GEOLOGICAL SURVEY QUEENSLAND
SOUTH NICHOLSON BASIN
AAE LAWN HILL 83-3

ERC# Type	Depth (m)	$\overline{R}_{vmax}$	Range	SD	N	Sample description including liptinite fluorescence, maceral abundances, mineral fluorescence
						Lower Mullera Formation
E2599 Core	20.69 ?Alginite Pyrobitumen Bitumen	- 1.05 2.02 0.75	- 0.87-1.39 1.56-2.56 0.42-1.06	- 0.163 0.257 0.205	- 10 25 6	Rare alginite dull orange to weak brown. (Silty claystone with minor silty claystone. Dom rare, L only. Liptinite rare, other macerals absent. Diffuse organic matter common. Common pyrobitumen. ?Coalified alginite occur as weak brown fluorescing narrow strands, associated with diffuse organic matter, with smooth polishing surface. Pyrobitumen occur as non-fluorescing blocks and strands with irregular polishing surfaces. Pyrobitumen grains have polishing surfaces ranging from slightly pitted to highly mottled. Some pyrobitumen grains have a coarse mosaic with wavy extinction. Reflectance values obtained for pyrobitumen may not be reproducible owing to high degree of surface irregularities. ?Migrato-bitumen occur as dull orange fluorescing round to oval shaped bodies with smooth polishing surfaces and these could also be dead oil. Mineral fluorescence weak to patchy moderate orange. Iron oxides abundant. Pyrite sparse.)
E2601 Core	36 ?Alginite Pyrobitumen Bitumen	- 1.37 2.08 0.75	- 1.23-1.51 1.56-2.76 0.49-0.92	- 0.093 0.315 0.163	- 7 25 6	Rare alginite weak brown. (Silty claystone and siltstone with minor sandstone. Dom rare, L only. Liptinite rare, other macerals absent. Diffuse organic matter common. Common pyrobitumen. ?Coalified alginite occur as weak brown fluorescing narrow strands, associated with diffuse organic matter, with smooth polishing surface. Pyrobitumen occur as non-fluorescing blocks and strands with irregular polishing surfaces. Pyrobitumen grains have polishing surfaces ranging from slightly pitted to highly mottled. Some pyrobitumen grains have a coarse mosaic with wavy extinction. Reflectance values obtained for pyrobitumen may not be reproducible owing to high degree of surface irregularities. ?Migrato-bitumen occur as orange to dull orange fluorescing round to oval shaped bodies with smooth polishing surfaces and these could also be dead oil. Mineral fluorescence weak to patchy moderate orange. Iron oxides rare. Pyrite rare.)

GEOLOGICAL SURVEY QUEENSLAND
SOUTH NICHOLSON BASIN
AAE LAWN HILL 83-3, p2

ERC# Type	Depth (m)	$\overline{R}$ vmax	Range	SD	N	Sample description including liptinite fluorescence, maceral abundances, mineral fluorescence
						Lower Mullera Formation
E2603 Core	26 ?Alginite Pyrobitumen Bitumen	- 1.31 2.04 0.54	- 1.11-1.53 1.61-2.33 0.44-0.74	- 0.125 0.231 0.088	- 25 10 8	Sparse alginite dull orange to weak brown to none. (Silty claystone and argillaceous siltstone. Dom sparse, L only. Liptinite sparse, other macerals absent. Diffuse organic matter abundant. Common pyrobitumen. ?Coalified alginite sparse and occur as weak brown fluorescing narrow strands, associated with diffuse organic matter, with smooth polishing surface. Pyrobitumen occur as non-fluorescing blocks and strands with irregular polishing surfaces. Pyrobitumen grains have polishing surfaces ranging from slightly pitted to highly mottled. Some pyrobitumen grains have a coarse mosaic with wavy extinction. Reflectance values obtained for pyrobitumen may not be reproducible owing to high degree of surface irregularities. ?Migrato-bitumen occur as orange to dull orange fluorescing round to oval shaped bodies with smooth polishing surfaces and these could also be dead oil. Mineral fluorescence weak to patchy moderate orange. Iron oxides rare. Pyrite rare.)
						?Constance sandstone
E2630 Core	453.88-3.91 ?Alginite Bitumen	- 2.60 3.02	- 2.10-3.17 2.45-3.90	- 0.260 0.527	- 25 6	Fluorescing liptinite absent. (Sandstone with minor claystone. Dom sparse, L only. Liptinite sparse, other macerals absent. Diffuse organic matter sparse. ?Coalified alginite sparse and occur as non-fluorescing narrow strands with smooth polishing surface and low polishing relief. Bitumen occur as non-fluorescing bodies with high polishing relief and usually formed around mineral grains. Mineral fluorescence patchy weak orange to pervasive dull orange. Iron oxides rare. Pyrite rare.)
E2632 Core	461.11-61.12 ?Alginite	- 2.53	- 2.20-2.86	- 0.178	- 25	Fluorescing liptinite absent. (Silty claystone, highly micaceous. Dom common, L only. Liptinite common, other macerals absent. Diffuse organic matter common. ?Coalified alginite common and occur as non-fluorescing long narrow strands with smooth polishing surface, often enveloped in strands of diffuse organic matter . Bireflectance of alginite is low to moderate with a mean bireflectance ratio of 0.27. Mineral fluorescence pervasive dull orange. Iron oxides rare. Pyrite sparse.)
E2635 Core	470.86-70.88 ?Alginite	- 2.34	- 1.51-2.83	- 0.337	- 25	Common alginite weak brown. (Silty claystone. Dom common to abundant, L only. Liptinite common to abundant, other macerals absent. Diffuse organic matter common. ?Coalified alginite common and occur as non-fluorescing long narrow strands with smooth polishing surface, often enveloped in strands of diffuse organic matter. Alginite with reflectance values at the lower end of the range exhibits a weak brown fluorescence under blue light excitation. Bireflectance of alginite is low to moderate with a mean bireflectance ratio of 0.22. Mineral fluorescence pervasive dull orange. Iron oxides rare. Pyrite sparse.)

Note: In the VRW Excel workbook, assessed pyrobitumen volume is recorded in the inertinite box.

Plates

E2599A ?Coalified alginite in silty claystone, R_{Alg} = 1.02%, reflected white light, X50
E2599B Same as E2599A, in fluorescence mode
E2599C Pyrobitumen in silty claystone, R_{PBit} = 1.91%, reflected white light, X50
E2599D Same as E2599C, in fluorescence mode
E2599E ?Migrato-bitumen in silty claystone, R_{Bit} = 0.86%, reflected white light, X50
E2599F Same as E2599E, in fluorescence mode
E2599G Lamalginite in silty claystone, reflected white light, X50
E2599H Same as E2599G, in fluorescence mode
E2601A ?Coalified alginite in silty claystone, R_{Alg} = 1.23%, reflected white light, X50
E2601B Same as E2601A, in fluorescence mode
E2601C Pyrobitumen in silty claystone, R_{PBit} = 2.61%, reflected white light, X50
E2601D Same as E2601C, in fluorescence mode
E2601E ?Migrato-bitumen in silty claystone, R_{Bit} = 0.58%, reflected white light, X50
E2601F Same as E2601E, in fluorescence mode
E2603A ?Coalified alginite in silty claystone, R_{Alg} = 1.27%, reflected white light, X50
E2603B Same as E2603A, in fluorescence mode
E2603C ?Migrato-bitumen in silty claystone, R_{Bit} = 0.52%, reflected white light, X50
E2603D Same as E2603C, in fluorescence mode
E2603E Weakly fluorescing lamalginite in fine claystone, reflected white light, X50
E2603F Same as E2603C, in fluorescence mode
E2630A ?Coalified alginite in silty claystone, R_{Alg} = 2.97%, reflected white light, X50
E2630B Same as E2630A, in fluorescence mode
E2630C Bitumen in silty claystone, R_{Bit} = 2.45%, reflected white light, X50
E2630D Same as E2630C, in fluorescence mode
E2632A ?Coalified alginite in silty claystone, maximum reflectance position, R_{Alg} = 2.66%, reflected white light, X50
E2632B Same grain, after rotating stage at 90^0, R_{Alg} minimum = 2.04%
E2632C Same as E2632A, in fluorescence mode
E2635A ?Coalified alginite in silty claystone, maximum reflectance position, R_{Alg} = 2.56%, reflected white light, X50
E2635B Same grain, after rotating stage at 90^0, R_{Alg} minimum = 2.11%
E2635C Same as E2635A, in fluorescence mode
E2635D ?Coalified alginite in the lower end of range, R_{Alg} = 1.87%, reflected white light, X50
E2635E Same as E2630A, in fluorescence mode, note weak brown fluorescence