P.E.P. 105/118 & ENVIRONMENTS
OTWAY BASIN
WESTERN VICTORIA

HYDROCARBON POTENTIAL and EXPLORATION CONCEPTS/DIRECTIONS of the TYRENDARRA EMBAYMENT

TEXT & APPENDICES

By

Dr. A. Tabassi

January
1988

BEACH PETROLEUM N.L.

(Incorporated in South Australia)

P.E.P 105/118 and Environments,
Otway Basin, Western Victoria.

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SAMPLE NO.	DEPTH (m)	RV Max %	RANGE	No.	T.O.C. %	DESCRIPTION INCLUDING EXINITE FLUORESCENCE
9815	1152	0.23	0.20-0.27	5	—	Sparse greenish yellow sporinite. (Sandy siltst. with abundant I and rare V.).
9816	1418	0.40	0.35-0.44	2	—	Exinite rare, mainly liptodetrinite, but an entire dinoflagellate found bright yellow to orange. (Siltst. with abundant I, and very rare V. Shell fragments and pyrite present.).
9817	1628	0.44	0.34-0.48	8	—	Rare to sparse lipodetrinite of dinoflagellate origin, brilliant greenish yellow. (Pale clay-size clastic, with d.o.m. <0.5% and vitrinite very rare.).
9818	1679	-		-	—	Very rare sporinite and liptodetrinite, orange to dull orange. (Ss. with some lithic grains, d.o.m. rare, chiefly I.).

CASTERTON - 1.

SAMPLE NO.	DEPTH	Rv Max (M)	RANGE %	NO.	T.O.C. %	DESCRIPTION INCLUDING EXINITE FLUORESCENCE
C2020	615.7	-	-	-	0.95	-
C2253	686.7	0.79	-	24	-	-
C2430	740.7	-	-	-	1.60	-
-	843	0.37	0.32-0.44	16	-	-
-	888	0.46	0.43-0.50	11	-	-
-	995	0.46	0.44-0.48	5	-	-
-	1096	0.46	0.43-0.50	4	-	-
C3601	1097.6	0.44	-	6	-	-
-	1141	0.47	0.43-0.50	10	-	-
C4500	1371.6	0.54	-	7	15.10	-
-	1373	0.54	0.50-0.59	10	-	-
-	1374	0.56	0.55-0.57	6	-	-
C4510	1374.7	-	-	-	3.00	-
C5618	1712.4	-	-	-	1.35	-
C6406	1952.5	-	-	-	1.60	-
-	1983	0.63	0.60-0.66	6	-	-
-	2011	0.56	0.53-0.59	6	-	-
C7253	2210.7	0.67	-	28	16.4	-
-	2211	0.66	0.63-0.70	6	-	-
C7255	2211.3	0.82	-	34	-	-
C7390	2252.5	-	-	-	2.95	-
C7394	2253.7	-	-	-	2.30	-
C7734	2357.3	-	-	-	1.50	-
C7950	2423.2	-	-	-	5.05	-
C7960	2426.2	-	-	-	1.35	-

Sample C3601 contains fairly abundant organic material with a reflectance of about 0.35%. This may be weathered/redeposited vitrinite.

SAMPLE NO.	DEPTH	Rv Max (M)	RANGE (%)	No. (%)	T.O.C. %	DESCRIPTION INCLUDING EXINITE FLUORESCENCE
20604	1061	0.47	0.45-0.50	2	-	Lithology: barren sandstone >> siltstone > pyrite. Dom very rare: vitrinite only - confined to siltstone.
20607	1362	0.49	0.43-0.53	5	-	Lithology: sandstone >> carbonate > pyrite > siltstone. Dom rare - confined to siltstone: V = L; vitrinite and liptinite: rare cutinite, orange to dull orange Pyrite abundant.
20608	1503	0.51	0.44-0.59	12	-	Lithology: sandstone >> carbonate > siltstone > pyrite. Dom sparse: V > L > I; vitrinite sparse, inertinite and liptinite rare. Liptinite: rare sporinite and liptodetrinite, yellow orange to dull orange; rare cutinite, orange to dull orange. Pyrite abundant.
20609	1606	0.52	0.45-0.60	10	-	Lithology: sandstone >> carbonate > siltstone > coal > shaly coal. Coal abundant: V >> L; vitrite. Shaly coal common: V>>L; vitrite. Dom sparse: V > L > I; vitrinite sparse, liptinite and inertinite rare. Liptinite: rare sporinite and liptodetrinite, yellow orange to dull orange; rare cutinite, orange to dull orange. Pyrite abundant.
20610	1682	0.53	0.46-0.63	25	-	Lithology: sandstone > siltstone > carbonate > coal > claystone = pyrite. Coal common: V>>L; vitrite = clarite. Dom common: V>>I>L; vitrinite common, inertinite and liptinite rare. Liptinite: rare cutinite, orange to dull orange; rare sporinite, yellow orange to orange; rare resinite, yellow; rare liptodetrinite, yellow orange to dull orange. Moderate mineral fluorescence. Pyrite abundant

COBBOBOONEE - 2 (Cont'd)

SAMPLE No.	DEPTH	Rv Max (m)	RANGE (%)	No. (%)	T.O.C. %	DESCRIPTION INCLUDING EXINITE FLUORESCENCE
20611	1707	0.58	0.46-0.71	15	-	Lithology: sandstone >> siltstone >> carbonate > pyrite. Dom sparse to common: V>I>L; vitrinite and inertinite sparse, liptinite rare. Liptinite: rare cutinite and sporinite, orange to dull orange. Moderate mineral fluorescence. Pyrite abundant.
20612	1764	0.61	0.54-0.74	15	-	Lithology: siltstone > sandstone > carbonate. Dom sparse: V > I > L; vitrinite and inertinite sparse, liptinite rare. Liptinite: rare sporinite, cutinite and liptodetrinite, dull orange. Moderate mineral fluorescence. Pyrite abundant.
20613	1813	0.63	0.55-0.68	9	-	Lithology: sandstone > siltstone > carbonate > pyrite. Dom sparse: V > I > L; vitrinite sparse, inertinite rare to sparse, liptinite rare. Liptinite: rare sporinite, cutinite and liptodetrinite, dull orange. Moderate mineral fluorescence. Pyrite abundant.

DISCOVERY BAY - 1.

SAMPLE No.	DEPTH	Rv Max (m)	RANGE (%)	No.	T.O.C. %	DESCRIPTION INCLUDING EXINITE FLUORESCENCE
-	1026	0.51	0.45-0.58	83	2.70	No data available
-	1150	0.52	0.45-0.59	94	2.15	
-	1240	-	-	-	1.41	
-	1306	0.56	0.48-0.64	42	0.97	
-	1400	0.55	0.47-0.63	43	1.42	
-	1410	-	-	-	0.33	
-	1562	0.56	0.52-0.59	35	1.88	
-	1565	0.52	0.45-0.60	92	0.71	
-	1687	0.56	0.51-0.59	37	2.38	
-	1715	0.52	0.49-0.56	48	1.27	
-	1796	0.59	0.50-0.64	54	1.99	
-	1908	0.58	0.52-0.64	38	1.27	
-	1970	0.55	0.45-0.65	23	2.13	
-	2047	0.59	0.50-0.68	74	2.97	
-	2060	-	-	-	0.57	
-	2175	0.59	0.52-0.67	47	0.78	
-	2260	0.62	0.52-0.71	71	2.72	
-	2305	0.63	0.53-0.74	61	1.39	
-	2418	-	-	-	2.04	
-	2475	-	-	-	0.71	
-	2505	0.63	0.55-0.73	79	2.13	
-	2590	0.66	0.61-0.71	17	0.44	
-	2633	0.67	0.54-0.81	83	2.56	
-	2772	0.66	0.59-0.75	61	2.11	
-	2776	0.66	0.62-0.69	8	0.82	

EUMERALLA - 1

SAMPLE No.	DEPTH (m)	Rv Max (%)	RANGE (%)	No.	T.O.C. %	DESCRIPTION INCLUDING EXINITE FLUORESCENCE
-	471	0.36	-	-	-	-
-	541	0.42	-	-	-	-
-	952	0.46	-	-	-	-
-	1160	0.41	-	-	-	-
10200 EM 7	1306	-	-	-	-	Sporinite and liptodetrinite, sparse, yellowish green to dull orange. (Pale silty claystone, sparse pyrite, rare ID.)
-	1340	0.48	-	-	-	-
-	1742	0.49	-	-	-	-
10201 EM 10	1768	0.44	0.36-0.51	11	-	Rare, exinite associated with vitrinite, cutinite dull brown, bright yellow orange resinite or sporinite. (Ss. with rare thin V layers, some SF. V ranges in texture from texto- to eu- ulminite, some micrinite. Shell fragments present.)
-	1785	0.48	-	-	-	-
-	2047	0.61	-	-	-	-
10202 EM15	2064	0.54	0.49-0.58	21	-	Abundant cutinite, orange, resinite, green to orange, and sporinite, yellow to orange. (Coal with clarite dominant, massive vitrinite and fusinite. Rare exsudatinite, dull orange V 70 - 80%, E 5-15%, 5-10%.)
-	2204	0.61	-	-	-	-
-	2440	0.67	-	-	-	-
-	2610	0.74	-	-	-	-
10203 EM 21	2719	0.67	0.58-0.73	8	-	Sporinite and cutinite, yellow to orange, rare in siltstone, absent from sandstone. (V as rare layers in the ss. D.o.m. rare in ss., common in siltstone, chiefly I.)
-	2738	0.80	-	-	-	-
-	2757	0.79	-		-	-
10204	2895.9	-	-	-	-	Liptodetrinite very rare, yellow to orange. (Silty mudstone, d.o.m. sparse chiefly I.)

EUMERALLA - 1 (Cont'd).

SAMPLE No.	DEPTH (m)	Rv Max (%)	RANGE (%)	No.	T.O.C. %	DESCRIPTION INCLUDING EXINITE FLUORESCENCE
10205	2978	<0.94	-	-	-	Sparse sporinite, cutinite and liptodetrinite, orange. (Silty shale with shell fragments. ID common. Some very thin layers which may be vitrinite but are too thin to take a polish.)
10206 EM 24	3014	0.88	0.69-1.00	17	-	Very rare bright orange cutinite. (Ss. with shell fragments, some thick layers of vitrinite and abundant thin layers of vitrinite. Micrinite present, some vitrinite with dull green brown fluorescence.)

SAMPLE No.	DEPTH (m)	Rv Max (%)	RANGE (%)	No.	T.O.C. %	DESCRIPTION INCLUDING EXINITE FLUORESCENCE
x3000	1050	0.28	0.21-0.52	29	0.47	Sparse Liptodetrinite, yellow to orange, rare? cutinite, yellow orange, rare phyto-plankton, yellow. (Sandstone >> siltstone>carbonate. Dom sparse, V>E>I. Vitrinite and exinite sparse, inertinite rare Rare yellow fluorescing droplets of ? oil. Inorganic mud additive sparse. Iron oxides common. Carbonate rare. Framboidal pyrite abundant.)
	R1	0.79	0.59-0.89	5		
x3001	1150	0.29	0.21-0.36	28	1.57	Sparse phytoplankton, yellow, sparse liptodetrinite, yellow to orange. (Siltstone >>sand-stone. Dom common, V>E>I. Vitrinite common, exinite sparse, inertinite rare. Inorganic mud additive rare. Iron oxides abundant. Carbonate sparse. Pyrite abundant.)
x3002	1250	0.32	0.27-0.41	26	1.13	Sparse phytoplankton, bright yellow to yellow, sparse liptodetrinite, yellow to orange, rare sporinite, yellow to orange. (Siltstone>>carbonate>sand-stone. Dom common, V>E>I. Vitrinite common, exinite sparse to common, inertinite rare. Rare yellow fluorescing droplets of ? oil. Inorganic mud additive sparse. Iron oxides abundant. Pyrite abundant.)
x3003	1460	0.35	0.24-0.52	28	1.46	Sparse sporinite, yellow to orange, sparse liptodetrinite, bright yellow to orange, rare cutinite, yellow orange, rare phytoplankton, bright yellow to yellow. (Sandstone>silt-stone>carbonate>coal. Coal rare, vitrite. Dom common, I>V>E. Inertinite common, vitrinite sparse to common, exinite sparse. Iron oxides common. Inorganic mud additive rare. Pyrite abundant.)

FAHLEY NO. 1 (Cont'd).

SAMPLE No.	DEPTH (m)	Rv Max (%)	RANGE (%)	No.	T.O.C. %	DESCRIPTION INCLUDING EXINITE FLUORESCENCE
x3004	1690	0.37	0.27-0.50	29	1.14	Sparse liptodetrinite, yellow to orange, rare sporinite, yellow, rare phytoplankton bright yellow to yellow. (Sandstone>siltstone>carbonate> coal. Coal rare, vitrite = linertite. Dom common, I>V>E. Inertinite sparse to common, vitrinite and exinite sparse. Green fluorescing oil droplets present especially in the mounting resin. Inorganic mud additive sparse. Iron oxides sparse. Pyrite common.)
x3005	1940	0.40	0.35-0.53	16	0.40	Rare liptodetrinite and cutinite, yellow to dull orange, rare resinite, yellow. (Sandstone>siltstone>claystone>carbonate>coal. Coal sparse, V. Vitrite. Dom sparse, I>E>V. Inertinite sparse, exinite and vitrinite rare. Green to yellow fluorescing ? oil droplets present. Inorganic mud additive present. Pyrite abundant.)
x3006	2030	0.37	0.25-0.51	22	0.44	Rare phytoplankton, bright yellow to yellow, rare liptodetrinite, yellow to orange. Sandstone>>siltstone>> carbonate>coal. Coal rare, vitrite, probably cavings. Dom sparse, I>V>E. Inertinite and vitrinite sparse, exinite rare. Iron oxides common. Inorganic mud additive rare. Green fluorescing ? oil droplets rare. Cavings may form a significant part of the vitrinite population. Pyrite common.)
x3007	2310	0.58*	0.47-0.76	17	1.08	Sparse liptodetrinite, yellow orange, rare phytoplankton, yellow. (Sandstone>siltstone> carbonate>shaly coal. Shaly coal rare, inertite. Dom common, I>V>E. All three maceral groups sparse. Iron oxides common. Inorganic mud additive sparse. Green fluorescing ? oil droplets present, mainly in setting resin. Pyrite common.)

*Presumed cavings.

FAHLEY NO. 1 (Cont'd).

SAMPLE No.	DEPTH (m)	Rv Max (%)	RANGE (%)	No.	T.O.C. (%)	DESCRIPTION INCLUDING EXINITE FLUORESCENCE
x3008	2400	0.60	0.41-0.75	25	1.65	Sparse sporinite and liptodetrinite, yellow to orange, sparse phytoplankton, bright yellow to yellow, rare cutinite, yellow to orange, rare resinite, yellow, rare ? fluorinite, green. (Siltstone> sandstone>carbonate>coal. Coal rare, vitrite. Dom abundant, I>E>V. Inertinite and exinite common, Vitrinite sparse to common. Diffuse humic matter rare. Iron oxides sparse. Green fluorescing ? oil droplets present. Pyrite abundant.)
x3009	2520	0.58	0.46-0.71	12	0.73	Rare sporinite, yellow, rare phytoplankton and liptodetrinite, bright yellow to yellow. (Sandstone>>siltstone>carbonate. Dom common, I>V>or=E. Inertinite common, vitrinite and exinite rare. Inorganic mud additive sparse. Iron oxides common. Pyrite abundant.)
	R1	1.00	0.85-1.21	5		
x3010	2620	0.60	0.47-0.76	32	1.02	Rare resinite and sporinite, yellow, rare phytoplankton, bright yellow to yellow, rare liptodetrinite, yellow to orange. (Sandstone>> siltstone >>carbonate>coal. Coal rare, pyritized vitrite. Dom common, I>V>E. Inertinite common, vitrinite and exinite sparse. Iron oxides rare. Inorganic mud additive rare. Green fluorescing ? oil droplets present. Diffuse humic matter rare Pyrite common.)
x3011	2690	0.66	0.48-0.81	29	1.18	Sparse phytoplankton, bright yellow to yellow, sparse liptodetrinite, bright yellow to orange, rare resinite, yellow, rare sporinite, yellow to orange, rare cutinite, orange to dull orange. (Sandstone>>siltstone>carbonate> shaly coal. Shaly coal rare, vitrite. Dom common, V>I>or-E. All three maceral groups sparse. Inorganic mud additive rare. Green fluorescing oil droplets present. Moderate green oil cut from cracks in ? carbonate/ additive. Pyrite common.)

FAHLEY NO. 1 (Cont'd).

SAMPLE No.	DEPTH (m)	Rv max (%)	RANGE (%)	No.	T.O.C. %	DESCRIPTION INCLUDING EXINITE FLUORESCENCE
x3012	2780	0.63	0.48-0.79	29	0.71	Sparse liptodetrinite and cutinite, yellow orange to dull orange, rare phytoplankton, yellow, rare sporinite, yellow orange, rare resinite, yellow, rare bituminite, dull orange to brown. (Sandstone>siltstone>carbonate>claystone>shaly coal. Shaly coal common, inertite. Dom common, I>or=V>E. Inertinite and vitrinite common, exinite sparse. Vitrinite shows weak dull brown fluorescence. Green ? oil in fissures of carbonate. Mud additive present. Pyrite abundant.)
	R1	1.27	0.99-1.57	6		
x3013	2930	0.72	0.59-0.86	25	0.96	Sparse liptodetrinite and sporinite, yellow orange to dull orange, rare cutinite, yellow to dull orange, rare resinite/fluorinite, greenish yellow to yellow, rare phytoplankton, greenish yellow, rare bituminite, dull orange to brown. (Sandstone>siltstone>carbonatecarbonaceous siltstone. Dom abundant, in some siltstone grains common overall. I>V>E. Inertinite common, vitrinite sparse, exinite locally abundant but sparse overall. Some vitrinite shows weak dull brown fluorescence. Green oil cut from some siltstone grains. Strong mineral fluorescence. Pyrite abundant.)
	R1	1.38	1.11-1.76	6		
x3014	3010	0.71	0.55-0.85	25	0.69	Sparse liptodetrinite and sporinite, yellow to dull orange, rare cutinite, yellow to dull orange, ? rare phytoplankton, greenish yellow. (Siltstone>sandstone>carbonate>shaly coal. Shaly coal rare, vitrite. Dom common, I>V>E. Inertinite common, vitrinite and exinite sparse. Most Vitrinite shows weak brown fluorescence. Green oil cut from some siltstone grains. Oil present in sandstone. Strong mineral fluorescence. Pyrite abundant.)
	R1	1.42	0.97-2.11	5		

FAHLEY NO. 1.

SAMPLE No.	DEPTH (m)	Rv max (%)	RANGE (%)	No.	T.O.C. %	DESCRIPTION INCLUDING EXINITE FLUORESCENCE
x3015	3110	0.72	0.54-0.88	31	0.86	Sparse liptodetrinite, yellow to dull orange, rare sporinite and cutinite, yellow orange to dull orange, rare resinite, yellow. (Siltstone>sandstone> claystone>carbonate>shaly coal. Shaly coal rare, V>>E>I. Clarite. Dom common, I>V>E. Inertinite common, vitrinite and exinite sparse. Vitrinite shows weak dull brown to brown fluorescence. Rare green oil cut from some siltstone and claystone grains and occasionally from vitrinite. Strong mineral fluorescence. Pyrite abundant.)
	R1	1.33	0.97-1.85	5		
x3016	3200	0.75	0.58-0.92	32	1.54	Common cutinite and sporinite, yellow orange to dull orange, sparse liptodetrinite, yellow to dull orange, sparse resinite, yellow, rare bituminite, dull orange, rare suberinite, dull yellow to dull orange, rare ? telalginite, yellow, rare fluorinite, greenish yellow. (Siltstone>sandstone>carbonaceous siltstone>carbonate> shaly coal. Shaly coal rare, I>Vor=E. Inertinite abundant, vitrinite shows dull orange to brown fluorescence. Weak green oil cut from some vitrinite. Greenish yellow fluorescing oil droplets present. Strong mineral fluorescence. Pyrite abundant.)
	R1	1.48	1.04-1.99	5		

SAMPLE No.	DEPTH (m)	Rv max (%)	RANGE (%)	No.	T.O.C. %	DESCRIPTION INCLUDING EXINITE FLUORESCENCE
20682	836	0.39	0.32-0.44	9	–	Lithology: siltstone>sandstone> carbonate. Dom sparse: V>I>L; vitrinite sparse, inertinite and liptinite rare. Liptinite: rare liptodetrinite, yellow to orange. Iron oxides present. Pyrite (partly framboidal) abundant.
20683	907	0.40	-	1	–	Lithology: sandstone> carbonate >siltstone. Dom rare: V>L=I, vitrinite rare, trace of inertinite and liptinite. Liptinite: trace of liptodetrinite, yellow orange. Iron oxides present. Pyrite abundant.
20684	961	0.40	0.36-0.43	4	–	Lithology: sandstone>>siltstone Dom rare: V>L; vitrinite and liptinite rare, inertinite absent. Dom is restricted to siltstone. Liptinite: rare cutinite and liptodetrinite, yellow to orange. Pyrite rare.
20685	1040	0.40	0.36-0.42	4	–	Lithology: sandstone>> carbonate>coal. Coal sparse: V>>L; vitrite. Dom rare: vitrinite only (in carbonate). Liptinite: rare sporinite and liptodetrinite, yellow orange to orange; rare resinite, yellow. Pyrite rare.
20686	1111	0.44	0.33-0.51	16	–	Lithology: sandstone>siltstone> carbonate>claystone>coal>shaly coal>pyrite. Coal abundant: V>> L; vitrite. Shaly coal common: V>>L, vitrite. Dom sparse: V>I>L; vitrinite sparse, inertinite and liptinite rare. Liptinite: rare cutinite, orange to dull orange; rare sporinite, yellow orange, rare liptodetrinite, yellow. Carbonate and pyrite abundant.
20694	1155	0.41	0.34-0.47	25	–	Lithology: carbonaceous siltstone>siltstone. Dom major: V>I>L; vitrinite major, inertinite common, liptinite sparse. Liptinite: sparse sporinite and liptodetrinite, yellow to yellow orange; rare cutinite, yellow orange, rare dinoflagellates, yellow; ? fluorinite green. Strong mineral fluorescence. Pyrite common.

GORAE - 4 (Cont'd.)

SAMPLE No.	DEPTH (m)	Rv max (%)	RANGE (%)	No.	T.O.C. %	DESCRIPTION INCLUDING EXINITE FLUORESCENCE
20687	1223	0.46	0.37-0.52	20	–	Lithology: siltstone>sandstone >shaly coal>coal. Coal common: V>>L; vitrite. Dom abundant: I>V>L; inertinite and vitrinite common, liptinite sparse. Liptinite: sparse cutinite, yellow orange to dull orange; rare sporinite and liptodetrinite, yellow orange to dull orange; rare resinite, yellow to yellow orange. Some vitrinite grains show weak brown fluorescence. Carbonate and pyrite common.
20595	1249	0.44	0.30-0.50	19	–	Lithology: siltstone>carbonaceous siltstone. Dom abundant: V> I>L; vitrinite abundant, inertnite common, liptinite rare. Liptinite: rare sporinite orange; rare cutinite, yellow orange to dull orange; rare ? telalginite Botryococcus-related yellow. Pyrite abundant.
20688	1333	0.45	0.39-0.53	10	–	Lithology: sandstone>limestone> siltstone>shaly coal>coal. Coal common: V; vitrite. Shaly coal abundant: V>>L; vitrite. Dom rare: I>V>L; all macerals rare. Liptinite: rare cutinite and liptodetrinite, yellow orange to dull orange. Pyrite common.
20689	1402	0.48	0.41-0.53	8	–	Lithology: siltstone>sandstone> coal=shaly coal. Coal abundant: I only; inertinite. Shaly coal abundant:I>V>L inertite>vitrite. Dom abundant :I>>V;inertinite abundant, vitrinite rare, liptinite absent. Liptinite: trace of liptodetrinite, yellow orange to orange. Carbonate and Pyrite abundant.
20698	1588	0.48	0.40-0.54	15	–	Lithology: carbonaceous siltstone>siltstone>sandstone. Dom abundant: V>I>L; vitrinite and inertinite abundant, Liptinite sparse liptinite: sparse cutinite, yellow orange to dull orange; rare sporinite and liptodetrinite, orange; rare resinite, yellow. Pyrite abundant.

GORAE - 4 (Cont'd.)

SAMPLE No.	DEPTH (m)	Rv max (%)	RANGE (%)	No.	T.O.C. %	DESCRIPTION INCLUDING EXINITE FLUORESCENCE
20690	1643	0.44	0.37-0.51	12	–	Lithology: sandstone>siltstone >limestone=pyrite. Dom sparse:V>I>L; vitrinite sparse, inertinite and liptinite rare. Liptinite: rare cutinite and liptodetrinite, yellow orange to dull orange. Pyrite abundant.
20691	1730	0.51	0.37-0.64	24	–	Lithology: sandstone> claystone >siltstone>coal=limestone= pyrite. Coal abundant: V>>L; vitrite > clarite. Coal is strongly pyritized. Dom common: V>or=I>L; vitrinite and inertinite common, liptinite sparse. Liptinite: sparse cutinite and liptodetrinite, yellow orange to dull orange; rare sporinite, yellow to orange; rare suberinite, dull orange to brown. Some vitrinite grains show brown fluorescence. Carbonate and pyrite abundant.
20700	1767	0.44	0.41-0.47	2	–	Lithology: siltstone. Dom abundant: V>L>I; all macerals common. Liptinite: common liptodetrinite, yellow orange to dull orange, sparse cutinite and sporinite, yellow orange to orange. Pyrite abundant.
20701	1769	0.49	0.40-0.58	14	–	Lithology:siltstone>sandstone. Dom common: V>L>I; vitrinite common, liptinite and inertinite rare. Liptinite: rare sporinite and cutinite, yellow orange to dull orange; rare liptodetrinite, yellow orange to dull orange; rare resinite, yellow; rare fluorinite, green. Pyrite sparse.
20703	1811	0.53	0.47-0.57	12	–	Lithology: siltstone> sandstone Dom common: V>L>I; vitrinite common, liptinite and inertinite rare. Liptinite: rare liptodetrinite and cutinite, yellow to dull orange; rare sporinite, yellow to dull orange; rare resinite, yellow. Pyrite sparse.

GORAE - 4

SAMPLE No.	DEPTH (m)	Rv max (%)	RANGE (%)	No.	T.O.C. %	DESCRIPTION INCLUDING EXINITE FLUORESCENCE
20692	1829	0.50	0.42-0.58	19 or 11	–	Lithology: siltstone > sandstone > claystone > limestone = pyrite > coal. Coal common: V>I>or=L; Vitrinite common, inertinite and liptinite rare. Liptinite: rare cutinite and liptodetrinite, yellow orange to dull orange; rare sporinite, yellow orange to orange; rare resinite, yellow Carbonate and pyrite abundant.

GLENELG - 1

SAMPLE No.	DEPTH (m)	Rv max (%)	RANGE (%)	No.	T.O.C. %	DESCRIPTION INCLUDING EXINITE FLUORESCENCE
9811	1582	0.69	0.55-0.80	8	–	Rare sporinite and liptodetrinite, medium orange, cutinite yellow. (Ss. with silty layers, rich in I and with some poorly defined vitrinite. Shell fragments present.)
9812	1762	0.50	0.43-0.64	7	–	Sporinite and liptodetrinite rare, yellow to dull orange. (Silty ss. with abundant sand and silt sized SF and ID. Rare thin layers of vitrinite.)
9813	1975	0.48	0.44-0.50	3	–	Similar to 9812 but pyrite more abundant.
9814	2057	0.77	0.62-0.91	18	–	Sporinite sparse, orange to dull orange. Two colonies of Botryococus -type alginite present, brilliant yellow fluorescence. (Silty ss. with common I and sparse vitrinite. Shell fragments and pyrite present.)

GREEN BANKS - 1

SAMPLE No.	DEPTH (m)	Rv max (%)	RANGE (%)	No.	T.O.C. %	DESCRIPTION INCLUDING EXINITE FLUORESCENCE
17720	454	0.21	0.19-0.23	3	0.94	Rare to sparse liptodetrinite, greenish yellow to dull orange, rare dinoflagellates, greenish yellow and rare sporinite, orange to dull orange. (Claystone>sandstone. D.o.m. sparse I>E>V. Vitrinite, inertinite and exinite rare. Common carbonate and pyrite. Abundant ? glauconite.)
17721	527	0.28	0.24-0.36	6	1.66	Rare to sparse liptodetrinite, orange to dull orange, rare sporinite, yellow to dull orange, rare cutinite, yellow and rare dinoflagellates, greenish yellow. (Siltstone. D.O.M. sparse, I>E>V. Vitrinite rare. Inertinite and exinite sparse.)
17722	527	0.35	0.25-0.49	10	0.86	Rare to sparse dinoflagellates/ acritarchs, greenish yellow, rare sporinite, yellowish orange to dull orange and rare resinite, bright yellow. (Claystone>sandstone. D.o.m. common, I>E>V. Vitrinite and exinite sparse. Inertinite common. Abundant sparry carbonate. Abundant pyrite.)
17723	610	0.42	0.37-0.49	3	0.37	Rare to sparse liptodetrinite, yellow to orange, rare sporinite, cutinite and resinite, yellow and rare dinoflagellates orange. (Siltstone>claystone with coaly intraclasts of clarite. D.o.m. sparse, E>I>V. Vitrinite and inertinite rare. Exinite sparse. Common iron oxides.)
17724	755.5	0.42	0.40-0.43	2	0.77	Common to abundant dinoflagellates, yellow to orange, rare cutinite, yellow and rare alginite A, bright yellow. (Claystone. D.o.m. common, E>V>or=I. Vitrinite and inertinite rare. Exinite common.)

GREEN BANKS -1

MPLE No.	DEPTH (m)	Rv max (%)	RANGE (%)	No.	T.O.C. %	DESCRIPTION INCLUDING EXINITE FLUORESCENCE
17725	870	0.38	0.34-0.43	4	0.48	Rare sporinite and cutinite and rare to sparse dinoflagellates, yellow to orange. (Claystone with coaly intraclasts of clarite and duroclarite. Sporinite common in coal. D.o.m. sparse, E>I>V. Vitrinite and inertinite rare. Exinite sparse. Sparse iron oxides.)
17726	1000	0.41	0.35-0.45	4	0.45	Rare to sparse dinoflagellates, yellow to orange and rare sporinite, orange to dull orange. (Claystone with coaly intraclasts of clarite>siltstone>sandstone. D.o.m. sparse I>E>V. Inertinite sparse, exinite rare to sparse, vitrinite rare. Common iron oxides. Rare pyrite.)
17727	1100	0.43	0.38-0.47	2	0.44	Rare cutinite and sporinite, yellowish orange to orange and rare liptodetrinite, yellow to orange. (Siltstone. D.o.m. rare, E>I>V. Vitrinite, inertinite and exinite rare. Sparse iron oxides.)
17728	1204.5	0.47	0.34-0.54	7	0.98	Sparse dinoflagellates, greenish yellow to orange, rare to sparse cutinite, orange and rare sporinite, orange to dull orange. (Claystone. D.o.m. common, Vitrinite rare to common. Inertinite and exinite sparse to common.)
* 17729	1207	0.55	0.44-0.66	27	19.40	Sample severely heat altered by drying process. Sparse to common sporinite, yellow to dull orange, sparse to common cutinite, yellowish orange to brown, rare resinite, dull orange to rare to sparse suberinite, brown. (Coal>sandstone >shaly coal>claystone. Coal abundant, V>I>E. Duroclarite> clarodurite>vitrite>clarite= fusite. Shaly coal abundant, I>V>E. D.o.m. rare, V>I>E. Rare pyrite.)

GREEN BANKS - 1

SAMPLE No.	DEPTH (m)	Rv max (%)	RANGE (%)	No.	T.O.C. %	DESCRIPTION INCLUDING EXINITE FLUORESCENCE
*17776	1207	0.45	0.35-0.57	34	20.80	Abundant sporinite and cutinite, yellow to dull orange, rare resinite, yellow, rare fluorinite, green and sparse suberinite, brown. (Coal >siltstone>sandstone>claystone Coal abundant, V>E>I. Durocla-rite>clarodurite>fusite=clarite. D.o.m. common, V>or=E>I. Vitrinite and exinite common. Inertinite sparse. Rare pyrite)

These two samples are virtually from the same depth.

- The first sample is a washed and oven-dried cutting sample which was thought to be heat altered by the drying process.

- The other sample is an unwashed air-dried cutting sample which was analysed to determine whether the first sample has been affected by the drying process.

  The result confirmed that the drying process has effected both the Vitrinite Reflectance and the type of organics.

GREENSLOPES -1

SAMPLE No.	DEPTH (m)	Rv max (%)	RANGE (%)	NO.	V.O.M. ml/10grm	DESCRIPTION INCLUDING EXINITE FLUORESCENCE
–	1367.0	–	–	–	0.32	None
–	1373.0	–	–	–	0.10	
–	1381.0	–	–	–	0.30	
–	1567.0	–	–	–	0.10	
–	1816.0	–	–	–	0.53	
–	1853.0	–	–	–	0.65	
–	1963.0	–	–	–	0.17	
–	1977.0	–	–	–	0.53	
–	2172.0	–	–	–	0.05	
–	2214.0	–	–	–	0.38	
–	2265.0	–	–	–	0.73	
–	2283.0	–	–	–	0.05	
–	2307.0	–	–	–	0.88	
–	2365.5	–	–	–	0.06	
–	2436.0	–	–	–	1.21	
–	2443.0	–	–	–	0.60	
–	2490.0	–	–	–	0.21	
–	2505.0	–	–	–	0.80	
–	2536.0	–	–	–	0.73	
–	2556.0	–	–	–	3.82	
–	2562.0	–	–	–	0.61	

NOTE:

V.O.M. = Volume of organic matter and is empirically equivalent to % Total Organic Content.

HAWKESDALE - 1

SAMPLE No.	DEPTH (m)	Rv max (%)	RANGE (%)	No.	T.O.C. %	DESCRIPTION INCLUDING EXINITE FLUORESCENCE
20655	783-	0.41	0.33-0.50	25	—	Lithology: coal>sandy siltstone>sandstone>claystone=shaly coal. Coal major to dominant: V>I>L; duroclarite=vitrite>clarite. Shaly coal common: V>I>L; duroclarite. Dom abundant: V>L>I: vitrinite common to abundant, liptinite and inertinite sparse. Liptinite: abundant sporinite, yellow to dull yellow orange; abundant cutinite, yellow to dull orange; common suberinite, dull brown; sparse resinite, green to yellow. Detrovitrinite shows dull brown fluorescence. Weak greenish oil cut from coal. Greenish yellow oil droplets present in coal. Some vitrinite shows white rims from frypanning. Carbonate abundant. Pyrite rare.
20656	820-823	0.44	0.34-0.52	25	—	Lithology: siltstone(partly sandy and calcareous)>coal>sandstone>claystone=carbonate. Coal major> V>L>I: vitrite>clarite. Dom common: V>L>I; vitrinite and liptinite common,inertinite sparse. Liptinite: abundant sporinite, bright yellow to dull yellow orange; common cutinite, bright yellow to dull orange; common resinite, green to yellow orange; common suberinite, dull brown. Greenish yellow oil droplets present in coal.Detrovitrinite shows brown fluorescence. Some vitrinite is micrinitized. Carbonate abundant. Siderite common. Pyrite rare.
20657	853-856	0.43	0.36-0.50	25	—	Lithology: siltstone (partly sandy) > sandstone > coal > claystone. Coal major: V>>L>I; vitrite>clarite. Dom common:L>V>I; liptinite sparse to common, vitrinite and inertinite sparse. Lipinite; common sporinite, yellow to orange; sparse cutinite and cutinite and liptodetrinite, yellow to dull orange; sparse suberinite, dull brown; sparse resinite, greenish yellow.

SAMPLE No.	DEPTH (m)	Rv max (%)	RANGE (%)	No.	T.O.C. %	DESCRIPTION INCLUDING EXINITE FLUORESCENCE
20657 Cont.						Rare greenish yellow oil droplets present in coal. Greenish oil haze from some siltstone grains. Part of the coal population may be cavings. Carbonate common. Siderite sparse. Pyrite rare.
20658	982-	0.46	0.35-0.56	17	–	Lithology: sandstone> siltstone> claystone; Coal; carbonate>shaly coal. Coal abundant: I>V>L: vitrinite= inertitie=fusite=duroclarite. Shaly coal common: I>V>L; clarodurite. Dom common: V>L>I; vitrinite and liptinite common, inertinite sparse. Liptinite: common sporinite, yellow to orange common liptodetrinite, greenish yellow to dull orange; sparse cutinite, yellow to orange; rare resinite, yellow rare suberinite, dull brown. Leaf and root tissue common. Coal shows white rims from fry panning. Coal may be cavings. Siderite common. Pyrite rare.
20659	994-997	0.46	0.34-0.59	8	–	Lithology: sandy siltstone> sandstone>>coal>claystone = carbonate. Coal abundant: V>> L > I; clarite. Dom common: L>V>I; all three maceral groups sparse. Liptinite: sparse sporinite and cutinite, yellow to dull yellow orange; sparse liptodetrinite, greenish yellow to dull orange; rare resinite, greenish yellow; rare suberinite, dull brown. Weak greenish oil cut from coal. Detrovitrinite shows brown fluorescence. Coal may be cavings. Inorganic mud additive sparse. Carbonate common. Pyrite rare.

HAWKESDALE - 1

SAMPLE o.	DEPTH (m)	Rv max (%)	RANGE (%)	No.	T.O.C. %	DESCRIPTION INCLUDING EXINITE FLUORESCENCE
20660	1253-1259	0.54	0.48-0.63	5	-	Lithology: igneous rock fragments>sandstone>siltstone. Dom common: L>V>I; all three maceral groups sparse. Liptinite: sparse sporinite, cutinite and liptodetrinite, yellow to orange. Low reflecting vitrinite population present (0.35% Rv max). Iron oxides common.
20661	1375-1378	0.55	0.49-0.64	5	-	Lithology: igneous rock fragments>sandstone>siltstone>coal. Coal rare: V>>L; clarite (? cavings). Dom sparse: I>L>V; inertinite sparse, liptinite and vitrinite rare. Liptinite: rare sporinite, cutinite and liptodetrinite, yellow to dull orange. Iron oxides abundant.
20662	1533-1536	0.45	-	1	-	Lithology: igneous rock fragments>> sandstone>siltstone. Dom rare to sparse: L>I>V; all three maceral groups rare. Liptinite: rare liptodetrinite greenish yellow to dull orange; rare sporinite and cutinite, yellow to orange. Organic matter may be cavings.
20668	1612-1643	0.58	0.52-0.63	5	-	Lithology: igneous rock fragments>>siltstone>coal. Coal rare:V>>L; vitrite. Dom sparse: I>V>L; inertinite vitrinite sparse, liptinite rare. Liptinite: rare liptodetrinite, yellow to dull orange. Igneous rock fragments show basaltic - doleritic texture.
20664	1768-1771	?0.65	0.64-0.66	2	-	Lithology: ? Igneous rock fragments>>siltstone. Dom sparse: I>L>V; inertinite sparse, liptinite rare to sparse, vitrinite rare. Liptinite: rare sporinite, dull yellow to orange; rare cutinite and liptodetrinite, dull yellow to dull orange.

HEATHFIELD - 1

SAMPLE No.	DEPTH (m)	Rv max (%)	RANGE (%)	No.	T.O.C. %	DESCRIPTION INCLUDING EXINITE FLUORESCENCE
H2876	876.6	-	-	-	0.40	No data available.
H3377	1029.3	-	-	-	0.70	
H3764	1147.3	-	-	-	0.55	
H4146	1263.7	-	-	-	0.50	
H4620	1408.2	-	-	-	1.25	
H5415	1650.5	0.53	-	15	40.1	
994	1827.0	-	-	-	0.40	
H6385	1946.2	-	-	-	0.30	
H6895	2101.6	-	-	-	1.05	
H7495	2284.5	-	-	-	2.20	

HENKE - 1

AMPLE No.	DEPTH (m)	Rv max (%)	RANGE (%)	No.	T.O.C. %	DESCRIPTION INCLUDING EXINITE FLUORESCENCE
x7004	1250	0.46	0.33-0.55	27	0.92	Rare ? phytoplankton, greenish yellow and yellow to orange, rare cutinite, orange. (Siltstone>claystone. Dom common, V>I>E. Vitrinite common, inertinite spare, exinite rare. Diffuse humic organic matter present. Rare sclerotinite. Pyrite abundant.)
x7005	1327.5	0.56	0.44-0.60	7	4.18	Rare ? phytoplankton, greenish yellow, rare liptodetrinite, orange to dull orange. (Carbonaceous shale and sandstone. Dom common. I>V>E. Inertinite common, vitrinite and exinite rare. Diffuse humic organic matter possibly related to bituminite, major.Very fine particles of humic organic matter probably represent chemically/biochemically altered ? vitrinite. Pyrite abundant.)
	R1	0.90	0.64-1.44	25		
x7006	1365	0.43	0.30-0.64	28	5.62	Sparse sporinite, orange to dull orange, sparse phytoplankton, greenish yellow and yellow to orange, rare to sparse cutinite, orange, rare resinite, yellow, rare Botryococcus-related telaginite, bright yellow. (Siltstone Dom abundant, V>I>E. Vitrinite and inertinite abundant, exinite common. Diffuse humic organic matter abundant. Abundant micrinite in some vitrinite. Pyrite common.)
x7007	1382	0.47	0.37-0.60	27	3.93	Sparse sporinite, orange, to dull orange,sparse ? phytoplankton, orange to dull orange, rare resinite, yellow, rare cutinite, orange. (Siltstone. Dom abundant, I>V>E. Inertinite and vitrinite abundant, exinite sparse.Diffuse humic organic matter abundant. Rare sclerotinite. Pyrite sparse.)

HEYWOOD - 10

SAMPLE No	DEPTH (m)	Rv max (%)	RANGE (%)	No.	T.O.C. %	DESCRIPTION INCLUDING EXINITE FLUORESCENCE
9805	1356	0.41	0.29-0.54	25	No data avail.	Abundant cutinite, sporinite, resinite, bright yellow to orange. (Carb. shale with abundant thin layers of vitrinite, exinite, and inertinite, V>E>I. Distinct positive alteration of exinite and of clay groundmass on prolonged irradiation.)
9806	1467	0.56	-	1		Sparse sporinite and cutinite, bright yellow to orange. Rare dinoflagellates present with dull orange fluorescence. (Sandy carb. siltst. with abundant I and very rare vitrinite.)
9807	1640	?0.60	0.56-0.64	?2		Sparse liptodetrinite, sporinite, cutinite and resinite, orange to yellow. Siltst. with abundant I, identification of vitrinite doubtful.)

LINDON - 1

SAMPLE No.	DEPTH (m)	Rv max (%)	RANGE (%)	No.	T.O.C. %	DESCRIPTION INCLUDING EXINITE FLUORESCENCE
19275	630	0.38	0.32-0.47	27	1.01	Rare sporinite, yellow to orange, rare cutinite yellow, rare phytoplankton, greenish yellow, rare suberinite, dull orange. (Sandstone>>siltst> shaly coal>coal.Coal rare, vitrite. D.o.m. common, but mostly confined to shaly coal and claystone matrix in sandstone, V>I>E. Vitrite common, inertite and exinite rare, common pyrite.)
19707	860	0.37	0.25-0.45	25	1.82	Sparse sporinite, yellow to dull orange, rare cutinite, yellow orange to orange, rare resinite, bright yellow. (Siltstone. D.o.m. common, V>I>E. Vitrinite common, inertinite and exinite sparse. Sparse carbonate. Abundant pyrite.)
-	873	0.43	-	15	-	-
19708	906.5	-	-	-	0.59	No fluorescing exinite. (Sandstone. D.o.m. absent. Abundant carbonate. Common Pyrite.)
19709	1210	0.39	0.32-0.47	20	1.76	Sparse phytoplankton, green yellow to orange, rare sporinite, dull orange, rare cutinite and ? tasmanitid, orange. (Claystone>siltstone>sandstone D.o.m. abundant, I>V>E. Inertinite abundant, cutinite common, exinite sparse. Abundant carbonate. Sparse ? glauconite. Abundant pyrite.)
19710	1230	0.38	0.31-0.44	6	0.43	Rare sporinite, orange, rare cutinite, yellow, rare ? phytoplankton, green yellow to yellow orange, rare fluorinite, green. (Sandstone>>claystone >coal. Coal rare, V>I>E, Vitrite>duroclarite. D.o.m. sparse, I>E>V. Inertinite sparse, exinite and vitrinite rare. Sparse carbonate and pyrite.)

LINDON - 1

SAMPLE o.	DEPTH (m)	Rv max (%)	RANGE (%)	NO.	T.O.C. %	DESCRIPTION INCLUDING EXINITE FLUORESCENCE
19711	1250	0.45	0.40-0.53	6	0.56	Common phytoplankton, green yellow to orange. (Sandstone> siltstone>claystone. D.o.m. common, E>I>V. Exinite common inertinite sparse, vitrinite rare. Limestone present. Sparse carbonate. Abundant pyrite.)
-	1300	0.48	-	41	-	-
19276	1340	0.43	0.38-0.57	19	-	Rare to sparse sporinite, yellow to orange, rare lipto-detrinite, yellow to orange, rare phytoplankton, yellow. (Siltstone>sandstone>claystone >coal>shaly coal. Coal sparse, vitrite. D.o.m. sparse, I>V>E. Inertinite and vitrinite sparse, exinite rare to sparse. Some of the vitrinite may be reworked. Rare pyrite.)
19712	1560	0.43	0.35-0 56	10	0.58	Common phytoplankton, green yellow to yellow orange, yellow orange, sparse sporinite yellow to orange, rare cutinite orange to dull orange, rare resinite, green. (Claystone> siltstone>coal. Coal rare, vitrite.D.o.m. common, E>I>V. Exinite common, inertinite and vitrinite sparse. Common carb-onate. Rare ? glauconite. Abundant pyrite.)
19713	1760	0.42	-	1	0.38	Sparse to common phyto-plankton, yellow to dull orange, rare sporinite, yellow to orange, rare cutinite, orange to dull orange brown. (Siltstone>claystone>sandstone. D.o.m. common, E>I>V. Exinite common, inertinite sparse, vitrinite rare. Sparse carbonate and pyrite.)
-	1815	0.54	-	32	-	-
-	1950	-	-	-	19.3	-
-	2000	0.61	-	-	-	-

LINDON - 1 (Cont'd)

SAMPLE No.	DEPTH (m)	Rv max (%)	RANGE (%)	No.	T.O.C. %	DESCRIPTION INCLUDING EXINITE FLUORESCENCE
19277	2060	0.61	0.52-0.72	12	0.60	Sparse sporinite, yellow to dull orange, rare liptodetrinite, orange to dull orange, rare phytoplankton, orange, rare resinite, yellow, rare cutinite, orange, vitrinite abundant in coal, weak brown. (Siltstone>sandstone>claystone> coal. Coal rare, clarodurite. D.o.m. sparse, I>V>E. Inertite, rare to sparse, vitrinite and exinite, rare. Some of the vitrinite may be reworked but reworking does not appear to have resulted in a higher reflectance. Rare pyrite.)
-	2205	0.66	-	32	-	-
-	2285	0.69	-	-	-	-
19714	2290	0.69	0.57-0.83	25	1.81	Common sporinite, dull yellow to dull orange, sparse to common cutinite, orange to brown, sparse suberinite, brown , sparse phytoplankton, yellow to orange, rare resinite, bright yellow, rare fluorinite, bright green. (Claystone>coal> siltstone. Coal abundant, V>E>I, duroclarite>vitrite> clarite>fusite. D.o.m. common, E>I>V. Exinite common, inertinite sparse, vitrinite rare. Sparse pyrite.)
-	2330	-	-	-	51.0	-
-	2350	-	-	-	46.8	-
19715	2460	0.68	0.55-0.79	18	1.14	Common sporinite and rare cutinite, orange to dull orange common phytoplankton, yellow to orange, sparse suberinite, brown. (Siltstone>claystone> sandstone. D.o.m. abundant, E>I>V. Exinite abundant, inertinite common, vitinite sparse. Abundant carbonate and iron oxides. Sparse pyrite.)
-	2650	-	-	-	9.5	-
-	2685	0.76	-	-	-	-
19716	2690	0.76	0.54-0.92	25	3.59	Common sporinite, orange to dull orange, sparse cutinite, dull orange to brown. (Claystone>siltstone>coal>shaly coal Shaly coal rare, V>I>E. Coal abundant, V>E>I, vitrite> duroclarite>fusite>clarite. D.o.m. abundant, E>I>V, all maceral groups common. Common carbonate. Sparse carbonate.)

LINDON - 1 (Cont'd.)

SAMPLE No.	DEPTH (m)	Rv max (%)	RANGE (%)	No.	T.O.C. %	DESCRIPTION INCLUDING EXINITE FLUORESCENCE
-	2730	-	-	-	27.3	-
-	2740	-	-	-	42.7	-
-	2790	0.82	-	-	-	-
19717	2800	0.82	0.70-0.96	25	2.12	Sparse sporinite, orange to dull orange, rare cutinite, dull orange. (Claystone> siltstone>coal. Coal sparse, V>I>E, vitrite>fusite>clarodurite. D.o.m. common, I>V>E. Inertinite and vitrinite common, exinite sparse. Abundant carbonate. Sparse pyrite.)
-	2830	-	-	-	27.4	-
	2840	0.85	0.60-1.10	51	-	-
-	2880	-	-	-	13.9	-
19279	2900	0.87	0.78-0.93	25	6.05	Sporinite rare in coal, weak brown, abundant vitrinite, weak brown. (Sandstone>siltstone>shaly coal>claystone> coal. Coal rare, vitrite> inertite, V>I>E. D.o.m. abundant, V>I. vitrite and inertite abundant, exinite absent as d.o.m. Rare pyrite.)
-	2940	0.88	0.60-1.10	48	-	-
-	2945	0.81	-	-	-	-
19718	2952	0.81	0.75-0.88	7	1.80	Rare sporinite and cutinite, orange, rare phytoplankton, yellow. Claystone>>coal. Coal rare, vitrite. D.o.m. sparse, I>V>E. Inertinite sparse, vitrinite and exinite rare. Sparse pyrite.)
-	2970	0.87	-	-	-	-
-	2995	0.86	-	-	-	-
19719	3010	0.86	0.70-0.95	25	1.84	Sparse sporinite, dull orange to brown, sparse suberinite, brown, rare cutinite, orange to dull orange. (Siltstone> claystone>coal. Coal abundant, V>>E>I, vitrite>duroclarite> clarite. D.o.m. sparse, I>V>E. Inertinite sparse, vitrinite and exinite rare. Abundant carbonate. Sparse pyrite.)

NAJABA - 1

AMPLE No.	DEPTH (m)	Rv max (%)	RANGE (%)	No.	T.O.C. %	DESCRIPTION INCLUDING EXINITE FLUORESCENCE
x5418	1038	0.34	0.29-0.41	28	3.28	Sparse liptodetrinite, greenish yellow to orange, sparse resinite, bright yellow to orange, rare to sparse cutinite yellow to orange, rare sporinite, bright yellow to yellow orange. (Siltstone. Dom common to abundant, V>E>I. Vitrinite common, exinite sparse, inertinite rare. Iron oxides abundant. Pyrite common.)
x5419	1217	0.34	0.29-0.40	20	1.47	Sparse liptodetrinite, bright yellow to orange, rare cutinite and sporinite, yellow to orange. (Siltstone>> sandstone. Dom common, V>E>I. Vitrinite and exinite sparse, inertinite rare. Carbonate sparse. Iron oxides abundant. Pyrite common)
x5420	1400	0.38	0.31-0.45	26	1.10	Sparse liptodetrinite and sporinite, greenish yellow to yellow orange, rare resinite and sporinite, yellow. (Siltstone>>sandstone. Dom common, V>E>I. Vitrinite and exinite sparse, inertinite rare. Sparse ? bitumen as lenses, yellow. Iron oxides abundant. Pyrite common.)
x5421	1485	0.52	0.33-0.70	24	2.11	Sparse cutinite yellow, yellow orange to orange, rare sporinite, yellow orange to orange, rare resinite, yellow to yellow orange, rare fluorinite, green rare ? phytoplankton, yellow. (Sandstone>silty sandstone> siltstone. Dom abundant, I>V>E. Inertinite abundant, vitrinite and exinite sparse. Pyrite abundant to major, pyritized wood being present. The reflectance range of the vitrinite is unusually large and some may be reworked but a definitive cut off from normal vitrinite could not be recognized.)
	R1	1.16	0.74-1.74	14		
x5532	2186.5	0.68	0.62-0.73	8	1.14	Sparse liptodetrinite and rare to sparse sporinite, yellow to orange, rare cutinite, yellow to orange. (Sandstone>siltstone >> carbonate. Dom abundant, I>E>V. Inertinite abundant, exinite sparse, vitrinite rare, Pyrite abundant.)

NAJABA - 1 (Cont'd.)

SAMPLE No.	DEPTH (m)	Rv Max (%)	RANGE (%)	No.	T.O.C. %	DESCRIPTION INCLUDING EXINITE FLUORESCENCE
x5533	2425.5	0.74	0.64-0.85	17	1.70	Sparse sporinite and rare liptodetrinite, yellow to orange, rare cutinite, orange to dull orange, rare resinite, yellow. (Sandstone>carbonate> siltstone. Dom abundant, I>E>V. Inertinite common, exinite and vitrinite sparse. Iron oxides sparse. Pyrite abundant.)
	R1	1.43	1.02-1.96	15		
x5534	2651	0.75	0.67-0.82	11	2.05	Sparse sporinite, yellow to orange, rare to sparse liptod-detrinite, yellow to orange, rare cutinite, yellow orange. (Siltstone>calcareous sandstone >carbonate. Dom abundant, I>E> V. Inertinite abundant, exin-ite sparse, vitrinite rare to sparse. Iron oxides sparse. Pyrite abundant.)
	R1	1.45	1.04-1.96	15		
x5535	2722	0.75	0.62-0.91	20	1.25	Sparse liptodetrinite and rare sporinite, yellow to orange, rare cutinite, orange. Sandy siltstone>sandstone>carbonate. Dom abundant, I>Vor=E. Inertin-ite abundant, vitrinite and exinite sparse. Iron oxides common. Pyrite abundant.)
	R1	1.44	0.98-1.86	15		
x5536	2997	0.65	-	1	0.38	Sparse liptodetrinite, yellow rare sporinite, yellow orange, rare cutinite, orange. (Clay-stone>siltstone. Dom sparse to common, I>E>V. Inertinite and exinite sparse, vitrinite rare. Pyrite rare.)
	R1	1.24	0.92-1.90	17		
x5537	3130	?0.58	-	?1	0.60	Rare liptodetrinite and sporin-ite, yellow to orange. (Carbon-ate>claystone>siltstone. Dom Common, I>E>V. Inertinite common, exinite and vitrinite rare. Pyrite rare.)
	R1	1.35	1.06-1.64	32		
x5538	3251	0.71	0.69-0.72	2	0.55	Sparse sporinite, orange yellow to orange,rare cutinite, yellow orange. (Claystone>siltstone. Dom sparse to common E>I>V. Exinite and inertinite sparse vitrinite rare. Pyrite rare.)
	R1	1.28	1.06-1.46	11		
x5539	3386	0.85	0.73-0.95	5	0.37	Rare ? liptodetrinite, yellow to orange, rare sporinite and ? cutinite, yellow to dull orange (Silty sandstone>sandy silt-stone. Dom sparse I>V?>E. Inertinite sparse vitrinite and ? exinite rare.

NAJABA - 1A (Cont'd.)

SAMPLE No.	DEPTH (m)	Rv max (%)	RANGE (%)	No.	T.O.C. %	DESCRIPTION INCLUDING EXINITE FLUORESCENCE
x5539 cont.						Vitrinite shows dull orange to brown fluorescence. Rare green oil droplets and specks present. Green interstitial oil present. Iron oxides sparse. Carbonate and siderite sparse. Pyrite sparse.)
x5503	3405	0.80	0.69-0.90	27	—	Rare sporinite, yellow orange. (Sandstone>>carbonate>sandy siltstone>claystone>coal. Coal sparse, vitrite. Overall dom sparse, I>V>E. Inertinite sparse, vitrinite and exinite rare. Vitrinite shows weak brown fluorescence. Green fluorescing interstitial ? oil sparse in clastics. Green fluorescing oil droplets rare in clastics. Weak oil cut from cracks in vitrinite in coal. Dom abundant in hand-picked grains of carbonaceous siltstone and claystone, I>E>V. Inertinite and exinite abundant, vitrinite common. Iron oxides sparse. Pyrite common.)

NORTH EUMERALLA - 1

SAMPLE No.	DEPTH (m)	Rv max (%)	RANGE (%)	No.	T.O.C. %	DESCRIPTION INCLUDING EXINITE FLUORESCENCE
9761	915	0.42	0.33-0.45	5	-	Sporinite, yellow, very rare. Possible wurtzilite grain. (Rare huminite grains.)
9762	1010	0.43	0.33-0.48	26	-	Sporinite, yellow, rare, sparse orange resinite. (Sample consists almost entirely of textoulminite and eu-ulminite.)
9763	1496	0.43	0.32-0.55	25	-	Sporinite rare to sparse, yellow to orange, grain of greenish yellow fluorinite noted. (Rare carb. shale, inertinite the majority of the d.o.m., very rare grains of coals, exinite rich.
9764	1923	0.56	0.48-0.72	22	-	Sporinite and cutinite sparse, yellow orange to orange, rare yellow ? dinoflagellates.(Rare coal, shaly coal and carb shale, organic matter rare overall in sample.)
9765	2130	0.58	0.47-0.71	20	-	Exinite sparse to common, sporinite bright yellow to dull orange. (Vitrinite abundant in shaly coal and in carbonaceous shale.)
9766	2669	0.68	0.60-0.80	17	-	Sporinite bright yellow to orange rare overall but common in coal grains. Exsudatinite, orange, noted in vitrinite. (Coal rare, low in mineral matter.)

PORTLAND - 3

SAMPLE No.	DEPTH (m)	Rv max (%)	RANGE (%)	No.	T.O.C. %	DESCRIPTION INCLUDING EXINITE FLUORESCENCE
9808	1419	?0.63	0.59-0.67	2	-	Rare liptodetrinite, yellow to orange. (Friable ss. with d.o.m rare interbedded with siltst. with common d.o.m., chiefly I. Identification of vitrinite is doubtful.)
9809	1611	0.78	0.64-0.95	16	-	Rare orange to dull orange sporinite, and orange cutinite. (Pyritic ss. Vitrinite is not well defined, but reflectances are consistent and cell structure is generally lacking.)
9810	1715	?1.40	-	1	-	No fluorescing exinite. (Sample consists of white pyritic ss. and ? bitumen impregnated sandstone. The ? bitumen may have very weak fluorescence but is thought to be one of the more mature pyrobitumens such as impsonite. Chalcopyrite and sphaletrie are present in the white ss.)

PRETTY HILL - 1

SAMPLE No.	DEPTH (m)	Rv max (%)	RANGE (%)	No.	T.O.C. %	DESCRIPTION INCLUDING EXINITE FLUORESCENCE
20632	515-518	0.34	0.25-0.38	5	-	Lithology: sandstone>limestone >>siltstone>claystone=coal> shaly coal. Coal common: V>>L; vitrite. Shaly coal rare V only; vitrite. Dom rare; L>I>V; trace of all three maceral groups. Liptinite: rare liptodetrinite, greenish yellow to dull orange; rare bitumen (in coal), greenish yellow. Mud additives common. Pyrite abundant.
20633	549-554	0.39	0.35-0.43	5	-	Lithology:limestone=sandstone> calcareous siltstone>claystone >>coal. Coal rare:V only; vitrite. Dom rare: V>L>I; vitrinite and liptinite rare, trace of inertinite. Liptinite: rare liptodetrinite and cutinite, yellow to dull orange; rare sporinite, yellow Mud additives common. Wood fragments present. Pyrite common.
20634	567-570	0.38	0.30-0.44	18	-	Lithology: sandstone>limestone >siltstone>calcareous claystone >coal>shaly coal. Coal common: V only; vitrite. Shaly coal rare: V>>I>L; vitrite. Dom sparse: V>I>L; vitrinite sparse, inertinite and liptinite rare. Liptinite: rare liptodetrinite and sporinite, yellow to dull orange, rare resinite, orange to dull orange. Vitrinite shows white oxidation rims from fry-panning. Iron oxides present. Framboidal pyrite abundant.
20635	576-579	0.36	0.28-0.41	8	-	Lithology: carbonate>sandstone >calcareous siltstone>>coal. Coal rare: V only; vitrite. Dom sparse: L>V:I; liptinite sparse, vitrinite and inertinite rare. Liptinite: sparse liptodetrinite, yellow to dull orange; rare cutinite, yellow to yellow orange; rare sporinite, yellow; rare ? phytoplankton, greenish yellow. Iron oxides abundant. Framboidal pyrite sparse.

PRETTY HILL - 1 (Cont'd)

SAMPLE No.	DEPTH (m)	Rv max (%)	RANGE (%)	No.	T.O.C. %	DESCRIPTION INCLUDING EXINITE FLUORESCENCE
20636	594-597	0.39	0.37-0.40	2	-	Lithology: carbonate>sandstone >siltstone>calcareous claystone Dom sparse: V>L>I; vitrinite rare to sparse; liptinite and inertinite rare. Liptinite:rare liptodetrinite, cutinite and sporinite, yellow to dull orange; rare resinite, yellow; rare ? bitumen, yellow. Iron oxides abundant. Framboidal pyrite sparse.
20637	646-649	0.37	0.34-0.40	3	-	Lithology: carbonate>>sandstone Dom sparse:I>L>or=V; inertinite sparse, liptinite and vitrinite rare. Liptinite: rare liptod-etrinite, greenish yellow to orange; rare cutinite and sporinite, yellow; rare bitumen yellow; rare oil droplets, yellow. Iron oxides abundant. Framboidal pyrite common.
9824	731	0.34	0.28-0.43	7	-	Sparse cutinite and sporinite brilliant yellow to orange. (Friable fine silty ss. with abundant d.o.m., I>V>E.)
20638	735-738	0.36	0.30-0.43	11	-	Lithology: carbonate>sandstone >calcareous>siltstone>coal. Coal common: V>>L; vitrite. V>>L;vitrite. Dom rare:I>V>or =L; all three maceral groups rare. Liptinite: rare liptodetrinite, yellow to dull orange; rare resinite, yellow; rare bitumen, brown. Coal may be cavings. Vitrinite shows white oxidation rims from fry-panning. Schlerotinite and micrinite present. Iron oxides abundant. Framboidal pyrite common.
20639	747-750	0.38	0.28-0.44	8	-	Lithology: carbonate>sandstone> calcareous siltstone>calcareous claystone. Dom sparse: I>V>L; inertinite sparse, vitrinite and liptinite rare. Liptinite: rare liptodetrinite, yellow to dull orange;rare phytoplankton, greenish yellow; rare sporinite orange; rare cutinite, yellow to orange; rare resinite, yellow. Iron oxides common. Framboidal pyrite sparse.

PRETTY HILL - 1 (Cont'd.)

SAMPLE No.	DEPTH (M)	Rv max (%)	RANGE (%)	No.	T.O.C. %	DESCRIPTION INCLUDING EXINITE FLUORESCENCE
20640	908-911	0.37	0.32-0.42	2	-	Lithology: sandstone>carbonate >siltstone. Dom sparse:I>L>V; all three maceral groups rare. Liptinite: rare liptodetrinite sporinite, yellow to dull orange. Glauconite abundant. Pyrite abundant. partly framboidal.
20641	945-948	0.38	0.29-0.47	25	-	Lithology: sandstone>siltstone >carbonate>calcareous claystone >coal>shaly coal. Coal common: V>L>>I;clarite. Dom common: L>I>V; liptinite sparse to common, inertinite and vitrinite sparse. Liptinite: sparse liptodetrinite, sporinite and cutinite, yellow to orange; rare resinite, yellow rare suberinite,brown. Pyrite common.
20642	1109-1116	0.41	0.36-0.46	7	-	Lithology: sandstone>>carbonate >siltstone (partly calcareous) >claystone>coal. Coal common: I>V>L; durite>inertite=fusite >vitrite. Dom sparse: I>V>L; inertinite and vitrinite rare to sparse, liptinite rare. Liptinite: rare liptodetrinite and sporinite, yellow to dull orange; rare cutinite, yellow orange. Pyrite sparse.
20653	1164	0.40	0.33-0.48	14	-	Lithology:silty sandstone (partly calcareous)>>coal. Coal major: V>>L:vitrite (texto-ulminite and eu-ulminite Dom sparse to common: L>V>I; all three maceral groups sparse. Liptinite: rare liptodetrinite, yellow orange to dull orange; rare sporinite and cutinite, yellow to dull orange; rare resinite greenish yellow. Diffuse organic matter common . Pyrite rare.
9826	1167	0.45	0.41-0.55	3	-	Common sporinite and sparse cutinite, yellow to orange. (Silty claystone with sparse d.o.m. and common pyrite. I>E>V.)

PRETTY HILL - 1 (Cont'd.)

SAMPLE No.	DEPTH (m)	Rv max (%)	RANGE (%)	No.	T.O.C. %	DESCRIPTION INCLUDING EXINITE FLUORESCENCE
20643	1298-1305	0.42	0.35-0.50	12	-	Lithology: sandstone>calcareous siltstone>carbonate>claystone>coal=shayl coal. Coal common: V>>L;vitrite. Shaly coal common: I>V>L; clarodurite. Dom common: I>L>V; all three maceral groups sparse. Liptinite: sparse cutinite, yellow to dull orange; sparse sporinite and liptodetrinite, yellow to dull orange; sparse sporinite and liptodetrinite, yellow to dull orange, rare resinite, yellow rare bitumen, greenish yellow. Diffuse organic matter common. Some siltstone grains appear to be impregnated by oil and typically show green halo. Sandy siltstone grains often contain round claystone and siltstone fragments with abundant liptinite. Pyrite common.
9827	1418	0.52	0.50-0.54	2	-	Similar to 9826 but shell fragments present.
20644	1512-1518	0.44	0.34-0.54	8	-	Lithology:sandstone>siltstone>calcareous claystone>coal. Coal common:V>>I; vitrite>inertite. Dom common: L>V>I; all three maceral groups sparse. Liptinite: sparse cutinite, bright yellow to orange; sparse sporinite and liptodetrinite, yellow to dull orange; rare resinite, yellow; rare bitumen, greenish yellow. Minute green oil specks present in some silty sandstone. Vitrinite is fry-panned. Part of the coal population may be cavings. Pyrite rare.
20645	1716-1722	0.57	0.43-0.70	30	-	Lithology:coal>sandstone>siltstone>carbonate>shaly coal>calcareous claystone. Coal dominant: V=I>L; duroclarite>clarodurite>clarite>inertite>>vitrite=durite=vitrinertite(I). Shaly coal abundant: I>L>>V; durite. Dom common: L>V> or =I; all three maceral groups sparse. Liptinite: abundant sporinite and cutinite, yellow to dull orange; common resinite, greenish yellow to yellow;

PRETTY HILL - 1 (Cont'd.)

SAMPLE No.	DEPTH (m)	Rv max (%)	RANGE (%)	No.	T.O.C. %	DESCRIPTION INCLUDING EXINITE FLUORESCENCE
20645 cont.						common suberinite, brown; common liptodetrinite, yellow to dull orange; sparse fluorinite, green; rare to sparse telalginite, greenish yellow; common oil droplets (in coal), yellow. Detrovitrinite shows dull brown fluorescence. Weak to moderate green oil cut from some coal. Leaf tissue abundant in coal. Some vitrinite is fry-panned. micrinite showing weak oil cut is present in coal. Pyrite sparse.
9828	1809	0.78	0.76-0.79	2	-	Liptodetrinite and cutinite sparse, yellow to orange. (Fine siltst. with rim fluorescence on some quartz grains.)
20646	1868-1874	0.53	0.48-0.59	8	-	Lithology:sandstone>carbonate>siltstone>coal. Coal common: V only; vitrite. Dom sparse: I>V>L; inertinite sparse, vitrinite and liptinite rare. Liptinite: rare liptodetrinite, yellow to dull orange, rare cutinite and sporinite, yellow to orange. Pyrite common.
20647	1932-1935	0.48	0.40-0.56	11	-	Lithology:sandstone>calcareous siltstone>claystone>coal carbonate. Coal abundant: V>I>>L; vitrite>inertite. Dom cmmon: L>V>I; all three maceral groups sparse. Liptinite: sparse liptodetrinite, sporinite and cutinite, yellow orange to dull orange, rare dinoglagellates, greenish yellow; rare oil specks, green Free oil (green to yellow) present in patches in mounting resin. Coal is oil stained. Vitrinite is mostly detrovitrinite and shows brown fluorescence and weak green oil cuts. Pyrite common.

PRETTY HILL - 1 (Cont'd.)

SAMPLE No.	DEPTH (M)	Rv max (%)	RANGE (%)	No.	T.O.C. %	DESCRIPTION INCLUDING EXINITE FLUORESCENCE
20648	2009-2012	0.50	0.41-0.57	16	-	Lithology: sandstone>siltstone>carbonate>claystone=coal. Coal common: V>I>L; vitrite>>duroclarite. Dom sparse: V>or=I>L; vitrinite and inertinite sparse, liptinite rare. Liptinite: rare sporinite, cutinite and liptodetrinite, yellow orange to dull orange; rare to sparse oil droplets and specks in sandstone, green to yellow. Common strong green oil cuts from silty sandstone. Free greenish yellow oil present in mounting resin. Siderite and pyrite sparse.
20649	2012-2015	0.51	0.46-0.62	23	-	Lithology: sandstone>calcareous siltstone>carbonate=coal>calcareous claystone. Coal abundant:V>I>>L;vitrite>>inertite. Dom common: I>L>V; all three maceral groups sparse. Liptinite: sparse sporinite, yellow orange to dull orange; sparse cutinite and liptodetrinite, yellow to dull orange sparse oil droplets and specks green to yellow. Sparse free oil (greenish yellow) present in mounting resin. Weak green oil cuts from coal and silty sandstone. Coal is oil stained. Pyrite sparse.
20650	2073-2079	0.54	0.49-0.67	16	-	Lithology: sandstone>carbonate>calcareous siltstone>coal. Coal abundant: V>>L; vitrite>>clarite. Dom rare: V>L>I; all three maceral groups rare. Liptinite: rare sporiite, yellow to dull orange; rare cutinite, dull orange; rare liptodetrinite, yellow orange to dull orange; rare suberinite brown. Sparse free oil (greenish yellow) present in mounting resin. Coal is oil stained and often shows halo. Mud additives common. Pyrite rare.

PRETTY HILL - 1 (Cont'd.)

SAMPLE No.	DEPTH (m)	Rv max (%)	RANGE (%)	No.	T.O.C. %	DESCRIPTION INCLUDING EXINITE FLUORESCENCE
20651	2298-2307	0.63	0.53-0.74	25	-	Lithology: sandstone>> carbonate>>coal>siltstone> claystone. Coal abundant: V>I>L; vitrite >>fusite=clarite. Dom rare: I>V>L; all three maceral groups rare. Liptinite: rare liptodetrinite, yellow to orange; rare cutinite yellow orange; rare resinite, greenish yellow. Common free oil (green to yellow) present in mounting resin. Coal is partly oil stained and shows halo. Mud additives common. Pyrite rare.
20651	2359-2362	0.66	0.58-0.71	4	-	Lithology: sandstone>>carbonate >siltstone>coal. Coal abundant: V only; vitrite. Dom rare: I>or=L>V; trace of all three maceral groups. Liptinite: trace of liptodetrinite, yellow orange to dull orange; sparse oil specks, green. (Sporinite, cutinite and suberinite present in cavings). Common free oil (bright greenish yellow) present in mounting resin. Mud additives common. Pyrite rare.

TARRAGAL - 3

SAMPLE No.	DEPTH (m)	Rv max (%)	RANGE (%)	NO.	T.O.C. %	DESCRIPTION INCLUDING EXINITE FLUORESCENCE
17509	1538	0.46	0.38-0.50	16	3.15	Sparse to common dinoflagellates acritarchs, yellow to orange, sparse sporinite and cutinite, yellow to dull orange, rare resinite, green to orange. (Siltstone, d.o.m. common to abundant, V>I=E. Vitrinite and inertinite common to abundant, V>I=E. Vitrinite and inertinite common, exinite sparse to common. Pyrite common.)
17510	1646	0.49	0.38-0.58	9	2.26	Sparse cutinite, yellow to dull orange, rare dinoflagellates/acritarchs, yellow to orange, rare resinite yellow to orange, rare sporinite, orange to dull orange. (Clay rich sandstone, d.o.m. common, V>I=E. Vitrinite sparse to common, inertinite exinite sparse. Pyrite abundant.)
17511	1708	0.47	0.37-0.56	6	3.66	Sparse cutinite, orange, sparse dinoflagellates/ acritarchs, yellow to orange, rare sporinite, orange to dull orange, rare resinite, yellow. (Siltstone> sandstone, d.o.m. common I>E>V. Vitrinite, inertinite and exinite sparse. Pyrite common.)
17512	1726	0.48	0.42-0.55	20	3.46	Cutinite sparse, orange to dull orange, sporinite rare to sparse, orange, resinite rare, green to orange. (Siltstone, d.o.m. abundant V>I>E. Vitrinite abundant, inertinite and exinite sparse. Abundant pyrite.)

VOLUTA-1 (Cont'd)

SAMPLE No.	DEPTH (m)	Rv max (%)	RANGE (%)	No.	T.O.C. %	DESCRIPTION INCLUDING EXINITE FLUORESCENCE
-	3736.8 -3739.9	-	-	-	1.44	-
-	3758.2	-	-	-	0.93;	-
	-3761.2	-	-	-	0.95	-
-	3770.4 -3773.4	-	-	-	1.47	-
-	3800.9 -3803.9	-	-	-	0.94	-
-	3825.2 -3828.3	-	-	-	0.95	-
-	3840.5 -3843.5	-	-	-	1.46	-
-	3852.7 -3855.7	-	-	-	0.90	-
-	3867.9 -3871.0	-	-	-	1.34	-
-	3883.2 -3886.2	-	-	-	1.14	-
-	3893.4 -3901.4	-	-	-	1.63	-
-	3913.6 -3916.7	-	-	-	0.92	-
-	3928.9 -3931.9	-	-	-	1.82	-
-	3947.2 -3950	-	-	-	0.90	-

VOLUTA-1 (Cont'd)

SAMPLE No.	DEPTH (m)	Rv max (%)	RANGE (%)	No.	T.O.C. %	DESCRIPTION INCLUDING EXINITE FLUORESCENCE
-	3323.9	0.93	-	-	-	-
32	3323.9 -3324.0	-	-	-	0.86	
-	3324.5	-	-	-	1.38	-
-	3334.5 -3337.6	-	-	-	1.30	-
-	3349.8 -3352.8	-	-	-	1.35	-
-	3365.0 -3368.0	-	-	-	1.23	-
-	3413.8 -3416.8	-	-	-	1.02	-
-	3426.0 -3429.0	-	-	-	1.47	-
-	3444.2	-	-	-	1.1	-
-	3444.2 3447.3	0.65	-	20	-	-
-	3447.3	-	-	-	0.87	-
-	3508.5 -3512.2	0.98	-	-	0.80	-
-	3509.5	-	-	-	0.75	-
-	3541.8 -3544	-	-	-	1.11	-
-	3566.2 -3569.2	-	-	-	0.97	-
-	3596.6 -3599.7	-	-	-	1.03	-
-	3618.0 -3621.0	-	-	-	1.48	-
-	3633.2 -3636.3	-	-	-	0.94	-
-	3639 -3642	0.64	-	20	-	-
-	3639.2	-	-	-	1.1	-
9772	3653	0.95	0.74-1.20	17	-	Rare orange liptodetrinite. (Siltstone with prominent patchy bright orange mineral fluorescence, small vitrinite phytoclasts, elongate to equidimensional.)
-	3654.2	-	-	-	<1	Translucent material. Fluorescence: dull brown
33	3654.2 -3654.5	-	-	-	0.98	-
-	3659.9	-	-	-	0.92	-
-	3688.1 -3691.1	-	-	-	0.99	-
-	3706.4 -3709.4	-	-	-	1.27	-
-	3719.6	-	-	-	1.1	-
-	3720 -3723	*0.45; 0.73	-	3; 15	-	*Bitumen cavings or staining
-	3721.6 -3724.7	-	-	-	0.99	

VOLUTA-1 (Cont'd)

SAMPLE No.	DEPTH (m)	Rv max (%)	RANGE (%)	No.	T.O.C. %	DESCRIPTION INCLUDING EXINITE FLUORESCENCE
-	3036.3	-	-	-	5	Alginite, Liptodetrinite Fluorescence: Alginite: Moderate orange, Liptodetrinite: dull.
-	3036.3 -3036.4	-	-	-	1.23	-
9771	3036.3	0.72	0.60-0.84	2	-	Similar to 9770 but shelley fossils present.
-	3036.3	0.61	-	-	-	-
-	3051.0	-	-	-	1.26	-
	-3054.1				1.25	-
-	3072.4 -3075.4	-	-	-	1.42	-
-	3078.0	-	-	-	1.3	-
-	3078-3081	0.56	-	20	-	-
-	3087.6 -3090.7	-	-	-	1.32	-
-	3102.9 -3105.9	-	-	-	1.84	-
-	3121.2 -3124.2	-	-	-	1.28	-
-	3136.4 -3139.4	-	-	-	1.38	-
-	3154.7 -3157.7	-	-	-	1.39	-
-	3170 -3173	0.57	-	22	-	-
-	3173.0 -3176.0	-	-	-	1.38	-
7036	3191.9 -3194.9	0.85	-	-	1.3	-
-	3192.8	-	-	-	1.28	-
-	3194.3 -3197.4	-	-	-	1.37	-
-	3212.6 -3215.6	-	-	-	1.23	-
-	3230.9 -3233.9	-	-	-	1.40	-
-	3252.2 -3255.3	-	-	-	1.17	-
-	3261-3264	0.60	-	21	-	-
-	3261.4	-	-	-	1.5	-
-	3270.5 -3273.6	-	-	-	1.36	-
-	3288.8 -3291.8	-	-	-	1.46	-
-	3304.0 -3307.1	-	-	-	1.15	-
-	3319.3 -3322.3	-	-	-	1.31	
-	3323.9	-	-	-	1	Resinite, Cutinite, (Liptodetrinite: traces only) Fluorescence: very dull.

VOLUTA-1 (Cont'd)

SAMPLE No.	DEPTH (m)	Rv max (%)	RANGE (%)	No.	T.O.C. %	DESCRIPTION INCLUDING EXINITE FLUORESCENCE
30	2672.4 -2672.5	-	-	-	1.40	-
-	" "	0.78	-	-	1.25	-
-	2674	-	-	-	1.27	-
-	2674	0.58	0.50-0.70	5	-	Sporinite and liptodetrinite, rare, yellow to orange. (Silty sandstone with abundant inertinite.
-	2676.1 2680.7	-	-	-	1.36	-
-	2694.4 -2697.5	-	-	-	1.35; 1.36	-
-	2709.7 -2712.7	-	-	-	0.97	-
-	2713 -2716	0.49	-	13	-	-
-	2712.7	-	-	-	1.5	-
-	2728.0 -2731.0	-	-	-	1.24	-
-	2749.3 -2752.3	-	-	-	1.27	-
-	2770.6 2773.7	-	-	-	1.38	-
-	2785.9 -2788.9	-	-	-	1.36	
-	2804.2 -2807.2	-	-	-	1.40	-
-	2807.2	0.52	-	21	-	-
-	2825.5 -2828.5	-	-	-	1.26	-
-	2843.8 -2846.8	-	-	-	1.35	-
-	2862.1 -2865.1	-	-	-	1.19	-
-	2877.3 -2880.4	-	-	-	1.50	-
-	2895.6	-	-	-	1.4	-
-	2895.6 -2898.6	-	-	-	2.56	-
-	2913.9 -2916.9	-	-	-	1.50	-
-	2932.2 -2935.2	-	-	-	1.22	-
-	2950.5 -2953.5	-	-	-	1.50	-
-	2971.8 -2974.8	-	-	-	1.26	-
-	2987 -2990	0.50	-	11	-	-
-	2993.1 -2996.2	-	-	-	1.24	
-	3011.4 -3014.5	-	-	-	1.47	-
-	3034.0 -3035.8	-	-	-	1.26	-
-	3035.8	-	-	-	1.42	-

VOLUTA-1 (Cont'd)

SAMPLE No.	DEPTH (m)	Rv max (%)	RANGE (%)	No.	T.O.C. %	DESCRIPTION INCLUDING EXINITE FLUORESCENCE
-	2168.3	-	-	-	2.33	-
-	2315.6	-	-	-	1.74	-
-	2319	0.72	-	63	-	-
-	2328.7 -2331.7	-	-	-	0.94	-
-	2350.0 -2353.1	-	-	-	1.81	-
-	2368.3 -23713	-	-	-	1.94	-
-	2377 -2380	0.50	-	19	-	-
-	2404.9 -2407.9	-	-	-	1.55	-
-	2423.2 -2426.2	-	-	-	1.01	-
-	2438 -2441	0.52	-	19	-	-
-	2441.4 -2444.5	-	-	-	1.66	-
-	2456.7 2459.7	-	-	-	1.03	
-	2459.9	-	-	-	10	Alginite, resinite, liptodetrinite. Fluorescence: Alginite, moderate yellow, resinite, dull orange.
7034	2459.9 -2468.6	0.69	-	-	0.80	-
29	2459.9 -2460.1	-	-	-	1.37	-
-	2461.0	-	-	-	1.03	-
-	2468.0	-	-	-	1.59	-
-	2478.0 -2481.1	-	-	-	1.33	-
-	2502.4 -2505.5	-	-	-	1.04; 1.05	-
-	2523.7 -2526.8	-	-	-	1.49	-
-	2530 -2533	0.47	-	20	-	
-	2529.8 2539 -2542	-	-	-	1.5 1.44	-
-	2672.4	-	-	-	15	Resinite, liptodetrinite, ? suberinite. Fluorescence: moderate orange/brown
-	2563.4 -2567.9	-	-	-	1.31	-
-	2578.6 -2581.7	-	-	-	1.13	-
-	2609.1 -2612.1	-	-	-	1.44	-
-	2627.4	-	-	-	1.36	-
-	2639.6 -2642.6	-	-	-	0.95	-
-	2660.9 -2665.6	-	-	-	1.40	-

VOLUTA-1

SAMPLE No.	DEPTH (m)	Rv max (%)	RANGE (%)	No.	T.O.C. %	DESCRIPTION INCLUDING EXINITE FLUORESCENCE
-	457.2	-	-	-	0.05	-
-	866	0.37	-	70	-	-
-	894	0.40	-	46	-	-
24	909.2	0.34	-	-	1.98	-
-	909.2	-	-	-	<<1	? Alginite (one fragment) Fluorescence:bright green.
-	1004	0.44	-	40	-	-
-	1280-1283	0.32	-	13	-	-
-	1405.1 1408.2	0.25	-	20	-	-
-	1414.0	-	-	-	<1	Resinite, Liptodetrinite, Fluorescence:very weak.
25	1414	-	-	-	1.70	-
9767	1414	?0.38	-	1	-	Rare sporinite yellow to orange. (Siltstones with abundant inertinite, vitrinite rare or absent.)
-	1414	?0.63	-	-	-	-
-	1559	0.45	-	55	-	-
-	1585	-	-	-	0.28	-
-	1585-88	0.32	-	21	-	-
-	1615-18	0.43	-	21	-	-
-	1670	0.44	-	62	-	-
-	1690	0.48	-	58	-	-
-	1769	0.43	-	21	-	-
9768	1792	0.38	0.34-0.42	3	-	Sporinite sparse, bright yellow to orange. (Siltstones with abundant inertinite but often macerals rare.)
-	1796.2	-	-	-	5	Resinite, (Liptodetrinite, cutinite, traces) Fluorescence: moderate brown, varies.
26	1796.2-1793	-	-	-	1.98	-
-	1859-1862	0.43	-	23	-	-
27	1917.2 -1917.4	-	-	-	2.94	-
-	1917.2	-	-	-	3	Resinite, cutinite, alginite Fluorescence: Moderate brown ? Alginite:green.
-	1971.2	0.55	-	-	-	-
-	1981-1984	0.33	-	13	-	-
-	2039.2	0.59	-	-	-	-
28	2039.2 - 2039.4	-	-	-	1.49	-
-	2039.2	-	-	-	10	Resinite, Liptodetrinite, Alginite Fluorescence: Moderate brown.
-	2105	0.41	-	21	-	-
-	2161	-	-	-	5.31	-
-	2163	0.66	-	72	-	-
9769	2165	0.66	0.62-0.76	4	-	Sporinite and resinite, rare, yellow to orange. (Clay rich carbonaceous silts. Inertinite abundant, mineral fluorescence rare.)

WANGOON - 6

SAMPLE No.	DEPTH (m)	Rv max (%)	RANGE (%)	NO.	T.O.C. %	DESCRIPTION INCLUDING EXINITE FLUORESCENCE
18098	952	0.44	0.39-0.51	3	1.46	Sparse sporinite, yellow and rare cutinite, yellow orange, rare resin, orange. (Siltstone. D.o.m.sparse, E>V>I. Exinite sparse, vitrinite and inertinite rare. Sparse iron oxides. Common pyrite.)
18099	1040	0.42	0.35-0.52	8	0.68	Sparse to common sporinite and sparse liptodetrinite, yellow to orange, sparse cutinite, orange to dull orange, rare resinite, green. (Claystone and silty claystone. D.o.m. common to abundant, I>E>V. Exinite and inertinite common, vitrinite rare. Detrital coal, reflectance 0.63%. Common Pyrite.)
18100	1077	0.44	0.40-0.49	4	0.31	Rare sporinite and resinite yellow and rare cutinite, orange. (siltstone>sandstone> coal>claystone. Coal rare, vitrinite. D.o.m. rare, I>E. Inertinite and exinite rare, vitrinite absent. ? Galuconite present. Abundant carbonate. Abundant iron oxides and pyrite/marcasite. Coal may be drilling mud contamination.)
18101	1184	0.50	0.46-0.54	4	0.24	Rare sporinite and cutinite, orange. (Sandstone>siltstone>> coal>carbonaceous claystone. Coal rare, vitrite=fusite. D.o.m. sparse, I>E>V. Inertinite sparse, exinite and vitrinite rare. Sparse shell fragments. Common iron oxides and carbonate. Abundant pyrite/ marcasite.)

SAMPLE No.	DEPTH (m)	Rv max (%)	RANGE (%)	No.	T.O.C. %	DESCRIPTION INCLUDING EXINITE FLUORESCENCE
17356	625	0.33	0.23-0.47	11	1.69	Rare cutinite, yellow and rare liptodetrinite, yellow to orange. (Siltstone. D.o.m. sparse V>I>E. Vitrinite rare to sparse. Rare clarite and vitrite probably as intraclasts. Inertinite and exinite rare. Sparse iron oxides. Abundant pyrite.)
17357	860	0.30	0.23-0.37	27	2.74	Rare cutinite, orange and sparse liptodetrinite, yellow to orange. (Siltstone. D.o.m. common to abundant, V>I>E. Vitrinite common, inertinite exinite sparse. Sparse iron oxides. Abundant pyrite.)
17358	1065	0.36	0.28-0.47	18	0.71	Rare cutinite and liptodetrinite orange. (Sandy siltstone. D.o.m. sparse, V>I>E. Vitrinite sparse. Inertinite and exinite rare. Common pyrite.)
17359	1170	0.39	0.32-0.46	20	2.32	Rare sporinite and cutinite and sparse to common liptodetrinite, yellow to orange, rare resinite orange. (Claystone>silty claystone. Some iron oxide stained claystone. D.o.m common to abundant, V>E>I. Vitrinite common. Exinite sparse to common. Inertinite rare. Abundant pyrite. Sparse iron oxides.
17360	1225	0.40	0.33-0.49	20	1.67	Rare sporinite and sparse to common liptodetrinite yellow to orange, rare resinite, yellow and sparse cutinite, yellowish orange to orange. (Claystone. D.o.m. common, V>E>I. Vitrinite common. Exinite sparse to common. Inertinite rare. Abundant pyrite.)
17361	1312	0.44	0.36-0.53	20	3.68	Rare cutinite orange, rare sporinite, orange to dull, orange, rare dinoflagellates and rare resinite, yellow and sparse liptodetrinite, yellow to orange. (Claystone. D.o.m. sparse to common, V>E>I. Vitrinite and exinite sparse. Inertinite rare. Sparse carbonate and iron oxides. abundant pyrite.)

WANWIN - 3 (Cont'd.)

SAMPLE NO.	DEPTH (M)	Rv max (%)	RANGE (%)	NO.	T.O.C. %	DESCRIPTION INCLUDING EXINITE FLUORESCENCE
17362	1377	0.49	0.46-0.53	2	1.39	Rare cutinite, yellowish orange and rare to sparse liptodetrinite, greenish yellow to orange. (Claystone and iron oxide nodules. D.o.m. sparse, E>I>V. Vitrinite and inertinite rare. Exinite rare to sparse. Sparse carbonate and pyrite, abundant iron oxide bearing minerals.)
17363	1412	0.51	0.39-0.60	25	2.75	Rare sporinite, orange to dull orange, rare to sparse cutinite, yellow to brown, rare dinoflagellates and resinite, yellow and rare to sparse liptodetrinite, yellow to orange. (Siltstone>sandstone. D.o.m. abundant V>I>E. Vitrinite and inertinite abundant. Exinite sparse. Sparse iron oxides. Abundant pyrite.)
17364	1508	0.47	0.38-0.56	30	2.23	Sparse sporinite, yellow, common cutinite, yellow to orange and brown, and rare to sparse resinite/fluorinite, green to yellowish orange. Rare ?dinoflagellates, yellow orange. (Siltstone>>sandstone. Clarite inclusions in siltstone. D.o.m. abundant, I>V>E. Inertinite, abundant, vitrinite and exinite common. Sparse iron oxides. Common pyrite.
17365	1672.5/ 1673.9	0.53	0.45-0.62	25	2.30	Sparse sporinite and cutinite, yellow to orange, rare resinite, yellow and sparse liptodetrinite, yellow to dull orange. (Siltstone>sandstone. D.o.m. abundant, I>V>E. Inertinite abundant, vitrinite and exinite sparse. Sparse iron oxides. Abundant pyrite.
17366	1851/ 1852	0.54	0.44-0.68	17	1.08	Rare sporinite, orange, sparse cutinite, yellow to dull orange rare resinite, greenish yellow and sparse liptodetrinite, yellow to dull orange. (Sandstone>siltstone. D.o.m. abundant, I>V>E. Inertinite abundant, vitrinite common, exinite sparse. Common iron oxides. Abundant pyrite.)

WILSON - 1

SAMPLE No.	DEPTH (m)	Rv max (%)	RANGE (%)	No.	T.O.C. %	DESCRIPTION INCLUDING EXINITE FLUORESCENCE
x7008	985	0.39	0.30-0.45	31	1.99	Rare to sparse ?phytoplankton, greenish yellow to dull yellow, rare sporinite, yellow, rare resinite, greenish yellow. (Sandy siltstone. Dom abundant, V>I>E. Vitrinite abundant, inertinite common, exinite rare to sparse. Diffuse humic organic matter abundant. Pyrite abundant.)
x7009	1195	0.38	-	1	0.53	Rare liptodetrinite, greenish yellow to dull yellow. (Sandy claystone. Dom sparse, I>E>V. Inertinite sparse, exinite and vitrinite rare. Iron oxide rare. Iron oxide rare to sparse. Pyrite common.)
x7010	1210	0.57	-	1	0.22	Exinite absent. (Impure sandstone with angular quartz grains. Dom rare, V. Vitrinite rare, inertinite and exinite absent. Glauconite major, siderite abundant. Pyrite common.)
x7011	1281	0.55	0.43-0.63	7	0.75	Rare phytoplankton/liptodetrinite, orange to dull orange. (Impure sandstone>claystone. Dom common, I>V>E. Inertinite common, vitrinite and exinite rare. Siderite common. Abundant micrinite in some vitrinite. Pyrite common.)
	R1	1.04	0.72-1.94	25		

WOOLSTHORPE - 1

SAMPLE No.	DEPTH (m)	Rv max (%)	RANGE (%)	No.	T.O.C. %	DESCRIPTION INCLUDING EXINITE FLUORESCENCE
18090	395	0.47	0.31-0.60	40	4.45	Abundant sporinite and common cutinite, yellow orange to dull orange, sparse resinite yellow and dull orange and abundant common suberinite, brown. (Claystone>sandstone> coal>shaly coal=siltstone. Coal, V>I>E, duroclarite> durite>fusite>clarite=vitrite. Shaly coal, V>E>I. D.o.m. common I>E>V. Inertinite common, exinite and vitrinite sparse. Micrinite locally abundant. Sparse shell fragments. Slight heat alteration of sample during drying.)
18901	1087	0.48	0.34-0.58	32	2.70	Common sporinite, yellow orange to orange, sparse cutinite, yellow to dull orange and sparse suberinite brown. (Claystone>coal>sand-stone>shaly coal. Coal abundant, V>E>I, vitrite> clarite>duroclarite. Shaly coal, V>E>I. D.o.m. common, V>I>E. All macerals common. Sparse shell fragments. Sparse pyrite.)
18092	1471	0.67	0.51-0.79	20	1.76	Common sporinite, yellow orange to dull orange, sparse cutinite, orange to dull orange and rare suberinite, brown. (Siltstone>claystone> sandstone>coal>shaly coal. Coal, V>E>I, duroclarite> vitrite. Shaly coal, V>E>I. D.o.m. common, E>I>V. Exinite sparse to common, vitrinite and inertinite sparse. Rare shell fragments and ?oolites. Sparse pyrite.)
18093	1855	0.81	0.69-0.97	8	0.70	Sparse sporinite orange to dull orange, sparse cutinite, orange to dull orange and rare alginite A, yellow. (Sandstone>siltstone>claystone> coal. Coal rare, V>I>E, clarite=fusite. D.o.m. common, E>I>V. Exinite and inertinite common, vitrinite sparse. Limestone present. Common shell fragments. Rare foraminiter tests. Common pyrite.)

WOOLSTHORPE - 1 (Cont'd.)

SAMPLE No.	DEPTH (m)	Rv max (%)	RANGE (%)	NO.	T.O.C. %	DESCRIPTION INCLUDING EXINITE FLUORESCENCE
18094	1943	0.72	0.57-0.86	17	1.38	Sparse sporinite and cutinite yellow orange to dull orange. (Claystone>siltstone>sandstone. D.o.m. common, I>E>V. Inertinite common, exinite and vitrinite sparse. Abundant carbonate. Rare shall fragments. Sparse iron oxides.