTSTONE	SSY.M.GY.LAM.SSD.SLD SANDSTONE CONTENT DECREASING, SLUMP STR UCTURES, TOPS UP
77	72.91	72.98	0.07			SILTSTONE	SSY.M.GY.LAM.SSD.SLD LITHOLOGY AS ABOVE
* 81	72.98	75.06	2.08			SILTSTONE	M.GY.LAM.SLD
81	75.06	75.91	0.85			SILTSTONE	M.GY.LAM.SLD
81	75.91	77.14	1.23			SILTSTONE	M.GY.LAM.SLD
81	77.14	78.86	1.72			SILTSTONE	M.GY.LAM.SLD MINOR DISSEMINATED SECONDARY PYRITE ALO NG FRACTURE SURFACES
81	78.86	79.20	0.34			SILTSTONE	M.GY.LAM.SLD MINOR DISSEMINATED SECONDARY PYRITE ALO NG FRACTURE SURFACES
80	79.20	80.73	1.53			CLAYSTONE	MEL.M.GY.MAS.BRKN VERY MONOTONOUS
80	80.73	80.79	0.06			CLAYSTONE	LT.GY.SLD PALE BROWN-GREY WITH FOSSIL PLANT HASH

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 14

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85006

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
80	80.79	80.89	0.10			CLAYSTONE	M.GY.SLD FEW BRIGHT BANDS
80	80.89	81.05	0.16			CLAYSTONE	CARB.BLK.SLD VERY COALY, SEVERAL BRIGHT BANDS, THICK ANKERITE FRACTURE FILLING
80	81.05	81.07	0.02			COAL	C-2.SLD ANKERITE BAND IN CLEAT
80	81.07	81.16	0.09			CLAYSTONE	CARB.BLK.BRKN LITHOLOGY AS ABOVE
80	81.16	81.30	0.14			CLAYSTONE	DK.GY.SLD NO COAL VEINS.
80	81.30	81.64	0.34			CLAYSTONE	M.GY.BRKN
80	81.64	81.93	0.29	07330		CLAYSTONE	CARB.DK.GY.BRKN BRIGHT COAL BANDS
80	81.93	82.02	0.09	07331	G	COAL	C-2.BRKN SLIGHTLY WEATHERED
80	82.02	82.19	0.17	07331	G	COAL LOSS	
80	82.19	82.44	0.25	07331	G	COAL	C-1.BRKN BRIGHT AND HARD

* DENOTES MEASURED BCA

FORM 4001

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85006

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
80	82.44	82.50	0.06	07331	G	CLAYSTONE	CARB.BLK.BRKN LISTRIC SURFACE
80	82.50	82.57	0.07	07331	G	COAL LOSS	
80	82.57	82.65	0.08	07331	G	COAL	C-3
80	82.65	82.78	0.13	07331	G	COAL	C-6.SLD
80	82.78	82.79	0.01	07331	G	COAL	C-1.SLD VERY BRIGHT
80	82.79	82.85	0.06	07331	G	COAL	C-6.SLD
80	82.85	83.03	0.18	07331	G	CLAYSTONE	CARB.DK.GY.SLD MORE CARBONACEOUS DOWNHOLE
80	83.03	83.28	0.25	07331	G	COAL	C-1.VBRKN
80	83.28	83.42	0.14	07331	G	COAL LOSS	
80	83.42	83.67	0.25	07332	G	CLAYSTONE	CARB.DK.GY.SLD FEW BRIGHT COAL BANDS

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85006

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
80	83.67	83.77	0.10	07332	G	CLAYSTONE	CARB.SLD FEW THIN COAL BANDS
80	83.77	83.89	0.12	07332	G	CLAYSTONE	CARB.BRKN LITHOLOGY AS ABOVE, MANY BRIGHT COAL BA NDS
80	83.89	84.51	0.62	07332	G	CLAYSTONE	CARB.SLD VERY NUMEROUS, VERY THIN COAL VEINS
80	84.51	84.57	0.06	07333	G	COAL	C-2.SLD ANKERITE VEINS ALONG BEDDING
80	84.57	84.83	0.26	07333	G	COAL	C-1.SLD FEW ANKERITE VEINS IN CLEATS
80	84.83	84.85	0.02	07333	G	COAL	C-3.BRKN
80	84.85	84.88	0.03	07333	G	CLAYSTONE	CARB.BLK.SLD
80	84.88	84.89	0.01	07333	G	COAL	C-1
80	84.89	84.99	0.10	07333	G	COAL	C-1.SLD

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 17

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85006

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
80	84.99	85.05	0.06	07333	G	COAL	C-6.SLD
80	85.05	85.16	0.11	07333	G	COAL	C-6.BRKN
80	85.16	85.18	0.02	07333	G	COAL	C-1.SLD
80	85.18	85.23	0.05	07333	G	COAL	C-6.BRKN
80	85.23	85.47	0.24	07333	G	COAL LOSS	
* 80	85.47	85.94	0.47	07334	G	MUDSTONE	CARB.M.GY.BRKN FOSSIL PLANT HASH ON SOME SURFACES
80	85.94	86.18	0.24	07334	G	CLAYSTONE	CARB.DK.GY.SLD FEW COAL BANDS
80	86.18	86.19	0.01	07334	G	COAL	C-1.SLD
80	86.19	86.21	0.02	07334	G	CLAYSTONE	CARB.DK.GY.SLD LITHOLOGY AS ABOVE
80	86.21	86.29	0.08	07334	G	COAL	C-1

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 18

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85006

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
80	86.29	86.33	0.04	07334	G	CLAYSTONE	CARB.DK.GY.SLD LITHOLOGY AS ABOVE
80	86.33	86.37	0.04	07334	G	COAL	C-3.SLD
80	86.37	86.38	0.01	07334	G	COAL	C-1
80	86.38	86.42	0.04	07334	G	COAL	C-3.SLD BRIGHT BANDS
80	86.42	86.68	0.26	07334	G	CLAYSTONE	CARB.M.GY.BRKN FEW COAL LAMINAE
79	86.68	86.69	0.01	07334	G	COAL	C-2.SLD
79	86.69	87.01	0.32	07334	G	CLAYSTONE	M.GY.BRKN
79	87.01	87.07	0.06	07334	G	COAL	C-4.SLD
79	87.07	87.16	0.09	07334	G	CLAYSTONE	CARB.M.GY.BRKN
79	87.16	87.26	0.10	07334	G	COAL	C-3.BRKN

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 19

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85006

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
79	87.26	87.42	0.16	07334	G	COAL LOSS	
79	87.42	87.49	0.07	07334	G	CLAYSTONE	CARB.M.GY.BRKN LITHOLOGY AS ABOVE
79	87.49	87.89	0.40	07334	G	CLAYSTONE	CARB.BLK.SLD COALY LAMINAE
79	87.89	87.92	0.03	07334	G	COAL	C-3
79	87.92	88.08	0.16	07334	G	COAL LOSS	
79	88.08	88.20	0.12	07335		CLAYSTONE	CARB.BLK.SLD LITHOLOGY AS ABOVE
78	88.20	90.36	2.16			CLAYSTONE	CARB.MOD.DK.GY.LAM.SLD ALMOST BLACK, ABUNDANT COAL STRINGERS (<10MM) DECREASING DOWNHOLE, MINOR CALCI TE VEINLETS PARALLEL TO BEDDING, ABUNDA NT NEEDLE LIKE PLANT FOSSILS ON BEDDING PLANE, DECREASINGLY CARBONACEOUS DOWN
77	90.36	91.09	0.73			CLAYSTONE	WEL.M.GY.LAM.BRKN RARE COALFIED PLANT FRAGMENTS
77	91.09	91.24	0.15			ROCK LOSS	

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 20

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85006

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
77	91.24	92.53	1.29			CLAYSTONE	WEL.M.GY.LAM.SLD LITHOLOGY AS ABOVE, BECOMES SILTY IN TH E LOWERMOST 200 MM
* 76	92.53	94.25	1.72			SILTSTONE	MOD.M.GY.LAM.SLD SLIGHTLY CLAYEY AT TOP BECOMING SLIGHTL Y SANDY IN CENTRAL PORTION
73	94.25	94.60	0.35			SILTSTONE	MOD.M.GY.LAM.SLD CONTAINS MINOR ZONES OF DISSEMINATED PY RITE IN COARSER ZONES
* 70	94.60	96.62	2.02			SILTSTONE	SSY.PR.M.GY.LAM.BRKN FINE GRAINED SANDSTONE BANDS 100 MM THI CK IN CENTRAL PORTION, CONTORTED BEDDIN G IN LOWER 200 MM, UPRIGHT COALIFIED PL ANT MATTER ON BEDDING SURFACE
73	96.62	97.15	0.53			SILTSTONE	SSY.PR.M.GY.LAM.BRKN GRADES TO CLAYEY SILTSTONE
75	97.15	98.42	1.27			SILTSTONE	CLYY.PR.M.GY.LAM.BRKN SLIGHTLY SANDY AT BASE, TALC ALONG FRAC TURE SURFACES
77	98.42	98.60	0.18			SANDSTONE	MG.MOD.M.GY.THKB.SLD MINOR SILTSTONE LAMIATION, SILTSTONE RI P-UP CLASTS

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 21

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85006

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
78	98.60	98.92	0.32			SANDSTONE	MG.MOD.M.GY.THKB.SLD SHARP CONTACT WITH TOP AND BOTTOM UNITS
79	98.92	100.08	1.16			MUDSTONE	CARB.WEL.DK.GY.SLD MINOR QUARTZ VEIN (10.0 MM WIDE)
81	100.08	100.49	0.41			MUDSTONE	CARB.WEL.DK.GY.BRKN PLIABLE, SOFT
83	100.49	101.53	1.04			MUDSTONE	CARB.WEL.DK.GY.BRKN
* 85	101.53	102.27	0.74			SANDSTONE	SLTY.VFG.PR.M.GY.LAM.BRKN CORE LOSS?, SILTY LAMINAE THROUGHOUT, M INOR FINE GRAINED SANDSTONE THROUGHOUT
85	102.27	103.13	0.86			ROCK LOSS	
86	103.13	103.28	0.15			SANDSTONE	SLTY.VFG.PR.M.GY.LAM.BRKN SILTY LAMINAE, FINE GRAINED SANDSTONE T HROUGHOUT
86	103.28	105.04	1.76			SANDSTONE	SLTY.FG.PR.M.GY.LAM.SLD SLIGHTLY LESS SILTSTONE THAN ABOVE
87	105.04	105.40	0.36			SANDSTONE	FG-.WEL.M.GY.THKB.SLD VERY MINOR SILTSTONE LAMINAE, TOPS UP, EROSIONAL SURFACE

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 22

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85006

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
87	105.40	106.16	0.76			SANDSTONE	FG.WEL.M.GY.MAS.SLD VERY UNIFORM
87	106.16	106.24	0.08			SILTSTONE	SSY.MOD.M.GY.LAM.SLD QUARTZ VEIN 5.0 MM WIDE AT BASE
87	106.24	107.47	1.23			SANDSTONE	SLTY.PR.M.GY.LAM.SLD MINOR QUARTZ VEIN PARALLEL TO BEDDING 3 .0 MM WIDE, DARK GREY SILTY LAMINAE
88	107.47	107.59	0.12			SANDSTONE	SLTY.PR.M.GY.LAM.SLD
* 88	107.59	108.96	1.37			SILTSTONE	MOD.DK.GY.LAM.SLD MINOR SILTSTONE LAMINAE THROUGHOUT, QUA RTZ VEIN 2.0 MM WIDE, MINOR PLANT MATER IAL ALONG SOME BEDDING SURFACES
84	108.96	109.07	0.11			SILTSTONE	MOD.M.GY.LAM.SLD MINOR SANDY LAMINAE
82	109.07	109.39	0.32			MUDSTONE	WEL.DK.GY.BRKN MINOR PLANT MATERIAL, QUARTZ VEIN (1.0 MM WIDE) PERPENDICULAR TO BEDDING
81	109.39	109.49	0.10			MUDSTONE	WEL.DK.GY.SLD BRECCIATED ANGULAR MUDSTONE FRAGMENTS C EMENTED BY 1.0 MM WIDE QUARTZ VEINS

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 23

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85006

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
78	109.49	110.42	0.93			SILTSTONE	M.GY.BRKN HEAVILY FRACTURED WITH ANKERITE FILLING , THICK, APPROXIMATE, SAMPLED BY R HANE S BEFORE LOGGING
74	110.42	110.89	0.47			CLAYSTONE	CARB.DK.GY.BRKN ANKERITE VEINING
72	110.89	111.27	0.38			CLAYSTONE	CARB.DK.GY.BRKN THIN VEINS OF ANKERITE, BANDED WITH C-2 TO 5.0 MM WIDE
* 65	111.27	113.25	1.98			MUDSTONE	WEL.DK.GY.LAM.SLD VERY UNIFORM, MINOR COALY LENSES THROUG HOUT (1.0 MM), MINOR PLANT MATERIAL, WI SPY QUARTZ VEINING TO 1.0 MM WIDE
72	113.25	114.04	0.79			MUDSTONE	WEL.M.GY.LAM.SLD DECREASING IN MUD CONTENT TOWARDS BASE, COAL BAND 1MM
75	114.04	114.31	0.27			SILTSTONE	MOD.M.GY.SLD MINOR MUDSTONE LAMINAE, MINOR PLANT MAT ERIAL, COAL LENS 1.0 MM WIDE
78	114.31	115.22	0.91			SILTSTONE	WEL.M.GY.LAM.SLD MINOR SANDY LAMINAE, COAL LENSES 1.0 MM WIDE WITH LISTRIC SURFACE CONTAINING T ALC, BECOMING MORE SANDY TOWARDS BASE

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 24

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85006

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 85	115.22	117.24	2.02			SILTSTONE	MOD.M.GY.LAM.SLD MINOR COAL LENSES 1.0 MM WIDE, MINOR TA LC ON FRACTURE SURFACES
83	117.24	117.53	0.29			SANDSTONE	SLTY.PR.M.GY.LAM.SLD DARK GREY SILTSTONE LAMINAE
* 82	117.53	119.31	1.78			SANDSTONE	VFG.MOD.M.GY.LAM.XBDG.SLD TOPS UP, MINOR SILTSTONE LAMINAE THROUG HOUT, COAL LENSES 4.0 MM WIDE ASSOCIATE D WITH MINOR PYRITE AND QUARTZ VEINING 2.0 MM WIDE
83	119.31	119.47	0.16			SANDSTONE	FG.MOD.M.GY.LAM.SLD MINOR SILTSTONE LAMINAE, QUARTZ VEIN PE RPENDICULAR TO BEDDING (1.0 MM WIDE)
83	119.47	120.75	1.28			SANDSTONE	FG-.WEL.LT-M.GY.MAS MINOR TALC ALONG FRACTURE SURFACES, BEC OMING COARSER GRAINED TOWARDS BASE, COA L STRINGER 1.0 MM WIDE AT TOP
84	120.75	121.02	0.27			SANDSTONE	FG-.MOD.LT-M.GY.MAS.SLD
84	121.02	121.22	0.20			SANDSTONE	MG.MOD.LT.GY.MAS.SLD MINOR TALC ALONG FRACTURE SURFACE

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 25

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85006

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
84	121.22	121.40	0.18			SANDSTONE	MG.MOD.LT.GY.MAS.BRKN LITHOLOGY AS ABOVE
85	121.40	122.97	1.57			SANDSTONE	FG-.PR.M.GY.MAS.BRKN MINOR TALC ALONG FRACTURE SURFACE, DARK SILTSTONE PEBBLES, ROUNDED, LESS THAN 10.0 MM IN DIAMETER, SPORADIC
86	122.97	124.00	1.03			SANDSTONE	FG-.MOD.M.GY.MAS.SLD PEBBLE HORIZON AT 0.07 MM, PEBBLES WELL ROUNDED, DARK, SPORADIC, TOPS UP, EROS IONAL SURFACE
86	124.00	124.11	0.11			SANDSTONE	MG.MOD.LT.GY.MAS.SLD SILICEOUS CEMENT
86	124.11	124.82	0.71			SANDSTONE	MG-.MOD.LT.GY.MAS.SLD MINOR SILTSTONE UNIT AT TOP, QUARTZ AND CALCITE VEIN 2.0 MM PERPENDICULAR TO B EDDING
87	124.82	124.92	0.10			SANDSTONE	MG-.MOD.LT.GY.MAS.SLD
* 87	124.92	125.37	0.45			SANDSTONE	FG.PR.M.GY.THNB.SLD INTERBEDDED SILTSTONE INCREASING TOWARD S BASE, EROSION SURFACE, TOPS UP

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 26

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85006

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
85	125.37	126.43	1.06			SILTSTONE	SSY.PR.M.GY.THNB.SLD BECOMING SLTIER TOWARDS BASE
83	126.43	126.63	0.20			MUDSTONE	VWEL.DK.GY.SLD QUARTZ VEIN 2MM AT BASE
83	126.63	126.79	0.16			MUDSTONE	VWEL.DK.GY.SLD COALIFIED PLANT MATERIAL AT BASE
* 81	126.79	127.99	1.20			MUDSTONE	VWEL.DK.GY.SLD TALC ALONG FRACTURE SURFACES
81	127.99	128.15	0.16			ROCK LOSS	
81	128.15	129.00	0.85			SILTSTONE	MOD.M.GY.LAM.SLD CALCITE VEIN 2MM AT BASE PERPENDICULAR TO BEDDING, BECOMING SILTIER AT BASE
* 82	129.00	130.62	1.62			SANDSTONE	VFG-.MOD.M.GY.THNB.SLD MINOR DARK GREY SILTSTONE LAMINAE, QUAR TZ VEIN 20.0 MM CAUSING MINOR BRECCIATI ON
82	130.62	131.06	0.44			SANDSTONE	VFG-.WEL.M-DK.GY.THNB.SLD MINOR DARK GREY SILTSTONE LAMINAE THROU GHOUT

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 27

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85006

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 83	131.06	132.93	1.87			SANDSTONE	VFG-.WEL.M.GY.THNB.SLD EROSIVE SURFACE, TOPS UP, MINOR DARK GR EY SILTSTONE LAMINAE
84	132.93	133.70	0.77			SANDSTONE	FG.WEL.M.GY.THNB.BRKN
* 85	133.70	134.90	1.20			SANDSTONE	FG.WEL.M.GY.THNB.SLD MINOR SILTSTONE LAMINAE
85	134.90	136.17	1.27			SANDSTONE	FG.MOD.M.GY.THNB.WRMBU.BRKN MINOR TALC ALONG FRACTURE SURFACES, QUA RTZ VEIN 1.0 MM WIDE
85	136.17	136.23	0.06			ROCK LOSS	
85	136.23	136.92	0.69			SANDSTONE	SLTY.VFG.PR.M.GY.LAM.WRMBU.SLD MINOR TALC ALONG FRACTURE SURFACE, EROS ION SURFACES, TOPS UP
85	136.92	137.00	0.08			SILTSTONE	SSY.PR.M.GY.LAM.SLD QUARTZ VEIN AT TOP 3.0 MM
85	137.00	139.04	2.04			SILTSTONE	MOD.M.GY.LAM.WRMBU.SLD TOPS UP

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 28

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85006

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 85	139.04	139.79	0.75			SILTSTONE	WEL.DK.GY.LAM.SLD SANDIER TOWARDS TOP
85	139.79	140.92	1.13			MUDSTONE	VWEL.DK.GY.LAM.WRMBU.SLD SILTIER TOWARDS TOP, TOPS UP, VERY UNIF ORM TOWARDS BASE
86	140.92	142.35	1.43			MUDSTONE	VWEL.DK.GY.LAM.SLD VERY UNIFORM
86	142.35	142.65	0.30			SANDSTONE	FG-.PR.M.GY.THNB.SLD MINOR SALT AND PEPPER COLOUR, MUDDIER T OWARDS TOP, MINOR MUDSTONE LAMINAE
86	142.65	142.93	0.28			SANDSTONE	FG-.MOD.M.GY.THNB.SLD ROOTLET 20.0 MM LONG
87	142.93	145.02	2.09			SILTSTONE	CLYY.PR.DK.GY.THNB.WRMBU.SLD TOPS UP, SANDIER AT TOP
* 87	145.02	145.70	0.68			SILTSTONE	CLYY.PR.DK.GY.LAM.SLD MUDDIER TOWARDS BASE
* 87	145.70	146.18	0.48			SILTSTONE	CLYY.MOD.DK.GY.LAM.WRMBU.SLD TOPS UP.

* DENOTES MEASURED BCA

FORM 4001

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85006

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
84	146.18	146.23	0.05			QUARTZITE	WH.SLD LAMINATED AT TOP AND BOTTOM WITH MUDSTO NE, SURROUNDED BY CALCITE AND MINOR TAL C
* 79	146.23	147.14	0.91			SILTSTONE	CLYY.MOD.DK.GY.LAM.WPMBU.SLD MODERATELY FRACTURED SURFACES WITH LINE ATIONS AND MINOR TALC
* 80	147.14	148.77	1.63			MUDSTONE	SLTY.MOD.DK.GY.LAM.XBDG.SLD TOPS UP
82	148.77	149.06	0.29			ROCK LOSS	
83	149.06	149.42	0.36			MUDSTONE	SLTY.MOD.DK.GY.LAM.XBDG.SLD
* 85	149.42	151.45	2.03			MUDSTONE	SLTY.MOD.DK.GY.LAM.XBDG.SLD QUARTZ VEIN 10.0 MM LAMINATED WITH MUDS TONE, MINOR LINEATED FRACTURE SURFACES CONTAINING TALC, TOPS UP
83	151.45	151.86	0.41			MUDSTONE	WEL.DK.GY.LAM.SLD MINOR SILTSTONE LAMINAE
81	151.86	153.13	1.27			MUDSTONE	MOD.DK.GY.LAM.XBDG.SLD SOME SILTY HORIZONS, MINOR DISSEMINATED PYRITE 1.0 MM THICK, TOPS UP

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85006

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
80	153.13	153.47	0.34	07336		MUDSTONE	WEL.DK.GY.SLD COALY LENSES UP TO 20.0 MM, ASSOCIATED QUARTZ VEINING 3.0 MM, FRACTURE SURFACE S STRIATED CONTAINING SOME TALC
80	153.47	153.53	0.06	07337	F	COAL	C-2.SLD ANKERITE IN CLEATS AND FRACTURES
79	153.53	153.71	0.18	07337	F	COAL	C-2.BRKN
79	153.71	153.76	0.05	07337	F	CLAYSTONE	CARB.DK.GY.BRKN ANKERITE VEINS
79	153.76	153.86	0.10	07337	F	COAL	C-2.SLD
79	153.86	153.89	0.03	07337	F	CLAYSTONE	CARB.SLD ANKERITE BANDS, CLAYSTONE VERY CARBONAC EOUS, BORDERING ON C-6
79	153.89	153.96	0.07	07337	F	COAL	C-3.BRKN
79	153.96	153.98	0.02	07337	F	CLAYSTONE	CARB.BLK.SLD

* DENOTES MEASURED BCA

FORM 4001

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85006

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
79	153.98	154.04	0.06	07337	F	COAL	C-3.BRKN
79	154.04	154.07	0.03	07337	F	CLAYSTONE	CARB.DK.GY.SLD
79	154.07	154.10	0.03	07337	F	COAL	C-3.BRKN
79	154.10	154.12	0.02	07337	F	CLAYSTONE	CARB
79	154.12	154.17	0.05	07337	F	COAL	C-4.SLD
78	154.17	154.31	0.14	07337	F	COAL	C-3.BRKN
78	154.31	154.33	0.02	07337	F	CLAYSTONE	CARB.BLK.SLD

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85006

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
78	154.33	154.36	0.03	07337	F	COAL	C-4.SLD
78	154.36	154.38	0.02	07337	F	COAL	C-3
78	154.38	154.39	0.01	07337	F	CLAYSTONE	CARB.BLK.SLD ANKERITE VEINS
78	154.39	154.63	0.24	07337	F	COAL	C-2.BRKN
78	154.63	154.65	0.02	07337	F	COAL	C-4.SLD
78	154.65	154.68	0.03	07337	F	COAL	C-1.SLD
78	154.68	154.71	0.03	07337	F	CLAYSTONE	CARB.BLK.BRKN
78	154.71	154.80	0.09	07337	F	COAL	C-2.BRKN
77	154.80	154.81	0.01	07337	F	CLAYSTONE	CARB.SLD

* DENOTES MEASURED BCA

FORM 4001

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PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85006

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
77	154.81	154.82	0.01	07337	F	COAL	C-6.SLD
77	154.82	154.91	0.09	07337	F	COAL	C-6.BRKN BRIGHT BANDS
77	154.91	154.94	0.03	07337	F	CLAYSTONE	CARB.SLD FEW COALY LAMINAE
77	154.94	155.13	0.19	07337	F	COAL	C-6.BRKN BRIGHT BANDS
77	155.13	155.38	0.25	07337	F	COAL LOSS	
76	155.38	155.47	0.09	07337	F	CLAYSTONE	CARB.BLK.SLD
76	155.47	155.64	0.17	07337	F	CLAYSTONE	CARB.BLK.BRKN BRIGHT BANDED
76	155.64	155.68	0.04	07337	F	COAL	C-2.BRKN
76	155.68	155.72	0.04	07337	F	CLAYSTONE	CARB.DK.GY.BRKN
76	155.72	155.75	0.03	07337	F	COAL	C-4.BRKN

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 34

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85006

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
76	155.75	155.80	0.05	07337	F	COAL	C-1.BRKN
76	155.80	155.92	0.12	07337	F	CLAYSTONE	CARB.BLK.BRKN
75	155.92	155.93	0.01	07337	F	COAL	C-2.SLD ANKERITE IN CLEATS
75	155.93	156.09	0.16	07337	F	CLAYSTONE	CARB.BLK.BRKN BRIGHT BANDS
75	156.09	156.45	0.36	07337	F	ROCK LOSS	
74	156.45	156.60	0.15	07337	F	COAL LOSS	
74	156.60	156.65	0.05	07337	F	COAL	C-1.SLD CLAYSTONE BAND 5.0 MM WIDE
74	156.65	157.02	0.37	07338		CLAYSTONE	CARB.DK.GY.SLD BRIGHT BANDS, SOME ANKERITE VEINING
73	157.02	157.45	0.43			CLAYSTONE	CARB.DK.GY ANKERITE VEINS
73	157.45	157.59	0.14			CLAYSTONE	APPROXIMATE ONLY - SAMPLED L.HAWES BEFO RE LOGGED.

* DENOTES MEASURED BCA

FORM 4001

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85006

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
72	157.59	157.89	0.30			CLAYSTONE	CARB.DK.GY.SLD VERY THIN COAL VEINS WITH ANKERITE LINI NG
72	157.89	158.24	0.35			MUDSTONE	CARB.WEL.BLK.SLD COAL INCLUSIONS THROUGHOUT 1-3MM SURROU NDED BY ANKERITE, PLANT MATERIAL ON FRA CTURE SURFACES
* 70	158.24	159.96	1.72			MUDSTONE	WEL.DK.GY.SLD COAL INCLUSIONS 1-2MM THROUGHOUT SURROU NDED BY ANKERITE, MODERATELY CARBONACEO US, SMALL PYRITE BLEB 5.0 MM
73	159.96	160.60	0.64			MUDSTONE	SLTY.MOD.M.GY.LAM.SLD COAL BAND 1MM.
* 75	160.60	161.31	0.71			SANDSTONE	SLTY.VFG.MOD.M.GY.VTHNB.SLD SILTIER TOWARDS TOP, FRACTURE SURFACE C ONTAINS STRIATIONS AND TALC
76	161.31	161.98	0.67			SANDSTONE	VFG.MOD.M.GY.VTHNB.SLD MINOR CARBONACEOUS PLANT MATERIAL
* 77	161.98	164.12	2.14			SANDSTONE	VFG-.MOD.M.GY.THNB.WRMBU.SLD TOPS UP, LOCALIZED BRECCIATED ZONES 80. 0 MM CONTAINING ANGULAR SANDSTONE FRAGM ENTS HOSTED BY CALCITE AND ANKERITE.

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85006

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
79	164.12	164.35	0.23			SANDSTONE	VFG-.PR.M.GY.VTHNB.SLD TALC ALONG FRACTURE SURFACE
* 80	164.35	166.13	1.78			SANDSTONE	FG.VPR.M.GY.THNB.WRMBU.SLD TOPS UP, CONTORTED BEDDING AND MINOR BR ECCIATION TOWARDS BASE, ANGULAR SANDSTO NE FRAGMENTS HOSTED BY CALCITE AND ANKE RITE
80	166.13	167.36	1.23			SANDSTONE	FG.PR.M.GY.THNB.WRMBU.SLD TALC ALONG FRACTURE SURFACES, TOPS UP, INTERBEDDED SILTSTONE LAMINAE
* 80	167.36	168.29	0.93			SANDSTONE	SLTY.VFG.PR.M.GY.VTHNB.SLD DARK GREY SILTY LAMINAE
* 87	168.29	170.37	2.08			SANDSTONE	VFG.VPR.M.GY.VTHNB.WRMBU.SLD DARK GREY SILTY LAMINAE, TOPS UP
86	170.37	170.46	0.09			SANDSTONE	VFG.MOD.M.GY.SLD
* 89	170.46	171.13	0.67			SANDSTONE	SLTY.VFG.PR.M.GY.VTHNB.WRMBU.SLD DARK GREY SILTY LAMINAE, TOPS UP
88	171.13	171.21	0.08			SILTSTONE	SSY.MOD.M.GY.VTHNB.SLD

* DENOTES MEASURED BCA

FORM 4001

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85006

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
88	171.21	171.28	0.07			CALCITE	MM.SLD CALCITE, ANKERITE AND QUARTZ WITH MINOR SILTSTONE LAMINAE DEPOSITION
87	171.28	172.50	1.22			SILTSTONE	SSY.VPR.M.GY.VTHNB.SLD LIGHT GREY VERY FINE GRAINED SANDSTONE BEDS, CALCAREOUS, CONTORTED BEDDING AT BASE, CALCITE VEIN PERPENDICULAR TO BED DING (1.0 MM WIDE)
85	172.50	172.77	0.27			SANDSTONE	FG.M.GY.THNB.SLD CALCITE VEIN 5.0 MM WIDE AT TOP
84	172.77	173.52	0.75			SANDSTONE	FG.WEL.M.GY.THNB.SLD UNIFORM, MINOR CALCITE VEIN 1.0 MM WIDE PERPENDICULAR TO BEDDING
83	173.52	173.73	0.21			SANDSTONE	FG.MOD.LT-M.GY.LAM.SLD SLIGHTLY CALCAREOUS
82	173.73	173.97	0.24			SANDSTONE	FG.MOD.M.GY.LAM.WRMBU.SLD QUARTZ VEIN 10.0 MM WIDE PERPENDICULAR TO BEDDING, TOPS UP
* 80	173.97	175.94	1.97			SILTSTONE	MOD.M.GY.LAM.SLD MINOR SANDSTONE LAMINAE INCREASING TOWA RDS TOP, TALC ALONG FRACTURE SURFACES, SLUMP STRUCTURE, TOPS UP, QUARTZ VEIN 1 .0 MM WIDE

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85006

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
81	175.94	176.07	0.13			MUDSTONE	SLTY.MOD.DK.GY.LAM.SLD
81	176.07	176.29	0.22			SILTSTONE	CLYY.MOD.M.GY.MAS.BRKN LAMINATED SEDIMENTARY STRUCTURES
82	176.29	178.01	1.72	07339		SILTSTONE	AS ABOVE, WISPY LAMINAE, CROSS LAMINAE FINING DOWN
83	178.01	178.11	0.10	07339		CLAYSTONE	CARB.DK.GY.SLD DEFORMED ANKERITE VEINS WITH BOUDINAGED COAL VEINS
83	178.11	178.13	0.02	07339		CLAYSTONE	CARB.BLK.SLD VERY COALY, BRIGHT BANDS
83	178.13	178.20	0.07	07340	E	COAL	C-2.BRKN
84	178.20	178.22	0.02	07340	E	CLAYSTONE	CARB.DK.GY.BRKN
84	178.22	178.34	0.12	07340	E	COAL	C-3.VBRKN SOMEWHAT SOFT AND WEATHERED

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 39

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85006

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
84	178.34	178.44	0.10	07340	E	CLAYSTONE	CARB.BLK.PWRD SOFT, LISTRIC
84	178.44	178.46	0.02	07340	E	COAL LOSS	
84	178.46	178.47	0.01	07340	E	COAL	C-2.BRKN
84	178.47	178.53	0.06	07340	E	CLAYSTONE	CARB.BLK.PWRD AS ABOVE.
84	178.53	178.63	0.10	07340	E	COAL	C-2.VBRKN WEATHERED IN PLACES.
84	178.63	178.71	0.08	07340	E	COAL LOSS	
84	178.71	178.77	0.06	07340	E	CLAYSTONE	CARB.BLK.SLD SOFT
84	178.77	178.82	0.05	07340	E	CLAYSTONE	CARB.BLK.SLD
84	178.82	179.00	0.18	07340	E	COAL	C-2.BRKN FEW ANKERITE VEINS
84	179.00	179.04	0.04	07340	E	COAL LOSS	
85	179.04	179.29	0.25	07341		CLAYSTONE	CARB.DK.GY.BRKN VERY THIN COAL LAMINAE

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 40

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85006

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
85	179.29	180.10	0.81			CLAYSTONE	CARB.DK.GY.BRKN FEWER COAL VEINS DOWNWARD.
86	180.10	180.41	0.31			CLAYSTONE	CARB.WEL.DK.GY.SLD COAL STRINGERS 1MM AND STRATIFORM PYRIT E TOWARDS TOP, PLANT FOSSILS
86	180.41	180.80	0.39			SILTSTONE	MOD.M.GY.SLD CONTORTED BEDDING, LARGE PROPORTION OF MUDSTONE TOWARDS TOP
* 87	180.80	182.00	1.20			SANDSTONE	VFG-.WEL.M.GY.MAS.SLD UNIFORM.
87	182.00	182.17	0.17			SANDSTONE	FG.WEL.M.GY.THNB.SLD
* 88	182.17	184.01	1.84			SANDSTONE	FG.WEL.M.GY.THNB.WRMBU.SLD MINOR SILTSTONE AND MUDSTONE INTERBEDS 10.0 MM THICK, COAL BED 1.0 MM WIDE, TO PS UP
85	184.01	184.27	0.26			ROCK LOSS	

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 41

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85006

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 83	184.27	185.42	1.15			SANDSTONE	SLTY.VFG-.MOD.M.GY.THNB.BRKN
81	185.42	185.83	0.41			SANDSTONE	VFG.WEL.M.GY.MB.SLD MINOR DARK GREY SILTSTONE INTERBEDS
80	185.83	186.26	0.43			SANDSTONE	FG-.MOD.LT-M.GY.MB.SLD
79	186.26	186.57	0.31			SANDSTONE	MG.WEL.LT.GY.MAS.SLD SPORADIC PEBBLES 5.0MM COMPOSED OF SILT STONE, SHARP CONTACT WITH UNDERLYING UN IT
* 76	186.57	188.33	1.76			SANDSTONE	VFG.WEL.M.GY.THNB.SLD MINOR SILTSTONE INTERBEDS 10.0 MM WIDE, ONE CALCITE UNIT 40.0 MM WIDE
77	188.33	188.50	0.17			SANDSTONE	VFG.WEL.M.GY.THNB.SLD
78	188.50	189.33	0.83			SANDSTONE	FG.MOD.M.GY.VTHNB.VBRKN SOME DARK GREY SILTSTONE LAMINAE

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 42

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85006

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 79	189.33	190.17	0.84			SANDSTONE	VFG.MOD.M.GY.VTHNB.BRKN TALC ALONG FRACTURE SURFACE, MINOR DARK GREY SILTSTONE LAMINAE
* 78	190.17	191.39	1.22			SANDSTONE	SLTY.VFG.MOD.M.GY.VTHNB.SLD
* 72	191.39	192.21	0.82			SILTSTONE	SSY.MOD.M.GY.VTHNB.SLD CALCITE VEIN 20.0 MM WIDE PARALLEL TO B EDDING AT TOP INTERLAMINATED WITH SILTS TONE
* 76	192.21	194.33	2.12			SILTSTONE	MOD.M.GY.VTHNB.WRMBU.BRKN TOPS UP, VERY FINE GRAINED SANDSTONE IN TERBEDS
76	194.33	194.36	0.03			CALCITE	WH PARALLEL TO BEDDING, INTERLAMINATED WIT H SILTSTONE
76	194.36	194.56	0.20			ROCK LOSS	
77	194.56	195.07	0.51			SILTSTONE	MOD.M.GY.VTHNB.SLD SHARP CONTACT WITH UNDERLYING UNIT
77	195.07	196.04	0.97			SANDSTONE	VFG-.MOD.M.GY.THNB.SLD

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 43

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85006

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 77	196.04	196.66	0.62			SILTSTONE	MOD.M.GY.VTHNB.SLD MINOR DEPOSITS OF CALCITE AND COAL BAND S 1.0 MM WIDE AT TOP
78	196.66	197.62	0.96			SILTSTONE	MOD.M.GY.VTHNB.SLD
* 79	197.62	198.74	1.12			SILTSTONE	MOD.M.GY.VTHNB.SLD CALCITE VEIN 2MM WIDE PERPENDICULAR TO BEDDING, CORE BECOMING MORE FRACTURED D UE TO PROXIMITY TO AXIS
79	198.74	200.44	1.70			SILTSTONE	MOD.M.GY.BRKN ABUNDANT FRACTURING, MINOR TALC ON SOME FRACTURE SURFACES
79	200.44	200.69	0.25			SILTSTONE	MOD.M.GY.VTHNB.BRKN QUARTZ VEINING 3.0 MM WIDE FORMING MINO R BRECCIATION
79	200.69	200.81	0.12			SILTSTONE	WEL.M.GY.VBRKN MODERATELY UNCONSOLIDATED
* 79	200.81	201.89	1.08			SILTSTONE	WEL.M.GY.THNB.SLD TALC ALONG FRACTURE SURFACE

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 44

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85006

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
78	201.89	202.66	0.77			SILTSTONE	MOD.M.GY.VTHNB.BRKN TALC ALONG FRACTURE SURFACES, CALCITE A ND QUARTZ VEINING 1.0 MM PERPENDICULAR TO BEDDING, BECOMING ABUNDANT TOWARDS B ASE, CARBONACEOUS AT BASE, LINEATED FRA CTURE SURFACE AT BASE
78	202.66	203.64	0.98			MUDSTONE	WEL.DK.GY.BRKN MINOR TALC ALONG FRACTURE SURFACES, MIS PY CALCITE VEINING 1.0 MM WIDE FORMING MINOR BRECCIATION AT TOP
77	203.64	203.90	0.26			MUDSTONE	WEL.DK.GY.SLD HIGHLY FRACTURED, MODERATELY UNCONSOLID ATED
* 77	203.90	204.62	0.72			SILTSTONE	MOD.M.GY.LAM.BRKN MINOR TALC ALONG FRACTURE SURFACE, QUAR TZ VEIN 5.0 MM WIDE AT TOP PARALLEL TO BEDDING
78	204.62	206.14	1.52			SILTSTONE	MOD.M.GY.LAM.BRKN QUARTZ VEIN 35.0 MM WIDE
* 79	206.14	206.65	0.51			SILTSTONE	CLYY.PR.DK.GY.LAM.SLD MINOR TALC ALONG FRACTURE SURFACE

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 45

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85006

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 82	206.65	208.71	2.06			SILTSTONE	PR.M.GY.LAM.WRMBU.BRKN MINOR MUDSTONE INTERBEDS, TOPS UP AT TO P OF UNIT, CROSS BEDDING AT BASE (BCA=2 3) GIVES TOPS DOWN
* 34	208.71	209.36	0.65			MUDSTONE	SLTY.VPR.DK.GY.LAM.BRKN
37	209.36	209.51	0.15			SILTSTONE	PR.M.GY.LAM.XBDG.BRKN TOPS DOWN
39	209.51	209.84	0.33			ROCK LOSS	
* 45	209.84	210.88	1.04			SILTSTONE	PR.M.GY.LAM.WRMBU.SLD TOPS DOWN
51	210.88	211.57	0.69			SANDSTONE	VPR.S-P.GY.MAS.SLD TALC ALONG FRACTURE SURFACE, DARK GREY SANDSTONE WITH WHITE SPECKS
57	211.57	212.73	1.16			MUDSTONE	VWEL.DK.GY.SLD STRIATED ALONG FRACTURE SURFACE, VERY H OMOGENEOUS
61	212.73	212.90	0.17			MUDSTONE	VWEL.DK.GY.BRKN MINOR GREEN TALC ALONG FRACTURE SURFACE

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 46

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85006

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
64	212.90	213.63	0.73			SANDSTONE	PR.S-P.GY.MAS.SLD TALC ALONG FRACTURE SURFACE
69	213.63	214.24	0.61			SILTSTONE	MOD.M.GY.VTHNB.SLD MINOR TALC ALONG FRACTURE SURFACES
73	214.24	214.92	0.68			MUDSTONE	SLTY.MOD.M.GY.VTHNB.SLD
77	214.92	215.56	0.64			SANDSTONE	PR.S-P.GY.MAS.BRKN BECOMES DARK GREY AND MUDDY TOWARDS TOP , SANDSTONE IS SPECKLED
79	215.56	215.60	0.04			SANDSTONE	PR.S-P.GY.MAS.SLD SANDSTONE IS SPECKLED
* 84	215.60	216.98	1.38			SILTSTONE	PR.M.GY.BRKN STRATAFORM PYRITE BAND 3.0 MM WIDE, QUA RTZ VEIN PARALLEL TO BEDDING 10.0 MM WI DE, MINOR TALC ALONG FRACTURE SURFACES, WISPY QUARTZ VEINING 1.0 MM WIDE AT BO TTOM
* 52	216.98	218.42	1.44			SILTSTONE	CLYY.MOD.M.GY.VTHNB.BRKN QUARTZ AND CALCITE VEINING 60MM WIDE WI TH ASSOCIATED TALC, WISPY VEINING THROU GHOUT, HEAVILY FRACTURED

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 47

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85006

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
33	218.42	218.71	0.29			ROCK LOSS	
* 25	218.71	219.19	0.48			SILTSTONE	MOD.M.GY.VTHNB.SLD
33	219.19	220.57	1.38			MUDSTONE	SLTY.MEL.DK.GY.SLD VERY HOMOGENEOUS
* 42	220.57	221.14	0.57			SILTSTONE	CLYY.MOD.M.GY.VTHNB.SLD
43	221.14	221.45	0.31			SILTSTONE	MOD.M.GY.VTHNB.SLD
44	221.45	221.86	0.41			ROCK LOSS	
* 45	221.86	222.78	0.92			SILTSTONE	MOD.M.GY.VTHNB.BRKN MINOR TALC ALONG FRACTURE SURFACES, QUA RTZ AND CALCITE VEIN 2.0 MM WIDE PARALL EL TO BEDDING

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 48

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85006

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
39	222.78	223.45	0.67			SILTSTONE	M.GY.VTHNB.BRKN QUARTZ AND CALCITE VEINING PERPENDICULA R AND PARALLEL TO BEDDING, LESS THAN 10 .0 MM WIDE, FRACTURED AND MODERATELY UN CONSOLIDATED
32	223.45	224.69	1.24			SILTSTONE	CLYY.MEL.M-DK.GY.LAM.BRKN MODERATELY FRACTURED, WISPY QUARTZ AND CALCITE VEINING THROUGHOUT, SOME UNCONS OLIDATED UNITS
26	224.69	225.12	0.43			ROCK LOSS	
24	225.12	225.20	0.08			SILTSTONE	CLYY.MEL.M-DK.GY.LAM.VBRKN QUARTZ VEINING
24	225.20	225.24	0.04			CLAYSTONE	CARB.BLK.BRKN COALY
23	225.24	225.48	0.24			SILTSTONE	MEL.M.GY.SLD PARTIALLY UNCONSOLIDATED, WISPY QUARTZ AND CALCITE VEINING THROUGHOUT
21	225.48	225.59	0.11			QUARTZITE	WH.SLD EUHEDRAL QUARTZ CRYSTALS, ASSOCIATED GR EEN TALC AND MINOR BRECCIA

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 49

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85006

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
20	225.59	225.78	0.19			SILTSTONE	WEL.M.GY.VTHNB.SLD GREEN TALC INCLUSION 10.0 MM
* 12	225.78	227.83	2.05			SILTSTONE	MOD.M.GY.LAM.SLD WISPY QUARTZ AND GREEN TALC VEINING CON FINED TO 260 MM ZONE, FOLD AXIS INTERSE CTED
08	227.83	227.94	0.11			SILTSTONE	WEL.M.GY.BRKN
* 05	227.94	229.66	1.72			SILTSTONE	MOD.M.GY.LAM.BRKN LINEATED TALC, GREEN AND WHITE ALONG FR ACTURE SURFACES
09	229.66	229.88	0.22			ROCK LOSS	
* 12	229.88	231.08	1.20			SILTSTONE	MOD.M.GY.LAM.BRKN MINOR TALC AND QUARTZ 1.0MM ALONG MINOR FRACTURE SURFACES
15	231.08	231.83	0.75			SILTSTONE	MOD.M.GY.LAM.WRMBU.BRKN TOPS UP

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 50

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85006

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 20	231.83	233.88	2.05			SILTSTONE	MOD.M.GY.LAM.BRKN MINOR WISPY QUARTZ AND TALC VEINING 1.0 MM, TWO FOLD AXES INTERSECTED
21	233.88	234.02	0.14			SILTSTONE	CLYY.MOD.M.GY.LAM.BRKN AS ABOVE.
21	234.02	234.28	0.26			ROCK LOSS	
22	234.28	236.15	1.87			SILTSTONE	CLYY.MOD.M.GY.LAM.BRKN AS ABOVE, INTENSELY VEINED AND BRECCIAT ED, ABUNDANT TALC ON FRACTURE PLANES, B CA'S VARY RADICALLY AROUND 45 DEGREES W ITH 2 SMALL FOLD AXES
23	236.15	236.69	0.54			SILTSTONE	CLYY.MOD.M.GY.LAM.BRKN AS ABOVE, SIMILAR FRACTURING, MORE MINO R BRECCIATION, 1 FOLD AXES
23	236.69	236.95	0.26			ROCK LOSS	
24	236.95	238.48	1.53			SILTSTONE	CLYY.MOD.M.GY.LAM.BRKN 2 FOLD AXES, AROUND 25 DEGREES
* 25	238.48	240.06	1.58			SILTSTONE	CLYY.MOD.M.GY.LAM.BRKN AS ABOVE, LESS VEINING, MODERATE TALC, BCA'S VARY WIDELY, GRADES TO MUDSTONE, ONE FOLD AXIS

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 51

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85006

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 40	240.06	240.46	0.40			MUDSTONE	MOD.DK.GY.LAM.SLD LARGE VEIN PARALLEL TO BEDDING
* 42	240.46	242.38	1.92			MUDSTONE	MOD.DK.GY.LAM.BRKN AS ABOVE, MODERATELY WELL SPACED VEINS, MOST PARALLEL TO BEDDING, ABUNDANT TAL C
28	242.38	242.90	0.52			MUDSTONE	CARB.MOD.M.GY.LAM.BRKN EXTREMELY PYRITIC IN LRGE PYRITE VEINS (>10.0 MM WIDE), MINOR COALY STRINGERS
24	242.90	243.19	0.29			ROCK LOSS	
* 14	243.19	244.57	1.38			MUDSTONE	CARB.MOD.DK.GY.LAM.BRKN AS ABOVE, MODERATE COALY STRINGERS, BED S ARE WAVY, MODERATE VEINING PARALLEL T O BEDDING
* 70	244.57	245.91	1.34			MUDSTONE	CARB.MOD.DK.GY.LAM.BRKN MINOR COALY BANDS, VEINING WITH ABUNDAN T TALC, PARALLEL BEDS, SLIGHTLY SILTY I N PLACES
63	245.91	246.55	0.64			ROCK LOSS	

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 52

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85006

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
60	246.55	246.77	0.22			MUDSTONE	CARB.MOD.DK.GY.LAM.BRKN AS ABOVE.
52	246.77	248.75	1.98			SILTSTONE	MOD.M.GY.BRKN SOME MUDSTONE INTERBEDS, WISPY QUARTZ A ND TALC VEINING THROUGHOUT CAUSING MINO R BRECCIATION, COAL BAND 2.0 MM WIDE AN D MINOR COAL INCLUSIONS
* 43	248.75	249.37	0.62			SILTSTONE	MOD.M.GY.BRKN GREEN TALC ALONG FRACTURE SURFACES SOME TIMES FORMING MINOR BRECCIA (ANGULAR FR AGMENTS 3.0 MM)
* 20	249.37	250.54	1.17			SILTSTONE	MOD.M.GY.LAM.BRKN TALC AND QUARTZ VEINING, SOMETIMES WISP Y, THROUGHOUT LESS THAN 3.0 MM WIDE, MI NOR BRECCIA UNITS
* 46	250.54	252.18	1.64			SILTSTONE	MOD.M.GY.LAM.SLD MINOR QUARTZ AND TALC VEINING THROUGHOU T BEDDING PLANE, QUARTZ VEIN 25.0 MM, M INOR BRECCIA UNIT 50.0 MM WIDE, AXIAL P LANE DISTURBANCE THROUGHOUT
40	252.18	252.42	0.24			ROCK LOSS	

* DENOTES MEASURED BCA

FORM 4001

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85006

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
38	252.42	252.62	0.20			SILTSTONE	MOD.M.GY.LAM.SLD FOLD AXIS, LINEATED FRACTURE SURFACE.
* 33	252.62	253.91	1.29			SILTSTONE	MOD.M.GY.LAM.SLD QUARTZ, CALCITE AND TALC VEINING THROUG HOUT FOLD AXIS
32	253.91	254.63	0.72			SILTSTONE	MOD.M.GY.LAM.SLD ABUNDANT QUARTZ TALC AND CALCITE VEININ G FORMING BRECCIA, ANGULAR FRAGMENTS 3. 0 MM
32	254.63	255.66	1.03			MUDSTONE	MEL.DK.GY.LAM.BRKN MINOR BRECCIA AND QUARTZ VEINING 20.0 M M WIDE PARALLEL TO BEDDING, LINEATED FR ACTURE SURFACES
31	255.66	256.63	0.97			MUDSTONE	MEL.DK.GY.LAM.BRKN TALC ALONG FRACTURE SURFACES
30	256.63	258.41	1.78			MUDSTONE	MEL.DK.GY.LAM.BRKN TALC ALONG FRACTURE SURFACES, QUARTZ VE IN 3.0 MM WIDE
* 29	258.41	260.05	1.64			MUDSTONE	MEL.DK.GY.LAM.BRKN VERY UNIFORM
27	260.05	261.25	1.20			MUDSTONE	MEL.GY.LAM.SLD

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85006

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 25	261.25	262.45	1.20			MUDSTONE	MEL.DK.GY.LAM.SLD VERY UNIFORM, COALY INCLUSION, TOTAL DE PTH 264.26 (DRILLERS MARKER)

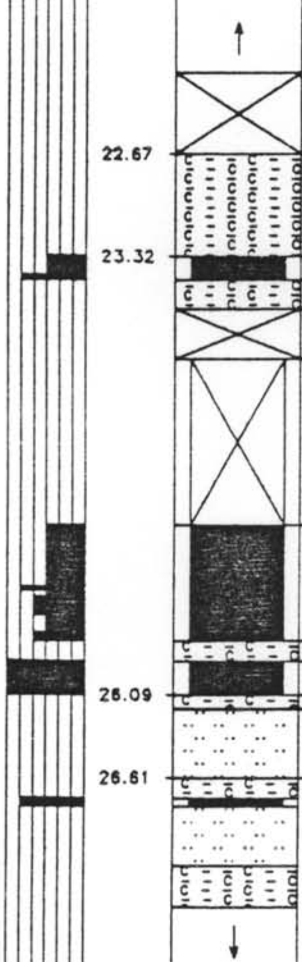
* DENOTES MEASURED BCA
NEWPAGE

FORM 4001

GULF CANADA RESOURCES INC.

SEAM DETAIL — COAL DIVISION — MOUNT KLAPPAN PROJECT — **TRUE THICKNESS**

DATA SOURCE:	KPN LR DDH85006	SEAM : H	INTERVAL(M) : 22.67 – 26.61	ELEVATION(M) :	1764.9
GEOLOGIST :	M. BARKER	SCALE:	DATE : DEC 19/85	DRAWING NO. :	

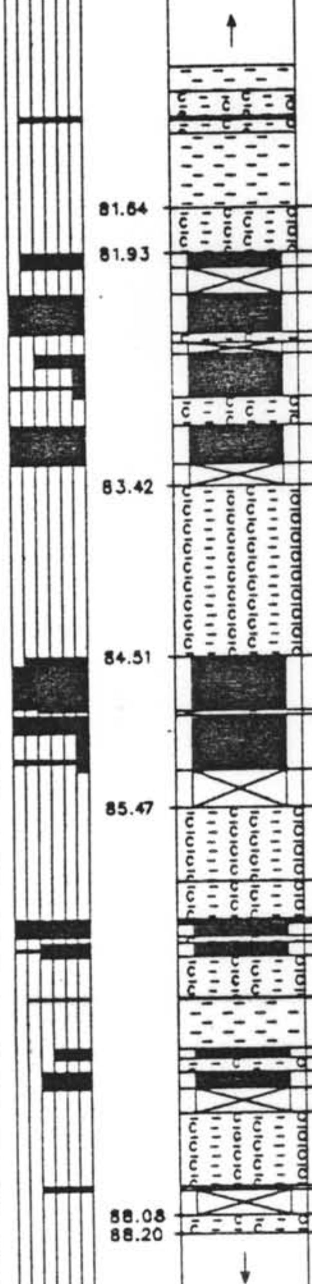


SEAM COMP. (1 2 3 4 5 6)	DRILL DEPTH (METRES)	COAL SEAM LOG	INTERVAL (METRES) ROCK	INTERVAL (METRES) COAL	% REC.	SAMPLE ID SIMP	SAMPLE ID COMP	COAL/ROCK TOTAL COMPOS	COAL/ROCK TOTAL MINING SECTION	COAL QUALITY A.D.B. RES MOIST	ASH	VM	FC	TS	CAL.VAL MJ/KG	
	22.67		0.65		100.0	7351										
	23.32			0.15	50.6	7352	22	2.13 / 0.63 2.76		1.15	40.46	7.56	50.83	0.32	19.16	—
			0.18													
			(0.32)													
				(1.05)												
				0.73												
			0.13													
				0.21												
	26.09		0.08													
			0.43		100.0	7353										
	26.61															

GULF CANADA RESOURCES INC.

SEAM DETAIL — COAL DIVISION — MOUNT KLAPPAN PROJECT — **TRUE THICKNESS**

DATA SOURCE:	KPN LR DDH85006	SEAM : G	INTERVAL(M) : 81.64 – 88.20	ELEVATION(M) : 1764.9	
GEOLOGIST :	M. BARKER	SCALE:	DATE : DEC 19/85	DRAWING NO. :	



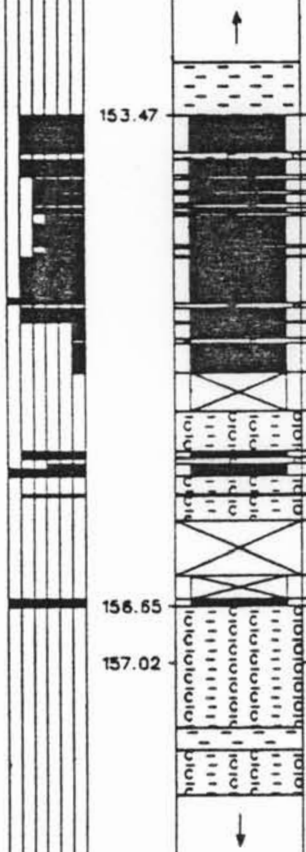
DRILL DEPTH (METRES)	INTERVAL (METRES) ROCK	INTERVAL (METRES) COAL	% REC.	SAMPLE ID SIMP	SAMPLE ID COMP	COAL/ROCK TOTAL COMPOS	COAL/ROCK TOTAL MINING SECTION	COAL QUALITY A.D.B. RES MOIST	ASH	VM	FC	TS	CAL.VAL MJ/KG	
81.64	0.29		100.0	7330										
81.93		[illegible]	74.5	7331										
		(0.17)												
		0.25												
	[illegible]													
		([illegible])												
		0.28												
	0.18													
		0.25												
		(0.14)												
83.42	1.07		100.0	7332	23	2.15 / 1.34 3.49		1.72	56.33	5.82	36.13	0.36	12.05	—
84.51		0.34	78.1	7333										
	[illegible]													
		0.35												
		(0.24)												
85.47	0.46		87.6	7334	24	0.69/ 1.88 2.57		2.18	67.74	6.34	23.74	0.22	8.11	—
	0.24													
	[illegible]	[illegible]												
	[illegible]	[illegible]												
		[illegible]												
	0.26													
		[illegible]												
	0.32													
		[illegible]												
	[illegible]													
		0.10												
		(0.16)												
	0.46													
		[illegible]												
		(0.10)												
88.08	0.12		100.0	7335										
88.20														

GULF CANADA RESOURCES INC.

COAL DIVISION
MOUNT KLAPPAN PROJECT

SEAM DETAIL — **TRUE THICKNESS**

DATA SOURCE:	KPN LR DDH85008	SEAM : F	INTERVAL(M) : 153.47 – 157.02	ELEVATION(M) :	1764.9
GEOLOGIST :	M. BARKER	SCALE:	DATE : DEC 19/85	DRAWING NO. :	



DRILL DEPTH (METRES)	INTERVAL (METRES) ROCK	INTERVAL (METRES) COAL	% REC.	SAMPLE ID SIMP	SAMPLE ID COMP	COAL/ROCK TOTAL COMPOS	COAL/ROCK TOTAL MINING SECTION	RES MOIST	ASH	VM	FC	TS	CAL.VAL MJ/KG
153.47		0.24											
	[illegible]												
		0.10											
	[illegible]	[illegible]											
	[illegible]	[illegible]											
	[illegible]	[illegible]											
		0.19											
	[illegible]	[illegible]											
		0.28											
	[illegible]	[illegible]											
	[illegible]	0.10											
	[illegible]	0.19	76.2	7337	25	1.94 / 1.16 3.10		1.22	38.67	7.37	55.74	0.87	20.78
		(0.24)											
	0.25												
		[illegible]											
	[illegible]												
		[illegible]											
	0.12												
		[illegible]											
	0.10												
	(0.35)												
		(0.19)											
		[illegible]											
156.65	0.38		100.0	7338									
157.02													

SEAM DETAIL

GULF CANADA RESOURCES INC.

COAL DIVISION
MOUNT KLAPPAN PROJECT

TRUE THICKNESS

DATA SOURCE: KPN LR DDH85006 SEAM : E INTERVAL(M) : 176.29 – 179.29 ELEVATION(M) : 1764.9

GEOLOGIST : M. BARKER SCALE: DATE : DEC 19/85 DRAWING NO. :

SEAM COMP. 1 2 3 4 5 6	DRILL DEPTH METRES	COAL SEAM LOG	INTERVAL METRES ROCK	COAL	% REC.	SAMPLE ID SIMP	COMP	COAL/ROCK TOTAL COMPOS	MINING SECTION	COAL QUALITY A.D.B. RES MOIST	ASH	V.M	FC	TS	CAL.VAL MJ/KG	
	176.29		1.71		100.0	7339										
			0.13													
	178.13		[illegible]	0.07												
				0.12												
			0.10													
				(0.02)												
			[illegible]													
				0.10	84.5	7340	26	0.62 / 0.29		1.15	15.72	6.39	76.74	0.52	28.80	—
				(0.06)				0.91								
			0.11													
				0.18												
	179.04			[illegible]												
			0.25		100.0	7341										
	179.29															

707

Gulf Canada Resources Inc.
Coal Division
Geophysical Log

Datasource:	**KPNLRDDH85006**	Province: BC	Northing: 6343990.00	Lat:	571427
Log Date:	85–03–24	Zone: 9	Easting: 506101.00	Long:	1285356
Company:	CENTURY	Measuring Point:		Elevation:	1764.9
Geologist:	M. BARKER				

Scale: 1 to 100.0

Depth Range: 0.0 to 267.0

True Thickness: NO

Comments:

1. GAMMA AND NEUTRON LOGS SHOW A DOWNHOLE SHIFT OF 1.5 M ; THAT
2. TOOL WAS NOT PROPERLY ZEROED AT SURFACE; DENSITY IS CORRECT.

Logs Plotted:

Description	Axis Range	Axis Length	Smoothing Points	Tool	Comments
1. GAMMA API	0.0 to 150.0	10.0	31	9055A	IN PIPE
2. NEUTRON–NEUTRON CPS	0.0 to 2500.0	10.0	9	9055A	IN PIPE
3. DENSITY G/CC	1.0 to 3.0	10.0	15	9030A1	IN PIPE

707

GULF CANADA RESOURCES INC.
COAL DIVISION
KLAPPAN PROJECT
STRATIGRAPHIC LOG
KPN LR DDH85006

GEOLOGIST : M. BARKER	DATE : JAN 08/86	DRAWING NO. :

SCALE : 1:200 1:40

NORTHING: 6343993.0 N INCLINATION: 90.0°
EASTING: 506101.0 E

LITHOLOGIC SYMBOLS

SANDSTONE	BENTONITE
SILTSTONE	BRECCIA
COAL	CARBONACEOUS
OVERBURDEN	QUARTZ
MUDSTONE/CLAYSTONE	PYRITE
TUFF	FERRUGINOUS
LIMESTONE	CONGLOMERATE
CORE LOSS	FOSSIL BED

KPNLRDDH85007

GULF CANADA RESOURCES INC.

- D A T A S O U R C E S U M M A R Y -

DATA SOURCE - KPNLRDDH85007 DATE - 01/09/86

- H I S T O R Y -

START DATE - 03/24/85
END DATE - 03/26/85

CONTRACTOR - J.T. THOMAS
GEOLOGIST - E. LEGRESLEY

OPERATOR - GCRI
SURVEYOR - MWG & ASS.

REMARKS - HOLE ABANDONED AT 101.00 M. NOT GEOPHYSICALLY LOGG
ED, SEE DDH85009 FOR RE-DRILL AT 65 DEGREE INCLINA
TION, SITE 1

- L O C A T I O N -

PROVINCE - BC
ELEVATION - 1761.90

ZONE - 9
NORTHING - 6344168.00
EASTING - 506330.37

LICENCE/LEASE NUMBER - 7151

LATITUDE - 571433
LONGITUDE - 1285342

- O R I E N T A T I O N -

LENGTH - 102.39

INCLINATION - 60.0
AZIMUTH - 45.0

CORE SIZE - 0.0

CEMENT -
PLUG -
PIEZ -

CASING DEPTH(M) - 6.09
AQUIFER DEPTHS(M) - 0.00
0.00
LOST CIRC. DEPTHS(M) - 0.00
0.00

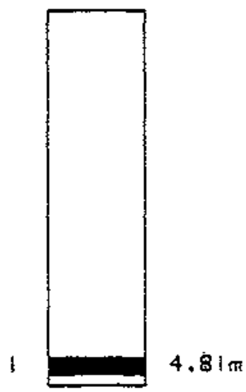
*** NOTE *** 0 INDICATES NO VALUE

MT. KLAPPAN COAL PROPERTY

1985 DIAMOND DRILL HOLES
DDH85007

SEAM

TRUE SEAM THICKNESS
(COAL & ROCK)



NOTE: SCHEMATIC PROFILE.
NO THICKNESSES SHOWN
FOR SEAMS CONTAINING
LESS THAN 50cm COAL.

SCALE: 1:2000	GULF CANADA RESOURCES INC. 15/01/86

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 1

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85007

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
60	0.00	6.10	6.10			OVERBURDEN	CASING TO 6.10 METRES
60	6.10	7.11	1.01			MUDSTONE	WEL.DK.GY.LAM.BRKN SOFT, CLAY RICH, BEDDING DIFFICULT TO D ETERMINE, WEATHERED, AS ABOVE.
60	7.11	8.44	1.33			ROCK LOSS	
60	8.44	9.42	0.98			MUDSTONE	WEL.DK.GY.LAM.BRKN WEATHERED AS ABOVE.
60	9.42	10.19	0.77			MUDSTONE	WEL.DK.GY.LAM.BRKN AS ABOVE
60	10.19	11.44	1.25			MUDSTONE	WEL.DK.GY.LAM.BRKN AS ABOVE, CORE HAS SHRUNK IN DIAMETER, UNCONSOLIDATED.
60	11.44	11.82	0.38			MUDSTONE	WEL.DK.GY.LAM.BRKN AS ABOVE.
60	11.82	13.19	1.37			ROCK LOSS	
60	13.19	14.29	1.10			MUDSTONE	WEL.DK.GY.LAM.BRKN AS ABOVE.
60	14.29	14.39	0.10			ROCK LOSS	

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 2

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85007

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
60	14.39	14.84	0.45			MUDSTONE	WEL.DK.GY.LAM.BRKN AS ABOVE. SLIGHTLY MORE CONSOLIDATED
60	14.84	16.97	2.13			MUDSTONE	WEL.DK.GY.LAM.BRKN AS ABOVE, SOME ROUNDED GROUND UP MATERI AL.
* 60	16.97	18.44	1.47			MUDSTONE	WEL.DK.GY.LAM.BRKN AS ABOVE, MINOR FRACTURES PARALLEL BEDD ING
60	18.44	19.29	0.85			ROCK LOSS	
60	19.29	19.83	0.54			MUDSTONE	WEL.DK.GY.LAM.BRKN LITHOLOGY AS ABOVE.
60	19.83	19.96	0.13			MUDSTONE	WEL.DK.GY.LAM.VBRKN LITHOLOGY AS ABOVE, BEDDING DIFFICULT T O DISTINGUISH.
60	19.96	21.99	2.03			ROCK LOSS	
* 60	21.99	23.30	1.31			MUDSTONE	SLTY.MOD.M.GY.LAM.BRKN

* DENOTES MEASURED BCA

FORM 4001

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85007

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
61	23.30	23.61	0.31			MUDSTONE	SLTY.MOD.M.GY.LAM.BRKN LITHOLOGY AS ABOVE.
61	23.61	23.90	0.29			ROCK LOSS	
61	23.90	25.14	1.24			MUDSTONE	MOD.M.GY.LAM.BRKN
62	25.14	25.81	0.67			MUDSTONE	MOD.M.GY.LAM.BRKN LITHOLOGY AS ABOVE, BEDDING DIFFICULT T O DISTINGUISH
63	25.81	27.88	2.07			MUDSTONE	MOD.M.GY.LAM.BRKN LITHOLOGY AS ABOVE
65	27.88	30.00	2.12			MUDSTONE	MOD.M.GY.LAM.BRKN LITHOLOGY AS ABOVE.
* 66	30.00	31.06	1.06			MUDSTONE	MOD.M.GY.LAM.BRKN LITHOLOGY AS ABOVE.
64	31.06	32.07	1.01			MUDSTONE	MOD.M.GY.LAM.BRKN LITHOLOGY AS ABOVE.
* 61	32.07	34.11	2.04			MUDSTONE	MOD.M.GY.LAM.BRKN MINOR CALCITE VEIN PARALLEL TO BEDDING.
* 53	34.11	36.06	1.95			MUDSTONE	LITHOLOGY AS ABOVE, SLIGHTLY SILTY

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85007

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
53	36.06	38.18	2.12			ROCK LOSS	
52	38.18	39.20	1.02			MUDSTONE	MOD.DK.GY.LAM.BRKN LITHOLOGY AS ABOVE
52	39.20	40.03	0.83			MUDSTONE	MOD.DK.GY.LAM.BRKN AS ABOVE, CONTAINS 20MM PYRITE NODULE, SLIGHTLY SILTY IN PLACES, MINOR VEINING .
* 52	40.03	42.05	2.02			MUDSTONE	MOD.DK.GY.LAM.BRKN LITHOLOGY AS ABOVE.
48	42.05	42.22	0.17			MUDSTONE	MOD.DK.GY.LAM.BRKN LITHOLOGY AS ABOVE, CARBONACEOUS PLANT FRAGMENTS
46	42.22	43.63	1.41			MUDSTONE	SLTY.MOD.M.GY.LAM.BRKN AS ABOVE, BECOMES INCREASINGLY MORE SIL TY DOWNHOLE
* 43	43.63	44.03	0.40			SILTSTONE	CLYY.MOD.M.GY.LAM.SLD MINOR CARBONACEOUS PLANT FRAGMENTS.
44	44.03	45.03	1.00			SILTSTONE	CLYY.MOD.M.GY.LAM.SLD LITHOLOGY AS ABOVE.
44	45.03	45.32	0.29			ROCK LOSS	

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 5

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85007

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 45	45.32	46.16	0.84			SILTSTONE	CLYY.MOD.M.GY.LAM.SLD LITHOLOGY AS ABOVE.
* 40	46.16	47.96	1.80			SILTSTONE	CLYY.MOD.M.GY.LAM.SLD LITHOLOGY AS ABOVE, SLIGHTLY CARBONACEOUS, MINOR CALCITE VEINING.
40	47.96	48.23	0.27			SILTSTONE	CLYY.MOD.M.GY.LAM.SLD LITHOLOGY AS ABOVE.
41	48.23	48.32	0.09			ROCK LOSS	
* 41	48.32	50.13	1.81			SILTSTONE	CLYY.MOD.M.GY.LAM.BRKN LITHOLOGY AS ABOVE.
* 47	50.13	51.46	1.33			SILTSTONE	CLYY.MOD.M.GY.LAM.BIOTR.BRKN LITHOLOGY AS ABOVE. MINOR VEINING
40	51.46	52.13	0.67			SILTSTONE	PR.DK.GY.LAM.BRKN LITHOLOGY AS ABOVE,SLIGHTLY CARBONACEOUSBECOMING SANDY
* 37	52.13	52.52	0.39			SILTSTONE	SSY.PR.M.GY.LAM.BIOTR.SLD
39	52.52	54.15	1.63			SANDSTONE	VFG.MOD.M.GY.THKB.BIOTR.SLD SILTY LAMINATIONS IN TOP PORTION.

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 6

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85007

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
42	54.15	54.50	0.35			SANDSTONE	VFG.MOD.M.GY.THKB.BIOTR.SLD LITHOLOGY AS ABOVE.
43	54.50	55.13	0.63			SANDSTONE	SLTY.VFG.MOD.M.GY.THKB.BIOTR.SLD LITHOLOGY AS ABOVE.
* 45	55.13	56.06	0.93			MUDSTONE	SLTY.PR.DK.GY.LAM.BRKN SLIGHTLY SANDY AT TOP, RAPID TRASITION TO SANDSTONE ABOVE
43	56.06	56.72	0.66			MUDSTONE	SLTY.PR.DK.GY.LAM.BRKN LITHOLOGY AS ABOVE,TOPS DOWN ON XBDG
* 40	56.72	57.67	0.95			SANDSTONE	SLTY.PR.M.GY.LAM.BIOTR.BRKN VERY SILTY, TOPS DOWN ON HRMBURS. 70 MM MEDIUM GRAINED SANDSTONE BAND.
40	57.67	58.09	0.42			SANDSTONE	SLTY.PR.M.GY.LAM.BIOTR.BRKN AS ABOVE. SILTSTONE INCREASING DOWNHOLE
40	58.09	60.22	2.13			SANDSTONE	SLTY.VFG.PR.M.GY.THNB.BIOTR.BRKN VERY SILTY.
41	60.22	60.72	0.50			SANDSTONE	SLTY.VFG.PR.M.GY.THNB.BIOTR.BRKN AS ABOVE GRADES TO SILTSTONE.
41	60.72	61.32	0.60			SILTSTONE	SSY.PR.M.GY.LAM.BRKN GRADES TO MUDSTONE.

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 7

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85007

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
41	61.32	62.15	0.83			MUDSTONE	SLTY.MOD.DK.GY.LAM.BRKN
41	62.15	63.64	1.49			MUDSTONE	SLTY.MOD.DK.GY.LAM.BRKN LITHOLOGY AS ABOVE.
41	63.64	63.82	0.18			ROCK LOSS	
41	63.82	64.21	0.39			MUDSTONE	SLTY.MOD.DK.GY.LAM.BRKN LITHOLOGY AS ABOVE, SLIGHTY CARBONACEOU S
42	64.21	66.32	2.11			MUDSTONE	SLTY.MOD.DK.GY.LAM.BRKN AS ABOVE.
42	66.32	66.86	0.54			MUDSTONE	SLTY.MOD.DK.GY.LAM.BRKN AS ABOVE.
* 42	66.86	68.05	1.19			MUDSTONE	SLTY.MOD.DK.GY.LAM.BRKN AS ABOVE.
* 45	68.05	69.51	1.46			MUDSTONE	SLTY.MOD.DK.GY.LAM.BRKN AS ABOVE
45	69.51	69.96	0.45			ROCK LOSS	
45	69.96	70.47	0.51			MUDSTONE	SLTY.MOD.DK.GY.LAM.BRKN AS ABOVE.

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 8

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85007

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 45	70.47	72.48	2.01			MUDSTONE	SLTY.PR.M.GY.LAM.BRKN SILTIER THAN ABOVE, WAVY BEDDING, GRADE S TO SILTSTONE
45	72.48	72.64	0.16			SILTSTONE	CLYY.PR.M.GY.LAM.BRKN
45	72.64	73.01	0.37			SILTSTONE	CLYY.PR.M.GY.LAM.BRKN LITHOLOGY AS ABOVE.
45	73.01	73.21	0.20			SILTSTONE	SSY.PR.M.GY.LAM.BRKN LITHOLOGY AS ABOVE, GRADES TO SANDSTONE
* 45	73.21	74.74	1.53			SANDSTONE	VFG.WEL.M.GY.THNB.BRKN FINE SILTSTONE LAMINAE.
46	74.74	75.09	0.35			SANDSTONE	VFG.WEL.M.GY.THNB.VBRKN AS ABOVE.
46	75.09	75.86	0.77			SANDSTONE	VFG.WEL.M.GY.THNB.BIOTR.VBRKN AS ABOVE, MINOR QTZ VEINING NORMAL TO B EDDING .
47	75.86	75.99	0.13			ROCK LOSS	

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 9

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85007

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
47	75.99	76.50	0.51			SANDSTONE	SLTY.VFG.MOD.M.GY.THNB.BIOTR.VBRKN SILTIER TOWARDS BASE LITHOLOGY AS ABOVE.
48	76.50	78.28	1.78			SANDSTONE	SLTY.VFG.PR.M.GY.THNB.BIOTR.VBRKN SILTIER THAN ABOVE. ESPECIALLY IN UPPER PORTION. TOPS DOWN ON EXCELLENT VERTICAL WRMBURS.
49	78.28	78.56	0.28			SANDSTONE	SLTY.VFG.MOD.M.GY.MB.VBRKN
* 50	78.56	80.39	1.83			SANDSTONE	SLTY.VFG.MOD.M.GY.THNB.BIOTR.VBRKN TOPS DOWN ON VERTICAL WRMBURS AND GRADED BEDDING, MINOR VEINING.
46	80.39	80.61	0.22			SANDSTONE	SLTY.VFG.PR.M.GY.THNB.BRKN GRADES TO SILTSTONE
45	80.61	81.11	0.50			SILTSTONE	CLYY.MOD.M.GY.LAM.BRKN GRADES TO MUDSTONE.
42	81.11	82.13	1.02			MUDSTONE	WEL.DK.GY.LAM.SLD

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 10

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85007

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
40	82.13	82.28	0.15			MUDSTONE	WEL.DK.GY.LAM.SLD LARGE BROAD LEAF PLANT FOSSIL TAKEN FOR IDENTIFICATION.
* 36	82.28	84.30	2.02			MUDSTONE	SLTY.MOD.M.GY.LAM.BRKN BECOMES SILTIER DOWNHOLE TALC ON FRACTURE SURFACES.
40	84.30	85.16	0.86			MUDSTONE	SLTY.MOD.M.GY.LAM.BRKN VERY SILTY. FRACTURES PARALLEL TO BEDDING. AS ABOVE.
41	85.16	85.42	0.26			MUDSTONE	SLTY.MOD.M.GY.LAM.BRKN AS ABOVE, GRADES RAPIDLY TO SANDSTONE
* 42	85.42	86.08	0.66			SANDSTONE	FG.WEL.M.GY.MAS.SLD VERY MINOR SILTSTONE LAMINAE, MINOR QUARTZ VEINING NORMAL TO BEDDING.
42	86.08	87.96	1.88			SANDSTONE	FG.WEL.M.GY.MAS.BRKN CALCITE VEINED PERENDICULAR TO BEDDING, LITHOLOGY AS ABOVE.
42	87.96	89.81	1.85			SANDSTONE	FG.WEL.M.GY.MAS.BRKN AS ABOVE, MINOR SILTSTONE RIP-UPS

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 11

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85007

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
42	89.81	91.72	1.91			SANDSTONE	FG.MOD.M.GY.THKB.BIOTR.BRKN AS ABOVE. SOME SILTY LAMINAE, MODERATE CALCITE VEINING, CARBONACEOUS.
* 42	91.72	93.68	1.96			SANDSTONE	SLTY.FG.PR.M.GY.THNB.BIOTR.BRKN SILTIER THAN ABOVE,EXTENSIVE BIOTRB, TO PS DOWN ON GOOD VERTICAL WRMBURS, MANY SILTY LAMINAE DISTORTED BY BURROWING, S ILTIER TOWARDS BASE.
* 45	93.68	94.54	0.86			CLAYSTONE	SLTY.M.GY.LAM.SLD
45	94.54	95.50	0.96			CLAYSTONE	SLTY.M.GY.LAM.SLD BECOMING DARKER, MORE CARBONACEOUS AND LESS LAMINATED DOWNWARDS.
45	95.50	95.67	0.17	07354	I	COAL	C-2.BRKN
45	95.67	96.25	0.58	07354	I	COAL	C-1.BRKN

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 12

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85007

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
45	96.25	96.55	0.30	07354	I	COAL	C-1.VBRKN ESTIMATED THICKNESS
45	96.55	97.72	1.17	07354	I	ROCK LOSS	
45	97.72	97.94	0.22	07354	I	COAL	C-1.SLD
45	97.94	98.14	0.20	07354	I	COAL	C-1.VBRKN
45	98.14	98.24	0.10	07354	I	COAL	C-1.BRKN
45	98.24	98.28	0.04	07354	I	COAL	C-4.BRKN
45	98.28	98.54	0.26	07354	I	COAL	C-1.VBRKN
45	98.54	98.57	0.03	07354	I	CLAYSTONE	CARB.BLK.SLD
45	98.57	98.67	0.10	07354	I	COAL	C-1.SLD
45	98.67	98.69	0.02	07354	I	CLAYSTONE	CARB.BLK.SLD

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 13

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85007

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
45	98.69	98.71	0.02	07354	I	COAL	C-1.SLD
45	98.71	98.72	0.01	07354	I	CLAYSTONE	CARB.BLK.BRKN
45	98.72	99.30	0.58	07354	I	COAL	C-1.VBRKN
45	99.30	100.04	0.74	07354	I	COAL	C-1.PWRD
45	100.04	100.52	0.48	07354	I	COAL	C-1.PWRD LOWER PART OF THE SEAM COMPLETELY SCRAM BLED DUE TO 60DEGREES ANGLE DRILLING. H OLE ABANDONED BELOW SEAM. WET AND MUSHY
45	100.52	100.60	0.08	07354	I	CLAYSTONE	CARB.BLK.BRKN
45	100.60	100.66	0.06	07354	I	CLAYSTONE	DK.GY.BRKN ROUNDED BY DRILLING.
45	100.66	100.79	0.13	07354	I	COAL	C-1.PWRD MUSH

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 14

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85007

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
45	100.79	100.85	0.06	07354	I	CLAYSTONE	M.BN.VBRKN DRILLING MUD?
45	100.85	100.99	0.14	07354	I	COAL	C-1.PWRD EVEN MUSHIER.
45	100.99	101.11	0.12	07354	I	CLAYSTONE	M.BN.SLD VERY SOFT
45	101.11	102.01	0.90	07354	I	COAL	C-1.PWRD SOME CHUNKS BUT WET.
45	102.01	102.09	0.08	07354	I	CLAYSTONE	CARB.DK.GY.SLD VERY SOFT AND DAMP
45	102.09	102.12	0.03	07354	I	CLAYSTONE	CARB.BLK.SLD
45	102.12	102.25	0.13	07354	I	COAL	C-1.SLD
45	102.25	102.30	0.05	07354	I	COAL	C-3.BRKN
45	102.30	102.39	0.09			CLAYSTONE	CARB.BLK.BRKN T.D 101.80

* DENOTES MEASURED BCA
NEWPAGE

FORM 4001

GULF CANADA RESOURCES INC.

SEAM DETAIL | COAL DIVISION | **TRUE THICKNESS**

MOUNT KLAPPAN PROJECT

DATA SOURCE:	KPN LR DDH85007	SEAM : 1	INTERVAL(M) :	95.50 – 102.30	ELEVATION(M) : 1761.9
GEOLOGIST :	E. LEGRESLEY	SCALE:	DATE :	DEC 19/85	DRAWING NO. :

DRILL DEPTH METRES	INTERVAL METRES ROCK	INTERVAL METRES COAL
95.50		0.74
	(0.83)	
		0.58
	[illegible]	[illegible]
	[illegible]	
		1.20
	[illegible]	
		0.09
	[illegible]	
		0.10
	[illegible]	
		0.84
	[illegible]	
102.30		0.13

% REC.	SAMPLE ID SIMP	SAMPLE ID COMP	COAL/ROCK TOTAL COMPOS	MINING SECTION	RES MOIST	ASH	VM	FC	TS	CAL.VAL MJ/KG	
82.8	7354	27	3.63/1.17 4.81		0.82	20.63	7.88	70.87	0.42	26.74	—

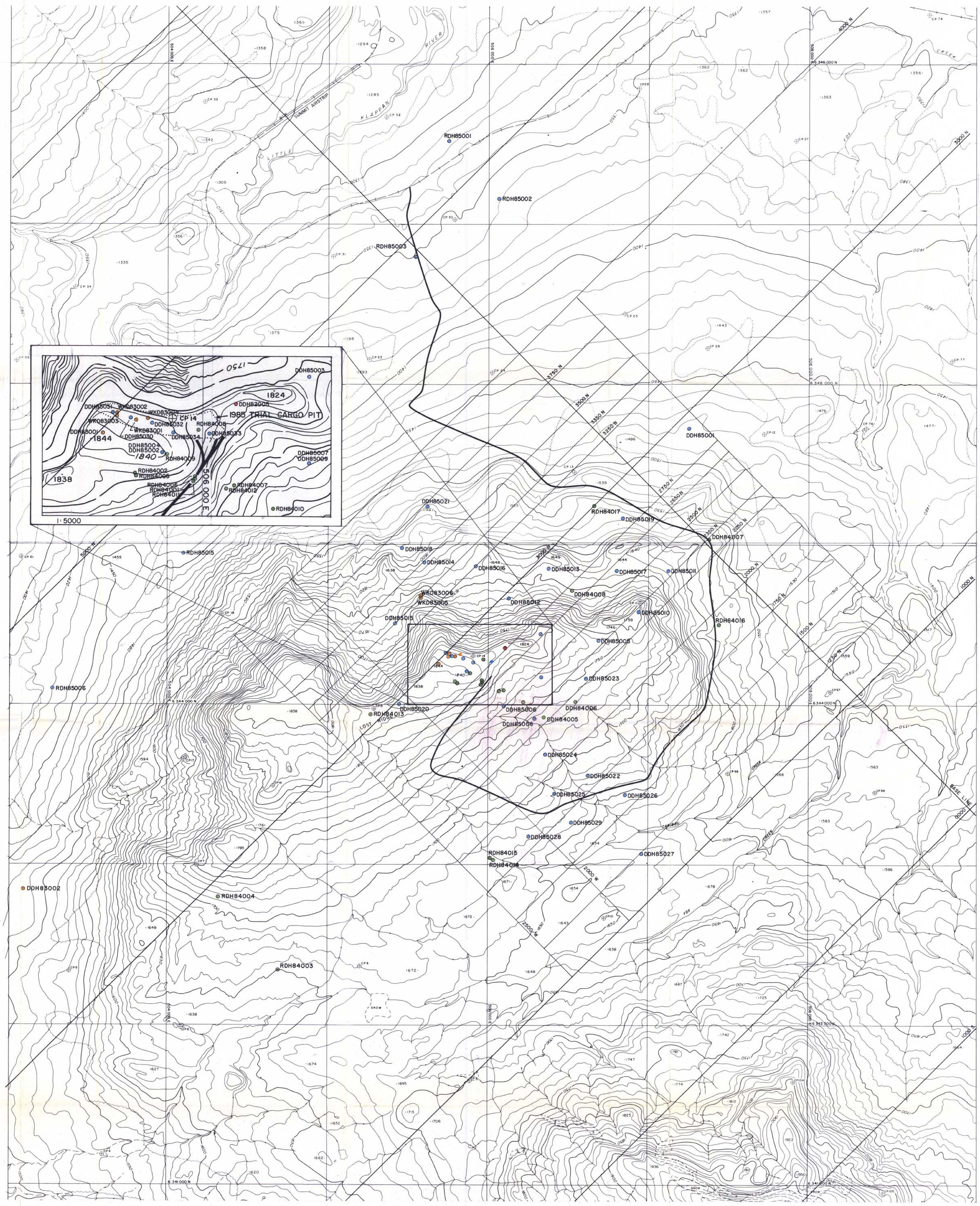
COAL QUALITY A.D.B.

MT. KLAPPAN

1985

LOST - FOX AREA

DRILL HOLE LOCATION MAP



LEGEND

BUILDING
ROAD, HARD SURFACE
LOOSE SURFACE
CART TRACK
TRAIL
RAILROAD BED
RIVER
STREAM, DEFINITE
APPROXIMATE
SPLIT
LAKE
WATER LEVEL — EL 505±
SWAMP
BEAVER DAM — B.D.
TREE LINE
CUT LINE
CONTOURS, INDEX — 1750
INTERMEDIATE
DEPRESSION
APPROXIMATE
SPOT ELEVATION — ·7654
FIELD CONTROL POINT — CP 121
COAL LICENCE

DIAMOND DRILL HOLE — DDH
ROTORY DRILL HOLE — RDH
WINKIE DRILL HOLE — WDH
ROAD
PERIMETER OF 1985 TRIAL CARGO PIT

NOTES

CONTOUR INTERVAL 10 METERS

SURVEY CONTROL TAKEN FROM EXISTING PHOTO IDENTIFIABLE GOVERNMENT SURVEY MONUMENTS AND N.T.S. MAPS. MAPPING IS BASED ON UNIVERSAL TRANSVERSE MERCATOR GRID AND GEODETIC DATUM.

RAILROAD BED LOCATION BASED ON DATA SUPPLIED BY B.C. RAIL

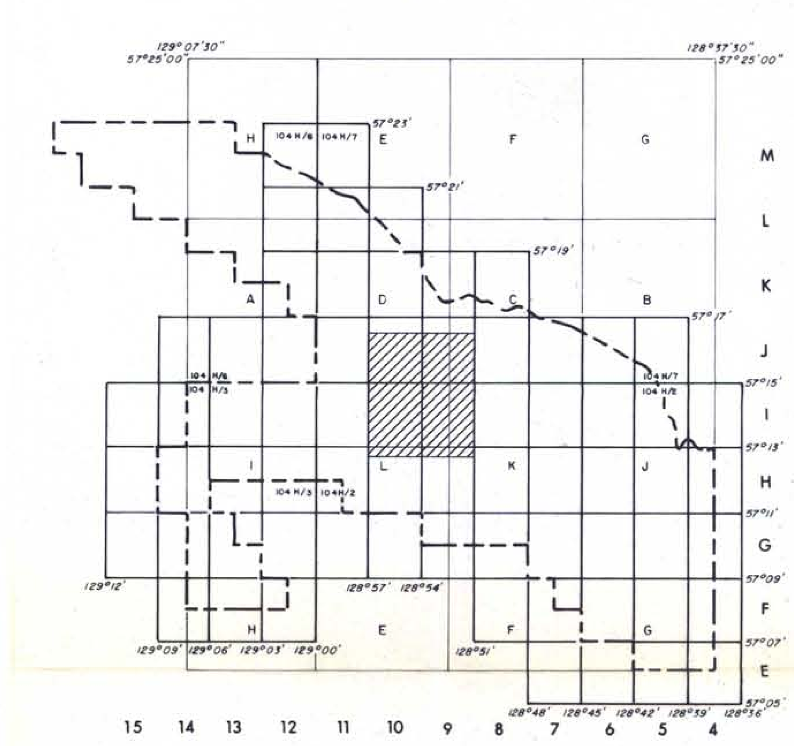
COMPILED BY
WESTERN PHOTOGRAMMETRY, A DIVISION OF UNDERWOOD McLELLAN LTD., FROM FEDERAL GOVERNMENT AERIAL PHOTOGRAPHY FLOWN IN AUGUST/67 AT A SCALE OF 1:60 000 (APPROXIMATE)

SCALE 1:10 000

MILES · METERS

MT. KLAPPAN AREA

INDEX MAP



LEASE BOUNDARY

707

GULF CANADA RESOURCES INC.
Coal Division
CALGARY ALBERTA

MOUNT KLAPPAN COAL PROPERTY
1985
LOST - FOX AREA
DRILL HOLE LOCATION MAP

PREPARED BY: K.F.	DRAWING No.
APPROVED BY: E.S DATE: JAN. 1986	

MOUNT KLAPPAN COAL PROJECT
LOST - FOX AREA
GEOLOGICAL REPORT
1985

APPENDIX III

DIAMOND DRILL HOLE DATA
VOLUME II

KPNLRDDH 85 008
TO
KPNLRDDH 85 015

707

GULF CANADA LIMITED
COAL DIVISION

KPNLRDDH85008

============================== GULF CANADA RESOURCES INC. ==========================

- D A T A S O U R C E S U M M A R Y -

DATA SOURCE - KPNLRDDH85008 DATE - 01/09/86

- H I S T O R Y -

START DATE - 03/25/85
END DATE - 03/26/85

CONTRACTOR - J.T. THOMAS
GEOLOGIST - K. JENNER

OPERATOR - GCRI
SURVEYOR - MWG & ASS.

REMARKS - SITE Q

- L O C A T I O N -

PROVINCE - BC
ELEVATION - 1732.10

ZONE - 9
NORTHING - 6343920.00
EASTING - 506349.56

LICENCE/LEASE NUMBER - 7151

LATITUDE - 571425
LONGITUDE - 1285341

- O R I E N T A T I O N -

LENGTH - 152.98

INCLINATION - 60.0
AZIMUTH - 225.0

CORE SIZE - 0.0

CEMENT -
PLUG -
PIEZ -

CASING DEPTH (M) - 7.00
AQUIFER DEPTHS (M) - 0.00
0.00
LOST CIRC. DEPTHS (M) - 0.00
0.00

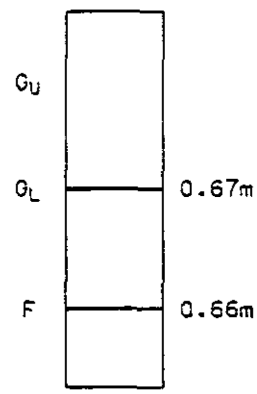
*** NOTE *** 0 INDICATES NO VALUE

==

MT. KLAPPAN COAL PROPERTY

1985 DIAMOND DRILL HOLES
DDH85008

SEAM TRUE SEAM THICKNESS (COAL & ROCK)



NOTE: SCHEMATIC PROFILE.
NO THICKNESSES SHOWN
FOR SEAMS CONTAINING
LESS THAN 50cm COAL.

SCALE: 1:2000

GULF CANADA RESOURCES INC.
15/01/86

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 1

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85008

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
71	0.00	7.00	7.00			OVERBURDEN	CASING TO 7.00 METRES
72	7.00	8.11	1.11			SILTSTONE	WEL.DK.GY.VBRKN UNCONSOLIDATED SILTSTONE AND MUDSTONE, OVERBURDEN, FE STAIN ALONG FRACTURE SUR FACES
72	8.11	8.57	0.46			MUDSTONE	WEL.DK.GY.LAM.VBRKN UNCONSOLIDATED, PLIABLE IN PARTS
72	8.57	9.37	0.80			MUDSTONE	WEL.DK.GY.LAM.VBRKN UNCONSOLIDATED, FE STAINS ON FRACTURE S URFACES
* 72	9.37	9.50	0.13			SILTSTONE	MOD.M.GY.LAM.SLD
71	9.50	10.34	0.84			ROCK LOSS	
70	10.34	10.61	0.27			SILTSTONE	MOD.M.GY.LAM.VBRKN
* 69	10.61	11.76	1.15			SILTSTONE	MOD.M.GY.LAM.BRKN PLIABLE IN PARTS

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 2

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85008

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
71	11.76	12.89	1.13			SILTSTONE	CLYY.MOD.DK.GY.LAM.VBRKN UNIFORM, MINOR TALC ON FRACTURE SURFACE S, PLIABLE IN PARTS
72	12.89	13.24	0.35			SILTSTONE	CLYY.MOD.DK.GY.LAM.VBRKN PARTIALLY PLIABLE, UNIFORM
73	13.24	14.98	1.74			MUDSTONE	WEL.DK.GY.BRKN TWO SILSTSTONE INTERBEDS 80.0 MM EACH
75	14.98	15.50	0.52			MUDSTONE	WEL.DK.GY.BRKN ONE BIVALVE 4.0 MM LONG, MINOR PLANT MA TERIAL
75	15.50	15.83	0.33			ROCK LOSS	
76	15.83	17.08	1.25			MUDSTONE	WEL.DK.GY.BRKN VERY UNIFORM
77	17.08	17.47	0.39			ROCK LOSS	
78	17.47	18.79	1.32			MUDSTONE	WEL.DK.GY.BRKN VERY UNIFORM, COALY STRINGER 2.0 MM WID E
80	18.79	19.00	0.21			MUDSTONE	WEL.DK.GY.SLD

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 3

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85008

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
80	19.00	19.02	0.02		G(UPPER)	COAL	C-2.BLK.VBRKN
80	19.02	19.10	0.08		G(UPPER)	MUDSTONE	WEL.DK.GY.SLD MINOR PYRITE AT BASE
80	19.10	19.11	0.01		G(UPPER)	COAL	C-2.BLK.VBRKN
80	19.11	19.22	0.11		G(UPPER)	ROCK LOSS	
80	19.22	19.24	0.02		G(UPPER)	SILTSTONE	WEL.M.GY.SLD MINOR ANKERITE VEINS 1.0 MM WIDE
* 80	19.24	19.28	0.04		G(UPPER)	COAL	C-2.BLK.SLD
80	19.28	19.36	0.08		G(UPPER)	MUDSTONE	SLTY.WEL.DK.GY.SLD MINOR COAL STRINGERS THROUGHOUT
72	19.36	21.16	1.80			SILTSTONE	WEL.M.GY.BRKN 1.0 MM ANKERITE AND COAL LAYER AT BASE
62	21.16	21.79	0.63			SILTSTONE	WEL.M.GY.BRKN UNIFORM

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 4

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85008

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 55	21.79	22.95	1.16			SILTSTONE	WEL.M.GY.BRKN MINOR TALC ON FRACTURE SURFACES, 2.0 MM COAL INCLUSION, 2.0 MM QUARTZ VEIN
52	22.95	23.24	0.29			ROCK LOSS	
* 50	23.24	23.82	0.58			SILTSTONE	WEL.M.GY.VTHNB.BRKN UNIFORM, VERY FINE GRAINED SANDSTONE IN TERBEDS
49	23.82	24.85	1.03			SILTSTONE	WEL.M.GY.VTHNB.BRKN UNIFORM
48	24.85	25.01	0.16			SILTSTONE	WEL.M.GY.LAM.SLD
48	25.01	25.12	0.11			ROCK LOSS	
* 47	25.12	26.94	1.82			SILTSTONE	MOD.M.GY.LAM.XBDG.BRKN XBDG INDICATES TOPS UP, VERY FINE GRAIN ED SANDSTONE LAMINAE THROUGHOUT
* 55	26.94	27.84	0.90			SANDSTONE	VFG.MOD.M.GY.LAM.SLD
57	27.84	28.24	0.40			SANDSTONE	VFG.MOD.M.GY.LAM.BRKN SHARP CONTACT WITH UNDERLYING SILTSTONE

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 5

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85008

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
57	28.24	28.36	0.12			ROCK LOSS	
58	28.36	28.83	0.47			SILTSTONE	MOD.M.GY.LAM.BRKN MINOR VERY FINE GRAINED SANDSTONE LAMIN AE THROUGHOT
* 60	28.83	29.87	1.04			SILTSTONE	MOD.M.GY.LAM.BRKN VERY UNIFORM
58	29.87	30.61	0.74			SILTSTONE	MOD.M.GY.LAM.SLD QUARTZ VEIN PARALLEL TO BEDDING, 10MM, GRADATIONALTO FINE GRAINED SANDSTONE AT BASE
56	30.61	30.75	0.14			SANDSTONE	MOD.LT-M.GY.THNB.SLD SHARP CONTACT WITH UNDERLYING SILTSTONE , TWO 1MM CALCITE VEINS PERPENDICULAR T O BEDDING
55	30.75	32.10	1.35			SILTSTONE	MOD.M.GY.LAM.BRKN GRADATIONAL CONTACT WITH UNDERLYING UNI T
53	32.10	32.21	0.11			ROCK LOSS	
* 52	32.21	32.56	0.35			SANDSTONE	FG.WEL.M.GY.THNB.SLD VERY MINOR DARK GREY SILTSTONE LAMINAE

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 6

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85008

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
51	32.56	32.82	0.26			SANDSTONE	FG.WEL.M.GY.THNB.SLD MINOR SILTSTONE RIP UP CLASTS 2.5MM ELO NGATED PAR ALLEL TO BEDDING
* 50	32.82	34.05	1.23			SANDSTONE	SLTY.FG.MOD.M.GY.LAM.VBRKN MINOR TALC ALONG FRACTURE SURFACES, DAR K GREY SILTY LAMINAE
50	34.05	34.41	0.36			ROCK LOSS	
49	34.41	35.33	0.92			SANDSTONE	FG.WEL.M.GY.THNB.VBRKN TALC ALONG FRACTURE SURFACES, MINOR SIL TSTONE RIP UP CLASTS
49	35.33	35.42	0.09			CONGLOMERATE	PR.M.GY.SLD MATRIX SUPPORTED CONGLOMERATE CONTAININ G WELL ROUNDED PEBBLES OF GREY, BLACK A ND WHITE CHERT 10MM IN SIZE AND SMALLER
49	35.42	35.77	0.35			SANDSTONE	FG.WEL.M.GY.THNB.BRKN ANKERITE VEIN 1MM WIDE PERPENDICULAR TO BEDDING
49	35.77	36.04	0.27			SANDSTONE	FG.WEL.M.GY.THNB.BRKN VERY MINOR SILTSTONE RIP UP CLASTS 2.5 MM

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 7

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85008

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
48	36.04	37.69	1.65			SANDSTONE	FG.WEL.M.GY.MAS.VBRKN MINOR QUARTZ VEINING PERPENDICULAR TO B EDDING 2MM,CHERT PEBBLE BAND 50MM, BECO MING COARSER GRAINED AT BASE
47	37.69	37.72	0.03			ROCK LOSS	
47	37.72	38.17	0.45			SANDSTONE	FG.WEL.M.GY.MAS.VBRKN MINOR TALC ALONG FRACTURE SURFACES.
47	38.17	39.12	0.95			SANDSTONE	FG.WEL.M.GY.MAS.VBRKN QUARTZ VEIN SHOWING CRYSTALS; PERPENDIC ULAR TO BEDDING; 2.5 MM WIDE.
46	39.12	39.79	0.67			SANDSTONE	FG.WEL.M.GY.MAS.VBRKN QUARTZ VEINING AT VARIED ANGLES TO BEDD ING; 1MM. CHERT PEBBLE BAND 30 MM WIDE
* 46	39.79	40.56	0.77			SILTSTONE	MOD.M.GY.LAM.BIOTR.BRKN
52	40.56	40.96	0.40			ROCK LOSS	
55	40.96	41.16	0.20			SILTSTONE	MOD.M.GY.LAM.VBRKN

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 8

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85008

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 64	41.16	42.79	1.63			SILTSTONE	SSY.PR.M.GY.LAM.WRMBU.BRKN WORM BURROWS INDICATE TOPS UP. BIOTURBA TED.
65	42.79	43.19	0.40			ROCK LOSS	
66	43.19	44.11	0.92			SILTSTONE	MOD.M.GY.LAM.BRKN DARK GREY MUDSTONE LAMINAE.
* 67	44.11	44.76	0.65			SILTSTONE	MOD.M.GY.LAM.BRKN UNIFORM.
55	44.76	45.28	0.52			CLAYSTONE	M.GY.LAM.BRKN VAGUE WAVEY LAMINAE.
49	45.28	45.37	0.09			CLAYSTONE	LT.GY.SLD SOFT, PALE, SOMEWHAT BENTONITIC.
47	45.37	45.45	0.08			CLAYSTONE	CARB.BLK.BRKN
46	45.45	45.46	0.01			COAL	C-1
43	45.46	45.71	0.25			CLAYSTONE	M.GY.BRKN VERY MINOR ANKERITE VEINS.

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 9

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85008

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
36	45.71	46.14	0.43			CLAYSTONE	CARB.BLK.VBRKN SOFT, VERY LISTRIC.
* 30	46.14	46.34	0.20			CLAYSTONE	M.GY.SLD BRECCIATED WITH ANKERITE VEINS.
31	46.34	46.65	0.31			CLAYSTONE	DK.GY.PWRD SOFT.
31	46.65	46.83	0.18			CLAYSTONE	M.GY.BRKN MINOR ANKERITE.
32	46.83	47.82	0.99			CLAYSTONE	M.GY.MAS.BRKN
34	47.82	48.00	0.18	07355		CLAYSTONE	CARB.DK.GY.PWRD VERY LISTRIC.
34	48.00	48.16	0.16	07356	G LOWER	COAL	C-3.PWRD WEATHERED.
35	48.16	48.52	0.36	07356	G LOWER	COAL LOSS	
35	48.52	48.73	0.21	07356	G LOWER	COAL	C-4.PWRD
36	48.73	48.91	0.18	07357	G LOWER	CLAYSTONE	CARB.BLK.PWRD VERY COALY.

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 10

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85008

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
36	48.91	48.98	0.07	07357	G LOWER	COAL LOSS	
36	48.98	49.16	0.18	07357	G LOWER	COAL LOSS	
37	49.16	49.28	0.12	07358		CLAYSTONE	M.GY.BRKN
38	49.28	49.81	0.53			CLAYSTONE	CARB.BLK.LAM.BRKN ABUNDANT LINEATED FRACTURE SURFACES.
38	49.81	49.87	0.06			COAL	C-5.BLK.SLD ASSOCIATED ANKERITE VEINING.
39	49.87	50.22	0.35			CLAYSTONE	CARB.BLK.BRKN COAL STRINGER 1MM WIDE. MINOR PLANT MAT ERIAL.
40	50.22	51.21	0.99			ROCK LOSS	
43	51.21	52.89	1.68			SILTSTONE	WEL.M.GY.BIOTR.BRKN QUARTZ VEIN AT ANGLE TO BEDDING; 10 MM WIDE.
45	52.89	53.19	0.30			ROCK LOSS	
* 48	53.19	55.09	1.90			SILTSTONE	CARB.WEL.M.GY.LAM.BRKN 2.5 MM QUARTZ VEIN AT ANGLE TO BEDDING.

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 11

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85008

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 45	55.09	56.99	1.90			SILTSTONE	CLYY.PR.M.GY.LAM.VBRKN COALY BANDS ASSOC WITH VEINING. VERTICA L FRACTURE SET.
46	56.99	57.64	0.65			ROCK LOSS	
46	57.64	59.65	2.01			SILTSTONE	CLYY.PR.M.GY.LAM.VBRKN AS ABOVE. MINOR TALC. COALIFIED PLANT F RAGS.
47	59.65	59.83	0.18			SILTSTONE	CLYY.PR.M.GY.LAM.VBRKN AS ABOVE. TALC ON FRACTURE PLANES.
* 47	59.83	61.59	1.76			SILTSTONE	CLYY.PR.M.GY.LAM.BRKN COALY BANDS WITH CALCITIC VEINING.
34	61.59	62.98	1.39			SILTSTONE	CLYY.PR.M.GY.LAM.BRKN AS ABOVE. MORE CLAY-RICH DOWNWARD. CARB ONACEOUS INPLACES. HEAVY VEINING PARALL EL TO BEDDING IN LOWER400 MM.
27	62.98	63.28	0.30			ROCK LOSS	
24	63.28	63.68	0.40			SILTSTONE	CLYY.PR.M.GY.LAM.BRKN VERY CLAY RICH. TOTALLY BRECCIATED. VEI N LARGER THAN 100 MM IN THICKNESS.

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 12

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85008

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 15	63.68	65.54	1.86			SILTSTONE	MOD.M.GY.LAM.BRKN LESS CLAY THAN ABOVE. MINOR SAND LAYER. NOT BRECCIATED BUT MANY THICK VEINS.
25	65.54	65.94	0.40			ROCK LOSS	
34	65.94	67.28	1.34			SILTSTONE	MOD.M.GY.LAM.VBRKN 3MM QUARTZ AND CALCITE VEIN AT ANGLE TO BEDDING.
42	67.28	67.68	0.40			ROCK LOSS	
* 45	67.68	68.00	0.32			SILTSTONE	MOD.M.GY.LAM.BRKN 20MM CALCITE VEIN.
45	68.00	68.48	0.48			SILTSTONE	MOD.M.GY.LAM.BRKN 5MM CALCITE VEIN AT ANGLE TO BEDDING.
45	68.48	68.97	0.49			ROCK LOSS	
44	68.97	69.75	0.78			SILTSTONE	MOD.M.GY.BRKN UNIFORM
44	69.75	70.17	0.42			SILTSTONE	WEL.M.GY.BRKN
44	70.17	70.77	0.60			ROCK LOSS	

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 13

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85008

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
44	70.77	72.04	1.27			SILTSTONE	WEL.M.GY.LAM.BRKN MINOR TALC ON LINEATED FRACTURE SURFACE S.
* 43	72.04	73.68	1.64			SILTSTONE	WEL.M.GY.VTHNB.BRKN UNIFORM. 3MM WIDE QUARTZ VEIN PARALLEL TO BEDDING.
45	73.68	74.23	0.55			ROCK LOSS	
47	74.23	76.16	1.93			SILTSTONE	WEL.M.GY.LAM.WRMBU.BRKN WORM BURROW INDICATES TOPS UP. 40MM WID E QUARTZ AND CALCITE VEIN. 1MM COAL INC LUSIONS. UNIFORM.
* 49	76.16	77.12	0.96			SILTSTONE	WEL.M.GY.LAM.WRMBU.SLD PYRITE BLEB 20MM LONG. WORMBURROW INDIC ATES TOPS UP.
* 55	77.12	78.18	1.06			SILTSTONE	WEL.M.GY.LAM.SLD VERY UNIFORM.
56	78.18	79.20	1.02			SILTSTONE	WEL.M.GY.LAM.SLD VERY UNIFORM. COALY LAMINAE AND ASSOCIA TED ANKERITE AT BASE.

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 14

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85008

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
57	79.20	79.61	0.41			SILTSTONE	MOD.M.GY.BRKN CALCITE AND QUARTZ VEINING FORMING BREC CIA WITH ANGULAR SILTSTONE FRAGMENTS. C OALY MATERIAL THROUGHOUT.
58	79.61	79.96	0.35			SILTSTONE	MOD.M.GY.SLD VERY UNIFORM.
* 58	79.96	80.25	0.29			CLAYSTONE	CARB.DK.GY.SLD BRIGHT COAL VEINS.
57	80.25	80.28	0.03			COAL	C-1.SLD HEAVILY CLEATED WITH ANKERITE.
56	80.28	80.87	0.59	07359		CLAYSTONE	CARB.DK.GY.SLD MORE CARBONACEOUS DOWNWARD.
53	80.87	81.52	0.65	07360	F	COAL	C-3.BRKN HEAVILY BANDED WITH PYRITE AND ANKERITE .
51	81.52	81.59	0.07	07360	F	COAL	C-5.BRKN
51	81.59	81.63	0.04	07360	F	CLAYSTONE	CARB.BLK.SLD SOFT

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 15

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85008

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
50	81.63	81.71	0.08	07360	F	COAL	C-6,BRKN
50	81.71	81.88	0.17	07361		CLAYSTONE	CARB,BLK,SLD VERY CARBONACEOUS WITH ANKERITE.
49	81.88	81.92	0.04			CLAYSTONE	DK,GY,SLD
49	81.92	82.00	0.08			CLAYSTONE	CARB,BLK,SLD INTENSE ANKERITE VEINING.
48	82.00	82.18	0.18			CLAYSTONE	CARB,BLK,SLD VERY CARBONACEOUS, MUCH ANKERITE.
* 45	82.18	83.41	1.23			CLAYSTONE	SLTY,M,GY,BRKN MINOR ANKERITE VEINS.
44	83.41	83.57	0.16			CLAYSTONE	CARB,BLK,BRKN
44	83.57	83.62	0.05			COAL	C-3,BRKN
44	83.62	83.67	0.05			CLAYSTONE	CARB,DK,GY,VBRKN
43	83.67	83.81	0.14			CLAYSTONE	CARB,BLK,BRKN SOFT.

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 16

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85008

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
43	83.81	83.96	0.15			CLAYSTONE	DK,GY,BRKN HEAVY ANKERITE VEINING LOWER DOWN.
42	83.96	84.67	0.71			CLAYSTONE	CARB,WEL,BLK,VBRKN MINOR TALC AND ANKERITE ALONG LINEATED FRACTURE SURFACES. 1MM COALY STRINGERS THROUGHOUT.
41	84.67	85.37	0.70			CLAYSTONE	CARB,WEL,BLK,SLD COALIFIED PLANT MATERIAL. MODERATELY FR ACTURED AT BASE.
40	85.37	86.19	0.82			SILTSTONE	WEL,M,GY,BRKN 40MM QUARTZ VEIN HOSTING SUB ANGULAR SI LTSTONE FRAGMENTS. VERY MINOR COAL INCL USIONS 1MM IN SIZE.
38	86.19	87.01	0.82			SILTSTONE	WEL,M,GY,SLD MINOR TALC ALONG LINEATED FRACTURE SURF ACES. QUARTZ VEIN AT ANGLE TO BEDDING, 3MM.
36	87.01	88.82	1.81			SILTSTONE	CLYY,WEL,DK,GY,LAM,BRKN MINOR COALY STRINGERS AND ASSOC. ANKERI TE 1MM IN SIZE. MINOR TALC ALONG FRACTU RE SURFACES.CARBONACEOUS IN PARTS.

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 17

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85008

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
34	88.82	89.14	0.32			SILTSTONE	CLYY.MOD.M.GY.LAM.SLD MINOR VEINING. TALC ON FRACTURE SURFACE S.
33	89.14	90.70	1.56			SILTSTONE	CLYY.MOD.M.GY.LAM.BRKN MINOR COAL LENS, AS ABOVE
* 30	90.70	92.10	1.40			SILTSTONE	CLYY.MOD.M.GY.LAM.BRKN AS ABOVE, MODERATE TALC, MODERATE VEINI NG, SLIGHTLY CARBONACEOUS
30	92.10	92.59	0.49			SILTSTONE	CLYY.MOD.M.GY.LAM.BRKN AS ABOVE
30	92.59	94.57	1.98			SILTSTONE	CLYY.MOD.M.GY.LAM.BIOTR.BRKN HEAVILY QUARTZ VEINED AND BRECCIATED, M INOR TALC.
30	94.57	94.69	0.12			ROCK LOSS	
30	94.69	95.15	0.46			SILTSTONE	CLYY.MOD.M.GY.LAM.BRKN AS ABOVE
30	95.15	96.52	1.37			SILTSTONE	CLYY.MOD.M.GY.LAM.BRKN AS ABOVE, BRECCIATED AND VEINED FOR TOP 500 MM, MINOR COALY BANDS, MODERATE VE INING PARALLEL TO BEDDING.

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 18

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85008

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 30	96.52	98.20	1.68			SILTSTONE	CLYY.MOD.M.GY.LAM.BRKN AS ABOVE, SLIGHTLY CARBONACEOUS, MODERA TE VEINING PARALLEL BEDDING, MODERATE C LEAVAGE DEVELOPMENT.
38	98.20	98.36	0.16			SILTSTONE	CLYY.MOD.M.GY.LAM.BRKN
39	98.36	98.44	0.08			ROCK LOSS	
* 49	98.44	100.54	2.10			SILTSTONE	CLYY.MOD.M.GY.LAM.BIOTR AS ABOVE
37	100.54	101.25	0.71			SILTSTONE	CLYY.MOD.M.GY.LAM.BIOTR.SLD AS ABOVE
* 28	101.25	102.51	1.26			SILTSTONE	CLYY.MOD.M.GY.LAM.BIOTR.SLD AS ABOVE, TOPS UP ON VERTICAL HRMBUR.
32	102.51	104.18	1.67			SILTSTONE	MOD.M.GY.LAM.SLD SCOURS INDICATE TOPS UP, TALC ALONG FRA CTURE SURFACE.
35	104.18	104.30	0.12			ROCK LOSS	

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 19

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85008

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 35	104.30	104.54	0.24			SILTSTONE	MOD.M.GY.LAM.SLD QUARTZ VEIN PARALLEL TO BEDDING, 2MM
* 28	104.54	106.57	2.03			SILTSTONE	MOD.M.GY.LAM.WRMBU.SLD WRMBUR AND SCOURING INDICATES TOPS UP. CALCITE VEIN 2MM PARALLEL TO BEDDING
28	106.57	107.07	0.50			SILTSTONE	SSY.MOD.M.GY.THNB.BRKN
28	107.07	107.34	0.27			ROCK LOSS	
28	107.34	108.66	1.32			SANDSTONE	FG.WEL.M.GY.MAS.BRKN SILSTONE RIP-UP CLASTS CONFINED TO 50 M M BAND, MINOR TALC AND CALCITE. ROSETTE S ALONG FRACTURE SURFACES, 2MM.
28	108.66	108.71	0.05			SILTSTONE	MOD.M.GY.LAM.SLD SHARP CONTACT TO OVERLYING SANDSTONE
* 28	108.71	109.75	1.04			SILTSTONE	MOD.M.GY.LAM.SLD SCOURING INDICATES TOPS UP.
25	109.75	110.38	0.63			SILTSTONE	MOD.M.GY.WB.BRKN INTENSIVE QUARTZ AND CALCITE VEINING PA RALLEL TO BEDDING, SOME BRECCIATION.

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 20

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85008

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
24	110.38	110.58	0.20			SILTSTONE	MOD.M.GY.LAM.BRKN CALCITE VEIN 2MM WIDE
* 20	110.58	112.58	2.00			SILTSTONE	MOD.M.GY.LAM.SLD INTERBEDDED VERY FINE GRAINED SANDSTONE LAMINAE, TALC AND CALCITE 1MM WIDE ALO NG FRACTURE SURFACES
23	112.58	113.02	0.44			ROCK LOSS	
* 25	113.02	114.95	1.93			SILTSTONE	SSY.[redacted]GY.LAM.BRKN MINOR CALCITE AND TALC VEINING ALONG FR ACTURE SURFACES
24	114.95	116.48	1.53			SILTSTONE	SSY.MOD.M.GY.WB.BRKN MINOR TALC ALONG FRACTURE SURFACE
24	116.48	116.69	0.21			SILTSTONE	WEL.M.GY.THNB.SLD UNIFORM
* 23	116.69	118.56	1.87			SANDSTONE	FG.WEL.M.GY.MAS.BRKN SLTIER TOWARDS TOP, SCOURING INDICATES TOPS UP, CALCITE VEIN (2.0 MM) AT ANGLE TO BEDDING

* DENOTES MEASURED BCA

FORM 4001

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85008

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
22	118.56	118.96	0.40			ROCK LOSS	
22	118.96	119.53	0.57			SILTSTONE	WEL.M.GY.LAM.BRKN UNIFORM, SANDY LAMINAE THROUGHOUT
* 21	119.53	120.10	0.57			SILTSTONE	WEL.M.GY.LAM.BRKN SHARP CONTACT WITH UNDERLYING UNIT
16	120.10	120.50	0.40			SANDSTONE	FG.WEL.M.GY.MAS.SLD SCOURING INDICATES TOPS UP.
12	120.50	120.79	0.29			SILTSTONE	MOD.M.GY.LAM.SLD UNIFORM
* 08	120.79	121.29	0.50			SILTSTONE	MOD.M.GY.LAM.BRKN TALC ALONG FRACTURE SURFACES
09	121.29	121.34	0.05			ROCK LOSS	
10	121.34	121.57	0.23			SILTSTONE	CLYY.MOD.DK.GY.SLD MODERATELY UNCONSOLIDATED, TALC ALONG L INEATED FRACTURE SURFACES
12	121.57	122.57	1.00			SANDSTONE	FG.WEL.M.GY.MAS.BRKN TALC ALONG FRACTURE SURFACES

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85008

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
15	122.57	122.77	0.20			SANDSTONE	FG.MOD.M.GY.THNB.SLD TALC ALONG FRACTURE SURFACES
* 20	122.77	124.88	2.11			SANDSTONE	SLTY.VFG.MOD.M.GY.THNB.BIOTR.SLD NUMEROUS SILTY LAMINAE, SLIGHTLY CARBON ACEOUS, TALC ON FRACTURE SURFACES, TOPS UP, VERTICAL WORMBURROWS, MINOR QUARTZ VEINING PARALLEL TO BEDDING
* 05	124.88	125.59	0.71			SANDSTONE	SLTY.VFG.MOD.M.GY.THNB.BIOTR.BRKN AS ABOVE, BRECCIATED IN PART
06	125.59	126.70	1.11			SANDSTONE	VFG.WEL.M.GY.MAS.BRKN SLIGHTLY CARBONACEOUS, THICK TALC ON FR ACTURE SURFACES
07	126.70	128.56	1.86			SANDSTONE	SLTY.VFG.MOD.M.GY.MB.VBRKN DISCRETE SILTSTONE BANDS, INTENSELY CAL CITE VEINED AND BRECCIATED
08	128.56	130.45	1.89			SANDSTONE	VFG.MOD.M.GY.MB.VBRKN AS ABOVE HEAVILY VEINED AND BRECCIATED
09	130.45	131.69	1.24			SANDSTONE	VFG.MOD.M.GY.MB.VBRKN AS ABOVE, HEAVY BUT THIN VEINING, SILTS TONE RIP-UP CLASTS
* 10	131.69	132.32	0.63			SANDSTONE	VFG.MOD.M.GY.MB.VBRKN AS ABOVE, SILTY BANDS ARE CARBONACEOUS.

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 23

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85008

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 01	132.32	134.47	2.15			SANDSTONE	SLTY.VFG.PR.M.GY.THNB.BIOTR.BRKN VERY SILTY, RIP-UPS AND SILTY LAMINAE, MINOR VEINING, AS ABOVE
10	134.47	134.73	0.26			SANDSTONE	SLTY.VFG.PR.M.GY.THNB.BRKN AS ABOVE
* 17	134.73	136.34	1.61			SANDSTONE	SLTY.VFG.PR.M.GY.THNB.BRKN AS ABOVE, SILTIER TOWARDS BASE, MINOR V EINING AND TALC
14	136.34	137.77	1.43			SANDSTONE	SLTY.VFG.PR.M.GY.THNB.BRKN LESS SILTY THAN ABOVE HEAVY CALCITE VEI NING IN TOP 500 MM, SILTSTONE RIP-UP CL ASTS
12	137.77	138.15	0.38			SANDSTONE	SLTY.VFG.PR.M.GY.THNB.BRKN AS ABOVE, BCA'S VARY
11	138.15	138.22	0.07			SANDSTONE	SLTY.VFG.PR.M.GY.THNB.BRKN AS ABOVE.
11	138.22	138.69	0.47			SANDSTONE	SLTY.VFG.PR.M.GY.THNB.BRKN AS ABOVE
* 09	138.69	140.07	1.38			SANDSTONE	SLTY.VFG.PR.M.GY.THNB.BRKN AS ABOVE, DISTINCT SILTY BANDS 30MM WID E, MODERATE VEINING

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 24

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85008

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
10	140.07	140.82	0.75			SANDSTONE	FG.WEL.M.GY.MAS.BRKN QUARTZ VEINING AT ANGLE TO BEDDING (10 MM WIDE)
11	140.82	141.81	0.99			SANDSTONE	FG.WEL.M.GY.MAS.BRKN SILTSTONE RIP-UP CLAST, MINOR QUARTZ VE IN AT ANGLE TO BEDDING
12	141.81	142.05	0.24			ROCK LOSS	
13	142.05	143.87	1.82			SANDSTONE	FG.WEL.M.GY.MAS.BRKN THREE QUARTZ VEINS (4.0 MM WIDE) AT ANG LE TO BEDDING
15	143.87	145.07	1.20			SANDSTONE	FG.WEL.M.GY.MAS.BRKN MINOR QUARTZ VEINING AT ANGLE TO BEDDIN G
16	145.07	145.54	0.47			SILTSTONE	MOD.M.GY.THNB.SLD MIRROR FRACTURE SURFACE
16	145.54	145.59	0.05			QUARTZITE	WH.SLD QUARTZ AND CALCITE VEIN
16	145.59	145.71	0.12			SILTSTONE	MOD.M.GY.THNB.SLD
16	145.71	146.10	0.39			ROCK LOSS	

* DENOTES MEASURED BCA

FORM 4001

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85008

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
17	146.10	146.61	0.51			SILTSTONE	CARB.PR.M.GY.LAM.BRKN LINEATED FRACTURE SURFACES, HEAVILY QUA RTZ AND CALCITE VEINING FORMING BRECCIA
* 18	146.61	147.86	1.25			SILTSTONE	CARB.PR.M.GY.LAM.BRKN LINEATED FRACTURE SURFACES, HEAVILY QUA RTZ AND CALCITE VEINING FORMING BRECCIA
* 21	147.86	149.42	1.56			SANDSTONE	VFG.PR.M.GY.THNB.BRKN SHINY FRACTURE SURFACES WITH MINOR TALC , HEAVILY QUARTZ AND CALCITE VEINING FO RMING BRECCIA, MINOR SILTSTONE INTERBED S
19	149.42	149.66	0.24			ROCK LOSS	
16	149.66	151.63	1.97			SANDSTONE	FG.MOD.M.GY.THKB.SLD INTENSE VEINING AND BRECCIATION, EARLY CALCITE, LATE QUARTZ, MINOR TALC, BCA'S VERY LOW
* 11	151.63	152.98	1.35			SANDSTONE	SLTY.FG.MOD.M.GY.THKB.SLD SILTIER THAN ABOVE, CARBONACEOUS, LESS INTENSE VEINING, MINOR TALC, TOTAL DEPT H DRILLERS MARKER 154.50 M

* DENOTES MEASURED BCA
NEWPAGE

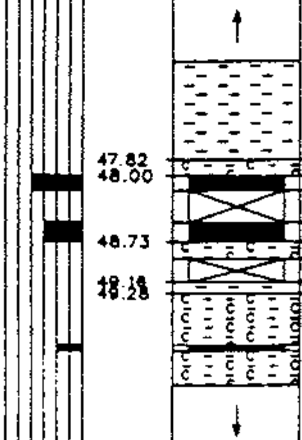
FORM 4001

GULF CANADA RESOURCES INC.

SEAM DETAIL — COAL DIVISION — MOUNT KLAPPAN PROJECT — **TRUE THICKNESS**

DATA SOURCE: XPN LR DDH85008 SEAM : G.LOWER INTERVAL(M) : 47.82 – 49.28 ELEVATION(M) : 1732.1

GEOLOGIST : K. JENNER SCALE: DATE : DEC 19/85 DRAWING NO. :



DRILL DEPTH (METRES)	INTERVAL (METRES) ROCK	INTERVAL (METRES) COAL	% REC.	SAMPLE ID SIMP	SAMPLE ID COMP	COAL/ROCK TOTAL COMPOS	MINING SECTION	COAL QUALITY A.D.B. RES MOIST	ASH	VM	FC	TS	CAL.VAL MJ/KG	
47.82	0.18		100.0	7355										
48.00		0.09	50.8	7356	28	0.57 / 0.11 0.67		1.85	29.82	8.54	59.58	0.95	23.08	—
		(0.21)												
		0.12												
48.73	0.11		41.5	7357										
		(0.18)												
49.16	1.07		100.0	7358										
49.28														

GULF CANADA RESOURCES INC.

SEAM DETAIL | COAL DIVISION | MOUNT KLAPPAN PROJECT | **TRUE THICKNESS**

DATA SOURCE: KPN LR DDH85008 | SEAM : F | INTERVAL(M) : 80.28 – 81.88 | ELEVATION(M) : 1732.1

GEOLOGIST : K. JENNER | SCALE: | DATE : DEC 19/85 | DRAWING NO. :

SEAM COMP. 1 2 3 4 5 6	DRILL DEPTH METRES	COAL SEAM LOG	INTERVAL METRES ROCK	INTERVAL METRES COAL	% REC.	SAMPLE ID SIMP	SAMPLE ID COMP	COAL/ROCK TOTAL COMPOS	COAL/ROCK TOTAL MINING SECTION	COAL QUALITY A.D.B. RES MOIST	ASH	VM	FC	TS	CALVAL MJ/KG	
	80.28		0.49		100.0	7359										
	80.87			0.57	100.0	7360	29	0.83/ 0.03 0.58		1.87	39.46	8.36	50.31	3.00	18.82	—
			0.02	[illegible]												
	81.71		0.13		100.0	7361										
	81.88															

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Gulf Canada Resources Inc.
Coal Division
Geophysical Log

Datasource: **KPNLRDDH85008**	Province: BC — Northing: 6343920.00 — Lat: 571425
Log Date: 85-03-27	Zone: 9 — Easting: 506350.00 — Long: 1285341
Company: CENTURY	Measuring Point: — Elevation:
Geologist: K. JENNER	

Scale: 1 to 100.0	Comments:
Depth Range: 0.0 to 156.0	1. LOGGED THROUGH THE RODS
True Thickness: NO	2.

Logs Plotted:

Description	Axis Range	Axis Length	Smoothing Points	Tool	Comments
1. GAMMA API	0.0 to 150.0	10.0	31	9030A	IN PIPE
2. NEUTRON-NEUTRON CPS	0.0 to 2500.0	10.0	9	9067	IN PIPE
3. DENSITY G/CC	1.0 to 3.0	10.0	15	9030A	IN PIPE

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GULF CANADA RESOURCES INC.
COAL DIVISION
KLAPPAN PROJECT
STRATIGRAPHIC LOG
KPN LR DDH85008

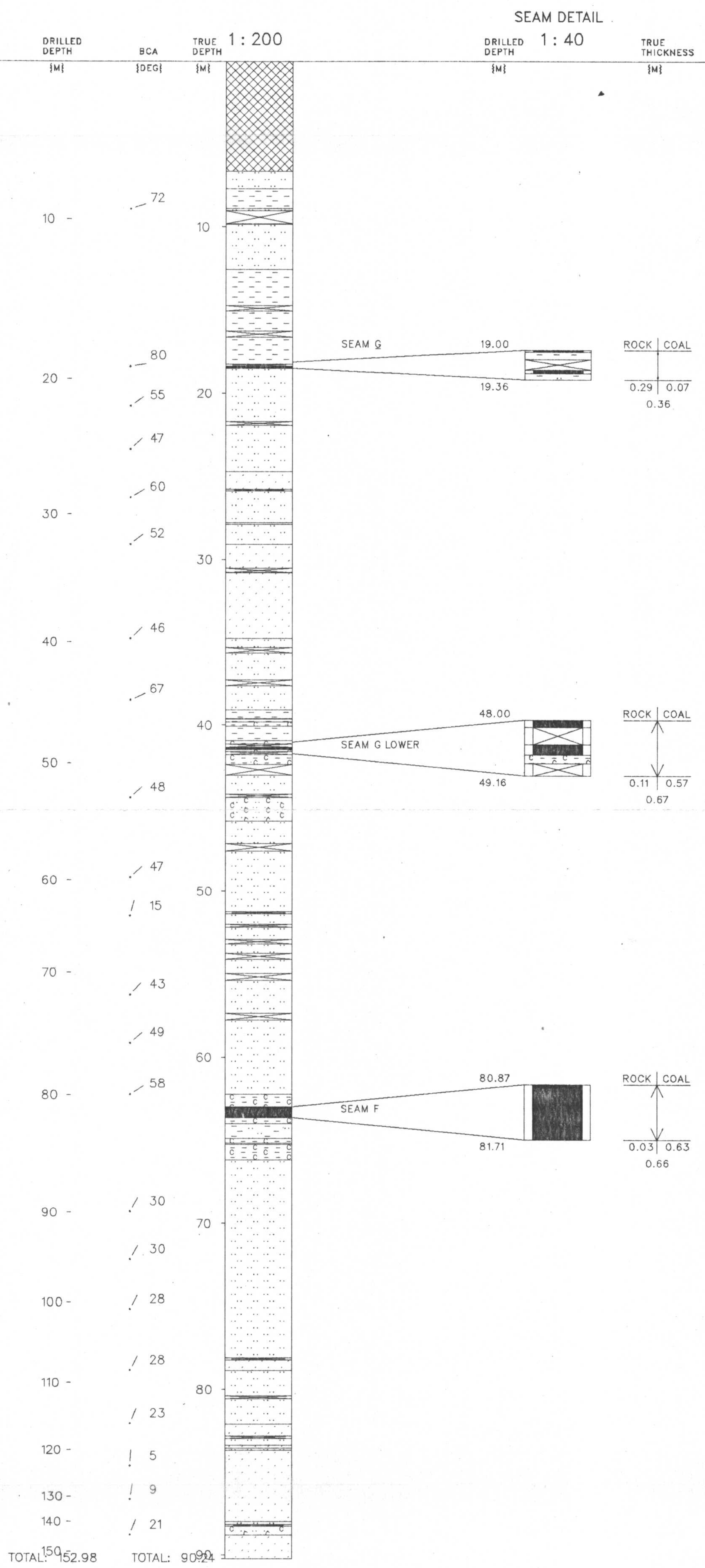
GEOLOGIST : K. JENNER	DATE : JAN 08/86	DRAWING NO. :

SCALE : 1:200 1:40

NORTHING: 6343920.0 N INCLINATION: 60.0°
EASTING: 506349.5 E BEARING: 225.0°

LITHOLOGIC SYMBOLS

SANDSTONE	BENTONITE
SILTSTONE	BRECCIA
COAL	CARBONACEOUS
OVERBURDEN	QUARTZ
MUDSTONE, CLAYSTONE	PYRITE
TUFF	FERRUGINOUS
LIMESTONE	CONGLOMERATE
CORE LOSS	FOSSIL BED



KPNLRDDH85009

============================== GULF CANADA RESOURCES INC. ==========================

- D A T A   S O U R C E   S U M M A R Y -

DATA SOURCE - KPNLRDDH85009 DATE - 01/09/86

- H I S T O R Y -

START DATE - 03/26/85
END DATE - 03/30/85

CONTRACTOR - J.T. THOMAS
GEOLOGIST - E. LEGRESLEY

OPERATOR - GCRI
SURVEYOR - MWG & ASS.

REMARKS - SITE I, DDH85007 RE-DRILLED AT A 65 DEGREE INCLINA TION

- L O C A T I O N -

PROVINCE - BC
ELEVATION - 1761.90

LICENCE/LEASE NUMBER - 7151

ZONE - 9
NORTHING - 6344168.00
EASTING - 506330.37

LATITUDE - 571433
LONGITUDE - 1285342

- O R I E N T A T I O N -

LENGTH - 343.72

CORE SIZE - 0.0

INCLINATION - 65.0
AZIMUTH - 45.0

CEMENT -
PLUG -
PIEZ -

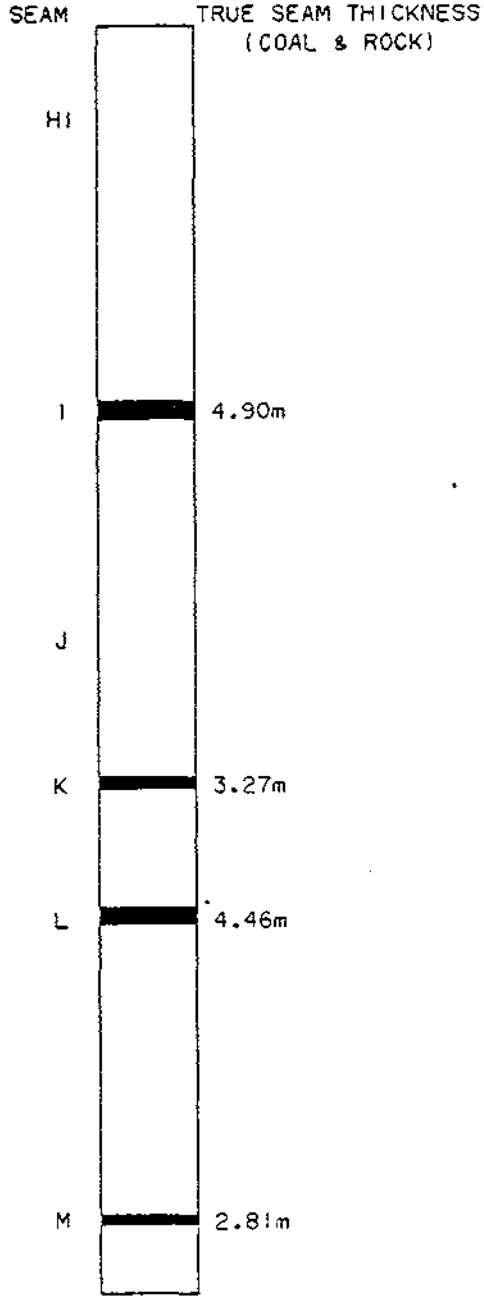
CASING DEPTH (M)	-	7.32
AQUIFER DEPTHS (M)	-	0.00
		0.00
LOST CIRC. DEPTHS (M)	-	0.00
		0.00

*** NOTE *** 0 INDICATES NO VALUE

===

MT. KLAPPAN COAL PROPERTY

1985 DIAMOND DRILL HOLES
DDH85009



NOTE: SCHEMATIC PROFILE.
NO THICKNESSES SHOWN
FOR SEAMS CONTAINING
LESS THAN 50cm COAL.

SCALE: 1:2000	GULF CANADA RESOURCES INC. 15/01/86

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 1

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85009

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
47	0.00	7.32	7.32			OVERBURDEN	CASING TO 7.32 METRES
47	7.32	8.97	1.65			ROCK LOSS	
47	8.97	9.89	0.92			MUDSTONE	MOD.DK.GY.LAM.BRKN VERY SOFT, ONLY PARTIALLY CONSOLIDATED, SLIGHTLY CARBONACEOUS, INTENSELY FRACT URED
47	9.89	10.93	1.04			MUDSTONE	MOD.DK.GY.LAM.BRKN LITHOLOGY AS ABOVE
47	10.93	11.85	0.92			ROCK LOSS	
47	11.85	12.89	1.04			MUDSTONE	MOD.DK.GY.LAM.BRKN LITHOLOGY AS ABOVE
47	12.89	13.97	1.08			MUDSTONE	MOD.DK.GY.LAM.BRKN LITHOLOGY AS ABOVE
47	13.97	14.59	0.62			ROCK LOSS	
47	14.59	14.99	0.40			MUDSTONE	MOD.DK.GY.LAM.BRKN LITHOLOGY AS ABOVE, SLIGHTLY MORE CONSO LIDATED
47	14.99	16.36	1.37			MUDSTONE	MOD.DK.GY.LAM.BRKN LITHOLOGY AS ABOVE

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 2

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85009

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
47	16.36	18.09	1.73			ROCK LOSS	
47	18.09	18.25	0.16			MUDSTONE	MOD.DK.GY.LAM.BRKN LITHOLOGY AS ABOVE
47	18.25	20.29	2.04			MUDSTONE	MOD.DK.GY.LAM.BRKN LITHOLOGY AS ABOVE
47	20.29	21.36	1.07			MUDSTONE	MOD.DK.GY.LAM.BRKN LITHOLOGY AS ABOVE
47	21.36	22.11	0.75			MUDSTONE	MOD.DK.GY.LAM.BRKN LITHOLOGY AS ABOVE
47	22.11	24.15	2.04			MUDSTONE	MOD.DK.GY.LAM.BRKN LITHOLOGY AS ABOVE
47	24.15	24.57	0.42			MUDSTONE	MOD.DK.GY.LAM.BRKN LITHOLOGY AS ABOVE
47	24.57	26.24	1.67		H/I	MUDSTONE	MOD.DK.GY.LAM.BRKN LITHOLOGY AS ABOVE, COALFIED PLANT FRAG MENTS, PRONOUNCED CLEAVAGE, TOPS DOWN F ROM BEDDING
47	26.24	28.04	1.80			MUDSTONE	MOD.DK.GY.LAM.BRKN LITHOLOGY AS ABOVE

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85009

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
47	28.04	28.24	0.20			MUDSTONE	MOD.DK.GY.LAM.BRKN LITHOLOGY AS ABOVE
47	28.24	30.42	2.18			MUDSTONE	MOD.DK.GY.LAM.BRKN LITHOLOGY AS ABOVE
* 47	30.42	32.41	1.99			MUDSTONE	MOD.DK.GY.LAM.BRKN SLIGHTLY MORE CONSOLIDATED
47	32.41	34.43	2.02			MUDSTONE	MOD.DK.GY.LAM.BRKN LITHOLOGY AS ABOVE, CARBONACEOUS PLANT FRAGMENTS
46	34.43	34.56	0.13			ROCK LOSS	
46	34.56	34.69	0.13			MUDSTONE	MOD.DK.GY.LAM.BRKN LITHOLOGY AS ABOVE, MINOR CALCITE VEINI NG
46	34.69	36.84	2.15			MUDSTONE	MOD.DK.GY.LAM.BRKN LITHOLOGY AS ABOVE
46	36.84	37.53	0.69			MUDSTONE	MOD.DK.GY.LAM.BRKN LITHOLOGY AS ABOVE
46	37.53	38.95	1.42			MUDSTONE	MOD.DK.GY.LAM.BRKN LITHOLOGY AS ABOVE

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85009

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
45	38.95	39.38	0.43			ROCK LOSS	
45	39.38	40.53	1.15			MUDSTONE	MOD.DK.GY.LAM.BRKN LITHOLOGY AS ABOVE
* 45	40.53	40.89	0.36			MUDSTONE	MOD.DK.GY.LAM.BRKN LITHOLOGY AS ABOVE
43	40.89	43.04	2.15			MUDSTONE	MOD.DK.GY.LAM.BRKN LITHOLOGY AS ABOVE
42	43.04	43.28	0.24			MUDSTONE	MOD.DK.GY.LAM.BRKN LITHOLOGY AS ABOVE
41	43.28	44.80	1.52			MUDSTONE	MOD.DK.GY.LAM.BRKN LITHOLOGY AS ABOVE
39	44.80	46.37	1.57			MUDSTONE	MOD.DK.GY.LAM.BRKN LITHOLOGY AS ABOVE
38	46.37	46.71	0.34			MUDSTONE	MOD.DK.GY.LAM.BRKN LITHOLOGY AS ABOVE
37	46.71	46.77	0.06			ROCK LOSS	
36	46.77	48.88	2.11			MUDSTONE	SLTY.MOD.DK.GY.LAM.SLD SILTIER THAN ABOVE

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 5

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85009

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
34	48.86	49.47	0.59			MUDSTONE	SLTY.MOD.DK.GY.LAM.SLD LITHOLOGY AS ABOVE
* 33	49.47	50.76	1.29			MUDSTONE	SLTY.MOD.DK.GY.LAM.SLD LITHOLOGY AS ABOVE
41	50.76	50.82	0.06			ROCK LOSS	
* 52	50.82	52.47	1.65			MUDSTONE	SLTY.PR.DK.GY.LAM.BRKN SILTIER THAN ABOVE, VERY THIN COALY LAM INAE, MINOR CALCITE VEINING PARALLEL TO BEDDING
41	52.47	52.77	0.30			MUDSTONE	SLTY.MOD.DK.GY.LAM.BRKN LITHOLOGY AS ABOVE, GRADES RAPIDLY TO S ILTSTONE
38	52.77	52.97	0.20			SILTSTONE	CLYY.MOD.M.GY.LAM.BRKN
* 25	52.97	55.03	2.06			SILTSTONE	CLYY.MOD.M.GY.LAM.BRKN LITHOLOGY AS ABOVE, SANDIER TOWARDS BAS E
30	55.03	55.16	0.13			ROCK LOSS	

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 6

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85009

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
32	55.16	55.64	0.48			SILTSTONE	SSY.MOD.M.GY.LAM.BRKN GRADES RAPIDLY TO SANDSTONE BELOW
* 37	55.64	57.22	1.58			SANDSTONE	VFG.MOD.M.GY.MAS.SLD SILTY LAMINAE IN TOP 300.0 MM, MODERATE RIP-UP CLASTS THROUGHOUT
38	57.22	58.57	1.35			SANDSTONE	VFG.MOD.M.GY.MAS.SLD LITHOLOGY AS ABOVE
* 38	58.57	59.28	0.71			MUDSTONE	SLTY.MOD.DK.GY.LAM.WRMBU.SLD ABRUPT TRANSITION TO OVERLYING UNIT, SI LTIER TOWARDS TOP, TOPS DOWN, VERTICAL WORMBURROWS
37	59.28	59.38	0.10			ROCK LOSS	
* 34	59.38	61.49	2.11			MUDSTONE	SLTY.PR.DK.GY.LAM.BIOTR.SLD LITHOLOGY AS ABOVE, TWO 200.0 MM FINE G RAINEDSAN DSTONE BANDS IN GRADATIONAL C ONTACT WITH MUDSTONE, INCREASE IN SILT TOWARDS THE BASE

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 7

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85009

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
33	61.49	61.67	0.18			SILTSTONE	SSY,PR,M,GY,LAM,BIOTR,SLD
33	61.67	61.93	0.26			SILTSTONE	SSY,PR,M,GY,LAM,BIOTR,SLD LITHOLOGY AS ABOVE, SOMEWHAT CLAY RICH
32	61.93	63.47	1.54			SANDSTONE	SLTY,VFG,MOD,M,GY,MB,BIOTR,SLD NUMEROUS SILTY LAMINAE, TOPS DOWN, VERT ICAL WORMBURROWS, MINOR BAND OF FINE GR AINED SANDSTONE
31	63.47	63.70	0.23			ROCK LOSS	
31	63.70	63.83	0.13			SANDSTONE	SLTY,VFG,MOD,M,GY,MB,BIOTR,SLD LITHOLOGY AS ABOVE, RAPID TRANSITION TO SILTSTONE BELOW
* 30	63.83	64.67	0.84			SILTSTONE	SSY,MOD,M,GY,LAM SLIGHTLY CARBONACEOUS
32	64.67	65.17	0.50			SILTSTONE	PR,DK,GY,LAM,SLD GRADES VERY SLOWLY FROM SANDSTONE TO CL AYSTONE

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 8

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85009

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
33	65.17	65.34	0.17			MUDSTONE	SLTY,MOD,DK,GY,LAM,SLD
* 37	65.34	67.24	1.90			MUDSTONE	SLTY,MOD,DK,GY,LAM,BRKN LITHOLOGY AS ABOVE
38	67.24	67.57	0.33			ROCK LOSS	
39	67.57	67.77	0.20			MUDSTONE	SLTY,MOD,DK,GY,LAM,BRKN LITHOLOGY AS ABOVE
* 40	67.77	69.59	1.82			MUDSTONE	SLTY,MOD,DK,GY,LAM,BRKN LITHOLOGY AS ABOVE
40	69.59	70.83	1.24			MUDSTONE	SLTY,MOD,DK,GY,LAM,BRKN LITHOLGY AS ABOVE
39	70.83	71.54	0.71			MUDSTONE	SLTY,MOD,DK,GY,LAM,BRKN LITHOLOGY AS ABOVE
39	71.54	73.70	2.16			MUDSTONE	SLTY,MOD,DK,GY,LAM,BRKN LITHOLOGY AS ABOVE
38	73.70	74.02	0.32			MUDSTONE	SLTY,MOD,DK,GY,LAM,BRKN LITHOLOGY AS ABOVE
* 38	74.02	75.88	1.86			MUDSTONE	SLTY,MOD,DK,GY,LAM,BRKN LITHOLOGY AS ABOVE

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 9

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85009

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
36	75.88	76.92	1.04			MUDSTONE	SLTY.MOD.DK.GY.LAM.BRKN BECOMES INCREASINGLY SILTY DOWNHOLE AND GRADES TO SILTSTONE RAPIDLY
36	76.92	77.12	0.20			SILTSTONE	CLYY.MOD.M.GY.LAM.BRKN
* 35	77.12	77.91	0.79			SILTSTONE	CLYY.MOD.M.GY.LAM.BRKN
35	77.91	77.95	0.04			ROCK LOSS	
34	77.95	78.33	0.38			SILTSTONE	CLYY.MOD.M.GY.LAM.BRKN INCREASINGLY SANDY DOWNHOLE
* 33	78.33	80.15	1.82			SANDSTONE	SLTY.VFG.MOD.M.GY.THNB.SLD NUMEROUS SILTY LAMINAE, TOPS DOWN, GRAD ED BEDDING, CLEANER AND COARSER TOWARDS BASE
39	80.15	80.22	0.07			SANDSTONE	VFG-.WEL.M.GY.MAS.SLD VERY FINE GRAINED TO FINE GRAINED SANDS TONE

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 10

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85009

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 46	80.22	82.14	1.92			SANDSTONE	VFG-.WEL.M.GY.MAS.BRKN LITHOLOGY AS ABOVE, VERY FINE GRAINED T O FINE GRAINED SANDSTONE
45	82.14	82.38	0.24			SANDSTONE	SLTY.VFG.MOD.M.GY.MAS.BRKN GRADES RAPIDLY TO SILTSTONE
44	82.38	83.35	0.97			SILTSTONE	SSY.PR.M.GY.LAM.WRMBU.BRKN TOPS DOWN, VERY GOOD VERTICAL WORMBURRO WS
* 43	83.35	84.07	0.72			SILTSTONE	SSY.PR.M.GY.LAM.BIOTR.SLD LITHOLOGY AS ABOVE, TOPS DOWN ON LOAD C AST, VERY SANDY
* 33	84.07	85.98	1.91			SANDSTONE	SLTY.FG.MOD.M.GY.THNB.XBDG.SLD TOPS DOWN, SCOUR AND FILL PATTERNS, CRO SS BEDDING, CLEANER IN CENTRAL PORTION
34	85.98	86.03	0.05			ROCK LOSS	
* 34	86.03	86.45	0.42			SANDSTONE	SLTY.FG.MOD.M.GY.THNB.BRKN LITHOLOGY AS ABOVE, VERY SILTY
35	86.45	87.33	0.88			SANDSTONE	SLTY.FG.MOD.M.GY.THNB.BRKN LITHOLOGY AS ABOVE, RAPID TRANSITION TO MUDSTONE BELOW

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 11

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85009

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
36	87.33	87.43	0.10			ROCK LOSS	
37	87.43	88.09	0.66			MUDSTONE	SLTY.WEL.DK.GY.LAM.SLD NUMEROUS MINOR FRACTURES PARALLEL TO BE DDING
39	88.09	89.43	1.34			MUDSTONE	SLTY.WEL.DK.GY.LAM.SLD LITHOLOGY AS ABOVE
41	89.43	90.12	0.69			MUDSTONE	SLTY.MOD.DK.GY.LAM.SLD LITHOLOGY AS ABOVE, SILTIER DOWNHOLE
43	90.12	91.66	1.54			SILTSTONE	CLYY.MOD.M.GY.LAM.SLD GRADES RAPIDLY TO SANDSTONE BELOW
* 45	91.66	92.21	0.55			SANDSTONE	VFG-.WEL.M.GY.MAS.SLD MINOR SILTY RIP-UP CLASTS, VERY MINOR V EINING, VERY FINE GRAINED TO FINE GRAIN ED SANDSTONE
44	92.21	92.43	0.22			SANDSTONE	VFG-.WEL.M.GY.MAS.SLD LITHOLOGY AS ABOVE, VERY FINE GRAINED T O FINE GRAINED SANDSTONE
42	92.43	94.13	1.70			SANDSTONE	VFG-.WEL.M.GY.MAS.BRKN LITHOLOGY AS ABOVE, MODERATE VEINING, E ARLY CALCITE, MINOR LATE QUARTZ

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 12

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85009

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
39	94.13	94.46	0.33			ROCK LOSS	
37	94.46	96.13	1.67			SANDSTONE	FG.MOD.M.GY.MB.BRKN MINOR QUARTZ VEINING PARALLEL TO FRACTU RING (1.0 MM WIDE), VERY FINE GRAINED SANDSTONE INTERBEDS
34	96.13	96.33	0.20			SANDSTONE	FG.MOD.M.GY.MB.BRKN MINOR SILTSTONE INTERBEDS
33	96.33	97.24	0.91			SANDSTONE	FG.WEL.M.GY.MB.BRKN UNIFORM
31	97.24	97.44	0.20			ROCK LOSS	
31	97.44	97.71	0.27			SANDSTONE	FG.PR.M.GY.MB.VBRKN ABUNDANT QUARTZ AND CALCITE VEINING FOR MING BRECCIA
* 30	97.71	98.06	0.35			SANDSTONE	FG.MOD.M.GY.MB.BRKN
31	98.06	98.53	0.47			SANDSTONE	FG.MOD.M.GY.MB.BRKN QUARTZ AND CALCITE VEINING PARALLEL TO FRACTURES (LESS THAN 5.0 MM WIDE)

* DENOTES MEASURED BCA

FORM 4001

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85009

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
31	98.53	99.20	0.67			SILTSTONE	MOD.DK.GY.VTHNB.BRKN SANDY INTERBEDS, LINEATED LISTRIC SURFACES WITH TALC
* 32	99.20	99.82	0.62			SANDSTONE	FG.PR.M.GY.THNB.BRKN DARK GREY SILTSTONE INTERBED (70.0 MM)
32	99.82	100.30	0.48			ROCK LOSS	
32	100.30	101.23	0.93			SILTSTONE	SSY.PR.M.GY.LAM.VBRKN SANDY AT STRATIGRAPHIC BOTTOM
* 32	101.23	101.92	0.69			SILTSTONE	SSY.PR.DK.GY.LAM.SLD
35	101.92	102.02	0.10			ROCK LOSS	
* 39	102.02	102.85	0.83	07451		CLAYSTONE	SLTY.DK.GY.LAM.SLD SOMEWHAT CARBONACEOUS
* 42	102.85	102.98	0.13	07452	I	COAL	C-1.BRKN
* 25	102.98	103.67	0.69	07452	I	COAL	C-1.VBRKN
28	103.67	104.13	0.46	07452	I	COAL	C-1.BRKN

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85009

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
29	104.13	104.23	0.10	07452	I	COAL	C-2.VBRKN
31	104.23	105.16	0.93	07452	I	COAL LOSS	
35	105.16	105.93	0.77	07452	I	COAL	C-1.VBRKN
37	105.93	106.01	0.08	07452	I	COAL	C-2.BRKN
37	106.01	106.08	0.07	07452	I	COAL	C-1
38	106.08	106.18	0.10	07452	I	COAL	C-2
38	106.18	106.22	0.04	07452	I	COAL	C-2
38	106.22	106.33	0.11	07453	I	ROCK LOSS	
39	106.33	106.48	0.15	07453	I	CLAYSTONE	CARB.DK.GY.PHRD
* 40	106.48	106.73	0.25	07453	I	COAL	C-1.BRKN
40	106.73	106.75	0.02	07453	I	CLAYSTONE	CARB.VBRKN

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 15

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85009

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
40	106.75	107.60	0.85	07453	I	COAL LOSS	VBRKN
41	107.60	108.26	0.66	07453	I	COAL	C-1.VBRKN FEW ANKERITE VEINS
41	108.26	108.32	0.06	07453	I	CLAYSTONE	CARB.BLK.SLD
41	108.32	108.43	0.11	07453	I	COAL	C-2.BRKN
41	108.43	108.47	0.04	07453	I	CLAYSTONE	CARB.BLK.VBRKN
41	108.47	108.60	0.13	07453	I	COAL	C-2.VBRKN
41	108.60	108.79	0.19	07453	I	CLAYSTONE	CARB.BLK.BRKN VERY SOFT
42	108.79	108.84	0.05	07453	I	CLAYSTONE	CARB.BRKN
42	108.84	109.39	0.55	07453	I	COAL LOSS	
42	109.39	109.77	0.38	07453	I	COAL	C-1.BRKN

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 16

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85009

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
42	109.77	109.83	0.06	07453	I	COAL	C-2.SLD
42	109.83	109.87	0.04	07453	I	COAL	C-1.BRKN
42	109.87	109.92	0.05	07453	I	CLAYSTONE	CARB.BLK.SLD COALY BANDS, BRIGHT
42	109.92	109.96	0.04	07453	I	CLAYSTONE	CARB.BLK.BRKN SOFT
42	109.96	110.13	0.17	07453	I	COAL	C-1
42	110.13	110.30	0.17	07453	I	COAL	C-1.VBRKN
43	110.30	110.50	0.20	07453	I	COAL	C-3.PWRD
43	110.50	110.74	0.24	07453	I	CLAYSTONE	CARB.DK.GY.SLD
43	110.74	110.91	0.17	07453	I	COAL	C-2.SLD
43	110.91	111.00	0.09	07453	I	COAL	C-1.VBRKN

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 17

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85009

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
43	111.00	111.11	0.11	07454		CLAYSTONE	CARB.DK.GY.SLD
43	111.11	111.73	0.62			MUDSTONE	CARB.MOD.DK.GY.LAM.BRKN SILTY TOWARDS STRATIGRAPHIC TOP, PLANT MATERIAL AT STRATIGRAPHIC BASE
* 44	111.73	113.07	1.34			SILTSTONE	PR.M.GY.LAM.SLD VERY UNIFORM
* 39	113.07	115.06	1.99			SILTSTONE	PR.M.GY.LAM.BRKN VERY UNIFORM
36	115.06	116.05	0.99			ROCK LOSS	
* 34	116.05	117.67	1.62			SILTSTONE	PR.M.GY.LAM.BRKN VERY UNIFORM
39	117.67	117.93	0.26			SILTSTONE	MOD.M.GY.LAM.SLD VERY UNIFORM
* 45	117.93	120.04	2.11			SILTSTONE	PR.M-DK.GY.LAM.BRKN VERY UNIFORM, WAVY BEDDING
45	120.04	120.36	0.32			ROCK LOSS	
45	120.36	120.97	0.61			SILTSTONE	PR.M-DK.GY.LAM.SLD VERY UNIFORM

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 18

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85009

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 45	120.97	122.40	1.43			SILTSTONE	PR.M-DK.GY.LAM.SLD MUDDY TOWARDS STRATIGRAPHIC TOP, VERY U NIFORM
* 45	122.40	123.88	1.48			SILTSTONE	PR.M-DK.GY.LAM.BRKN VERY UNIFORM
44	123.88	124.08	0.20			ROCK LOSS	
44	124.08	124.62	0.54			SILTSTONE	MOD.M-DK.GY.LAM.SLD VERY UNIFORM
* 43	124.62	126.69	2.07			SILTSTONE	MOD.M-DK.GY.LAM.SLD VERY UNIFORM
* 44	126.69	127.14	0.45			SILTSTONE	PR.M.GY.LAM.SLD VERY UNIFORM
44	127.14	127.23	0.09			ROCK LOSS	
44	127.23	127.34	0.11			SILTSTONE	PR.M.GY.LAM.SLD
44	127.34	127.37	0.03			CLAYSTONE	VWEL.LT.GY.LAM.SLD SOFT, SHELLS WHEN WET
44	127.37	127.48	0.11			SILTSTONE	MOD.M.GY.LAM.SLD CALCITE VEIN PARALLEL TO BEDDING (5.0 M M WIDE)

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 19

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85009

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
44	127.48	127.58	0.10			CLAYSTONE	VWEL.LT.GY.LAM.SLD SOFT, SWELLS WHEN WET
44	127.58	128.71	1.13			SILTSTONE	CLYY.WEL.LT.GY.LAM.SLD SOFT
43	128.71	129.03	0.32			ROCK LOSS	
* 43	129.03	130.26	1.23			SILTSTONE	CLYY.WEL.LT.GY.LAM.SLD HARDER THAN BELOW
41	130.26	130.41	0.15			SILTSTONE	CLYY.WEL.LT.GY.LAM.SLD SLIGHTLY CALCAREOUS
41	130.41	131.06	0.65			SILTSTONE	CLYY.MOD.LT-M.GY.LAM.SLD UNIFORM, SLIGHTLY CALCAREOUS (TOP 30.0 MM)
39	131.06	132.05	0.99			SILTSTONE	CLYY.WEL.LT.GY.BRKN NO APPARENT BEDDING, CALCAREOUS
37	132.05	132.14	0.09			ROCK LOSS	
* 36	132.14	133.27	1.13			SILTSTONE	CLYY.MOD.DK.GY.LAM.BRKN QUITE UNIFORM
38	133.27	133.56	0.29			SILTSTONE	CLYY.MOD.DK.GY.LAM.BRKN LIHTOLOGY AS ABOVE

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 20

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85009

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 41	133.56	134.70	1.14			SILTSTONE	CLYY.MOD.DK.GY.LAM.BRKN BECOMES SLIGHTLY SANDY TOWARDS BASE, GR ADATIONAL LOWER CONTACT, MINOR SLIPPAGE SURFACES
41	134.70	135.10	0.40			ROCK LOSS	
42	135.10	135.65	0.55			SILTSTONE	SSY.MOD.M.GY.LAM.SLD TOPS DOWN, NUMEROUS VERY FINE GRAINED S ANDY LAYERS
42	135.65	136.78	1.13			SILTSTONE	SSY.MOD.M.GY.LAM.XBDG.SLD LITHOLOGY AS ABOVE, TOPS DOWN
* 43	136.78	137.64	0.86			SILTSTONE	SSY.MOD.M.GY.LAM.SLD LITHOLOGY AS ABOVE
* 40	137.64	139.80	2.16			SILTSTONE	SSY.MOD.M.GY.LAM.SLD LITHOLOGY AS ABOVE, MINOR 30.0 MM FINE GRAINED SANDY BANDS, TOPS DOWN, SCOUR S URFACE
39	139.80	139.89	0.09			SILTSTONE	SSY.MOD.M.GY.LAM.SLD LITHOLOGY AS ABOVE

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 21

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85009

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
39	139.89	141.89	2.00			SILTSTONE	SSY.MOD.M.GY.LAM.XBDG.SLD SANDIER THAN ABOVE, TOPS DOWN
38	141.89	142.98	1.09			SILTSTONE	SSY.PR.M.GY.LAM.XBDG.SLD TOPS DOWN
* 37	142.98	143.83	0.85			SILTSTONE	SSY.PR.M.GY.LAM.SLD LITHOLOGY AS ABOVE
40	143.83	145.89	2.06			SILTSTONE	SSY.PR.M.GY.LAM.XBDG.SLD LITHOLOGY AS ABOVE, TOPS DOWN, BECOMES SANDIER AND COARSER DOWNHOLE
* 45	145.89	147.88	1.99			MUDSTONE	SLTY.MOD.DK.GY.LAM.SLD VERY FINE LAMINAE
43	147.88	148.99	1.11			MUDSTONE	SLTY.MOD.DK.GY.LAM.SLD LITHOLOGY AS ABOVE
42	148.99	149.85	0.86			MUDSTONE	SLTY.MOD.DK.GY.LAM.SLD SLIGHTLY SILTIER THAN ABOVE
* 41	149.85	151.97	2.12			MUDSTONE	SLTY.MOD.DK.GY.LAM.SLD CLAY RICH
40	151.97	153.99	2.02			SILTSTONE	CLYY.PR.M.GY.LAM.SLD CLAYEY AT TOP, SANDY IN MIDDLE

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 22

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85009

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
39	153.99	155.19	1.20			SILTSTONE	MOD.M.GY.LAM.SLD SLIGHTLY SANDY
* 39	155.19	155.98	0.79			SILTSTONE	CLYY.MOD.M.GY.LAM.SLD MINOR CLAYSTONE LAMINAE
* 57	155.98	158.11	2.13			SILTSTONE	CLYY.MOD.M.GY.LAM.BIOTR.SLD LITHOLOGY AS ABOVE, TOPS DOWN, VERTICAL WORMBURROWS
50	158.11	158.23	0.12			SILTSTONE	CLYY.MOD.DK.GY.LAM.SLD LITHOLOGY AS ABOVE
* 43	158.23	160.08	1.85			SILTSTONE	PR.DK.GY.LAM.SLD LITHOLOGY AS ABOVE, BECOMES SLIGHTLY SA NDY DOWNHOLE
* 42	160.08	161.26	1.18			SILTSTONE	PR.M.GY.LAM.WRMBU.SLD LITHOLOGY AS ABOVE, SLIGHTLY SANDY, TOP S DOWN, VERTICAL WORMBURROWS
44	161.26	162.02	0.76			SILTSTONE	CLYY.PR.M.GY.LAM.SLD LITHOLOGY AS ABOVE, BECOMES MUDDY DOWNH OLE
* 47	162.02	164.17	2.15			MUDSTONE	SLTY.MOD.DK.GY.LAM.SLD SLIGHTLY WAVY BEDDING, MINOR QUARTZ VEI NING PERPENDICULAR TO BEDDING

* DENOTES MEASURED BCA

FORM 4001

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PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85009

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
43	164.17	164.42	0.25			ROCK LOSS	
43	164.42	164.49	0.07			CLAYSTONE	SLTY.M.GY.SLD
* 40	164.49	166.20	1.71			CLAYSTONE	CARB.DK.GY.SLD CLAYSTONE PROGRESSIVELY MORE CARBONACEO US DOWNHOLE, COALY LAMINAE, ANKERITE VE INS
42	166.20	166.23	0.03	07456	J	COAL	C-1.BRKN
42	166.23	166.45	0.22			CLAYSTONE	CARB.BLK.SLD
44	166.45	167.47	1.02			CLAYSTONE	M.GY.LAM.SLD
* 45	167.47	167.72	0.25			CLAYSTONE	BRKN LITHOLOGY AS ABOVE

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 24

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85009

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
34	167.72	167.73	0.01			CLAYSTONE	CARB.BRKN
* 25	167.73	167.92	0.19			CLAYSTONE	M.GY.BRKN
30	167.92	167.99	0.07			CLAYSTONE	CARB.BLK.SHRD
33	167.99	168.11	0.12			CLAYSTONE	CARB.DK.GY.BRKN
36	168.11	168.13	0.02			ANKERITE	WH.SLD
* 40	168.13	168.33	0.20			CLAYSTONE	CARB.BLK.BRKN LITHOLOGY AS ABOVE
* 45	168.33	170.36	2.03			MUDSTONE	SLTY.MOD.M.GY.LAM.SLD FISSILE, 'COASTER ZONE', UNIFORM
44	170.36	172.26	1.90			MUDSTONE	SLTY.MOD.M.GY.LAM.SLD FISSILE, QUARTZ VEIN PERPENDICULAR TO B EDDING (1.0 MM WIDE)
* 43	172.26	173.17	0.91			MUDSTONE	SLTY.MOD.M.GY.LAM.SLD FISSILE, 'COASTER ZONE', UNIFORM

* DENOTES MEASURED BCA

FORM 4001

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PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85009

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
44	173.17	173.66	0.49			MUDSTONE	SLTY.MOD.M.GY.LAM.SLD FISSILE, 'COASTER ZONE', UNIFORM
44	173.66	173.95	0.29			MUDSTONE	SLTY.MOD.M.GY.LAM.VBRKN TALC ON FRACTURE SURFACES, UNIFORM
44	173.95	174.06	0.11			MUDSTONE	SLTY.MOD.M.GY.LAM.SLD FISSILE, 'COASTER ZONE', UNIFORM
* 45	174.06	175.85	1.79			MUDSTONE	SLTY.MOD.M.GY.LAM.BRKN FISSILE
42	175.85	175.93	0.08			MUDSTONE	SLTY.MOD.M.GY.THNB.SLD
41	175.93	176.04	0.11			MUDSTONE	SLTY.MOD.M.GY.LAM.SLD FISSILE, 'COASTER ZONE', UNIFORM
* 39	176.04	177.16	1.12			MUDSTONE	SLTY.MOD.M.GY.LAM.BRKN FISSILE, 'COASTER ZONE', UNIFORM
42	177.16	177.33	0.17			MUDSTONE	SLTY.MOD.M.GY.LAM.SLD
* 45	177.33	178.74	1.41			SILTSTONE	MOD.M.GY.LAM.XBDG.SLD TOPS DOWN, MUDDY TOWARDS STRATIGRAPHIC BASE

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 26

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85009

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
42	178.74	179.14	0.40			SILTSTONE	MOD.M.GY.SLD
* 38	179.14	181.24	2.10			SILTSTONE	MOD.M.GY.LAM.SLD UNIFORM
40	181.24	181.78	0.54			MUDSTONE	SLTY.MOD.DK.GY.LAM.SLD GRADES TO SILTSTONE
41	181.78	183.28	1.50			SILTSTONE	CLYY.PR.M.GY.LAM.SLD SANDY IN PLACES, MODERATE QUARTZ VEININ G, VERY THIN VEINLETS, VERY WISPY BRECC IATION ZONES, SANDY TOWARDS BASE
44	183.28	184.75	1.47			SANDSTONE	SLTY.VFG.PR.M.GY.LAM.SLD THIN QUARTZ VEINING, LITHOLOGY AS ABOVE
* 45	184.75	185.24	0.49			SANDSTONE	SLTY.VFG.PR.M.GY.LAM.SLD LITHOLOGY AS ABOVE
45	185.24	185.90	0.66			SANDSTONE	SLTY.VFG.PR.M.GY.LAM.SLD LITHOLOGY AS ABOVE
45	185.90	186.59	0.69			SILTSTONE	SSY.PR.M.GY.LAM.SLD CALCAREOUS IN PLACES, RAPID TRANSITION TO MUDSTONE BELOW

* DENOTES MEASURED BCA

FORM 4001

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85009

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
45	186.59	187.20	0.61			MUDSTONE	MEL.DK.GY.LAM.BRKN 'COASTER' ZONE
45	187.20	187.70	0.50			MUDSTONE	MEL.DK.GY.LAM.BRKN LITHOLOGY AS ABOVE
45	187.70	189.01	1.31			MUDSTONE	MEL.DK.GY.LAM.BRKN LITHOLOGY AS ABOVE
* 45	189.01	190.47	1.46			MUDSTONE	MEL.DK.GY.LAM.VBRKN LITHOLOGY AS ABOVE, 'COASTER ZONE', FIS SILE
45	190.47	190.52	0.05			MUDSTONE	MEL.DK.GY.LAM.VBRKN LITHOLOGY AS ABOVE, 'COASTER ZONE', FIS SILE
45	190.52	190.75	0.23			SILTSTONE	PR.M.GY.LAM.SLD OCCASIONAL FINE MUDDY LAMINAE, SHARP CO NTACTS
45	190.75	191.77	1.02			SANDSTONE	FG.PR.LT-M.GY.THNB.BRKN FAIRLY UNIFORM AND MASSIVE, GRADING IN SOME PLACES TO MEDIUM GRAINED SANDSTONE , QUARTZ VEINS PARALLEL AND PERPENDICUL AR TO BEDDING
45	191.77	192.39	0.62			SANDSTONE	FG.PR.LT-M.GY.THNB.BRKN LITHOLOGY AS ABOVE

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85009

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
45	192.39	193.91	1.52			SANDSTONE	FG-.MEL.LT.GY.MAS.SLD OCCASIONAL QUARTZ VEINING POSSIBLY PARA LLEL TO BEDDING, FINE GRAINED TO MEDIUM GRAINED SANDSTONE
45	193.91	194.23	0.32			SANDSTONE	FG-.MEL.LT.GY.MAS.SLD LITHOLOGY AS ABOVE, FINE GRAINED TO MED IUM GRAINED SANDSTONE
* 45	194.23	196.24	2.01			SANDSTONE	SLTY.VFG-.VPR.M-DK.GY.LAM.SSD.SLD INTER-LAYERED FINELY LAMINATED SILTY SA NDSTONE AND LAMINATED MUDDY SILTSTONES, FLASER BEDDING, LOADING, OCCASIONAL WO RMBURROWS, TOPS DOWN, QUARTZ VEINS PERP ENDICULAR TO BEDDING, VERY FINE GRAINED TO FINE GRAINED SANDSTONE
45	196.24	196.82	0.58			SILTSTONE	SSY.PR.M-DK.GY.LAM.BRKN FINELY LAMINATED, OCCASIONAL QUARTZ VEI NS PARALLEL TO BEDDING
45	196.82	198.11	1.29			SILTSTONE	SSY.PR.M-DK.GY.LAM.BRKN LITHOLOGY AS ABOVE, INTENSE QUARTZ VEIN ING AT 0.58 TO 0.64 M FROM TOP OF BED
* 45	198.11	199.68	1.57			SILTSTONE	SSY.PR.DK.GY.LAM.SLD GRADED BEDDING, FINELY LAMINATED SANDY SILTSTONES,TOPS DOWN, MORE CLAYEY TOWAR S STRATIGRAPHIC TOP

* DENOTES MEASURED BCA

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PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85009

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
44	199.68	200.16	0.48			MUDSTONE	SLTY.DK.GY.LAM.SLD VERY FAINT FINE SILTY LAMINAE
43	200.16	200.45	0.29			SILTSTONE	CLYY.VPR.DK.GY.LAM.SLD VERY FINELY LAMINATED UNIFORM SILTSTONE , SHARP CONTACT
43	200.45	201.06	0.61			SANDSTONE	MG.HEL.M.GY.MAS.SLD QUARTZ VEIN PARALLEL TO BEDDING
42	201.06	202.10	1.04			SILTSTONE	CLYY.VPR.DK.GY.LAM.BIOTR.BRKN OCCASIONAL SANDY OR FINE MUDDY LAMINAE, ONE PYRITE BAND 4.0 MM WIDE, MUCH DARK ER AND MORE CLAYEY TOWARDS STRATIGRAPHI C TOP
41	202.10	202.41	0.31			MUDSTONE	DK.GY.MAS.SLD MASSIVE, VERY UNIFORM
* 40	202.41	204.19	1.78			MUDSTONE	CARB.DK.GY.MAS.SLD FINE COAL STRINGERS 2.0 MM WIDE THROUGH OUT PLANT HASH ON SOME BEDDING PLANES
38	204.19	204.40	0.21	07457		CLAYSTONE	CARB.DK.GY.SLD MORE CARBONACEOUS
38	204.40	204.42	0.02	07458	K	COAL	C-2.SLD

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 30

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85009

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 38	204.42	204.51	0.09	07458	K	COAL	C-4.BRKN
37	204.51	204.54	0.03	07458	K	COAL	C-1.SLD ANKERITE IN BEDDING AND CLEAT
36	204.54	204.57	0.03	07458	K	CLAYSTONE	CARB.SLD
34	204.57	204.67	0.10	07458	K	COAL	C-1.BRKN
* 32	204.67	204.76	0.09	07458	K	COAL	C-3.SLD
* 40	204.76	205.14	0.38	07458	K	COAL	C-3
40	205.14	205.26	0.12	07458	K	COAL LOSS	
40	205.26	205.27	0.01	07458	K	CLAYSTONE	CARB.M.GY
40	205.27	205.37	0.10	07458	K	COAL	C-5
40	205.37	205.43	0.06	07459	K	ROCK LOSS	

* DENOTES MEASURED BCA

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PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85009

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
39	205.43	205.73	0.30	07459	K	CLAYSTONE	CARB.BLK.SLD FEW COALY LAMINAE
39	205.73	205.93	0.20	07459	K	COAL	C-3.BRKN
39	205.93	205.98	0.05	07459	K	CLAYSTONE	CARB.BLK.BRKN
39	205.98	206.07	0.09	07459	K	COAL	C-3.SLD
39	206.07	206.20	0.13	07459	K	COAL	C-6.BRKN
39	206.20	206.37	0.17	07459	K	COAL LOSS	
38	206.37	206.40	0.03	07459	K	COAL	C-4.SLD
38	206.40	206.79	0.39	07459	K	CLAYSTONE	CARB.M.GY.BRKN
38	206.79	206.98	0.19	07460	K	COAL	C-1.VBRKN
38	206.98	207.01	0.03	07460	K	CLAYSTONE	CARB.DK.GY.BRKN

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 32

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85009

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
38	207.01	207.08	0.07	07460	K	COAL	C-2.BRKN
38	207.08	207.11	0.03	07460	K	COAL	C-1.SLD
37	207.11	207.66	0.55	07460	K	COAL	C-2.BRKN
37	207.66	207.79	0.13	07460	K	COAL	C-1.VBRKN
* 37	207.79	207.80	0.01	07460	K	COAL	C-1.SLD
37	207.80	207.83	0.03	07460	K	CLAYSTONE	CARB.BLK.SLD
37	207.83	207.88	0.05	07460	K	COAL	C-3.BRKN
39	207.88	208.22	0.34	07460	K	COAL	C-1.BRKN SOMEWHAT SHEARED, MINOR MOVEMENT, MINOR ANKERITE IN CLEAT
41	208.22	208.41	0.19	07460	K	COAL	C-2.BRKN

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 33

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85009

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
43	208.41	208.79	0.38	07460	K	COAL LOSS	
45	208.79	208.97	0.18	07460	K	COAL	C-1.VBRKN
47	208.97	209.30	0.33	07460	K	COAL	C-2.BRKN
48	209.30	209.31	0.01	07460	K	CLAYSTONE	CARB.SLD
49	209.31	209.51	0.20	07460	K	COAL	C-1.SLD FEW CLAYSTONE BANDS
* 50	209.51	209.59	0.08	07461		CLAYSTONE	CARB.DK.GY.SLD VERY COALY, ANKERITE IN BEDDING
50	209.59	209.96	0.37	07461		CLAYSTONE	CARB.BLK FEW MINOR COAL LAMINAE WITH ANKERITE CO ATING
* 50	209.96	210.36	0.40			MUDSTONE	CARB.PR.DK.GY.LAM.SLD

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 34

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85009

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
49	210.36	211.62	1.26			SILTSTONE	CLYY.PR.DK.GY.LAM.BRKN FINELY LAMINATED, SOME LAMINAE GRADING TO FINE GRAINED SANDSTONE
47	211.62	211.75	0.13			ROCK LOSS	
47	211.75	211.98	0.23			SILTSTONE	CLYY.PR.LT-M.GY.LAM.SLD VERY FINELY LAMINATED
* 45	211.98	214.02	2.04			SILTSTONE	CLYY.VPR.M-DK.GY.LAM.SSD.SLD LITHOLOGY AS ABOVE, OCCASIONAL WORMBURR OW AND LOADING, TOPS DOWN
48	214.02	214.65	0.63			SILTSTONE	CLYY.VPR.M-DK.GY.LAM.SLD FAINT BEDDING
* 50	214.65	216.08	1.43			SILTSTONE	CLYY.VPR.M-DK.GY.LAM.WRMBU.SLD LITHOLOGY AS ABOVE, TOPS DOWN
* 47	216.08	217.64	1.56			SILTSTONE	CLYY.MOD.M.GY.LAM.SLD SLIGHTLY SANDY, POLISHED SLIPPAGE SURFA CES
50	217.64	218.14	0.50			SILTSTONE	SSY.MOD.M.GY.LAM.SLD

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 35

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85009

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 53	218.14	220.31	2.17			SILTSTONE	SSY.MOD.M.GY.LAM.SLD LITHOLOGY AS ABOVE, MINOR CALCITE VEINI NG
50	220.31	220.66	0.35			SILTSTONE	SSY.MOD.M.GY.LAM.SLD LITHOLOGY AS ABOVE, MINOR CALCITE VEINI NG
48	220.66	222.30	1.64			SILTSTONE	SSY.MOD.M.GY.LAM.SLD SANDIER THAN ABOVE, VERY FINE GRAINED S ANDSTONE BANDS TO 70.0 MM WIDE
* 45	222.30	223.62	1.32			SILTSTONE	SSY.MOD.M.GY.LAM.SLD LITHOLOGY AS ABOVE
48	223.62	224.35	0.73			SILTSTONE	SSY.MOD.M.GY.LAM.SLD LITHOLOGY AS ABOVE, STRIATED FRACTURE P LANES IN FINER PORTIONS
* 52	224.35	226.53	2.18			SILTSTONE	WEL.M.GY.LAM.SLD STRIATED SLIPPAGE SURFACES, FINER GRAIN ED THAN ABOVE
49	226.53	228.60	2.07			SILTSTONE	WEL.DK.GY.LAM.SLD LITHOLOGY AS ABOVE, MINOR CARBONACEOUS PLANT FRAGMENTS
47	228.60	229.66	1.06			SILTSTONE	WEL.DK.GY.LAM.SLD SLIGHTLY SANDIER THAN ABOVE

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 36

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85009

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 45	229.66	230.68	1.02			SILTSTONE	WEL.DK.GY.LAM.SLD LITHOLOGY AS ABOVE
49	230.68	231.02	0.34			SILTSTONE	WEL.DK.GY.LAM.BRKN BECOMING CLAY RICH, MINOR VEINING
50	231.02	231.12	0.10			ROCK LOSS	
* 56	231.12	232.93	1.81			MUDSTONE	SLTY.MOD.DK.GY.LAM.SLD STRIATED BEDDING PLANES
49	232.93	235.00	2.07			MUDSTONE	SLTY.MOD.DK.GY.LAM.SLD LITHOLOGY AS ABOVE
44	235.00	235.82	0.82			MUDSTONE	SLTY.MOD.DK.GY.LAM.SLD LITHOLOGY AS ABOVE
* 38	235.82	238.02	2.20			MUDSTONE	SLTY.MOD.DK.GY.LAM.BRKN LITHOLOGY AS ABOVE, WAVY BEDDING, STRIA TED BEDDING PLANES
45	238.02	239.82	1.80			MUDSTONE	SLTY.DK.GY.VTHNB.SLD VERY FAINT BEDDING, OCCASIONAL CARBONAC EOUS STRINGERS
48	239.82	239.94	0.12			SILTSTONE	M.GY.LAM.SLD VERY FINELY LAMINATED

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 37

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85009

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 50	239.94	240.71	0.77			SILTSTONE	CLYY.M.GY.BRKN BECOMING LESS SILTY AND MUCH MORE CARBO NACEOUS LOWER DOWN
49	240.71	240.74	0.03			COAL	C-1
49	240.74	241.05	0.31			CLAYSTONE	CARB.BLK.SLD COALY LAMINAE
48	241.05	241.14	0.09			CLAYSTONE	M.GY.SLD SLIGHTLY SOFT AND DAMP
48	241.14	241.25	0.11	07455	L	COAL	C-2.VBRKN PYRITE BAND
48	241.25	241.32	0.07	07455	L	COAL LOSS	
47	241.32	241.40	0.08	07455	L	COAL	C-4.BRKN
47	241.40	241.65	0.25	07455	L	CLAYSTONE	CARB.BLK.SLD
47	241.65	241.69	0.04	07455	L	COAL	C-1.SLD
47	241.69	241.71	0.02	07455	L	CLAYSTONE	CARB

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 38

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85009

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
46	241.71	241.80	0.09	07455	L	COAL	C-4
46	241.80	241.93	0.13	07455	L	CLAYSTONE	CARB.BLK.BRKN COALY LAMINAE
46	241.93	242.04	0.11	07455	L	ROCK LOSS	
46	242.04	242.06	0.02	07455	L	COAL	C-1.BRKN
45	242.06	242.16	0.10	07455	L	CLAYSTONE	CARB.BLK.SLD COALY LAMINAE
45	242.16	242.37	0.21	07462	L	CLAYSTONE	CARB.BLK.BRKN COAL BANDS
45	242.37	242.41	0.04	07462	L	COAL	C-2.BRKN
45	242.41	242.50	0.09	07462	L	CLAYSTONE	CARB.BLK.SLD BRIGHT BANDS
44	242.50	242.60	0.10	07462	L	COAL	C-3
44	242.60	242.63	0.03	07462	L	COAL	C-1.BRKN

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 39

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85009

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
44	242.63	242.77	0.14	07462	L	COAL	C-3.SLD
44	242.77	242.87	0.10	07462	L	COAL	C-5
44	242.87	242.88	0.01	07462	L	COAL	C-1.BRKN
43	242.88	242.93	0.05	07462	L	CLAYSTONE	CARB.BLK.SLD LITHOLOGY AS ABOVE
43	242.93	242.98	0.05	07462	L	CLAYSTONE	CARB.BLK.SLD LENTICULAR
43	242.98	243.03	0.05	07462	L	CLAYSTONE	DK.GY.SLD LENTICULAR
43	243.03	243.18	0.15	07462	L	COAL	C-6.SLD BRIGHT BANDS
43	243.18	243.29	0.11	07462	L	CLAYSTONE	CARB.BLK.SLD
42	243.29	243.42	0.13	07462	L	CLAYSTONE	DK.GY.SLD
42	243.42	243.60	0.18	07462	L	COAL	C-6.BRKN

* DENOTES MEASURED BCA

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PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85009

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
41	243.60	243.76	0.16	07462	L	COAL	C-3.SLD
41	243.76	243.80	0.04	07462	L	COAL	C-1.BRKN
41	243.80	243.84	0.04	07462	L	CLAYSTONE	M.GY.BRKN NUMEROUS PYRITE BLEBS
41	243.84	243.97	0.13	07462	L	COAL	C-1.BRKN
41	243.97	244.12	0.15	07462	L	COAL LOSS	
40	244.12	244.25	0.13	07462	L	COAL	C-3.SLD
* 40	244.25	244.28	0.03	07462	L	CLAYSTONE	CARB.BLK.SLD BRIGHT BANDS (C-1)
40	244.28	244.46	0.18	07462	L	COAL	C-3
40	244.46	244.94	0.48	07462	L	CLAYSTONE	CARB.BLK.BRKN MINOR COAL LAMINAE
40	244.94	245.08	0.14	07462	L	COAL	C-4.SLD BRIGHT BANDS

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 41

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85009

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
40	245.08	245.12	0.04	07462	L	COAL	C-2,BRKN
40	245.12	245.19	0.07	07462	L	COAL	C-4,BLK,SLD
40	245.19	245.21	0.02	07462	L	COAL	C-2,BRKN
40	245.21	245.24	0.03	07462	L	CLAYSTONE	CARB,BLK,SLD
40	245.24	245.35	0.11	07462	L	COAL	C-5,BLK,SLD COALY LAMINAE
40	245.35	245.40	0.05	07462	L	CLAYSTONE	CARB,DK,GY,SLD LENTICULAR
40	245.40	245.54	0.14	07462	L	CLAYSTONE	CARB,BLK,SLD COALY LAMINAE
40	245.54	245.59	0.05	07462	L	COAL	C-1,VBRKN
40	245.59	246.00	0.41	07462	L	COAL	C-4,SLD
40	246.00	246.17	0.17	07462	L	COAL	C-4,SLD

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 42

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85009

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
40	246.17	246.26	0.09	07462	L	COAL	C-5,SLD
40	246.26	246.55	0.29	07462	L	CLAYSTONE	CARB,BLK,BRKN COALY LAMINAE
* 40	246.55	246.77	0.22	07463	L	COAL	C-3,BRKN
39	246.77	246.82	0.05	07463	L	CLAYSTONE	CARB,BLK,SLD LAMINAE
39	246.82	246.84	0.02	07463	L	COAL	C-1,BRKN
38	246.84	246.97	0.13	07463	L	COAL	C-5,VBRKN
37	246.97	247.15	0.18	07463	L	COAL	C-3,VBRKN BRIGHT BANDS
36	247.15	247.25	0.10	07463	L	COAL	C-6,BRKN
35	247.25	247.31	0.06	07463	L	COAL	C-1,VBRKN
* 35	247.31	247.33	0.02	07463	L	CLAYSTONE	CARB,M,GY,SLD LENTICULAR

* DENOTES MEASURED BCA

FORM 4001

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85009

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
35	247.33	247.53	0.20	07463	L	COAL LOSS	
35	247.53	247.63	0.10	07463	L	COAL	C-1.VBRKN
36	247.63	247.78	0.15	07463	L	CLAYSTONE	CARB.SLD ANKERITE ALONG BEDDING
36	247.78	247.93	0.15	07463	L	COAL	C-2.SHRD
36	247.93	248.63	0.70			MUDSTONE	CARB.DK.GY.LAM.VBRKN INTENSE QUARTZ VEINING ASSOCIATED OCCAS IONALLY WITH COAL STRINGERS, SWIRLED LA MINAE
38	248.63	249.65	1.02			MUDSTONE	SLTY.DK.GY.VTHNB.BRKN MUCH SLTIER DOWNHOLE OCCASIONAL MUDSTON E RIP-UP CLASTS IN SILTY AREAS
39	249.65	249.83	0.18			ROCK LOSS	

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85009

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 40	249.83	251.68	1.85			SANDSTONE	SLTY.VFG-.PR.M-DK.GY.THNB.VBRKN MODERATE QUARTZ VEINING AT AN ANGLE TO BEDDING, MUDDY STRINGERS 1.0 MM WIDE TH ROUGHOUT, NUMEROUS MUDSTONE RIP-UP CLAS TS 10.0 MM IN DIAMETER, VERY FINE GRAIN ED TO FINE GRAINED SANDSTONE
* 30	251.68	253.36	1.68			SANDSTONE	FG.VPR.M.GY.THNB.XBDG FINE BLACK SILTY LAMINAE IN PLACES, SLI CKENSIDES AND TALC ON SOME FRACTURE SUR FACES, CARBONACEOUS CLAY IN SOME FRACTU RES
33	253.36	253.57	0.21			ROCK LOSS	
* 35	253.57	254.58	1.01			SANDSTONE	VFG.PR.LT-M.GY.LAM.BRKN SILTIER LAMINAE THROUGHOUT, GRADING IN PLACES FROM SILTSTONE TO FINE GRAINED S ANDSTONE, OCCASIONAL QUARTZ VEIN PERPEN DICULAR TO BEDDING
37	254.58	255.25	0.67			SANDSTONE	VFG-.PR.LT-M.GY.LAM.BRKN LITHOLOGY AS ABOVE, VERY UNIFORM BEDDIN G, CARBONACEOUS CLAY INFILLING OCCASION AL FRACTURES PARALLEL TO BEDDING, VERY FINE GRAINED TO FINE GRAINED SANDSTONE

* DENOTES MEASURED BCA

FORM 4001

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PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85009

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 40	255.25	257.22	1.97			SANDSTONE	FG-.PR.LT-M.GY.LAM.BRKN LITHOLOGY AS ABOVE, INTENSELY FRACTURED BY QUARTZ FILLED HAIRLIKE CRACKS AT VA RIOUS ANGLES, NEARLY PARALLEL TO CORE I N SOME PLACES, OCCASIONAL CARBONACEOUS CLAY INFILLING FRACTURES PARALLEL TO BE DDING, GRADING TO MEDIUM GRAINED SANDST ONE IN PLACES
41	257.22	257.55	0.33			SANDSTONE	FG-.VWEL.LT-M.GY.VTHNB.SLD OCCASIONAL QUARTZ VEINING PERPENDICULAR TO BEDDING, LITHOLOGY AS ABOVE, FINE G RAINED TO MEDIUM GRAINED SANDSTONE
42	257.55	259.22	1.67			SANDSTONE	FG-.VWEL.LT-M.GY.VTHNB.SLD LITHOLOGY AS ABOVE, CALCITE AND QUARTZ VEIN (4.0 MM WIDE), FINE GRAINED TO MED IUM GRAINED SANDSTONE
43	259.22	259.36	0.14			ROCK LOSS	
43	259.36	260.68	1.32			SANDSTONE	FG-.WEL.LT-M.GY.THNB.SLD LITHOLOGY AS ABOVE, VERY FAINT BEDDING OF PLANT HASH, OCCASIONAL MUDDY LAMINAE , FINE GRAINED TO MEDIUM GRAINED SANDST ONE

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 46

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85009

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
44	260.68	261.35	0.67			SANDSTONE	SLTY.FG.PR.LT-M.GY.LAM.SLD CORE TWIST OFF AT 0.00 M, EXTREMELY FIN ELY LAMINATED SANDSTONE WITH SILTY LAMI NAE
* 45	261.35	263.33	1.98			SANDSTONE	SLTY.FG-.WEL.LT-M.GY.LAM.XBDG.BRKN SANDSTONE GRADING FROM FINE GRAINED TO COARSE GRAINED DOWNHOLE, CROSS-BEDDING IN SILTY LAMINAE, TOPS DOWN
* 25	263.33	263.62	0.29			SANDSTONE	FG.MOD.M.GY.LAM.XBDG.SLD LITHOLOGY AS ABOVE
34	263.62	265.29	1.67			SANDSTONE	FG.MOD.M.GY.LAM.XBDG.SLD GRADING IN SOME PLACES TO MEDIUM GRAINE D SANDSTONE, NUMEROUS MUDSTONE RIP-UP C LASTS IN COARSERBANDS, TOPS DOWN
* 45	265.29	266.21	0.92			SANDSTONE	FG.MOD.M.GY.LAM.XBDG.SLD LITHOLOGY AS ABOVE
45	266.21	266.66	0.45			SILTSTONE	SSY.PR.M.GY.LAM.XBDG.SLD VERY FINELY LAMINATED SILTSTONE, TOPS D OWN
45	266.66	267.42	0.76			SILTSTONE	PR.M-DK.GY.LAM.XBDG.SLD LITHOLOGY AS ABOVE, OCCASIONAL CALCITE VEINS AT ANGLE TO BEDDING

* DENOTES MEASURED BCA

FORM 4001

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85009

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 45	267.42	269.47	2.05			SANDSTONE	SLTY.FG.PR.M-DK.GY.LAM.WRMBU.SLD TOPS DOWN, LESS INTENSE BEDDING, FINE SILTY LAMINAE THROUGHOUT, ONE CALCITE AND QUARTZ VEIN PERPENDICULAR TO BEDDING
50	269.47	269.54	0.07			ROCK LOSS	
50	269.54	269.66	0.12			SANDSTONE	SLTY.FG.PR.M-DK.GY.LAM.XBDG.BRKN LITHOLOGY AS ABOVE
* 55	269.66	271.65	1.99			SILTSTONE	MOD.DK.GY.VTHNB.BRKN FAINT BEDDING, ONE QUARTZ AND CALCITE VEIN (30.0 MM WIDE), MOTTLED IN SOME AREAS
47	271.65	272.03	0.38			ROCK LOSS	
* 43	272.03	272.66	0.63			SILTSTONE	MOD.DK.GY.VTHNB.SLD LITHOLOGY AS ABOVE
31	272.66	273.99	1.33			SILTSTONE	MOD.DK.GY.VTHNB.BRKN LITHOLOGY AS ABOVE

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85009

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 12	273.99	275.62	1.63			SILTSTONE	MOD.M-DK.GY.THNB.SLD FAINT BEDDING, MINOR PLANT HASH, MOTTLED IN AREAS, ONE CALCITE AND QUARTZ VEIN (35.0 MM WIDE)
33	275.62	275.92	0.30			MUDSTONE	SLTY.DK.GY.VTHNB.BRKN OCCASIONAL BANDS OF POORLY CONSOLIDATED CLAY
* 45	275.92	276.67	0.75			MUDSTONE	DK.GY.MAS.BRKN OCCASIONAL COAL STRINGERS 1.0 MM WIDE, NEAR FRACTURE ZONE
* 45	276.67	277.95	1.28			SILTSTONE	PR.M-DK.GY.VTHNB.BRKN PLANT HASH THROUGHOUT, GRADING TO FINE GRAINED SANDSTONE BANDS DOWNHOLE
48	277.95	278.69	0.74			SILTSTONE	SSY.VPR.LT.GY.VTHNB.WRMBU.BRKN PLANT HASH THROUGHOUT, OCCASIONAL COAL CLUSTERS 2.0 TO 5.0 MM IN DIAMETER, ALTERNATING SILTSTONE AND VERY FINE GRAINED SANDSTONE BANDS, TOPS DOWN
52	278.69	279.98	1.29			SILTSTONE	SSY.VPR.LT.GY.VTHNB.WRMBU.BRKN LITHOLOGY AS ABOVE
* 57	279.98	281.67	1.69			SILTSTONE	SSY.VPR.LT-M.GY.VTHNB.VBRKN LITHOLOGY AS ABOVE, MOTTLED IN SOME AREAS

* DENOTES MEASURED BCA

FORM 4001

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85009

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
37	281.67	281.99	0.32			SILTSTONE	SSY.VPR.LT-M.GY.VTHNB.BRKN LITHOLOGY AS ABOVE
33	281.99	282.16	0.17			ROCK LOSS	
* 15	282.16	283.79	1.63			SILTSTONE	SSY.VPR.M.GY.VTHNB.VBRKN MUCH LESS SANDY THAN ABOVE, OCCASIONAL PLANT HASH THROUGHOUT
18	283.79	284.10	0.31			CLAYSTONE	LT.GY.MAS.BRKN SLIGHTLY CALCAREOUS, VERY SOLID CLAYSTO NE, MINOR PLANT HASH THROUGHOUT, SHARP CONTACTSR-CALC
* 19	284.10	284.15	0.05			CLAYSTONE	LT.GY.MAS.SLD LITHOLOGY AS ABOVE, SHARP CONTACTS
19	284.15	284.72	0.57			SILTSTONE	SSY.LT-M.GY.THNB.BIOTR.VBRKN PLANT HASH THROUGHOUT, PREDOMINANTLY SI LTSTONE WITH SOME FINE GRAINED SANDSTON E BANDS, MOTTLED, OCCASIONAL FRACTURES ASSOCIATED WITH COAL AND QUARTZ AND CAL CITE
19	284.72	286.08	1.36			SILTSTONE	SSY.LT-M.GY.THNB.BIOTR.VBRKN LITHOLOGY AS ABOVE

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85009

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 20	286.08	287.69	1.61			SILTSTONE	M.GY.SLD VERY FAINT BEDDING, RARE MOTTLING, OCCA SIONAL COAL AND QUARTZ LENSES (3.0-6.0 MM WIDE)
15	287.69	288.10	0.41			SILTSTONE	M.GY.SLD LITHOLOGY AS ABOVE
08	288.10	290.19	2.09			CLAYSTONE	SLTY.VPR.LT-M.GY.SLD VERY MOTTLED, BEDDING MAY BE AT 0 DEGRE ES BCA, SOME AREAS OF POORLY CONSOLIDAT ED CLAY, PLANT HASH THROUGHOUT, WIDE FR ACTURE WITH COALY MATERIAL AND QUARTZ A T BOTTOM OF BOX
* 01	290.19	290.77	0.58			SILTSTONE	CLYY.VPR.M.GY.SLD PREDOMINANTLY VERY MOTTLED BEDDING, IN ONE PLACE BCA HAS 0 DEGREES, COALY AND QUARTZ FILLED FRACTURE AT TOP OF BOX (F ROM BOX 136)
02	290.77	292.27	1.50			SILTSTONE	SSY.VPR.M.GY.BRKN VERY MOTTLED, AREAS RANGE FROM VERY MUD DY TO FINE GRAINED SANDSTONE
04	292.27	293.70	1.43			SILTSTONE	CLYY.VPR.M.GY.VBRKN LITHOLOGY AS ABOVE, MUCH LESS SANDY

* DENOTES MEASURED BCA

FORM 4001

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85009

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
05	293.70	294.08	0.38			CLAYSTONE	SLTY.VPR.M.GY.VBRKN SOME AREAS OF POORLY CONSOLIDATED CLAY, COAL AND QUARTZ FILLED FRACTURES, VERY LOW ANGLE BCA'S
07	294.08	296.20	2.12			SILTSTONE	CLYY.VPR.M.GY.BRKN NO BEDDING APPARENT, VERY MOTTLED, LITH OLOGY AS ABOVE, ONE QUARTZ VEIN PERPEND ICULAR TO CORE
08	296.20	296.26	0.06			ROCK LOSS	
09	296.26	296.75	0.49			SILTSTONE	CLYY.VPR.M-DK.GY.BRKN NO APPARENT BEDDING, MOTTLED, LITHOLOGY AS ABOVE
* 10	296.75	298.32	1.57			SILTSTONE	CLYY.VPR.M-DK.GY.LAM.BRKN FAINTLY LAMINATED, UNCONSOLIDATED CLAY WITH SHARP CONTACT AT BOTTOM OF BOX, LI THOLOGY AS ABOVE
* 30	298.32	299.53	1.21			CLAYSTONE	SLTY.VPR.LT.GY.MAS.WRMBU.BRKN AREAS OF POORLY CONSOLIDATED CLAY, ONE WORMBURROW, TOPS UP, VERY FINE GRAINED SANDSTONE IN SOME AREAS

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85009

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
28	299.53	300.24	0.71			SILTSTONE	CLYY.VPR.M.GY.THNB.WRMBU.BRKN OCCASIONAL QUARTZ VEIN, TOPS UP
* 25	300.24	302.19	1.95			SILTSTONE	LAM.WRMBU.BRKN LESS MOTTLED, LAMINAE RANGING FROM VERY SILTY TO FINE GRAINED SANDSTONE, OCCAS IONAL QUARTZ VEINS AT VERY LOW ANGLES T O CORE, OCCASIONAL SCATTERED PLANT HASH AT STRATIGRAPHIC BASE, TOPS UP
30	302.19	302.66	0.47			ROCK LOSS	
32	302.66	302.83	0.17			CLAYSTONE	SLTY.M-DK.GY.MAS.VBRKN QUARTZ VEIN 35.0 MM WIDE
* 35	302.83	304.19	1.36			SILTSTONE	CLYY.M-DK.GY.LAM.WRMBU.VBRKN FINELY LAMINATED GRADING TO FINE GRAINE D SANDSTONE IN PLACES, NUMEROUS HAIRLIK E QUARTZ VEINS, VERY WAVY BEDDING IN PL ACES, OCCASIONAL COALY AND QUARTZ FILLE D WIDER FRACTURES, CARBONACEOUS CLAYSTO NE TOWARDS BASE

* DENOTES MEASURED BCA

FORM 4001

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PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85009

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
30	304.19	304.76	0.57			ROCK LOSS	
27	304.76	305.63	0.87			MUDSTONE	SLTY.VPR.DK.GY.MAS.VBRKN SLIGHTLY CARBONACEOUS, OCCASIONAL COALY BLEBS (2.0-3.0 MM IN DIAMETER) OCCASIO NAL QUARTZ VEIN, SOME POORLY CONSOLIDAT ED CLAY AREAS, ONE QUARTZ VEIN 25.0 MM WIDE
* 23	305.63	306.38	0.75			MUDSTONE	VPR.DK.GY.MAS.VBRKN LITHOLOGY AS ABOVE, SMALL AREA OF BLACK CARBONACEOUS CLAYSTONE RIP-UP CLASTS
17	306.38	307.64	1.26			ROCK LOSS	
* 10	307.64	308.40	0.76			MUDSTONE	VPR.DK.GY.MAS.BRKN MOTTLED IN SOME AREAS, FAINT BEDDING IN PLACES, PREDOMINANTLY MASSIVE, ONE QUA RTZ VEIN 15.0 MM WIDE

* DENOTES MEASURED BCA

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PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85009

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
09	308.40	309.53	1.13			MUDSTONE	SLTY.VPR.DK.GY.MAS.BIOTR.BRKN LITHOLOGY AS ABOVE, BIOTURBATED SILTY A REAS
* 07	309.53	311.15	1.62			MUDSTONE	DK.GY.MAS.SSD.BRKN OCCASIONAL CALCITE VEINS, QUARTZ VEINS AT VARIOUS ANGLES, FAINT BEDDING NEAR B ASE, RARE COAL BLEBS 1.0 MM IN DIAMETER
06	311.15	311.35	0.20			ROCK LOSS	
06	311.35	311.85	0.50			MUDSTONE	DK.GY.MAS.BRKN LITHOLOGY AS ABOVE
05	311.85	313.98	2.13			MUDSTONE	SLTY.DK.GY.MAS.SLD VERY MOTTLED THROUGHOUT, TALC ON ONE FR ACTURE SURFACE, VERY LOW BCA VALUES, SI LTY CARBONACEOUS BLEBS 3.0 MM IN DIAMET ER THROUGHOUT MOTTLED AREAS (WORMBURROW S?)
04	313.98	314.79	0.81			MUDSTONE	DK.GY.MAS.BRKN LITHOLOGY AS ABOVE, ONE QUARTZ VEIN
03	314.79	315.98	1.19			MUDSTONE	DK.GY.MAS.SLD LITHOLOGY AS ABOVE

* DENOTES MEASURED BCA

FORM 4001

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85009

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
03	315.98	317.03	1.05			CLAYSTONE	CARB.DK.GY.MAS.BRKN
02	317.03	317.07	0.04			ANKERITE	HH
02	317.07	317.16	0.09			CLAYSTONE	BN.SLD SOFT
02	317.16	317.24	0.08			CLAYSTONE	CARB.M.GY.BRKN
02	317.24	317.81	0.57			CLAYSTONE	CARB.BLK.PHRD LISTRIC SURFACE
02	317.81	317.93	0.12			CLAYSTONE	CARB.BLK.PHRD SOFT AS ABOVE
01	317.93	318.03	0.10			ROCK LOSS	
01	318.03	318.35	0.32			CLAYSTONE	CARB.BLK.PHRD
* 01	318.35	318.80	0.45			SANDSTONE	FG.WEL.M.GY.LAM.BRKN WISPY CARBONACEOUS LAMINAE, ABUNDANT AN KERITE FILLED FRACTURES
* 30	318.80	319.11	0.31			SANDSTONE	BRKN LITHOLOGY AS ABOVE, FINER BELOW

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85009

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
28	319.11	319.19	0.08			CLAYSTONE	M.BN.SLD SOFT
* 23	319.19	319.94	0.75			SANDSTONE	BRKN LITHOLOGY AS ABOVE, VERY FRACTURED WITH ANKERITE
* 35	319.94	320.14	0.20			SANDSTONE	FG.WEL.M.GY.LAM.BRKN FEW CARBONACEOUS WISPS, ANKERITE VEININ G
31	320.14	320.25	0.11			CLAYSTONE	CARB.BLK.SHRD FEW LISTRIC SURFACES
28	320.25	320.34	0.09			CLAYSTONE	CARB.BLK.SLD
24	320.34	320.58	0.24			SANDSTONE	M.GY LITHOLOGY AS ABOVE, ANKERITE VEINING
16	320.58	320.88	0.30			CLAYSTONE	CARB.BLK.SHRD VERY LISTRIC
12	320.88	320.92	0.04			CLAYSTONE	M.GY.SLD SOFT
* 01	320.92	321.69	0.77			CLAYSTONE	CARB.BLK

* DENOTES MEASURED BCA

FORM 4001

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85009

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
01	321.69	321.77	0.08			ROCK LOSS	
* 01	321.77	322.62	0.85	07464		CLAYSTONE	CARB.BLK.VBRKN QUITE LISTRIC PYRITE BAND
01	322.62	323.47	0.85	07465	M	COAL	C-5
01	323.47	323.62	0.15	07465	M	CLAYSTONE	CARB.BLK.SHRD LISTRIC
01	323.62	323.82	0.20	07465	M	CLAYSTONE	CARB.BLK.BRKN
01	323.82	323.87	0.05	07465	M	CLAYSTONE	CARB.BLK.PWRD SOFT
01	323.87	324.06	0.19	07465	M	COAL LOSS	
01	324.06	324.43	0.37	07465	M	COAL	C-5.PWRD
* 01	324.43	324.73	0.30	07465	M	CLAYSTONE	CARB.BLK.SHRD
14	324.73	324.83	0.10	07465	M	CLAYSTONE	CARB.DK.GY.SLD ANKERITE VEINING

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85009

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
20	324.83	324.94	0.11	07465	M	COAL	C-4.PWRD
29	324.94	325.10	0.16	07465	M	CLAYSTONE	CARB.BLK.BRKN VERY LISTRIC
* 50	325.10	325.60	0.50	07465	M	COAL	C-2.VBRKN
50	325.60	325.64	0.04	07465	M	COAL	C-3.BRKN
50	325.64	325.69	0.05	07465	M	CLAYSTONE	M.GY
50	325.69	325.76	0.07	07465	M	COAL	C-4.BRKN
* 50	325.76	325.94	0.18	07465	M	COAL	C-6.SLD
54	325.94	326.08	0.14	07465	M	CLAYSTONE	CARB.BLK.BRKN LISTRIC
57	326.08	326.19	0.11	07465	M	COAL	C-6.PWRD
62	326.19	326.43	0.24	07465	M	CLAYSTONE	CARB.BLK.BRKN LISTRIC

* DENOTES MEASURED BCA

FORM 4001

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PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85009

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
66	326.43	326.50	0.07	07465	M	COAL	C-6,VBRKN
68	326.50	326.58	0.08	07465	M	COAL	C-6,PWRD
70	326.58	326.63	0.05	07465	M	CLAYSTONE	CARB,BRKN LISTRIC
72	326.63	326.75	0.12	07465	M	COAL	C-6,PWRD
76	326.75	326.93	0.18	07465	M	CLAYSTONE	CARB,BLK,SLD ANKERITE VEINING MINOR
* 80	326.93	327.09	0.16	07465	M	COAL	C-3,VBRKN
79	327.09	327.11	0.02	07465	M	CLAYSTONE	CARB,DK,GY,SLD ANKERITE VEINING
79	327.11	327.23	0.12	07465	M	COAL	C-3,VBRKN
78	327.23	327.36	0.13	07465	M	COAL	C-3,VBRKN
75	327.36	328.06	0.70	07465	M	COAL LOSS	

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 60

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85009

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 65	328.06	329.96	1.90	07466		CLAYSTONE	CARB,M,GY,BRKN ANKERITE FILLED FRACTURES THROUGHOUT, L ESS CARBONACEOUS, MORE SILTY DOWNWARD
56	329.96	330.13	0.17			MUDSTONE	DK,GY,MAS,BRKN LITHOLOGY AS ABOVE, OCCASIOAL QUARTZ VE IN PERPENDICULAR TO CORE
51	330.13	331.18	1.05			ROCK LOSS	
43	331.18	331.93	0.75			MUDSTONE	SLTY,DK,GY,MAS,VBRKN LITHOLOGY AS ABOVE, INTENSELY FRACTURED BY QUARTZ VEINS
38	331.93	332.31	0.38			MUDSTONE	SLTY,DK,GY,MAS,VBRKN LITHOLOGY AS ABOVE, INTENSE FRACTURING BY QUARTZ VEINS
35	332.31	332.67	0.36			ROCK LOSS	
31	332.67	333.13	0.46			MUDSTONE	DK,GY,MAS,VBRKN CARBONACEOUS IN PLACES, OCCASIONAL QUAR TZ VEINS, SLICKENSIDES

* DENOTES MEASURED BCA

FORM 4001

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85009

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 23	333.13	334.50	1.37			MUDSTONE	DK.GY.MAS.SLD LITHOLOGY AS ABOVE, GRADING TO VERY FIN E GRAINED SANDSTONE NEAR BOTTOM OF BOX, MODERATE QUARTZ FRACTURES IN SANDSTONE SLICKENSIDES
* 28	334.50	336.06	1.56			SILTSTONE	SSY.DK.GY.VTHNB.NRMBU.VBRKN POOR DEWATERING STRUCTURE, TOPS UP, OCC ASIONAL QUARTZ VEINS, ONE VUG WITH DRUS EY QUARTZ 20.0 MM IN DIAMETER
29	336.06	336.20	0.14			ROCK LOSS	
29	336.20	336.54	0.34			SILTSTONE	SSY.VPR.M-DK.GY.VTHNB.SLD LITHOLOGY AS ABOVE, MOTTLED IN PLACES, GRADING FROM VERY CLAYEY TO FINE GRAINE D SANDSTONE IN PLACES
* 30	336.54	338.60	2.06			SANDSTONE	SLTY.VFG.VPR.M-DK.GY.THNB.SLD BANDS GRADING FROM SILTSTONE TO FINE GR AINED SANDSTONE, OCCASIONAL FINE SILTY LAMINAE AND OR SILTY RIP-UP CLASTS

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85009

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 33	338.60	339.23	0.63			SANDSTONE	SLTY.FG.MOD.M.GY.VTHNB.SSD.SLD DEWATERING STRUCTURES, GRADED BEDDING, TOPS UP,PR EDOMINANTLY FINE GRAINED SAN DSTONE, FINE DARK SILTY WISPY LAMINAE T HROUGHOUT, MODERATE QUARTZ VEINING PERP ENDICULAR TO BEDDING
* 30	339.23	340.52	1.29			SANDSTONE	FG.WEL.LT-M.GY.THNB LITHOLOGY AS ABOVE, GRADING TO MEDIUM G RAINED SANDSTONE TOWARDS BASE
34	340.52	340.58	0.06			ROCK LOSS	
* 40	340.58	342.33	1.75			SANDSTONE	FG.WEL.LT-M.GY.MAS.SLD VERY UNIFORM, MODERATE QUARTZ VEINS AT LOW ANGLES TO CORE, VERY FAINT BEDDING IN ONE AREA
38	342.33	342.49	0.16			SANDSTONE	FG.WEL.LT-M.GY.MAS.SLD LITHOLOGY AS ABOVE
* 37	342.49	343.72	1.23			SANDSTONE	FG.WEL.LT-M.GY.MAS.SLD FINE SLTY LAMINAE. OCC FINE WISPY QTZ V EINS. MINOR RIP UP CLASTS ASSOC WITH SO ME SILTY LAMINAE. T.D. 344.82M DRILLER' S DEPTH.

* DENOTES MEASURED BCA
NEWPAGE

FORM 4001

GULF CANADA RESOURCES INC.		
SEAM DETAIL	COAL DIVISION MOUNT KLAPPAN PROJECT	TRUE THICKNESS

DATA SOURCE:	KPN LR DDH85009	SEAM : 1	INTERVAL(M) : 102.85 - 111.11	ELEVATION(M) :	1761.9
GEOLOGIST :	E. LEGRESLEY	SCALE:	DATE : DEC 19/85	DRAWING NO. :	

SEAM COMP. (1 2 3 4 5 6)	DRILL DEPTH (METRES)	COAL SEAM LOG	INTERVAL (METRES) ROCK	INTERVAL (METRES) COAL	% REC.	SAMPLE ID SIMP	SAMPLE ID COMP	COAL/ROCK TOTAL COMPOS	COAL/ROCK TOTAL MINING SECTION	COAL QUALITY A.D.B. RES MOIST	ASH	VM	FC	TS	CAL.VAL MJ/KG
	102.85			0.84											
				(0.48)	72.3	7462									
				0.62											
	106.22		([illegible])												
			[illegible]												
				0.16											
			[illegible]												
				(0.55)			4	4.27 / 0.42 4.90		—	—	—	—	—	—
				0.43											
			[illegible]												
				[illegible]											
			[illegible]												
				[illegible]											
			[illegible]		88.8	7463									
				(0.37)											
				0.32											
			[illegible]												
				0.37											
			0.15												
				0.18											
	111.09		[illegible]		100.0	7464									

GULF CANADA RESOURCES INC.

SEAM DETAIL — COAL DIVISION — MOUNT KLAPPAN PROJECT — **TRUE THICKNESS**

DATA SOURCE: KPN LR DDH85009	SEAM : J	INTERVAL(M) :	166.20 – 166.23	ELEVATION(M) :	1761.9
GEOLOGIST : E. LEGRESLEY	SCALE:	DATE :	DEC 19/85	DRAWING NO. :	

SEAM COMP. 1 2 3 4 5 6	DRILL DEPTH METRES	COAL SEAM LOG	INTERVAL METRES ROCK	INTERVAL METRES COAL	% REC.	SAMPLE ID SIMP	SAMPLE ID COMP	COAL/ROCK TOTAL COMPOS	COAL/ROCK TOTAL MINING SECTION	COAL QUALITY A.D.B. RES MOIST	ASH	VM	FC	TS	CAL. VAL MJ/KG
	166.20		0.15					0.02							

GULF CANADA RESOURCES INC.

SEAM DETAIL — COAL DIVISION — MOUNT KLAPPAN PROJECT — **TRUE THICKNESS**

DATA SOURCE:	KPN LR DDH85009	SEAM :	K	INTERVAL(M) :	204.19 - 208.98	ELEVATION(M) :	1761.9
GEOLOGIST :	E LEGRESLEY	SCALE:		DATE :	DEC 19/85	DRAW NG NO. :	

DRILL DEPTH (METRES)	INTERVAL (METRES) ROCK	INTERVAL (METRES) COAL	% REC.	SAMPLE ID SIMP	SAMPLE ID COMP	COAL/ROCK TOTAL COMPOS	MINING SECTION	RES MOIST	ASH	VM	FC	TS	CAL.VAL MJ/KG
204.19	0.13		100.0	7457									
204.40	[illegible]	[illegible]											
		0.36	66.1	7458									
		([illegible])											
	([illegible])	[illegible]											
205.37	0.19												
		0.12											
	[illegible]	0.14	63.8	7459									
		(0.11)											
	0.24												
206.79	[illegible]	0.12			36	2.70 / 0.57 3.27		1.70	31.53	7.65	59.12	0.46	22.57
		0.48											
	[illegible]	0.37	85.5	7460									
		(0.28)											
		0.53											
209.51	0.34		100.0	7461									
209.98													

GULF CANADA RESOURCES INC.
COAL DIVISION
MOUNT KLAPPAN PROJECT

SEAM DETAIL **TRUE THICKNESS**

DATA SOURCE: KPN LR DDH85009 SEAM : L INTERVAL(M) : 241.14 – 247.93 ELEVATION(M) : 1781.9

GEOLOGIST : E. LEGRESLEY SCALE: DATE : DEC 19/85 DRAWING NO. :

DRILL DEPTH (METRES)	INTERVAL (METRES): ROCK	INTERVAL (METRES): COAL	% REC.	SAMPLE ID: SIMP	SAMPLE ID: COMP	COAL/ROCK TOTAL: COMPOS	COAL/ROCK TOTAL: MINING SECTION	COAL QUALITY A.D.B.: RES MOIST	ASH	VM	FC	TS	CAL.VAL MJ/KG
241.14		[illegible]											
	0.18	[illegible]	82.3	7465									
	[illegible] ([illegible])	[illegible]											
242.18	0.22	[illegible]											
		0.26											
	[illegible]	[illegible]											
		0.25											
	[illegible]	[illegible] (0.10) [illegible]											
	[illegible]	0.13	88.8	7482	31	2.73 / 1.73 4.46		2.06	47.08	6.96	48.82	0.92	16.52
	0.31												
	[illegible]	0.17											
	0.12												
		0.48											
	0.19												
246.55	[illegible]	0.14											
	[illegible]	0.30	84.1	7483									
	[illegible]	(0.12) [illegible] [illegible]											
247.93													

GULF CANADA RESOURCES INC.

COAL DIVISION
MOUNT KLAPPAN PROJECT

SEAM DETAIL — **TRUE THICKNESS**

DATA SOURCE: KPN LR DDH85009 — SEAM : M — INTERVAL(M) : 321.77 – 329.98 — ELEVATION(M) : 1761.8

GEOLOGIST : E. LEGRESLEY — SCALE: — DATE : DEC 19/85 — DRAWING NO. :

SEAM COMP.	DRILL DEPTH (METRES)	COAL SEAM LOG	INTERVAL (METRES) ROCK	INTERVAL (METRES) COAL	% REC.	SAMPLE ID SIMP	SAMPLE ID COMP	COAL/ROCK TOTAL COMPOS	COAL/ROCK TOTAL MINING SECTION	COAL QUALITY A.D.B. RES MOIST	ASH	VM	FC	TS	CAL.VAL MJ/KG
	321.77		[illegible]	[illegible]											
			[illegible]												
				0.41											
			[illegible]												
				0.19											
			0.11												
				[illegible]											
			0.21												
				[illegible]	78.0	7468	32	2.09 / 0.72 2.81		0.64	33.03	10.83	55.50	0.78	21.82
			[illegible]												
				0.11											
			0.17												
				[illegible]											
			[illegible]												
				0.25											
				(0.68)											
	328.06		1.72		100.0	7469									
	329.98														

707

Gulf Canada Resources Inc.
Coal Division
Geophysical Log

Datasource:	**KPNLRDDH85009**	Province: BC	Northing:	6344170.00	Lat:	571433
Log Date:	85-03-31	Zone: 9	Easting:	506330.00	Long:	1285342
Company:	CENTURY	Measuring Point:			Elevation:	
Geologist:	E. LEGRESLEY					

Scale: 1 to 100.0
Depth Range: 0.0 to 342.0
True Thickness: NO

Comments:
1. LOGGED THROUGH THE RODS
2.

Logs Plotted:

Description	Axis Range	Axis Length	Smoothing Points	Tool	Comments
1 .GAMMA API	0.0 to 150.0	10.0	31	9030A	IN PIPE
2 .NEUTRON-NEUTRON CPS	0.0 to 2500.0	10.0	9	9067	IN PIPE
3 .DENSITY G/CC	1.0 to 3.0	10.0	15	9030A	IN PIPE

707

GULF CANADA RESOURCES INC.
COAL DIVISION
KLAPPAN PROJECT
STRATIGRAPHIC LOG
KPN LR DDH85009

GEOLOGIST : E. LEGRESLEY	DATE : JAN 08/86	DRAWING NO. :

SCALE : 1:200 1:40

NORTHING: 6344168.0 N INCLINATION: 85.0°
EASTING: 506330.3 E BEARING: 45.0°

LITHOLOGIC SYMBOLS

SANDSTONE	BENTONITE
SILTSTONE	BRECCIA
COAL	CARBONACEOUS
OVERBURDEN	QUARTZ
MUDSTONE/CLAYSTONE	PYRITE
TUFF	FERRUGINOUS
LIMESTONE	CONGLOMERATE
CORE LOSS	FOSSIL BED

KPNLRDDH85010

==================== GULF CANADA RESOURCES INC. ====================

- D A T A   S O U R C E   S U M M A R Y -

DATA SOURCE - KPNLRDDH85010

DATE - 01/09/86

- H I S T O R Y -

START DATE - 03/27/85
END DATE - 03/30/85

CONTRACTOR - J.T. THOMAS
GEOLOGIST - K. JENNER

OPERATOR - GCRI
SURVEYOR - MWG & ASS.

REMARKS - SITE L

- L O C A T I O N -

PROVINCE - BC
ELEVATION - 1752.70

LICENCE/LEASE NUMBER - 7151

ZONE - 9
NORTHING - 6344570.00
EASTING - 506920.87

LATITUDE - 571446
LONGITUDE - 1285307

- O R I E N T A T I O N -

LENGTH - 231.80

CORE SIZE - 0.0

INCLINATION - 90.0
AZIMUTH - 0.0

CEMENT -
PLUG -
PIEZ -

CASING DEPTH (M) - 6.10
AQUIFER DEPTHS (M) - 0.00
0.00
LOST CIRC. DEPTHS (M) - 0.00
0.00

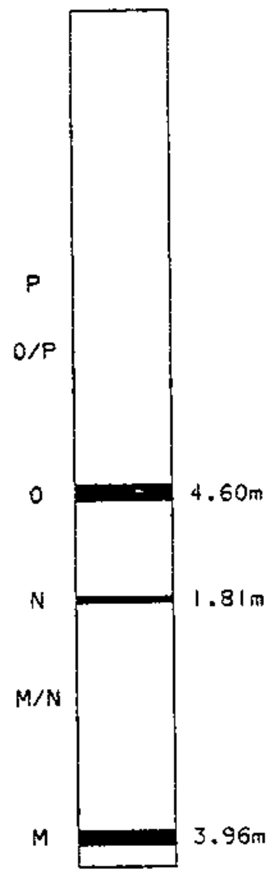
*** NOTE *** 0 INDICATES NO VALUE

===

MT. KLAPPAN COAL PROPERTY

1985 DIAMOND DRILL HOLES
DDH85010

SEAM   TRUE SEAM THICKNESS (COAL & ROCK)



NOTE: SCHEMATIC PROFILE.
NO THICKNESSES SHOWN
FOR SEAMS CONTAINING
LESS THAN 50cm COAL.

SCALE: 1:2000	GULF CANADA RESOURCES INC. 15/01/86

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 1

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85010

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
31	0.00	6.10	6.10			OVERBURDEN	CASING TO 6.10 METRES
* 31	6.10	7.93	1.83			SANDSTONE	SLTY.VFG.MOD.M.GY.THNB.BRKN CLEANS UP DOWNWARD HEAVY FE STAINING, M INOR VEINING
32	7.93	8.23	0.30			ROCK LOSS	
* 33	8.23	10.23	2.00			SANDSTONE	VFG.VWEL.M.GY.MAS.SLD CLEANER AND SLIGHTLY COARSER THAN ABOVE , EARLY CALCITE LATE QUARTZ VEINING ROU GHLY PERPENDICULAR TO BEDDING
32	10.23	10.49	0.26			SANDSTONE	SLTY.VFG.VWEL.M.GY.MAS.SLD LITHOLOGY AS ABOVE, RAPID GRADATION TO MUDSTONE BELOW
32	10.49	10.75	0.26			MUDSTONE	SLTY.MOD.DK.GY.LAM.BRKN MINOR CALCITE VEINING, FE STAINED
32	10.75	11.28	0.53			ROCK LOSS	
32	11.28	12.46	1.18			MUDSTONE	SLTY.MOD.DK.GY.LAM.BRKN LITHOLOGY AS ABOVE
31	12.46	14.46	2.00			MUDSTONE	MOD.DK.GY.LAM.BRKN LITHOLOGY AS ABOVE, VERY WEATHERED ON F RACTURE SURFACES

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 2

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85010

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
30	14.46	14.88	0.42			MUDSTONE	SLTY.MOD.DK.GY.LAM.SLD LITHOLOGY AS ABOVE
* 30	14.88	16.43	1.55			MUDSTONE	SLTY.MOD.DK.GY.LAM.SLD LITHOLOGY AS ABOVE, SLIGHTLY SILTIER
* 29	16.43	17.86	1.43			MUDSTONE	SLTY.MOD.DK.GY.LAM.SLD SILTIER THAN ABOVE
30	17.86	18.50	0.64			SILTSTONE	SSY.MOD.M.GY.LAM.SLD
30	18.50	18.83	0.33			SILTSTONE	SSY.MOD.DK.GY.LAM.SLD LITHOLOGY AS ABOVE, SANDIER TOWARDS BAS E, GRADUAL LOWER CONTACT
31	18.83	20.61	1.78			SANDSTONE	VFG.VWEL.M.GY.MAS.SLD
31	20.61	20.65	0.04			ROCK LOSS	
31	20.65	20.91	0.26			SANDSTONE	SLTY.VFG.MOD.M.GY.LAM.BRKN
* 32	20.91	22.54	1.63			SILTSTONE	SSY.MOD.DK.GY.LAM.BRKN MODERATE CALCITE VEINING

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 3

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85010

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
32	22.54	22.69	0.15			SILTSTONE	SSY.MOD.DK.GY.LAM.BRKN EROSIONAL CONTACT WITH SANDSTONE BELOW
33	22.69	24.22	1.53			SANDSTONE	SLTY.VFG-.MOD.M.GY.MB.BRKN SILTSTONE LAMINAE, TOPS DOWN, GRADED BEDS, MINOR VEINING PERPENDICULAP TO BEDDING, VERY FINE GRAINED TO FINE GRAINED SANDSTONE
33	24.22	24.53	0.31			SANDSTONE	SSY.VFG-.MOD.M.GY.MB.BRKN LITHOLOGY AS ABOVE, VERY FINE GRAINED TO FINE GRAINED SANDSTONE
* 34	24.53	26.64	2.11			SANDSTONE	SLTY.VFG-.MOD.M.GY.THKB.BRKN VERY FRACTURED, WEATHERED BAND IN CENTER, MINOR CALCITE VEINING PERPENDICULAR TO BEDDING, SILT INCREASES TOWARDS BASE, VERY FINE GRAINED TO FINE GRAINED SANDSTONE
33	26.64	27.24	0.60			SILTSTONE	SSY.MOD.M.GY.LAM.SLD SAND DECREASES DOWNHOLE
32	27.24	28.55	1.31			SILTSTONE	VWEL.DK.GY.LAM.SLD
31	28.55	28.99	0.44			SILTSTONE	MOD.M.GY.LAM.BRKN FE STAINING ON FRACTURE SURFACES

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 4

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85010

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
31	28.99	29.04	0.05			CALCITE	WH FORMS MINOR BRECCIA WITH SILTSTONE
31	29.04	29.10	0.06			CLAYSTONE	CARB.WEL.DK.GY.LAM.BRKN PLIABLE
31	29.10	29.66	0.56			ROCK LOSS	
30	29.66	30.59	0.93			SILTSTONE	MOD.M.GY.LAM.VBRKN FE STAINING ON FRACTURE SURFACE
30	30.59	30.83	0.24			SILTSTONE	MOD.M.GY.LAM.SLD FE STAINING ON FRACTURE SURFACE
* 29	30.83	32.22	1.39			SILTSTONE	PR.M.GY.LAM.VBRKN HEAVILY FE STAINED, QUARTZ VEIN (5.0 MM WIDE) PARALLEL TO BEDDING, TALC ON FRACTURE SURFACES
29	32.22	33.21	0.99			ROCK LOSS	
* 29	33.21	34.52	1.31			SANDSTONE	VFG.MOD.M.GY.MB.VBRKN HEAVILY FE STAINED, MINOR TALC ON FRACTURE SURFACES
30	34.52	34.86	0.34			ROCK LOSS	

* DENOTES MEASURED BCA

FORM 4001

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85010

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
31	34.86	36.19	1.33			SANDSTONE	VFG.MOD.M.GY.MB.VBRKN HEAVILY FE STAINED
32	36.19	37.45	1.26			SANDSTONE	FG.WEL.M.GY.MAS.VBRKN QUARTZ VEIN (1.0 MM WIDE), HEAVY FE STA INING
33	37.45	38.13	0.68			ROCK LOSS	
33	38.13	38.37	0.24			SANDSTONE	VFG.WEL.M.GY.MAS.BRKN HEAVILY FE STAINED
34	38.37	39.67	1.30			SANDSTONE	WEL.M.GY.MAS.VBRKN HEAVILY FE STAINED
34	39.67	39.86	0.19			SANDSTONE	WEL.M.GY.MAS.SLD QUARTZ VEIN (3.0 MM WIDE) AT ANGLE TO B EDDING
35	39.86	41.05	1.19			SANDSTONE	WEL.M.GY.MAS.VBRKN HEAVILY FE STAINED
36	41.05	41.12	0.07			CLAYSTONE	WEL.BN.SLD PLIABLE, SOFT
36	41.12	41.44	0.32			SANDSTONE	FG.WEL.M.GY.MAS.BRKN FE STAINED

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85010

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
36	41.44	41.73	0.29			SANDSTONE	FG.WEL.M.GY.MAS.BRKN HEAVILY FE STAINED
37	41.73	42.91	1.18			SANDSTONE	VFG-.WEL.M.GY.MAS.BRKN HEAVILY FE STAINED, VERY FINE GRAINED T O FINE GRAINED SANDSTONE
* 38	42.91	44.14	1.23			SANDSTONE	VFG-.WEL.M.GY.MAS.BRKN CALCITE VEIN (10.0 MM WIDE), VERY FINE GRAINED TO FINE GRAINED SANDSTONE
35	44.14	44.62	0.48			SILTSTONE	SSY.MOD.M.GY.THNB.BRKN MINOR TALC ON FRACTURE SURFACES, MINOR FE STAINING
34	44.62	44.77	0.15			SILTSTONE	MOD.DK.GY.THNB.SLD
32	44.77	45.72	0.95			SILTSTONE	CLYY.PR.DK.GY.LAM.VBRKN ABUNDANT CALCITE VEINING, UNCONSOLIDATE D IN PLACES, PLIABLE, FE STAINING
30	45.72	45.95	0.23			SILTSTONE	MOD.M.GY.THNB.SLD MINOR FE STAINING ON FRACTURE SURFACES

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 7

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85010

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 27	45.95	47.34	1.39			SANDSTONE	SLTY.VFG.PR.M.GY.THNB.VBRKN MODERATE CALCITE VEINING, MODERATE FE S TAINING, VERY SILTY
26	47.34	47.87	0.53			SANDSTONE	VFG.MOD.M.GY.THKB.BRKN CLEANER THAN ABOVE, MODERATE VEINING, E ARLY CALCITE AND LATE QUARTZ, MINOR SIL TY LAMINAE
* 25	47.87	49.32	1.45			SANDSTONE	VFG.MOD.M.GY.THKB.BRKN LITHOLOGY AS ABOVE
* 01	49.32	50.22	0.90			SANDSTONE	VFG.MOD.M.GY.THKB.VBRKN LITHOLOGY AS ABOVE, HEAVILY FRACTURED, QUARTZ AND CALCITE VEINING, STRONG FE S TAINING, APPEARS TO BE A FOLD AXIS AT E ND OF THIS BOX AND BEGINNING OF NEXT BO X
* 05	50.22	51.35	1.13			SANDSTONE	VFG.MOD.M.GY.THKB.VBRKN LITHOLOGY AND DEFORMATION AS ABOVE
* 72	51.35	52.26	0.91			SANDSTONE	SLTY.VFG.MOD.M.GY.THNB.BRKN LEAVES FOLD AXIS ZONE
* 78	52.26	53.23	0.97			SANDSTONE	SLTY.VFG.PR.M.GY.THNB.BRKN VERY SILTY, FE STAINED, TOPS UP, SCOUR AND FILL PATTERN

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 8

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85010

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
77	53.23	54.34	1.11			SANDSTONE	VFG-.MOD.M.GY.THKB.BRKN SILTY LAMINAE IN TOP 300.0 MM,UNIFORM, CLEANER TH AN ABOVE, MINOR CALCITE VEIN ING, VERY FINE GRAINED TO FINE GRAINED SANDSTONE
75	54.34	55.45	1.11			SANDSTONE	VFG-.MOD.M.GY.THKB.VBRKN LITHOLOGY AS ABOVE, MINOR CALCITE VEINI NG,VERY FINE GRAINED TO FINE GRAINED SA NDSTONE
74	55.45	56.36	0.91			SANDSTONE	VFG-.MOD.M.GY.THKB.BRKN LITHOLOGY AS ABOVE, SLIGHTLY COARSER, M INOR CALCITE VEINING, HEAVY FE STAINING , VERY FINE GRAINED TO FINE GRAINED SAN DSTONE
73	56.36	57.56	1.20			SANDSTONE	VFG-.MOD.M.GY.THKB.BRKN LITHOLOGY AS ABOVE, VERY FINE GRAINED T O FINE GRAINED SANDSTONE
72	57.56	57.65	0.09			SANDSTONE	VFG-.MOD.M.GY.THKB.BRKN LITHOLOGY AS ABOVE, VERY FINE GRAINED T O FINE GRAINED SANDSTONE
71	57.65	58.19	0.54			SANDSTONE	VFG-.MOD.M.GY.THKB.BRKN LITHOLOGY AS ABOVE, GRADES TO SILTSTONE , VERY FINE GRAINED TO FINE GRAINED SAN DSTONE

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 9

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85010

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 70	58.19	59.70	1.51			SILTSTONE	SSY.MOD.DK.GY.LAM.WRMBU.BRKN TOPS UP, VERTICAL WORMBURROWS, MINOR CA LCITE VEINING
73	59.70	60.29	0.59			SILTSTONE	CLYY.MOD.DK.GY.LAM.BRKN
75	60.29	61.40	1.11			SILTSTONE	CLYY.MOD.DK.GY.LAM.BRKN LITHOLOGY AS ABOVE, HEAVY FE STAINING, LINEATED TALC ON FRACTURE SURFACES
77	61.40	61.62	0.22			SANDSTONE	SLTY.VFG.MOD.M.GY.THKB.SLD NO GRADING TO SILTSTONE ABOVE, POSSIBLE CORE LOSS ABOVE
* 80	61.62	63.21	1.59			SANDSTONE	SLTY.VFG.MOD.M.GY.MB.SLD LITHOLOGY AS ABOVE, MODERATE VEINING, T ALC ON FRACTURE SURFACES
78	63.21	63.63	0.42			SANDSTONE	SLTY.VFG.MOD.M.GY.THNB.SLD SILTIER THAN ABOVE, HEAVY CALCITE VEINI NG PARALLEL TO BEDDING
77	63.63	64.51	0.88			SANDSTONE	VFG.MOD.M.GY.THNB.VBRKN LINEATED FRACTURE SURFACES WITH TALC, H EAVILY OXIDIZED

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 10

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85010

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 75	64.51	65.47	0.96			SILTSTONE	MOD.M.GY.LAM.WRMBU.BRKN TOPS UP, WORMBURROWS, MINOR FE STAINING
77	65.47	67.31	1.84			SILTSTONE	MOD.M.GY.LAM.BRKN MINOR FE STAINING
* 78	67.31	67.43	0.12			SILTSTONE	MOD.M.GY.LAM.SLD QUARTZ VEIN PARALLEL TO BEDDING (3.0 MM WIDE)
* 80	67.43	67.83	0.40			SILTSTONE	MOD.M.GY.LAM.VBRKN HEAVILY FE STAINED
81	67.83	68.65	0.82			SANDSTONE	FG.MOD.M.GY.VBRKN PARTIALLY UNCONSOLIDATED, HEAVY FE STAI NING, CALCITE VEINING AT ANGLE TO BEDDI NG (10.0 MM WIDE)
81	68.65	69.01	0.36			SANDSTONE	FG.M.GY.THNB.VBRKN QUARTZ VEIN PERPENDICULAR TO BEDDING (3 .0 MM WIDE), HEAVY FE STAINING
82	69.01	70.10	1.09			SILTSTONE	PR.M-DK.GY.THNB.VBRKN MINOR FE STAINING, PARTIALLY UNCONSOLID ATED, QUARTZ VEIN AT ANGLE TO BEDDING (3.0 MM WIDE)

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 11

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85010

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
83	70.10	71.06	0.96			SILTSTONE	PR.DK.GY.THNB.VBRKN UNCONSOLIDATED IN PLACES, MUDDIER TOWAR DS BASE, SLIGHTLY CARBONACEOUS AT TOP
83	71.06	71.67	0.61			MUDSTONE	WEL.DK.GY.BRKN LINEATED FRACTURE SURFACES CONTAIN MINO R TALC
84	71.67	73.29	1.62			MUDSTONE	WEL.DK.GY.VBRKN UNIFORM
85	73.29	73.34	0.05			SILTSTONE	CLYY.M.GY.BRKN
85	73.34	73.40	0.06			SILTSTONE	CARB.DK.GY.SLD DISSEMINATED PYRITE THROUGHOUT
85	73.40	73.62	0.22	07400	P	COAL	C-2.VBRKN SULPHUROUS SMELL, WEATHERED
85	73.62	74.05	0.43			ROCK LOSS	
86	74.05	74.17	0.12			MUDSTONE	M.GY.SLD SOFT
86	74.17	75.67	1.50			MUDSTONE	M.GY.MAS.BRKN

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 12

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85010

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
87	75.67	75.72	0.05			BENTONITE	LT.GY.SLD SOFT
* 87	75.72	75.75	0.03			BENTONITE	WEL.LT.GY.SLD SWELLS WHEN WET, PLIABLE
87	75.75	76.83	1.08			SILTSTONE	CLYY.MOD.DK.GY.LAM.VBRKN TALC ON FRACTURE SURFACES, UNIFORM
88	76.83	76.92	0.09			ROCK LOSS	
88	76.92	77.57	0.65			SILTSTONE	CLYY.MOD.DK.GY.LAM.BRKN LINEATED FRACTURE SURFACES CONTAINING T ALC
88	77.57	78.08	0.51			SILTSTONE	MOD.M.GY.THNB.BRKN SHARP CONTACT WITH UNDERLYING UNIT
* 89	78.08	79.45	1.37			SANDSTONE	PR.LT-M.GY.MB.BRKN CONGLOMERATE SANDSTONE, MATRIX SUPPORTE D, PEBBLES OCCURRING IN UNITS UP TO 200 .0 MM, SUB-ROUND, SUB-ANGULAR, 2.0 TO 4 .0 MM IN SIZE, CHERT, HEAVILY FRACTURED , FE STAINED

* DENOTES MEASURED BCA

FORM 4001

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85010

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
79	79.45	79.88	0.43			SANDSTONE	PR.LT-M.GY.MB.BRKN CONGLOMERATE SANDSTONE, MATRIX SUPPORTED, PEBBLES OCCURRING IN UNITS UP TO 200.0 MM, SUB-ROUND, SUB-ANGULAR, 2.0 TO 4.0 MM IN SIZE, CHERT, HEAVILY FRACTURED, FE STAINED
* 68	79.88	81.48	1.60			SANDSTONE	PR.LT-M.GY.MB.BRKN CONGLOMERATE SANDSTONE. MATRIX SUPPORTED, PEBBLES OCCURRING IN UNITS UP TO 200.00 MM, SUB-ROUND, SUB-ANGULAR, 2.0 TO 4.0 MM IN SIZE, CHERT, FRACTURED HEAVILY, FE STAINED
67	81.48	82.98	1.50			CONGLOMERATE	SSY.PBL.PR.LT.GY.MAS.BRKN CONGLOMERATE IS MEDIUM GRAINED, SUPPORTED, CHERT RICH, CRUDE SUB-HORIZONTAL STRATIFICATION OF PEBBLY AND SANDY LAYERS, FE STAINED, WELL ROUNDED PEBBLES
67	82.98	83.46	0.48			CONGLOMERATE	SSY.PBL.PR.LT.GY.MAS.BRKN LITHOLOGY AS ABOVE
66	83.46	85.54	2.08			CONGLOMERATE	SSY.PBL.PR.LT.GY.MAS.BRKN LITHOLOGY AS ABOVE

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85010

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
66	85.54	86.46	0.92			CONGLOMERATE	SSY.PBL.PR.LT.GY.MAS.BRKN MORE SAND RICH, COARSE MATERIAL IS MIXTURE OF PEBBLES AND GRANULES, ABRUPT TRANSITION TO SANDSTONE BELOW
66	86.46	86.80	0.34			SANDSTONE	MG.MOD.LT.GY.MAS.SLD LOOKS LIKE MATRIX OF OVERLYING CONGLOMERATE
65	86.80	87.54	0.74			SANDSTONE	MG.MOD.LT.GY.MAS.SLD LITHOLOGY AS ABOVE, NO TRANSITION TO CONGLOMERATE BELOW (CORE LOSS?)
65	87.54	89.30	1.76			CONGLOMERATE	SSY.PBL.PR.LT.GY.MAS.BRKN SIMILAR TO CONGLOMERATE ABOVE, SLIGHTLY COARSER AND MORE ANGULAR, FINES DOWNWARD (UP STRATIGRAPHY), FE STAINED
64	89.30	91.16	1.86			CONGLOMERATE	SSY.PBL.PR.M.GY.MAS.BRKN LITHOLOGY AS ABOVE, VERY VARIABLE GRAIN SIZE, GRANULES TO COBBLES, CLAST SUPPORTED IN ANGULAR PEBBLY ZONES, MINOR QUARTZ VEINING
64	91.16	91.18	0.02			MUDSTONE	CARB.MOD.DK.GY.LAM.SLD NO TRANSITION UP OR DOWN

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 15

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85010

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
64	91.18	91.55	0.37			SANDSTONE	FG-.VWEL.LT.GY.MAS.BRKN HEAVY CALCITE VEINING, SALT AND PEPPER TEXTURE, FINE GRAINED TO MEDIUM GRAINED SANDSTONE
64	91.55	91.62	0.07			ROCK LOSS	
64	91.62	91.66	0.04			SANDSTONE	FG-.VWEL.LT.GY.MAS.BRKN LITHOLOGY AS ABOVE, NO TRANSITION DOWNH OLE, FINE GRAINED TO MEDIUM GRAINED SAN DSTONE
64	91.66	92.01	0.35		O/P	COAL	C-3.LAM.SLD INTENSIVE CALCITE VEINING PARALLEL TO B EDDING, VERY LARGE PYRITE NODULES AND B EDS, BRECCIA IN PARTS
63	92.01	92.98	0.97			SANDSTONE	FG.VWEL.LT.GY.MAS.BRKN VERY UNIFORM
63	92.98	93.72	0.74			SANDSTONE	FG.VWEL.LT.GY.MAS.BRKN LITHOLOGY AS ABOVE, VERY RARE PEBBLES, SLIGHT CHEMICAL WEATHERING

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 16

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85010

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
62	93.72	95.59	1.87			SANDSTONE	FG.VWEL.LT.GY.MAS.BRKN LITHOLOGY AS ABOVE, FINES DOWNHOLE (UP STRATIGRAPHICALLY), MINOR CALCITE VEINI NG
62	95.59	95.90	0.31			SANDSTONE	VFG-.WEL.LT.GY.MAS.BRKN LITHOLOGY AS ABOVE, VERY FINE GRAINED T O FINE GRAINED SANDSTONE
62	95.90	97.56	1.66			SANDSTONE	FG.PR.LT.GY.MAS.BRKN GRADES FROM VERY FINE GRAINED TO FINE G RAINED TO MEDIUM GRAINED TO FINE GRAINE D, COARSER ZONES HAVE SILTSTONE/CHERT C LASTS UP TO COBBLE SIZE, MINOR CALCITE VEINING, CALCITE PIECES IN PLACES
61	97.56	98.30	0.74			SANDSTONE	FG.PR.LT.GY.MAS.SLD LITHOLOGY AS ABOVE, SIMILAR GRAINSIZE A ND CLAST SIZE
61	98.30	99.10	0.80			MUDSTONE	CARB.PR.BLK.LAM.VBRKN COALY BANDS TO 50.0 MM, NUMEROUS COALY LAMINAE, INTENSE CALCITE VEINING IN COA LY ZONE, ABRUPT TRANSITION
61	99.10	99.65	0.55			MUDSTONE	VWEL.DK.GY.LAM.BRKN SLIPPAGE SURFACES, QUITE UNIFORM

* DENOTES MEASURED BCA

LRM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 17

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85010

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 60	95.65	101.62	1.97			MUDSTONE	VWEL.DK.GY.LAM.BRKN BCA IS QUESTIONABLE,BEDDING NONDISTINCT ,LITHOLOGY AS ABOVE, TALC ON FRACTURE S URFACES
60	101.62	102.15	0.53			MUDSTONE	VWEL.DK.GY.LAM.BRKN LITHOLOGY AS ABOVE, TALC ON FRACTURE SU RFACES
* 60	102.15	103.67	1.52			MUDSTONE	VWEL.DK.GY.LAM.SLD LITHOLOGY AS ABOVE,TALC, LINEATED ON BE DDING DUE TO SLIPPAGE
60	103.67	105.28	1.61			MUDSTONE	VWEL.DK.GY.LAM.SLD LITHOLOGY AS ABOVE
60	105.28	105.62	0.34			MUDSTONE	VWEL.DK.GY.LAM.SLD LITHOLOGY AS ABOVE
60	105.62	107.75	2.13			MUDSTONE	VWEL.DK.GY.LAM.SLD SLIGHTLY CARBONACEOUS, MINOR QUARTZ VEI NING, LITHOLOGY AS ABOVE
60	107.75	108.35	0.60			MUDSTONE	VWEL.GY.LAM.SLD LITHOLOGY AS ABOVE
* 60	108.35	109.83	1.48			MUDSTONE	VWEL.DK.GY.LAM.SLD LITHOLOGY AS ABOVE

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 18

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85010

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
63	109.83	111.46	1.63			MUDSTONE	VWEL.DK.GY.LAM.SLD LITHOLOGY AS ABOVE
65	111.46	111.78	0.32			MUDSTONE	VWEL.DK.GY.LAM.SLD LITHOLOGY AS ABOVE, TALC
67	111.78	113.77	1.99			MUDSTONE	VWEL.DK.GY.LAM.SLD LITHOLOGY AS ABOVE
* 70	113.77	114.77	1.00			MUDSTONE	VWEL.DK.GY.LAM.BRKN LITHOLOGY AS ABOVE, TALC ON FRACTURE SU RFACES, POLISHED SLIPPAGE SURFACES
70	114.77	115.47	0.70			MUDSTONE	VWEL.DK.GY.LAM.BRKN LITHOLOGY AS ABOVE, QUARTZ VEINED
70	115.47	117.47	2.00			MUDSTONE	VWEL.DK.GY.LAM.BRKN LITHOLOGY AS ABOVE
71	117.47	117.60	0.13			MUDSTONE	VWEL.DK.GY.LAM.BRKN LITHOLOGY AS ABOVE
71	117.60	119.61	2.01			MUDSTONE	WEL.DK.GY.LAM.BRKN LITHOLOGY AS ABOVE, MINOR TALC, SLIGHTL Y SILTY, POLISHED BEDDING SURFACES
* 71	119.61	120.87	1.26			MUDSTONE	SLTY.MOD.DK.GY.LAM.BRKN SILTIER THAN ABOVE

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 19

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85010

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
72	120.87	121.67	0.80			MUDSTONE	SLTY.MOD.DK.GY.LAM.BRKN LITHOLOGY AS ABOVE
73	121.67	123.42	1.75			MUDSTONE	VWEL.DK.GY.LAM.BRKN VERY LITTLE SILT
73	123.42	123.82	0.40			MUDSTONE	VWEL.DK.GY.LAM.VBRKN MUSHY CORE
74	123.82	125.21	1.39			MUDSTONE	VWEL.DK.GY.LAM.BRKN LITHOLOGY AS ABOVE
75	125.21	126.29	1.08			MUDSTONE	VWEL.DK.GY.LAM.BRKN LITHOLOGY AS ABOVE
76	126.29	127.31	1.02			MUDSTONE	VWEL.DK.GY.LAM.BRKN LITHOLOGY AS ABOVE, BEDDING FAINT
77	127.31	129.36	2.05			MUDSTONE	VWEL.DK.GY.LAM.BRKN LITHOLOGY AS ABOVE
78	129.36	129.43	0.07			MUDSTONE	VWEL.DK.GY.LAM.BRKN LITHOLOGY AS ABOVE
78	129.43	130.04	0.61	07377		CLAYSTONE	M.GY.BRKN
78	130.04	130.32	0.28	07378	0	COAL LOSS	

* DENOTES MEASURED BCA

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PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85010

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
78	130.32	130.37	0.05	07378	0	COAL	C-1.SLD ANKERITE VEINING
79	130.37	130.57	0.20	07378	0	COAL	C-6.BRKN
79	130.57	130.60	0.03	07378	0	CLAYSTONE	CARB.BLK.SLD SOFT
79	130.60	130.62	0.02	07378	0	CLAYSTONE	CARB.BLK.SLD
79	130.62	130.63	0.01	07378	0	COAL LOSS	
79	130.63	130.67	0.04	07378	0	COAL	C-4.BRKN
79	130.67	130.68	0.01	07378	0	CLAYSTONE	CARB.BLK.SLD
79	130.68	130.70	0.02	07378	0	COAL	C-4.SLD ANKERITE IN CLEATS
79	130.70	130.75	0.05	07378	0	CLAYSTONE	CARB.DK.GY.SLD COAL AND ANKERITE VEINS
79	130.75	130.79	0.04	07378	0	COAL	C-2.BRKN

* DENOTES MEASURED BCA

FORM 4007

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PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85010

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
79	130.79	130.96	0.17	07378	0	CLAYSTONE	CARB.BLK.BRKN
79	130.96	131.09	0.13	07378	0	CLAYSTONE	CARB.BLK.PHRD
79	131.09	131.13	0.04	07378	0	CLAYSTONE	CARB.DK.BN
79	131.13	131.32	0.19	07378	0	CLAYSTONE	CARB.BLK.BRKN
79	131.32	131.37	0.05	07378	0	CLAYSTONE	CARB.BLK.BRKN
79	131.37	131.52	0.15	07378	0	COAL	C-2.BRKN
79	131.52	131.67	0.15	07378	0	CLAYSTONE	CARB.BLK.SLD COALY LAMINAE
79	131.67	131.69	0.02	07378	0	COAL	C-2.SLD ANKERITE IN CLEATS
79	131.69	131.88	0.19	07378	0	CLAYSTONE	CARB.BLK.BRKN COALY LAMINAE, ANKERITE IN CLEATS
80	131.88	131.94	0.06	07378	0	CLAYSTONE	DK.BN.SLD SOFT

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 22

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85010

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
80	131.94	132.07	0.13	07378	0	CLAYSTONE	CARB.BLK.SLD COALY BELOW
80	132.07	132.09	0.02	07379	0	COAL LOSS	
80	132.09	132.26	0.17	07379	0	COAL	C-4.BRKN
80	132.26	132.37	0.11	07379	0	CLAYSTONE	BLK COAL VEINS
80	132.37	132.50	0.13	07379	0	COAL	C-3.BRKN BRIGHT
* 80	132.50	132.53	0.03	07379	0	CLAYSTONE	M.BN
80	132.53	132.54	0.01	07379	0	ROCK LOSS	
80	132.54	132.59	0.05	07379	0	CLAYSTONE	CARB.BLK.SLD
79	132.59	132.69	0.10	07379	0	ROCK LOSS	
79	132.69	132.86	0.17	07379	0	COAL	C-3.BRKN
78	132.86	132.87	0.01	07379	0	COAL LOSS	

* DENOTES MEASURED BCA

FORM 4001

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85010

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
78	132.87	132.88	0.01	07379	0	CLAYSTONE	CARB.BLK.SLD
78	132.88	132.93	0.05	07379	0	COAL	C-2.BRKN
78	132.93	133.00	0.07	07379	0	CLAYSTONE	CARB.BLK.SLD ANKERITE VEINS
77	133.00	133.23	0.23	07379	0	COAL	C-2.BRKN
77	133.23	133.30	0.07	07379	0	COAL	C-5.SLD
76	133.30	133.34	0.04	07379	0	CLAYSTONE	DK.GY.BRKN
76	133.34	133.46	0.12	07379	0	COAL	C-2.SLD ANKERITE IN CLEATS
76	133.46	133.54	0.08	07379	0	CLAYSTONE	CARB.BLK.SLD
75	133.54	133.68	0.14	07379	0	ROCK LOSS	
75	133.68	133.76	0.08	07379	0	COAL LOSS	
74	133.76	133.97	0.21	07379	0	COAL	C-2.BRKN

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85010

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
73	133.97	134.19	0.22	07379	0	COAL	C-2.BRKN ANKERITE VEINING
72	134.19	134.33	0.14	07379	0	CLAYSTONE	CARB.DK.GY.BRKN
71	134.33	134.57	0.24	07379	0	COAL	C-6.SLD
71	134.57	134.67	0.10	07379	0	COAL	C-3.SLD ANKERITE IN CLEATS
70	134.67	134.71	0.04	07379	0	CLAYSTONE	CARB.BLK.SLD
70	134.71	134.76	0.05	07379	0	COAL	C-3.SLD
69	134.76	135.24	0.48	07380	0	CLAYSTONE	CARB.BLK.BRKN COALY LAMINAE, PYRITE BAND AT BASE (20.0 MM WIDE)
68	135.24	135.36	0.12	07380	0	CLAYSTONE	CARB.BLK.BRKN
67	135.36	135.38	0.02	07380	0	COAL	C-3.SLD ANKERITE IN CLEATS

* DENOTES MEASURED BCA

CRM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 25

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85010

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
67	135.38	135.53	0.15	07380	0	CLAYSTONE	CARB.BLK.BRKN COAL LAMINAE
66	135.53	135.68	0.15	07380	0	COAL	C-6.BRKN
66	135.68	135.75	0.07	07380	0	COAL	C-1.BRKN ANKERITE IN CLEATS
65	135.75	135.90	0.15	07380	0	COAL LOSS	
65	135.90	135.94	0.04	07381		CLAYSTONE	CARB.BLK.VBRKN VERY SHEARED
65	135.94	136.04	0.10	07381		ROCK LOSS	
64	136.04	136.34	0.30	07381		CLAYSTONE	M.GY.BRKN
63	136.34	136.39	0.05			CLAYSTONE	CARB.BLK.SLD VERY COALY WITH ANKERITE VEINING
* 60	136.39	137.73	1.34			CLAYSTONE	M.GY
64	137.73	137.99	0.26			SILTSTONE	CLYY.M.GY.SLD COALY BANDS

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 26

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85010

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
66	137.99	138.35	0.36			MUDSTONE	SLTY.MOD.M.GY.LAM.BRKN
68	138.35	138.70	0.35			MUDSTONE	SLTY.MOD.M.GY.LAM.BRKN LITHOLOGY AS ABOVE, MORE SILTY AND GRAD ES RAPIDLY TO SANDSTONE
72	138.70	140.01	1.31			SANDSTONE	SLTY.VFG.MOD.M.GY.THKB.SLD SILTY LAMINAE IN TOP 500.0 MM
* 80	140.01	141.56	1.55			SANDSTONE	VFG-.VWEL.M.GY.THKB.BRKN SLIGHTLY COARSER THAN ABOVE, VERY FINE GRAINED TO FINE GRAINED SANDSTONE
78	141.56	141.95	0.39			SANDSTONE	FG.VWEL.M.GY.THKB.BRKN LITHOLOGY AS ABOVE, MODERATE CHEMICAL W EATHERING
75	141.95	144.05	2.10			SANDSTONE	FG.VWEL.M.GY.LAM.XBDG.BRKN LITHOLOGY AS ABOVE, TOPS UP, GRADED BED DING, REPEATED 50.0 MM FINING UP STRATI GRAPHY
71	144.05	144.51	0.46			SANDSTONE	FG.VWEL.M.GY.LAM.BRKN LITHOLOGY AS ABOVE

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 27

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85010

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 69	144.51	146.01	1.50			SANDSTONE	FG.VWEL.M.GY.LAM.XBDG.SLD LITHOLOGY AS ABOVE, TOPS UP, CROSS BEDD ING
72	146.01	147.98	1.97			SANDSTONE	FG.VWEL.M.GY.THKB.BRKN LITHOLOGY AS ABOVE, WELL DISTRIBUTED SI LTY LAMINAE
74	147.98	149.49	1.51			SANDSTONE	FG.VWEL.M.GY.THKB.BRKN LITHOLOGY AS ABOVE
76	149.49	149.91	0.42			SANDSTONE	FG-.PR.M.GY.MAS.BRKN SLIGHTLY COARSER SAND THAN ABOVE WITH A BUNDANT SILTSTONE COBBLES AND PEBBLES, WELL ROUNDED, SLIGHTLY STRATIFIED, SOME EVIDENCE OF PRESSURE SOLUTION, COAL RI P-UPS, MATRIX SUPPORT, FINE GRAINED TO MEDIUM GRAINED SANDSTONE
76	149.91	150.31	0.40			SANDSTONE	FG-.PR.M.GY.MAS.BRKN EXACTLY AS ABOVE, UNCONFORMABLE WITH UN DERLYING SILTSTONE WHICH FORMS CLASTS, FINE GRAINED TO MEDIUM GRAINED SANDSTON E

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 28

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85010

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
78	150.31	151.94	1.63			SILTSTONE	CLYY.MOD.M.GY.LAM.SLD
80	151.94	153.01	1.07			SILTSTONE	CLYY.MOD.M.GY.LAM.SLD LITHOLOGY AS ABOVE
82	153.01	154.08	1.07			SILTSTONE	CLYY.MOD.M.GY.LAM.SLD LITHOLOGY AS ABOVE
* 84	154.08	156.04	1.96			SILTSTONE	CLYY.MOD.M.GY.LAM.BRKN LITHOLOGY AS ABOVE, VERY MINOR VEINING, SLIGHTLY CARBONACEOUS IN PLACES, GRADA TIONAL CONTACT BELOW
79	156.04	158.16	2.12			MUDSTONE	SLTY.MOD.M.GY.LAM.BRKN SILTY LAMINAE IN TOP 400.0 MM
76	158.16	158.78	0.62			CLAYSTONE	M.GY.MAS.BRKN
75	158.78	158.98	0.20	07382		CLAYSTONE	CARB.DK.GY.VBRKN
74	158.98	159.08	0.10	07382		ROCK LOSS	
74	159.08	159.22	0.14	07382		ROCK LOSS	

* DENOTES MEASURED BCA

FORM 4001

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85010

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
74	159.22	159.37	0.15	07383	N	COAL	C-2.BRKN ANKERITE VEINING
73	159.37	159.39	0.02	07383	N	CLAYSTONE	M.GY.BRKN
73	159.39	159.58	0.19	07383	N	COAL	C-3.SLD FEW CLAYSTONE BANDS AT BASE
73	159.58	159.61	0.03	07383	N	CLAYSTONE	CARB.BLK.SLD
73	159.61	159.83	0.22	07383	N	ROCK LOSS	
72	159.83	160.11	0.28	07383	N	COAL	C-2.BRKN
72	160.11	160.16	0.05	07383	N	CLAYSTONE	CARB.DK.GY.BRKN
71	160.16	160.24	0.08	07383	N	COAL	C-5.BRKN
71	160.24	160.27	0.03	07383	N	CLAYSTONE	CARB.DK.GY.SLD
71	160.27	160.29	0.02	07383	N	CLAYSTONE	CARB.SLD

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85010

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
71	160.29	160.47	0.18	07383	N	ROCK LOSS	
71	160.47	160.55	0.08	07383	N	COAL	C-2.BRKN ANKERITE IN CLEATS
70	160.55	160.62	0.07	07383	N	CLAYSTONE	CARB.DK.GY.SLD
* 70	160.62	160.87	0.25	07383	N	COAL	C-1.VBRKN FEW CLAYSTONE BANDS
70	160.87	161.00	0.13	07383	N	COAL	C-3.VBRKN
70	161.00	161.03	0.03	07383	N	CLAYSTONE	CARB.DK.GY.BRKN
70	161.03	161.13	0.10	07383	N	COAL	C-5.SHRD
69	161.13	161.80	0.67	07384		CLAYSTONE	CARB.BLK.BRKN COALY LAMINAE
69	161.80	161.82	0.02	07384		COAL	C-2.SLD
69	161.82	162.31	0.49			CLAYSTONE	CARB.DK.GY.MAS.BRKN

* DENOTES MEASURED BCA

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PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85010

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
69	162.31	162.61	0.30			MUDSTONE	MOD.BLK.LAM.BRKN MINOR QUARTZ VEINS
68	162.61	163.72	1.11			MUDSTONE	MOD.BLK.LAM.BRKN THIN COAL LAMINAE
68	163.72	164.46	0.74			MUDSTONE	CARB.MOD.BLK.LAM.BRKN NUMEROUS COAL LAMINAE, MINOR QUARTZ VEINING PARALLEL TO BEDDING, MINOR SLIPPAGE SURFACES
67	164.46	165.07	0.61			MUDSTONE	CARB.MOD.BLK.LAM.BRKN LITHOLOGY AS ABOVE
66	165.07	165.94	0.87			MUDSTONE	MOD.DK.GY.LAM.BRKN MINOR CALCITE VEINING
* 66	165.94	166.40	0.46			MUDSTONE	MOD.DK.GY.LAM.BRKN LITHOLOGY AS ABOVE, MINOR CALCITE VEINING
68	166.40	166.83	0.43			MUDSTONE	MOD.DK.GY.LAM.SLD LITHOLOGY AS ABOVE, GRADATIONAL LOWER CONTACT

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 32

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85010

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
71	166.83	168.00	1.17			MUDSTONE	CARB.MOD.BLK.LAM.BRKN VERY CARBONACEOUS, THIN COAL STRINGERS, 350.0 MM BAND OF BRECCIATED CLAYSTONE/QUARTZ WITH ANGULAR CLASTS ALLIGNED WITH BEDDING
74	168.00	168.45	0.45			MUDSTONE	MOD.DK.GY.LAM.SLD
76	168.45	169.00	0.55			MUDSTONE	MOD.DK.GY.LAM.BRKN RARE COAL STRINGERS
78	169.00	169.16	0.16			MUDSTONE	CARB.MOD.BLK.LAM.BRKN COALY LAMINAE
* 80	169.16	170.25	1.09			MUDSTONE	CARB.MOD.BLK.LAM.BRKN LITHOLOGY AS ABOVE, COAL LAMINAE WITH TINY CALCITE VEINS
77	170.25	171.14	0.89			MUDSTONE	CARB.MOD.BLK.LAM.BRKN LITHOLOGY AS ABOVE, COAL LAMINAE AND COALIFIED PLANT MATERIAL

* DENOTES MEASURED BCA

FORM 4001

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85010

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
75	171.14	172.21	1.07			MUDSTONE	CARB.MOD.BLK.LAM.BRKN LITHOLOGY AS ABOVE, MINOR CALCITE VEINI NG PARALLEL TO BEDDING, 10.0 MM PYRITE BANDS PARALLEL TO BEDDING, MINOR TALC O N SLIPPAGE BEDDING PLANES
* 71	172.21	174.16	1.95			MUDSTONE	CARB.MOD.BLK.LAM.BRKN LITHOLOGY AS ABOVE, MINOR QUARTZ AND CA LCITE VEINS, MORE SILTY TOWARDS THE BAS E, CONTAINS 30.0 MM BAND OF SOFT SHELLI NG CLAYS, DARKER THAN MOST BENTONITES, COAL LAMINAE, STRIATED SLIPPAGE SURFACE S WITH TALC
69	174.16	175.32	1.16			MUDSTONE	CARB.MOD.BLK.LAM.BRKN LITHOLOGY AS ABOVE, STRIATED SLIPPAGE S URFACES WITH TALC, COAL LAMINAE, QUARTZ VEINED
68	175.32	175.76	0.44			MUDSTONE	CARB.MOD.BLK.LAM.BRKN LITHOLOGY AS ABOVE, RAPID TRANSITION TO UNDERLYING SILTSTONE
68	175.76	176.16	0.40			SILTSTONE	MOD.M.GY.LAM.BRKN

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85010

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 66	176.16	178.31	2.15			SILTSTONE	CLYY.MOD.M.GY.LAM.SLD LITHOLOGY AS ABOVE, MORE CLAY RICH TOWA RD BASE
63	178.31	180.32	2.01			SILTSTONE	CLYY.MOD.M.GY.LAM.SLD LITHOLOGY AS ABOVE, ABUNDANT TALC
60	180.32	181.38	1.06			SILTSTONE	SSY.MOD.M.GY.LAM.SLD LONG GRADATION TO SANDSTONE
59	181.38	181.39	0.01			BENTONITE	MOD.LT.GY.SLD SOFT, SHELLS
* 59	181.39	182.01	0.62			SANDSTONE	SLTY.VFG.MOD.M.GY.THNB.BRKN NUMEROUS SILTSTONE LAMINAE AND RIP-UP C LASTS, MINOR QUARTZ VEINING
59	182.01	182.29	0.28			SANDSTONE	SLTY.VFG.MOD.M.GY.THNB.BRKN LITHOLOGY AS ABOVE, MODERATE QUARTZ VEI NING, MORE BROKEN THAN ABOVE, VERY MINO R COAL RIP-UPS
* 60	182.29	182.93	0.64			SANDSTONE	SLTY.VFG.MOD.M.GY.THNB.BRKN LITHOLOGY AS ABOVE, RAPID TRANSITION TO MUDSTONE BELOW

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 35

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85010

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
63	182.93	184.53	1.60		M/N	MUDSTONE	CARB.MOD.BLK.LAM.VBRKN NUMEROUS COAL LAMINAE, MODERATE CALCITE VEINING PARALLEL TO BEDDING, MODERATE TALC ON FRACTURE SURFACES
66	184.53	184.96	0.43		M/N	MUDSTONE	MEL.DK.GY.LAM.SLD LITHOLOGY AS ABOVE, MINOR COAL LAMINAE, ABUNDANT TALC ON FRACTURE SURFACE
* 69	184.96	186.52	1.56		M/N	MUDSTONE	CLYY.MEL.DK.GY.LAM.SLD LITHOLOGY AS ABOVE, VERY SLIGHTLY SILTY , MINOR COAL LAMINAE, BECOMES CARBONACE OUS TOWARDS BASE
58	186.52	188.08	1.56		M/N	SILTSTONE	CLYY.MOD.M.GY.LAM.BRKN SIGMOIDAL CALCITE VEINLETS, MINOR SOFT BENTONITIC SWELLING CLAY (20.0 MM), MIN OR COAL LAMINAE, MORE CARBONACEOUS TOWA RD BASE, GRADUAL LOWER CONTACT
51	188.08	188.51	0.43			MUDSTONE	CARB.VWEL.BLK.LAM.SLD ABUNDANT SMALL PLANT FOSSILS ON BEDDING PLANES
48	188.51	189.04	0.53			MUDSTONE	CARB.VWEL.BLK.LAM.SLD LONG GRADATIONAL CONTACT WITH SILTSTONE BELOW

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 36

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85010

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 40	189.04	190.68	1.64			SILTSTONE	SSY.MOD.M.GY.LAM.XBDG.SLD TOPS UP, CROSS BEDDING, SANDY BANDS TO 100.0 MM WIDE
44	190.68	190.94	0.26			SILTSTONE	SSY.MOD.M.GY.LAM.SLD LITHOLOGY AS ABOVE
46	190.94	192.14	1.20			SILTSTONE	SSY.MOD.M.GY.LAM.BIOTR SLIGHTLY SANDIER THAN ABOVE, RAPID TRAN SITION TO MUDSTONE BELOW
50	192.14	192.74	0.60			MUDSTONE	SLTY.MOD.DK.GY.LAM.SLD
53	192.74	194.06	1.32			MUDSTONE	WEL.BLK.LAM.BRKN MINOR COALY STRINGER, ABUNDANT PLANT HA SH
57	194.06	194.77	0.71			MUDSTONE	VWEL.BLK.LAM.BRKN LITHOLOGY AS ABOVE
* 62	194.77	196.60	1.83			MUDSTONE	VWEL.BLK.LAM.BRKN LITHOLOGY AS ABOVE, ABUNDANT PLANT FRAG MENTS AS ABOVE, SLIGHTLY CARBONACEOUS, CALCITE VEINING PARALLEL TO BEDDING
61	196.60	196.83	0.23			MUDSTONE	VWEL.BLK.LAM.BRKN LITHOLOGY AS ABOVE

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 37

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85010

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 59	196.83	198.68	1.85			MUDSTONE	VWEL.BLK.LAM.SLD LITHOLOGY AS ABOVE, VERY HOMOGENOUS
63	198.68	199.84	1.16			MUDSTONE	VWEL.BLK.LAM.SLD LITHOLOGY AS ABOVE, ABUNDANT COAL STRIN GERS
65	199.84	200.82	0.98			MUDSTONE	SLTY.MOD.DK.GY.LAM.SSD.BRKN ABRUPT TRANSITION TO OVERLYING MUDSTONE
* 69	200.82	202.95	2.13			MUDSTONE	SLTY.MOD.DK.GY.LAM.XBDG.BRKN LITHOLOGY AS ABOVE, SANDY IN PLACES, TO PS UP, SCOUR AND FILL OF CROSS BEDDING
* 70	202.95	205.01	2.06			SILTSTONE	CLYY.MOD.DK.GY.LAM.XBDG.BRKN TOPS UP, CROSS BEDDING, GRADED BEDDING, VERTICAL WORM BURROWS, SCOUR AND FILL PATTERNS, LONG GRADATIONAL CONTACT WITH ABOVE, MINOR QUARTZ VEINING, VERY FINE CARBONACEOUS PLANT FRAGMENTS
70	205.01	205.82	0.81			SILTSTONE	CLYY.MOD.DK.GY.LAM.WRMBU.BRKN LITHOLOGY AS ABOVE, TOPS UP, VERTICAL W ORM BURROWS
70	205.82	206.99	1.17			SILTSTONE	CLYY.MOD.DK.GY.LAM.WRMBU.BRKN LITHOLOGY AS ABOVE, SLIGHTLY SANDY, TOP S UP, GRADED BEDDING, SCOUR PATTERNS

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 38

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85010

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 70	206.99	209.00	2.01			SILTSTONE	CLYY.MOD.M.GY.LAM.BRKN LITHOLOGY AS ABOVE, TOPS UP, SCOUR PATT ERNS, FLAME STRUCTURES
70	209.00	209.06	0.06			SILTSTONE	CLYY.MOD.M.GY.LAM.BRKN LITHOLOGY AS ABOVE
70	209.06	209.78	0.72			SILTSTONE	CLYY.MOD.M.GY.LAM.BRKN LITHOLOGY AS ABOVE, LONG GRADATIONAL CO NTACT WITH UNDERLYING MUDSTONE, ABUNDAN T PLANT HASH ON BEDDING PLANES
71	209.78	211.20	1.42			MUDSTONE	VWEL.DK.GY.LAM.BRKN SILTY AT TOP BUT BECOMES CLEAN AND UNIF ORM LOWER DOWN
* 71	211.20	212.14	0.94			MUDSTONE	VWEL.DK.GY.LAM.BRKN LITHOLOGY AS ABOVE, PLANT HASH
67	212.14	213.24	1.10			MUDSTONE	VWEL.DK.GY.LAM.BRKN LITHOLOGY AS ABOVE, SLIGHTLY MORE CARBO NACEOUS, MODERATE QUARTZ VEINING (TO 5 0.0 MM WIDE), POLISHED LINEATED BEDDING PLANES, MINOR TALC ON FRACTURE SURFACE S
62	213.24	215.22	1.98			MUDSTONE	VWEL.BLK.LAM.BRKN LITHOLOGY AS ABOVE, QUARTZ VEINING (20. 0 TO 70.0 MM WIDE)

* DENOTES MEASURED BCA

FORM 4001

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85010

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
55	215.22	217.34	2.12			MUDSTONE	VWEL.BLK.LAM.SLD LITHOLOGY AS ABOVE, VERY UNIFORM MARINE MOLLUSKSH ELLS, MINOR TALC ON BED PLAN ES, SLIPPAGE SURFACES
50	217.34	218.29	0.95			MUDSTONE	VWEL.BLK.LAM.SLD LITHOLOGY AS ABOVE
46	218.29	219.23	0.94			MUDSTONE	VWEL.BLK.LAM.SLD LITHOLOGY AS ABOVE, MINOR COAL LAMINAE, VERY UNIFORM
* 42	219.23	220.85	1.62			MUDSTONE	VWEL.BLK.LAM.SLD LITHOLOGY AS ABOVE, MINOR CALCITE VEINI NG, COAL LAMINAE, POLIAMED STRIATED BED DING PLANES
42	220.85	221.24	0.39			MUDSTONE	VWEL.BLK.LAM.SLD LITHOLOGY AS ABOVE, MINOR COAL LAMINAE, EXTENSIVE TALC ON SLIPPAGE SURFACES
43	221.24	221.61	0.37			CLAYSTONE	M.GY.MAS.SLD
43	221.61	221.62	0.01			ANKERITE	WH

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85010

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
43	221.62	222.11	0.49			CLAYSTONE	CARB.DK.GY.BRKN FEW COAL VEINS
43	222.11	222.56	0.45	07386		CLAYSTONE	CARB.BLK.BRKN LISTRIL SURFACE, ANKERITE VEINS
43	222.56	222.80	0.24	07387	M	COAL LOSS	
43	222.80	223.13	0.33	07387	M	COAL	C-2.VBRKN
43	223.13	223.20	0.07	07387	M	CLAYSTONE	CARB.BLK.BRKN
43	223.20	223.45	0.25	07387	M	COAL	C-2.BRKN
44	223.45	223.48	0.03	07387	M	CLAYSTONE	CARB.BLK.SLD ANKERITE VEINING
44	223.48	223.52	0.04	07387	M	COAL	C-3.SLD
44	223.52	223.60	0.08	07387	M	CLAYSTONE	CARB.BLK.BRKN
44	223.60	223.80	0.20	07387	M	COAL	C-1.VBRKN WEATHERED

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 41

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85010

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
44	223.80	223.84	0.04	07387	M	CLAYSTONE	CARB.BLK,VBRKN
44	223.84	224.47	0.63	07387	M	COAL	C-1,SHRD
44	224.47	224.97	0.50	07387	M	COAL LOSS	
44	224.97	225.17	0.20	07387	M	ROCK LOSS	
44	225.17	225.30	0.13	07387	M	CLAYSTONE	CARB.SLD ANKERITE VEINING
44	225.30	225.62	0.32	07387	M	COAL	C-1,VBRKN SLIGHTLY WEATHERED.
45	225.62	225.94	0.32	07387	M	COAL	C-2.BRKN
45	225.94	225.95	0.01	07387	M	COAL LOSS	
45	225.95	226.01	0.06	07388	M	CLAYSTONE	CARB.M.GY
45	226.01	226.29	0.28	07388	M	CLAYSTONE	CARB.BLK.SHRD LISTRIC
45	226.29	226.42	0.13	07388	M	COAL	C-1,PHRD

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 42

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85010

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
45	226.42	227.08	0.66	07388	M	CLAYSTONE	CARB.DK.GY.BRKN
45	227.08	227.47	0.39	07389	M	COAL	C-1,VBRKN
45	227.47	227.80	0.33	07389	M	COAL	C-1,VBRKN WEATHERED
45	227.80	227.96	0.16	07389	M	COAL LOSS	
46	227.96	228.03	0.07	07389	M	CLAYSTONE	CARB.DK.GY.SLD BANDED WITH COAL
46	228.03	228.20	0.17	07389	M	COAL	C-2.BRKN
46	228.20	228.22	0.02	07389	M	COAL LOSS	
46	228.22	228.26	0.04	07390		CLAYSTONE	CARB.BLK.VBRKN ANKERITE VEINING
46	228.26	228.58	0.32	07390		CLAYSTONE	CARB.BLK.SLD VERTICAL ANKERITE FILLED FRACTURES
46	228.58	228.61	0.03			COAL LOSS	
46	228.61	228.64	0.03			COAL	C-3.SLD ANKERITE IN CLEAT, CLAYSTONE BANDS

* DENOTES MEASURED BCA

FORM 4001

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85010

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
46	228.64	228.78	0.14			CLAYSTONE	CARB.SLD
46	228.78	228.79	0.01			PYRITE	YEL
46	228.79	229.67	0.88			CLAYSTONE	CARB.DK.GY.MAS.SLD LESS CARBONACEOUS DOWNHOLE
47	229.67	230.70	1.03			MUDSTONE	SLTY.MOD.DK.GY.LAM.BRKN
* 47	230.70	231.80	1.10			MUDSTONE	SLTY.MOD.DK.GY.LAM.BRKN MINOR CALCITE VEINING PERPENDICULAR TO BEDDING

* DENOTES MEASURED BCA
NEWPAGE

URM 4001

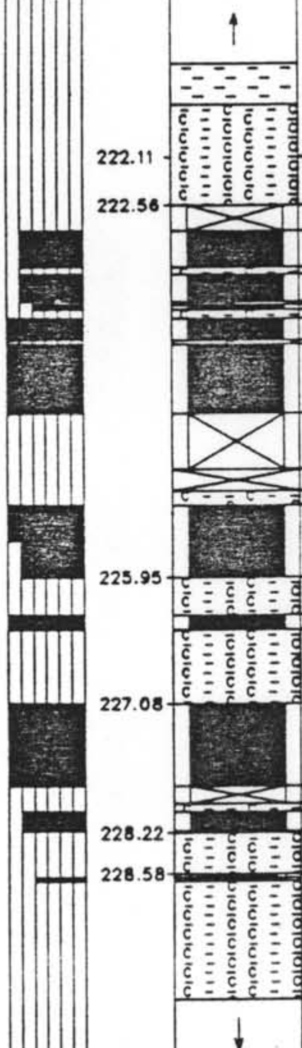
GULF CANADA RESOURCES INC.

COAL DIVISION
MOUNT KLAPPAN PROJECT

SEAM DETAIL — **TRUE THICKNESS**

DATA SOURCE: KPN LR DDH85010 — SEAM : M — INTERVAL(M) : 222.11 - 228.58 — ELEVATION(M) : 1752.7

GEOLOGIST : K. JENNER — SCALE: — DATE : DEC 19/85 — DRAWING NO. :



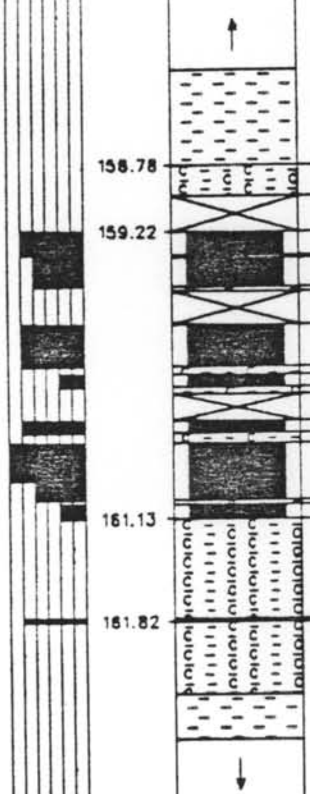
SEAM COMP. 1 2 3 4 5 6	DRILL DEPTH METRES	INTERVAL (METRES) ROCK	COAL	% REC.	SAMPLE ID SIMP	COMP	COAL/ROCK TOTAL COMPOS	MINING SECTION	RES MOIST	ASH	VM	FC	TS	CAL.VAL MJ/KG	
	222.11	0.31		100.0	7386										
	222.56		(0.18)	72.3	7387	37	2.82 / 1.14 3.96		2.28	38.23	7.10	52.41	0.40	19.93	—
			0.23												
		[illegible]													
			0.17												
		[illegible]	[illegible]												
		[illegible]													
			0.14												
		[illegible]													
			0.44												
			(0.35)												
		(0.14)													
		0.09													
			0.48												
	225.95	0.24		100.0	7388										
			0.09												
		0.47													
	227.08		0.51	84.2	7389										
			(0.11)												
		[illegible]													
			(0.13)												
	228.22	0.28		100.0	7390										
	228.58														

GULF CANADA RESOURCES INC.

COAL DIVISION
MOUNT KLAPPAN PROJECT

SEAM DETAIL | **TRUE THICKNESS**

DATA SOURCE:	KPN LR DDH85010	SEAM : H	INTERVAL(M) : 158.78 – 161.82	ELEVATION(M) :	1752.7
GEOLOGIST :	K. JENNER –	SCALE:	DATE : DEC 19/85	DRAWING NO. :	



SEAM COMP.	DRILL DEPTH (METRES)	INTERVAL (METRES) ROCK	INTERVAL (METRES) COAL	% REC.	SAMPLE ID SIMP	SAMPLE ID COMP	COAL/ROCK TOTAL COMPOS	COAL/ROCK TOTAL MINING SECTION	RES MOIST	ASH	VM	FC	TS	CAL.VAL MJ/KG
	158.78	0.19		46.5	7382									
		(0.23)												
	159.22		0.14	79.0	7383	36	1.19 / 0.62 1.81		1.00	33.87	7.17	57.96	0.39	22.25
		[illegible]												
			0.18											
		[illegible]												
		(0.21)												
			0.27											
		[illegible]												
			[illegible]											
		[illegible]												
		(0.17)												
			[illegible]											
		[illegible]												
			0.36											
		[illegible]												
			0.05											
	161.13	0.63		100.0	7384									
			[illegible]											
	161.82													

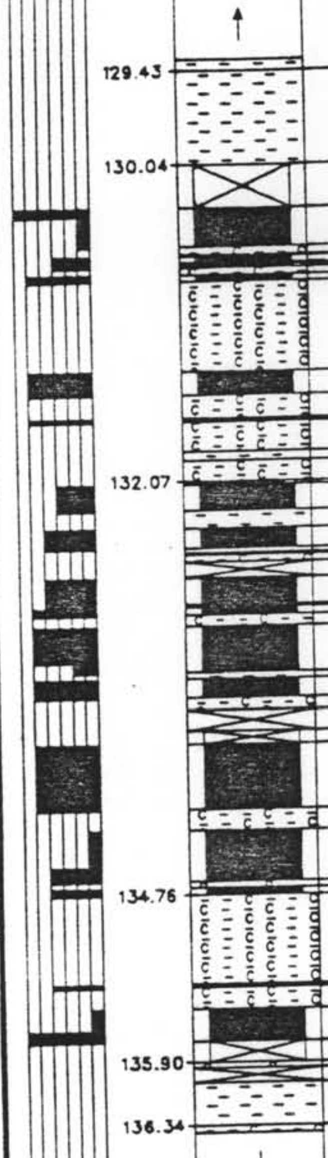
SEAM DETAIL

GULF CANADA RESOURCES INC.

COAL DIVISION
MOUNT KLAPPAN PROJECT

TRUE THICKNESS

DATA SOURCE:	KPN LR DDH85010	SEAM : O	INTERVAL(M) : 129.43 – 136.34	ELEVATION(M) :	1752.7
GEOLOGIST :	K. JENNER	SCALE:	DATE : DEC 19/85	DRAWING NO. :	-



DRILL DEPTH (METRES)	INTERVAL (METRES) ROCK	INTERVAL (METRES) COAL	% REC.	SAMPLE ID SIMP	SAMPLE ID COMP	COAL/ROCK TOTAL COMPOS	MINING SECTION	RES MOIST	ASH	VM	FC	TS	CAL.VAL MJ/KG	
129.43 – 130.04	0.60		100.0	7377										
130.04 – 132.07	0.57, 0.10, 0.19, 0.13	(0.27), 0.25, 0.04, 0.10, (0.02)	88.8	7378	33	0.79 / 1.20 1.99		1.77	44.92	9.00	44.31	0.51	16.84	—
132.07 – 134.76	0.11, (0.10), 0.07, 0.04, 0.09, (0.14), 0.13, 0.04	0.17, 0.13, 0.17, 0.29, 0.12, (0.02), 0.41, 0.32	86.6	7379	34	1.81 / 0.80 2.80		2.58	30.27	7.83	59.32	0.56	22.94	—
134.76 – 135.90	0.56, 0.14	0.20, (0.14)	87.1	7380	35	0.36 / 0.70 1.06		1.71	63.81	8.05	26.43	1.22	11.14	—
135.90 – 136.34	0.04, (0.08), 0.27		77.2	7381										

COAL QUALITY A.D.B.

GULF CANADA RESOURCES INC.

COAL DIVISION
MOUNT KLAPPAN PROJECT

SEAM DETAIL | **TRUE THICKNESS**

DATA SOURCE: KPN LR DDH85010	SEAM : P	INTERVAL(M) :	73.40 – 73.62	ELEVATION(M) :	1752.7
GEOLOGIST : K. JENNER	SCALE:	DATE :	DEC 19/85	DRAWING NO. :	

SEAM COMP. (1 2 3 4 5 6)	DRILL DEPTH (METRES)	COAL SEAM LOG	INTERVAL (METRES) ROCK	INTERVAL (METRES) COAL	% REC.	SAMPLE ID SIMP	SAMPLE ID COMP	COAL/ROCK TOTAL COMPOS	COAL/ROCK TOTAL MINING SECTION	COAL QUALITY A.D.B. RES MOIST	ASH	VM	FC	TS	CAL.VAL MJ/KG	
	73.40 – 73.62			0.22	100.0	7400	7400	0.22 / 0.00 0.22		1.83	26.97	—	—	—	—	—

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Gulf Canada Resources Inc.
Coal Division
Geophysical Log

Datasource:	**KPNLRDDH85010**	Province: BC	Northing: 6344570.00	Lat:	571446
Log Date:	85-03-31	Zone: 9	Easting: 506921.00	Long:	1285307
Company:	CENTURY	Measuring Point:		Elevation:	
Geologist:	K. JENNER				

Scale: 1 to 100.0

Depth Range: 0.0 to 236.0

True Thickness: NO

Comments:

1. LOGGED THROUGH THE RODS
2.

Logs Plotted:

Description	Axis Range	Axis Length	Smoothing Points	Tool	Comments
1. GAMMA API	0.0 to 150.0	10.0	31	9030A	IN PIPE
2. NEUTRON-NEUTRON CPS	0.0 to 2500.0	10.0	9	9067	IN PIPE
3. DENSITY G/CC	1.0 to 3.0	10.0	15	9030A	IN PIPE

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GULF CANADA RESOURCES INC.
COAL DIVISION
KLAPPAN PROJECT
STRATIGRAPHIC LOG
KPN LR DDH85010

GEOLOGIST : K. JENNER | DATE : JAN 08/86 | DRAWING NO. :

SCALE : 1:200 1:40

NORTHING: 6344570.0 N INCLINATION: 90.0°
EASTING: 506920.8 E

LITHOLOGIC SYMBOLS

SANDSTONE, SILTSTONE, COAL, OVERBURDEN, MUDSTONE,CLAYSTONE, TUFF, LIMESTONE, CORE LOSS, BENTONITE, BRECCIA, CARBONACEOUS, QUARTZ, PYRITE, FERRUGINOUS, CONGLOMERATE, FOSSIL BED

KPNLRDDH85011

================================ GULF CANADA RESOURCES INC. ================================

- D A T A   S O U R C E   S U M M A R Y -

DATA SOURCE - KPNLRDDH85011　　　　　　DATE - 01/09/86

- H I S T O R Y -

START DATE - 03/31/85
END DATE - 04/02/85

CONTRACTOR - J.T. THOMAS　　　　　　OPERATOR - GCRI
GEOLOGIST - M. BARKER　　　　　　SURVEYOR - MWG & ASS.

REMARKS - SITE O

- L O C A T I O N -

PROVINCE - BC　　　　　　ZONE - 9
ELEVATION - 1625.70　　　　　　NORTHING - 6344833.00
　　　　　　EASTING - 507124.50

LICENCE/LEASE NUMBER - 7151

　　　　　　LATITUDE - 571454
　　　　　　LONGITUDE - 1285255

- O R I E N T A T I O N -

LENGTH - 162.50　　　　　　INCLINATION - 75.0
　　　　　　AZIMUTH - 45.0

CORE SIZE - 0.0

CEMENT -　　　　　　CASING DEPTH(M) - 16.15
PLUG -　　　　　　AQUIFER DEPTHS(M) - 0.00
PIEZ -　　　　　　0.00
　　　　　　LOST CIRC. DEPTHS(M) - 0.00
　　　　　　0.00

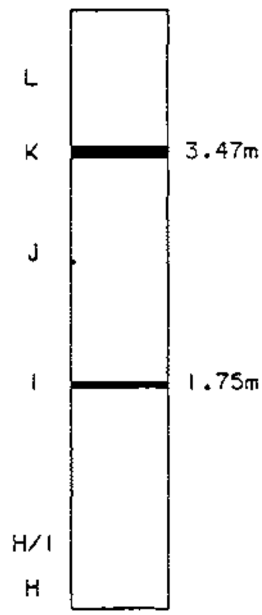
*** NOTE *** 0 INDICATES NO VALUE

==

MT. KLAPPAN COAL PROPERTY

1985 DIAMOND DRILL HOLES
DDH85011

SEAM — TRUE SEAM THICKNESS (COAL & ROCK)



NOTE: SCHEMATIC PROFILE.
NO THICKNESSES SHOWN
FOR SEAMS CONTAINING
LESS THAN 50cm COAL.

SCALE: 1:2000

GULF CANADA RESOURCES INC.
15/01/86

FILE NAME ZF0:[205,57]85[048009.LOG

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 1

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85011

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
65	0.00	16.15	16.15			OVERBURDEN	CASING TO 16.15 METRES
65	16.15	16.36	0.21			MUDSTONE	CARB.VPR.DK.GY.MAS.VBRKN CRUSHED, SILTY
65	16.36	16.97	0.61			ROCK LOSS	
65	16.97	17.37	0.40		L	MUDSTONE	CARB.VPR.DK.GY.VTHNB.VBRKN OCCASIONAL QUARTZ VEINS, OCCASIONAL COA LY LENSES, LAMINAE GRADING FROM CLAY TO SILTSTONE IN PLACES, SILTY
65	17.37	17.88	0.51		L	ROCK LOSS	
65	17.88	18.43	0.55		L	MUDSTONE	CARB.VPR.DK.GY.VTHNB.VBRKN OCCASIONAL QUARTZ VEINS, MODERATELY COA LY LENSES
65	18.43	18.82	0.39			CLAYSTONE	SLTY.VPR.DK.GY.LAM.VBRKN SLIGHTLY MOTTLED WITH PLANT HASH, CORE CRUSHED
65	18.82	19.40	0.58			ROCK LOSS	

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 2

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85011

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 65	19.40	20.42	1.02			CLAYSTONE	SLTY.VPR.DK.GY.LAM.SSD.VBRKN VERY FINE SILTY LAMINAE, TOPS UP, FLAME STRUCTURES
65	20.42	20.58	0.16			CLAYSTONE	SLTY.VPR.DK.GY.LAM.VBRKN LITHOLOGY AS ABOVE
* 65	20.58	22.31	1.73			CLAYSTONE	SLTY.VPR.DK.GY.LAM.VBRKN LITHOLOGY AS ABOVE, VERY FINE LAMINAE, TOPS UP, SCOUR MARKS, SOME LAMINAE GRAD ING TO VERY FINE GRAINED SANDSTONE
* 65	22.31	22.91	0.60			CLAYSTONE	SLTY.VPR.DK.GY.LAM.VBRKN LITHOLOGY AS ABOVE
65	22.91	23.47	0.56			ROCK LOSS	
65	23.47	24.84	1.37			CLAYSTONE	SLTY.VPR.DK.GY.LAM.SSD.VBRKN LITHOLOGY AS ABOVE, TOPS UP, FLAME STRU CTURES, SCOURS, LOADING
* 65	24.84	26.08	1.24			CLAYSTONE	SLTY.VPR.DK.GY.LAM.VBRKN LITHOLOGY AS ABOVE, OCCASIONAL QUARTZ V EINS (10.0 MM WIDE)
67	26.08	26.20	0.12			CLAYSTONE	SLTY.VPR.DK.GY.LAM.VBRKN LITHOLOGY AS ABOVE

* DENOTES MEASURED BCA

FORM 4001

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85011

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 67	26.20	26.53	0.33			CLAYSTONE	SLTY.VPR.DK.GY.LAM.BRKN LITHOLOGY AS ABOVE, GRADATIONAL LOWER C ONTACT
* 65	26.53	27.95	1.42	07954		CLAYSTONE	VWEL.LT.GY.VTHNB.VBRKN EXTREMELY FINE GRAINED LIGHT GREY, NOTI CEABLE COLOUR GRADING BETWEEN LIGHT SWE LLING CLAY BANDS AND SLIGHTLY DARKER, M UCH DENSER BANDS, QUITE SOFT, DENSER BA NDS HAVE CONCHOIDAL FRAC.
57	27.95	28.48	0.53			ROCK LOSS	
52	28.48	29.07	0.59			CLAYSTONE	VWEL.LT.GY.MAS.VBRKN LITHOLOGY AS ABOVE, ALL MASSIVE, VERY H ARD, DENSE, VERY UNIFORM
46	29.07	29.95	0.88			ROCK LOSS	
* 40	29.95	30.57	0.62			CLAYSTONE	VWEL.LT.GY.MAS.VBRKN VERY HARD, SHATTERS WHEN HIT WITH HAMME R, MINOR DARKER GREY STREAKS PARALLEL T O BEDDING (0.5 MM WIDEX 1.0 TO 2.0 MM L ONG), SLIGHTLY CALCAREOUS

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85011

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
48	30.57	31.36	0.79			CLAYSTONE	VWEL.LT.GY.VTHNB.VBRKN LITHOLOGY AS ABOVE, BANDS GRADING FROM DENSER DARKER CLAYSTONE TO VERY SOFT LI GHTER GREY BANDS (BENTONITE?)
52	31.36	31.45	0.09			CLAYSTONE	SLTY.DK.GY.MAS.VBRKN ABOVE UNIT GRADING SLOWLY TO HARD DENSE DARK GREY SILTY CLAYSTONE, SHARP LOWER CONTACT
* 55	31.45	31.87	0.42			CLAYSTONE	VWEL.LT.GY.VTHNB.VBRKN LITHOLOGY AS LIGHT GREY CLAYSTONE UNIT ABOVE, GRADATIONAL LOWER CONTACT
60	31.87	32.81	0.94			ROCK LOSS	
* 70	32.81	34.31	1.50			CLAYSTONE	CARB.PR.DK.GY.LAM.VBRKN COARSER SILTY LAMINAE THROUGHOUT, VERY FINE LAMINAE
63	34.31	35.22	0.91			CLAYSTONE	CARB.PR.BLK.MAS.VBRKN RARE SILTY LAMINAE, PREDOMINANTLY MASSI VE
60	35.22	35.53	0.31			CLAYSTONE	CARB.PR.BLK.MAS.VBRKN LITHOLOGY AS ABOVE, CONCHOIDAL FRACTURE S, PLANT HASH RARE OR ABSENT

* DENOTES MEASURED BCA

F.M 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 5

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85011

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
58	35.53	35.82	0.29			CLAYSTONE	M.BN.BRKN
57	35.82	35.84	0.02			COAL	C-2.BRKN ANKERITE VEINING
* 55	35.84	36.49	0.65	07391		CLAYSTONE	BLK.BRKN FEW COALY BANDS
56	36.49	36.58	0.09	07392	K	COAL LOSS	
56	36.58	36.90	0.32	07392	K	COAL	C-6.BRKN
56	36.90	37.10	0.20	07392	K	CLAYSTONE	CARB.BLK.BRKN VERY COALY
57	37.10	37.28	0.18	07392	K	COAL	C-2.BRKN
57	37.28	37.35	0.07	07392	K	COAL	C-5.BRKN
57	37.35	37.39	0.04	07392	K	COAL	C-4.SLD
57	37.39	37.47	0.08	07392	K	COAL	C-2.BRKN

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 6

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85011

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
57	37.47	37.50	0.03	07392	K	CLAYSTONE	CARB.BLK.SLD
57	37.50	37.54	0.04	07392	K	COAL	C-4.PHRD
57	37.54	37.75	0.21	07392	K	COAL LOSS	
58	37.75	38.05	0.30	07392	K	CLAYSTONE	CARB.BLK.SHRD LISTRIC, SOFT
58	38.05	38.17	0.12	07392	K	CLAYSTONE	BLK.SLD SOFT
58	38.17	38.40	0.23	07392	K	COAL	C-3.BRKN
59	38.40	38.65	0.25	07392	K	CLAYSTONE	CARB.BLK.BRKN COALY BANDS
59	38.65	38.74	0.09	07392	K	COAL	C-2.BRKN
59	38.74	38.82	0.08	07392	K	CLAYSTONE	CARB.BLK.VBRKN SLIGHTLY SOFT
59	38.82	38.87	0.05	07392	K	ROCK LOSS	
59	38.87	38.91	0.04	07393	K	COAL LOSS	

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 7

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85011

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
59	38.91	39.07	0.16	07393	K	COAL	C-2,BRKN
60	39.07	39.18	0.11	07393	K	CLAYSTONE	CARB,BLK,BRKN COAL BANDS
60	39.18	39.33	0.15	07393	K	COAL	C-3,BRKN
60	39.33	39.36	0.03	07393	K	CLAYSTONE	CARB,BLK,SLD
61	39.36	40.13	0.77	07393	K	COAL	C-1,BRKN
61	40.13	40.17	0.04	07393	K	CLAYSTONE	CARB,BLK,BRKN
61	40.17	40.28	0.11	07393	K	COAL	C-1,BRKN
62	40.28	40.55	0.27	07393	K	CLAYSTONE	CARB,BLK,PHRD SOME COAL
62	40.55	40.99	0.44	07394	K	SILTSTONE	CLYY,M.GY,MAS,SLD COAL BANDS
63	40.99	42.02	1.03	07394	K	CLAYSTONE	M.GY,MAS,BRKN

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 8

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85011

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
64	42.02	42.16	0.14	07395	K	COAL	C-1,BRKN CLAYSTONE LENSES
64	42.16	42.20	0.04	07395	K	CLAYSTONE	CARB,BLK,SHRD LISTRIC, SOFT
65	42.20	42.59	0.39	07395	K	COAL	C-1,BRKN
65	42.59	42.65	0.06	07395	K	CLAYSTONE	CARB,BLK,SLD SOFT WITH COALY STREAKS
65	42.65	42.68	0.03	07395	K	COAL	C-1,SLD ANKERITE VEINS
65	42.68	42.74	0.06	07396		CLAYSTONE	SOFT, AS ABOVE, WITH ANKERITE VEINS
66	42.74	43.23	0.49			MUDSTONE	CARB.VWEL.BLK.LAM.VBRKN COAL LAMINAE, RAPID GRADING TO MUDSTONE BELOW
66	43.23	43.57	0.34			MUDSTONE	VWEL,DK,GY,LAM,BRKN LIGHTER COLOR THAN ABOVE COAL LAMINAE, ABUNDANT PLANT FRAGMENTS
68	43.57	44.73	1.16			MUDSTONE	VWEL,DK,GY,LAM,BRKN LITHOLOGY AS ABOVE, SLIGHTLY SILTY TOWA RDS BASE, VERY CARBONACEOUS BANDS

* DENOTES MEASURED BCA

URM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85011

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
69	44.73	44.78	0.05			ROCK LOSS	
* 70	44.78	46.61	1.83			MUDSTONE	SLTY.MOD.DK.GY.LAM.WRMBU.BRKN SILTIER THAN ABOVE, TOPS UP, VERTICAL W ORM BURROWS, VERY SILTY TOWARDS BASE, T ALC
* 71	46.61	47.16	0.55			SILTSTONE	SSY.PR.M.GY.LAM.BRKN GRADES TO SANDSTONE
64	47.16	48.81	1.65			SANDSTONE	FG.MOD.M.GY.MAS.BRKN UNIFORM, TALC IN FRACTURES, POLISHED SL IPPAGE SURFACES, QUARTZ VEINS AT ANGLE TO BEDDING, COARSENS SLIGHTLY DOWNHOLE
* 55	48.81	49.91	1.10			SANDSTONE	FG.MOD.M.GY.MAS.BRKN LITHOLOGY AS ABOVE, MINOR VEINING, EARL Y QUARTZ, LATE CALCITE MGS
56	49.91	50.82	0.91			SANDSTONE	FG.VWEL.M.GY.MAS.SLD LITHOLOGY AS ABOVE, VERY UNIFORM, QUART Z VEINING PERPENDICULAR TO BEDDING
58	50.82	52.32	1.50			SANDSTONE	FG.VWEL.M.GY.MAS.SLD LITHOLOGY AS ABOVE, FINES DOWNHOLE SLIG HTLY, ABUNDANT STRIATED TALC ON FRACTUR ES AT HIGH ANGLES TO BEDDING

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85011

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
59	52.32	52.78	0.46			SANDSTONE	VFG.VWEL.M.GY.MAS.SLD FINER THAN ABOVE BUT SIMILARLY UNIFORM
60	52.78	53.85	1.07			SANDSTONE	VFG.VWEL.M.GY.MAS.SLD TALC ON HIGH ANGLE FRACTURES
62	53.85	54.65	0.80			SANDSTONE	VFG.VWEL.M.GY.MAS.VBRKN RUBBLED CORE IN PLACES, LITHOLOGY AS AB OVE, MINOR QUARTZ VEINING, EXTENSIVE CO RE LOSS
65	54.65	58.26	3.61			ROCK LOSS	
68	58.26	59.95	1.69			SANDSTONE	VFG.VWEL.M.GY.MAS.BRKN LITHOLOGY AS ABOVE, MINOR QUARTZ VEININ G
70	59.95	60.28	0.33			SANDSTONE	VFG.VWEL.M.GY.MAS.BRKN LITHOLOGY AS ABOVE
71	60.28	60.98	0.70			SANDSTONE	FG.MOD.M.GY.MAS.BRKN COARSENS THEN FINES TO SILTSTONE, QUART Z VEINING
* 72	60.98	62.44	1.46			SILTSTONE	SSY.MOD.M.GY.LAM.XBDG.SLD TOPS UP, CROSS BEDDING, GRADED BEDDING

* DENOTES MEASURED BCA

FCRM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 11

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85011

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 70	62.44	63.02	0.58			SILTSTONE	CLYY.PR.DK.GY.LAM.BRKN FINELY LAMINATED SILTY AND CLAYSTONE LA MINAE
70	63.02	64.36	1.34			SILTSTONE	CLYY.PR.DK.GY.LAM.BRKN LITHOLOGY AS ABOVE
70	64.36	65.04	0.68			ROCK LOSS	
* 70	65.04	65.96	0.92			CLAYSTONE	SLTY.PR.DK.GY.LAM.VBRKN PARTS EASILY ALONG BEDDING, LITHOLOGY A S ABOVE
* 70	65.96	67.36	1.40			CLAYSTONE	SLTY.PR.DK.GY.LAM.VBRKN LITHOLOGY AS ABOVE
* 65	67.36	69.36	2.00			CLAYSTONE	SLTY.PR.DK.GY.LAM.BRKN PARTS EASILY ALONG BEDDING, VERGING ON 'COASTER' ZONE, NUMEROUS CYCLES OF GRAD ED BEDDING, TOPS UP
71	69.36	70.10	0.74			CLAYSTONE	SLTY.M-DK.GY.LAM.BRKN 'COASTER' ZONE, QUARTZ VEINS, MODERATEL Y FISSILE, POLISHED FRACTURE SURFACES
* 73	70.10	70.56	0.46			CLAYSTONE	DK.GY.LAM.BRKN LESS FISSILE, FAINTER BANDING, MORE CLA YEY

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 12

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85011

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
74	70.56	70.94	0.38		J	CLAYSTONE	CARB.BLK.MAS.VBRKN VERY CARBONACEOUS, OCCASIONAL QUARTZ VE INS
* 75	70.94	71.12	0.18			CLAYSTONE	SLTY.DK.GY.MAS.SLD MASSIVE DARK GREY CLAYSTONE
66	71.12	71.30	0.18			CLAYSTONE	SLTY.DK.GY.MAS.SLD SLITHTLY MOTTLED, ONE QUARTZ VEIN (2.0 MM WIDE)
* 35	71.30	72.33	1.03			SILTSTONE	SSY.M.GY.LAM.WRMBU.BRKN VERY DISRUPTED LAYER, INTERLAYERED SILT STONES AND FINE GRAINED SANDSTONES, NUM EROUS SCOURS (SLUMP FEATURE?), MODERATE QUARTZ VEINING AT VARIOUS ANGLES TO BE DDING, WORM BURROWS?, TOPS UP, LAMINATE D TO MASSIVE BEDDING
* 66	72.33	73.19	0.86			CLAYSTONE	SLTY.DK.GY.LAM.VBRKN FAINTLY LAMINATED, MODERATE QUARTZ VEIN ING
52	73.19	73.52	0.33			CLAYSTONE	DK.GY.MAS.VBRKN VERY UNIFORM, CORE CRUSHED IN PLACES

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 13

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85011

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 60	73.52	74.74	1.22			CLAYSTONE	DK.GY.MAS.VBRKN PREDOMINANTLY MASSIVE, VERY UNIFORM, VE RY FAINT BANDING IN ONE AREA, SLIGHTLY CARBONACEOUS NEARBASE
62	74.74	75.45	0.71			CLAYSTONE	CARB.DK.GY.MAS.VBRKN MANY CRUSHED AREAS, PREDOMINANTLY MASSI VE, FOSSIL LEAVES (GINKGO?), INFILLED W ITH QUARTZ, SILTY
63	75.45	76.17	0.72			SANDSTONE	FG.PR.M.GY.VTHNB.VBRKN PARTLY CRUSHED DARK WISPY SILTY LAMINAE
64	76.17	76.24	0.07			SANDSTONE	FG.PR.M.GY.VTHNB.SLD LITHOLOGY AS ABOVE
66	76.24	78.26	2.02			SANDSTONE	VFG-.VWEL.M.GY.MAS.BRKN TALC, CALCITE VEINED, VERY FINE GRAINED TO FINE GRAINED SANDSTONE
* 70	78.26	80.35	2.09			SANDSTONE	VFG-.VWEL.M.GY.MAS.BIOTR.BRKN LITHOLOGY AS ABOVE,MODERATE QUARTZ VEIN S PARALLEL AND PERPENDICULAR TO BEDDING , TOPS UP, DESSICATION CRACKS, VERY FIN E GRAINED TO FINE GRAINED SANDSTONE

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 14

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85011

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
70	80.35	81.79	1.44			SANDSTONE	SLTY.VFG-.MOD.M.GY.MAS.WRMBU.BRKN VERTICAL AND HORIZONTAL WORMBURROWS, SI LTIER THAN ABOVE, GRADATIONAL LOWER CON TACT, VERY FINE GRAINED TO FINE GRAINED SANDSTONE
70	81.79	82.27	0.48			SILTSTONE	SSY.MOD.M.GY.LAM.WRMBU.BRKN HORIZONTAL WORMBURROWS, VERY SANDY
70	82.27	82.41	0.14			SILTSTONE	SSY.MOD.M.GY.LAM.WRMBU.BRKN LITHOLOGY AS ABOVE
* 70	82.41	84.22	1.81			SILTSTONE	SSY.MOD.M.GY.LAM.WRMBU.BRKN LITHOLOGY AS ABOVE, HORIZONTAL WORMBURR OWS, SLIGHTLY CARBONACEOUS, POLISHED SL IPPAGE SURFACES, MINOR QUARTZ VEINING P ARALLEL TO BEDDING
* 69	84.22	85.56	1.34			SILTSTONE	SSY.MOD.M.GY.LAM.WRMBU.BRKN LITHOLOGY AS ABOVE
69	85.56	86.05	0.49			SILTSTONE	SSY.MOD.M.GY.LAM.WRMBU.BRKN LITHOLOGY AS ABOVE, HORIZONTAL WORMBURR OWS, TOPS UP, SCOUR AND FILL PATTERNS
68	86.05	88.13	2.08			SILTSTONE	SSY.MOD.M.GY.LAM.WRMBU.BRKN HORIZONTAL AND VERTICAL WORMBURROWS, TO PS UP, LITHOLOGY AS ABOVE

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 15

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85011

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
67	88.13	88.65	0.52			SILTSTONE	SSY.MOD.M.GY.LAM.WRMBU.BRKN LITHOLOGY AS ABOVE
* 67	88.65	90.10	1.45			SILTSTONE	SSY.MOD.M.GY.LAM.WRMBU.BRKN LITHOLOGYAS ABOVE, HORIZONTAL AND VERTI CAL WORMBURROWS, MINOR QUARTZ VEINING P ARALLEL TO BEDDING
60	90.10	91.71	1.61			SILTSTONE	VWEL.DK.GY.LAM.WRMBU.BRKN CLEANER THAN ABOVE, TOPS UP, VERTICAL W ORMBURROWS
56	91.71	92.09	0.38			SILTSTONE	VWEL.DK.GY.LAM.WRMBU.BRKN LITHOLOGY AS ABOVE, VERY MINOR TALC
50	92.09	94.18	2.09			SILTSTONE	CLYY.MOD.DK.GY.LAM.VBRKN SLIGHTLY CARBONACEOUS, POLISHED SLIPPAG E SURFACES
44	94.18	94.68	0.50			SILTSTONE	CLYY.MOD.DK.GY.LAM.VBRKN LITHOLOGY AS ABOVE, MINOR QUARTZ VEININ G PARALLEL TO BEDDING, STRIATED SLIPPAG E SURFACES
40	94.68	96.16	1.48			SILTSTONE	CLYY.MOD.DK.GY.LAM.VBRKN LITHOLOGY AS ABOVE, MODERATE TALC ON FR ACTURE PLANES, STRIATED SLIPPAGE SURFAC ES, CLAYEY AND UNCONSOLIDATED IN PLACES

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 16

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85011

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 35	96.16	96.82	0.66			MUDSTONE	SLTY.M-DK.GY.LAM.WRMBU.VBRKN LAMINAE GRADING FROM LIGHT GREY CLAYSTO NE TO FINE GRAINED SANDSTONE, OCCASIONA L FINE QUARTZ VEINS WITH TALC, TOPS UP
34	96.82	97.23	0.41			MUDSTONE	SLTY.M-DK.GY.LAM.WRMBU.VBRKN LITHOLOGY AS ABOVE, TOPS UP
* 33	97.23	98.17	0.94			SILTSTONE	M.GY.LAM.XBDG.VBRKN INTENSE QUARTZ VEINING
* 60	98.17	98.80	0.63			SILTSTONE	M.GY.LAM.XBDG.BRKN FINE DARK GREY SILTY LAMINAE THROUGHOUT , FINE SETS OF CROSS-BEDS THROUGHOUT, O CCASIONAL QUARTZ VEINS, TOPS UP
66	98.80	99.77	0.97			SILTSTONE	M.GY.LAM.XBDG.BRKN LITHOLOGY AS ABOVE, TOPS UP
* 70	99.77	100.00	0.23			SILTSTONE	M.GY.LAM.VBRKN LITHOLOGY AS ABOVE
70	100.00	100.33	0.33			CLAYSTONE	VWEL.LT.GY.THNB.VBRKN BENTONITE?, PREDOMINANTLY MASSIVE, SHAR P UPPER AND LOWER CONTACTS

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 17

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85011

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
69	100.33	101.06	0.73			SILTSTONE	CLYY.DK.GY.VTHNB.VBRKN SOME AREAS VERY CLAY RICH AND CARBONACE OUS, OCCASIONAL COAL STRINGERS NEAR BAS E (1.0 MM WIDE), MUCH CLAYIER TOWARDS B ASE
68	101.06	101.42	0.36			CLAYSTONE	CARB.M.GY.LAM.BRKN
68	101.42	101.44	0.02	07397		ANKERITE	MM
68	101.44	101.56	0.12	07398	I	COAL LOSS	
68	101.56	101.67	0.11	07398	I	COAL	C-4.VBRKN

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 18

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85011

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
68	101.67	101.79	0.12	07398	I	ROCK LOSS	
68	101.79	101.83	0.04	07398	I	CLAYSTONE	CARB.BLK.BRKN
68	101.83	101.94	0.11	07398	I	COAL	C-6.SLD COMPRESSED POWDER
68	101.94	102.05	0.11	07398	I	CLAYSTONE	CARB.BLK SOFT
67	102.05	102.14	0.09	07398	I	COAL	C-6.VBRKN
67	102.14	102.53	0.39	07398	I	COAL	C-2.VBRKN
67	102.53	102.61	0.08	07398	I	ROCK LOSS	
67	102.61	102.72	0.11	07398	I	CLAYSTONE	DK.BN.SLD
67	102.72	102.87	0.15	07398	I	COAL	C-2.BRKN

* DENOTES MEASURED BCA

FORM 4001

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85011

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
67	102.87	102.94	0.07	07398	I	CLAYSTONE	CARB.BLK.SLD SOFT
66	102.94	103.16	0.22	07398	I	COAL	C-6.PWRD
66	103.16	103.29	0.13	07398	I	COAL LOSS	
66	103.29	103.34	0.05	07398	I	CLAYSTONE	CARB.PWRD
66	103.34	103.53	0.19			COAL	C-6.BLK.VBRKN OCCASIONAL QUARTZ VEINS, HIGH CARBONACE OUS MUDSTONE CONTENT, SOME POLISHED FRA CTURE SURFACES
* 65	103.53	104.91	1.38			SANDSTONE	FG-.VWEL.LT.GY.MAS.SLD OCCASIONAL QUARTZ VEINS (1.0 MM WIDE TH ROUGHOUT), RARE SILTY LAMINAE, FINE GRA INED TO MEDIUM GRAINED SANDSTONE
* 40	104.91	105.18	0.27			SANDSTONE	FG-.VWEL.LT.GY.VTHNB.SLD SILTY LAMINAE MORE COMMON, FINE GRAINED TO MEDIUM GRAINED SANDSTONE

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85011

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
50	105.18	107.35	2.17			SANDSTONE	PBLY.MG.PR.LT.GY.THNB.SLD OCCASIONAL BANDS OF MORE CONCENTRATED P EBBLES SURROUNDED BY CLASTS, POLYMICTIC -CHERT, MUDSTONE, SILTSTONE, ONE BAND O F CONCENTRATED MUDSTONE RIP-UP CLASTS (40.0 MM WIDE) CHERT ABSENT HERE, SHARP EROSIONAL CONTACTS ABOVE AND BELOW RIP- UP CLAST BAND
62	107.35	107.92	0.57			SANDSTONE	PBLY.MG.VWEL.LT.GY.THNB.BRKN LITHOLOGY AS ABOVE
* 70	107.92	109.23	1.31			SANDSTONE	PBLY.MG.VWEL.LT.GY.THNB.SLD LITHOLOGY AS ABOVE, OCCASIONAL QUARTZ A ND CALCITE VEINS, FEWER PEBBLES TOWARDS BASE
61	109.23	110.86	1.63			SANDSTONE	MG.VWEL.LT.GY.MAS.SLD OCCASIONAL MUDSTONE RIP-UP CLASTS (25.0 TO 30.0 MM IN DIAMETER), MODERATE QUAR TZ VEINING (1.0 TO 3.0 MM WIDE)
55	110.86	110.97	0.11			ROCK LOSS	
54	110.97	111.36	0.39			SANDSTONE	MG.VWEL.LT.GY.MAS.SLD LITHOLOGY AS ABOVE, MODERATE QUARTZ AND TALC FILLED FRATURES

* DENOTES MEASURED BCA

F C F M 4 0 0 1

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85011

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
50	111.36	112.13	0.77			SANDSTONE	MG.WEL.LT.GY.THNB.SLD GRAIN SIZE CONSTANT THROUGHOUT, SILT CO NTENT APPEARS TO VARY SLIGHTLY IN WIDE BANDS WITH VERY IRREGULAR, DISCONTINUOU S GRADATIONAL CONTACTS
* 45	112.13	112.88	0.75			SILTSTONE	CLYY.PR.M-DK.GY.LAM.WRMBU.VBRKN VERY FINELY LAMINATED, GRADING FROM CLA YEY BANDS TO FINE GRAINED SANDSTONE, NU MEROUS HORIZONTALAND VERTICAL WORMBURRO WS, TOPS UP, MORE CLAYEY TOWARDS BASE
44	112.88	113.41	0.53			ROCK LOSS	
* 43	113.41	114.25	0.84			MUDSTONE	SLTY.WEL.DK.GY.LAM.BRKN FINE FAINT SILTY LAMINAE, CARBONACEOUS AT BASE, SHARP BOTTOM CONTACT, ONE BAND (80.0 MM WIDE) AT BASE WITH INTENSE QU ARTZ VEINING AND VERY CARBONACEOUS
34	114.25	114.69	0.44			SANDSTONE	FG-.WEL.LT.GY.MAS.BRKN EXTREMELY BRECCIATED BY WIDE QUARTZ AND MASSIVE TALC-FILLED FRACTURES, SHARP B OTTOM CONTACT, FINE GRAINED TO MEDIUM G RAINED SANDSTONE

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85011

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
28	114.69	115.22	0.53			MUDSTONE	DK.GY.MAS.BRKN VERY UNIFORM, NA APPARENT BEDDING, SLIG HTLY SILTY
** 20	115.22	115.85	0.63			MUDSTONE	SLTY.DK.GY.LAM.WRMBU.BRKN FINELY LAMINATED IN PLACES, OCCASIONAL VERTICAL WORMBURROWS, TOPS UP, ONE QUAR TZ VEIN (20.0 MM WIDE)
24	115.85	116.46	0.61			ROCK LOSS	
* 30	116.46	117.66	1.20			MUDSTONE	SLTY.DK.GY.MAS.BRKN LITHOLOGY AS ABOVE, ONE TALC AND QUARTZ FILLED FRACTURE (20.0 MM WIDE), PREDOM INANTLY MASSIVE, VERY UNIFORM
36	117.66	119.39	1.73			MUDSTONE	WEL.BLK.LAM.BRKN VERY HOMOGENOUS, POLISHED SLIPPAGE SURF ACES WITH TALC
40	119.39	119.50	0.11			ROCK LOSS	
* 45	119.50	121.59	2.09			MUDSTONE	CARB.WEL.BLK.LAM.BRKN LITHOLOGY AS ABOVE, MINOR CALCITE VEINS , POLISHED SLIPPAGE SURFACES WITH POWDE RED TALC, SLIGHTLY SILTY

* DENOTES MEASURED BCA

FORM 4001

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85011

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
40	121.59	122.75	1.16			MUDSTONE	WEL.BLK.LAM.BRKN LITHOLOGY AS ABOVE, POLISHED SLIPPAGE S URFACES ON BEDDING PLANES, SLIGHTLY SIL TIER THAN ABOVE
38	122.75	123.48	0.73			MUDSTONE	WEL.BLK.LAM.BRKN LITHOLOGY AS ABOVE
35	123.48	124.55	1.07			MUDSTONE	WEL.BLK.LAM.BRKN LITHOLOGY AS ABOVE, LINEATED TALC ON FR ACTURE SURFACES, MINOR QUARTZ VEINING
* 32	124.55	125.46	0.91			MUDSTONE	SLTY.MOD.DK.GY.LAM.BRKN
39	125.46	126.02	0.56			MUDSTONE	SLTY.MOD.DK.GY.LAM.SLD VERY RAPID TRANSITION TO SANDY SILTSTON E BELOW
45	126.02	126.65	0.63			SILTSTONE	SSY.PR.M.GY.LAM.BIOTR.BRKN MODERATE QUARTZ VEINING PARALLEL TO BED DING, SLIGHTLY CARBONACEOUS, POLISHED S LIPPAGE SURFACES, SALT AND PEPPER TEXTU RE TO THE FINE GRAINED SANDSTONE

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85011

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
52	126.65	127.41	0.76			SILTSTONE	SSY.PR.M.GY.LAM.BIOTR.BRKN LITHOLOGY AS ABOVE, SANDIER, EXTENSIVEL Y BIOTURBATED, TOPS UP, VERTICAL WORMBU RROWS
* 64	127.41	128.93	1.52			SILTSTONE	SSY.PR.M.GY.LAM.BIOTR.BRKN LITHOLOGY AS ABOVE, TOPS UP, SCOUR AND FILL PATTERN, EXTENSIVE QUARTZ VEINING AND BIOTURBATION,GRADES TO SANDSTONE
53	128.93	129.46	0.53			SANDSTONE	SLTY.VFG.PR.M.GY.MAS.BIOTR.BRKN POLISHED SLIPPAGE SURFACES MINOR TALC
48	129.46	129.86	0.40			SANDSTONE	SLTY.VFG-.PR.M.GY.MAS.BIOTR.BRKN LITHOLOGY AS ABOVE, VERY FINE GRAINED T O FINE GRAINED SANDSTONE
* 39	129.86	131.26	1.40			SANDSTONE	SLTY.FG.PR.M.GY.LAM.WRMBU.BRKN LITHOLOGY AS ABOVE, SILTY LAMINAE, TOPS UP, VERTICAL WORMBURROWS, SLIGHTLY WAV Y BEDDING
* 32	131.26	132.91	1.65			SANDSTONE	SLTY.FG-.PR.M.GY.MAS.BIOTR.BRKN COARSENS DOWNHOLE AND CONTAINS SILTSTON E PEBBLES, FINE GRAINED TO MEDIUM GRAIN ED SANDSTONE

* DENOTES MEASURED BCA

FRM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 25

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85011

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
36	132.91	133.17	0.26			SANDSTONE	MG.PR.M.GY.MAS.BRKN COARSER THAN ABOVE, SILTSTONE CLASTS TO 70.0 MM DIAMETER, WELL ROUNDED MATRIX WITH ABUNDANT SILTSTONE RIP-UP CLASTS
* 41	133.17	135.16	1.99			SANDSTONE	MG.PR.M.GY.MAS.BRKN LITHOLOGY AS ABOVE, LARGE SILTSTONE CLA STS AT BOTTOM OF UNIT, MINOR SILTSTONE RIP-UPS AND BANDS (UP TO 30.0 MM), CENT ER PORTION IS HOMOGENOU, POLISHED SLIPP AGE
55	135.16	135.80	0.64			SILTSTONE	SSY.PR.M.GY.LAM.WRMBU.BRKN TOPS UP, VERTICAL WORMBURROWS
59	135.80	135.98	0.18			ROCK LOSS	
63	135.98	136.60	0.62			SILTSTONE	SSY.PR.M.GY.LAM.BRKN LITHOLOGY AS ABOVE, GRADES TO SANDSTONE BELOW
70	136.60	137.30	0.70			SANDSTONE	SLTY.MG.PR.M.GY.MB.BIOTR.BRKN SILTY LAMINAE AND BANDS , SALT AND PEPP ER TEXTURE, LESS SILT TOWARDS BASE, POL ISHED SLIPPAGE SURFACES

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 26

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85011

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 80	137.30	138.47	1.17			MUDSTONE	CARB.DK.GY.LAM.SSD.VBRKN FINE SILTY LAMINAE, MODERATE QUARTZ FIL LING IN FRACTURES, SOME POLISHED FRACTU RE SURFACES, TOPS UP
77	138.47	139.02	0.55			ROCK LOSS	
76	139.02	139.23	0.21			MUDSTONE	CARB.DK.GY.MAS.VBRKN LITHOLOGY AS ABOVE, LESS SILTY, FEWER L AMINAE
* 73	139.23	141.14	1.91		H/I	MUDSTONE	CARB.DK.GY.MAS.VBRKN PREDOMINANTLY MASSIVE, OCCASIONAL PLANT HASH ON FRACTURE SURFACES, COALIFIED T WIGS AND BRANCHES?, SOME SLICKENSIDES, QUARTZ FILLING WITH SOME COAL
70	141.14	141.86	0.72		H/I	MUDSTONE	CARB.DK.GY.MAS.BRKN ONE 10.0 MM WIDE QUARTZ VEIN, PLANT HAS H RARE, OCCASIONAL COAL BLEB (2.0 MM IN DIAMETER)
69	141.86	142.07	0.21		H/I	ROCK LOSS	

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 27

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85011

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
68	142.07	143.33	1.26		H/I	MUDSTONE	CARB.DK.GY.MAS.VBRKN PLANT HASH AND COAL STRINGERS (1.0 MM W IDE) THROUGHOUT, SOME TALC ON FRACTURE SURFACES
65	143.33	144.84	1.51		H/I	MUDSTONE	CARB.DK.GY.MAS.VBRKN LITHOLOGY AS ABOVE, PLANT HASH RARE, OC CASIONAL QUARTZ VEIN, OCCASIONAL COAL S TRINGERS AND FINE LAMINAE THROUGHOUT
63	144.84	145.12	0.28			ROCK LOSS	
* 60	145.12	147.19	2.07			MUDSTONE	SLTY.DK.GY.LAM.BRKN OCCASIONAL SILTY LAMINAE, RARE COALY LA MINAE, ONE QUARTZ VEIN (20.0 MM WIDE), MUCH MORE CLAYEY AND MASSIVE TOWARDS BA SE
64	147.19	148.02	0.83			MUDSTONE	SLTY.DK.GY.LAM.BRKN OCCASIONAL SILTY LAMINAE, OCCASIONAL QU ARTZ AND COALY VEINS

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 28

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85011

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 67	148.02	149.16	1.14			MUDSTONE	CARB.DK.GY.MAS.BRKN LITHOLOGY AS ABOVE, COAL BLEBS AND LAMI NAE THROUGHOUT, ONE QUARTZ VEIN (4.0 MM WIDE), SOME POORLY CONSOLIDATED CLAY B ANDS, FINE SILTY LAMINAE MORE COMMON TO WARDS BASE
* 70	149.16	150.88	1.72			MUDSTONE	CARB.DK.GY.LAM.BRKN LESS CARBONACEOUS AT TOP, MINOR CARBONA CEOUS BLEBS (1.0 MM DIAMETER), OCCASION AL QUARTZ VEINS, COALIFIED PLANT MATERI AL MORE COMMON TOWARDS BASE, SOME SILTY MATERIAL
70	150.88	151.06	0.18			ROCK LOSS	
70	151.06	151.28	0.22			MUDSTONE	CARB.DK.GY.LAM.SLD LITHOLOGY AS ABOVE
70	151.28	153.32	2.04			MUDSTONE	CARB.BLK.LAM.BRKN COALIFIED PLANT MATERIAL AND PLANT FOSS ILS ABUNDANT, FRACTURES FILLED WITH COA L (10.0 TO 15.0 MM WIDE) POSSIBLE CORE LOSS HERE, LAMINAE OF CARBONACEOUS MATE RIAL, VERY CARBONACEOUS

* DENOTES MEASURED BCA

F.5M 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 29

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85011

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
70	153.32	153.42	0.10			CLAYSTONE	CARB.BLK.SHRD
70	153.42	153.52	0.10		H	CLAYSTONE	CARB.LT.GY.SLD BRECCIATED COAL WITH INTENSE ANKERITE V EINING
70	153.52	153.61	0.09		H	CLAYSTONE	CARB.BLK.VBRKN
70	153.61	153.76	0.15		H	CLAYSTONE	CARB.LT.GY.SLD LITHOLOGY AS ABOVE WITH ANKERITE BRECCI A FILL
70	153.76	154.11	0.35		H	CLAYSTONE	CARB.BLK.VBRKN
70	154.11	155.10	0.99			CLAYSTONE	CARB.LT.GY.BRKN MINOR PYRITE LAMINAE, DISSEMINATED

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 30

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85011

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
70	155.10	156.82	1.72			MUDSTONE	CARB.DK.GY.MAS.VBRKN PYRITE THROUGHOUT, COALY STRINGERS AND LENSES COMMON, MUCH PLANT HASH AND COAL IFIED TWIGS, SILTIER TOWARDS BASE
70	156.82	157.56	0.74			MUDSTONE	SLTY.DK.GY.LAM.SLD MUCH SILTIER THAN ABOVE, FINE LAMINAE A T BASE, MORE MASSIVE AT BASE
* 70	157.56	158.98	1.42			SANDSTONE	SLTY.FG.PR.M.GY.VTHNB.XBDG.SLD FINE SILTY LAMINAE THROUGHOUT, SCOURS A ND CROSS-BEDDING, TOPS UP, OCCASIONAL M UDSTONE RIP-UP CLASTS
78	158.98	159.40	0.42			SANDSTONE	SLTY.FG.PR.LT-M.GY.VTHNB.VBRKN LITHOLOGY AS ABOVE
83	159.40	160.14	0.74			SANDSTONE	MG.VWEL.LT.GY.MAS.VBRKN RARE WISPY SILTY LAYER, SHARP EROSIONAL CONTACT BELOW, TOPS UP, SILTSTONE RIP- UP CLASTS AT LOWER CONTACT
* 87	160.14	160.47	0.33			SILTSTONE	CLYY.M-DK.GY.LAM.XBDG.BRKN VERY FINE AND UNIFORMLY LAMINATED, TOPS UP

* DENOTES MEASURED BCA

FORM 4001

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85011

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 80	160.47	161.48	1.01			SILTSTONE	CLYY.M-DK.GY.LAM.XBDG.SLD LITHOLOGY AS ABOVE, TOPS UP, OCCASIONAL MUDSTONE RIP-UP CLASTS IN LAMINAE AND AT BOTTOM CONTACT, VERTICAL WORMBURROWS
80	161.48	162.00	0.52			SANDSTONE	MG.WEL.LT.GY.THNB.SLD OCCASIONAL MUDSTONE LAMINAE, SUB-ROUNDED MUDSTONE CLASTS AT UPPER CONTACT, MIXED IN WITH RIP-UP CLASTS
80	162.00	162.50	0.50			SANDSTONE	END OF HOLE. DRILLERS MARKER.

* DENOTES MEASURED BCA

NEWPAGE

FORM 4001

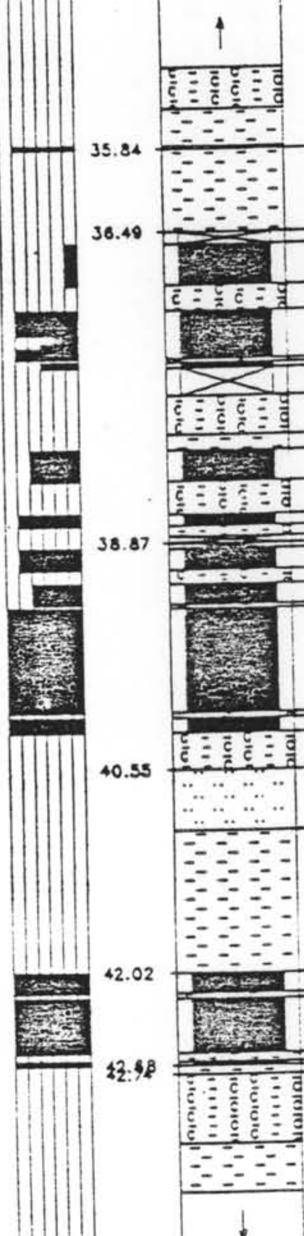
GULF CANADA RESOURCES INC.

COAL DIVISION
MOUNT KLAPPAN PROJECT

SEAM DETAIL — TRUE THICKNESS

DATA SOURCE: KPN LR DDH85011 | SEAM : K | INTERVAL(M) : 35.84 – 42.74 | ELEVATION(M) : 1625.7

GEOLOGIST : M BARKER | SCALE: | DATE : DEC 19/85 | DRAWING NO. :



DRILL DEPTH (METRES)	INTERVAL (METRES) ROCK	INTERVAL (METRES) COAL	% REC.	SAMPLE ID SIMP	SAMPLE ID COMP	COAL/ROCK TOTAL COMPOS	COAL/ROCK TOTAL MINING SECTION	RES MOIST	ASH	VM	FC	TS	CAL.VAL MJ/KG
35.84	0.53		100.0	7391									
36.49		([illegible])											
		0.27											
	0.17												
		0.31											
	[illegible]	[illegible]											
		(0.18)	85.3	7392									
	0.25												
	0.10												
		0.20											
	0.21				38	2.20 / 1.27 3.47		1.03	27.81	8.07	63.09	0.41	24.16
		[illegible]											
	[illegible]												
38.87		([illegible])											
		0.14											
	0.10												
		0.13											
	[illegible]												
		0.87	97.7	7393									
	[illegible]												
		0.10											
	0.24												
40.55	0.39		100.0	7394									
	0.92												
42.02		0.13											
	[illegible]												
		0.35	100.0	7395									
	[illegible]	[illegible]											
42.68	[illegible]		[illegible]	[illegible]									
42.74													

GULF CANADA RESOURCES INC.

COAL DIVISION
MOUNT KLAPPAN PROJECT

SEAM DETAIL

TRUE THICKNESS

DATA SOURCE: KPN LR DDH85011	SEAM : 1	INTERVAL(M) : 101.42 - 103.34	ELEVATION(M) : 1625.7
GEOLOGIST : M. BARKER	SCALE:	DATE : DEC 19/85	DRAWING NO. :

SEAM COMP. 1 2 3 4 5 6	DRILL DEPTH METRES	INTERVAL METRES ROCK	INTERVAL METRES COAL	% REC.	SAMPLE ID SIMP	SAMPLE ID COMP	COAL/ROCK TOTAL COMPOS	MINING SECTION	COAL QUALITY A.D.B. RES MOIST	ASH	VM	FC	TS	CAL.VAL
	101.42		(0.11)											
			0.10											
		(0.11) [illegible]												
			0.10											
		0.10												
			0.44	76.3	7388	39	1.22 / 0.54 1.79		1.08	33.01	7.52	58.39	0.31	21.90
		([illegible]) 0.10												
			0.14											
		[illegible]												
			0.20											
	103.34		(0.12)											

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Gulf Canada Resources Inc.
Coal Division
Geophysical Log

Datasource:	KPNLRDDH85011	Province: BC	Northing: 6344830.00	Lat:	571454
Log Date:	85–04–03	Zone: 9	Easting: 507125.00	Long:	1285255
Company:	CENTURY	Measuring Point:		Elevation:	
Geologist:	M. BARKER				

Scale: 1 to 100.0
Depth Range: 0.0 to 167.0
True Thickness: NO

Comments:
1.
2.

Logs Plotted:

Description	Axis Range	Axis Length	Smoothing Points	Tool	Comments
1 .GAMMA API	0.0 to 150.0	10.0	31	9067	IN PIPE
2 .NEUTRON–NEUTRON CPS	0.0 to 2500.0	10.0	9	9067	IN PIPE
3 .DENSITY G/CC	1.0 to 3.0	10.0	15	9030A	IN PIPE

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GULF CANADA RESOURCES INC.
COAL DIVISION
KLAPPAN PROJECT
STRATIGRAPHIC LOG
KPN LR DDH85011

GEOLOGIST : M. BARKER	DATE : JAN 08/86	DRAWING NO. :

SCALE : 1:200 1:40

NORTHING: 6344833.0 N INCLINATION: 75.0 °
EASTING: 507124.5 E BEARING: 45.0 °

LITHOLOGIC SYMBOLS

SANDSTONE	BENTONITE
SILTSTONE	BRECCIA
COAL	CARBONACEOUS
OVERBURDEN	QUARTZ
MUDSTONE,CLAYSTONE	PYRITE
TUFF	FERRUGINOUS
LIMESTONE	CONGLOMERATE
CORE LOSS	FOSSIL BED

SEAM DETAIL

DRILLED DEPTH {M} | BCA {DEG} | TRUE DEPTH {M} 1 : 200 | DRILLED DEPTH {M} 1 : 40 | TRUE THICKNESS {M}

KPNLRDDH85012

GULF CANADA RESOURCES INC.

- D A T A S O U R C E S U M M A R Y -

DATA SOURCE - KPNLRDDH85012

DATE - 01/09/86

- H I S T O R Y -

START DATE - 03/31/85
END DATE - 04/06/85

CONTRACTOR - J.T. THOMAS
GEOLOGIST - E. LEGRESLEY

OPERATOR - GCRI
SURVEYOR - MWG & ASS.

REMARKS - SITE D

- L O C A T I O N -

PROVINCE - BC
ELEVATION - 1666.40

ZONE - 9
NORTHING - 6344660.00
EASTING - 506131.44

LICENCE/LEASE NUMBER - 7151

LATITUDE - 571449
LONGITUDE - 1285354

- O R I E N T A T I O N -

LENGTH - 262.70

INCLINATION - 80.0
AZIMUTH - 10.0

CORE SIZE - 0.0

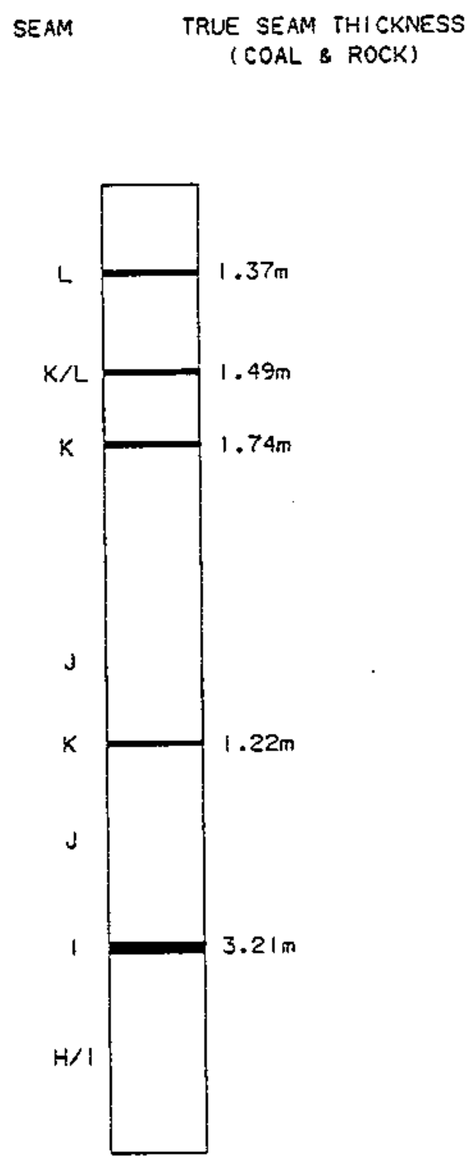
CEMENT -
PLUG -
PIEZ -

CASING DEPTH (M) - 19.00
AQUIFER DEPTHS (M) - 0.00
0.00
LOST CIRC. DEPTHS (M) - 0.00
0.00

*** NOTE *** 0 INDICATES NO VALUE

MT. KLAPPAN COAL PROPERTY

1985 DIAMOND DRILL HOLES
DDH85012



NOTE: SCHEMATIC PROFILE.
NO THICKNESSES SHOWN
FOR SEAMS CONTAINING
LESS THAN 50cm COAL.

SCALE: 1:2000	GULF CANADA RESOURCES INC. 15/01/86

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 1

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85012

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
61	0.00	19.00	19.00			OVERBURDEN	CASING TO 19.00 METRES
61	19.00	20.15	1.15			CLAY	WEL.M.GY.SLD SOFT, UNCONSOLIDATED
61	20.15	20.60	0.45			MUDSTONE	CARB.WEL.DK.GY.LAM.BRKN WEATHERED
61	20.60	20.87	0.27			MUDSTONE	CARB.WEL.DK.GY.LAM.BRKN AS ABOVE
* 61	20.87	22.07	1.20			MUDSTONE	CARB.WEL.BLK.LAM.BRKN COALY LAMINAE THROUGHOUT, FOSSILIZIED T WIGS
60	22.07	22.25	0.18			CLAYSTONE	DK.BN.BRKN ANKERITE VEINING
60	22.25	22.83	0.58			CLAYSTONE	CARB.DK.GY.LAM.BRKN
60	22.83	22.92	0.09			CLAYSTONE	LT.BN.LAM.SLD
60	22.92	23.15	0.23			CLAYSTONE	CARB.BLK.BRKN VERY COALY, ANKERITE IN VEINS
60	23.15	23.24	0.09	07467		CLAYSTONE	CARB.DK.BN.SLD SOFT

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 2

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85012

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
60	23.24	23.51	0.27	07468	L	COAL	C-2.BRKN
59	23.51	23.61	0.10	07468	L	COAL	C-6.PHRD SOFT
59	23.61	24.65	1.04	07468	L	COAL LOSS	
59	24.65	24.84	0.19	07468	L	COAL	C-2.VBRKN
58	24.84	25.80	0.96			MUDSTONE	MOD.DK.GY.LAM.BRKN SLIGHTLY SILTY
58	25.80	26.57	0.77			MUDSTONE	MOD.DK.GY.LAM.BRKN LITHOLOGY AS ABOVE, GRADES TO SILTSTONE , BROAD LEAF PLANT FOSSILS
57	26.57	26.69	0.12			ROCK LOSS	
57	26.69	27.34	0.65			SILTSTONE	SSY.PR.M.GY.LAM.SLD LONG GRADATION TO SANDSTONE BELOW
56	27.34	28.66	1.32			SANDSTONE	FG.MOD.M.GY.MAS.BRKN SILTY LAMINAE IN TOP 300.0MM, MODERATE TALC ON FRACTURES, LOWER PORTION VERY H OMOGENOUS

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 3

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85012

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 55	28.66	30.49	1.83			SANDSTONE	FG.WEL.M.GY.MAS.BRKN LITHOLOGY AS ABOVE, MINOR SILTY LAMINAE , RIP-UP CLASTS, MODERATE TALC
59	30.49	31.65	1.16			SANDSTONE	FG.WEL.M.GY.MAS.BRKN LITHOLOGY AS ABOVE, MODERATE TALC FILLI NG IN FRACTURES APPROXIMATELY PERPENDIC ULAR TO BEDDING, HOMOGENEOUS
61	31.65	32.49	0.84			SANDSTONE	FG.WEL.M.GY.MAS.BRKN LITHOLOGY AS ABOVE, COARSENS DOWNWARD V ERY SLIGHTLY
65	32.49	34.54	2.05			SANDSTONE	FG-.WEL.M.GY.MAS.BRKN LITHOLOGY AS ABOVE, MINOR SILTY LAMINAE AND RIP-UP CLASTS, TALC
68	34.54	34.78	0.24			SANDSTONE	FG.WEL.M.GY.MAS.SLD LITHOLOGY AS ABOVE, MODERATE VERY SOFT TALC
* 70	34.78	36.44	1.66			SANDSTONE	FG.WEL.M.GY.MAS.BRKN LITH AS ABOVE, MINOR SILTSTONE RIP-UP C LASTS, MINOR TALC FILLED VEINS, MINOR S ILTSTONE LAMINAE

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 4

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85012

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
69	36.44	37.66	1.22			SANDSTONE	MG-.PR.DK.GY.MAS.BRKN GRADES FROM HOMOGENEOUS SANDSTONE TO SA NDSTONE WITH VARIABLE GRAIN SIZES IN BA NDS TO 100.0MM AND SILTY LAMINAE, WAVY BEDDING, MINOR COAL RIP-UP CLASTS, ABUN DANT SILTSTONE RIP-UP CLASTS ANGULAR AN D BED PLANAR ELONGATED, SLIP SURFACES
68	37.66	37.76	0.10			ROCK LOSS	
67	37.76	38.43	0.67			SANDSTONE	MG-.PR.DK.GY.MAS.BRKN AS ABOVE
66	38.43	40.31	1.88			SANDSTONE	MG-.MOD.M.GY.MAS.BRKN HOMOGENEOUS WITH MINOR SILTY BANDS, SLI GHTLY STRATIFIED BY GRAIN SIZE, MINOR S ILTSTONE RIP-UP CLASTS, 400.0MM FROM BO TTOM STARTS TO FINE DOWNWARD
* 65	40.31	40.79	0.48			SANDSTONE	SLTY.FG-.MOD.M.GY.MAS.BRKN DIRTY SANDS, SILTSTONE LAMINAE, RIP-UP CLASTS

* DENOTES MEASURED BCA

RM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 5

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85012

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
66	40.79	40.89	0.10			ROCK LOSS	
67	40.89	42.43	1.54			SANDSTONE	MG.MOD.M.GY.MAS.BRKN SLIGHTLY COARSER THAN ABOVE, MINOR SILTY LAMINAE AND RIP-UP CLASTS, QUARTZ VEINS PERPENDICULAR TO BEDDING, SALT AND PEPPER TEXTURE, MINOR COAL RIP-UPS
70	42.43	43.22	0.79			SANDSTONE	MG.MOD.M.GY.MAS.BRKN LITH AS ABOVE. SALT AND PEPPER TEXTURE, LARGE QUARTZ VEIN PERPENDICULAR TO BEDDING, LARGE EUHEDRAL CRYSTALS, MODERATE RIP-UP CLASTS, EROSIVE BASAL CONTACT
72	43.22	43.96	0.74			SANDSTONE	SLTY.VFG.MOD.M.GY.MAS.BRKN SILTY LAMINAE, EXTREMELY FINE GRAINED
72	43.96	44.02	0.06			ROCK LOSS	
* 73	44.02	44.48	0.46			SANDSTONE	SLTY.VFG.MOD.M.GY.MAS.BRKN LITHOLOGY AS ABOVE
* 66	44.48	46.28	1.80			SANDSTONE	SLTY.VFG.MOD.M.GY.MAS.BRKN LITH AS ABOVE, COAL BAND 40.0MM WITH CALCITE VEINING NEAR BOTTOM, SILTSTONE LAMINAE, MINOR SLIP SURFACES ALONG BEDDING.

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 6

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85012

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 74	46.28	46.99	0.71			SILTSTONE	CARB.DK.GY.THNB.SLD OCCASIONAL CLAYEY LAMINAE, COAL FILLED FRACTURES, PLANT HASH AND COALY MATERIAL ON BEDDING PLANES
75	46.99	48.26	1.27			MUDSTONE	CARB.BLK.VBRKN NUMEROUS COAL VEINS AND COAL LENSES THROUGHOUT
75	48.26	48.51	0.25			ROCK LOSS	
76	48.51	48.94	0.43			CLAYSTONE	CARB.DK.GY.BRKN MINOR COAL LAMINAE
76	48.94	48.97	0.03			COAL	C-6.BRKN
76	48.97	49.82	0.85			CLAYSTONE	CARB.BLK.BRKN COAL LAMINAE
77	49.82	50.03	0.21	07470		CLAYSTONE	CARB.DK.GY.BRKN
77	50.03	50.05	0.02	07470		COAL	C-6.BRKN
77	50.05	50.14	0.09	07470		CLAYSTONE	CARB.BLK.BRKN COAL LAMINAE

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 7

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85012

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
77	50.14	50.16	0.02	07470		CLAYSTONE	CARB.M.GY.SLD
77	50.16	50.26	0.10	07471	K/L	COAL	C-2.BRKN
77	50.26	50.30	0.04	07471	K/L	COAL	C-4.BRKN
77	50.30	50.38	0.08	07471	K/L	CLAYSTONE	CARB.BLK.BRKN VERY COALY
77	50.38	50.44	0.06	07471	K/L	COAL	C-3.VBRKN
77	50.44	50.66	0.22	07471	K/L	COAL LOSS	
77	50.66	50.79	0.13	07471	K/L	CLAYSTONE	M.GY.MAS.SLD
77	50.79	50.90	0.11	07471	K/L	COAL	C-6.SLD ANKERITE IN CLEATS
78	50.90	50.96	0.06	07471	K/L	COAL LOSS	
78	50.96	51.02	0.06	07471	K/L	COAL	C-2.VBRKN
78	51.02	51.10	0.08	07471	K/L	CLAYSTONE	CARB.DK.GY.BRKN

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 8

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85012

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
78	51.10	51.20	0.10	07471	K/L	COAL LOSS	
78	51.20	51.41	0.21	07471	K/L	COAL	C-5.VBRKN
78	51.41	51.46	0.05	07471	K/L	CLAYSTONE	CARB.BLK.SLD VERY COALY WITH ANKERITE VEINS
78	51.46	51.50	0.04	07471	K/L	COAL	C-2.BRKN
78	51.50	51.51	0.01	07471	K/L	CLAYSTONE	CARB.SLD
78	51.51	51.69	0.18	07471	K/L	COAL	C-1.VBRKN
78	51.69	51.72	0.03	07472		CLAYSTONE	CARB.DK.GY.SLD
78	51.72	51.74	0.02	07472		CLAYSTONE	M.BN.SLD SOFT
78	51.74	51.76	0.02	07472		CLAYSTONE	M.GY.SLD
78	51.76	51.78	0.02	07472		CLAYSTONE	M.BN.SLD SOFT

* DENOTES MEASURED BCA

FORM 4001

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85012

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
78	51.78	52.03	0.25	07472		ROCK LOSS	
79	52.03	52.12	0.09	07472		CLAYSTONE	M.GY.BRKN
79	52.12	52.37	0.25			ROCK LOSS	
79	52.37	52.43	0.06			CLAYSTONE	CARB.BLK.SLD COALY, SOFT
79	52.43	52.85	0.42			CLAYSTONE	M.GY.SLD
79	52.85	53.32	0.47			SILTSTONE	M.GY.LAM.VBRKN UNIFORM, OCCASIONAL BAND GRADING TO FIN E GRAINED SANDSTONE
80	53.32	53.62	0.30			ROCK LOSS	
* 80	53.62	54.11	0.49			SILTSTONE	SSY.M.GY.LAM.HRMBU.SLD RIPPLE MARKS, GRADED AND CROSS-BEDDING, TOPS UP, FINELY LAMINATED SOME BEDS GR ADING TO MEDIUM GRAINED SANDSTONE
78	54.11	55.13	1.02			SANDSTONE	FG-.PR.M.GY.LAM.HRMBU.SLD FINE SILTY LAMINAE, SOME BEDS GRADING T O MEDIUM GRAINED SANDSTONE

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85012

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
75	55.13	56.66	1.53			SANDSTONE	FG-.VWEL.LT.GY.MAS.VBRKN FINE GRAINED TO MEDIUM GRAINED SANDSTON E, ONE RIP-UP CLAST 25.0 X 4.0 MM
73	56.66	56.72	0.06			ROCK LOSS	
* 70	56.72	58.84	2.12			SANDSTONE	FG-.VWEL.LT.GY.THNB.SLD FINE SILTY LAMINAE, OCCASIONAL SUBROUND ED MUDSTONERIP-UP CLAST, ONE BAND OF SI LTY MUDSTONE CLASTS 70.0 MM WIDE, ONE B AND OF FINELY LAMINATED SILTSTONE 160.0 MM WIDE, SHARP CONTACTS ON BOTH BANDS, FINE GRAINED TO MEDIUM GRAINED SANDSTO NE
70	58.84	59.54	0.70			SANDSTONE	FG-.WEL.LT.GY.THNB.VBRKN LITHOLOGY AS ABOVE, FINE GRAINED TO MED IUM GRAINED SANDSTONE
70	59.54	59.81	0.27			ROCK LOSS	
* 70	59.81	60.91	1.10			SANDSTONE	FG-.WEL.LT.GY.THNB.BRKN LITHOLOGY AS ABOVE, FINE GRAINED TO MED IUM GRAINED SANDSTONE
70	60.91	61.11	0.20			ROCK LOSS	

* DENOTES MEASURED BCA

FORM 4001

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85012

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 70	61.11	62.30	1.19			SANDSTONE	FG-.MEL.LT.GY.THNB.BRKN LITHOLOGY AS ABOVE, OCCASIONAL MUDSTONE RIP-UP CLAST, FINE GRAINED TO MEDIUM G RAINED SANDSTONE
* 75	62.30	64.37	2.07			SANDSTONE	FG-.PR.LT.GY.THNB.SLD MORE VARIABLE THAN ABOVE, BANDS GRADING FROM FINE GRAINED SANDSTONE TO PRIMARI LY MEDIUM TO VERY COARSE GRAINED SANDST ONE, MUDSTONE RIP-UP CLASTS IN COARSE S ANDS, ONE QUARTZ VEIN 3.0 MM WIDE PERPE NDICULAR TO BEDDING, OCCASIONAL COALY S TRINGERS 1.0 MM
76	64.37	65.27	0.90			SANDSTONE	FG-.VPR.M-DK.GY.VTHNB.SLD AS ABOVE, OCCASIONAL COAL BLEBS AND MUD STONE RIP-UP CLASTS, FINE GRAINED TO ME DIUM GRAINED SANDSTONE
77	65.27	66.26	0.99			SANDSTONE	SLTY.FG.VPR.M.GY.LAM.XBDG.SLD OCCASIONAL COALY STRINGERS, TOPS UP, MU DSTONE RIP-UP CLASTS 4.0 TO 40.0 MM IN DIAMETER, FINE SILTY LAMINAE
79	66.26	68.17	1.91			SILTSTONE	CLYY.VPR.M-DK.GY.LAM.HRMBU.SLD FINELY LAMINATED BANDS FROM CLAYSTONE T O FINE GRAINED SANDSTONE, MORE CLAYEY T OWARDS THE BASE, TOPS UP

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85012

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
80	68.17	68.37	0.20			ROCK LOSS	
* 80	68.37	68.58	0.21			SILTSTONE	CLYY.VPR.DK.GY.LAM.SLD VERY FAINT LAMINAE
78	68.58	69.30	0.72			CLAYSTONE	M.GY.LAM.BRKN
75	69.30	69.64	0.34			CLAYSTONE	CARB.DK.GY.SLD
75	69.64	69.66	0.02			COAL	C-1.SLD
74	69.66	69.89	0.23	07473		CLAYSTONE	CARB.BLK.BRKN BRIGHT COAL BANDS
73	69.89	69.97	0.08	07474	K	COAL	C-3.SLD
73	69.97	70.11	0.14	07474	K	COAL	C-1.VBRKN
72	70.11	70.45	0.34	07474	K	COAL LOSS	
71	70.45	70.48	0.03	07474	K	COAL	C-6.BRKN

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 13

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85012

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 70	70.48	70.88	0.40	07474	K	COAL	C-1,BRKN
70	70.88	70.90	0.02	07474	K	CLAYSTONE	CARB,BLK,SLD ANKERITE VEINING
70	70.90	70.97	0.07	07474	K	COAL	C-1,BRKN
70	70.97	71.02	0.05	07474	K	COAL	C-1,SLD
70	71.02	71.05	0.03	07474	K	CLAYSTONE	CARB,BLK,BRKN
70	71.05	71.17	0.12	07474	K	COAL	C-1,BRKN
70	71.17	71.20	0.03	07474	K	CLAYSTONE	CARB,BLK,SLD
70	71.20	71.45	0.25	07474	K	COAL	C-1,BRKN CLAYSTONE LENS NEAR THE TOP
70	71.45	71.53	0.08	07474	K	COAL	C-3,BRKN
70	71.53	71.58	0.05	07474	K	CLAYSTONE	CARB,BLK,SLD

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 14

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85012

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
70	71.58	71.73	0.15	07474	K	COAL	C-4,BRKN BRIGHT BANDED
70	71.73	71.78	0.05	07475	K	CLAYSTONE	BN,SLD
70	71.78	72.15	0.37	07475	K	CLAYSTONE	CARB,BLK,BRKN COALY BANDS
70	72.15	72.17	0.02	07475	K	COAL	C-2,BRKN
70	72.17	72.22	0.05	07475	K	CLAYSTONE	CARB,DK,GY,SLD ANKERITE IN BEDDING AND CLEATS
70	72.22	72.27	0.05	07475	K	COAL	C-1,VBRKN
70	72.27	72.32	0.05	07475	K	CLAYSTONE	CARB,BLK,SLD
70	72.32	72.35	0.03	07475	K	COAL	C-2,PHRD
70	72.35	72.77	0.42	07475	K	CLAYSTONE	M,GY,BRKN
* 70	72.77	73.04	0.27	07475	K	CLAYSTONE	M,GY,LAM

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 15

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85012

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
70	73.04	73.09	0.05	07475	K	ROCK LOSS	
70	73.09	73.46	0.37	07476	K	COAL	C-1.BRKN
70	73.46	73.62	0.16	07476	K	CLAYSTONE	CARB.DK.GY.VBRKN
70	73.62	73.63	0.01	07476	K	COAL	C-1.BRKN
70	73.63	74.40	0.77	07477		CLAYSTONE	M.GY.MAS.SLD
70	74.40	74.49	0.09			CLAYSTONE	M.GY.BRKN AS ABOVE
71	74.49	76.63	2.14			SILTSTONE	CLYY.PR.M-DK.GY.LAM.XBDG.SLD FINE LAMINAE, BEDS GRADE FROM FINE GRAI NED SANDSTONE TO SILTY CLAYSTONE
71	76.63	77.42	0.79			SILTSTONE	CLYY.PR.M-DK.GY.LAM.SLD LITHOLOGY AS ABOVE
71	77.42	78.56	1.14			SANDSTONE	MG.MEL.M.GY.MAS.SLD LAMINATED CLAYEY SANDS NEAR THE TOP, PR EDOMINANTLY MASSIVE

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 16

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85012

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
72	78.56	80.36	1.80			SANDSTONE	FG.MEL.M.GY.MAS.SLD HOMOGENEOUS
72	80.36	80.52	0.16			ROCK LOSS	
72	80.52	80.70	0.18			SANDSTONE	FG.MEL.M.GY.MAS.SLD LITHOLOGY AS ABOVE
72	80.70	82.83	2.13			SANDSTONE	FG.MEL.M.GY.MAS.SLD AS ABOVE, QUARTZ VEINS AND FRACTURES AP PROXIMATELY PERPENDICULAR TO BEDDING
72	82.83	83.26	0.43			SANDSTONE	FG.MEL.M.GY.MAS.VBRKN AS ABOVE, QUARTZ VEINS PERPENDICULAR TO BEDDING
72	83.26	83.67	0.41			SANDSTONE	FG.MEL.M.GY.MAS.SLD AS ABOVE, TWO GENERATIONS OF QUARTZ VEI NING PERPENDICULAR TO BEDDING. GRADES R APIDLY TO MUDSTONE
73	83.67	84.86	1.19			MUDSTONE	MEL.DK.GY.LAM.BRKN 'COASTER ZONE', FISSILE, MINOR CALCITE VEINING AND NUMEROUS FRACTURES PARALLEL TO BEDDING
* 73	84.86	86.39	1.53			MUDSTONE	MEL.DK.GY.LAM.BRKN LITHOLOGY AS ABOVE, 'COASTER ZONE'

* DENOTES MEASURED BCA

FIM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 17

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85012

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
72	86.39	86.69	0.30			MUDSTONE	MOD.M.GY.LAM.SLD GRADES TO SILTSTONE, NOT FISSILE AS ABO VE
71	86.69	87.02	0.33			SILTSTONE	SSY.MOD.M.GY.LAM.SLD
* 70	87.02	89.02	2.00			SANDSTONE	SLTY.VFG.MOD.M.GY.THKB.XBDG.BRKN MINOR CALCITE VEINS AND TALC, SILTIER T OWARDS THE BASE, TOPS UP
73	89.02	89.68	0.66			SANDSTONE	SLTY.VFG.MOD.M.GY.THNB.BRKN VERY SILTY
75	89.68	90.78	1.10			SANDSTONE	SLTY.VFG.MOD.M.GY.THNB.BRKN LITHOLOGY AS ABOVE
* 76	90.78	91.09	0.31			SILTSTONE	MOD.M.GY.LAM.SLD GRADES TO MUDSTONE
68	91.09	91.77	0.68			MUDSTONE	MOD.DK.GY.LAM.BRKN NON-FISSILE
62	91.77	91.86	0.09			CLAY	M.GY SOFT, UNCONSOLIDATED, LOSS OF CIRCULATI ON AT THIS POINT, POSSIBLE FOLD AXIS (?)

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 18

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85012

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
55	91.86	92.63	0.77			MUDSTONE	WEL.DK.GY.LAM.BRKN 'COASTER ZONE', FISSILE, APPEARS TO BE A REPEAT OF THE UNIT ABOVE, BCA'S VARIA BLE, SMALL FOLD AXIS VISIBLE IN THE COR E
* 45	92.63	93.05	0.42			MUDSTONE	WEL.DK.GY.LAM.BRKN 'COASTER ZONE', LINEAR BEDDING PLANE FE ATURES, (TRACE FOSSILS?), BEDDING MORE CONSISTENT THAN ABOVE
39	93.05	93.80	0.75			ROCK LOSS	
* 25	93.80	95.60	1.80			MUDSTONE	WEL.DK.GY.LAM.BRKN 'COASTER ZONE' BCA'S 45 DEGREES FOR TOP 1000 MM THEN EXTREMELY VARIABLE TO 0 D EGREES, MINOR QUARTZ VEINING
30	95.60	96.50	0.90			MUDSTONE	WEL.DK.GY.LAM.BRKN FISSILE 'COASTER' MUDSTONES WITH NON-FI SSILE MUDSTONES CONTORTED BEDDING, HEAV Y QUARTZ VEINING
33	96.50	97.60	1.10			MUDSTONE	WEL.DK.GY.LAM.BRKN 'COASTER ZONE', AT LEAST ONE FOLD AXIS CROSSED, HEAVY QUARTZ VEINING AT HIGH A NGLE TO BEDDING

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 19

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85012

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
38	97.60	99.60	2.00			MUDSTONE	WEL.DK.GY.LAM.BRKN VARIABLE BCA'S, LITHOLOGY AS ABOVE, EXT REMELY HEAVY QUARTZ VEINING PARALLEL AN D PERPENDICULAR TO BEDDING, BRECCIATED, POLISHED SLIPPAGE SURFACES
* 45	99.60	101.65	2.05			MUDSTONE	WEL.M.GY.LAM.BRKN 'COASTER' ZONE, BRECCIATED, HEAVY QUART Z VEINING, WAVY BEDS BUT BCA'S SLIGHTLY MORE CONSISTENT
* 45	101.65	102.52	0.87			MUDSTONE	WEL.M.GY.LAM.BRKN MOSTLY NON-FISSILE, SMALL QUARTZ VEINS, BRECCIATED, POLISHED SLIPPAGE SURFACES ON BEDDING PLANES
39	102.52	102.57	0.05			ROCK LOSS	
33	102.57	103.59	1.02			MUDSTONE	WEL.M.GY.LAM.BRKN 'COASTER' ZONE, BCA'S LOWER TOWARDS BOT TOM OF THE BOX, THIN QUARTZ VEINS PERPE NDICULAR TO BEDDING
* 15	103.59	105.52	1.93			MUDSTONE	WEL.M.GY.LAM.BRKN MOSTLY NON-FISSILE, AT LEAST ONE EVIDEN T FOLD AXIS CROSSED, POLISHED SLIPPAGE SURFACES ON BEDS, MINOR QUARTZ VEINING

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 20

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85012

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
08	105.52	105.85	0.33			MUDSTONE	WEL.M.GY.LAM.BRKN LITHOLOGY AS ABOVE, BCA=0 FOR LARGE POR TION OF THIS
* 05	105.85	106.48	0.63			MUDSTONE	WEL.M.GY.LAM.BRKN LITHOLOGY AS ABOVE
06	106.48	107.25	0.77			MUDSTONE	WEL.DK.GY.LAM.VBRKN SLICKENSIDES
07	107.25	107.95	0.70			ROCK LOSS	
08	107.95	108.75	0.80			MUDSTONE	WEL.DK.GY.LAM.VBRKN LITHOLOGY AS ABOVE, CALCITE, SLICKENSID ES
09	108.75	109.03	0.28			MUDSTONE	WEL.DK.GY.LAM.VBRKN LITHOLOGY AS ABOVE, VERY LOW BCA'S
* 10	109.03	110.93	1.90			MUDSTONE	SLTY.PR.DK.GY.LAM.BRKN OCCASIONAL FAINT SILTY LAMINAE, QUARTZ VEINS AT VARIOUS ANGLES, VERY UNIFORM L AMINAE
* 04	110.93	111.35	0.42			MUDSTONE	SLTY.PR.DK.GY.LAM.VBRKN LITHOLOGY AS ABOVE, FRACTURES EASILY PA RALLEL TO BEDDING, APPARENT TOPS DOWN

* DENOTES MEASURED BCA

FORM 4007

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 21

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85012

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
06	111.35	111.85	0.50			ROCK LOSS	
* 10	111.85	112.88	1.03			MUDSTONE	SLTY.PR.DK.GY.LAM.VBRKN LITHOLOGY AS ABOVE, NUMEROUS WIDE QUART Z VEINS 2.0TO 35.0 MM WIDEPERPENDICULAR TO BEDDING
22	112.88	113.18	0.30			ROCK LOSS	
* 40	113.18	114.85	1.67			MUDSTONE	SLTY.PR.DK.GY.LAM.VBRKN LITHOLOGY AS ABOVE, MODERATE QUARTZ VEI NING, TOPS DOWN INDICATED BY NUMEROUS C YCLES OF GRADATIONAL BEDDING
43	114.85	116.68	1.83			ROCK LOSS	
47	116.68	118.46	1.78			MUDSTONE	SLTY.PR.DK.GY.LAM.WRMBU.VBRKN TOPS DOWN, MODERTAE QUARTZ VEINING AT V ARIOUS ANGLES, FEED TRAILS (TRACE FOSSI LS) ON BEDDING PLANES,TOPS UP ON HORIZO NTAL WORM BURROWS, VERY UNIFORM LAMINAE BREAKS EASILY ALONG BEDDING

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 22

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85012

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
49	118.46	119.47	1.01			MUDSTONE	SLTY.PR.DK.GY.LAM.WRMBU.VBRKN TOPS DOWN, NUMEROUS WIDE QUARTZ VEINS
51	119.47	120.33	0.86			MUDSTONE	SLTY.PR.DK.GY.LAM.WRMBU.VBRKN TOPS DOWN, LITHOLOGY AS ABOVE
54	120.33	122.14	1.81			BRECCIA	M.GY.LAM.VBRKN ANGULAR SILTY MUDSTONE CLASTS, INTENSEL Y BRECCIATED BY QUARTZ VEINS, OCCASIONA L FRACTURE FILL BY CARBONACEOUS MATERIA L
56	122.14	122.31	0.17			BRECCIA	PR.M-DK.GY.MAS.VBRKN SILTY FINE GRAINED SANDSTONE INTENSELY BRECCIATED BY QUARTZ VEINS, ALSO MASSIV E, TALC IN SOME VEINS
57	122.31	123.77	1.46			BRECCIA	PR.M-DK.GY.MAS.VBRKN AS ABOVE, OCCASIONAL CARBONACEOUS CLAY FILLINGS, SOME LATE FRACTURES
59	123.77	124.73	0.96			BRECCIA	PR.M-DK.GY.MAS.VBRKN LITHOLOGY AS ABOVE
61	124.73	125.31	0.58			ROCK LOSS	
62	125.31	125.61	0.30			BRECCIA	PR.M-DK.GY.MAS.VBRKN LITHOLOGY AS ABOVE

* DENOTES MEASURED BCA

FORM 4001

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85012

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
63	125.61	126.50	0.89		J	BRECCIA	DK.GY.MAS.VBRKN CARBONACEOUS MUDSTONE BRECCIATED BY QUA RTZ VEINS, SOME PLACES QUITE SILTY, 50. 0 MM OF COALY MUDSTONE WITH POLISHED FR ACTURE SURFACES, CORE CRUSHED IN PLACES
64	126.50	127.21	0.71			ROCK LOSS	
65	127.21	127.41	0.20			BRECCIA	DK.GY.MAS.BRKN LITHOLOGY AS ABOVE
66	127.41	128.22	0.81			BRECCIA	DK.GY.MAS.VBRKN SILTY FINE GRAINED SANDSTONE BRECCIA
67	128.22	128.41	0.19			ROCK LOSS	
68	128.41	129.01	0.60			MUDSTONE	CARB.BLK.MAS.VBRKN CRUSHED IN PLACES, COALY IN PLACES, MOD ERATE ANKERITE VEINING THROUGHOUT
* 70	129.01	130.58	1.57			MUDSTONE	CARB.DK.GY.VTHNB.VBRKN AS ABOVE, GRADING TO SILTY MUDSTONE IN PLACES, MODERATE ANKERITE VEINING, SLIK ENSIDES

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85012

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
53	130.58	130.70	0.12			SILTSTONE	CLYY.MOD.M.GY.LAM.BRKN MINOR QUARTZ VEINING, SLIGHTLY CARBONAC EOUS
38	130.70	132.15	1.45			SILTSTONE	SSY.MOD.M.GY.LAM.BRKN LOCALLY VERY SANDY
* 10	132.15	133.46	1.31			SILTSTONE	SSY.MOD.M.GY.LAM.BRKN AS ABOVE, LINEATED SLIPPAGE SURFACES, T ALC
12	133.46	133.80	0.34			ROCK LOSS	
13	133.80	134.12	0.32			SILTSTONE	SSY.MOD.M.GY.LAM.BIOTR.BRKN LITHOLOGY AS ABOVE, LONG GRADATION TO S ANDSTONE
14	134.12	134.33	0.21			SANDSTONE	SLTY.MOD.M.GY.LAM.BIOTR.BRKN SLIGHTLY SANDIER THAN ABOVE
17	134.33	136.50	2.17			SANDSTONE	SLTY.MOD.M.GY.LAM.BIOTR.SLD LITHOLOGY AS ABOVE, VERY SILTY, LARGE Q UARTZ VEINS PARALLEL AND PERPENDICULAR TO BEDDING
20	136.50	136.83	0.33			SANDSTONE	SLTY.MOD.M.GY.LAM.BIOTR.SLD LITHOLOGY AS ABOVE, QUARTZ VEINED

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85012

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 23	136.83	138.53	1.70			SANDSTONE	SLTY.MOD.M.GY.LAM.BIOTR.SLD SILTIER TOWARDS THE BASE, NUMEROUS SILT Y LAMINAE, GRADES TO SILTSTONE
* 31	138.53	139.88	1.35			SILTSTONE	SSY.MOD.M.GY.THNB.BIOTR.SLD SANDY AT TOP, MINOR QUARTZ VEINS PERPEN DICULAR TO BEDDING EXHIBITING EVIDENCE OF PRESSURE SOLUTION, POLISHED SLIPPAGE SURFACES ON FRACTURE AND BEDDING PLANE S
32	139.88	139.93	0.05			ROCK LOSS	
33	139.93	140.60	0.67			SILTSTONE	SSY.MOD.M.GY.THNB.BIOTR.SLD LITHOLOGY AS ABOVE
36	140.60	142.72	2.12			SILTSTONE	SSY.MOD.M.GY.LAM.BIOTR.BRKN LITHOLOGY AS ABOVE, SANDY BANDS TO 20.0 MM
38	142.72	143.04	0.32			SILTSTONE	SSY.MOD.M.GY.LAM.BIOTR.BRKN LITHOLOGY AS ABOVE

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85012

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 40	143.04	144.68	1.64			SILTSTONE	CLYY.MOD.DK.GY.LAM.SLD ABUNDANT POLISHED, LINEATED SLIPPAGE PL ANES, CALCITE VEINING
44	144.68	146.17	1.49			SILTSTONE	CLYY.MOD.DK.GY.LAM.BRKN LITHOLOGY AS ABOVE, MINOR CALCITE VEINI NG
46	146.17	146.69	0.52			MUDSTONE	CLYY.MOD.DK.GY.LAM.BRKN ABUNDANT SLIPPAGE SURFACES
48	146.69	147.89	1.20			CLAYSTONE	DK.GY.MAS.BRKN VAGUE LAMINAE, SOME LISTRIC FRACTURES
50	147.89	148.13	0.24			COAL	C-6.SLD INTENSIVE ANKERITE VEINING
51	148.13	148.34	0.21			CLAYSTONE	CARB.DK.GY.SLD FEW COAL VEINS AND ANKERITE FILLED FRAC TURES
51	148.34	148.42	0.08			CLAYSTONE	CARB.BLK.VBRKN VERY COALY WITH MINOR ANKERITE VEINS
52	148.42	148.85	0.43			CLAYSTONE	CARB.BLK.SLD
53	148.85	149.67	0.82			CLAYSTONE	CARB.DK.GY.BRKN FEW ANKERITE FILLED VEINS

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 27

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85012

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
54	149.67	149.70	0.03			CLAYSTONE	M.BN.SLD SOFT
55	149.70	150.32	0.62			CLAYSTONE	CARB.BLK.BRKN FEW COALY LAMINAE, LISTRIC FRACTURING
57	150.32	151.21	0.89			CLAYSTONE	CARB.BLK.BRKN COALY BANDS
58	151.21	151.29	0.08			CLAYSTONE	DK.BN.SLD
58	151.29	151.35	0.06			CLAYSTONE	CARB.BLK.SLD AS ABOVE, ANKERITE ALONG BEDDING
59	151.35	151.37	0.02			COAL	C-1.SLD
59	151.37	151.54	0.17	07478	K (REPEAT)	CLAYSTONE	CARB.BLK.BRKN COALY WITH ANKERITE FILLED FRACTURE
59	151.54	151.66	0.12	07479	K (REPEAT)	COAL	C-1.BRKN
59	151.66	151.68	0.02	07479	K (REPEAT)	COAL	C-2.SLD
59	151.68	151.73	0.05	07479	K (REPEAT)	CLAYSTONE	CARB.DK.GY.SLD

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 28

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85012

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
60	151.73	151.81	0.08	07479	K (REPEAT)	COAL	C-2.VBRKN
60	151.81	151.82	0.01	07479	K (REPEAT)	CLAYSTONE	CARB.BLK.SLD
60	151.82	151.94	0.12	07479	K (REPEAT)	COAL	C-1.SLD
* 60	151.94	151.97	0.03	07479	K (REPEAT)	CLAYSTONE	CARB.BLK.BRKN LISTRIC SURFACES
60	151.97	152.02	0.05	07479	K (REPEAT)	CLAYSTONE	CARB.BLK.SLD
59	152.02	152.06	0.04	07479	K (REPEAT)	COAL	C-4.BRKN
58	152.06	152.23	0.17	07479	K (REPEAT)	CLAYSTONE	CARB.BLK.SLD
57	152.23	152.31	0.08	07479	K (REPEAT)	COAL	C-2.SLD ANKERITE IN FRACTURES
56	152.31	152.39	0.08	07479	K (REPEAT)	CLAYSTONE	CARB.BLK.SLD
56	152.39	152.47	0.08	07479	K (REPEAT)	COAL	C-2.BRKN

* DENOTES MEASURED BCA

FCFN. 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 29

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85012

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
55	152.47	152.51	0.04	07479	K (REPEAT)	CLAYSTONE	CARB.BLK.BRKN
55	152.51	152.53	0.02	07479	K (REPEAT)	COAL	C-2.BRKN
54	152.53	152.73	0.20	07479	K (REPEAT)	CLAYSTONE	CARB.BLK.BRKN
52	152.73	152.87	0.14	07479	K (REPEAT)	COAL	C-6.VBRKN
51	152.87	153.01	0.14	07479	K (REPEAT)	CLAYSTONE	CARB.BLK.SHRD VERY LISTRIC
48	153.01	153.56	0.55	07480	K (REPEAT)	SANDSTONE	SLTY.FG.MOD.M.GY.MAS.BRKN NUMEROUS ANKERITE FILLED FRACTURES
44	153.56	153.95	0.39			SANDSTONE	VFG.HEL.LT.GY.MAS.BRKN
* 35	153.95	155.55	1.60			SANDSTONE	SLTY.VFG.HEL.LT.GY.MAS.BRKN LITHOLOGY AS ABOVE, OCCASIONAL SILTY BA NDS, LARGE CALCITE VEIN PARALLEL TOBEDO ING, POLISHED SLIPPAG E SURFACES
54	155.55	157.16	1.61			SANDSTONE	FG.MOD.LT.GY.MAS.BRKN COARSENS DOWNHOLE FROM VERY FINE GRAINE D TO FINE GRAINED BANDED SANDSTONE

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 30

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85012

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
65	157.16	157.32	0.16			SANDSTONE	FG.MOD.LT.GY.MAS.BRKN LITHOLOGY AS ABOVE, INTENSE RANDOM QUAR TZ VEINING, VERY RAPID TRANSITION TO MU DSTONE BELOW
* 68	157.32	157.75	0.43			MUDSTONE	HEL.LT.GY.LAM.BRKN DISTINCTLY LIGHTER COLOUR
68	157.75	157.88	0.13			MUDSTONE	HEL.LT.GY.LAM.SLD LITHOLOGY AS ABOVE
* 67	157.88	159.82	1.94			MUDSTONE	HEL.M.GY.LAM.BRKN 'COASTER' ZONE, NO TRANSITION TO ABOVEM UDSTONE, S ILTIER TOWARDS THE BASE, CAL CITE VEINING PARALLEL TO BEDDING
66	159.82	160.24	0.42			MUDSTONE	HEL.M.GY.LAM.BRKN 'COASTER' ZONE
65	160.24	161.89	1.65			MUDSTONE	HEL.M.GY.LAM.BRKN 'COASTER' ZONE
65	161.89	162.62	0.73			MUDSTONE	HEL.M.GY.LAM.BRKN 'COASTER' ZONE, RAPID TRANSITION TO SAN DSTONE BELOW
* 64	162.62	163.31	0.69			SANDSTONE	SLTY.MOD.M.GY.THNB.SLD VERY SILTY IN PLACES

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 31

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85012

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
64	163.31	163.97	0.66			SANDSTONE	SLTY.MOD.M.GY.THNB.SLD LITHOLOGY AS ABOVE
65	163.97	164.24	0.27			SANDSTONE	SLTY.MOD.M.GY.THNB.XBDG.SLD TOPS DOWN ON CROSS BEDS, LITHOLOGY AS A BOVE
* 65	164.24	165.54	1.30			SILTSTONE	MOD.M.GY.LAM.SLD
67	165.54	166.10	0.56			MUDSTONE	WEL.DK.GY.LAM.BRKN 'COASTER' ZONE, NOT QUITE AS FISSILE AS ABOVE
68	166.10	166.38	0.28			MUDSTONE	WEL.DK.GY.LAM.BRKN 'COASTER' ZONE, FISSILE
* 70	166.38	168.12	1.74			MUDSTONE	WEL.DK.GY.LAM.BRKN 'COASTER' ZONE, SMOOTH POLISHED BEDDING , SLIPPAGE SURFACES
70	168.12	169.44	1.32			MUDSTONE	WEL.DK.GY.LAM.BRKN LITHOLOGY AS ABOVE, 'COASTER' ZONE
71	169.44	170.17	0.73			MUDSTONE	WEL.DK.GY.LAM.BRKN LITHOLOGY AS ABOVE, 'COASTER' ZONE

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 32

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85012

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 71	170.17	172.27	2.10			MUDSTONE	WEL.DK.GY.LAM.BRKN LITHOLOGY AS ABOVE, 'COASTER' ZONE, POL ISHED SLIPPAGE SURFACES, MINOR CALCITE VEINING, BECOMES LESS FISSILE DOWNHOLE
64	172.27	173.09	0.82			MUDSTONE	WEL.DK.GY.LAM.BRKN NON-FISSILE, GRADES TO SILTSTONE, MINOR CALCITE VEINING
59	173.09	174.33	1.24			SILTSTONE	CLYY.MOD.M.GY.LAM.XBDG.BRKN MINOR FAULTS WITH ABOUT 10.0 MM DISPLAC EMENT, TOPSDOWN ON CROSS-BEDS, GRADES T O MUDSTONE, TALC
54	174.33	175.40	1.07			MUDSTONE	SLTY.MOD.M.GY.LAM.BRKN POLISHED SLIPPAGE SURFACES, SLIGHTLY CA RBONACEOUS
* 50	175.40	176.01	0.61			SILTSTONE	CLYY.MOD.M.GY.LAM.SLD NUMEROUS THIN CALCITE VEINS
53	176.01	176.21	0.20		J	MUDSTONE	CARB.MOD.BLK.LAM.BRKN COALY, SLIPPAGE SURFACES
55	176.21	176.31	0.10			MUDSTONE	SLTY.MOD.M.GY.LAM.BRKN MINOR VEINING
62	176.31	177.92	1.61			SILTSTONE	CLYY.PR.M.GY.LAM.VBRKN SLIGHTLY SANDY IN PLACES

* DENOTES MEASURED BCA

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86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 33

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85012

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 70	177.92	178.35	0.43			SILTSTONE	CLYY.MOD.M.GY.LAM.BRKN TOPS DOWN ON GRADED BEDDING, FINE INTER LAMINATED SILTSTONES AND CLAYSTONE, LIN EATED TALC ON FRACTURE SURFACES
* 63	178.35	180.40	2.05			MUDSTONE	SLTY.MOD.M.GY.LAM.BIOTR.BRKN SLIGHTLY FINER THAN ABOVE, VERY SMALL F AULTS
65	180.40	181.21	0.81			MUDSTONE	WEL.DK.GY.LAM.BRKN VERY LITTLE SILT
66	181.21	182.45	1.24			MUDSTONE	WEL.DK.GY.LAM.BRKN MINOR SILTY LAMINAE, CALCITE VEIN PARAL LEL TO BEDDING
69	182.45	184.33	1.88			MUDSTONE	SLTY.MOD.M.GY.LAM.BRKN VERY MINOR SANDSTONE BANDS, MINOR TALC ON FRACTURES
71	184.33	185.02	0.69			MUDSTONE	WEL.BLK.LAM.BRKN HOMOGENOUS, TALC, EROSIVE LOWER CONTACT
* 72	185.02	186.37	1.35			SILTSTONE	MOD.M.GY.LAM.BRKN CONTAINS LARGE ANGULAR SPOTTED SILTY SA NDSTONE RIP-UP CLASTS AT TOP, TOPS DOWN (??), GRADES TO SANDY SILTSTONE

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 34

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85012

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
72	186.37	187.58	1.21			SILTSTONE	SSY.MOD.M.GY.LAM.VBRKN VERY DIRTY.
71	187.58	188.46	0.88			SANDSTONE	SLTY.VFG.MOD.M.GY.THNB.BIOTR.BRKN TOPS UP, CONTAINS SOME FINE GRAINED TO MEDIUM FINE GRAINED SPOTTED SANDSTONES, EXCELLENT VERTICAL WORMBURROWS
* 71	188.46	190.46	2.00			SANDSTONE	SLTY.FG.MOD.M.GY.MB.SLD SILTY BANDS IN CENTRAL PORTION, COARSEN S DOWN TO SPECKLED SAND AS DESCRIBED AB OVE, FINE GRAINED TO MEDIUM GRAINED SAN DSTONE
71	190.46	190.66	0.20			SANDSTONE	SLTY.FG.MOD.M.GY.MB.BIOTR.SLD LITHOLOGY AS ABOVE, TOPS UP, VERTICAL W ORM BURROWS, FINE GRAINED TO MEDIUM GRA INED SANDSTONE
70	190.66	192.57	1.91			SANDSTONE	SLTY.FG-.MOD.M.GY.MB.BIOTR.SLD ABUNDANT SILTY BANDS, COARSENS DOWNWARD , SPECKLED SANDSTONE, TRANSPORTED BIVAL VES IN COARSER SANDSTONE, TOPS UP, FINE GRAINED TO MEDIUM GRAINED SANDSTONE
70	192.57	193.87	1.30			SANDSTONE	SLTY.VFG-.MOD.M.GY.MB.BIOTR.SLD BECOMING SILTIER, VERY FINE GRAINED TO FINE GRAINED SANDSTONE

* DENOTES MEASURED BCA

FORM 4001

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PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85012

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
69	193.87	194.58	0.71			SANDSTONE	SLTY.VFG-.MOD.M.GY.MB.BIOTR.SLD LITHOLOGY AS ABOVE. TOPS UP, MINOR TALC ANDPOLISH ED SLIPPAGE SURFACES, VERY F INE GRAINED TO FINE GRAINED SANDSTONE
* 69	194 58	196.76	2.18			SANDSTONE	SLTY.VFG-.MOD.M.GY.THNB.BIOTR.SLD LITHOLOGY AS ABOVE, LOCALLY INTENSE BIO TURBATIONS, TOPS UP, CALCITE VEINED, OC CASIONALLY RIP-UP CLASTS, POLISHED SLIP PAGE SURFACES, VERY DIRTY SANDSTONE, VE RY FINE GRAINED TO FINE GRAINED SANDSTO NE
70	196.76	197.01	0.25			SANDSTONE	SLTY.VFG-.MOD.M.GY.THNB.BIOTR.SLD SOME CLAY LAMINAE, LITHOLOGY AS ABOVE, VERY FINE GRAINED TO FINE GRAINED SANDS TONE
70	197.01	198.73	1.72			SILTSTONE	SSY.MOD.M.GY.LAM.BIOTR.BRKN TOPS UP, POLISHED SLIPPAGE SURFACES, TA LC ON FRACTURES, VERY DIRTY SANDSTONE L AMINAE, VERTICAL WORM BURROWS
* 71	198.73	200.02	1.29			SANDSTONE	SLTY.VFG-.MOD.M.GY.LAM.WRMBU.BRKN HORIZONTAL WORMBURROWS, TALC ALONG POLI SHED SLIPPAGE FRACTURE SURFACES

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 36

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85012

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
67	200.02	200.67	0.65			SILTSTONE	MOD.M.GY.LAM.BRKN SANDY TOWARD TOP, CALCITE VEIN 2.0 MM A T ANGLE TO BEDDING
* 61	200.67	202.78	2.11			SILTSTONE	MOD.M-DK.GY.LAM.SLD TALC ALONG POLISHED SLIPPAGE SURFACES, MINOR PLANT MATERIAL
70	202.78	202.95	0.17			SILTSTONE	MOD.M-DK.GY.LAM.BRKN LINEATED SLIPPAGE SURFACES CONTAIN TALC
* 72	202.95	203.45	0.50			SANDSTONE	SLTY.PR.M.GY.THNB.BRKN LINEATED POLISHED SLIPPAGE SURFACES, MI NOR TALC, DARK GREY SILTSTONE INTERBEDS
72	203.45	204.52	1.07			SILTSTONE	MOD.M-DK.GY.VTHNB.BIOTR.BRKN TOPS UP, TALC ON POLISHED SLIPPAGE SURF ACES
71	204.52	204.85	0.33			CLAYSTONE	SLTY.DK.GY.BRKN WAVY LAMINAE
71	204.85	204.86	0.01			CLAYSTONE	M.BN.BRKN
71	204.86	205.78	0.92	07481		CLAYSTONE	CARB.BLK.BRKN

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 37

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85012

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
71	205.78	205.83	0.05	07482	I	COAL	C-6.BRKN
71	205.83	206.26	0.43	07482	I	COAL	C-2.BRKN LENS OF CLAYSTONE
70	206.26	206.33	0.07	07482	I	COAL LOSS	
70	206.33	206.43	0.10	07483	I	CLAYSTONE	CARB.BLK.SLD GRADATIONAL CONTACT DOWNWARD
70	206.43	206.49	0.06	07483	I	CLAYSTONE	M.BN.BRKN SOFT
70	206.49	206.53	0.04	07483	I	CLAYSTONE	M.BN.BRKN LITHOLOGY AS ABOVE
70	206.53	206.61	0.08	07483	I	CLAYSTONE	CARB.BLK.SHRD LISTRIC
70	206.61	206.78	0.17	07483	I	ROCK LOSS	
70	206.78	206.80	0.02	07483	I	CLAYSTONE	M.BN.SLD SOFT
70	206.80	206.83	0.03	07483	I	CLAYSTONE	CARB.BLK.BRKN

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 38

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85012

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
70	206.83	206.84	0.01	07483	I	COAL	C-3.VBRKN
70	206.84	206.91	0.07	07483	I	CLAYSTONE	CARB.BLK.SLD
70	206.91	207.00	0.09	07483	I	CLAYSTONE	M.BN.SLD SOFT
70	207.00	207.08	0.08	07483	I	CLAYSTONE	CARB.BLK.SLD
70	207.08	207.17	0.09	07483	I	CLAYSTONE	M.BN.SLD SOFT
70	207.17	207.27	0.10	07483	I	CLAYSTONE	CARB.BLK.SLD
70	207.27	207.50	0.23	07484	I	COAL	C-3.SLD
70	207.50	207.51	0.01	07484	I	CLAYSTONE	CARB.DK.GY.BRKN
70	207.51	207.59	0.08	07484	I	COAL	C-5.SLD BRIGHT BANDS
70	207.59	207.94	0.35	07484	I	COAL	C-3.BRKN

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 39

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85012

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
70	207.94	208.00	0.06	07484	I	COAL	C-2,BRKN
70	208.00	208.15	0.15	07484	I	COAL	C-1,VBRKN
70	208.15	208.18	0.03	07484	I	CLAYSTONE	CARB,DK,GY,SLD LENS IN COAL
69	208.18	208.54	0.36	07484	I	COAL	C-2,VBRKN
69	208.54	208.56	0.02	07484	I	CLAYSTONE	CARB,DK,GY,SLD
69	208.56	208.61	0.05	07484	I	COAL	C-1,SLD
69	208.61	208.64	0.03	07484	I	CLAYSTONE	CARB,DK,GY,SLD
69	208.64	208.66	0.02	07484	I	COAL	C-1,BRKN
69	208.66	208.79	0.13	07484	I	CLAYSTONE	M,GY,SLD GRADES INTO CARBONACEOUS CLAYSTONE ABOV E AND BELOW

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 40

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85012

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
69	208.79	208.81	0.02	07484	I	CLAYSTONE	CARB.BLK.SLD
69	208.81	208.89	0.08	07484	I	COAL	C-5.SLD
69	208.89	208.95	0.06	07484	I	CLAYSTONE	CARB.BLK.SLD
69	208.95	209.20	0.25	07484	I	COAL	C-1.BRKN
69	209.20	210.57	1.37	07485		CLAYSTONE	CARB.BLK.SLD COAL LAMINAE ABOVE, PYRITE BANDS ABOVE, LIGHTER COLOUR, MORE SILTY AND LAMINAT ED BELOW.
* 68	210.57	211.86	1.29			SANDSTONE	VFG.MOD.M.GY.THNB.BRKN DARK GREY SILTSTONE LAMINAE, UNIFORM, S ILTIER DOWN TO BASE
65	211.86	212.39	0.53			SILTSTONE	SSY.MOD.M.GY.VTHNB.BRKN FRACTURED TOWARDS BASE, UNIFORM

* DENOTES MEASURED BCA

FORM 4001

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85012

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
62	212.39	213.47	1.08			SILTSTONE	SSY.MOD.M.GY.VTHNB.BRKN MINOR PLANT MATERIAL ON DARK GREY SILTS TONE LAMINAE
* 59	213.47	214.34	0.87			SANDSTONE	FG.MOD.M.GY.THNB.SLD DARK GREY SILTSTONE LAMINAE
57	214.34	214.67	0.33			SANDSTONE	FG.MOD.M.GY.THNB.SLD MINOR SILTSTONE RIP-UP CLASTS AT TOP, C OALY PLANT FRAGMENTS (1.0 MM)
56	214.67	214.96	0.29			ROCK LOSS	
* 52	214.96	216.67	1.71			SANDSTONE	FG.MOD.M.GY.THNB.SLD MINOR SILTSTONE RIP-UP CLASTS (20.0 MM) INCREASING IN ABUNDANCE AND BECOMING S MALLER (2.5 MM) TOWARDTHE BASE, UNIFORM
* 53	216.67	217.11	0.44			SANDSTONE	FG-.PR.S-P.GY.MB.BRKN BAND OF SILTSTONE RIP-UP CLASTS 60.0 MM FROM TOP, DARK GREY, SUB-ROUNDED,2.5 M M IN DIAMETER, FINE GRAINED TO MEDIUM G RAINED SANDSTONE
57	217.11	217.61	0.50			SANDSTONE	FG.MOD.M.GY.MB.VBRKN EASILY WEATHERED, SILTIER TOWARDS BASE
50	217.61	217.96	0.35			ROCK LOSS	

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85012

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
65	217.96	218.67	0.71			SANDSTONE	VFG-.MOD.M.GY.THKB.BRKN MINOR TALC ON FRACTURE SURFACES, UNIFOR M, VERY FINE GRAINED TO FINE GRAINED SA NDSTONE
71	218.67	219.60	0.93			SANDSTONE	FG-.MOD.M.GY.THKB.VBRKN HIGHLY FRACTURED, TALC, QUARTZ AND CALC ITE VEINS (2.0 MM) THROUGHOUT, 60.0 MM SILTSTONE RIP-UP CLAST UNIT, FINE GRAIN ED TO MEDIUM GRAINED SANDSTONE
* 78	219.60	220.35	0.75			SILTSTONE	MOD.M-DK.GY.VTHNB.BRKN MINOR TALC ALONG FRACTURE SURFACES, SAN DSTONE INTERBEDS INCREASING TOWARD TOP
78	220.35	220.58	0.23			SILTSTONE	SSY.WEL.M-DK.GY.MAS.SLD SANDY TOWARD BASE
78	220.58	220.79	0.21			SANDSTONE	FG.WEL.M.GY.THKB.SLD UNIFORM
78	220.79	220.91	0.12			ROCK LOSS	
78	220.91	222.22	1.31			SANDSTONE	FG.MOD.M.GY.THKB.BRKN MINOR TALC ALONG FRACTURE SURFACES, UNI FORM

* DENOTES MEASURED BCA

FORM 4001

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85012

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 78	222.22	223.65	1.43			SANDSTONE	VFG-.MOD.M.GY.THNB.BRKN UNIFORM, DIRTY SANDSTONE, MINORTALC ON SLIPPAGE S URFACES, LITHOLOGY AS ABOVE, VERY FINE GRAINED TO FINE GRAINED SAND STONE
74	223.65	223.93	0.28			SANDSTONE	VFG-.MOD.M.GY.THNB.BRKN UNIFORM, DIRTY SANDSTONE, TALC ON SLIPP AGE SURFACES, LITHOLOGY AS ABOVE, VERY FINE GRAINED TO FINE GRAINED SANDSTONE
* 70	223.93	225.44	1.51			SANDSTONE	SLTY.VFG.MOD.M.GY.LAM.VBRKN TALC ON POLISHED FRACTURE SURFACES, UNI FORM, SILTIER TOWARD BASE
67	225.44	226.30	0.86			SILTSTONE	MOD.M.GY.LAM.BRKN MINOR TALC ON FRACTURE SURFACES
64	226.30	227.37	1.07			SILTSTONE	MOD.DK.GY.LAM.BRKN TALC ON POLISHED SLIPPAGE SURFACES
* 60	227.37	229.20	1.83			SILTSTONE	CLYY.DK.GY.LAM.BRKN FAINTLY BEDDED, MINOR TALC ON FRACTURE SURFACES, PYRITE BLEBS, OCCASIONAL QUAR TZ VEINS PERPENDICULAR TO BEDDING

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85012

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 78	229.20	231.06	1.86			MUDSTONE	SLTY.DK.GY.LAM.WRMBU.BRKN LITHOLOGY AS ABOVE, MUCH MORE CLAYEY, S ILTY LAMINAE, TALC ON FRACTURE SURFACES , VERTICAL WORMBURROWS, TOPS UP
77	231.06	231.24	0.18			MUDSTONE	BLK.MAS.BRKN MASSIVE
75	231.24	233.09	1.85			MUDSTONE	BLK.MAS.BRKN ONE PYRITIZED, TRANSPORTED BIVALVE SHEL L (CROSS-SECTION), ONE POSSIBLE SHELL F RAGMENT, PLANT HASH ON FRACTURE SURFACE S, ONE PYRITE BLEB 10.0 MM IN DIAMETER
73	233.09	234.24	1.15			MUDSTONE	BLK.MAS.BRKN LITHOLOGY AS ABOVE, SLICKENSIDES, SILTI ER TOWARD BOTTOM
72	234.24	235.09	0.85			MUDSTONE	SLTY.DK.GY.VTHNB.BRKN CORE TWIST OFF AT 0.00M, SOME SILTY LAM INAE GRADING TO VERY FINE GRAINED SANDS TONE, SCOURS
* 70	235.09	236.48	1.39			MUDSTONE	SLTY.DK.GY.VTHNB.BRKN LITHOLOGY AS ABOVE, FINER GRAINED, FAIN TER BEDDING, POLISHED FRACTURE SURFACES , SCOURS

* DENOTES MEASURED BCA

FORM 4001

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PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85012

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
70	236.48	236.54	0.06			COAL	C-3,BLK.BRKN
70	236.54	236.77	0.23			CLAYSTONE	CARB.BLK.VBRKN SOFT, UNCONSOLIDATED IN PLACES, SLICKEN SIDES, TALC ON SOME FRACTURE SURFACES, VERY CARBONACEOUS
70	236.77	237.08	0.31			MUDSTONE	SLTY.DK.GY.VTHNB.SLD MINOR QUARTZ VEINS 1.0 MM WIDE
* 70	237.08	238.86	1.78			SILTSTONE	M-DK.GY.LAM.WRMBU.VBRKN LAMINAE GRADING FROM MUDSTONE TO FINE G RAINED SANDSTONE, MODERATE QUARTZ VEINI NG, TALC ON SOME FRACTURE SURFACES, SAN DIER AND INTENSE VEINING NEAR BOTTOM, T OPS UP, VERTICAL WORMBURROWS
69	238.86	239.90	1.04			SANDSTONE	FG.PR.LT.GY.MAS.VBRKN MODERATE QUARTZ VEINING AT VARIOUS ANGL ES, OCCASIONAL MUDSTONE RIP-UP CLAST, P OORLY SORTED
68	239.90	240.73	0.83			SANDSTONE	FG.VPR.LT.GY.MAS.VBRKN NUMEROUS SUB-ANGULAR MUDSTONE RIP-UP CL ASTS (3.0 MM X25.0 MM)

* DENOTES MEASURED BCA

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PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85012

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
66	240.73	242.57	1.84			SANDSTONE	FG.VPR.LT.GY.MAS.VBRKN GRADES TO MEDIUM GRAINED SANDSTONE IN P LACES, MODERATE QUARTZ VEINING, MUCH FE WER RIP-UP CLASTS
* 65	242.57	243.55	0.98		H/I	MUDSTONE	CARB.BLK.LAM.VBRKN NUMEROUS 1.0 MM WIDE COAL STRINGERS THR OUGHOUT
64	243.55	244.24	0.69		H/I	SILTSTONE	M.GY.LAM.SLD FAINT BEDDING.
64	244.24	245.40	1.16		H/I	MUDSTONE	CARB.DK.GY.MAS.BRKN COAL STRINGERS AND LENSES THROUGHOUT (1 .0 TO 4.0 MM WIDE), OCCASIONAL QUARTZ V EINS, VERY CARBONACEOUS
63	245.40	245.54	0.14		H/I	COAL	C-5.BLK.VBRKN VERY DIRTY
63	245.54	245.98	0.44		H/I	MUDSTONE	CARB.DK.GY.MAS.SLD VERY CARBONACEOUS
62	245.98	247.90	1.92		H/I	MUDSTONE	CARB.VPR.DK.GY.MAS.BRKN OCCASIONAL COAL BLEBS AND LENSES (1.0 T O 3.0 MM WIDE), SOME SILTY AREAS
61	247.90	248.22	0.32		H/I	SILTSTONE	VPR.LT-M.GY.LAM.SLD FINE WISPY MUDDY LAMINAE THROUGHOUT

* DENOTES MEASURED BCA

FORM 4001

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PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85012

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 60	248.22	249.80	1.58		H/I	SILTSTONE	VPR.LT-M.GY.LAM.BIOTR.VBRKN LITHOLOGY AS ABOVE, CORE TWIST OFF AT 0 .00M
54	249.80	251.32	1.52		H/I	SILTSTONE	VPR.M-DK.GY.VTHNB.BIOTR.BRKN ONE COAL LENS 15.0 MM WIDE, VERY BIOTUR BATED IN PLACES, VERY VARIABLE BCA'S, L AMINAE GRADING FROM MUDSTONE TO FINE GR AINED SANDSTONE
* 50	251.32	251.88	0.56		H/I	MUDSTONE	VPR.DK.GY.MAS.BRKN UNIFORM, OCCASIONAL COAL STRINGER (2.0 MM WIDE)
* 70	251.88	253.84	1.96		H/I	MUDSTONE	CLYY.BLK.MAS.VBRKN OCCASIONAL FINE QUARTZ VEINS, NUMEROUS COAL STRINGERS (1.0 TO 25.0 MM WIDE), U NCONSOLIDATED CLAYS IN PLACES
63	253.84	253.87	0.03		H/I	MUDSTONE	CARB.WEL.DK.GY.VBRKN POLISHED SURFACES
62	253.87	253.91	0.04		H/I	COAL	C-5.BLK.BRKN INTLAMINATED MUDSTONES
61	253.91	254.14	0.23		H/I	MUDSTONE	CARB.WEL.DK.GY.LAM.BRKN COAL LAMINAE THROUGHOUT (1.0 TO 2.0 MM WIDE), MINOR ANKERITE VEINING

* DENOTES MEASURED BCA

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PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85012

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
60	254.14	254.22	0.08		H/I	MUDSTONE	CARB.DK.GY.SLD SOME PLANT MATERIAL, COAL LAMINA TOP 2M M, LITHOLOGY AS ABOVE
* 55	254.22	255.57	1.35		H/I	MUDSTONE	SLTY.WEL.DK.GY.BRKN UNIFORM, MINOR COALY LAMINAE TOWARDS TO P (1.0 MM), CARBONACEOUS PLANT FOSSILS, LITHOLOGY AS ABOVE
56	255.57	255.70	0.13		H/I	MUDSTONE	SLTY.WEL.DK.GY.SLD MINOR COALY STRINGERS (1.0 MM WIDE)
56	255.70	255.78	0.08		H/I	COAL	C-3.BLK.BRKN INTERLAMINATED MUDSTONES (2.0 MM), MINO R ANKERITE
56	255.78	255.88	0.10		H/I	CLAYSTONE	WEL.DK.GY.SLD SOFT, CONSOLIDATED, HIGHLY FRACTURED, M INOR C-6 COAL AT TOP
56	255.88	255.92	0.04		H/I	COAL	C-3.BLK.BRKN MINOR ANKERITE VEINING
* 57	255.92	256.92	1.00			MUDSTONE	WEL.DK.GY.BRKN LITHOLOGY AS ABOVE, CARBONACEOUS PLANT MATERIAL, LINEATED POLISHED SURFACES CO NTAINING TALC, PYRITE BLEBS PARALLEL TO BEDDING (3.0 MM)

* DENOTES MEASURED BCA

LRM 4001

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PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85012

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
59	256.92	257.01	0.09			SILTSTONE	MOD.M.GY.THNB.SLD
59	257.01	257.22	0.21			SILTSTONE	MOD.M.GY.THNB.BRKN INTERLAMINATED WITH VERY FINE GRAINED S ANDSTONE
* 62	257.22	259.13	1.91			SILTSTONE	MOD.M.GY.LAM.WRMBU.BRKN TOPS UP, LITHOLOGY AS ABOVE, TALC ON AL L FRACTURE SURFACES, SOME SURFACES POLI SHED
* 64	259.13	260.00	0.87			SILTSTONE	MOD.M.GY.LAM.SLD LITHOLOGY AS ABOVE, TALC ON FRACTURE SU RFACES
62	260.00	260.81	0.81			SILTSTONE	MOD.M.GY.LAM.BRKN LITHOLOGY AS ABOVE, ABUNDANT POLISHED S LIPPAGE SURFACES CONTAINING TALC
61	260.81	261.87	1.06			SILTSTONE	MOD.M.GY.VTHNB.BRKN AS ABOVE AT TOP OF UNIT, BECOMING SANDY AND LIGHTER IN COLOUR TOWARDS BASE

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 50

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85012

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 59	261.87	262.70	0.83			SANDSTONE	FG.MOD.M.GY.MB.RIPMK.BRKN TOPS UP, DARK GREY SILTSTONE LAMINAE TO WARDS TOP, CALCITE VEIN (1.0 MM) AT ANG LE TO BEDDING

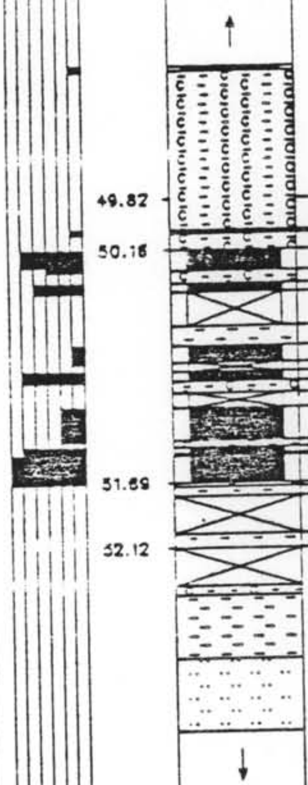
* DENOTES MEASURED BCA
NEWPAGE

FORM 400

GULF CANADA RESOURCES INC.

SEAM DETAIL — COAL DIVISION — MOUNT KLAPPAN PROJECT — **TRUE THICKNESS**

DATA SOURCE:	KPN LR DDH85012	SEAM : K/L	INTERVAL(M) : 49.82 - 52.12	ELEVATION(M) :	1666.4
GEOLOGIST :	E LEGRESLEY	SCALE:	DATE : DEC 19/85	DRAWING NO. :	



SEAM COMP. 1 2 3 4 5 6	DRILL DEPTH METRES	COAL SEAM LOG	INTERVAL METRES ROCK	INTERVAL METRES COAL	% REC.	SAMPLE ID SIMP	SAMPLE ID COMP	COAL/ROCK TOTAL COMPOS	MINING SECTION	RES MOIST	ASH	VM	FC	TS	CAL VAL MJ/KG	
	49.82		0.20	[illegible]	100.0	7470										
			0.11													
	50.16			0.16												
			0.09	[illegible]												
				(0.22)												
			0.13													
				0.11	75.1	7471	41	1.15 / 0.34 1.49		1.01	36.06	7.88	55.97	0.43	21.02	—
			0.19													
				0.10												
				0.21												
			[illegible]	0.04												
				0.18												
	51.69		[illegible]													
			(0.25)		41.9	7472										
			0.06													
	52.12															

GULF CANADA RESOURCES INC.

SEAM DETAIL — COAL DIVISION — MOUNT KLAPPAN PROJECT — **TRUE THICKNESS**

DATA SOURCE:	KPN LR DDH85012	SEAM : K	INTERVAL(M) :	69.66 - 74.40	ELEVATION(M) : 1686.4
GEOLOGIST :	E LEGRESLEY	SCALE:	DATE :	DEC 19/85	DRAWING NO. :

DRILL DEPTH METRES	INTERVAL METRES ROCK	INTERVAL METRES COAL	% REC.	SAMPLE ID SIMP	SAMPLE ID COMP	COAL/ROCK TOTAL COMPOS	COAL/ROCK TOTAL MINING SECTION	COAL QUALITY A.D.B. RES MOIST	ASH	VM	FC	TS	CAL. VAL MJ/KG	
69.66	0.22		100.0	7473										
69.89		0.21	81.4	7474	42	1.62 / 0.12 1.74		1.08	17.27	8.95	72.69	0.49	28.64	—
		(0.32)												
		0.40												
	[illegible]	0.11												
	[illegible]	0.11												
	[illegible]	0.31												
	[illegible]	0.14												
71.73	0.35	[illegible]	88.3	7475	43	0.45 / 1.34 1.79		1.46	64.70	7.84	26.06	0.29	10.30	—
	0.65													
73.09	-	0.35	100.0	7476										
	0.10													
73.63	0.73		100.0	7477										
74.40														

GULF CANADA RESOURCES INC.

COAL DIVISION
MOUNT KLAPPAN PROJECT

SEAM DETAIL | **TRUE THICKNESS**

DATA SOURCE: KPN LR DDH85012 SEAM : K (REPEAT) INTERVAL(M) : 151.37 - 153.56 ELEVATION(M) : 1866.4

GEOLOGIST : E. LEGRESLEY SCALE: DATE : DEC 9/85 DRAWING NO. :

SEAM COMP.	DRILL DEPTH (METRES)	COAL SEAM LOG	INTERVAL (METRES) ROCK	INTERVAL (METRES) COAL	% REC.	SAMPLE ID SIMP	SAMPLE ID COMP	COAL/ROCK TOTAL COMPOS	MINING SECTION	COAL QUALITY A.D.B. RES MOIST	ASH	VM	FC	TS	CAL.VAL MJ/KG	
	151.37		0.15		100.0	7478										
	151.54			0.12	100.0	7479	44	0.59 / 0.64 1.22		0.78	34.04	9.53	55.64	0.40	21.26	—
			[illegible]													
				0.18												
			0.17	0.02												
			0.15													
				0.07												
			0.17													
			0.11	0.07												
			0.16													
				0.11												
	153.01		0.11													
	153.56		0.41		100.0	7480										

GULF CANADA RESOURCES INC.

COAL DIVISION
MOUNT KLAPPAN PROJECT

SEAM DETAIL — **TRUE THICKNESS**

DATA SOURCE: KPN LR DDH85012 SEAM : 1 INTERVAL(M) : 204.86 – 210.57 ELEVATION(M) : 1666.4

GEOLOGIST : E. LEGRESLEY SCALE: DATE : DEC 19/85 DRAWING NO. :

DRILL DEPTH (METRES)	INTERVAL (METRES) ROCK	INTERVAL (METRES) COAL	% REC.	SAMPLE ID SIMP	SAMPLE ID COMP	COAL/ROCK TOTAL COMPOS	MINING SECTION	COAL QUALITY A.D.B. RES MOIST	ASH	VM	FC	TS	CAL.VAL
204.86	0.87		100.0	7481									
205.78		0.46	87.3	7482	45	0.52 / 0.00 0.52		2.56	29.89	7.06	60.33	0.43	26.42
206.33	[illegible] (0.16) [illegible]		81.9	7483	46	0.01 / 0.88 0.89		1.73	58.51	7.28	31.47	0.18	11.22
207.27	[illegible]	0.83 0.34 [illegible] 0.23	100.0	7484	47	1.53 / 0.28 1.81		1.89	35.15	8.47	53.46	0.34	20.42
209.20	1.28		100.0	7485									
210.57													

GULF CANADA RESOURCES INC.

COAL DIVISION

MOUNT KLAPPAN PROJECT

TRUE THICKNESS

SEAM DETAIL

DATA SOURCE: KPN LR DDH85012	SEAM : L	INTERVAL(M) : 23.15 - 24.84	ELEVATION(M) : 1666.4
GEOLOGIST : E. LEGRESLEY	SCALE:	DATE : DEC 19/85	DRAWING NO. :

SEAM COMP. 1 2 3 4 5 6	DRILL DEPTH METRES	COAL SEAM LOG	INTERVAL METRES ROCK	INTERVAL METRES COAL	% REC.	SAMPLE ID SIMP	SAMPLE ID COMP	COAL/ROCK TOTAL COMPOS	MINING SECTION	RES MOIST	ASH	VM	FC	TS	CAL. VAL MJ/KG	
	23.15		1.11		100.0	7487										
	23.24			0.32												
				(0.89)	35.0	7468	40	1.37 / 0.00 1.37		1.20	26.83	7.53	64.64	0.48	24.62	—
				0.16												
	24.84															

COAL QUALITY A.D.B.

707

Gulf Canada Resources Inc.
Coal Division
Geophysical Log

Datasource:	**KPNLRDDH85012**	Province: BC	Northing: 6344660.00	Lat:	571449
Log Date:	85-04-06	Zone: 9	Easting: 506131.00	Long:	1285354
Company:	CENTURY	Measuring Point:		Elevation:	
Geologist:	E. LEGRESLEY				

Scale: 1 to 100.0

Depth Range: 0.0 to 268.0

True Thickness: NO

Comments:

1. LOGGED THROUGH THE RODS
2.

Logs Plotted:

Description	Axis Range	Axis Length	Smoothing Points	Tool	Comments
1. GAMMA API	0.0 to 150.0	10.0	31	9030A	IN PIPE
2. NEUTRON-NEUTRON CPS	0.0 to 2500.0	10.0	9	9067	IN PIPE
3. DENSITY G/CC	1.0 to 3.0	10.0	15	9030A	IN PIPE

707

GULF CANADA RESOURCES INC.
COAL DIVISION
KLAPPAN PROJECT
STRATIGRAPHIC LOG
KPN LR DDH85012

GEOLOGIST : E. LEGRESLEY	DATE : JAN 08/86	DRAWING NO. :

SCALE : 1:200 1:40

NORTHING: 6344660.0 N INCLINATION: 80.0°
EASTING: 506131.4 E BEARING: 10.0 °

LITHOLOGIC SYMBOLS

SANDSTONE	BENTONITE
SILTSTONE	BRECCIA
COAL	CARBONACEOUS
OVERBURDEN	QUARTZ
MUDSTONE, CLAYSTONE	PYRITE
TUFF	FERRUGINOUS
LIMESTONE	CONGLOMERATE
CORE LOSS	FOSSIL BED

KPNLRDDH85013

============================ GULF CANADA RESOURCES INC. ============================

- D A T A   S O U R C E   S U M M A R Y -

DATA SOURCE - KPNLRDDH85013   DATE - 01/09/86

- H I S T O R Y -

START DATE - 04/03/85
END DATE - 04/07/85

CONTRACTOR - J.T. THOMAS   OPERATOR - GCRI
GEOLOGIST - M. BARKER   SURVEYOR - MWG & ASS.

REMARKS - SITE E

- L O C A T I O N -

PROVINCE - BC   ZONE - 9
ELEVATION - 1643.90   NORTHING - 6344850.00
                                            EASTING - 506377.50

LICENCE/LEASE NUMBER - 7151

                                            LATITUDE - 571455
                                            LONGITUDE - 1285340

- O R I E N T A T I O N -

LENGTH - 278.99   INCLINATION - 75.0
                                            AZIMUTH - 10.0

CORE SIZE - 0.0

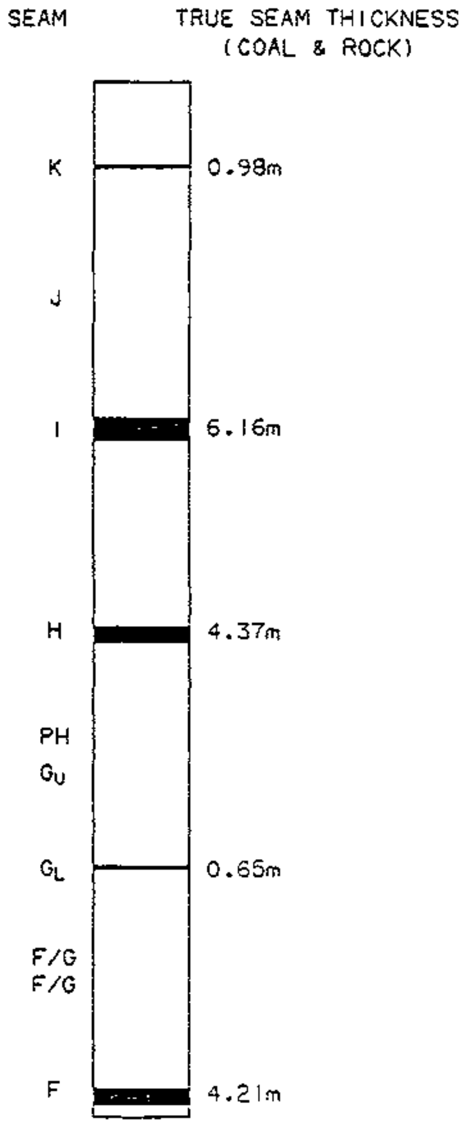
CEMENT -   CASING DEPTH(M) - 20.73
PLUG -   AQUIFER DEPTHS(M) - 0.00
PIEZ -   0.00
                                            LOST CIRC. DEPTHS(M) - 0.00
                                            0.00

*** NOTE *** 0 INDICATES NO VALUE

==

MT. KLAPPAN COAL PROPERTY

1985 DIAMOND DRILL HOLES
DDH85013



NOTE: SCHEMATIC PROFILE.
NO THICKNESSES SHOWN
FOR SEAMS CONTAINING
LESS THAN 50cm COAL.

SCALE: 1:2000	GULF CANADA RESOURCES INC. 15/01/86

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 1

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85013

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
77	0.00	20.73	20.73			OVERBURDEN	CASING TO 20.73 METRES
77	20.73	21.89	1.16			ROCK LOSS	
77	21.89	22.78	0.89	07486		CLAY	DK.BN.SLD VERY SOFT
77	22.78	22.90	0.12	07486		CLAYSTONE	CARB.BLK.BRKN
77	22.90	22.96	0.06	07487	K	COAL	BRKN WEATHERED
77	22.96	23.03	0.07	07487	K	CLAYSTONE	CARB.BLK.SLD SOFT
77	23.03	23.28	0.25	07487	K	COAL	C-6.PHRD DAMP AND SOFT
77	23.28	23.39	0.11	07487	K	COAL	C-2.VBRKN WEATHERED
77	23.39	23.46	0.07	07487	K	CLAYSTONE	CARB.BLK.PHRD VERY SOFT
77	23.46	23.50	0.04	07487	K	COAL	C-3.BRKN

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 2

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85013

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
77	23.50	23.60	0.10	07487	K	COAL	C-2.BRKN
77	23.60	23.67	0.07	07487	K	CLAYSTONE	CARB.BLK.SHRD
77	23.67	23.72	0.05	07487	K	CLAYSTONE	DK.BN.SLD SOFT
77	23.72	23.75	0.03	07487	K	COAL	C-3.BRKN
77	23.75	23.80	0.05	07487	K	CLAYSTONE	CARB.BLK.SLD
77	23.80	23.91	0.11	07487	K	COAL	C-1.BRKN WEATHERED
77	23.91	23.96	0.05	07488		CLAYSTONE	CARB.BLK.SLD
77	23.96	24.49	0.53	07488		CLAYSTONE	DK.BN.BRKN SOFT
77	24.49	24.66	0.17			CLAYSTONE	CARB.BLK.BRKN VERY COALY, ANKERITE IN BEDDING
77	24.66	25.30	0.64			ROCK LOSS	

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 3

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85013

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
77	25.30	25.42	0.12			CLAYSTONE	CARB.BLK.BRKN
77	25.42	25.57	0.15			COAL	C-3.VBRKN
77	25.57	25.88	0.31			CLAYSTONE	CARB.BLK.SLD ANKERITE ALONG BEDDING
77	25.88	26.07	0.19			CLAYSTONE	CARB.DK.BN.SLD SOFT, BECOMING LIGHTER GOING DOWN
77	26.07	26.10	0.03			CLAYSTONE	LT.GY.BRKN
77	26.10	26.25	0.15			CLAYSTONE	CARB.SLD
77	26.25	26.52	0.27			ROCK LOSS	
77	26.52	28.09	1.57			MUDSTONE	SLTY.PR.DK.GY.VTHNB.BIOTR.VBRKN SILTY LAMINAE
77	28.09	28.65	0.56			ROCK LOSS	
77	28.65	29.35	0.70			MUDSTONE	SLTY.PR.DK.GY.VTHNB.BIOTR.BRKN LITHOLOGY AS ABOVE
77	29.35	29.56	0.21			ROCK LOSS	

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 4

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85013

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 77	29.56	30.67	1.11			MUDSTONE	SLTY.PR.DK.GY.VTHNB.WRMBU.BRKN TOPS UP, VERTICAL AND HORIZONTAL WORM B URROWS, SOME BANDS GRADING TO VERY FINE GRAINED SANDSTONE
72	30.67	32.62	1.95			SILTSTONE	VPR.DK.GY.THNB.BIOTR.BRKN GRADING FROM VERY CLAYEY TO FINE GRAINE D SANDSTONE. MINOR PLANT HASH ON MUDDIE R BEDDING SURFACES
* 65	32.62	34.65	2.03			SANDSTONE	CLYY.VFG.VPR.M-DK.GY.MAS.SLD SLIGHTLY COASER GRAINED TOWARDS THE BOT TOM. OCCASIONAL FINE QUARTZ VEINS WITH LOW BCA
* 80	34.65	35.43	0.78			SANDSTONE	FG.PR.LT-M.GY.THNB.SLD ALTERNATING BETWEEN WELL SORTED LIGHT S ANDSTONES AND SLIGHTLY DARKER SANDSTONE S WITH SLIGHTLY FINER GRAINS AND MORE S ILTS INTERFINGERED WITH WISPY GRADUAL C ONTACTS
* 80	35.43	36.65	1.22			SILTSTONE	M.GY.LAM.XBDG.BRKN TOPS UP, FINELY LAMINATED
80	36.65	38.38	1.73			SILTSTONE	CLYY.PR.M.GY.LAM.XBDG.VBRKN VERY FINELY LAMINATED

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 5

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85013

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
80	38.38	38.58	0.20			SILTSTONE	CLYY.PR.M.GY.LAM.VBRKN AS ABOVE
* 80	38.58	40.71	2.13			SILTSTONE	CLYY.PR.M.GY.LAM.VBRKN AS ABOVE, BREAKS EASILY ALONG BEDDING
80	40.71	41.45	0.74			SILTSTONE	CLYY.PR.M.GY.LAM.XBDG.VBRKN AS ABOVE, SOME BANDS GRADE TO FINE GRAI NED SANDSTONE WHITH DARK SILTY LAMINAE, TOPS UP
80	41.45	42.78	1.33			SILTSTONE	CLYY.PR.M.GY.LAM.XBDG.VBRKN AS ABOVE
* 80	42.78	44.38	1.60			SILTSTONE	CLYY.PR.M.GY.LAM.XBDG.SLD FINELY LAMINATED CLAYEY SILTSTONE
80	44.38	44.49	0.11			ROCK LOSS	
80	44.49	44.98	0.49			SILTSTONE	CLYY.PR.M.GY.LAM.XBDG.SLD LITHOLOGY AS ABOVE
* 79	44.98	47.11	2.13			MUDSTONE	WEL.DK.GY.LAM.SLD VERY FINE LAMINAE, SIMILAR TO COASTER Z ONE BUT NOT QUITE AS FISSILE
79	47.11	47.65	0.54			MUDSTONE	WEL.DK.GY.LAM.SLD AS ABOVE

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 6

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85013

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
78	47.65	49.22	1.57			MUDSTONE	WEL.DK.GY.LAM.SLD AS ABOVE
78	49.22	50.02	0.80			MUDSTONE	WEL.DK.GY.LAM.SLD AS ABOVE, GRADES RAPIDLY TO MUDSTONE BE LOW
77	50.02	50.69	0.67		J	MUDSTONE	CARB.WEL.BLK.LAM.BRKN VERY CARBONACEOUS, MINOR CALCITE VEINS PARALLEL TO BEDDING, MINOR PYRITE
77	50.69	51.36	0.67		J	MUDSTONE	CARB.WEL.BLK.LAM.BRKN AS ABOVE, C-1 COAL BANDS IN LOWER 300.0 MM
77	51.36	52.93	1.57		J	MUDSTONE	CARB.WEL.BLK.LAM.BRKN AS ABOVE, ABUNDANT C-1 BANDS, MINOR QUA RTZ AND CALCITE VEINS, BONE COAL IN PAR T
76	52.93	53.40	0.47			MUDSTONE	SLTY.MOD.M.GY.LAM.BRKN COALIFIED PLANT HASH
76	53.40	53.76	0.36			SANDSTONE	SLTY.VFG.MOD.M.GY.LAM.BRKN COAL LAMINAE, MINOR QUARTZ VEIN WITH CO AL

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 7

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85013

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
76	53.76	54.21	0.45			SANDSTONE	SLTY.VFG.MOD.M.GY.MAS.BRKN AS ABOVE, GRADES TO SILTSTONE
76	54.21	55.47	1.26			SILTSTONE	SSY.MOD.M.GY.LAM.BRKN
75	55.47	56.94	1.47			SILTSTONE	SSY.MOD.M.GY.LAM.BRKN AS ABOVE, ABUNDANT LEAFY PLANT FOSSILS
* 75	56.94	57.55	0.61			SILTSTONE	SSY.MOD.M.GY.LAM.BRKN AS ABOVE, SANDY BANDS BECOMING COARSER
80	57.55	57.88	0.33			SILTSTONE	SSY.MOD.M.GY.LAM.BRKN AS ABOVE, GRADES TO SANDSTONE
* 90	57.88	59.62	1.74			SANDSTONE	SLTY.FG.MOD.M.GY.MAS.XBDG.BRKN VERY DIRTY, TOPS UP, SILTY BANDS TO 70. OMM, GRADES DOWN TO SILTSTONE
84	59.62	59.96	0.34			SILTSTONE	SSY.MOD.M.GY.LAM.BRKN
* 80	59.96	60.83	0.87			SILTSTONE	SSY.MOD.M.GY.LAM.BIOTR.BRKN AS ABOVE
80	60.83	61.72	0.89			SANDSTONE	FG.WEL.M.GY.MAS.SLD DISTINCT DARK/LIGHT BANDING WITH SERRAT ED EDGES, SEEN IN DDH85-012

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 8

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85013

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
81	61.72	62.99	1.27			SANDSTONE	FG.WEL.M.GY.MAS.BIOTR.SLD LITHOLOGY AS ABOVE, TRACE FOSSILS OF LA RGE HORIZONTAL BURROWS ON BEDDING PLANE S, SIMILAR SERRATED BANDING AS ABOVE
* 81	62.99	63.84	0.85			SANDSTONE	FG.WEL.M.GY.MAS.BIOTR.SLD AS ABOVE, BANDED, MINOR SILTY LAMINAE
82	63.84	65.99	2.15			SANDSTONE	FG.WEL.M.GY.MAS.BIOTR.SLD AS ABOVE, SINGLE 5.0 MM COAL LAMINAE, M INOR CALCITE VEINS, MAJOR FRACTURING PE RPENDICULAR TO BEDDING
84	65.99	67.99	2.00			SANDSTONE	FG.WEL.M.GY.MAS.BIOTR.BRKN AS ABOVE, MINOR SILTY LAMINAE
* 85	67.99	69.11	1.12			SANDSTONE	FG.VWEL.LT-M.GY.THNB.BRKN AS ABOVE, MINOR PLANT HASH ON FRACTURE SURFACES
86	69.11	69.82	0.71			ROCK LOSS	
86	69.82	70.33	0.51			SANDSTONE	FG.VWEL.LT-M.GY.THNB.BRKN AS ABOVE

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG - PAGE 9

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85013

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
87	70.33	72.13	1.80			SANDSTONE	FG.VWEL.LT-M.GY.MAS.WRMBU.BRKN CROSS-BEDDING, MINOR SILTY BANDS, TOPS UP, MINOR QUARTZ VEIN (1.0 MM WIDE) WIT H VERY LOW BCA
87	72.13	72.60	0.47			SANDSTONE	FG.VWEL.LT-M.GY.MAS.VBRKN AS ABOVE
88	72.60	72.86	0.26			ROCK LOSS	
88	72.86	74.70	1.84			SANDSTONE	FG.VWEL.LT.GY.MAS.BRKN AS ABOVE, SOME SILTY WISPS, PLANT HASH ON FRACTURE SURFACES, ONE ROUND MUDSTON E RIP-UP CLAST 25.0 MM IN DIAMETER
89	74.70	75.91	1.21			ROCK LOSS	
90	75.91	76.10	0.19			SANDSTONE	FG.VWEL.LT.GY.MAS.BRKN AS ABOVE
* 90	76.10	76.60	0.50			SANDSTONE	FG.VWEL.LT.GY.MAS.BRKN AS ABOVE, ONE CARBONACEOUS SILT BAND 40 .0 MM THICK

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 10

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85013

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 80	76.60	77.98	1.38			SILTSTONE	CLYY.VPR.M.GY.LAM.BIOTR.BRKN WORM BURROWS, DESICATION CRACKS, LAMINA E RANGE FROM CARBONACEOUS MUDSTONE TO V ERY FINE GRAINED SANDSTONE, SCOURING IN PLACES
* 80	77.98	78.69	0.71			SILTSTONE	CLYY.VPR.M.GY.LAM.BIOTR.BRKN CROSS-BEDDING, TOPS UP, LITHOLOGY AS AB OVE
80	78.69	78.96	0.27			ROCK LOSS	
81	78.96	80.22	1.26			SILTSTONE	SSY.VPR.M.GY.LAM.BIOTR.BRKN CROSS-BEDDING, AS ABOVE, EXTENSIVE BIOT URBATION, WAVY BEDDING, VERTICAL WORM B URROWS
82	80.22	81.89	1.67			SILTSTONE	SSY.VPR.M.GY.LAM.BIOTR.SLD CROSS-BEDDING, AS ABOVE
83	81.89	82.33	0.44			SILTSTONE	SSY.VPR.M.GY.LAM.BIOTR.SLD CROSS-BEDDING, AS ABOVE, CORE TWISTED O FF AT TOP
84	82.33	84.38	2.05			SILTSTONE	SSY.VPR.M.GY.LAM.BIOTR.BRKN CROSS-BEDDING, AS ABOVE, TOPS UP

* DENOTES MEASURED BCA

FORM 4001

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85013

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
84	84.38	84.82	0.44			SILTSTONE	VPR.LT.GY.VTHNB.WRMBU.BRKN CROSS-BEDDING, BANDS VERY GRADATIONAL
* 85	84.82	86.17	1.35			SILTSTONE	VPR.LT.GY.VTHNB.WRMBU.SLD CROSS-BEDDING, AS ABOVE, EROSIONAL CONT ACT AT EDGE OF LOCAL SLUMP FEATURE, LOC AL CONCENTRIC BEDDING TRACES
81	86.17	87.81	1.64			SILTSTONE	PR.LT.GY.THNB.XBDG.BRKN TOPS UP, FINE WISPY, CROSS-BEDDING, SIL TY LAMINAE THROUGHOUT
79	87.81	87.88	0.07			BENTONITE	LT.GY.MAS.SLD SWELLS, UNIFORM
79	87.88	88.15	0.27			SILTSTONE	PR.LT.GY.THNB.SLD FINE WISPY SILTY LAMINAE, LITHOLOGY SIM ILAR TO SILTSTONES ABOVE, BENTONITE
* 77	88.15	89.45	1.30			SILTSTONE	PR.LT.GY.VTHNB.XBDG.SLD AS ABOVE
77	89.45	89.65	0.20			BENTONITE	VWEL.LT.GY.MAS.VBRKN SOFT, SWELLS, BENTONITE?
77	89.65	89.75	0.10			MUDSTONE	SLTY.PR.DK.GY.LAM.VBRKN FINELY LAMINATED

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85013

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
77	89.75	89.95	0.20			MUDSTONE	SLTY.PR.DK.GY.LAM.VBRKN AS ABOVE
77	89.95	90.20	0.25			ROCK LOSS	
77	90.20	91.10	0.90			MUDSTONE	PR.DK.GY.LAM.VBRKN AS ABOVE, FAINTER BEDDING TOWARDS THE B ASE, SLIGHTLY CARBONACEOUS, NUMEROUS PL ANT FOSSILS ON BEDDING PLANES TOWARDS T HE BOTTOM
78	91.10	91.24	0.14	07489		CLAYSTONE	CARB.DK.GY.SLD
78	91.24	91.42	0.18	07490	I	COAL	C-1.VBRKN
78	91.42	91.47	0.05	07490	I	CLAYSTONE	CARB.BLK.SLD

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 13

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85013

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
78	91.47	91.55	0.08	07490	I	COAL	C-1,SLD
78	91.55	91.56	0.01	07490	I	CLAYSTONE	CARB,BLK,SLD
78	91.56	91.77	0.21	07490	I	COAL	C-1,VBRKN
78	91.77	91.96	0.19	07490	I	COAL LOSS	
78	91.96	91.99	0.03	07490	I	CLAYSTONE	CARB,BLK,SLD

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 14

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85013

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
78	91.99	92.79	0.80	07490	I	COAL	C-1,BRKN
78	92.79	92.89	0.10	07490	I	CLAYSTONE	CARB,BLK,BRKN
78	92.89	92.92	0.03	07490	I	COAL	C-1,BRKN
78	92.92	92.96	0.04	07490	I	CLAYSTONE	CARB,BLK,BRKN
78	92.96	93.00	0.04	07490	I	COAL	C-1,BRKN

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 15

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85013

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
78	93.00	93.03	0.03	07490	I	CLAYSTONE	CARB,BLK,SLD 0.08
78	93.03	93.22	0.19	07490	I	COAL	C-1,BRKN
78	93.22	93.50	0.28	07490	I	COAL	C-1,PHRD
78	93.50	94.17	0.67	07490	I	COAL LOSS	
78	94.17	94.22	0.05	07490	I	ROCK LOSS	
78	94.22	94.33	0.11	07490	I	COAL	C-1,BRKN
78	94.33	94.38	0.05	07490	I	CLAYSTONE	CARB,BLK,SLD COALY
78	94.38	94.48	0.10	07490	I	COAL	C-1,SLD
78	94.48	94.49	0.01	07490	I	CLAYSTONE	CARB,BLK,SLD
79	94.49	94.60	0.11	07490	I	COAL	C-1,SLD

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 16

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85013

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
79	94.60	94.61	0.01	07490	I	CLAYSTONE	CARB,BLK,SLD
79	94.61	94.62	0.01	07490	I	COAL	C-1,SLD
79	94.62	95.00	0.38	07491	I	CLAYSTONE	CARB,BLK,PHRD SOFT
79	95.00	95.03	0.03	07491	I	COAL	C-3,PHRD
79	95.03	95.05	0.02	07491	I	COAL	C-1,SLD
79	95.05	95.07	0.02	07491	I	CLAYSTONE	CARB,BLK,SLD
79	95.07	95.11	0.04	07491	I	COAL	C-2,SLD
79	95.11	95.13	0.02	07491	I	COAL	C-1,SLD
79	95.13	95.18	0.05	07491	I	CLAYSTONE	CARB,BLK,PHRD SOFT, WEATHERED
79	95.18	95.38	0.20	07492	I	COAL	C-3,BRKN

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 17

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85013

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
79	95.38	95.47	0.09	07492	I	COAL	C-1.SLD ANKERITE ACROSS BEDDING
79	95.47	95.97	0.50	07492	I	COAL	C-1.BRKN ANKERITE IN FRACTURE AT TOP
79	95.97	96.97	1.00	07492	I	COAL	C-1.BRKN
79	96.97	97.34	0.37	07492	I	COAL LOSS	
79	97.34	97.41	0.07	07492	I	COAL	C-1.PWRD
79	97.41	97.43	0.02	07492	I	CLAYSTONE	CARB.BLK.SLD
79	97.43	97.53	0.10	07492	I	COAL	C-1.SLD ANKERITE IN BEDDING
79	97.53	98.88	1.35			MUDSTONE	CARB.BLK.MAS.SLD COAL LAMINAE THROUGHOUT, SOME QUARTZ VE INS PERPENDICULAR TO CORE, PLANT FOSSIL S, SLICKENSIDES WITH TALC
80	98.88	99.50	0.62			MUDSTONE	SLTY.DK.GY.LAM.BIOTR.BRKN TOPS UP, WORM BURROWS, FINELY LAMINATED

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 18

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85013

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 80	99.50	100.90	1.40			SILTSTONE	DK.GY.LAM.BIOTR.VBRKN WORM BURROWS, SANDIER TOWARDS THE BASE, LAMINAE GRADE FROM MUDSTONE TO VERY FI NE GRAINED SANDSTONE TOWARDS BASE
82	100.90	101.34	0.44			SILTSTONE	SSY.M-DK.GY.LAM.WRMBU.VBRKN CROSS BEDDING, INTERLAYERED CLAYSTONE A ND FINE GRAINED SANDSTONE, TOPS UP, NUM EROUS SCOURS, VERTICAL WORM BURROWS
83	101.34	101.93	0.59			ROCK LOSS	
* 85	101.93	102.65	0.72			SILTSTONE	SSY.M-DK.GY.LAM.WRMBU.VBRKN AS ABOVE
84	102.65	103.05	0.40			ROCK LOSS	
83	103.05	104.98	1.93			SILTSTONE	SSY.M-DK.GY.LAM.WRMBU.BRKN AS ABOVE, LESS SILTY AND SANDY TOWARDS THE BOTTOM, CROSS BEDDING
81	104.98	107.02	2.04			MUDSTONE	DK.GY.MAS.WRMBU.SLD MASSIVE AND UNIFORM, MINOR PYRITE STRIN GERS, VERY FINE GRAINED

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 19

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85013

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
79	107.02	107.96	0.94			SILTSTONE	DK.GY.LAM.XBDG.BRKN LITHOLOGY AS ABOVE, TOPS UP, FINELY LAM INATED WITH LIGHTER SLIGHTLY COARSER SI LTSTONES
79	107.96	108.21	0.25			ROCK LOSS	
* 78	108.21	109.07	0.86			SILTSTONE	DK.GY.LAM.XBDG.BRKN TOPS UP, LITHOLOGY AS ABOVE
79	109.07	111.10	2.03			SILTSTONE	CLYY.DK.GY.LAM.XBDG.BRKN AS ABOVE WITH INCREASING SILT, TOPS UP
80	111.10	113.03	1.93			SILTSTONE	CLYY.DK.GY.LAM.XBDG.BRKN AS ABOVE, TOPS UP
81	113.03	113.81	0.78			SILTSTONE	SSY.M-DK.GY.VTHNB.BRKN GRADING TO FINE GRAINED SANDSTONE IN BR OAD BANDS
82	113.81	115.02	1.21			SILTSTONE	SSY.M-DK.GY.LAM.BRKN BANDS GRADING FROM CLAYSTONE TO FINE GR AINED SANDSTONE

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 20

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85013

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 83	115.02	116.75	1.73			SILTSTONE	SSY.M-DK.GY.LAM.WRMBU.BRKN CROSS-BEDDING, TOPS UP, LAMINAE GRADE F ROM SILTY CLAYSTONE TO MEDIUM GRAINED S ANDSTONE, MINOR LOCALIZED VEINING
83	116.75	116.87	0.12			ROCK LOSS	
83	116.87	117.16	0.29			SILTSTONE	SSY.M-DK.GY.LAM.XBDG.SLD LITHOLOGY AS ABOVE
82	117.16	119.23	2.07			SILTSTONE	SSY.VPR.M-DK.GY.VTHNB.WRMBU.SLD TALC ON FRACTURE SURFACES, VERY THINLY BANDED SILTSTONES WITH MOSTLY SANDY BAN DS
82	119.23	119.80	0.57			SILTSTONE	SSY.PR.M-DK.GY.LAM.WRMBU.SLD TOPS UP, ALTERNATING FINE GRAINED SAND AND MUDSTONE BANDS, ONE BAND OF SILTY R IP-UP CLASTS, VERTICAL WORM BURROWS
81	119.80	121.32	1.52			SILTSTONE	SSY.PR.M-DK.GY.LAM.WRMBU.SLD LITHOLOGY AS ABOVE
81	121.32	121.63	0.31			ROCK LOSS	

* DENOTES MEASURED BCA

LRM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85013

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
81	121.63	122.54	0.91			SANDSTONE	SLTY.MG-.VPR.LT-M.GY.THNB.SLD SILTSTONE RIP-UP CLASTS 25.0 MM IN DIAM ETER, SILTY LAMINAE THROUGHOUT
81	122.54	122.83	0.29			SILTSTONE	LT.GY.LAM.BIOTR.SLD
80	122.83	123.71	0.88			SILTSTONE	LT-M.GY.LAM.WRMBU.BRKN CROSS-BEDDING, FINELY LAMINATED
* 80	123.71	125.69	1.98			SILTSTONE	LT-M.GY.LAM.WRMBU.BRKN CROSS-BEDDING, BIOTURBATED IN PLACES, V ERTICAL WORM BURROWS
81	125.69	125.88	0.19			ROCK LOSS	
* 83	125.88	127.92	2.04			SILTSTONE	LT-M.GY.LAM.WRMBU.SLD AS ABOVE
* 81	127.92	128.96	1.04			SILTSTONE	VPR.M-DK.GY.LAM.WRMBU.SLD BIOTURBATED, LAMINAE GRADING FROM CLAYE Y SILTSTONE TO FINE GRAINED SANDSTONE
81	128.96	129.90	0.94			SANDSTONE	SLTY.FG.VPR.M.GY.LAM.WRMBU.SLD DARK SILT LAMINAE THROUGHOUT, PLANT HAS H ON SILTY LAYERS, TOPS UP

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85013

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 80	129.90	131.89	1.99			SANDSTONE	SLTY.FG.VPR.M.GY.LAM.WRMBU.SLD AS ABOVE, SILTIER TOWARDS BOTTOM
79	131.89	132.05	0.16			SILTSTONE	M-DK.GY.LAM.WRMBU.BRKN LESS SAND THAN ABOVE, LAMINAE GRADING F ROM MUDSTONE TO FINE GRAINED SANDSTONE
79	132.05	132.30	0.25			ROCK LOSS	
* 78	132.30	134.03	1.73			SILTSTONE	M-DK.GY.LAM.WRMBU.BRKN AS ABOVE
* 82	134.03	135.34	1.31			SILTSTONE	SSY.M-DK.GY.LAM.WRMBU.BRKN BIOTURBATED, CROSS-BEDDING, AS ABOVE, L AMINAE GRADING FROM MUDSTONE TO FINE GR AINED SANDSTONE, TOPS UP
83	135.34	136.00	0.66			SILTSTONE	SSY.M-DK.GY.LAM.WRMBU.SLD AS ABOVE, TOPS UP
* 84	136.00	137.88	1.88			SILTSTONE	SSY.M-DK.GY.LAM.WRMBU.SLD AS ABOVE, COALIFIED TREE BRANCH, FOSSIL AND PLANT HASH ON SOME FRACTURE SURFAC ES, TOPS UP
84	137.88	138.39	0.51			ROCK LOSS	

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 23

PROJECT: KPW BLOCK: LR DATA SOURCE: DDH85013

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
85	138.39	138.62	0.23			CLAYSTONE	DK.GY.MAS.VBRKN SOFT
* 85	138.62	140.38	1.76			SILTSTONE	SSY.M-DK.GY.LAM.WRMBU.SLD BIOTURBATED, FINELY LAMINATED AS SILTST ONE ABOVE, ONE PYRITE BLEB, PLANT FOSSI LS ON FRACTURE SURFACES
84	140.38	141.35	0.97			MUDSTONE	SLTY.VPR.DK.GY.LAM.BRKN PLANT FOSSILS, FAINT SILTY LAMINAE
83	141.35	141.44	0.09			ROCK LOSS	
* 83	141.44	142.39	0.95			MUDSTONE	SLTY.VPR.DK.GY.LAM.BIOTR.BRKN AS ABOVE, GRADING TO VERY POORLY SORTED FINE GRAINED SANDSTONE
* 83	142.39	143.89	1.50			SILTSTONE	CLYY.DK.GY.LAM.WRMBU.SLD BIOTURBATED, GRADATIONAL LOWER CONTACT, FAINTLY LAMINATED ZONES GRADING FROM C LAYEY TO SANDY
83	143.89	144.47	0.58			MUDSTONE	CARB.BLK.MAS.SLD LARGE BIVALVES, BOTH CLOSED AND OPENED SHELLS, SOME WITH TALC OR PYRITE INFILL ING, SOME FINE COALY STRINGERS

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 24

PROJECT: KPW BLOCK: LR DATA SOURCE: DDH85013

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
83	144.47	144.72	0.25			ROCK LOSS	
83	144.72	146.55	1.83			MUDSTONE	BLK.MAS.WRMBU.BRKN VERY UNIFORM, SOME POLISHED FRACTURE SU RFACES WITH TALC, MINOR QUARTZ VEINS, P YRITE FILLING, VERY CARBONACEOUS TOWARD S BASE, COALIFIED PLANT FRAGMENTSAND CO AL STRINGERS THROUGHOUT
82	146.55	146.62	0.07	07493	H	COAL	C-1.SLD
82	146.62	146.70	0.08	07493	H	CLAYSTONE	M.GY.BRKN BANDED WITH COAL AND ANKERITE
82	146.70	146.88	0.18	07493	H	COAL	C-1.BRKN
82	146.88	147.22	0.34	07493	H	CLAYSTONE	CARB.BLK.BRKN INTENSELY DEFORMED "Z" FOLD IN LAMINAE
82	147.22	147.50	0.28	07493	H	COAL	C-1.SLD FEW CLAYSTONE BANDS

* DENOTES MEASURED BCA

CRM 4001

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85013

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
82	147.50	147.53	0.03	07493	H	CLAYSTONE	BLK,BRKN
82	147.53	147.55	0.02	07493	H	COAL	C-1,BRKN
82	147.55	147.70	0.15	07493	H	CLAYSTONE	CARB,BLK,SLD COALY WITH ANKERITE VEINS
82	147.70	147.89	0.19	07493	H	COAL	C-1,BRKN
82	147.89	147.91	0.02	07493	H	CLAYSTONE	CARB,BLK,SLD
82	147.91	147.94	0.03	07493	H	COAL	C-1,BRKN
82	147.94	147.95	0.01	07493	H	CLAYSTONE	CARB,BLK,SLD
82	147.95	148.12	0.17	07493	H	CLAYSTONE	SLTY,M,BN,SLD
82	148.12	148.20	0.08	07493	H	CLAYSTONE	CARB,BLK,SLD
82	148.20	148.37	0.17	07493	H	COAL	C-2,SLD

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85013

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
82	148.37	148.49	0.12	07493	H	COAL	C-2,SLD
82	148.49	148.50	0.01	07493	H	CLAYSTONE	CARB,DK,BN,BRKN
82	148.50	148.58	0.08	07493	H	COAL	C-2,SLD
82	148.58	148.61	0.03	07493	H	CLAYSTONE	CARB,BLK,SLD ANKERITE IN CLEATS
82	148.61	148.63	0.02	07493	H	COAL	C-2,SLD
82	148.63	148.67	0.04	07493	H	CLAYSTONE	CARB,BLK,SLD
82	148.67	148.69	0.02	07493	H	CLAYSTONE	DK,BN,SLD
82	148.69	148.72	0.03	07493	H	COAL	C-2,SLD ANKERITE IN CLEAT
82	148.72	149.17	0.45	07493	H	CLAYSTONE	CARB,BLK,BRKN COAL BANDS
82	149.17	149.23	0.06	07494	H	COAL	C-3,BRKN QUARTZ VEIN

* DENOTES MEASURED BCA

FORM 4001

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85013

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
82	149.23	149.32	0.09	07494	H	CLAYSTONE	CARB.BLK.BRKN
82	149.32	149.54	0.22	07494	H	COAL	C-3.SLD CLAYSTONE LAMINAE
82	149.54	149.87	0.33	07494	H	COAL	C-2.BRKN
82	149.87	149.91	0.04	07494	H	COAL	C-3.PHRD
82	149.91	149.98	0.07	07494	H	CLAYSTONE	CARB.BLK.SLD QUARTZ VEIN
82	149.98	150.24	0.26	07494	H	COAL	C-1.VBRKN
82	150.24	150.28	0.04	07494	H	ROCK LOSS	
82	150.28	150.35	0.07	07494	H	COAL LOSS	
82	150.35	150.37	0.02	07494	H	CLAYSTONE	CARB.DK.GY.BRKN
82	150.37	150.46	0.09	07494	H	COAL	C-2.BRKN

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85013

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
82	150.46	150.49	0.03	07494	H	CLAYSTONE	CARB.BLK.BRKN COAL LAMINAE
82	150.49	150.59	0.10	07494	H	CLAYSTONE	SLTY.M.GY.VBRKN
82	150.59	150.96	0.37	07494	H	COAL	C-1.VBRKN ANKERITE IN CLEAT
82	150.96	151.14	0.18	07495		CLAYSTONE	CARB.BLK.SLD
82	151.14	151.17	0.03			COAL	C-1.BRKN
82	151.17	151.42	0.25			CLAYSTONE	CARB.BLK.SLD FEW COALY BANDS, PYRITE BAND NEAR THE B OTTOM
81	151.42	151.59	0.17			CLAYSTONE	CARB.BLK.SLD VERY COALY
81	151.59	152.32	0.73			CLAYSTONE	CARB.BLK.SLD DISSEMINATED PYRITE BAND, MORE SILTY DO WNWARD

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 29

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85013

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
81	152.32	153.69	1.37			MUDSTONE	SLTY.VPR.DK.GY.LAM.HRMBU.VBRKN CROSS-BEDDING, BIOTURBATED, ONE COAL LENS 20.0 MM WIDE, ONE CLAY LAMINAE 2.0MM WIDE, TALC FILLED FRACTURES, TOPS UP
81	153.69	153.89	0.20			ROCK LOSS	
* 81	153.89	154.53	0.64			SILTSTONE	SSY.VPR.M-DK.GY.LAM.HRMBU.BRKN CROSS-BEDDING, TOPS UP, SANDY TOWARDS BASE, LAMINAE GRADE FROM MUDSTONE TO MEDIUM GRAINED SANDSTONE
80	154.53	156.63	2.10			SANDSTONE	SLTY.VPR.LT.GY.MAS.XBDG.BRKN PLANT HASH AND FINE WISPY SILT LAMINAE, CARBONACEOUS MATERIAL ON SOME FRACTURE SURFACES
80	156.63	156.88	0.25			SANDSTONE	FG.MOD.M.GY.VTHNB.SLD
80	156.88	157.06	0.18			SANDSTONE	FG.MOD.M.GY.VTHNB.SLD

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 30

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85013

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
79	157.06	157.61	0.55			SANDSTONE	VFG.WEL.M.GY.LAM.SLD MILDY CALCAREOUS
* 79	157.61	158.47	0.86			SANDSTONE	FG.MOD.M.GY.VTHNB.SLD QUARTZ VEINING PERPENDICULAR TO BEDDING
75	158.47	159.83	1.36			SANDSTONE	FG.MOD.M.GY.VTHNB.BRKN MODERATELY CARBONACEOUS ALONG FRACTURE SURFACES, COAL 2.0 MM AT BASE
72	159.83	160.23	0.40			ROCK LOSS	
71	160.23	160.33	0.10			SANDSTONE	FG.MOD.M.GY.THNB.SLD MINOR ROUNDED SILTSTONE PEBBLES THROUGOUT
* 70	160.33	160.56	0.23			SANDSTONE	FG.MOD.M.GY.THNB.SLD
71	160.56	160.66	0.10			QUARTZITE	WH.SLD QUARTZ AND CALCITE VEIN
71	160.66	160.71	0.05			SANDSTONE	FG.PR.M.GY.SLD ANGULAR SANDSTONE FRAGMENTS FORMING BRECCIA WITH QUARTZ CEMENT

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 31

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85013

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
71	160.71	160.75	0.04			SANDSTONE	FG.MOD.M.GY.THNB.SLD
74	160.75	161.84	1.09			SANDSTONE	FG.MOD.M.GY.THNB.SLD SHARP CONTACT WITH UNDERLYING UNIT
* 79	161.84	162.74	0.90			SILTSTONE	CLYY.WEL.DK.GY.VTHNB.BRKN SANDY TOWARDS THE BASE, ANKERITE VEIN P ARALLEL TO BEDDING
79	162.74	163.16	0.42			SANDSTONE	VFG.MOD.M.GY.VTHNB.BRKN MINOR TALC ON LINEATED FRACTURE SURFACE S
79	163.16	163.28	0.12			ROCK LOSS	
80	163.28	164.31	1.03			SANDSTONE	FG.MOD.M.GY.VTHNB.BRKN QUARTZ VEINING FORMING BRECCIA AT TOP O F UNIT, MINOR LINEATED FRACTURE SURFACE S
80	164.31	164.46	0.15			ROCK LOSS	

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 32

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85013

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 80	164.46	164.81	0.35			SILTSTONE	SSY.PR.M.GY.THNB.BRKN MODERATELY CALCAREOUS UNIT CONTAINING C ALCITE VEIN PERPENDICULAR TO BEDDING
* 75	164.81	165.19	0.38			SILTSTONE	SSY.PR.M.GY.THNB.SLD MINOR TALC ALONG FRACTURE SURFACES
76	165.19	166.33	1.14			SANDSTONE	VFG-.MOD.M.GY.LAM.SLD BRECCIA ZONE HOSTED BY QUARTZ, UNIFORM, VERY FINE GRAINED TO FINE GRAINED SAND STONE
77	166.33	166.83	0.50			SANDSTONE	SLTY.MOD.M.GY.LAM.SLD UNIFORM
* 79	166.83	168.93	2.10			SANDSTONE	SLTY.MOD.M.GY.LAM.SLD UNIFORM, SILTIER AT BASE
81	168.93	169.34	0.41			SILTSTONE	MOD.M.GY.LAM.SLD
* 82	169.34	171.01	1.67			SILTSTONE	MOD.DK.GY.LAM.BRKN UNIFORM
* 74	171.01	172.25	1.24			SILTSTONE	CLYY.MOD.DK.GY.LAM.SLD PYRITE BLEB, UNIFORM
76	172.25	172.33	0.08			SILTSTONE	MOD.M.GY.LAM.SLD MILDY CALCAREOUS

* DENOTES MEASURED BCA

FORM 4001

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PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85013

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
76	172.33	172.38	0.05			SILTSTONE	MOD.M.GY.LAM.SLD MILDY CALCAREOUS
77	172.38	173.08	0.70			SILTSTONE	CLYY.MOD.DK.GY.LAM.SLD UNIFORM
* 80	173.08	175.17	2.09			MUDSTONE	SLTY.HEL.DK.GY.MAS.SLD MINOR TALC ALONG FRACTURE SURFACES
81	175.17	175.38	0.21			ROCK LOSS	
81	175.38	175.42	0.04			CLAYSTONE	CARB.BLK.VBRKN
81	175.42	175.46	0.04			COAL	C-4.VBRKN
81	175.46	175.96	0.50			ROCK LOSS	
81	175.96	176.56	0.60		PHANTOM	CLAYSTONE	CARB.BLK.VBRKN SOME ANKERITE IN BEDDING, QUITE COALY
82	176.56	176.65	0.09	07496	PHANTOM	COAL	C-3.BRKN
82	176.65	176.91	0.26		PHANTOM	CLAYSTONE	CARB.BLK.VBRKN COALY

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 34

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85013

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
82	176.91	177.14	0.23		PHANTOM	COAL	C-5.BRKN PYRITE BANDING, COAL BRECCIATED
82	177.14	177.28	0.14		PHANTOM	CLAYSTONE	CARB.BLK.VBRKN
82	177.28	177.41	0.13			CLAYSTONE	CARB.BLK.BRKN VERY COALY WITH ANKERITE
82	177.41	178.48	1.07			CLAYSTONE	CARB.DK.GY.BRKN FEW COAL LAMINAE, LESS DOWNWARD
83	178.48	178.93	0.45			CLAYSTONE	M.GY.BRKN
83	178.93	179.95	1.02			SANDSTONE	SLTY.VFG-.PR.M.GY.THNB.VBRKN HIGHLY FRACTURED, MINOR QUARTZ AND CALC ITE VEINING PERPENDICULAR TO BEDDING, C ARBONACEOUS FRACTURE SURFACES CONTAININ G TALC
* 84	179.95	180.91	0.96			SANDSTONE	VFG-.HEL.LT.GY.MAS.SLD UNIFORM
79	180.91	181.43	0.52			SANDSTONE	VFG-.HEL.LT.GY.MAS.BRKN QUARTZ VEIN ALONG FRACTURE SURFACES, UN IFORM

* DENOTES MEASURED BCA

FCRA 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 35

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85013

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
74	181.43	182.42	0.99			SANDSTONE	VFG-.WEL.LT.GY.MAS.BRKN UNIFORM, MINOR CALCITE AND QUARTZ VEINI NG
70	182.42	182.54	0.12			QUARTZITE	WH UNIFORM, QUARTZ AND CALCITE VEIN
* 65	182.54	183.89	1.35			SANDSTONE	FG.MOD.M.GY.THNB.BRKN TALC ALONG FRACTURE SURFACES, MINOR QUA RTZ AND CALCITE VEINING
64	183.89	184.47	0.58			ROCK LOSS	
63	184.47	185.65	1.18			SANDSTONE	SLTY.FG.MOD.LT-M.GY.MAS.VBRKN QUARTZ VEIN AT BASE
62	185.65	185.81	0.16	07497	G UPPER	COAL	C-5.VBRKN PYRITE BAND
62	185.81	185.90	0.09	07497	G UPPER	COAL	C-3.VBRKN
62	185.90	185.96	0.06		G UPPER	SANDSTONE	FG.MOD.M.GY.VBRKN PEBBLES ONLY, MAY BE RE-CYCLED FROM ABO VE
62	185.96	186.56	0.60			ROCK LOSS	

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 36

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85013

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
61	186.56	187.39	0.83			MUDSTONE	CARB.DK.GY.MAS.VBRKN TALC AND QUARTZ ON FRACTURE SURFACES, C OAL STRINGERS THROUGHOUT
* 60	187.39	188.36	0.97			SANDSTONE	SLTY.M-DK.GY.LAM.BRKN SLICKENSIDES, FINE SILTY LAMINAE
60	188.36	190.02	1.66			MUDSTONE	CARB.M.GY.LAM.VBRKN BCA'S VARIABLE, AT LEAST ONE FOLD, UNCO NSOLIDATED CLAY 25.0MM THICK AT 0.32M, POLISHED AND SHEARED DOWNHOLE, INTENSEL Y QUARTZ VEINED, VERY CARBONACEOUS
60	190.02	190.17	0.15			MUDSTONE	CARB.DK.GY.MAS.VBRKN POLISHED FRACTURE SURFACES, MINOR TALC FILLED FRACTURES, VERY CARBONACEOUS
* 60	190.17	191.62	1.45			MUDSTONE	CARB.DK.GY.LAM.VBRKN COAL LENSES 25.0MM WIDE, FINELY LAMINAT ED, QUARTZ VEINING AT VARIOUS ANGLES, S OME UNCONSOLIDATED SILTY LAYERS
46	191.62	192.29	0.67			MUDSTONE	CARB.DK.GY.MAS.BRKN COAL AND QUARTZ LENSES 25.0MM WIDE, NUM EROUS HAIRLINE QUARTZ FRACTURES
37	192.29	192.97	0.68			SILTSTONE	CLYY.VPR.M-DK.GY.VTHNB.BRKN CLAYEY LAMINAE, PLANT HASH THROUGHOUT

* DENOTES MEASURED BCA

FLRM 4001

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85013

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
31	192.97	193.22	0.25			ROCK LOSS	
* 25	193.22	193.89	0.67			SILTSTONE	CLYY.VPR.M-DK.GY.VTHNB.BRKN AS ABOVE
* 20	193.89	195.66	1.77			MUDSTONE	CARB.BLK.LAM.BRKN NUMEROUS COAL STRINGERS, AT LEAST ONE F OLD, MINOR QUARTZ VEINS, POLISHED FRACT URE SURFACES
22	195.66	196.27	0.61			ROCK LOSS	
* 24	196.27	197.13	0.86			MUDSTONE	SLTY.DK.GY.LAM.VBRKN GRADING TO VERY CARBONACEOUS MUDSTONE B ELOW ONE QUARTZ VEIN
* 32	197.13	198.16	1.03			MUDSTONE	CARB.DK.GY.LAM.VBRKN POLISHED FRACTURE SURFACES, COAL STRING ERS AND BLEBS, SOME QUARTZ VEINS
48	198.16	198.40	0.24			MUDSTONE	HEL.DK.GY.VBRKN POLISHED FRACTURE SURFACES, QUARTZ VEIN 5.0 MM WIDE
60	198.40	199.13	0.73			SANDSTONE	FG.PR.M.GY.THNB.VBRKN HIGHLY QUARTZ VEINED AND FRACTURED, POL ISHED SLIPPAGE SURFACES, FOLD AXIS?

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85013

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
74	199.13	199.49	0.36			ROCK LOSS	
* 82	199.49	199.76	0.27			MUDSTONE	CARB.HEL.DK.GY.VTHNB.VBRKN COALY BANDS SURROUNDED BY ANKEREITE, PO LISHED FRACTURE SURFACES
* 20	199.76	200.22	0.46			MUDSTONE	CARB.HEL.DK.GY.VTHNB.VBRKN AS ABOVE, FOLD AXIS INTERSECTED
* 85	200.22	200.29	0.07			COAL	C-5.BLK.BRKN ANKERITE VEINING
85	200.29	201.46	1.17			SILTSTONE	HEL.M.GY.VTHNB.BRKN POLISHED SLIPPAGE SURFACES CONTAINING T ALC, ABUNDANT QUARTZ VEINS CONFINED TO 240.0 MM ZONE
85	201.46	201.91	0.45			SILTSTONE	HEL.M.GY.VTHNB.BRKN AS ABOVE
85	201.91	201.95	0.04			SILTSTONE	PR.M.GY.SLD DEATH ZONE OF BIVALVES SHOWING CROSS-SE CTION OF SHELLS, SOME REPLACED BY PYRIT E
85	201.95	202.13	0.18			SILTSTONE	HEL.M.GY.BRKN POLISHED SLIPPAGE SURFACES CONTAINING T ALC

* DENOTES MEASURED BCA

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PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85013

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
85	202.13	203.14	1.01			SILTSTONE	HEL.M.GY.THNB.BRKN AS ABOVE
84	203.14	204.73	1.59			SILTSTONE	HEL.M.GY.BRKN LITHOLOGY AS ABOVE
84	204.73	204.84	0.11			CLAYSTONE	M.GY.VBRKN CORE LOSS IN THIS ZONE
84	204.84	204.99	0.15			SANDSTONE	FG.HEL.M.GY.VBRKN CORE LOSS
84	204.99	205.22	0.23			CLAYSTONE	M.GY.BRKN
84	205.22	205.53	0.31			CLAYSTONE	CARB.BLK.BRKN COALY LAMINAE
84	205.53	205.78	0.25			ROCK LOSS	
84	205.78	205.81	0.03			CLAYSTONE	M.BN.SLD
84	205.81	206.11	0.30		G ?	COAL	C-6.VBRKN
84	206.11	206.32	0.21		G ?	COAL LOSS	

* DENOTES MEASURED BCA

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PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85013

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
84	206.32	206.40	0.08		G ?	CLAYSTONE	CARB.BLK.SLD PYRITIC
84	206.40	206.50	0.10		G ?	COAL	C-3.PHRD
84	206.50	206.68	0.18			COAL LOSS	
84	206.68	206.81	0.13			CLAYSTONE	CARB.BLK.BRKN PYRITE AND ANKERITE VEINS
84	206.81	207.19	0.38			CLAYSTONE	SLTY.M.GY.VBRKN RUBBLE, LOSS IN THIS AREA
84	207.19	207.64	0.45			ROCK LOSS	
84	207.64	208.61	0.97			CLAYSTONE	CARB.DK.GY.BRKN ANKERITE AT BASE, LOCALLY MORE CARBONAC EOUS
83	208.61	208.90	0.29			CLAYSTONE	CARB.DK.GY.SLD ANKERITE IN FRACTURES
83	208.90	210.10	1.20			CLAYSTONE	CARB.BLK.BRKN ANKERITE ALONG BEDDING AND IN FRACTURES , MORE COALY ABOVE

* DENOTES MEASURED BCA

F N 4001

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PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85013

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
83	210.10	210.13	0.03			COAL	C-4
83	210.13	210.90	0.77			ROCK LOSS	
83	210.90	211.17	0.27	07498		CLAYSTONE	CARB.BLK.BRKN COALY WITH ANKERITE
83	211.17	211.31	0.14	07499	G LOWER	COAL	C-4.PWRD
83	211.31	211.33	0.02	07499	G LOWER	CLAYSTONE	CARB.BLK.BRKN SOFT
83	211.33	211.45	0.12	07499	G LOWER	COAL	C-3.PWRD
83	211.45	211.48	0.03	07499	G LOWER	CLAYSTONE	CARB.BLK.SLD SOFT
83	211.48	211.53	0.05	07499	G LOWER	COAL	C-4.BRKN
83	211.53	211.54	0.01	07499	G LOWER	CLAYSTONE	CARB.BLK.BRKN

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 42

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85013

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
83	211.54	211.60	0.06	07499	G LOWER	COAL	C-6.SLD
83	211.60	211.65	0.05	07499	G LOWER	COAL	C-4.BRKN
83	211.65	211.68	0.03	07499	G LOWER	COAL	C-6.SLD
83	211.68	211.70	0.02	07499	G LOWER	ROCK LOSS	
83	211.70	211.71	0.01	07499	G LOWER	CLAYSTONE	CARB.BLK.BRKN
83	211.71	211.75	0.04	07499	G LOWER	COAL	C-6.BRKN
83	211.75	211.79	0.04	07499	G LOWER	COAL	C-2.BRKN
83	211.79	211.82	0.03	07499	G LOWER	COAL	C-5.SLD ANKERITE IN FRACTURE
83	211.82	212.07	0.25	07500	G LOWER	CLAYSTONE	CARB.DK.GY.BRKN
83	212.07	212.57	0.50	07500	G LOWER	CLAYSTONE	CARB.DK.GY.BRKN

* DENOTES MEASURED BCA

FORM 4001

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85013

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
83	212.57	212.62	0.05	07500	G LOWER	COAL	C-2.PHRD
83	212.62	212.70	0.08	07500	G LOWER	CLAYSTONE	CARB.BLK.VBRKN
83	212.70	212.72	0.02	07500	G LOWER	COAL	C-2.SLD ANKERITE VEINS
83	212.72	213.27	0.55	07500	G LOWER	CLAYSTONE	CARB.DK.GY.BRKN COALY AT TOP LESS BELOW
83	213.27	213.38	0.11	07500	G LOWER	COAL	C-3.BRKN
83	213.38	213.54	0.16	07500	G LOWER	COAL	C-3.BRKN
82	213.54	213.70	0.16	07500	G LOWER	CLAYSTONE	CARB.BLK.BRKN COALY
82	213.70	214.04	0.34	07500	G LOWER	CLAYSTONE	DK.GY.SLD LARGE ANKERITE FRACTURE FILLS
82	214.04	214.45	0.41	07500	G LOWER	CLAYSTONE	CARB.BLK.BRKN COALY WITH ANKERITE
82	214.45	214.65	0.20	07500	G LOWER	CLAYSTONE	CARB.BLK.SHRD VERY LISTRIC

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85013

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
82	214.65	214.71	0.06	07500	G LOWER	CLAYSTONE	CARB.BLK.BRKN COALY, ANKERITE IN BEDDING
82	214.71	215.11	0.40	07500	G LOWER	ROCK LOSS	
82	215.11	215.32	0.21	07500	G LOWER	CLAYSTONE	DK.GY.BRKN
* 82	215.32	217.19	1.87			MUDSTONE	MOD.DK.GY.THNB.BRKN CARBONACEOUS IN PLACES, COALY STRINGERS SURROUNDED BY ANKERITE, UNIFORM, MINOR TALC ON POLISHED SLIPPAGE SURFACES
78	217.19	217.98	0.79			SILTSTONE	MOD.M.GY.BRKN VERY UNIFORM
76	217.98	218.16	0.18			ROCK LOSS	
74	218.16	219.21	1.05			SILTSTONE	MOD.M.GY.SLD AS ABOVE, VERY UNIFORM
* 70	219.21	221.03	1.82			MUDSTONE	SLTY.DK.GY.LAM.SLD QUARTZ VEIN 40.0 MM WIDE
73	221.03	221.29	0.26			MUDSTONE	SLTY.DK.GY.LAM.SLD AS ABOVE

* DENOTES MEASURED BCA

FORM 4001

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PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85013

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
76	221.29	223.41	2.12			MUDSTONE	SLTY.DK.GY.LAM.WRMBU.SLD CROSS-BEDDING, BIOTURBATED, LITHOLOGY A S ABOVE, TOPS UP
* 80	223.41	224.04	0.63			SILTSTONE	CLYY.DK.GY.LAM.XBDG.BRKN SILTIER THAN ABOVE, SCOURS, TOPS UP
80	224.04	224.34	0.30			SANDSTONE	FG-.WEL.LT.GY.MAS.VBRKN SOME MUDSTONE RIP-UP CLASTS, MINOR QUAR TZ VEIN, FINE GRAINED TO MEDIUM GRAINED SANDSTONE
79	224.34	224.84	0.50			SANDSTONE	FG-.WEL.LT.GY.MAS.VBRKN AS ABOVE
78	224.84	226.82	1.98			ROCK LOSS	
77	226.82	227.35	0.53			SANDSTONE	FG-.WEL.LT.GY.MAS.VBRKN AS ABOVE, 70.0 MM BAND OF MUDSTONE RIP-UP CLASTS
76	227.35	229.05	1.70			SANDSTONE	FG-.WEL.LT.GY.MAS.VBRKN AS ABOVE, OCCASIONAL MUDSTONE RIP-UP CL ASTS
76	229.05	229.46	0.41			SANDSTONE	FG-.WEL.LT.GY.MAS.VBRKN AS ABOVE, RIP-UP CLASTS

* DENOTES MEASURED BCA

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PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85013

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
75	229.46	230.65	1.19			SANDSTONE	FG-.WEL.LT.GY.MAS.VBRKN AS ABOVE, RIP-UP CLASTS
74	230.65	231.60	0.95			SANDSTONE	FG-.WEL.LT.GY.MAS.VBRKN AS ABOVE, RARE RIP-UP CLASTS
73	231.60	232.20	0.60			ROCK LOSS	
73	232.20	232.93	0.73			SANDSTONE	FG-.WEL.LT.GY.MAS.VBRKN AS ABOVE, RARE RIP-UP CLASTS
72	232.93	235.05	2.12			SANDSTONE	FG-.WEL.LT.GY.THNB.BRKN BANDS VARYING SLIGHTLY IN SILT CONTENT, SHARP CONTACTS
71	235.05	235.25	0.20			ROCK LOSS	
71	235.25	235.70	0.45	07501		SANDSTONE	FG.MOD.M.GY.MAS.VBRKN SOME CORE LOSS
70	235.70	235.74	0.04	07502	F/G	COAL	C-3.VBRKN
70	235.74	235.83	0.09	07502	F/G	CLAYSTONE	CARB.BLK.BRKN VERY COALY, PYRITE BLEBS, ANKERITE IN B EDDING

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 47

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85013

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
70	235.83	235.84	0.01	07502	F/G	COAL	C-2.VBRKN
70	235.84	235.89	0.05	07502	F/G	CLAYSTONE	CARB.BLK.SHRD PYRITE
70	235.89	235.97	0.08	07502	F/G	COAL	C-3.PHRD
70	235.97	236.05	0.08	07502	F/G	CLAYSTONE	CARB.BLK.VBRKN SOME LOSS HERE
70	236.05	236.11	0.06	07502	F/G	COAL	C-6.VBRKN
70	236.11	236.53	0.42	07503		CLAYSTONE	CARB.DK.GY.BRKN
70	236.53	236.95	0.42	07503		CLAYSTONE	SLTY.DK.GY.BRKN LESS SILTY, MORE CARBONACEOUS DOWNWARD
69	236.95	236.97	0.02	07503		COAL	C-2.VBRKN
69	236.97	237.22	0.25	07503		CLAYSTONE	CARB.BLK.VBRKN

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 48

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85013

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
69	237.22	237.25	0.03	07503		COAL	C-6.VBRKN
69	237.25	238.36	1.11	07503		CLAYSTONE	CARB.BLK.BRKN COALY BANDS, LIGHTER DOWNWARD
68	238.36	238.52	0.16			MUDSTONE	WEL.DK.GY.VBRKN POLISHED SLIPPAGE SURFACES CONTAINING T ALC
68	238.52	238.56	0.04			COAL	C-2.VBRKN SOME C-3
68	238.56	238.90	0.34			ROCK LOSS	
68	238.90	239.20	0.30			MUDSTONE	WEL.M-DK.GY.SLD POLISHED FRACTURE SURFACES
68	239.20	239.25	0.05			COAL	C-3
67	239.25	239.32	0.07			MUDSTONE	WEL.DK.GY.BRKN COALY LAMINAE THROUGHOUT
67	239.32	239.54	0.22			MUDSTONE	WEL.DK.GY.BRKN MINOR COALY LAMINAE SURROUNDED BY ANKER ITE

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 49

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85013

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
67	239.54	240.28	0.74			SILTSTONE	WEL.H.GY.VTHNB.BRKN MINOR COAL LENSES, TALC ON FRACTURE SUR FACES
* 66	240.28	241.91	1.63	07504		CLAYSTONE	H.GY.LAM.BRKN MORE CARBONACEOUS DOWNWARD
72	241.91	242.19	0.28	07504		ROCK LOSS	
73	242.19	242.26	0.07	07504		CLAYSTONE	CARB.BLK.VBRKN
73	242.26	242.30	0.04	07505	F/G	COAL	C-1.VBRKN
74	242.30	242.32	0.02	07505	F/G	COAL	C-2.BRKN
74	242.32	242.43	0.11	07505	F/G	CLAYSTONE	CARB.BLK.BRKN
75	242.43	242.47	0.04	07505	F/G	COAL	C-3.SLD
75	242.47	242.49	0.02	07505	F/G	CLAYSTONE	CARB.BLK.SLD
75	242.49	242.50	0.01	07505	F/G	ROCK LOSS	

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 50

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85013

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
75	242.50	242.57	0.07	07505	F/G	COAL	C-2.BRKN
75	242.57	242.58	0.01	07505	F/G	CLAYSTONE	CARB.BLK.BRKN
75	242.58	242.59	0.01	07505	F/G	COAL	C-2.SLD
76	242.59	242.73	0.14	07506	F/G	CLAYSTONE	CARB.BLK.BRKN
76	242.73	242.74	0.01	07506	F/G	COAL	C-1.SLD
77	242.74	242.78	0.04	07506	F/G	CLAYSTONE	CARB.BLK.SLD VERY COALY
81	242.78	244.27	1.49			CLAYSTONE	CARB.DK.GY.BRKN MINOR PYRITE STREAKS, LIGHTER COLOUR DO WNWARD
* 89	244.27	245.20	0.93			SILTSTONE	MOD.H.GY.VTHNB.BRKN CLEAVED IN ONE 100.0 MM ZONE, MINOR TAL C ON FRACTURE SURFACES, CONTEMPORANEOUS DEFORMATION OF BIVALVES

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 51

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85013

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
89	245.20	245.36	0.16			ROCK LOSS	
89	245.36	246.54	1.18			SILTSTONE	MOD.M.GY.VTHNB.BIOTR.BRKN LITHOLOGY AS ABOVE
88	246.54	247.44	0.90			SILTSTONE	MOD.M.GY.VTHNB.SLD LITHOLOGY AS ABOVE
* 88	247.44	248.40	0.96			SANDSTONE	MOD.M.GY.THNB.BRKN SILT CONTENT INCREASING TOWARDS THE BAS E, MORE THINLY BEDDED
85	248.40	248.60	0.20			ROCK LOSS	
84	248.60	248.81	0.21			SILTSTONE	MOD.M.GY.LAM.SLD LITHOLOGY AS SILTSTONE ABOVE
* 78	248.81	250.88	2.07			SILTSTONE	MOD.M.GY.LAM.BRKN AS ABOVE, PLANT MATERIAL, DARKER MUDSTO NE LAMINAE, UNIFORM
80	250.88	251.63	0.75			SILTSTONE	CLYY.MOD.M.GY.LAM.BRKN AS ABOVE
80	251.63	252.23	0.60			SILTSTONE	CLYY.WEL.DK.GY.BRKN AS ABOVE, UNIFORM

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 52

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85013

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 81	252.23	252.87	0.64			SILTSTONE	MOD.M-DK.GY.LAM.BRKN AS ABOVE, GREATER PERCENTAGE OF SANDSTO NE, TALC ALONG FRACTURE SURFACES
79	252.87	253.31	0.44			SILTSTONE	PR.M.GY.VTHNB.BRKN SANDSTONE INTERBEDS, MINOR TALC ALONG F RACTURE SURFACES
* 75	253.31	254.55	1.24			SILTSTONE	MOD.M.GY.LAM.BRKN AS ABOVE, TALC ON FRACTURE SURFACES
78	254.55	254.90	0.35			SILTSTONE	CLYY.MOD.M-DK.GY.LAM.SLD TALC ON POLISHED FRACTURE SURFACES
78	254.90	255.15	0.25			ROCK LOSS	
81	255.15	256.50	1.35			MUDSTONE	WEL.DK.GY.SLD LINEATED POLISHED SURFACES CONTAIN TALC , QUARTZ VEIN 2.0MM AT ANGLE TO BEDDING , SHARP CONTACT WITH UNDERLYING UNIT
84	256.50	256.93	0.43			SANDSTONE	MG.PR.S-P.GY.MB.SLD SILTSTONE RIP-UP CLASTS, VERY DIRTY
* 85	256.93	257.24	0.31			SILTSTONE	MOD.M.GY.VTHNB.MRMBU.SLD TOPS UP, COALY LAMINAE PARALLEL TO BEDD ING

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 53

PROJECT: KPN BLOCK: LR DATA SOURCE: CDH85013

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
84	257.24	257.78	0.54			MUDSTONE	SLTY.M.GY.VTHNB.BRKN PLANT FOSSILS ON BEDDING PLANES
83	257.78	257.85	0.07			ROCK LOSS	
* 82	257.85	259.21	1.36			MUDSTONE	SLTY.M.GY.VTHNB.WRMBU.BRKN CROSS-BEDDING, LITHOLOGY AS ABOVE, ROUN DED RIP-UP CLASTS IN PLACES, MINOR BROK EN CARBONACEOUS LAYER AT BASE OF UNIT, TOPS UP
* 74	259.21	260.83	1.62			SILTSTONE	M.GY.LAM.WRMBU.SLD CROSS-BEDDING, TOPS UP, FINER LAMINAE T HAN ABOVE
74	260.83	261.18	0.35			SILTSTONE	M.GY.LAM.WRMBU.SLD CROSS-BEDDING, LITHOLOGY AS ABOVE
* 74	261.18	263.30	2.12			SILTSTONE	SSY.M.GY.LAM.WRMBU.SLD LITHOLOGY AS ABOVE, OCCASIONAL BIOTURBA TED LAYERS, SOME CLAYSTONE LAMINAE WITH PLANT FOSSILS, POLISHED FRACTURE SURFA CES WITH SOME TALC, SLICKENSIDES IN PLA CES, SANDIER TOWARDS THE BASE
* 78	263.30	263.92	0.62			SANDSTONE	SLTY.FG.PR.LT-M.GY.LAM.XBDG.BRKN TOPS UP, LAMINAE GRADING FROM MUDSTONE TO PRIMARILY FINE GRAINED SANDSTONE

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 54

PROJECT: KPN BLOCK: LR DATA SOURCE: CDH85013

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
77	263.92	264.17	0.25			ROCK LOSS	
76	264.17	265.58	1.41			SANDSTONE	SLTY.FG.PR.LT-M.GY.VTHNB.XBDG.SLD LITHOLOGY AS ABOVE, ONE RIP-UP CLAST, T OPS UP
* 74	265.58	267.23	1.65			SANDSTONE	SLTY.FG.PR.LT-M.GY.VTHNB.XBDG.BRKN LITHOLOGY AS ABOVE, ONE SWELLING CLAY B AND 15.0MM WIDE, TALC ON SOME FRACTURE SURFACES, TOPS UP
78	267.23	267.53	0.30			SANDSTONE	SLTY.FG.PR.LT.GY.VTHNB.VBRKN LITHOLOGY AS ABOVE, FLASER BEDDING
* 83	267.53	269.65	2.12			SANDSTONE	SLTY.FG.PR.LT.GY.VTHNB.VBRKN LITHOLOGY AS ABOVE, FLASER BEDDING
83	269.65	270.30	0.65			SANDSTONE	FG.WEL.M.GY.LAM.SLD MINOR WISPY CARBONACEOUS LAMINAE
83	270.30	270.72	0.42			SANDSTONE	FG.WEL.M.GY.LAM.SLD
83	270.72	270.97	0.25			SANDSTONE	FG.MOD.M.GY.LAM.SLD SLIGHTLY DARKER, MINOR COARSENING IN RI PPLES AT BASE

* DENOTES MEASURED BCA

FORM 4001

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85013

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
83	270.97	270.98	0.01			CLAYSTONE	CARB.BLK.SLD
* 83	270.98	271.22	0.24	07507		SANDSTONE	FG.M.GY.LAM.SLD
83	271.22	271.23	0.01	07507		CLAYSTONE	CARB.BLK.SLD
82	271.23	271.62	0.39	07508	F	COAL	C-1.BRKN
82	271.62	271.64	0.02	07508	F	COAL	C-1.SLD
82	271.64	271.67	0.03	07508	F	COAL	C-5.SLD
82	271.67	271.70	0.03	07508	F	COAL	C-2.BRKN

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85013

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
82	271.70	271.73	0.03	07508	F	COAL	C-5.SLD
82	271.73	271.87	0.14	07508	F	COAL	C-1.BRKN
82	271.87	271.88	0.01	07508	F	CLAYSTONE	CARB.BLK.SLD LENTICULAR
82	271.88	271.91	0.03	07508	F	COAL	C-1.BRKN
82	271.91	271.98	0.07	07508	F	CLAYSTONE	CARB.BLK.SLD COAL LAMINAE
81	271.98	272.18	0.20	07508	F	COAL	C-2.SLD ANKERITE IN CLEATS
81	272.18	272.29	0.11	07509	F	CLAYSTONE	DK.BN.SLD SOFT
80	272.29	272.99	0.70	07509	F	CLAYSTONE	CARB.BLK.BRKN COALY AT TOP
80	272.99	273.20	0.21	07509	F	CLAYSTONE	CARB.BLK.SLD AS ABOVE

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 57

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85013

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
79	273.20	273.28	0.08	07510	F	COAL	C-2.SLD
79	273.28	273.34	0.06	07510	F	CLAYSTONE	DK.GY.BRKN PYRITE AT BASE
79	273.34	273.50	0.16	07510	F	COAL	C-1.SLD
79	273.50	273.63	0.13	07510	F	COAL	C-1.SLD ANKERITE IN CLEATS
79	273.63	273.71	0.08	07510	F	COAL	C-2.BRKN
79	273.71	273.72	0.01	07510	F	CLAYSTONE	CARB.BLK.SLD
79	273.72	273.74	0.02	07510	F	COAL	C-2.SLD
78	273.74	273.87	0.13	07510	F	COAL	C-5.SLD
78	273.87	273.92	0.05	07510	F	CLAYSTONE	CARB.BLK.SLD
78	273.92	273.99	0.07	07510	F	COAL	C-6.BRKN

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 58

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85013

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
78	273.99	274.01	0.02	07510	F	CLAYSTONE	CARB.DK.GY.SLD
78	274.01	274.12	0.11	07510	F	COAL	C-6.SLD
78	274.12	274.14	0.02	07510	F	CLAYSTONE	CARB.BLK.SLD
78	274.14	274.29	0.15	07510	F	COAL	C-5.SLD
78	274.29	274.31	0.02	07510	F	CLAYSTONE	CARB.BLK.SLD
77	274.31	274.40	0.09	07510	F	COAL LOSS	
77	274.40	274.65	0.25	07510	F	COAL	C-2.BRKN
77	274.65	274.73	0.08	07510	F	CLAYSTONE	CARB.BLK.SLD
77	274.73	274.81	0.08	07510	F	COAL	C-6.SLD
77	274.81	274.85	0.04	07510	F	CLAYSTONE	CARB.BLK.SLD

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 59

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85013

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
77	274.85	274.95	0.10	07510	F	COAL	C-3,SLD
76	274.95	275.01	0.06	07510	F	CLAYSTONE	CARB,BLK,SLD
76	275.01	275.12	0.11	07510	F	COAL	C-3,SLD CLAYSTONE BANDS
76	275.12	275.14	0.02	07510	F	CLAYSTONE	CARB,BLK,SLD
76	275.14	275.21	0.07	07510	F	COAL	C-3,SLD
76	275.21	275.23	0.02	07510	F	COAL	C-6,SLD
76	275.23	275.28	0.05	07510	F	COAL	C-2 CLAYSTONE BANDS
76	275.28	275.32	0.04	07510	F	COAL	C-3,SLD
76	275.32	275.37	0.05	07510	F	CLAYSTONE	CARB,BLK,SLD
76	275.37	275.40	0.03	07510	F	COAL	C-6,SLD

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 60

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85013

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
76	275.40	275.44	0.04	07510	F	CLAYSTONE	CARB,BLK,SLD
76	275.44	275.51	0.07	07510	F	COAL	C-2,BRKN
75	275.51	275.55	0.04			CLAYSTONE	CARB,DK,GY,BRKN
* 75	275.55	276.02	0.47			MUDSTONE	CARB,DK,GY,LAM,VBRKN COALIFIED PLANT HASH FORMING FINE LAMIN AE, 1.0 MM COAL STRINGERS
75	276.02	276.07	0.05			ROCK LOSS	
75	276.07	277.31	1.24			MUDSTONE	CARB,DK,GY,MAS,VBRKN LESS CARBONACEOUS THAN ABOVE, FEWER COA L STRINGERS, TALC ON FRACTURE SURFACES
75	277.31	278.99	1.68			MUDSTONE	CARB,DK,GY,MAS,VBRKN LITHOLOGY AS ABOVE, TALC ON FRACTURE SU RFACES, PLANT FOSSILS ON FRACTURE SURFA CES, TOTAL DEPTH DRILLERS MARKER 279.49

* DENOTES MEASURED BCA
NEWPAGE

FORM 4001

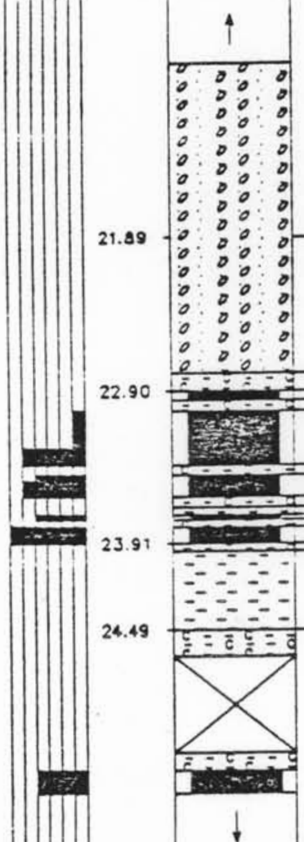
GULF CANADA RESOURCES INC.

COAL DIVISION
MOUNT KLAPPAN PROJECT

SEAM DETAIL — TRUE THICKNESS

DATA SOURCE: KPN LR DDH85013 SEAM : K INTERVAL(M) : 21.89 - 24.49 ELEVATION(M) : 1643.9

GEOLOGIST : M. BARKER SCALE: DATE : DEC 19/85 DRAWING NO. :



SEAM COMP. 1 2 3 4 5 6	DRILL DEPTH METRES	INTERVAL METRES ROCK	INTERVAL METRES COAL	% REC.	SAMPLE ID SIMP	SAMPLE ID COMP	COAL/ROCK TOTAL COMPOS	MINING SECTION	RES MOIST	ASH	VM	FC	TS	CAL.VAL MJ/KG	
	21.89	0.87		100.0	7486										
		0.12													
	22.90	[illegible]	[illegible]												
		[illegible]	0.35	100.0	7487	62	0.68/ 0.30 0.98		2.28	37.60	6.79	53.33	0.57	19.96	—
		[illegible]	0.14												
		[illegible]	[illegible]												
		[illegible]	0.11												
	23.91	0.52		100.0	7488										
	24.49														

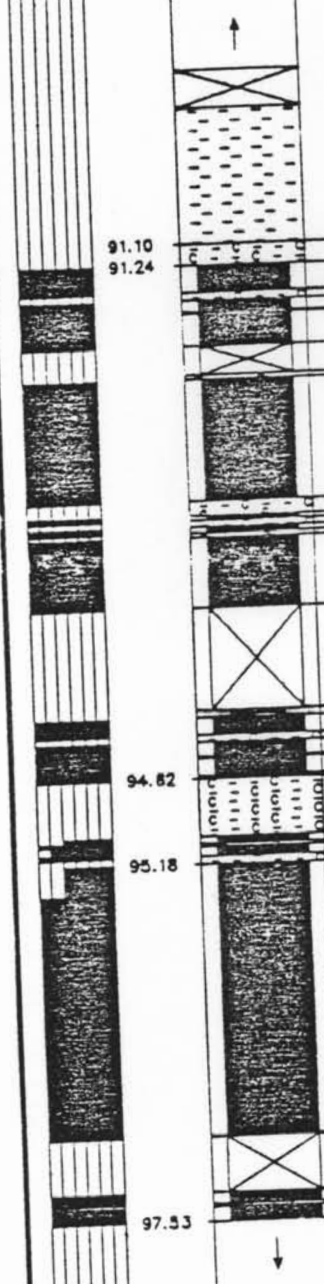
GULF CANADA RESOURCES INC.

COAL DIVISION

MOUNT KLAPPAN PROJECT

SEAM DETAIL — **TRUE THICKNESS**

DATA SOURCE: KPN LR DDH85013	SEAM : 1	INTERVAL(M) : 91.10 – 97.53	ELEVATION(M) : 1643.9
GEOLOGIST M. BARKER	SCALE:	DATE : DEC 19/85	DRAWING NO. :



DRILL DEPTH METRES	INTERVAL METRES ROCK	INTERVAL METRES COAL	% REC.	SAMPLE ID SIMP	SAMPLE ID COMP	COAL/ROCK TOTAL COMPOS	MINING SECTION	RES MOIST	ASH	VM	FC	TS	CAL.VAL
91.10	0.14		100.0	7489									
91.24		0.18											
	[illegible]	[illegible]											
		0.21											
		(0.19)											
	[illegible]												
		0.78											
	0.16	[illegible]	73.1	7490									
		0.46											
		(0.68)											
		0.11											
	[illegible]	0.10			46	5.33/0.83 6.16		1.16	18.05	7.09	72.70	0.39	26.91
	[illegible]	0.11											
94.82	0.37		100.0	7491									
	[illegible]	[illegible]											
95.18		1.76	84.3	7492									
		(0.36)											
	[illegible]	[illegible]											
97.53		0.10											

GULF CANADA RESOURCES INC.

SEAM DETAIL — COAL DIVISION — MOUNT KLAPPAN PROJECT — **TRUE THICKNESS**

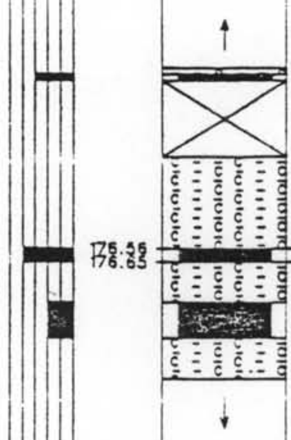
DATA SOURCE:	KPN LR DDH85013	SEAM : H	INTERVAL(M) : 146.55 – 151.14	ELEVATION(M) :	1643.9
GEOLOGIST :	M. BARKER	SCALE:	DATE : DEC 19/85	DRAWING NO. :	

DRILL DEPTH (METRES)	INTERVAL ROCK (METRES)	INTERVAL COAL (METRES)	% REC.	SAMPLE ID SIMP	SAMPLE ID COMP	COAL/ROCK TOTAL COMPOS	MINING SECTION	RES MOIST	ASH	VM	FC	TS	CAL.VAL. MJ/KG
146.55		[illegible]											
	[illegible]												
		0.18											
	0.34												
		0.28											
	[illegible]	[illegible]											
	0.16												
		0.19	100.0	7483									
	[illegible]	[illegible]											
	0.17												
	[illegible]												
		0.29											
	[illegible]	[illegible]											
	[illegible]	[illegible]											
	[illegible]	[illegible]			48	2.60 / 1.77 4.37		1.31	33.85	7.89	56.95	0.82	21.04
	0.45												
149.77		[illegible]											
	[illegible]												
		0.59											
	[illegible]												
		0.26	93.3	7484									
	[illegible]	[illegible]											
	[illegible]	[illegible]											
	0.10												
		0.37											
150.96	0.18		100.0	7485									
151.14													

GULF CANADA RESOURCES INC.

SEAM DETAIL — COAL DIVISION — MOUNT KLAPPAN PROJECT — **TRUE THICKNESS**

DATA SOURCE:	KPN LR DDH85013	SEAM : PHANTOM	INTERVAL(M) : 176.56 – 176.65	ELEVATION(M) :	1543.9
GEOLOGIST :	M BARKER	SCALE:	DATE : DEC 19/85	DRAWING NO. :	



SEAM COMP. 1 2 3 4 5 6	DRILL DEPTH METRES	COAL SEAM LOG	INTERVAL METRES ROCK	COAL	% REC.	SAMPLE ID SIMP	COMP	COAL/ROCK TOTAL COMPOS	MINING SECTION	COAL QUALITY A.D.B. RES MOIST	ASH	VM	FC	TS	CAL.VAL MJ/KG
	176.56 176.65			0.09	100.0	7488	7488	0.09/0.00 0.09		1.79	44.69	—	—	—	—

GULF CANADA RESOURCES INC.

SEAM DETAIL

COAL DIVISION
MOUNT KLAPPAN PROJECT

TRUE THICKNESS

DATA SOURCE: KPN LR DDH85013 SEAM : G UPPER INTERVAL(M) : 185.81 – 185.90 ELEVATION(M) : 1643.9

GEOLOGIST : M. BARKER SCALE: DATE : DEC 19/85 DRAWING NO. :

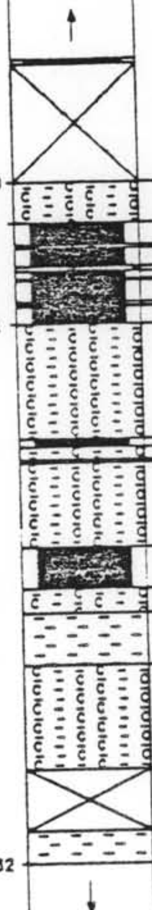
SEAM COMP.	DRILL DEPTH METRES	COAL SEAM LOG	INTERVAL METRES		% REC.	SAMPLE ID		COAL/ROCK TOTAL		COAL QUALITY A.D.B.					
1 2 3 4 5 6			ROCK	COAL		SIMP	COMP	COMPCS	MINING SECTION	RES MOIST	ASH	VM	FC	TS	CAL. VAL MJ/KG
	185.81 – 185.90			[illegible]	100.0	7467	7467	0.22 / 0.00 0.22		1.32	34.46	—	—	—	—

GULF CANADA RESOURCES INC.

COAL DIVISION
MOUNT KLAPPAN PROJECT

SEAM DETAIL — **TRUE THICKNESS**

DATA SOURCE: KPH LR DDH85013	SEAM : G LOWER	INTERVAL(M) : 210.90 – 215.32	ELEVATION(M) : 1643.9
GEOLOGIST : M. BARKER	SCALE:	DATE : DEC 19/85	DRAWING NO. :



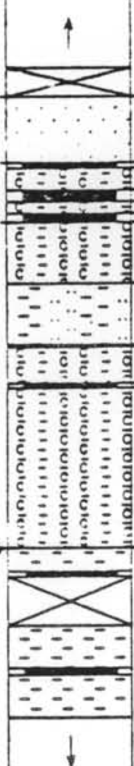
SEAM COMP.	DRILL DEPTH (METRES)	COAL SEAM LOG	INTERVAL (METRES) ROCK	INTERVAL (METRES) COAL	% REC.	SAMPLE ID SIMP	SAMPLE ID COMP	COAL/ROCK TOTAL COMPOS	MINING SECTION	RES MOIST	ASH	VM	FC	TS	CAL.VAL
	210.90		0.27		100.0	7498									
	211.17			0.14						—	—	—	—	—	—
			[illegible]												
				0.12	96.9	7499	7499	0.56/0.09							
			[illegible]	[illegible]				0.85							
				0.14											
			([illegible])												
				0.11											
	211.82		0.74												
				[illegible]											
			[illegible]	[illegible]											
			0.55												
				0.27											
			0.16		88.6	7500									
			0.34												
			0.66												
			(0.40)												
			0.21												
	215.32														

GULF CANADA RESOURCES INC.

SEAM DETAIL — COAL DIVISION — MOUNT KLAPPAN PROJECT — TRUE THICKNESS

DATA SOURCE: KPN LR DDH85013 SEAM : F/G INTERVAL(M) : 235.25 - 238.36 ELEVATION(M) : 1643.9

GEOLOGIST : M BARKER SCALE: DATE : DEC 19/85 DRAWING NO. :



SEAM COMP.	DRILL DEPTH (METRES)	INTERVAL (METRES) ROCK	INTERVAL (METRES) COAL	% REC.	SAMPLE ID SIMP	SAMPLE ID COMP	COAL/ROCK TOTAL COMPOS	MINING SECTION	RES MOIST	ASH	VM	FC	TS	CAL.VAL MJ/KG
	235.25	0.42		100.0	7501									
	235.70	[illegible]	[illegible]	100.0	7502	7502	0.18 / 0.21 0.39		—	—	—	—	—	—
	236.11	0.39												
		0.39	[illegible]											
		0.23	[illegible]	100.0	7503									
		1.03												
	238.36													

GULF CANADA RESOURCES INC.
COAL DIVISION
MOUNT KLAPPAN PROJECT

SEAM DETAIL

TRUE THICKNESS

DATA SOURCE: KPN LR DDH85013 SEAM : F/G INTERVAL(M) : 240.28 - 242.78 ELEVATION(M) : 1843.9

GEOLOGIST : M BARKER SCALE: DATE : DEC 19/85 DRAWING NO. :

SEAM COMP.	DRILL DEPTH (METRES)	COAL SEAM LOG	INTERVAL (METRES) ROCK	INTERVAL (METRES) COAL	% REC.	SAMPLE ID SIMP	SAMPLE ID COMP	COAL/ROCK TOTAL COMPOS	COAL/ROCK TOTAL MINING SECTION	COAL QUALITY A.D.B. RES MOIST	ASH	VM	FC	TS	CAL.VAL
	240.28		1.48		85.4	7504									
			(0.27)												
	242.26		[illegible]	[illegible]	94.9	7505	[illegible]	0.17 / 0.15 [illegible]		—	—	—	—	—	—
	242.59		[illegible]	[illegible]	100.0	7506									
	242.78														

GULF CANADA RESOURCES INC.

COAL DIVISION
MOUNT KLAPPAN PROJECT

SEAM DETAIL — TRUE THICKNESS

DATA SOURCE:	KPN LR DDH85013	SEAM : F	INTERVAL(M) :	270.98 - 275.51	ELEVATION(M) : 1643.9
GEOLOGIST :	M BARKER	SCALE:	DATE :	DEC 19/85	DRAWING NO. :

SEAM COMP.	DRILL DEPTH (METRES)	COAL SEAM LOG	INTERVAL (METRES) ROCK	INTERVAL (METRES) COAL	% REC.	SAMPLE ID SIMP	SAMPLE ID COMP	COAL/ROCK TOTAL COMPOS	MINING SECTION	COAL QUALITY A.D.B. RES MOIST	ASH	VM	FC	TS	CAL.VAL MJ/KG	
	270.98		0.24		100.0	7507										
	271.23		[illegible]	0.64	100.0	7508	50	6.86/ 0.06 0.94		1.35	14.90	5.83	78.12	0.60	29.53	—
			[illegible] [illegible]	[illegible] 0.20												
	272.18		0.11 0.90		100.0	7509	51	0.00/ 1.01 1.01		:92	72.32	5.93	19.83	0.48	6.91	—
	273.20		[illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]	[illegible] 0.36 0.16 [illegible] 0.11 0.16 (0.??) 0.24 [illegible] 0.10 0.71 0.17 [illegible] [illegible]	96.1	7510	52	1.80/ 0.46 2.26		2.04	34.74	7.82	50.46	1.00	21.97	—
	275.51															

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Gulf Canada Resources Inc.
Coal Division
Geophysical Log

Datasource:	**KPNLRDDH85013**	Province: BC	Northing: 6344850.00	Lat:	571455
Log Date:	85–04–07	Zone: 9	Easting: 506378.00	Long:	1285340
Company:	CENTURY	Measuring Point:		Elevation:	
Geologist:	M. BARKER				

Scale: 1 to 100.0

Depth Range: 0.0 to 283.0

True Thickness: NO

Comments:

1. LOGGED THROUGH THE RODS
2.

Logs Plotted:

Description	Axis Range	Axis Length	Smoothing Points	Tool	Comments
1 .GAMMA API	0.0 to 150.0	10.0	31	9067	IN PIPE
2 .NEUTRON–NEUTRON CPS	0.0 to 2500.0	10.0	9	9067	IN PIPE

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GULF CANADA RESOURCES INC.
COAL DIVISION
KLAPPAN PROJECT
STRATIGRAPHIC LOG
KPN LR DDH85013

GEOLOGIST : M. BARKER	DATE : JAN 08/86	DRAWING NO. :

SCALE : 1:200 1:40

NORTHING: 6344850.0 N INCLINATION: 75.0 °
EASTING: 506377.5 E BEARING: 10.0 °

LITHOLOGIC SYMBOLS

SANDSTONE	BENTONITE
SILTSTONE	BRECCIA
COAL	CARBONACEOUS
OVERBURDEN	QUARTZ
MUDSTONE,CLAYSTONE	PYRITE
TUFF	FERRUGINOUS
LIMESTONE	CONGLOMERATE
CORE LOSS	FOSSIL BED

SEAM DETAIL

DRILLED DEPTH {M}	BCA {DEG}	TRUE DEPTH {M} 1 : 200	DRILLED DEPTH {M} 1 : 40	TRUE THICKNESS {M}

KPNLRDDH85014

========================== GULF CANADA RESOURCES INC. ==========================

- D A T A S O U R C E S U M M A R Y -

DATA SOURCE - KPNLRDDH85014 DATE - 01/09/86

- H I S T O R Y -

START DATE - 04/06/85
END DATE - 04/10/85

CONTRACTOR - J.T. THOMAS
GEOLOGIST - M. BARKER

OPERATOR - GCRI
SURVEYOR - MWG & ASS.

REMARKS - SITE A

- L O C A T I O N -

PROVINCE - BC
ELEVATION - 1605.40

LICENCE/LEASE NUMBER - 7152

ZONE - 9
NORTHING - 6344886.00
EASTING - 505606.69

LATITUDE - 571456
LONGITUDE - 1285426

- O R I E N T A T I O N -

LENGTH - 253.94

CORE SIZE - 0.0

CEMENT -
PLUG -
PIEZ -

INCLINATION - 70.0
AZIMUTH - 20.0

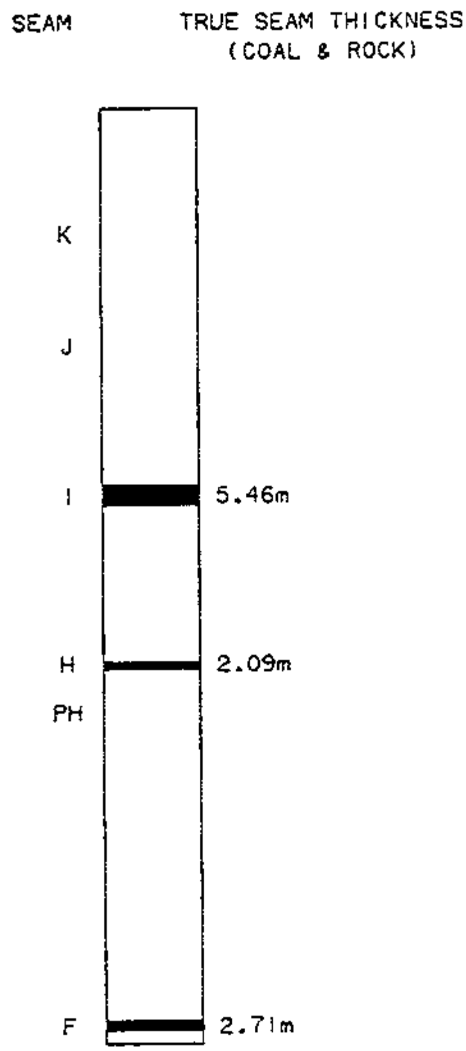
CASING DEPTH(M) - 18.90
AQUIFER DEPTHS(M) - 0.00
0.00
LOST CIRC. DEPTHS(M) - 0.00
0.00

*** NOTE *** 0 INDICATES NO VALUE

==

MT. KLAPPAN COAL PROPERTY

1985 DIAMOND DRILL HOLES
DDH85014



NOTE: SCHEMATIC PROFILE.
NO THICKNESSES SHOWN
FOR SEAMS CONTAINING
LESS THAN 50cm COAL.

SCALE: 1:2000	GULF CANADA RESOURCES INC. 13/01/86

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 1

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85014

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
80	0.00	18.90	18.90			OVERBURDEN	CASING TO 18.90 METRES
80	18.90	20.42	1.52			ROCK LOSS	
80	20.42	22.66	2.24			ROCK LOSS	
80	22.66	23.50	0.84			CLAY	MEL.M.GY.MAS.BRKN VERY SOFT, UNCONSOLIDATED
30	23.50	23.57	0.07			SANDSTONE	FG.PR.LT.GY.MAS.VBRKN CRUSHED CORE
80	23.57	26.50	2.93			ROCK LOSS	
30	26.50	27.22	0.72			CLAY	VPR.M.GY.MAS.VBRKN OVERBURDEN
80	27.22	27.93	0.71			SANDSTONE	CLYY.FG.VPR.LT.GY.MAS.VBRKN OCCASIONAL ENECHELON QUARTZ VEINS, UNCO NSOLIDATED CLAYEY SAND IN PLACES.
80	27.93	29.60	1.67			ROCK LOSS	
80	29.60	30.13	0.53			CLAY	SSY.VPR.LT.GY.MAS.VBRKN VERY SOFT, UNCONSOLIDATED
80	30.13	32.60	2.47			ROCK LOSS	

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 2

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85014

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
80	32.60	32.68	0.08		K	MUDSTONE	CARB.LT.GY.MAS.VBRKN CORE LOSS, UNCONSOLIDATED COAL
80	32.68	34.10	1.42		K	ROCK LOSS	
80	34.10	35.40	1.30		K	MUDSTONE	CARB.LT.GY.VTHNB.VBRKN CARBONACEOUS WITH 90 MM COAL BAND, SILT IER TOWARD S THE BASE, OCCASSIONAL QUAR TZ VEINS PARALLEL TO CORE
80	35.40	35.70	0.30			ROCK LOSS	
* 80	35.70	37.85	2.15			SILTSTONE	LT.GY.LAM.WRMBU.BRKN FINE LAMINATED BANDS GRADING FROM CLAYS TONE TO FINE GRAINED SANDSTONE, MINOR Q UARTZ VEIN 8.0 MM
74	37.85	38.61	0.76			SILTSTONE	SSY.M.GY.LAM.BRKN LITHOLOGY AS ABOVE, QUARTZ VEINS PARALL EL TO BEDDING
72	38.61	38.70	0.09			ROCK LOSS	
* 70	38.70	39.83	1.13			SILTSTONE	SSY.M.GY.LAM.BRKN QUARTZ VEINS AT VARIED ANGLES

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 3

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85014

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
69	39.83	41.54	1.71			SANDSTONE	FG.WEL.LT.GY.MAS.BRKN UNIFORM
68	41.54	41.70	0.16			ROCK LOSS	
68	41.70	42.08	0.38			SANDSTONE	FG.WEL.LT.GY.MAS.BRKN UNIFORM, MASSIVE.
* 67	42.08	44.07	1.99			SANDSTONE	FG.WEL.LT.GY.MAS.SLD MINOR QUARTZ VEIN PARALLEL TO BEDDING
73	44.07	44.43	0.36			SANDSTONE	FG.WEL.LT.GY.MAS.SLD AS ABOVE
74	44.43	44.66	0.23			SILTSTONE	VPR.DK.GY.LAM.XBDG.VBRKN TOPS UP, FINE LAMINAE, GRADES FROM MUDS TONE TO FINE GRAINED SANDSTONE
76	44.66	45.18	0.52			ROCK LOSS	
* 80	45.18	46.42	1.24			SILTSTONE	VPR.DK.GY.LAM.XBDG.VBRKN AS ABOVE
* 80	46.42	48.10	1.68			SILTSTONE	CLYY.PR.DK.GY.LAM.SLD TOPS UP, NUMEROUS FINE CYCLES OF GRADED BEDDING, LESS SILTY THAN ABOVE

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 4

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85014

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
80	48.10	48.18	0.08			ROCK LOSS	
80	48.18	48.38	0.20			SILTSTONE	CLYY.PR.DK.GY.LAM.SLD AS ABOVE
* 80	48.38	50.48	2.10			SILTSTONE	CLYY.PR.DK.GY.LAM.SLD AS ABOVE, SILTIER TOWARDS BASE
77	50.48	51.16	0.68			SILTSTONE	CLYY.VPR.M.GY.THNB.SLD MINOR QUARTZ VEINS AT LOW ANGLES TO COR E. BEDS GRADING FROM CLAYSTONE TO FINE GRAINED SANDSTONE.
* 74	51.16	52.51	1.35			SILTSTONE	CLYY.VPR.M.GY.THNB.SLD LITHOLOGY AS ABOVE
* 78	52.51	54.17	1.66			SILTSTONE	SSY.VPR.M.GY.LAM.BRKN AS ABOVE, QUARTZ VEIN PARALLEL TO BEDDI NG
78	54.17	54.48	0.31			SILTSTONE	CLYY.VPR.M.GY.LAM.VBRKN 50 MM OF CRUSHED CONGLOMERATIC SANDS (N OT IN SITU), AS ABOVE.
* 78	54.48	56.52	2.04			SILTSTONE	CLYY.VPR.M.GY.LAM.BRKN AS ABOVE, NUMEROUS CYCLES OF VERY FINE GRADED BEDDING

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 5

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85014

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
78	56.52	57.17	0.65			SILTSTONE	CLYY.VPR.M.GY.LAM.SLD AS ABOVE, PARTS EASILY ALONG DIP
* 78	57.17	58.51	1.34			SILTSTONE	CLYY.VPR.M.GY.LAM.BRKN AS ABOVE, PARTS ALONG DIP
78	58.51	60.15	1.64			SILTSTONE	CLYY.PR.M.GY.LAM.VBRKN AS ABOVE, FINE UNIFORM LAMINAE, PARTS E ASILY ALONG DIP, "COASTER ZONE"
78	60.15	61.29	1.14			ROCK LOSS	
* 78	61.29	61.62	0.33			SILTSTONE	PR.M.GY.LAM.SLD AS ABOVE, TRACE PLANT FOSSILS ON FRACTU RE SURFACES. TINY LEAF FOSSILS 1.0 MM I N DIAMETER.
* 72	61.62	63.22	1.60			MUDSTONE	CARB.PR.DK.GY.LAM.VBRKN CARBONACEOUS NEAR THE TOP, NUMEROUS UNC ONSOLIDATED CLAY BANDS (BENTONITE?), PO LISHED FRACTURE SURFACES WITH SOME TALC . ONE PYRITE LAYER.
71	63.22	64.46	1.24		J	MUDSTONE	CARB.DK.GY.MAS.VBRKN UNIFORM, COAL STRINGERS 2-8.0 MM WIDE T HROUGHOUT, MINOR QUARTZ VEINS, MOTTLED, SILTIER TOWARDS THE BASE.

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 6

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85014

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 70	64.46	66.25	1.79			SILTSTONE	SSY.M.GY.LAM.WRMBU.SLD GRADES FROM SILTSTONE TO FINE GRAINED S ANDSTONE, MOTTLED IN PLACES. TOPS UP. S COURS.
72	66.25	66.45	0.20			SILTSTONE	SSY.M.GY.LAM.WRMBU.SLD AS ABOVE
* 74	66.45	68.55	2.10			MUDSTONE	SLTY.DK.GY.MAS.SLD TWO QUARTZ VEINS PERPENDICULAR TO CORE. LAMINATIONS AT TOP OF BOX.
67	68.55	69.10	0.55			SILTSTONE	MOD.M.GY.VTHNB.BRKN VERY FINE GRAINED SANDSTONE INTERBEDS.
65	69.10	69.35	0.25			ROCK LOSS	
* 61	69.35	70.59	1.24			SILTSTONE	MOD.M.GY.VTHNB.BRKN AS ABOVE, MINOR QUARTZ VEINING AT ANGLE TO CORE, TALC ON FRACTURE SURFACES. SA NDSTONE CONTENT INCREASES TOWARDS BASE.
71	70.59	71.34	0.75			SANDSTONE	VFG.PR.M.GY.VBRKN WISPY CALCITE VEINING FORMING BRECCIA.
* 78	71.34	72.08	0.74			SANDSTONE	VFG.MOD.M.GY.VTHNB.BRKN INTERLAMINATED DARK GREY SILTSTONE

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 7

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85014

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
77	72.08	73.95	1.87			SILTSTONE	MOD.M.GY.VTHNB.BRKN BECOMING SANDY AT BASE, CALCITE VEIN AT ANGLE TO BEDDING, TALC ON FRACTURE SUR FACES, LITHOLOGY AS ABOVE.
* 76	73.95	74.95	1.00			SILTSTONE	SSY.MOD.M.GY.VTHNB.BRKN MINOR DARK GREY SILTSTONE LAMINAE, AS A BOVE
78	74.95	75.18	0.23			ROCK LOSS	
80	75.18	75.99	0.81			SILTSTONE	MOD.M.GY.VTHNB.SLD UNIFORM, VERY FINE GRAINED SANDSTONE IN TERBEDS, LITHOLOGY AS ABOVE
* 86	75.99	78.05	2.06			SILTSTONE	SSY.MOD.M.GY.LAM.WRMBU.SLD LITHOLOGY AS ABOVE, TOPS UP, QUARTZ VEI N PARALLEL TO BEDDING, SANDY UNITS INCR EASING IN THICKNESS TOWARDS THE BOTTOM.
83	78.05	78.17	0.12			SILTSTONE	MOD.M.GY.LAM.SLD LITHOLOGY AS ABOVE
* 82	78.17	79.11	0.94			SILTSTONE	MOD.M.GY.LAM.SLD AS ABOVE, SHARP CONTACT WITH UNDERLYING UNIT

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 8

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85014

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
78	79.11	80.07	0.96			SANDSTONE	VFG.MOD.M.GY.THNB.WRMBU.SLD TOPS UP, SHARP GRADATIONAL CONTACTS WIT H FINE AND VERY FINE GRAINED SANDS
* 75	80.07	81.00	0.93			SILTSTONE	MOD.M.GY.LAM.BRKN LITHOLOGY AS IN SILTSTONES ABOVE, CALCI TE VEIN ALONG FRACTURE SURFACE, INTERLA MINATED VERY FINE GRAINED SANDSTONE.
77	81.00	81.06	0.06			CLAY	PR.M.GY.VBRKN UNCONSOLIDATED CLAY CONTAINING ANGULAR SANDSTONE FRAGMENTS
79	81.06	81.75	0.69			SILTSTONE	PR.M.GY.LAM.VBRKN FINE GRAINED SANDSTONE INTERBEDS(150 MM), TALC ON FRACTURE SURFACES, MINOR CAL CITE VEINING
* 85	81.75	83.44	1.69			SILTSTONE	MOD.M.GY.LAM.VBRKN LITHOLOGY AS ABOVE, TALC ON FRACTURE SU RFACES, SILTSTONE GRADATIONAL INTO SAND STONE INTERBEDS
84	83.44	83.65	0.21			SILTSTONE	MOD.M.GY.LAM.SLD LITHOLOGY AS ABOVE, MINOR CALCITE ON FR ACTURE SURFACES, SHARP CONTACT WITH UND ERLYING UNIT

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 9

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85014

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
83	83.65	83.85	0.20			SANDSTONE	VFG.MOD.LT.GY.LAM.SLD
* 82	83.85	85.37	1.52			SANDSTONE	VFG.WEL.LT.GY.LAM.XBDG.BRKN LITHOLOGY AS ABOVE, DEVELOPED PLANAR CR OSS-BEDDING GIVES TOPS UP, SOME DARK GR EY SILTSTONE LAMINAE AT 20 TO 200 MM IN TERVALS
* 75	85.37	86.79	1.42			SANDSTONE	VFG.WEL.LT.GY.LAM.XBDG.SLD AS ABOVE, SILTIER TOWARDS THE BASE
75	86.79	86.95	0.16			ROCK LOSS	
75	86.95	87.62	0.67			SILTSTONE	SSY.MOD.M.GY.LAM.SLD INTERLAMINATED VERY FINE GRAINED SANDST ONE THROUGHOUT
* 75	87.62	89.76	2.14			SILTSTONE	MOD.M.GY.LAM.SLD LITHOLOGY AS ABOVE
77	89.76	89.89	0.13			SILTSTONE	MOD.M.GY.LAM.SLD LITHOLOGY AS ABOVE
* 79	89.89	91.74	1.85			SILTSTONE	MOD.M.GY.LAM.SLD AS ABOVE, UNIFORM, CALCITE VEIN PARALLE L TO BEDDING

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 10

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85014

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
77	91.74	92.86	1.12			SILTSTONE	MOD.M.GY.LAM.SLD LITHOLOGY AS ABOVE, UNIFORM
76	92.86	92.90	0.04			ROCK LOSS	
* 75	92.90	93.84	0.94			SILTSTONE	MOD.M.GY.LAM.SLD LITHOLOGY AS ABOVE, UNIFORM
* 83	93.84	95.90	2.06			SILTSTONE	MOD.M.GY.LAM.SLD LITHOLOGY AS ABOVE, UNIFORM
* 80	95.90	97.68	1.78			SILTSTONE	MOD.M.GY.LAM.BRKN AS ABOVE, UNIFORM, MUDSTONE CONTENT INC REASING TOWARDS THE BASE, TALC ON FRACT URE SURFACES
* 75	97.68	98.71	1.03			SILTSTONE	MOD.M.GY.LAM.SLD AS ABOVE, UNIFORM
70	98.71	99.65	0.94			SILTSTONE	MOD.M.GY.LAM.BRKN LITHOLOGY AS ABOVE, UNIFORM
* 62	99.65	101.66	2.01			SILTSTONE	MOD.M.GY.LAM.SLD AS ABOVE, SLIGHTLY SILTIER
65	101.66	102.59	0.93	07511		CLAYSTONE	M.GY.MAS.SLD
66	102.59	103.04	0.45	07512	I	COAL LOSS	

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 11

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85014

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
67	103.04	103.18	0.14	07512	I	COAL	C-1,VBRKN LOSS
67	103.18	103.21	0.03	07512	I	COAL	C-1,BRKN
67	103.21	103.24	0.03	07512	I	CLAYSTONE	DK,BN,SLD SOFT
67	103.24	103.30	0.06	07512	I	COAL	C-1,BRKN
67	103.30	103.32	0.02	07512	I	CLAYSTONE	CARB,BLK,BRKN
67	103.32	103.42	0.10	07512	I	COAL	C-1,BRKN
67	103.42	103.44	0.02	07512	I	CLAYSTONE	M,GY,BRKN LENTICULAR
67	103.44	103.63	0.19	07512	I	COAL	C-1,BRKN
68	103.63	104.13	0.50	07512	I	COAL	C-1,BRKN
69	104.13	104.17	0.04	07512	I	CLAYSTONE	CARB,BLK,SLD

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 12

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85014

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
69	104.17	104.21	0.04	07512	I	CLAYSTONE	DK,BN,SLD SOFT
69	104.21	104.23	0.02	07512	I	COAL	C-1,BRKN
69	104.23	104.24	0.01	07512	I	CLAYSTONE	CARB,BLK,BRKN
69	104.24	104.29	0.05	07512	I	COAL	C-1,BRKN
69	104.29	104.32	0.03	07512	I	CLAYSTONE	DK,GY,SLD
69	104.32	104.35	0.03	07512	I	COAL	C-6,SLD
69	104.35	104.42	0.07	07512	I	COAL	C-2,SLD
69	104.42	104.54	0.12	07512	I	COAL	C-1,BRKN
69	104.54	104.56	0.02	07512	I	COAL	C-6,SLD
70	104.56	104.97	0.41	07512	I	COAL	C-1,VBRKN

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 13

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85014

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
70	104.97	105.03	0.06	07512	I	COAL	C-5.PWRD SOFT AND DAMP
71	105.03	105.32	0.29	07512	I	COAL	C-1.BRKN
71	105.32	105.36	0.04	07512	I	CLAYSTONE	CARB.BLK.BRKN
71	105.36	105.41	0.05	07512	I	COAL	C-1.BRKN
71	105.41	105.42	0.01	07512	I	CLAYSTONE	CARB.BLK.SLD
71	105.42	105.91	0.49	07512	I	COAL	C-1.BRKN
72	105.91	106.08	0.17	07512	I	COAL LOSS	
72	106.08	106.15	0.07	07512	I	COAL	C-3.SLD
73	106.15	106.80	0.65	07512	I	COAL	C-1.BRKN SLIGHTLY WEATHERED
74	106.80	106.95	0.15	07512	I	COAL	C-3.PWRD SOFT

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 14

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85014

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
74	106.95	107.55	0.60	07512	I	COAL LOSS	
75	107.55	107.89	0.34	07512	I	COAL	C-1.VBRKN SOFT AND WEATHERED
76	107.89	107.91	0.02	07512	I	COAL	C-1.BRKN
76	107.91	108.37	0.46	07512	I	COAL	C-1.BRKN ANKERITE AT BASE
77	108.37	108.73	0.36	07513		CLAYSTONE	CARB.DK.GY.SLD LESS CARBONACEOUS DOWNHOLE
78	108.73	109.72	0.99			CLAYSTONE	M.GY.LAM.SLD LAMINATIONS BECOME LIGHTER TOWARDS BOTT OM
* 80	109.72	110.70	0.98			SILTSTONE	MOD.M.GY.LAM.BRKN SLICKENSIDED SURFACES WITH MINOR QUARTZ , INTERLAMINATED WITH VERY FINE GRAINED SANDSTONE.
76	110.70	110.93	0.23			ROCK LOSS	

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 15

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85014

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
72	110.93	111.89	0.96			SILTSTONE	MOD.M.GY.THNB.BRKN VERY FINE GRAINED SANDSTONE TOWARDS THE BASE
* 66	111.89	112.77	0.88			SANDSTONE	VFG.MOD.M.GY.THNB.BRKN MINOR DARK GREY SILTSTONE INTERBEDS TOWARDS BASE
69	112.77	113.56	0.79			SILTSTONE	SSY.MOD.M.GY.LAM.SLD GRADATIONAL CONTACT WITH UNDERLYING UNIT
71	113.56	113.76	0.20			SANDSTONE	FG.WEL.M.GY.MB.SLD
71	113.76	113.79	0.03			SILTSTONE	WEL.M.GY.SLD QUARTZ VEIN PARALLEL TO BED
73	113.79	114.89	1.10			ROCK LOSS	
* 79	114.89	116.83	1.94			SILTSTONE	MOD.M.GY.LAM.BRKN FRACTURED SURFACES INCREASING TOWARDS BASE, SOME GREY CLAY INFILLING, SANDY AT TOP OF UNIT.
78	116.83	117.49	0.66			SILTSTONE	MOD.M.GY.LAM.BRKN LITHOLOGY AS ABOVE

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 16

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85014

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
77	117.49	117.89	0.40			ROCK LOSS	
76	117.89	119.00	1.11			SILTSTONE	MOD.M.GY.LAM.BRKN LITHOLOGY AS ABOVE
* 75	119.00	120.96	1.96			SILTSTONE	MOD.M.GY.LAM.BRKN LITHOLOGY AS ABOVE, GRADATION INTO SANDSTONE UNIT WITH SHARP CONTACT INTO UNDERLYING SILTSTONES
77	120.96	121.01	0.05			ROCK LOSS	
* 80	121.01	122.98	1.97			SILTSTONE	MOD.M.GY.LAM.BRKN AS ABOVE, POLISHED FRACTURE SURFACES WITH TALC, QUARTZ VEIN PARALLEL TO BEDDING (50 MM).
* 75	122.98	123.96	0.98			SILTSTONE	MOD.M.GY.LAM.SLD AS ABOVE, DISTINCT SEPARATION OF VERY FINE GRAINED SANDSTONES WITH SILTSTONE LAMINAE
76	123.96	124.98	1.02			SILTSTONE	MOD.M.GY.LAM.SLD AS ABOVE
* 77	124.98	126.94	1.96			SILTSTONE	MOD.M.GY.LAM.SLD AS ABOVE, INCREASING MUDSTONE CONTENT

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 17

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85014

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
80	126.94	127.06	0.12			ROCK LOSS	
80	127.06	127.31	0.25			SILTSTONE	MOD.M.GY.LAM.SLD AS ABOVE
81	127.31	127.77	0.46			SILTSTONE	SSY.PR.M.GY.MB.SLD GRADATIONAL FROM SILTSTONE TO SILTSTONES CONTAINING WHITE SPECS TO FINE GRAINED SANDSTONES HAVING A SHARP CONTACT TO UNDERLYING SILTSTONE, RIP-UP CLASTS IN SANDS, MINOR COALY INCLUSIONS
* 84	127.77	129.14	1.37			SILTSTONE	MOD.M.GY.VTHNB.BRKN REPETATIVE SEQUENCE OF SILTSTONES GRADING INTO 120 MM OF FINE GRAINED SANDSTONE UNITS
85	129.14	130.02	0.88			SILTSTONE	MOD.M.GY.VTHNB.BRKN AS ABOVE, MORE SANDY AT BASE
* 85	130.02	131.15	1.13			SILTSTONE	SSY.PR.M-DK.GY.VTHNB.BIOTR.SLD TOPS UP, LITHOLOGY AS ABOVE, SHARP CONTACTS, WHITE SPECKLED BAND 1.0 CM OF SANDSTONE
* 82	131.15	132.19	1.04			SILTSTONE	MOD.M.GY.VTHNB.SLD AS ABOVE, QUARTZ VEINING PARALLEL TO BEDDING, GRADATIONAL CONTACT WITH UNDERLYING UNIT

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 18

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85014

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
73	132.19	133.05	0.86			SANDSTONE	FG.MEL.M.GY.MB.BRKN UNIFORM
68	133.05	133.12	0.07			ROCK LOSS	
68	133.12	133.20	0.08			SANDSTONE	FG.MOD.M.GY.THNB.SLD MINOR DARK GREY SILTSTONE INTERBEDS
* 63	133.20	134.11	0.91			SILTSTONE	SSY.PR.M.GY.THNB.BRKN SHARP CONTACT BETWEEN SAND/SILTSTONE INTERBEDS
69	134.11	134.86	0.75			SANDSTONE	FG.MOD.M.GY.MB.BRKN TWO SILTSTONE RIP-UP CLASTS AT BASE, INTERLAMINATED SILTSTONE AT TOP, SHARP CONTACT WITH UNDERLYING SILTSTONE
72	134.86	135.15	0.29			SILTSTONE	PR.M.GY.THNB.BRKN INTERBEDDED VERY FINE GRAIN SANDSTONE
76	135.15	135.88	0.73			SANDSTONE	SLTY.VFG.PR.M.GY.THNB.BRKN TALC ON FRACTURED SURFACES, MOTTLED
* 82	135.88	136.89	1.01			SANDSTONE	SLTY.VFG.PR.M.GY.THNB.WRMBU.BRKN AS ABOVE, TOPS UP, SHARP CONTACTS WITH DARK GREY SILTSTONE INTERBEDS

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 19

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85014

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 75	136.89	138.90	2.01			SANDSTONE	SLTY.VFG.PR.M.GY.THNB.BRKN AS ABOVE, SHARP CONTACTS BETWEEN SAND/S ILTSTONE AT TOP OF UNIT BECOMING GRADAT IONAL TOWARDS THE BASE
77	138.90	138.98	0.08			ROCK LOSS	
* 80	138.98	141.07	2.09			SILTSTONE	SSY.PR.M.GY.VTHNB.SLD LITHOLOGY AS ABOVE, SHARP CONTACTS, SIL TSTONE INCREASING TOWARDS THE BASE
67	141.07	141.76	0.69			SILTSTONE	MOD.M.GY.LAM.VBRKN SOME FRACTURES CONTAINING TALC
63	141.76	141.90	0.14			ROCK LOSS	
* 58	141.90	142.74	0.84			SILTSTONE	MOD.M.GY.LAM.VBRKN AS ABOVE
* 72	142.74	144.61	1.87			SILTSTONE	MOD.M.GY.LAM.VBRKN AS ABOVE, MINOR TALC ON FRACTURE SURFAC ES
* 80	144.61	146.77	2.16			SILTSTONE	MOD.M.GY.LAM.BRKN AS ABOVE, MINOR CALCITE VEIN PARALLEL T O BEDDING, COAL LAMINAE (1.0 MM)

* DENOTES MEASURED BCA

36/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 20

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85014

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 72	146.77	147.72	0.95			SILTSTONE	MOD.M.GY.LAM.SLD AS ABOVE, SANDSTONE INTERBEDS THICKER
70	147.72	148.88	1.16			SILTSTONE	MOD.M.GY.LAM.SLD AS ABOVE
* 68	148.88	150.71	1.83			SILTSTONE	SSY.PR.DK.GY.VTHNB.WRMBU.SLD LITHOLOGY AS ABOVE WITH SHARP CONTACTS BETWEEN THE SAND/SILTSTONES, BIOTURBATE D, TOPS UP, COAL LAMINAE (1.00 MM)
69	150.71	150.92	0.21			SILTSTONE	MOD.M.GY.LAM.SLD AS ABOVE
* 70	150.92	153.02	2.10			SILTSTONE	MOD.M.GY.LAM.SLD AS ABOVE, SANDY AT THE TOP, TWO PYRITE BLEBS 2.0 CM IN DIAMETER
72	153.02	153.49	0.47			SILTSTONE	MOD.M.GY.LAM.SLD AS ABOVE
73	153.49	153.83	0.34			SILTSTONE	MOD.M.GY.LAM.SLD AS ABOVE, GRADATIONAL INTO UNDERLYING U NIT
74	153.83	155.10	1.27			MUDSTONE	WEL.DK.GY.BRKN SMALL PLANT FOSSILS, POLISHED FRACTURE SURFACES CONTAINING TALC, CALCITE VEIN 1.0 MM ALONG FRACTURE

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 21

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85014

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
76	155.10	155.53	0.43	07514		CLAYSTONE	CARB.DK.GY.SLD FEW COALY LAMINAE
76	155.53	155.73	0.20	07515	H	COAL	C-4.SLD ABUNDANT ANKERITE IN CLEAT AND BEDDING SURFACES
77	155.73	155.91	0.18	07515	H	CLAYSTONE	CARB.BLK.SHRD
77	155.91	155.99	0.08	07515	H	COAL	C-6.SLD SOFT
77	155.99	156.00	0.01	07515	H	CLAYSTONE	CARB.BLK.SLD
77	156.00	156.16	0.16	07515	H	COAL	C-5.VBRKN
77	156.16	156.38	0.22	07516	H	ROCK LOSS	
78	156.38	156.44	0.06	07516	H	CLAYSTONE	CARB.DK.GY.BRKN
78	156.44	156.51	0.07	07516	H	CLAYSTONE	M.BN SOFT

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 22

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85014

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
78	156.51	156.56	0.05	07516	H	CLAYSTONE	CARB.BLK.SLD
78	156.56	156.59	0.03	07516	H	COAL	C-3.VBRKN
78	156.59	156.71	0.12	07516	H	COAL	C-6.SLD
78	156.71	156.74	0.03	07516	H	CLAYSTONE	CARB.BLK.BRKN
78	156.74	156.79	0.05	07516	H	CLAYSTONE	M.BN.BRKN
78	156.79	156.81	0.02	07516	H	CLAYSTONE	BLK.SLD
78	156.81	156.90	0.09	07516	H	COAL	C-6.BRKN
79	156.90	157.09	0.19	07516	H	CLAYSTONE	CARB.BRKN FEW ANKERITE VEINS IN THE BEDDING
79	157.09	157.20	0.11	07516	H	CLAYSTONE	CARB.BLK.BRKN ANKERITE IN BEDDING
79	157.20	157.33	0.13	07517	H	COAL	C-3.VBRKN

* DENOTES MEASURED BCA

FORM 4001

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85014

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
79	157.33	157.38	0.05	07517	H	CLAYSTONE	CARB.BLK.SHRD
79	157.38	157.48	0.10	07517	H	COAL	C-3.VBRKN
79	157.48	157.51	0.03	07517	H	CLAYSTONE	CARB.BLK.VBRKN COALY
79	157.51	157.63	0.12	07517	H	COAL	C-3.VBRKN
80	157.63	157.67	0.04	07517	H	COAL LOSS	
81	157.67	159.07	1.40	07518		CLAYSTONE	DK.GY.BRKN MINOR ANKERITE
82	159.07	159.48	0.41			MUDSTONE	WEL.DK.GY.VBRKN TALC ON POLISHED FRACTURE SURFACES, "BI VALVES", GRADATIONAL INTO UNDERLYING UN IT
* 84	159.48	160.98	1.50			SILTSTONE	MOD.W-DK.GY.LAM.SLD MINOR TALC ON POLISHED SURFACES, QUARTZ VEIN (5.0 MM) AT ANGLE TO BEDDING

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85014

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
83	160.98	161.72	0.74		PHANTOM	MUDSTONE	WEL.DK.GY.VBRKN POLISHED FRACTURE SURFACES, COAL BAND W ITH ASSOCIATED ANKERITE AND CALCITE (1. 0 CM)
83	161.72	161.88	0.16		PHANTOM	MUDSTONE	CARB.WEL.BLK.VBRKN EASILY CRUMBLES, POLISHED SURFACES, COA LY BANDS, QUARTZ VEIN
83	161.88	162.11	0.23		PHANTOM	MUDSTONE	WEL.DK.GY.BRKN COALY STRINGERS AND ASSOCIATED ANKERITE , GRADATIONAL INTO UNDERLYING UNIT
82	162.11	162.31	0.20			SILTSTONE	MOD.M.GY.THNB.SLD SHARP CONTACT WITH FINE GRAINED SANDSTO NE UNIT (7.0 MM)
82	162.31	162.58	0.27			ROCK LOSS	
82	162.58	162.86	0.28			SILTSTONE	MOD.M.GY.THNB.SLD AS ABOVE
* 81	162.86	165.01	2.15			SILTSTONE	MOD.M.GY.LAM.BIOTR.SLD LITHOLOGY AS ABOVE, SANDSTONE INTERBEDS THINNER, BIOTURBATIONS TOWARDS THE BOT TOM, 10 MM QUARTZ VEIN PARALLEL TO BEDD ING

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 25

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85014

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
81	165.01	165.67	0.66			SANDSTONE	SLTY.FG.PR.M-DK.GY.VTHNB.WRMBU.BRKN VERY DISTURBED, MUDDY, BROKEN UP RESULT ING IN NUMEROUS SILTSTONE RIP-UP CLASTS 5-80 MM LONG, TOPS UP
* 81	165.67	167.11	1.44			SANDSTONE	FG.WEL.LT.GY.LAM.SLD MASSIVE, SILTY LAMINAE, RARE SILTSTONE RIP-UP CLASTS, SOME QUARTZ VEINS PARALL EL TO BEDDING
78	167.11	169.10	1.99			SANDSTONE	FG.WEL.LT.GY.MAS.SLD MINOR FINE WISPY SILTSTONE LAMINAE TOWA RDS THE BOTTOM
* 75	169.10	171.21	2.11			SANDSTONE	FG.WEL.LT.GY.MAS.RIPMK.SLD MINOR FINE WISPY SILTSTONE LAMINAE, MIN OR RIP-UP CLASTS 2 X 10 MM
77	171.21	171.75	0.54			SANDSTONE	FG.WEL.LT.GY.MAS.SLD LITHOLOGY AS ABOVE
* 78	171.75	173.24	1.49			SANDSTONE	SLTY.FG.PR.LT.GY.VTHNB.WRMBU.BRKN OCCASSIONALLY GRADING TO MUDSTONE BANDS

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 26

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85014

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
79	173.24	174.73	1.49			SANDSTONE	SLTY.FG.PR.LT.GY.VTHNB.SLD LITHOLOGY AS ABOVE, RARE MUDSTONE RIP-U P CLASTS, SOME SANDSTONE BANDS VARYING IN SILT CONTENT RESULTING IN COLOUR BAN DING, GRADATIONAL .
79	174.73	174.85	0.12			ROCK LOSS	
79	174.85	175.40	0.55			SANDSTONE	SLTY.FG.PR.LT.GY.VTHNB.BRKN AS ABOVE
* 80	175.40	177.54	2.14			SANDSTONE	SLTY.FG.PR.LT.GY.VTHNB.SSD.BRKN TOPS UP, LITHOLOGY AS ABOVE, NUMEROUS M UDSTONE BANDS, FAIRLY SHARP CONTACTS, F AINT COLOUR BANDING DUE TO VARYING SILT CONTENTS
80	177.54	179.42	1.88			SANDSTONE	SLTY.FG-.PR.LT-DK.GY.LAM.SSD.VBRKN INTERBEDDED VERY FINE GRAINED SANDSTONE AND SILTSTONES, SHARP CONTACTS, SOME S ILTSTONE RIP-UP CLASTS IN THE SANDS, SI NGLE QUARTZ VEIN AT LOW ANGLES TO THE C ORE

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 27

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85014

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 80	179.42	180.31	0.89			SANDSTONE	SLTY.FG-.VPR.LT-DK.GY.LAM.BRKN INTERBEDDED DARK SILTSTONES AND FINE SANDSTONES, OCCASSIONAL RIP-UP CLASTS, SOME POLISHED FRACTURE SURFACES, PLANT MASH ON SILTY BEDDING SURFACES
80	180.31	180.78	0.47			SANDSTONE	FG-.VPR.LT.GY.THNB.BRKN FINE TO GRANULAR GRAINED, INTERBEDDED FINE GRAINED SANDSTONE AND GRANULAR (WITH FINE SAND MATRIX) SANDSTONE.
79	180.78	180.95	0.17			ROCK LOSS	
79	180.95	181.67	0.72			SANDSTONE	FG-.VPR.LT.GY.THNB.SLD LITHOLOGY AS ABOVE, SINGLE COAL LAYER, QUARTZ LENS 45 DEGREES TO CORE
79	181.67	182.05	0.38			SANDSTONE	FG-.VPR.LT.GY.THNB.BRKN LITHOLOGY AS ABOVE, SINGLE COAL LAYER 8.0 MM
* 78	182.05	183.75	1.70			MUDSTONE	SLTY.VPR.DK.GY.LAM.WRMBU.SLD TOPS UP, FINELY LAMINATED GRADING FROM CLAYSTONE TO FINE GRAINED SANDSTONES, PLANT HASH ON BEDDING SURFACES, XBDG

* DENOTES MEASURED SCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 28

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85014

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
79	183.75	183.94	0.19			MUDSTONE	SLTY.VPR.DK.GY.LAM.SLD LITHOLOGY AS ABOVE
* 80	183.94	185.85	1.91			SANDSTONE	SLTY.FG.VPR.LT.GY.LAM.SLD FINE WISPY SILTSTONE LAMINAE, QUARTZ VEIN 3.0 MM WIDE
* 78	185.85	186.92	1.07			SANDSTONE	FG.WEL.LT.GY.MAS.SLD WISPY SILT LAMINAE, MUDSTONE CLASTS 30 X 10 MM, SINGLE DARK SILTSTONE BAND 20 MM WIDE
82	186.92	187.92	1.00			SANDSTONE	FG.WEL.LT.GY.MAS.SLD CORE TWISTED OFF, LITHOLOGY AS ABOVE
* 87	187.92	189.84	1.92			SANDSTONE	FG.VPR.LT.GY.VTHNB.SLD SOME WISPY SILTSTONE LAMINAE, MUDSTONE RIP-UP CLASTS 2-10 MM
86	189.84	189.92	0.08			ROCK LOSS	
86	189.92	190.05	0.13			SANDSTONE	FG.VPR.LT.GY.VTHNB.SLD AS ABOVE
85	190.05	191.04	0.99			SANDSTONE	SLTY.FG.VPR.LT.GY.LAM.BRKN OCCASSIONAL SILTY MUDSTONE LAYERS
83	191.04	192.92	1.88			ROCK LOSS	

* DENOTES MEASURED BCA

FORM 4001

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85014

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
82	192.92	194.01	1.09			SANDSTONE	SLTY.FG.VPR.LT.GY.LAM.SLD LITHOLOGY AS ABOVE, SOME SMALL MUDSTONE RIP-UP CLASTS
* 80	194.01	195.93	1.92			SANDSTONE	SLTY.FG-.VPR.LT.GY.LAM.SLD FINE MUDSTONE LAYERS, MUDSTONE RIP-UP C LASTS
80	195.93	196.02	0.09			ROCK LOSS	
80	196.02	196.22	0.20			SANDSTONE	SLTY.FG-.VPR.LT.GY.LAM.SLD AS ABOVE
80	196.22	198.31	2.09			SANDSTONE	SLTY.FG-.VPR.LT.GY.LAM.SLD AS ABOVE, MUDSTONE LAYERES AND RIP-UP C LASTS THROUGHOUT, MINOR COAL STRINGERS .5 MM WIDE AND 10 MM LONG
80	198.31	199.03	0.72			SANDSTONE	SLTY.FG-.VPR.LT-M.GY.LAM.BRKN AS ABOVE, NUMEROUS RIP-UP CLASTS, MUDST ONE LAMINAE
80	199.03	200.35	1.32			SANDSTONE	SLTY.FG-.VPR.LT-M.GY.LAM.BRKN LITHOLOGY AS ABOVE
80	200.35	202.04	1.69			SANDSTONE	FG-.VPR.LT-M.GY.MAS.BRKN NUMEROUS MUDSTONE RIP-UP CLASTS

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85014

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
80	202.04	202.13	0.09			ROCK LOSS	FG-
80	202.13	202.47	0.34			SANDSTONE	FG-.VPR.LT-M.GY.LAM.BRKN LITHOLOGY AS ABOVE
* 80	202.47	204.40	1.93			SANDSTONE	SLTY.FG-.VPR.M-DK.GY.LAM.VBRKN SILTY MUDSTONE LAYERS AND RIP-UP CLASTS
78	204.40	206.12	1.72			SANDSTONE	PBLY.FG-.VPR.LT-M.GY.THNB.VBRKN ALTERNATING BEDS OF FINE GRAIN AND PEBB LY SANDSTONES, ONE 120 MM WIDE BAND OF ROUNDED MATRIX SUPPORTED POLYMICTIC CON GLOMERATE, MUDSTONE,SILTSTONE AND CHERT CLAST
75	206.12	207.98	1.86			CONGLOMERATE	VPR.LT.GY.MAS.BRKN UNIFORM, SUBANGULAR TO SUBROUNDED MATRI X SUPPORTED, POLYMICTIC CONGLOMERATE, O NE 120 MM WIDE BAND OF FINE GRAINED SAN DSTONE WITH COAL STRINGERS
74	207.98	208.30	0.32			CONGLOMERATE	VPR.LT.GY.MAS.BRKN AS ABOVE
* 73	208.30	209.20	0.90			SANDSTONE	SLTY.FG.PR.LT.GY.MAS.BRKN SMALL PLANT FRAGMENTS THROUGHOUT, SILTY LAMINAE

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 31

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85014

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
73	209.20	209.90	0.70			SANDSTONE	SLTY.FG.PR.LT.GY.MAS.BRKN LITHOLOGY AS ABOVE, COAL LENSES 2-10 MM WIDE
74	209.90	211.90	2.00			SANDSTONE	SLTY.FG-.PR.LT-M.GY.THNB.BRKN LITHOLOGY AS ABOVE. FEW COAL STRINGERS, OCCASIONAL MUDSTONE RIP-UP CLASTS
74	211.90	212.23	0.33			SANDSTONE	MG.VWEL.LT.GY.MAS.SLD VERY UNIFORM. RARE MUDSTONE RIP-UP CLAS TS
75	212.23	213.97	1.74			SANDSTONE	CG.VWEL.LT.GY.MAS.SLD LITHOLOGY AS ABOVE. NO RIP-UP CLASTS, C ORE TWISTED OFF
75	213.97	214.25	0.28			SANDSTONE	SLTY.MG.PR.S-P.GY.MAS.SLD AS ABOVE BUT SILTIER, MODERATE QUARTZ V EINING, SOME SILT LAMINAE
75	214.25	215.25	1.00			CONGLOMERATE	PR.S-P.GY.MAS.SLD MATRIX SUPPORTED, CLAST SUPPORTED IN PL ACES, SUBROUNDED POLYMICTIC, WHITE CREA MY FILLING IN POROSITY, OCCASIONAL QUAR TZ VEINS AT VARIOUS ANGLES
76	215.25	215.89	0.64			CONGLOMERATE	PR.S-P.GY.MAS.SLD LITHOLOGY AS ABOVE

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 32

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85014

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
76	215.89	218.01	2.12			CONGLOMERATE	PR.S-P.GY.MAS.BRKN LITH AS ABOVE. ONE TALC FILLED FRAC 2MM WIDE @ 45 DEGREE TO CORE. SLIGHT SIZE BANDING IN CLASTS. MANY AREAS ARE CLAST SUPPORTED. TWO COAL CLASTS 20MM LONG B Y 8MM WIDE. ONE CARBONATE STRINGER.
77	218.01	220.03	2.02			CONGLOMERATE	PR.S-P.GY.MAS.BRKN LITHOLOGY AS ABOVE. TWO TALC FILLED FRA CS 2-4MM W ITH ONE CARBONATE BAND 15MM WIDE @ 90 DEGREE BCA.
78	220.03	220.87	0.84			CONGLOMERATE	PR.S-P.GY.MAS.SLD LITHOLOGY AS ABOVE; GRADATIONAL LOWER C ONTACT.
78	220.87	221.17	0.30			ROCK LOSS	
78	221.17	221.48	0.31			SANDSTONE	MG.WEL.LT.GY.MAS.SLD ONE COAL BAND 1CM WIDE.
78	221.48	222.36	0.88			SANDSTONE	MG.WEL.LT.GY.MAS.SLD NUMEROUS COAL STRINGERS 1-4MM WIDE TOWA RDS END OF BOX. TALC FILLED FRACTURES A ND OCCASIONAL VEINS. SPORADIC CHERT PEB BLES LESS THAN 3MM IN DIAMETER.

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 33

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85014

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 79	222.36	224.46	2.10			SILTSTONE	SSY.VPR.M-DK.GY.VTHNB.BRKN COAL STRINGERS 1-3MM WIDE THROUGH OUT. BANDS GRADE FROM CARBONACEOUS CLAYSTONE TO MEDIUM GRAINED SANDTONE WITH RIP-UP CLASTS. MODERATE QUARTZ VEINING IN MUD STONE LAYERS. OCCASIONAL PLANT FOSSILS ON BEDDING PLANES.
82	224.46	224.63	0.17			SILTSTONE	MOD.M.GY.THNB.SLD TALC ON POLISHED FRACTURE SURFACES.
82	224.63	224.94	0.31			SILTSTONE	MOD.M.GY.THNB.SLD LITHOLOGY AS ABOVE
83	224.94	225.60	0.66			SILTSTONE	PR.M.GY.THNB.BRKN ABUNDANT QUARTZ VEINING THROUGHOUT FORM ING POLISHED FRACTURE SURFACES CONTAINI NG TALC.
* 85	225.60	226.36	0.76			SILTSTONE	MOD.DK.GY.THNB.SLD UNIFORM POLISHED BEDDING SURFACES CONTA INING TALC
81	226.36	227.62	1.26			MUDSTONE	SLTY.MOD.DK.GY.VTHNB.SLD LITHOLOGY AS ABOVE, VERY UNIFORM
78	227.62	228.03	0.41			SILTSTONE	SSY.MOD.DK.GY.THNB.SLD INCREASE IN SANDSTONE TO BASE: SHARP CO NTACT WITH UNDERLYING UNIT.

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 34

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85014

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
76	228.03	228.34	0.31			SANDSTONE	FG.WEL.LT-M.GY.MAS.VBRKN QUARTZ VEINING 2MM ALONG FRACTURE SURFA CES.
* 72	228.34	230.14	1.80			SILTSTONE	VFG.MOD.M.GY.THNB.VBRKN DARK GRAY SILTSTONE INTERBEDS WITH SHAR P CONTACTS ; FRACTURE SURFACES, EROSION AL SURFACES INDICATE TOPS UP, TRACE FOS SILS
74	230.14	230.53	0.39			SILTSTONE	VPR.M.GY.LAM.WRMBU.SLD LAMINAE GRADING FROM MUDSTONE TO FINE G RAINED SANDSTONE, TOPS UP
* 75	230.53	232.14	1.61			SILTSTONE	VPR.M.GY.LAM.BIOTR.BRKN LITHOLOGY AS ABOVE
75	232.14	233.44	1.30			SILTSTONE	VPR.M.GY.LAM.WRMBU.BRKN LITHOLOGY AS ABOVE
* 75	233.44	234.14	0.70			MUDSTONE	SLTY.VPR.DK.GY.LAM OCCASIONAL LAMINAE GRADING TO VERY FINE GRAINED SANDSTONE
* 75	234.14	236.14	2.00			MUDSTONE	SLTY.VPR.DK.GY.MAS.SLD PREDOMINANTLY MASSIVE, VERY FAINT FINE BEDDING IN ONE PLACE

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 35

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85014

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
77	236.14	236.28	0.14			MUDSTONE	SLTY.VPR.DK.GY.MAS.SLD LITHOLOGY AS ABOVE, CONTAINS WHITE ANGU LAR CLASTS 1.0 MM IN DIAMETER
77	236.28	236.64	0.36			MUDSTONE	SLTY.VPR.DK.GY.MAS.SLD LITHOLOGY AS ABOVE, ANGULAR WHITE CLAST S 1.00 MM IN DIAMETER
* 79	236.64	238.31	1.67			SILTSTONE	VPR.M.GY.LAM.BRKN FINELY LAMINATED, ONE QUARTZ VEIN 20.0 MM WIDE AT LOW ANGLES TO THE CORE
* 77	238.31	239.44	1.13			SILTSTONE	VPR.M.GY.LAM.WRMBU.SLD LITHOLOGY AS ABOVE, TOPS UP
* 80	239.44	240.40	0.96			SILTSTONE	VPR.M.GY.LAM.WRMBU.SLD LITHOLOGY AS ABOVE
* 79	240.40	242.41	2.01			SILTSTONE	VPR.M.GY.LAM.BRKN LITHOLOGY AS ABOVE, SLICKENSIDES, POLIS HED FRACTURE SURFACES IN PLACES
* 68	242.41	244.51	2.10			MUDSTONE	DK.GY.MAS.SLD PLANT FOSSILS ON FRACTURE SURFACES, VER Y UNIFORM, PREDOMINANTLY MASSIVE
69	244.51	245.30	0.79			MUDSTONE	SLTY.DK.GY.MAS.SLD LITHOLOGY AS ABOVE, SILTIER

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 36

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85014

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 69	245.30	246.54	1.24			MUDSTONE	SLTY.DK.GY.MAS.SLD LITHOLOGY AS ABOVE, CORE TWISTED OFF, C OAL LAYERS 3-5MM WIDE OCCASIONAL VEINS PARALLEL TO BEDDING
69	246.54	247.19	0.65	07519		CLAYSTONE	SLTY.DK.GY.SLD LESS SILTY MORE CARBONACEOUS
69	247.19	247.64	0.45	07520	F	COAL	C-1.VBRKN WEATHERED, SOFT
69	247.64	247.71	0.07	07520	F	CLAYSTONE	CARB.DK.GY.SLD
69	247.71	247.74	0.03	07520	F	COAL	C-1.BRKN
69	247.74	247.81	0.07	07520	F	CLAYSTONE	CARB.DK.GY.SLD
69	247.81	247.84	0.03	07520	F	COAL	C-1.BRKN
69	247.84	247.99	0.15	07520	F	COAL LOSS	
69	247.99	248.03	0.04	07520	F	COAL	C-1.BRKN
69	248.03	248.06	0.03	07520	F	CLAYSTONE	CARB.DK.GY.SLD

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG , PAGE 37

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85014

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
69	248.06	248.26	0.20	07520	F	COAL	C-1.BRKN
69	248.26	248.32	0.06	07520	F	COAL LOSS	
69	248.32	248.37	0.05	07521	F	ROCK LOSS	
69	248.37	248.46	0.09	07521	F	CLAYSTONE	CARB.BLK.PHRD SOFT
69	248.46	248.50	0.04	07521	F	CLAYSTONE	CARB.BLK.SLD ANKERITE VEINING, CLAYSTONE, LENTICULAR
69	248.30	248.54	0.04	07521	F	COAL	C-1.BRKN WEATHERED
69	248.54	248.56	0.02	07521	F	COAL	C-1.VBRKN
69	248.56	248.62	0.06	07521	F	COAL	C-3.SLD
69	248.62	248.64	0.02	07521	F	COAL	C-6.BRKN
69	248.64	248.66	0.02	07521	F	COAL	C-1

* DENOTES MEASURED BCA

36/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 38

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85014

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
69	248.66	248.75	0.09	07521	F	COAL	C-3.BRKN ANKERITE VEINS AT BOTTOM
69	248.75	248.86	0.11	07521	F	COAL	C-6.SLD
69	248.86	248.91	0.05	07521	F	COAL	C-2.BRKN ANKERITE AT THE BASE
69	248.91	249.02	0.11	07521	F	CLAYSTONE	CARB.BLK.SLD BRIGHT COAL BANDS
69	249.02	249.08	0.06	07521	F	COAL	C-4.SLD
69	249.08	249.28	0.20	07521	F	COAL	C-6.SLD
69	249.28	249.32	0.04	07521	F	CLAYSTONE	CARB.BLK.SLD ANKERITE IN FRACTURE
69	249.32	249.45	0.13	07522	F	COAL	C-3.BRKN ANKERITE IN FRACTURE
69	249.45	249.67	0.22	07522	F	COAL	C-2.VBRKN
69	249.67	249.71	0.04	07522	F	COAL	C-4.SLD

* DENOTES MEASURED BCA

FORM 4001

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 39

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85014

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
69	249.71	249.74	0.03	07522	F	COAL	C-2.BRKN
69	249.74	249.75	0.01	07522	F	CLAYSTONE	CARB.BLK.BRKN
69	249.75	249.79	0.04	07522	F	COAL	C-2.BRKN
69	249.79	249.85	0.06	07522	F	COAL	C-5.BRKN
69	249.85	249.88	0.03	07522	F	COAL	C-2.SLD
69	249.88	249.89	0.01	07522	F	CLAYSTONE	CARB.BLK.SLD
69	249.89	249.90	0.01	07522	F	COAL	C-1.SLD
69	249.90	249.91	0.01	07522	F	CLAYSTONE	CARB.BLK.SLD
69	249.91	249.98	0.07	07522	F	COAL	C-2.VBRKN
69	249.98	250.10	0.12	07522	F	COAL LOSS	

* DENOTES MEASURED BCA

86/01/02 GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG PAGE 40

PROJECT: KPN BLOCK: LR DATA SOURCE: DDH85014

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
69	250.10	250.20	0.10	07523		CLAYSTONE	CARB.BLK.SLD VERY COALY, NUMEROUS ANKERITE VEINS
69	250.20	250.55	0.35	07523		CLAYSTONE	CARB.BLK.SLD FEW COALY STREAKS.
69	250.55	251.07	0.52			MUDSTONE	CARB.DK.GY.SLD OCCASIONAL QUARTZ STRINGERS 1.0 MM WIDE THROUGHOUT
69	251.07	252.57	1.50			MUDSTONE	CARB.DK.GY.BRKN LITHOLOGY AS ABOVE, COAL STRINGER 1-3.0 MM WIDE, PLANT FOSSILS
69	252.57	253.94	1.37			MUDSTONE	CARB.DK.GY.BRKN LITHOLOGY AS ABOVE, PLANT FOSSILS, OCCA SIONAL QUARTZ VEINS VERY LOW ANGLE TO C ORE, SILTIER THAN ABOVE, TOTAL DEPTH 25 4.80

* DENOTES MEASURED BCA
NEWPAGE

FORM 4001

GULF CANADA RESOURCES INC.

COAL DIVISION
MOUNT KLAPPAN PROJECT

SEAM DETAIL — **TRUE THICKNESS**

DATA SOURCE:	KPN LR DDH85014	SEAM : 1	INTERVAL(M) : 101.68 - 108.73	ELEVATION(M) :	1805.4
GEOLOGIST :	M BARKER	SCALE:	DATE : DEC 19/85	DRAWING NO. :	

SEAM COMP.	DRILL DEPTH (METRES)	COAL SEAM LOG	INTERVAL (METRES) ROCK	INTERVAL (METRES) COAL	% REC.	SAMPLE ID SIMP	SAMPLE ID COMP	COAL/ROCK TOTAL COMPOS	COAL/ROCK TOTAL MINING SECTION	COAL QUALITY A.D.B. RES MOIST	ASH	VM	FC	TS	CAL VAL MJ/KG
	101.66		0.84		100.0	7511									
	102.59			(0.41)											
				0.18											
			[illegible]	[illegible]											
				0.64											
			[illegible]	[illegible]											
				0.94											
			[illegible]												
				0.52	78.9	7512	53	5.24 / 0.12 5.46		0.97	16.26	6.94	75.83	0.43	29.35
				(0.16)											
				0.83											
				(0.58)											
				0.80											
	108.37		0.35		100.0	7513									
	108.73														

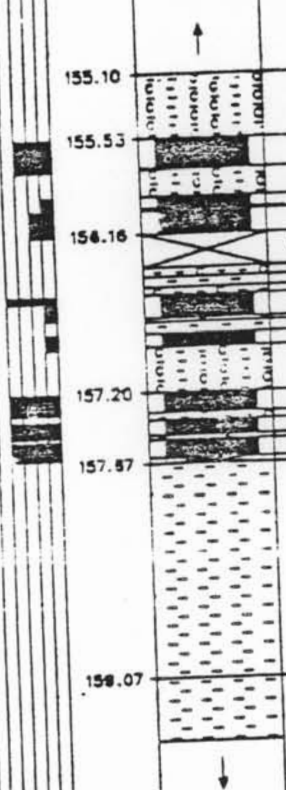
GULF CANADA RESOURCES INC.

COAL DIVISION

MOUNT KLAPPAN PROJECT

SEAM DETAIL — **TRUE THICKNESS**

DATA SOURCE:	KPN LR DDH85014	SEAM : H	INTERVAL(M) :	155.10 – 158.07	ELEVATION(M) : 1605.4
GEOLOGIST :	M. BARKER	SCALE:	DATE :	DEC 19/85	DRAWING NO. :



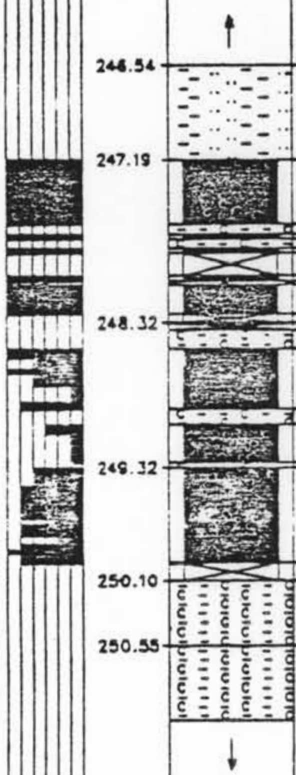
DRILL DEPTH (METRES)	INTERVAL ROCK (METRES)	INTERVAL COAL (METRES)	% REC.	SAMPLE ID SIMP	SAMPLE ID COMP	COAL/ROCK TOTAL COMPOS	MINING SECTION	RES MOIST	ASH	VM	FC	TS	CAL.VAL MJ/KG
155.10	0.42		100.0	7514									
155.53		0.19	100.0	7515	84	1.04 / 1.06 2.09		1.29	38.77	7.80	51.07	0.35	19.85
	0.18												
	[illegible]	[illegible]											
		0.14											
156.16	(0.22)		78.9	7516									
		0.18											
		[illegible]											
	0.29												
157.20		0.13	91.5	7517									
		0.16											
	[illegible]	0.12											
157.57	1.38		100.0	7518									
158.07													

GULF CANADA RESOURCES INC.

SEAM DETAIL | COAL DIVISION | **TRUE THICKNESS**

MOUNT KLAPPAN PROJECT

DATA SOURCE:	KPN LR DDH85014	SEAM : F	INTERVAL(M) : 246.54 – 250.55	ELEVATION(M) :	1605.4
GEOLOGIST :	M. BARKER	SCALE:	DATE : DEC 19/85	DRAWING NO. :	



DRILL DEPTH (METRES)	INTERVAL (METRES) ROCK	INTERVAL (METRES) COAL	% REC.	SAMPLE ID SIMP	SAMPLE ID COMP	COAL/ROCK TOTAL COMPOS	COAL/ROCK TOTAL MINING SECTION	COAL QUALITY A.D.B. RES MOIST	ASH	VM	FC	TS	CAL.VAL MJ/KG
246.54 – 247.19	0.81		100.0	7519									
247.19 – 248.32	[illegible] [illegible] [illegible]	0.42 [illegible] [illegible] (0.16) [illegible] 0.19 [illegible]	81.4	7520	58	2.22 / 0.40 2.71		1.23	35.86	6.58	56.33	0.47	21.66
248.32 – 249.32	0.12 0.10 0.04	0.38 0.24	88.0	7521									
249.32 – 250.10		0.81 (0.11)	84.6	7522									
250.10 – 250.55	0.42		100.0	7523									

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Gulf Canada Resources Inc.
Coal Division
Geophysical Log

Datasource:	**KPNLRDDH85014**	Province: BC	Northing: 6344890.00	Lat:	571456
Log Date:	85-04-10	Zone: 9	Easting: 505607.00	Long:	1285426
Company:	CENTURY	Measuring Point:		Elevation:	
Geologist:	M. BARKER				

Scale: 1 to 100.0

Depth Range: 0.0 to 255.0

True Thickness: NO

Comments:

1. LOGGED THROUGH THE RODS
2.

Logs Plotted:

Description	Axis Range	Axis Length	Smoothing Points	Tool	Comments
1. GAMMA API	0.0 to 150.0	10.0	31	9030A	IN PIPE
2. NEUTRON-NEUTRON CPS	0.0 to 2500.0	10.0	9	9067	IN PIPE
3. DENSITY G/CC	1.0 to 3.0	10.0	15	9030A	IN PIPE

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GULF CANADA RESOURCES INC.
COAL DIVISION
KLAPPAN PROJECT
STRATIGRAPHIC LOG
KPN LR DDH85014

GEOLOGIST : M. BARKER	DATE : JAN 08/86	DRAWING NO. :

LITHOLOGIC SYMBOLS

	SANDSTONE		BENTONITE
	SILTSTONE		BRECCIA
	COAL	C C C	CARBONACEOUS
	OVERBURDEN	Q Q Q	QUARTZ
	MUDSTONE,CLAYSTONE	P P P	PYRITE
	TUFF	FE FE FE	FERRUGINOUS
	LIMESTONE		CONGLOMERATE
	CORE LOSS	F	FOSSIL BED

SCALE : 1:200 1:40

NORTHING: 6344886.0 N INCLINATION: 70.0°
EASTING: 505606.6 E BEARING: 20.0°