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APPENDICES

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ABBREVIATIONS AND EXPLANATIONS

LITHOLOGY AND MINERALOGY

sh	-	shale	Py C	-	pyrolytic carbon
sst	-	sandstone	carbarg	-	carbargilite
lst	-	limestone	lamalg	-	lamalginite
ign	-	igneous	om	-	organic matter
calc	-	calcareous	phyts	-	phytoclasts
carb	-	carbonate	min	-	mineral
vit	-	vitrinite	qtz	-	quartz
fus	-	fusinite	haem	-	haematite
inert	-	inertinite	py	-	pyrite/pyritic
sp	-	spores/sporinite	sid	-	siderite
res	-	resin/resinite	Fe	-	iron
cut	-	cuticles/cutinite	ox	-	oxides
micn	-	micrinitisation	oxid	-	oxidised

MORPHOLOGY

p/parts	-	particles	lay	-	layered
frags	-	fragments	filam	-	filamentous
w	-	wisps	lamns	-	laminations
wp	-	wispy particles	intercns	-	intercalations
st	-	stringers	interst	-	interstitial
f	-	flecks	pty	-	patchy
liptodet	-	liptodetrinite	amorph	-	amorphous
disc	-	discrete	->	-	altering to

BITUMEN

bit	-	bitumen	lt	-	light
res	-	residue	ov	-	overall
hvy	-	heavy	st	-	stain/staining
dk	-	dark	sat	-	saturated
mod	-	moderate			

COLOUR

g	-	green	r	-	red
y	-	yellow	br	-	brown
o	-	orange	blk	-	black

MISCELLANEOUS

tr	-	trace	bkg	-	background
mn	-	minor	fl	-	fluorescence
sl	-	slightly	h-c	-	hydrocarbons
v	-	very	popns	-	populations
ab	-	abundant	assoc	-	associated
conc	-	concentrated	SWC	-	sidewall core
-	-	nothing observed or not applicable	terrest	-	terrestrial
ND	-	not determined	foss	-	fossils
NDP	-	no determination possible	osts	-	ostracods

ORGANIC CONTENT

description	approximate vol (%) of organic matter in view of view
-------------	--

barren	0
tr	<1
low	1-5
mod	5-25
high	25-50
v. high	50+

the term carbargilite is given to samples containing approximately equal proportions of humic macerals and sedimentary material.

FLUORESCENCE

Information before / relates to fluorescence intensity.

Information after / relates to colour and nature of liptinitic components.

e.g. int/o-y f means intensely fluorescing orangey-yellow flecks.

MISCELLANEOUS INFORMATION

Additional pertinent descriptive and/or stratigraphic data is included under this heading. Each new piece of information is presented on a new line thus avoiding the excessive use of space by including commas, colons, stops etc.

APPENDIX I

SAMPLE DESCRIPTIONS AND REFLECTANCE DATA

PART 1

BOREHOLE AND FIELD SECTIONS

BROACHRIGG NT 329209 660867

Sample Number	Depth (ft)	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (no. readings)
BEA 6895	52	sh	mod	80:20:0	st	lt ov + f	-	-	0.59 (15)
BEA 6899	71	silty sh	mod	5:90:5	p	≈no ov + f	mod/mid o sp + sp frags tr int/y w	tasmanitid	0.68 (8)
BEA 6930	259	siltstone	high	5:85:5	p	no ov + ab f	mod/o-y sp	-	0.64 (25)
BEA 6960	469	vitrinite	-	100:0:0	-	-	-	-	0.55 (25)
BEA 6980	562	silty sh	20:80:tr	mod	p	none/lt ov tr mod interst ab f + w	tr mod/o-y sp	ab Fe oxide staining (haem) some vit brecciated	1.20 (20)
BEA 6992	639	coal	-	NDP	-	-	tr mod/o-y h-c in fusinite cells	severe strain anisotropy in places vit fractured py dropped out => natural oxidation hydrocarbons	2.15 (25)
BEA 7007	728	sh	v high	tr:20:80	p	v hvy ov	50% int/y Bot 30% int/y f	sample smells of oil	0.37 (6)
BEA 7012	747	coal	-	60:20:20	-	-	mod/y-o + o-y sp tr resin blobs	-	0.51 (25)

BROACHRIGG NT 329209 660867

Sample Number	Depth (ft)	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (no. readings)
BEA 7047	958	py sh	high	tr:20:80	wp	v hvy ov	10% mod/y + o-y sp 70% int/y f tr <i>Tasmanites</i>	-	0.37 (3)
BEA 7063	1139	siltstone	high	10:80:10	p + wp	no ov ab w + f	mod/o-y + y-o sp frags	-	0.56 (25)
BEA 7076	1260	sh	barren	-	-	-	-	-	NDP
BEA 7097	1414	sh	high	tr:95:5	p	no ov + w	mod/o-y + lt o sp frags	-	0.68 (3)
BEA 7151	1788	siltstone	high	tr:90:10	wp	lt ov + f	mod/lt o sp tr <i>Bot</i> frags	-	0.72 (12)
BEA 7152	1794	sl silty sh	high	tr:80:20	wp	lt ov + f	mod/lt o sp tr int/y w	-	0.65 (7)
BEA 7157	1831	sh lamn in sst	low	5:95:0	wp	mod ov int/y h-c in	int/y matrix fl in sh sst is brown and pore space in sst	EXTRACTED hydrocarbons has oily smell white after extraction	0.57 (6)
BEA 7158	1837	silty sh	high	5:90:5	p	lt ov + f	mod/o-y + y-o liptodet	-	0.59 (9)
BEA 7165	1900	siltstone	high	5:85:10	st + w	v lt ov + w	mod/y-o sp	bioturbated	0.60 (8)

BROACHRIGG NT 329209 660867

Sample Number	Depth (ft)	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (no. readings)
BEA 7169	1921	sst	-	-	-	-	int/y h-c in pore space	EXTRACTED hydrocarbons sst is brown and has oily smell white after extraction	NDP
BEA 7187	2081	silty sh	high	10:70:20	wp	lt ov + f	mod/lt + mid o sp tr int/y w	-	0.69 (7)
BEA 7192	2116		low	tr:90:10	p	mod int	mod/o-y + y-o sp	-	0.58 (6)

Oil-stained sandstones between 1828'-1831' and 1906'-1929'

Samples taken from cores located in the BGS corestore, Newbattle Abbey

CARRINGTON NT 33122 66103

Sample Number	Depth (ft)	Lithology (percent)	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (no. readings)
CAR 1	220	silty sh:coal 80:20	mod	40:55:5	wp	lt ov	mod/y sp tr int/y resin + cut	-	0.57 (25)
CAR 2	350	coal 100	-	60:35:5	scruffy vit	-	mod/y sp try int/y resin	-	0.59 (25)
CAR 3	670	coal 100	-	75:20:5	-	-	mod/y sp	thick oxidation rims	low 0.61 (25) high 0.89 (25)
CAR 4	840	coal:sh 50:50	mod	30:70:tr	w	no ov + f	tr mod/y + y-o sp	-	0.60 (25)
CAR 5	880	siltst:sh 60:40	mod	tr:95:5	wp + p	lt ov + ab f	mod/y sp + liptodet	tr py -> haem	0.54 (25)
CAR 6	1000	sst 100	tr	NDP	-	-	-	tr py -> haem phyts v small and oxidised	NDP
CAR 7	1060	sst:sh 95:5	tr	0:100:0	-	-	-	py -> haem phyts oxidised	NDP
CAR 8	1130	sh:siltst:ssst 40:40:20	low	10:90:tr	wp	lt ov	mod/y liptodet w + o-y sp	-	0.53 (9)
CAR 9	1180	sst:sh 90:10	tr	tr:100:0	wp	-	-	phyts + py oxidised	0.63 (1)

CARRINGTON NT 33122 66103

Sample Number	Depth (ft)	Lithology (percent)	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (no. readings)
CAR 10	1380	sh:siltst:sst 40:40:20	low	tr:100:tr	wp	lt ov in sh none in sst	mod/lt y-o liptodet	-	0.61 (4)
CAR 11	1410	sh:siltst 80:40	mod	tr:100:tr	wp	no ov + f + w + blobs	mod/o-y + lt o liptodet int/y algal blobs	-	0.59 (8)
CAR 12	1520	siltst:sst 90:10	low/mod	5:95:tr	p	≈ no ov tr w	mod/y + o-y f	-	0.61 (3)
CAR 13	1690	sh:sst 80:20	mod	tr:100:tr	wp	no ov + f	mod/lt o liptodet	-	0.58 (5)
CAR 14	1940	coal:sh 60:40	high	60:30:10	w	no ov + f	mod/o-y + y-o sp int y/resin blobs	ab oxidation rims	0.68 (25)
CAR 15	2120 80:20	coal:sh	mod	60:35:5	w	lt ov + f debris	mod/y-o sp vitrinite	ab brecciated tr oxidation rims	0.64 (25)
CAR 16	2210	coal:siltst 80:20	high	60:30:10	w + p	lt ov	mod/o-y sp frags	ab oxidation rims	0.70 (25)
CAR 17	2370	coal:sh 90:10	high	50:45:5	w	lt ov	mod/lt o sp	brecciated vit tr oxidation rims	0.67 (25)
CAR 18	2600 80:20	coal:silty sh	high	50:40:10	hvy interst	lt ov tr Bot in silty sh	mod/lt o sp oxidation rims	some large	0.70 (25)

CARRINGTON NT 33122 66103

Sample Number	Depth (ft)	Lithology (percent)	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (no. readings)
CAR 19	2850 100	marl	low	tr:90:10	p	no ov + ab w mod/y liptodet	tr dull/mid o sp 1 tasmanitid	-	0.84 (1)
CAR 20	2900	siltst:ssst 80:20	high	10:80:10	wp	no ov + f	mod/lt o sp int/y h-c f in siltst int/y h-c in sst	hydrocarbons	0.77 (11)
CAR 21	3080	py sh 100	mod	10:30:60	wp	mod/hvy ov	50% int/y liptodet f 10% mod/lt o sp	-	0.75 (5)
CAR 22	3350	calc sh 100	low	tr:90:10	wp	no ov + mn blotches	dull/mid o sp + mn o min fl	-	0.72 (2)
CAR 23	3550	sh:ssst 90:10	low	tr:80:20	p	no ov st tr f	dull/o sp tr in/y h-c	hydrocarbons	0.92 (2)
CAR 24	3790	sh:marl 90:10	mod	10:70:30	st + w	mod ov	20%in/y liptodet f 10% dull/lt o sp	band vit + phyls measured	0.86 (3) band 0.65 (10) phyls
CAR 25	4000	calc sh:sh 80:20	high	10:60:30	wp	lt ov st + w	mod/mid o sp dull/o-y carb fl	-	0.86 (13)
CAR 26	4100	calc sh:coal 95:5	high	10:60:30	wp + w	mod ov	10% mod/mid o sp 20% int/y liptodet f mod/o-y carb fl	brecciated coal	0.74 (18)

CARRINGTON NT 33122 66103

Sample Number	Depth (ft)	Lithology (percent)	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (no. readings)
CAR 27	4200	py sh:siltst 80:20	high	10:50:40	wp	mod/dk ov	10% mod/mid o sp 30% mod/o-y liptodet f dull/o-y bkg fl tr <i>Bot</i>	-	0.79 (2)
CAR 28	4420	calc sh:coal 70:30	high	30:40:30	p + w	mod ov	dull/o sp + liptodet pty mod/y-o carb fl	some brecciation of coal	0.81 (18)
CAR 29	4620	calc sh:siltst 80:20	mod ov	5:90:5	p	lt ov + f	mod + dull/deep o sp pty mod/y + o carb fl	-	0.92 (5)
CAR 30	4720	siltst:calc sh 60:40	mod ov	10:70:20	p	no ov in siltst lt ov in	mod/deep o sp mod/o-y carb fl pty dull/y matrix fl	-	1.01 (7)
CAR 31 Core	4760	vit/bitumen 100	-	100:0:0	homogeneous appearance	-	-	probably bitumen	1.74 (25)
CAR 32 Core	4774	calc sh 100	high	5:35:60	wp	mod/hvy ov	30% mod/lt + mid o sp 30% mod/lt + mid o w dull/o matrix fl	-	0.70 (8)
CAR 33.1 Core	4779	vit/bitumen 100	-	100:0:0	homogeneous appearance	-	-	probably bitumen	0.98 (25)

CARRINGTON NT 33122 66103

Sample Number	Depth (ft)	Lithology (percent)	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (no. readings)
CAR 33.2 Core	4779	v calc py sh 100	high	10:50:50	w	v hvy ov tr bit res	10% mod-dull/mid + deep or sp 40% mod-dull/mid + deep o w	EXTRACTED	0.72 (25)
CAR 34 Core	4782	marl 100	high	10:40:50	wp + mn st	hvy interst	mod/mid o w mod/o-y matrix fl	-	0.63 (13)
CAR 35 Core	4784	vit/bitumen 100	-	100:0:0	-	-	-	probably bitumen	1.18 (25)
CAR 36 Core	4788	sh 100	low	20:80:20	st + w	no ov st	dull/mid o liptodet	-	1.37 (8)
CAR 37 Core	4809	sh 100	mod	30:60:10	st	lt ov pty hvy	dull/mid o liptodet f	some brecciation of vit	1.17 (17)
CAR 38 Core	4816	vit 100	-	100:0:tr	p	-	mod/deep o sp	-	0.97 (25)
CAR 39	4830	calc sh:sh 60:40	mod	10:70:20	p	mod/dk ov in calc sh none in sh	dull/deep o w mod/y carb fl in calc sh	-	1.01 (4)
CAR 40	4910	marl:siltst:ss 50:40:10	mod	5:75:20	wp	mod/hvy ov	dull/mid o w int/y h-c in siltst + sst pty mod/y carb fl in marl	hydrocarbons in sst + siltst	1.07 (5)

CARRINGTON NT 33122 66103

Sample Number	Depth (ft)	Lithology (percent)	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (no. readings)
CAR 41	5130	calc sh:sh 90:10	mod	10:70:20	wp	lt ov pty dk interst in calc sh	dull/deep o w ab mod/y + o-y h-c in carb + interst	hydrocarbons	0.93 (16)
CAR 42	5330	sh:calc sh 80:20	mod	10:80:10	wp + tr st	lt ov	dull/deep o w pty dull/deep o carb fl	-	1.39 (4)
CAR 43	5390	sl calc sh:ss 70:30	mod	10:80:10	wp	lt/mod ov in sh	dull/deep o liptodet int/interst y h-c in sst pty dull/deep o carb fl	hydrocarbons	1.21 (9)
CAR 44	5460	calc sh:siltst 60:40	mod	10:80:10	p	lt ov + f	dull/deep o liptodet pty mod/y carb fl in calc sh tr mod/mid o w	possibly some caved material	1.28 (13)
CAR 45	5600	sh:siltst 60:40	mod	5:85:10	p	v lt ov + mn f	dull/deep o f	-	1.10 (8)
CAR 46	5610	calc sh:sh 60:40	mod	10:80:10	p	v lt ov tr hvy in sh	dull/deep o w + f tr mod/y fl in carb	possibly some caved material	1.15 (8)

Cored interval 4758' - 4825'

Samples collected from Lasmo

D'ARCY MIDLOTHIAN N° 1 NT 33625 66473

Sample Number	Depth (ft)	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (no. readings)
SBO 1741	1968	marl	low	tr:95:5	p	lt ov	mod/y liptodet tr int/y w dull/mid o carb fl	-	0.78 (2)
SBO 1746	2027	calc + silty sh	mod	10:80:10	w	lt ov	mod/mid o sp mn int/y f	-	0.75 (12)
SBO 1756	2131	marl	high	tr:10:90	w	lt ov	80% int/y interst w 10% mod/y + o-y <i>Bot</i>	-	0.49 (4)
SBO 1762	2298	calc sh	mod	tr:10:90	wp	lt/hvy ov	80% int/y interst w 10% mod/o-y amorph ?algal om tr int/g h-c	algal wisps anastomose through matrix	0.46 (2)
SBO	2330	carbarg	high	20:50:30	st	hvy	mod/mid o sp	-	0.75 (25)

Samples taken from cores located in the BGS corestore at Newbattle Abbey

MONKTON HOUSE BORE (Nº 37) NT 33325 67044

Sample Number	Depth (ft)	Lithology	Organic Content	V.I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance % R _v max
1701	275	coal	-	ND	-	-	ND	Beefie Coal	0.59 (25)
1704	387	coal	-	ND	-	-	ND	Jewel Coal	0.57 (25)
1710	702	coal	-	ND	scruffy	-	ND	Five Foot Coal	0.56 (25)
1714	801	coal	-	ND	-	-	ND	Quarry Coal	0.61 (25)
1718	876	coal	-	ND	scruffy	-	ND	Salters Coal onset of mic formation in vit	0.57 (25)
1723	933	coal + cannel lamns	-	ND	-	-	ND	Nine Foot Coal ab mic in cannel lamns	0.54 (25)
1726	961	coal	-	ND	-	-	ND	Fifteen Foot Coal	0.61 (25)
1729	1032	coal	-	ND	sl scruffy vit	-	ND	Four Foot Coal ab mic assoc with sp	0.58 (25)
1733	1080	coal	-	ND	-	-	ND	Seven Foot Coal	0.61 (25)
1662	2660	coal	-	ND	-	-	ND	Flex Coal	0.78 (25)
1663	2704	coal	-	ND	-	-	ND	Rumbles Coal	0.76 (25)
1677	2719	coal	-	ND	-	-	ND	Great Coal	0.74 (25)
1685	2754	coal	-	ND	-	-	ND	-	0.77 (25)

MONKTON HOUSE BORE (Nº 37) NT 33325 67044

MONKTON HOUSE BORE (Nº 37) NT 33325 67044

Sample Number	Depth (ft)	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance % R _y max
1665	2783	coal	-	ND	-	-	ND	Upper Gillespie Coal	0.68 (25)
1667	2802	coal	-	ND	-	-	ND	-	0.73 (25)
1690	2851	coal	-	ND	-	-	ND	Upper Blackbird Coal	0.78 (25)
1668	2908	coal	-	ND	-	-	ND	-	0.72 (25)
1696	2917	coal	-	ND	-	-	ND	Coronation Coal	0.69 (25)
1669	2979	coal	-	ND	-	-	ND	Ball Coal	0.77 (25)
1670	3004	coal	-	ND	-	-	ND	Glen Coal	0.77 (25)
1699	3120	coal	-	ND	-	-	ND	Stoney Coal	0.75 (25)
1671	3169	coal	-	ND	-	-	ND	Beattie Coal	0.78 (25)
1672	3211	coal	-	ND	-	-	ND	Corbie Coal	0.81 (25)

All samples collected from the NCB palynological collection at Wath-upon-Deane.

ESK MOUTH BORE N°50/56 NT 33453 67332

Sample Number	Depth (ft)	Lithology	Organic Content	V.I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance % R _v average coals %R _v max (n° readings)
2746	279	coal	-	ND	-	-	ND	Splint Coal	0.59 (25)
2747	289	coal	-	ND	-	-	ND	Rough Coal	0.58 (25)
2748	379	coal	-	ND	-	-	ND	Beefie Coal	0.60 (25)
2749	401	coal	-	ND	-	-	ND	-	0.56 (25)
2750	462	coal	-	ND	-	-	ND	-	0.59 (25)
2751	487	coal	-	ND	-	-	ND	Musselburgh Jewel Coal	0.59 (25)
2753	531	coal	-	ND	-	-	ND	Golden Coal	0.60 (25)
2754	564	coal	-	ND	-	-	ND	-	0.58 (25)
2755	684	coal	-	ND	-	-	ND	?Little Splint or Dalkeith Upper Coal	0.62 (25)
2756	881	coal	-	ND	-	-	ND	Cowpits Five Foot Coal	0.63 (25)
2757	887	coal	-	ND	-	-	ND	Quarry Coal	0.58 (25)
2758	932	coal	-	ND	-	-	ND	-	0.59 (25)

ESK MOUTH BORE N°50/56 NT 33453 67332

Sample Number	Depth (ft)	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance % R _v -average coals %R _v max (n° readings)
2759	951	coal	-	ND	-	-	ND	-	0.63 (25)
2760	973	coal	-	ND	-	-	ND	-	0.62 (25)
2761	1063	coal	-	ND	-	-	ND	Salter's Coal	0.63 (25)
2762	1157	coal	-	ND	-	-	ND	Nine Foot Coal	0.63 (25)
2763	1192	coal	-	ND	-	-	ND	Fifteen Foot Coal	0.63 (25)
2764	1266	coal	-	ND	-	-	ND	Pinkie Four Foot Coal	0.58 (25)
2765	1288	coal	-	ND	-	-	ND	Seven Foot (Top) Coal	0.60 (25)
2767	1298	coal	-	ND	-	-	ND	Seven Foot (Bottom) Coal	0.65 (25)
ES A	1422	calc sh	high	10:70:20	w	mod ov + ab w	10% int/y w 5% mod/o-y sp 5% Bot	-	0.50 (8)
ES B	1455	py sh	mod	5:25:70	s t	lt ov	50% int/y f 10% mod/o-y sp 10% int/y w	1 tasmanitid	0.50 (8)

ESK MOUTH BORE N°50/56 NT 33453 67332

Sample Number	Depth (ft)	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance % R _v average coals %R _v max (n° readings)
ESC	1456	torbanite	-	10:10:80	st + w	hvy ov	80% int/y <i>Bot</i> tr mod/o-y sp	EXTRACTED <i>Bot</i> sl degraded	0.35 (13)
2768	1477	coal	ND	-	-	-	ND	Eskmouth Extra Coal	0.63 (25)
ESD	1562	py sh	mod/high	5:55:40	w	no ov	20% mod-dull/o-y + lt o sp debris 20% int/y f	-	0.42 (3)
ESE	1644	silty sh	high	tr:90:10	wp	≈no ov + f	mod/lt o liptodet	-	0.70 (4)
ESF	1707	sh	mod	10:80:10	p	no ov + f	int/y f tr mod/lt o sp	ab Fe ox	0.74 (5)
ESG	1847	sl py sh	high	10:20:70	w	hvy ov	50% int/y f 10% int-mod/y algal cysts 5% mod/y-o sp 5% <i>Bot</i>	1 tasmanitid tr fish scales	0.53 (6)
ESH	1856	py sh	low/mod	5:95:10	p	lt ov + f	mod/lt-mid o liptodet	-	0.65 (9)
ESI	1863	v calc sh	barren	-	-	tr dk w	NDP	-	NDP

ESK MOUTH BORE N°50/56 NT 33453 67332

Sample Number	Depth (ft)	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance % R _v average coals %R _v max (n° readings)
ES J	1932	silty sh	low/mod	tr:95:5	p	no ov + f	mod/o-y + y-o liptodet	ab Fe ox	0.80 (6)
ESK	1936	sl py calc sh	low/mod	5:90:5	p	no ov + f	mod/o-y + y-o liptodet	-	0.78 (2)
ES L	1963	sh	high	5:25:60	st	mod ov	50% int/y w 10% Bot	-	0.47 (8)
ES M	1991	sl py silty sh	high	10:70:20	st + w	lt ov + f	mod/y-o + lt o sp mod/y liptodet tr int/y w	-	0.58 (5)
ES N	2002	silty sh	v high	tr:90:10	st + wp	no ov + blotches	mod/o-y + lt o liptodet	-	0.74 (1)
ES O	2015	v py sh	v high	10:30:60	w	hvy ov	30% int/y f + w 20% mod/lt o sp 10% Bot	-	0.51 (4)
ES P	2041	v calc sh	mod	0:20:80	-	lt ov	70% int/y f 10% mod/y Bot	-	NDP
ES Q	2164	siltstone	high	5:80:15	-	lt ov	mod/lt + mid o sp	phys v small	NDP
ES R	2193	siltstone	high	0:90:10	p	no ov + blotches + f	mod/lt o sp	-	NDP

ESK MOUTH BORE N°50/56 NT 33453 67332

Sample Number	Depth (ft)	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance % R _v average coals %R _v max (n° readings)
ES S	2206	siltstone	mod	10:70:20	p	no ov + f	mod/lt - mid o sp mod/o-y liptodet	Fe ox blotches	0.73 (5)
ES T	2211	py silty sh	mod/high	tr:80:20	wp	lt/mod ov	mod/lt o sp + liptodet	-	NDP
ES U	2501	siltstone	high	10:80:10	wp	no/lt ov	mod/lt + mid o sp frags	-	0.48 (14)
ES V	2660	calc sh	low	tr:90:10	p	lt ov	mod/y + o-y liptodet	-	0.72 (2)
2769	2698	coal	-	ND	-	-	ND	Deception Coal	0.81 (25)
ES W	2730	py carbarg	v high	30:20:50	st	hvy ov	40% mod/lt + mid o sp 5% <i>Bot</i> 5% int/y w	-	0.58 (16)
2770	2732	coal	-	ND	-	-	ND	Flex Coal	0.87 (25)
ES X	2763	sl py calc sh	mod	10:60:30	st	lt-mod ov	20% mod/lt o liptodet 10% int + mod/y liptodet	-	0.72 (10)
2771	2766	coal	-	ND	-	-	ND	Rumbles Coal	0.81 (25)

ESK MOUTH BORE N°50/56 NT 33453 67332

Sample Number	Depth (ft)	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance % R _v -average coals %R _v max (n° readings)
2775	2791	coal	-	ND	-	-	ND	Stairhead Coal	0.90 (25)
2776	2846	coal	-	ND	-	-	ND	Gillespie Coal	0.78 (25)
2777	2904	coal	-	ND	-	-	ND	Blackchapel Coal	0.81 (25)
ESY	2912	marl	high	10:30:60	w + st	mod ov + hvy blotches	30% int/y w 20% Bot 10% mod/mid o sp	-	0.50 (22)
2779	2957	coal	-	ND	-	-	ND	Kittlepurse Coal	0.81 (25)
ESZ	3018	sl py silty sh	high	tr:90:10	p	lt ov + f	mod-dull/mid deep o liptodet	-	0.67 (2)
2781	3031	coal	-	ND	-	-	ND	Ball Coal	0.80 (25)
ES EE	3074	py canneloid sh	v high	tr:30:70	st + w	v hvy ov	50% mod-dull/mid + deep o sp 10% mod/y w 10% mod/y liptodet	-	0.55 (9)
2783	3109	coal	-	ND	-	-	ND	Bryan's Splint Coal	0.86 (25)
ES AA	3128	calc sh	mod	20:60:20	wp	lt ov	mod/lt + mid o sp mod/y w	-	0.76 (14)

ESK MOUTH BORE N°50/56 NT 33453 67332

Sample Number	Depth (ft)	Lithology	Organic Content	V.I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance % R _v average coals %R _v max (n° readings)
2785	3159	coal	-	ND	-	-	ND	Stoney Coal	0.83 (25)
2786	3187	coal	-	ND	-	-	ND	Beattie Coal	0.85 (25)
2787	3209	coal	-	ND	-	-	ND	Corbie (Little Splint) Coal	0.87 (25)
ESBB	3236	silty sh	high	tr:90:10	wp	lt ov + f	dull/deep o sp mod/y liptodet	-	0.78 (5)
2788	3278	coal	-	ND	-	-	ND	Andrews Coal	0.89 (25)
2789	3313	coal	-	ND	-	-	ND	South Coal	0.87 (25)
2791	3350	coal	-	ND	-	-	ND	North Coal	0.89 (25)
ESCC	3369	sl calc sh	low/mod	10:80:10	p	lt ov	mod + dull/mid o liptodet	-	0.80 (4)
ESDD	3388	silty sh	high	10:70:20	wp	lt ov + f	mod/mid + dull o sp + liptodet	-	0.89 (7)

Sediment samples prefixed ES provided by Mr. P. Brand.

Coals sampled from the NCB palynological collection at Wath-upon-Dearne.

MUSSELBURGH N01 SEA BORE NT 34058 67658

Sample Number	Depth (ft)	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance % R _v -average coals %R _v max (n ^o readings)
MUS 1	1056	py silty sh	high	40:30:30	w + wp	mod/hvy ov	20% mod/y-o + lt o sp 10% int/y f	-	0.52 (25)
3565	1060	coal	-	85:10:5	scruffy	-	mod/o-y sp tr resin	onset of micn in places	0.56 (25)
3566	1073	coal	-	80:10:10	scruffy	-	mod/o-y sp tr resin	EXTRACTED some mic assoc with sp	0.58 (25)
3567	1115	coal	-	70:20:10	scruffy	-	mod/o-y sp	EXTRACTED dispersed mic + mic assoc with sp	0.61 (25)
3568	1137	coal	-	70:20:10	sl scruffy	-	mod/lt o sp	mic assoc with sp	0.67 (25)
3570	1214	coal	-	85:10:5	scruffy	-	mod/o-y sp tr resin	sl oxid-py missing mic assoc with sp	0.62 (25)
3571	1236	coal	-	85:10:5	scruffy	-	mod/y-o sp	-	0.63 (25)
3572	1270	coal	-	80:15:5	sl scruffy	-	mod/lt o sp	-	0.61 (25)

MUSSELBURGH N°1 SEA BORE NT 34058 67658

Sample Number	Depth (ft)	Lithology	Organic Content	V:l:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance % R _v average coals %R _v max (n° readings)
3573	1337	coal	-	70:20:10	sl scruffy	-	mod/lt-mid o sp	-	0.63 (25)
3574	1398	coal	-	80:15:5	sl scruffy	-	mod/y-o sp	Splint Coal	0.67 (25)
3576	1534	coal	-	ND	-	-	ND	-	0.58 (25)
3581	1643	coal	-	ND	-	-	ND	Golden Coal	0.63 (25)
3583	1714	coal	-	ND	sl scruffy	-	mod/y-o + lt o sp tr res	tr mic	0.61 (25)
3586	1777	coal	-	ND	-	-	ND	-	0.65 (25)
3587	1986	coal	-	70:20:10	-	-	mod/lt-mid o sp tr res	-	0.72 (25)
3591	2071	coal	-	80:15:5	pty scruffy	-	mod/y-o + lt o sp	Glass Coal some cannel lamns with ab mic	0.61 (25)
3592	2138	coal	-	70:20:10	sl scruffy	-	mod/lt o sp	Salters Coal	0.68 (25)
3593	2171	coal	-	ND	-	-	ND	-	0.72 (25)
3596	2253	coal	-	ND	-	-	ND	EXTRACTED Fifteen Foot Coal	0.71 (25)

MUSSELBURGH N°1 SEA BORE NT 34058 67658

Sample Number	Depth (ft)	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance % R _v average coals %R _v max (n° readings)
3597	2346	coal	-	ND	-	-	ND	Pinkie Four Foot Coal	0.68 (25)
3600	2396	coal	-	ND	-	-	ND (bottom leaf)	EXTRACTED Seven Foot Coal	0.70 (25)
MUS 2	2569	sh	mod	10:40:50	wp	mod ov	40% mod/o liptodet 10% int/y w	-	0.56 (8)
MUS 3	2772	silty sh	high	5:85:10	wp	no ov + f	5% mod/lt o f 5% mod/lt o sp	ab Fe ox	0.65 (13)
MUS 4	2839	sh	mod	60:30:10	w + st	no ov	mod/lt o sp tr int/y f	-	0.60 (13)
MUS 5	2992	sh	v low	6:100:tr	-	no ov	dull/mid o sp	-	NDP
MUS 6	3010	v calc + sl py sh	high	10:30:60	wp	mod/hvy ov	50% mod/lt o f + w 10% mod/o-y w tr Bot	-	0.62 (14)
MUS 7	3100	sh	mod	10:85:5	wp	no ov	mod/lt + mid o liptodet	-	0.81 (6)
3601	3113	coal	-	ND	-	-	ND	-	0.80 (25)

MUSSELBURGH N°1 SEA BORE NT 34058 67658

Sample Number	Depth (ft)	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance % R _v average coals %R _v max (n° readings)
MUS 8	3163	silty sh	high	10:80:10	wp	lt ov + f	5% mod/lt + mid o sp 5% int/y w	-	0.87 (7)
MUS 9	3232	sl py sh	high	0:95:5	-	no ov + f	mod/mid + deep o sp	-	NDP
MUS 10	3281	py sh	high	5:85:10	p	no ov + f	5% mod/lt + mid o sp 5% mod/o-y f + w	1 tasmanitid	0.94 (4)
MUS 11	3423	calc sh	low/mod	5:90:5	p	no ov	mod/lt o f	-	0.89 (2)
MUS 12	3570	silty sh	high	10:60:30	w	lt ov + f	mod/lt o sp tr int/y w	-	1.02 (13)
MUS 13	3641	sh	high	0:20:80	-	lt ov	60% mod/o-y f + w 10% mod/mid o sp tr Bot	-	NDP
3602	3685	coal	-	ND	-	-	ND	EXTRACTED South Parrot Coal	0.90 (25)
MUS 14	3774	silty sh	high	10:70:20	wp	lt ov	10% mod/lt + mid o sp 10% mod/o-y w	-	0.88 (8)

MUSSELBURGH N°1 SEA BORE NT 34058 67658

Sample Number	Depth (ft)	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance % R _v average coals %R _v max (n° readings)
MUS 15	3777	lst	=barren	0:100:0	p	no ov + tr mod w	-	-	NDP
3603	3805	coal	-	ND	-	-	-	-	0.94 (25)
MUS 16	3866	py canneloid sh	v high	30:30:40	w + wp	v hvy ov	35% mod/y-o + lt o sp 5% mod/y Bot	spores degraded	0.55 (19)
MUS 17	3894	silty sh	high	5:75:25	wp	v lt ov + f	mod/lt + mid o sp + liptodet tr int/y w	-	0.72 (9)
3607	3897	coal	-	ND	-	-	ND	Rumbles Coal	0.98 (25)
MUS 18	3965	py sh	high	20:55:25	st	lt ov	20% mod/lt o sp + liptodet 5% Bot	-	0.68 (25)
3613	4070	coal	-	ND	-	-	ND	EXTRACTED Blackchapel Coal	0.93 (25)
MUS 19	4087	v calc sh + carbarg intercns	high	20:60:20	st	mod ov + w	mod/y-o + lt o sp tr Bot dull/lt o carb fl	-	0.67 (13)

MUSSELBURGH N°1 SEA BORE NT 34058 67658

Sample Number	Depth (ft)	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance % R _v average coals %R _v max (n° readings)
3614	4095	coal	-	ND	-	-	ND	EXTRACTED Calpatie Coal	0.92 (25)
3615	4109	coal	-	ND	-	-	ND	EXTRACTED Kittlepurse Coal	0.91 (25)
MUS 20	4195	sh	high	tr:90:10	p	lt ov + f	mod/lt + mid o liptodet	ab Fe ox	0.73 (4)
3618	4202	coal	-	70:20:10	-	-	mod-dull/mid + deep o sp	Ball Coal	0.89 (25)
MUS 21	4235	py canneloid sh	high	tr:40:60	st + w	v hvy ov	mod/lt + mid o sp tr Bot	-	0.68 (1)
3620	4254	coal	-	75:20:5	-	-	mod/mid + deep o sp Coal	EXTRACTED Bryan's Splint	0.99 (25)
MUS 22	4273	v py sh	high	40:10:50	st	v hvy bkg	30% dull/lt o lamalg - 10% mod/mid o sp 10% mod/o-y w	-	0.73 (19)
3622	4317	coal	-	ND	-	-	ND	?Hopes Coal	0.99 (25)
MUS 23	4331	silty py sh	high	10:30:60	st	v hvy	30% mod-mid o sp 20% mod/o-y w + f 10% Bot	Bot degraded	0.58 (8)

MUSSELBURGH N°1 SEA BORE NT 34058 67658

Sample Number	Depth (ft)	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance % R _v average coals %R _v max (n° readings)
3624	4368	coal + cannel lamns	-	70:20:10	-	-	mod + dull/mid o sp tr Bot in cannel	EXTRACTED Corbie Coal	0.99 (25)
MUS 24	4395	sh	high	10:70:20	wp	no ov + f	dull/deep o f + liptodet tr Bot	-	0.88 (16)
MUS 25	4421	calc sh	v high	20:40:40	wp	mod ov	30% mod/mid o sp 10% mod/o-y w	-	0.82 (13)
3625	4456	coal	-	ND	-	-	ND	EXTRACTED South Coal	0.98 (25)
MUS 26	4477	v py siltst	high	10:30:60	st	v hvy interst	40% mod/lt o w 20% mod/mid + deep o sp	-	0.57 (5)
3626	4478	cannel coal	-	30:40:30	-	-	dull/mid + deep o sp	North Coal ab mic	0.81 (25)

All samples prefixed MUS provided by Mr. P. Brand.

All other samples (coals) collected from the NCB palynological collection at Wath-upon-Dearne.

BLACKNESS N°2 NT 30471 68027

Sample Number	Depth (ft)	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance % R _v average (n° readings)
SBO 3715	215	calc canneloid sh	high	10:50:40	wp	v hvy ov -> bit res	dull/mod + deep o sp + liptodet	-	0.43 (8)
SBO 3727	500	silty calc sh	mod	10:90:0	wp	v hvy ov -> bit res	-	-	0.69 (10)
SBO 3722	506	v calc sh	mod	tr:70:30	wp	v hvy ov	mod/y + o-y f + liptodet	sample smells of oil when crushed	0.40 (5)
SBO 3729	669	calc sh	low	5:90:5	p	lt ov + mn f	dull/mid o sp	ab shell frags	0.65 (5)
SBO 3731	1119	py silty sh	high	NDP	p	v hvy ov -> coarse bit res	-	-	2.56 (8)

Samples collected from the BGS corestore at Newbattle Abbey.

ANSTRUTHER NO 35653 70350

Sample Number	Depth (ft)	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (no. readings)
SBO 7515	38	siltstone	mod	tr:95:5	p	lt ov + f	mod/y-o + lt o sp + terrest frags	-	0.74 (10)
ANST A	40	sh	low	tr:90:10	p	lt ov + f	mod/o-y + y-o sp frags	-	0.66 (2)
SBO 7516	91	marl	mod	10:30:60	wp	no ov + ab w	40% int/y f 20% mod/o-y sp tr <i>Bot</i>	EXTRACTED	0.47 (9)
SBO 7517	167	marl	v low	tr:20:80	p	lt ov + tr w	int/y w mod/y matrix fl	EXTRACTED	0.78 (3)
SBO 7518	172	sh + carbarg lamns	high	60:40:tr	st + w	lt ov in sh hvy ov in carbarg	tr mod/y-o + lt o sp	-	0.72 (25)
SBO 7519	193	silty sh	v low	60:20:20	p	lt ov + f	mod/o-y sp + liptodet	vit exudes bituminous/humic material	0.51 (1)
ANST B	230	carbarg	high	60:10:30	w + st	hvy ov	mod/y-o + o-y sp tr resin strings	-	0.66 (25)
SBO 250	250	silty sh	low	NDP	p	v hvy ov -> bit res	-	1 mosaiced spore	2.94 (8)
SBO 7521	308	sh + vit lamns	mod	40:50:10	st + w	lt ov + f	mod/lt o sp tr mod/y f	-	0.74 (27)

ANSTRUTHER NO 35653 70350

Sample Number	Depth (ft)	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (no. readings)
SBO 7522	350	coal	-	100:0:tr	-	-	tr mod/o-y sp	tr Bot in sh next to coal	0.74 (25)
ANST C	441	sh	low	30:60:10	wp	mod ov + w	mod/o-y + y-o sp	-	0.53 (11)
SBO 7526	445	siltst + vit lamns	high	70:20:10	st	lt/mod ov	mod/o + lt o sp	-	0.75 (25)
SBO 7527	465	marl	low	30:60:10	w + wp	dk interst	mod/y-o + o-y sp + blotches + f	vit exudes bituminous/humic material	0.57 (21)
ANST D	579	carbarg	v high	tr:50:50	w	hvy ov	mod/o-y sp	-	0.56 (24)
SBO 7529	612	marl	low	30:30:40	wp	mod blotches	20% mod/o-y + y-o 20% int/y f	-	0.46 (23)
ANST E	741	silty sh	mod	20:70:10	p	no ov	mod/deep o sp frags	-	0.81 (8)
ANST F	810	py sh	low	0:20:80	-	no ov	50% int/y f 20% mod/o-y sp 10% Bot	EXTRACTED	NDP
ANST G	925	sh	low	tr:80:20	p	lt ov	mod/lt o sp	-	0.85 (8)

Samples prefixed ANST were provided by Mr. P. Brand from the palaeontological collection at Murchison House.

Samples prefixed SBO were collected from the BGS corestore at Newbattle Abbey.

BALCORMO N°1 NO 35084 70408

Sample Number	Depth (ft)	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (no. readings)
BAL 1	44	marl	low	tr:90:10	p	lt ov + f	mod/o-y sp tr Bot	-	0.41 (1)
BAL 2	233	sl silty sh	mod	10:90:0	wp	lt ov	-	-	0.47 (2)
BAL 3	365	sl silty sh	high	50:30:20	w	lt ov dk w	15% mod/o-7 sp 5% int/y w	-	0.53 (25)
BAL 4	541	sh	mod	0:100:tr	p	≈no ov	tr mod/lt o sp	-	NDP
BAL 5	836	carbarg	v high	30:10:60	st + w	v hvy ov	int/y lamalg mod/o-y sp tr Bot	-	0.49 (25)
BAL 6	915	sh	v high	60:10:30	w	v hvy ov + dk w	10% int/y liptidet 10% mod/y Bot 10% mod/o-y sp	vit parts v small	0.51 (6)
BAL 7	1055	sh	high	tr:90:10	p	lt ov + ab f	mod/lt o sp	-	0.57 (2)

Samples provided by Mr. P. Brand from the palaeontological collection at Murchison House.

KILCONQUHAR NO 34844 70304

Sample Number	Depth (ft)	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (no. readings)
KIL 1	152	sl calc sh	low	tr:80:20	p	lt ov + f	mod/o-y sp tr <i>Bot</i>	-	0.48 (4)
KIL 2	426	sh	mod	0:90:10	-	no ov + ab f	dull/o-y sp	-	NDP
KIL 3	526	sh	low	10:60:30	wp	no ov	mod/o-y sp tr mod/y w	-	0.48 (5)
KIL 4	665	sh	high	30:50:20	w + st	hvy ov + lamms with no ov	mod/y-o sp + liptodet	-	0.55 (24)
KIL 5	1092	marl	high	tr:30:70	lt ov	wp	50% int/y interst w 10% mod/y-o sp 10% <i>Bot</i>	-	0.45 (14)
KIL 6	1387	marl	high	tr:30:70	lt ov	wp	60% in y/f 10% mod/o-y sp	-	0.51 (2)
KIL 7	1618	sh	high	tr:90:10	no ov	wp	mod/lt o sp tr <i>Bot</i>	-	0.60 (3)
KIL 8	1900	sh	mod	tr:30:70	w	v hvy ov	60% int/y f 5% mod/y-o sp 5% <i>Bot</i> dull/y-o matrix fl int/y h-c in fus	tr hydrocarbons in fusinite cells	0.47 (5)
KIL 9	2230	sh	high	10:70:20	p	lt ov + ab f	mod/y-o + lt o sp tr <i>Bot</i>	-	0.75 (8)

KILCONQUHAR NO 34844 70304

Sample Number	Depth (ft)	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (no. readings)
KIL 10	2313	sh	high	tr:80:20	p	≈no ov + f	mod/lt o sp + sp frags	-	0.76 (9)
KIL 11	2570	calc sh	mod	10:40:50	w + p	hvy ov + dk w	mod/o-y sp dull/y-o matrix fl	-	0.67 (25)
KIL 12	2595	cannel coal	-	60:20:20	-	-	mod/mid o sp tr Bot	highly calc in places	0.72 (25)
KIL 13	2700	sh	low	tr:100:10	p	v lt ov ab dk w	mod/lt o sp tr Bot	-	0.58 (4)

Samples provided by Mr. P. Brand from the palaeontological collection at Murchison House.

DUNOTTER NO 34649 70252

Sample Number	Depth (ft)	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (no. readings)
-	321	coal	-	-	-	-	-	-	0.57*
-	341	coal	-	-	-	-	-	-	0.59*
BM 18	355	sst + silty lamns	low	10:60:30	wp	mod ov in siltst none in sst	mod/y + o-y sp + cut frags	-	0.42 (3)
-	394	coal	-	-	-	-	-	-	0.46*
-	406	coal	-	-	-	-	-	-	0.50*
-	503	-	-	-	-	-	-	-	0.53*
JSB 18	705	sh	v high	40:30:30	wp	lt/mod ov	mod/y-o sp + resin + cut	EXTRACTED 8.3% TOC 78 HI	0.47 (25)
-	750	coal	-	-	-	-	-	-	0.60*
DUN 963	963	sh	low	5:95:0	wp	lt ov + f	-	-	0.57 (4)

* Reflectance determinations calculated from coal analysis data cited in Forsyth and Chisholm (1968).

All other samples were provided by Mr. P. Brand from the palaeontological collection at Murchison House.

LITTLE PILMUIR NO 34072 70392

Sample Number	Depth (ft)	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (no. readings)
SBO 7307	75	siltstone	mod	10:70:30	st	no ov	20% mod/y-o sp 10% <i>Bot</i>	ab Fe oxides	0.46 (9)
P 222/6	223	sh	high	tr:100:tr	p	no ov	mod/lt o sp	vit v small	NDP
SBO 7316	344	silty sh	mod	20:70:10	wp	no ov + f	mod/o-y sp mod-int/o-y <i>Bot</i>	-	0.47 (5)
C 53	438	calc sh	high	5:90:5	p	lt ov + f	dull/o-y f	-	0.56 (16)
SBO 7325	456	sh	mod	10:80:10	p	lt ov	mod/lt o sp tr <i>Bot</i>	ab sid blotches	0.63 (6)
SBO 7329	490	siltstone	high	5:95:0	p	mod ov + f tr bit res	-	-	0.65 (4)
SBO 7330	629	sh	high	5:95:0	p	mod ov + w -> bit res	-	-	0.85 (11)
P 655/6	666	sh	mod	tr:100:0	p	lt ov + f	-	-	1.68 (3)

Samples prefixed SBO were collected from the BGS corestore at Newbattle Abbey.

Samples prefixed P and C were provided by Mr. P. Brand from the palaeontological collection at Murchison House.

EAST DRON NO 31360 71572

Sample Number	Depth (ft)	Lithology	Organic Content	V:l:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (no. readings)
SBO 9817	233	silty sh	low	0:60:40	-	v lt ov	20% mod/y-o + lt o sp 20% int/y w + ?cysts tr int/y <i>Tasmanites</i>	-	NDP
SBO 9800	335	calc sh	mod	0:90:10	-	no ov	-	-	NDP
SBO 9753	348	siltstone	low	0:100:0	-	no ov	-	-	NDP
SBO 9695	479	siltstone	low	0:90:10	-	no ov	mod/y-o sp	-	NDP
SBO 9820	496	sh	low	0:100:tr	-	no ov	tr int/y w	-	NDP
SBO 9758	537	marl	mod	0:95:5	-	lt ov	mod/o-y sp mod-int/y f + w mod/y fl in some calc areas	-	NDP

Samples collected from BGS corestore at Newbattle Abbey.

BALFOUR MAINS NT 33307 69989

Sample Number	Depth (ft)	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance % R _v average (n° readings)
SBO 4108	1065	coal	-	70:20:10	-	-	mod/y-o + o-y sp	-	0.55 (25)
SBO 4114	1618	coal	-	70:20:10	-	-	mod/lt o + y-o sp	-	0.65 (25)
C 10	1893	sl calc sh	mod	10:60:30	wp	lt ov + f	int/y f + w tr mod/y sp	EXTRACTED	0.49 (4)
KBBI 10	2019	calc sh	high	20:70:10	wp	mod ov	dull/o-y sp tr Bot	ab bladed carb crystals	0.34 (25)
SBO 4121	2359	coal	-	30:45:25	-	-	mod/mid o sp	Bowesbank Splint Coal ab cannel intercs	0.89 (25)
SBO 4123	2518	coal	-	NDP	-	-	-	-	3.54 (25)
SBO 4127	3081	carbarg	-	NDP	wp + st	hvy ov -> bit res	-	-	4.17 (25)
BM 10	3594	sl silty sh	high	10:60:30	w + wp	lt/mod ov + w	int/y f mod/o-y + lt o sp + terrest frags	-	0.60 (25)
JSB 10	4159	carbarg	-	30:40:30	st + w	mod ov tr in/y w	int-mod/y + o-y sp	EXTRACTED	0.71 (15)
							tr Bot		

Samples prefixed SBO collected from the corestore at Murchison House.

All other samples provided by Mr. P. Brand.

MILTON OF BALGONIE-1 NT 33174 69933

Sample Number	Depth (ft)	Lithology (percent)	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (no. readings)
MOB 1	150	shale 100	mod	0:100:0	NDP	lt ov/none + f	ir mod/y min fl	-	NDP
MOB 2	350	sh:carb 90:10	mod/high	5:90:5	p	no ov + f	mod/y sp + liptodet	-	0.51 (22)
MOB 3	570	sh:silty sh 70:30	mod	40:55:5	w + st	lt ov in sh mod/hvy in silty sh	mod/y sp + liptodet	ir coaly parts 69.7% TOC 145 HI	0.47 (18)
MOD 4	800	silty sh:sh 70:30	mod	tr:90:5	p	lt ov + f	mod/y liptodet	ir sst sh sl calc	0.46 (1)
MOB 5	820	calc sh:carb 90:10	mod	5:85:10	p	lt ov + f	mod/y liptodet	-	0.45 (17)
MOB 6	1000	sh:coal:carbarg 40:30:30	high	50:20:30	p + w carbarg	lt ov + f + w in sh mod/hvy ov in carbarg	mod/o-y sp tr resin globs 10% Bot. in carbarg places	EXTRACTED coal sl ox sh is calc in	0.54 (25)
MOB 7	1340	cannel coal: silty sh:carbarg 60:20:20	high	40:30:30	p + w	lt/mod in silty sh + w + f hvy ov in carbarg	mod/y-o + lt or sp ab cut	EXTRACTED	0.47 (25)
MOB 8	1603	siltst:carbarg:sh 50:20:30	mod/high	50:30:20	w	lt ov	mod/y + o-y sp + liptodet ab cut	EXTRACTED	0.65 (21)

MILTON OF BALGONIE-1 NT 33174 69933

Sample Number	Depth (ft)	Lithology (percent)	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (no. readings)
MOB 9	1740	silty sh:st:carb 50:20:30	high	40:40:20	w + st	hvy ov in carbarg lt ov in sh	mod/y + y-or sp	mn coal parts	0.59 (25)
MOB 10	1870	cannel coal:sh:carbarg 50:30:20	high	50:30:20	p + w	hvy ov in carbarg lt ov in sh	mod/lt or sp	EXTRACTED	0.69 (25)
MOB 11	1910	coal:sh 30:70	high	20:50:30	p + w	mod ov in sh. + f	mod/y + y-o sp	-	0.78 (25)
MOB 12	1945 SWC 100	silty sh 100	low/mod	5:100:5	p	lt ov + f	tr mod/y-o sp	-	0.82 (23)
MOB 13	1990	sh:coal 60:40	high	60:30:20	p + w	lt/mod ov in sh	mod/o-y sp ab mod/y cut	EXTRACTED	0.74 (25)
MOB 14	2020	coal:sh 80:20	high	50:30:20	coal p + w	mod ov in sh	mod/y + y-o sp	EXTRACTED	0.76 (25)
MOB 15	2100	sh:coal 60:40	mod/high	60:10:30	p + wp	lt ov in sh	mod/o-y + y-o sp mn resin globs in coal tr Bot . frags in sh	EXTRACTED 6.12% TOC 181 HI	0.80 (25)
MOB 15.5	2130	silty sh:coal 90:10	mod	30:60:10	p	mod ov in sh	dull/y-o sp + f in coal	-	0.83 (25)

MILTON OF BALGONIE-1 NT 33174 69933

Sample Number	Depth (ft)	Lithology (percent)	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (no. readings)
MOB 15.6	2170	siltst:coal 60:40	high	50:25:25	p	mod ov in siltst	mod/o sp + resin in coal	-	0.94 (25)
MOB 15.7	2190	siltstone 100	high	30:60:10	p	lt ov + w	dull/o sp	-	1.07 (13)
MOB 15.8	2230	siltst:coal 90:10	high	20:60:20	p	lt/mod ov + f + w	dull/o sp	-	0.90 (13)
MOB 16	2280	sh:siltst:ssst 70:20:10	mod	20:60:20	wp + p	mod/heavy in sh lt/mod in siltst + f	dull/or liptodet	EXTRACTED sh calc in places	0.91 (12)
MOB 17	2310	siltst:sh:ssst 50:30:20	mod	20:70:10	p	mod ov in siltst + f	dull/or f	-	1.95 (25)
MOB 18	2365 SWC	siltstone 100	high	NDP	p	lt/mod ov + dk f	dull/or matrix fl	EXTRACTED	1.42 (25)
MOB 19	2440	coal:siltst 90:10	high	NDP	coal p + w	no ov in siltst + mn dk f	dull/or f	EXTRACTED	1.91 (25)
MOB 20	2496 SWC	siltstone 100	high	NDP	p	hvy interst -> bit res	v dull/o matrix fl	EXTRACTED	2.46 (25)
MOB 21	2500	calc sh:carb 90:10	high	NDP	p	dk interst -> bit res	dull/or + y min fl	-	2.24 (25)

MILTON OF BALGONIE-1 NT 33174 69933

Sample Number	Depth (ft)	Lithology (percent)	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (no. readings)
MOB 22	2550	calc siltst:coal 40:60	high	NDP	p	mn dk f in siltst	dull/or min fl	-	3.02 (25)
MOB 23	2620	sl silty calc sh 100	high	NDP	wp	mod/dk ov -> bit res dk interst w	dull/or matrix fl	-	3.32 (25)
MOB 24	2680	calc siltst:ss 60:40	high	NDP	wp	mod ov in siltst dk interst in sst	mod/y + o min fl	-	4.00 (22)
MOB 25	2730	calc siltst:ss:carb mod 85:10:5	mod	NDP	p	v hvy interst	dull/y + o min fl	-	3.21 (25)
MOB 26	2766 SWC	calc siltst 100	barren	NDP	-	no ov, mn dk f	dull/y min fl	-	NDP
MOB 27	2780	siltstone 100	low	NDP	p	no ov, black w	-	-	2.48 (25)
MOB 28	2800	calc siltst:sh 70:30	low	NDP	p	no ov	pty dull or min fl	-	2.41 (14)
MOB 29	2820	ign:calc sh:carbarg tr 70:20:20	tr	NDP	p	lt ov in siltst hvy in carbarg	-	-	1.81 (5)
MOB 30	2830	ign:sh 90:10	tr	NDP	p	no ov	-	metallic mins present in sh	NDP

MILTON OF BALGONIE-1 NT 33174 69933

Sample Number	Depth (ft)	Lithology (percent)	Organic Content	Vit:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (no. readings)
MOB 31	3320	ign:siltst 90:10	low	NDP	p	no ov	-	-	1.62 (2)
MOB 32	3340	ign:sh 80:20	low	NDP	p	black f + w -> bit res in sh	-	-	2.80 (5)
MOB 33	3350	ign:sh 70:30	low	NDP	p	dk ov -> bit res	-	-	3.80 (6)
MOB 34	3380	silty sh:ign:coal 70:30:tr	low	NDP	wp	no ov + ab black f	-	severe strain anisotropy in vit in coal	3.74 (14)
MOB 35	3400	sh:silty sh:coal 50:45:5	low/mod	NDP	p	mod/dk ov + w -> bit res	-	strained semi-fusinite	3.54 (13)
MOB 36	3450	sst:sh 90:10	low	NDP	p	mod ov + dk f in sh	-	-	3.17 (3)
MOB 37	3530	calc sh:ssst 60:40	low	NDP	p	mod/dk ov	mod/y min fl	-	3.38 (20)
MOB 38 SWC	3550	sl calc: silty sh 100	mod/high	NDP	p	mod/dk ov -> bit res	v dull/o-r matrix fl	-	2.11 (25)
MOB 39	3600	calc sh:ssst 90:10	high	NDP	p	mod/dk ov -> bit res	dull/y in carb	-	2.38 (25)

MILTON OF BALGONIE-I NT 33174 69933

Sample Number	Depth (ft)	Lithology (percent)	Organic Content	V:f:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (no. readings)
MOB 40	3690	siltst:sst:coal 80:10:10	high	NDP	p	mod ov in sh dk interst w in sst	v dull/o matrix fl	EXTRACTED hydrocarbons in fusinite cavities	1.44 (25)
MOB 41	3698	siltst 100	mod/high	NDP	wp + p	mod ov + f	dull/o matrix fl	extensive Fe staining	1.21 (25)
MOB 42	3730	siltst:sst:coal 60:40:tr	mod	NDP	wp + p	mod ov	int/y h-c	hydrocarbons in sst + siltst	1.22 (25)
MOB 43	3800	calc sh:calc siltst: sst 50:30:20	mod	60:40:0	p + wp	mod ov + f	mod/o matrix fl int/y h-c	hydrocarbons in sst + siltst	0.92 (26)
MOB 44	3850	marl:sh 60:40	low	10:85:5	p	mod ov + f + w	dull/mid o f mod/y carb fl	-	0.99 (10)
MOB 45 SWC	3922	sl calc. siltst 100	mod	5:95:tr	w + p	lt/mod ov + interst w	dull/o-y min fl dull/lt o matrix fl	matrix Fe stained ab sid	0.91 (17)
MOB 46	3970	calc sh:ign 70:30	mod	5:90:5	wp + p	mod ov dk f + w	dull/mid o matrix fl in sh	-	1.35 (20)
MOB 47	4010	calc sh: coal 95:5	low	10:60:30	coal p + wp	mod/dk + w	dull/mid o liptodet + sp + res mn algal cysts	-	0.75 (18)

MILTON OF BALGONIE-1 NT 33174 69933

Sample Number	Depth (ft)	Lithology (percent)	Organic Content	V.I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (no. readings)
MOB 48	4060	calc sh: ign 80:20	low	5:70:25	wp	lt ov + f + w mn dk ov in sh	tr mod/y-o algal bodies dull/mid+deep or sp	-	0.82 (6)
MOB 49	4170	siltst:sh 70:30	high	30:40:30	w + wp	mid/dk ov	mod/lt o sp + liptodet mn Bot.	74% TOC 158 HI	0.83 (17)
MOB 50	4200	calc sh:silty sh 70:30	high	5:65:30	wp	dk ov in calc sh lt ov in silty sh	dull/lt+mid or sp + liptodet tr Bot.	tr ign	0.84 (14)
MOD 51 SWC	4272	shale 100	mod	tr:30:70	p	lt ov + w sp	mod/mid or sp y algal f mn Bot	-	0.72 (10)
MOB 52	4490	sh:calc sh:ign 60:30:10	low/mod	5:75:20	wp	mod ov in sh	mod/lt o + y-o sp mn Bot	EXTRACTED	0.74 (9)
MOB 52.5	4720	silty sh 60:30:10	low	10:80:10	st + wp	mod ov in sh interst in sst	mod/lt o sp + liptodet mn Bot	-	0.86 (13)
MOB 53 SWC	4768	marl 100	low	0:90:10	NDP	lt ov + f	dull/mid o f ab y algal cysts	-	NDP
MOB 53.5	4870	sh:calc siltst 60:40	mod	10:70:20	p	mod/hvy in sh lt ov + w in siltst	mod/dull lt o sp	-	0.88 (21)

MILTON OF BALGONIE-1 NT 33174 69933

Sample Number	Depth (ft)	Lithology (percent)	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (no. readings)
MOB 53.6	4920	siltst:sh 60:40	mod	5:45:50	wp + st	lt/mod ov	mod/mid o sp + liptodet sh matrix filled	25.7% TOC 339 HI	0.83 (15)
MOB 54 SWC	5004	siltstone 100	mod	10:70:20	w	lt/mod + f	dull/deep o sp + liptodet	Fe stained matrix	0.88 (19)
MOB 53.7	5060	sh:siltst 70:30	mod	5:55:40	wp + w	lt/mod ov in siltst mod/dk ov in sh	dull/mid o sp tr <i>Bot</i>	-	0.77 (11)
MOB 53.8	5100	calc sh 100	low/mod	5:75:20	w + wp	mod ov tr <i>Bot</i>	mod/y-o + lt o sp + liptodet 126 HI	EXTRACTED 1.66% TOC	0.82 (9)
MOB 53.9	5150	sh:silty sh:ign 55:40:5	low/mod	5:70:25	p	lt ov in silty sh mod ov in sh	mod/y-o + lt o sp + liptodet	EXTRACTED	0.80 (13)
MOB 53.91	5200	siltst:ign 75:25	low	10:80:10	wp	lt/mod ov in siltst	mod/lt-mid o sp + liptodet tr <i>Bot</i>	two populations of material	3.47 (7) 0.94 (3)
MOB 53.92	5250	siltst:sh 70:30	low	10:75:15	wp	lt no ov + f	dull/deep o sp mn dull/o f	EXTRACTED	0.90 (12)
MOB 53.93	5360	calc sh:sst:siltst 50:30:20	low/mod	5:75:20	p	dk interst	dull/mid-deep o sp + f dull/deep o matrix fl int/y h-c in sst	tr ign hydrocarbons in sst	0.84 (12)

MILTON OF BALGONIE-1 NT 33174 69933

Sample Number	Depth (ft)	Lithology (percent)	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (no. readings)
MOB 53.94	5410	calc sh:siltst 50:50	mod	5:65:30	wp	lt ov + f in siltst mod/hvy in calc sh	dull/lt o sp + f	-	NDP
MOB 55	5460	sh 100	low/mod	5:75:20	p	mod ov	mod/y-o + lt o sp + liptodet tr int y algal o m	EXTRACTED 5.63% TOC 284 HI	0.72 (4)
MOB 56 SWC	5500	silty marl 100	low	tr:100:tr	p	lt ov	tr v dull/deep o sp	-	0.97 (10)
MOB 57	5600	siltst:sh 60:40	mod	5:85:10	p	lt/mod ov	mod/mid o sp + liptodet	EXTRACTED	0.91 (6)
MOB 58	5720	marl:sh 70:30	mod/high	5:70:25	p	lt/mod ov	dull/deep o sp + liptodet deep/o min fl	EXTRACTED	0.94 (6)
MOB 59 SWC	5779	calc sh 100	mod	tr:80:20	p	mod/dk ov	dull/or matrix fl + sp + f	-	NDP
MOB 59.1 SWC	5880	sh:silty sh 70:30	mod	5:85:10	p	lt/mod ov + f	dull/mid o f dull/mid o matrix fl tr algal om	-	1.12 (4)

MILTON OF BALGONIE-1 NT 33174 69933

Sample Number	Depth (ft)	Lithology (percent)	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (no. readings)
MOB 59.2 SWC	5890	siltstone 100	mod	tr:100:tr	p	lt ov + f	tr dull/deep o sp + liptodet	-	1.20 (14)
MOB 59.3	5920	silty sh:sh 80:20	high	30:70:tr	p	lt ov + ab f	tr dull/deep o f dull/deep o matrix fl	-	1.00 (16)
MOB 59.4	5950	siltst:sh:carb 50:40:10	mod	40:50:10	p	mod ov	mod/mid o matrix fl int/interst y h-c in sst	hydrocarbons in sst	0.95 (10)
MOB 59.5	5990	sh:calc sh:ss 60:20:20	mod	20:70:5	p + wp	mod/hvy ov	mod/mid+deep o sp + liptodet int/y h-c in sst and in calc areas	hydrocarbons in sst two populations of material	3.32 (18) 1.14 (18)
MOB 60	6050	sl silty sh 100	mod	25:70:5	p + wp	mod ov + dk w hvy in places	mod/mid o sp	two populations of material	2.73 (4) 1.10 (16)
MOB 61	6080	siltstone 100	mod	30:50:20	p	mod ov + f	mod/mid o w + sp	tr ig two populations of material	1.29 (4) 0.88 (3)
MOB 62	6130	silty sh: calc sh:ign 60:30:10	mod	30:65:5	p	mod/hvy ov	dull/mid-deep o liptodet	-	1.28 (8)

MILTON OF BALGONIE-1 NT 33174 69933

Sample Number	Depth (ft)	Lithology (percent)	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (no. readings)
MOB 63	6180 sst:ign	marl:siltst: 50:10:30:10	mod	30:60:10	st + p	lt ov + f + liptodet	mod/mid o sp in sst dull/deep o matrix fl int/interst y h-c in sst	hydrocarbons	1.10 (23)
MOB 64	6274	siltstone 100	mod	30:60:10	p	lt ov + ab f	dull/deep o liptodet	-	1.13 (18)
MOB 65	6340	marl:siltst:sst 40:30:30	mod	tr:90:10	p	lt/mod ov + f	dull/deep o f int/y h-c in sst	hydrocarbons in sst	NDP
MOB 66	6460	silty sh:sh 70:30	mod	30:60:10	p + st	mod ov + f	dull/deep o f	-	1.12 (7)
MOB 67	6480	calc sh:siltst 60:40	mod	30:70:0	p	v hvy ov	-	-	1.26 (12)
MOB 68	6490	siltst:calc sh:sst 70:20:10	low	NDP	w + wp	hvy ov dk interst in sst	dull/deep o matrix fl dull/deep o min fl	-	3.14 (8)
MOB 69	6500	marl:sh:sst:ign 60:20:10:10	low	NDP	p	dk hvy in sh v dk interst in sst	tr dull/deep o min fl	-	4.54 (1)

Samples collected from Burnah (now Premier)

Oil sample analysed from oil-bearing interval at 3870'-3912'

MACKIES MILL NT 33054 69794

Sample Number	Depth (ft)	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance % R _v average (n° readings)
I 16	2450	carbarg	-	20:40:40	w	pty hvy + w	mod-int/y sp + amorph om ab dull/y om in bkg	-	0.65 (25)
KBBI 16	2646	siltstone + sst lamns	high	10:60:30	p	lt ov + interst	mod/o-y sp tr int/y f + w	-	0.50 (4)
SBO 4777	2710	carbarg	-	70:30:tr	st + w	lt/mod ov + w	mod/o-y + y-o sp	-	0.77 (25)
BM 16	2812	calc sh	mod	5:75:20	p	lt ov + blotches	mod/y-o + lt o sp + f dull/o carb fl	-	0.82 (10)
JSB 16	3092	sl silty sh	mod	30:70:tr	wp	lt/mod ov	dull/o f	-	0.91 (25)
ST 16	3558	sh	low	NDP	wp	lt ov + blk w	-	-	2.71 (3)

Sample prefixed SBO collected from BGS corestore at Newbattle Abbey.

All other samples provided by Mr. P. Brand.

THORNTON BRIDGE NT 32889 69722

Sample Number	Depth (ft)	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (n° readings)
C 69	1128	sl calc siltst	high	20:50:30	p	w	mod/lt o sp dull/y carb fl	-	0.64 (25)
I 69	1515	sh	high	5:70:25	p	lt/mod ov + f	mod/y + o-y sp int/y f	-	0.66 (11)
BM 69	1868	siltstone	high	20:50:30	wp + w	hvy interst matrix sat in places	mod/y + o-y sp tr dull/brown bituminous om tr int/y f	-	0.48 (25)
SBO 4833	2018	siltstone	high	10:60:30	wp	lt ov + f	mod/lt o sp + cut	-	0.57 (9)
JSB 69	2109	silty sh	high	5:70:25	wp	lt ov	dull/mid o sp + liptodet dull/o matrix fl	-	0.78 (2)
ST 69	2644	silty sh	low	NDP	p	mod ov -> bit res	-	-	3.27 (23)

Sample prefixed SBO was collected from the BGS corestore at Newbattle Abbey.

All other samples provided by Mr. P. Brand.

LOCHHEAD NT 33219 69659

Sample Number	Depth (ft)	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance % R _v average (n° readings)
C 136	2077	sh	low	tr:90:10	p	lt ov + f	mod/y sp	-	0.48 (6)
I 136	2977	sh	mod	10:60:30	wp	lt ov + f + blotches	20% int/y f 10% mod/y + o-y sp	EXTRACTED ab py in places	0.54 (10)
KBI 136	3251	calc sh	high	10:50:40	wp	mod/hvy ov	30% int/y f 10% mod/y sp tr int/y w	-	0.54 (10)
SBO 4558	3256	silty sh	mod	10:90:tr	wp	lt ov + f	mod/y-o + o-y liptodet	-	0.74 (25)
SBO 4563	3264	silty sh	mod	20:60:20	wp + w	lt ov	mod + dull/lt- mid o sp tr int/y w	-	0.70 (15)
SBO 4563/3	3265	silty sh	mod	10:70:20	p	lt ov	mod/lt o + y-o sp tr Bot	ab Fe staining	0.62 (12)
SBO 4565	3267	sl silty sh	high	10:70:20	wp	mod ov	mod/mid o sp mod/y w	ab Fe ox	0.69 (18)
BM 136	3556	sh	high	10:80:10	p	lt ov + f	mod/lt-mid o sp	-	0.99 (8)

Samples prefixed SBO sampled from the BGS corestore at Newbattle abbey.

All other samples provided by Mr. P. Brand.

BORELAND NT 33039 69422

Sample Number	Depth (ft)	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance % R _v average (n ^o readings)
B 1	224	v calc carbarg	v high	tr:40:60	w	matrix sat	int/y + o-y sp + terrest debris tr int/y w	-	0.39 (4)
B 2	993	sh	mod	20:70:10	w	lt ov + w	mod/o-y sp	-	0.48 (24)
B 3	1370	silty sh	high	tr:70:30	wp	≈no ov + ab f	20% dull/y f 10% mod/lt o + y-o sp	-	0.51 (4)
C 44	1797	sh	high	tr:80:20	p	lt ov + f	int/y f tr mod/y sp	-	0.42 (1)
C 44a	1827	sl silty sh	mod	30:50:20	p	lt ov + w	mod/y + o-y sp	-	0.56 (25)
I 44	2532	sh	high	5:90:50	p	lt ov + f + blotches	mod/y-o sp	-	0.76 (18)
KBBI 44	2738	sh	high	20:30:50	wp	hvy ov	dull/y-o sp int/y f tr <i>Bot</i>	-	0.56 (25)
BM 44	3106	sh	high	10:80:10	p	lt ov	mod + dull/o + o-y sp + amorph blotches	-	0.75 (18)

All samples provided by Mr. P. Brand.

FIRTH OF FORTH TOWER BORE N°1 NT 33002 68789

Sample Number	Depth (ft)	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance % R _v average coals %R _v max (n° readings)
FOF 1a	1212	siltstone	mod	tr:60:40	wp	≈no ov + w	30% int/y w 10% dull/lt o sp	-	0.51 (8)
SBO 4427	1248	silty sh	mod	10:85:5	p	lt ov + f	mod/y-o + lt o sp + liptodet	ab sid blotches	0.59 (12)
FOF 1b	1326	py carbarg	-	20:10:70	w + st	mod/hvy ov	40% int/y cysts + w 30% mod/lt o sp	EXTRACTED	0.54 (25)
FOF 1c	1415	py sh	high	tr:20:80	w	dk ov + w	60% int/y w 10% mod/lt o sp 10% mod/y Bot	tr amorph ?algal blotches	0.48 (6)
C 1	1799	sl calc silty sh	high	5:90:5	p	no ov + f	dull/mid o sp tr Bot	-	0.70 (7)
I 1	2357	sh	mod	5:90:5	p	lt ov	mod/lt o sp	-	0.73 (7)
1312	2397	coal	-	ND	-	-	ND	Cardenden Coal	Smithy 0.74 (25)
1324	2463	coal	-	ND	-	-	ND	Lochgelly Blackband Ironstone	0.69 (25)

FIRTH OF FORTH TOWER BORE N°1 NT 33002 68789

Sample Number	Depth (ft)	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance % R _v average coals %R _v max (n° readings)
1323	2500	coal	-	ND	-	-	ND	Little Splint Coal	0.73 (25) Coal
1314	2521	coal	-	ND	-	-	ND	Rough Coal	0.74 (25)
KBBI 1	2563	v calc sh	low	10:50:40	wp + w	mod ov + f	mod/o-y sp + liptodet	Kely Blackband Ironstone	0.45 (10)
1322	2567	coal	-	ND	-	-	ND	Kely Main Coal	0.68 (25)
1327	2574	coal	-	ND	-	-	ND	Jersey Coal	0.71 (25)
1317	2628	coal	-	ND	-	-	ND	Swallowdrum Coal	0.70 (25)
1315	2687	coal	-	ND	-	-	ND	Lochgelly Splint Coal	0.69 (25)
BM 1	2791	sh	mod	10:70:20	p	v lt ov + w	mod/y-o + lt o sp	-	0.60 (11)
1326	2802	coal	-	ND	-	-	ND	Glasse Coal	0.76 (25)
1218	2911	coal	-	ND	-	-	ND	Jewel Coal	0.77 (25)
1321	2925	coal	-	ND	-	-	ND	Five Foot Coal	0.78 (25)

FIRTH OF FORTH TOWER BORE N°1 NT 33002 68799

Sample Number	Depth (ft)	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance % R _v average coals %R _v max (n° readings)
1320	2988	coal	-	ND	-	-	ND	Dunfermline Splint Coal	0.81 (25)
1316	3001	coal	-	ND	-	-	ND	Dunfermline Under Coal	0.80 (25)
JSB 1	3017	sl silty sh	mod/high	10:80:10	wp	lt ov + w + blotches	dull/mid o sp + liptodet	-	0.85 (25)
1319	3150	coal	-	ND	-	-	ND	2 sample popns	0.98 (25) 0.81 (25)

Numbered samples (coals) were collected from the NCB palynological collection at Wath-upon-Dearne.

All other samples provided by Mr. P.J. Brand.

FIRTH OF FORTH TOWER BORE N°2 NT 33156 68739

Sample Number	Depth (ft)	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance % R _v average coals %R _v max (n° readings)
FOF 2a	248	sh	high	30:30:40	w + wp	dk ov	mod + int/y-o sp tr int/y w + h-c	tr hydrocarbons	0.49 (25)
2569	290	coal	-	ND	-	-	ND	Barnraig Coal	0.66 (25)
2570	425	coal	-	ND	-	-	ND	Coxtool Coal	0.64 (25)
2573	492	coal	-	ND	-	-	ND	-	0.68 (25)
FOF 2b	568	carbarg	-	30:20:50	w	matrix sat	30% int/y liptodet 20% mod/y-o sp	-	0.52 (25)
2578	594	coal	-	ND	-	-	ND	-	0.71 (25)
2582	687	coal	-	ND	-	-	ND	-	0.65 (25)
2583	755	coal	-	ND	-	-	ND	EXTRACTED	0.64 (25)
QMB 2	769	py silty sh	mod	10:70:20	w + wp	lt/mod ov	mod/y + o-y cysts + w	EXTRACTED 2 vit popns ab Fe ox blotches	0.47 (25) 0.66 (8)
2584	789	coal	-	ND	-	-	ND	-	0.70 (25)
2587	914	coal	-	ND	-	-	ND	-	0.63 (25)
2589	1016	coal	-	ND	-	-	ND	-	0.66 (25)

FIRTH OF FORTH TOWER BORE N^o2 NT 33156 68739

Sample Number	Depth (ft)	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance % R _v average coals %R _v max (n ^o readings)
2590	1056	coal	-	ND	-	-	ND	Branxton Coal	0.64 (25)
FOF 2c	1183	algal carbarg	-	20:10:70	w	hvy ov	mod + dull/o-y sp	50% int/o-y Bot 10% mod/o-y sp 10% int/y liptodet	0.46 (25)
2591	1185	coal	-	-	-	-	ND	Boreland Coal	0.65 (25)
2592	1260	coal	-	-	-	-	ND	Lower Sandwell Coal	0.66 (25)
2593	1341	coal	-	-	-	-	ND	-	0.68 (25)
2595	1459	coal	-	-	-	-	ND	Dysart Main Coal	0.69 (25)
2596	1523	coal	-	-	-	-	ND	Lower Dysart Coal	0.71 (25)
SBO 4414	1575	calc sh	high	10:80:10	p	no ov + tr f	mod/o-y liptodet tr Bot	-	0.59 (8)
2597	1606	coal	-	ND	-	-	ND	-	0.70 (25)
FOF 2d	1613	py sh	mod	30:50:20	w + st	lt ov	15% int/y liptodet 5% mod/y-o + o-y sp	-	0.50 (25)

FIRTH OF FORTH TOWER BORE N^o2 NT 33156 68739

Sample Number	Depth (ft)	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance % R _v average coals %R _v max (n ^o readings)
2600	1668	coal	-	ND	-	-	ND	Lethamwell Coal	0.72 (25)

Sample prefixed SBO collected from the BGS corestore at Newbattle Abbey.

Numbered samples (coals) collected from the NCB palynological collection at Wath-upon-Dearne.

All other samples provided by Mr. P. Brand.

FIRTH OF FORTH TOWER BORE 3 NT 33954 69818

Sample Number	Depth (ft)	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance % R _v max
SBO 4363	666	coal	-	NDP	-	-	dull/deep y-o min fl	much brecciated; cracks filled with carb	1.55 (25)
FOF 3a	1084	siltstone	high	tr:100:0	wp	lt ov + ab f	-	-	0.95 (11)
FOF 3b	1420	sh	mod	NDP	w	hvy ov -> bit res	-	-	1.86 (11)
SBO 4383	1631	carbarg	-	40:30:30	st	no ov	mod/y-o + lt o sp	vit exudes bituminous/humic om	0.67 (25)
SBO 4385	1635	ashy sh	tr	10:90:0	w	no ov	-	-	0.87 (17)
SBO 4398	1688	siltstone	high	5:90:5	p	no ov + f	mod/y-o + lt o sp	-	0.62 (7)
SBO 4404	1731	green ash + blk spots	-	-	-	-	-	spotting is possibly mineral matter	NDP

Samples prefixed FOF provided by Mr. P. Brand.

SBO 4385 collected from the corestore at Murchison House.

All other samples collected from the BGS corestore at Newbattle Abbey.

GLENROTHES BGS NO 32561 70314

Sample Number	Depth (ft)	Lithology (percent)	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (no. readings)
OPG 1	30	calc siltst 100	mod	NDP	p + w	mod/hvy -> bit res	-	ab Fe oxides	3.32 (25)
OPG 2	33	calc siltst:silty sh:ign 40:40:20	mod	NDP	st + p	v hvy ov + interst w -> bit res	-	-	3.80 (25)
OPG 3	52	sh:siltst 95:5	low	NDP	p	hvy ov -> bit res	-	-	4.60 (1)
OPG 4	62	ign:silty sh 80:20	low	NDP	p	mod/hvy ov in silty sh	-	-	3.51 (22)
OPG 5	79	siltst:ign 90:10	mod	NDP	p + wp	v hvy interst in siltst	-	-	4.03 (25)
OPG 6	82	ign:siltst 80:20	low/mod	NDP	p	pty hvy - -> bit res	-	-	3.88 (18)
OPG 7	85	ign:siltst 95:5	low	NDP	p	mod ov	-	tr poor mosaic in some vit	3.95 (12)
OPG 8	108	siltst:ign 90:10	mod	NDP	wp + p	blk interst -> bit res	v dull/deep o carb foss fl	vesiculation in some phyt fossil frags	3.84 (9)
OPG 9	115	siltst:ign 90:10	high	NDP	p	pty hvy	-	-	3.99 (25)

GLENROTHES BGS NO 32561 70314

Sample Number	Depth (ft)	Lithology (percent)	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (no. readings)
OPG 10	125	silty sh:ig 95:5	high	NDP	p	v hvy interst + pty hvy -> bit res	-	-	4.29 (24)
OPG 11	131	sl calc siltst:ign 90:10	high	NDP	p	v hvy interst + pty hvy -> bit res	-	-	4.30 (24)
OPG 12	141	siltst:ign 70:30	high	NDP	p + wp	v hvy interst -> bit res	-	-	3.96 (23)
G 1	152	calc sh	mod	NDP	w	no ov + blk w	-	-	NDP
G 2	180	sst	barren	-	-	no ov + ab blk f -> bit res	-	tr Fe oxides	NDP
G 3	187	marl	v low	NDP	w	mod ov -> bit res	-	-	NDP
G 4	522	sh	≈barren	-	-	no ov + tr dk f	-	lt o matrix stain oxidised phyls	NDP
G 5	555	silty sh	mod	NDP	p	no ov + tr interst blk f + w	-	-	2.61 (25)
G 6	577	marl	low	NDP	p	no ov + tr blk f	-	oxidised phyls -> haem	3.05 (1)
G 7	632	calc sh	mod/high	NDP	p	dk ov -> bit res	-	-	4.27 (16)

GLENROTHES BGS NO 32561 70314

Sample Number	Depth (ft)	Lithology (percent)	Organic Content	V:I:E (percent)	Vitritinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (no. readings)
G 8	676	marl	low	NDP	wp	dk ov + f + w	-	-	2.86 (10)
G 9	714	silty marl	high	70:30:0	p	lt/mod ov	-	-	2.20 (21)
G 10	735	calc sh	low	80:20:0	p	no ov + dk w	-	-	2.12 (21)
G 11	784	marl	low	10:90:0	p	lt ov + dk w	-	listric surfaces	1.96 (13)
G 12	824	marl	low	NDP	wp + p	lt ov + dk f + w	-	-	1.80 (22)
G 13	879	calc sh	low	NDP	p	no ov + dk f	phys v small + oxidised	-	NDP
G 14	915	marl	≈barren	NDP	p	no ov + w + blotches	pty v dull/deep o carb fl	listric surfaces	NDP
G 15	950	marl	low	tr:95:5	p	lt ov + dk w	dull/deep o sp + liptodet	-	1.37 (2)
G 16	978	marl	v low	0:100:0	p	lt ov + f	pty dull/deep o min fl	-	NDP
G 17	1019	sl calc sh	low	0:100:0	p	lt ov	dull/deep o carb fl	-	NDP
G 18	1066	sh	low	tr:80:20	p + wp	lt ov	10% mod-dull/y blotches 10% mod/lt o sp	-	0.93 (2)
G 19	1094	calc sh	barren	NDP	-	no ov + mn f	-	-	NDP

GLENROTHES BGS NO 32561 70314

Sample Number	Depth (ft)	Lithology (percent)	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (no. readings)
G 20	1121	marl	low	0:100:0	-	no ov + mn f	-	-	NDP
G 20.5	1136	marl	low	tr:100:0	p	no ov + f	-	ab red oxidised f	NDP
G 21	1169	marl	v low	0:100:0	-	no ov	dull/mid + deep o carb fl	-	NDP
G 22	1230	silty sh	barren	-	-	oxidised f	-	matrix reddened ab red f	NDP
G 23	1655	sst	v low	tr:100:0	p	no ov	-	-	0.63 (2)

Samples prefixed OP denote open hole cuttings and were sampled from plates in the BGS at Murchison House.

All other samples were taken from cores located in the BGS corestore at Gilmerton.

WESTFIELD IGS NT 32066 69778

Sample Number	Depth (ft)	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (no. readings)
W 1	164	sl silty sh	mod	40:50:10	wp + p	lt ov + w	int-mod/y + o-y sp tr int/y w	vit phys v small	0.53 (5)
W 2	169	sh	low	5:70:25	wp	lt ov + w	mod/o-y sp ab int/y w	-	0.60 (6)
W 3	171	sh	low	tr:95:5	p	≈no ov + w	mod/o-y + lt o sp ab int/y f + w	-	NDP
W 4	176	sh	low	30:60:10	w	lt ov ab w + blobs	mod/y-o sp int/y f	vit exudes brown bituminous/humic material	0.31 (4)
W 5	179	sh	low	5:90:5	p	none/lt ov	mod/y-o + lt o sp ab int/y f + amorph y blobs	amorphous blobs may be degraded algal cysts	0.64 (3)
W 6	182	sh	mod/high	50:50:10	st + w	no ov + ab w	mod/o-y + y-o sp tr int/y w pty dull/amorph bkg fl	-	0.62 (25)
W 7	260	py sh	high	NDP	wp	mod ov	-	py -> haem reddened matrix	1.57 (25)
W 8	260	sl calc sh	high	NDP	wp	none	-	py -> haem	1.64 (25)

WESTFIELD IGS NT 32066 69778

Sample Number	Depth (ft)	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (no. readings)
BEA 2821	269	coal	-	30:30:40	"scruffy"	-	mod/o-y sp tr int/y resin tr in/y cut	cannel layers present coal is probably hypautochthonous	0.52 (25)
W 9	397	canneloid sh	v high	10:20:70	w + wp	v hvy ov	dull/y-o + lt o sp ab int/y f mn Bot	-	0.55 (25)
BEA 2856	405	sh	high	10:80:10	wp	lt ov + f	mod/lt + mid o sp	-	0.64 (25)
W 10	438	silty sh	high	10:80:10	wp	lt ov	dull/y-o + o-y sp ab int/y f + w tr Bot	-	0.51 (4)
W 11	442	silty sh	high	10:60:30	p	mod/dk ov + blobs	int y/w + f tr mod/o-y sp	EXTRACTED	0.47 (12)
W12	444	silty sh	high	tr:75:25	p + wp	mod ov	mod/y-o sp int/y f	-	0.58 (2)
W 13	502	silty sh	high	tr:80:20	p	mod ov + f	mod/y-o + lt o sp ab int/y f	-	0.60 (1)
W 14	507	sh	high	0:95:5	p	mod ov	dull/lt o sp mn mod/y+y-o f	-	NDP
W 15	513	sh	mod	0:95:5	p	lt ov + f	dull/lt o sp ab int/y f	-	NDP
WESTFIELD IGS NT 32066 69778									

Sample Number	Depth (ft)	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Naure of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (no. readings)
W 16	515	sh	low	0:95:5	p	lt ov	dull/dk o sp tr int/y f	-	NDP
W 17	519	sh	v low	0:100:tr	p	lt ov	dull/o-y sp	-	NDP
W 18	540	sh	high	5:90:5	p	lt ov	dull/y-o lt o sp	-	0.68 (6)
W 19	559	sh	mod	0:100:0	p	lt ov	-	-	NDP
C 418	567	calc + silty sh	high	5:95:0	p	lt ov + f	-	-	0.45 (8)
W 20	571	sh	mod	tr:95:5	p	lt ov + f	mod/y-o f	-	0.59 (3)
W 21	578	sh	mod	10:80:10	p	lt/mod ov	mod-dull/lt o sp	-	0.59 (5)
W 22	584	sh	mod	10:70:20	wp	lt ov + blotches	dull/lt o sp mn mod/y f	-	0.61 (12)
W 23	595	py sh	=barren	tr:100:tr	wp	mod ov	mod/lt-mid o f	-	0.76 (1)
BEA 2888	597	sh	tr	NDP	p	hvy ov -> bit res	-	-	2.49 (4)
W 24	608	silty sh	mod	NDP	wp	hvy ov -> bit res	-	sample is a sediment leaf within sill	2.52 (17)
W 25	608	silty sh	mod	NDP	p	hvy ov -> bit res	-	sample is a sediment leaf within sil	2.02 (15)

WESTFIELD IGS NT 32066 69778

Sample Number	Depth (ft)	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (no. readings)
BEA 2878	610	coal	-	NDP	-	-	tr int/y h-c	U. Hirst Coal	2.46 (25)
BEA 2883	610	siltstone	mod	NDP	w	hvy int -> bit res	-	-	2.43 (13)
BEA 2940	688	sh	-	-	-	no ov	-	clasts in sill	NDP
BEA 2941	691	siltstone	≈barren	NDP	p	lt ov -> bit rest	-	-	2.89 (1)
BEA 2966	781	siltstone	high	NDP	w	mod/hvy ov -> bit res	-	-	1.93 (24)
BEA 3100	985	coal	-	NDP	-	-	-	Craig Coal heavily calcitised	3.06 (25)
W 26	1011	canneloid sh	high	30:30:40	wp	v hvy ov	dull/deep o sp + resin	-	0.50 (25)
W 27	1012	canneloid sh	high	30:30:40	wp	v hvy ov	dull/deep o sp + resin	EXTRACTED	0.53 (18)
BEA 3074	1014	cannel coal	-	30:30:40	st + w	-	dull/o-y sp	-	0.53 (25)
BEA 3080	1014	cannel coal	-	30:30:40	st + w	-	mod/lt o sp	-	0.56 (25)
BEA 3086	1057	siltstone	high	5:85:10	wp	no ov + mn f	mod/y-o + lt o sp	-	0.57 (11)
W 28	1130	sh	mod	tr:95:5	wp + p	lt/mod ov + w + f	mod/y-o + lt o sp + liptodet tr int/y w	-	0.61 (1)

WESTFIELD IGS NT 32066 69778

Sample Number	Depth (ft)	Lithology	Organic Content	V:l:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (no. readings)
W 29	1139	calc sh	low	tr:90:10	p	lt/mod ov	mod/y-o + lt o sp	-	0.63 (2)
W 30	1148	sh	mod	tr:80:20	p	≈no ov	mod/y-o _ lt o sp	-	NDP
W 31	1155	sh	mod	tr:80:20	p	lt ov	mod/lt + mid o sp + liptodet	-	0.57 (1)
W 32	1162	sh	high	tr:95:5	p	≈n ov + f	mod/lt o sp + o-y f try int/y f	-	0.64 (1)
W33	1174	marl	mod	0:80:20	-	no ov + f	mod-int/y w + f	-	NDP
W 34	1180	sh	v low	5:90:5	p	no ov	dull/deep o sp + o-y f	-	NDP
W 35	1184	silty sh	high	20:40:40	wp + w	mod ov	10% mod/y-o + lt o sp 30% mod + int/y f + w	-	0.54 (15)
W 36	1200	siltstone	mod	30:50:20	st	lt ov	mod/y-o + lt o sp	contains clasts of higher rank shale with hvy ov bit stain + Bot + int/y f	0.60 (20) 0.96 (10) (clasts)

Samples prefixed W and C provided by Mr. P. Brand from the BGS palaeontological collection at Murchison House.

Samples prefixed BEA were collected from the BGS corestore at Newbattle Abbey.

KELTY BRIDGE-1 NT 31338 69544

Sample Number	Depth (ft)	Lithology (percent)	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information (no. readings)	Reflectance %R _v average
KB 1	90-100	siltstone 100	high	5:85:15	w + wp	mod ov + w	mod/lt o sp tr Bot	ab Fe oxides	0.72 (25)
KB 2	110-120	siltstone 100	high	5:80:15	wp	mod ov + w	mod/lt o sp	ab Fe oxide staining	0.65 (10)
KB 3	210-220	siltstone 100	mod	5:80:15	wp	mod ov + f	mod/lt o sp mn mod/o-y cut	-	0.72 (22)
KB 4	260-270	calc siltst:calc sh 70:30	high in calc siltst none in calc sh	10:80:10	wp	mod ov + f	mod/lt o sp int/y interst h-c around carb	hydrocarbons	0.68 (16)
KB 5	280-290	siltst:sst 80:20	high	5:85:10	w + wp	lt ov + w	mod/mid o sp + terrest debris ply int/y h-c in sst	ab siderite stains hydrocarbons	0.69 (18)
KB 6	350-360	sst:siltst 90:10	mod/high in siltst siltst barren in sst	tr:90:10	p	lt ov + f in siltst	mod/min o sp + terrest debris tr int/y interst h-c in sst	hydrocarbons	0.73 (5)
KB 7	470-480	sl calc py sh:sst 90:10	low	tr:80:20	wp	mod/dk ov + f	dull/deep o f	-	0.87 (1)
KB 8	500-510	sh:sst 70:30	low	tr:100:0	p	=none	mod/mid o sp in sh try int/y interst h-c in sst	hydrocarbons	0.76 (4)

KELTY BRIDGE-1 NT 31338 69544

Sample Number	Depth (ft)	Lithology (percent)	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information (no. readings)	Reflectance %R _v average
KB 9	530-540	calc sh 100	mod/high	20:70:10	wp + p	mod ov + w	v dull/deep o carb fl	-	1.05 925)
KB 10	560-570	calc siltst:sst 90:10	high	20:80:0	wp	mod ov + f	dull/deep o carb fl int/y interst h-c in sst	-	1.11 (25)
KB 11	590-600	calc siltst 100	mod	20:80:10	wp	mod ov + f	dull/deep o carb + matrix fl	ab siderite	1.47 (21)
KB 12	760-770	calc sh 100	v low	0:100:0	p	no ov tr f	pty mod/y carb fl	-	1.94 (5)
KB 13	780-790	calc sh: sh 90:10	v low	0:100:0	p + wp	no/dk ov + f	pty dull/deep o carb fl	-	2.07 (2)
KB 14	820-830	lst:calc sh 60:40	low	NDP	p	lt ov -> bit res	pty mod/y carb fl	-	2.31 (1)
KB 15	880-890	sh:carb:sst 40:30:30	v low	NDP	p	lt ov -> bit res	int/y h-c in sst	hydrocarbons	2.49 (15)
KB 16	980-990	sh:carb 80:20	low	NDP	p	mod ov -> bit res	-	-	3.63 (8)
KB 17	1050-1060	calc sh:siltst 60:40	mod ov	NDP	p	dk interst -> bit res in siltst dk ov -> bit res in calc sh	-	-	4.34 (25)

KELTY BRIDGE-1 NT 31338 69544

Sample Number	Depth (ft)	Lithology (percent)	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information (no. readings)	Reflectance %R _v average
KB 18	1140-1150	sst:sh 90:10	v low	NDP	p	dk interst -> bit res in sst v hvy ov -> bit res in sh	-	-	4.47 (5)
KB 19	1160-1170	sh:sst 90:10	low	NDP	p	mod ov -> bit res in sh hvy interst -> bit res in sst	-	some spotting of shale	4.79 (19)
KB 20	1200-1210	sh:sst 60:40	low/mod	p	NDP	mod ov -> bit res	-	mosaics	4.73 (11)
KB 21	1270-1280	sst:sh 90:10	tr	p	NDP	dk ov -> bit res in sh	-	mosaics	3.71 (4)
KB 22	1290-1300	sh:sst 90:10	low	p	NDP	no ov st in most sh dk ov in some sh none in sst	-	sh with dk ov is probably caved phytos v small	4.13 (1)
KB 23	1350-1360	sl calc sh:sst 70:30	mod ov low in sst	p	NDP	dk ov -> bit res in sh + w tr dk interst w in sst	dull/deep o carb fl	ab cavings	3.90 (11)
KB 24	1390-1400	sh:sst 70:30	mod ov low in sst	wp	NDP	v hvy ov -> bit res in 20% sh no ov + f in 80% sh	-	ab cavings	3.49 (10)

KELTY BRIDGE-1 NT 31338 69544

Sample Number	Depth (ft)	Lithology (percent)	Organic Content	V.I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information (no. readings)	Reflectance %R _v average
KB 25	1430-1440	silty sh:sst 90:10	mod	w + wp	NDP	v hvy ov -> bit res + w	pty v dull/deep o carb fl	10% matrix reddened with Fe oxides	3.93 (14)
KB 26	1450-1460	sl silty sh 100	mod	p	NDP	dk ov -> bit res in 90% sh no ov in 10%	-	ab cavings phyts v small	3.34 (3)

Samples provided by Mr. D.J. McPhater

CALAIS-3 NT 312764 686386

Sample Number	Depth (ft)	Lithology (percent)	Organic Content	V.I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (no. readings)
CAL 1	60-70	coal 100	-	NDP	-	-	-	pty mosaic development	2.03 (25)
CAL 2	60-70	sst:sh 95:5	low	NDP	w	v dk interst in sst v dk ov in sh -> bit res	mod/y h-c in sst	hydrocarbons phyt too small to measure	NDP
CAL 3	80-90	sh:coal 70:30	high	NDP	w	dk ov in sh -> bit res dk interst in sst	-	some py -> haem	1.71 (25)
CAL 4	100-110	sst:sh 70:30	mod in sh low in sst	NDP	w	dk w in sh hvy interst in sst	-	-	1.62 (25)
CAL 6	120-130	coal 100	-	80:20:0	-	-	-	coal picked from sample interval	1.57 (25)
CAL 7	160-170	silty sh 100	mod	NDP	wp	mod ov + dk f + w	v dull/deep o bkg fl	some areas highly calc	1.51 (25)
CAL 8	180-190	silty sh 100	mod	NDP	wp	mod ov + dk f + w	v dull/deep o bkg fl	-	1.46 (25)
CAL 9	210-220	py sh:coal 90:10	mod	NDP	wp	dk ov	-	-	1.39 (25)
CAL 10	290-300	sst:calc sh 70:30	mod	NDP	wp	mod ov sh hvy interst in sst	int/y h-c in sst int/y h-c in fissures dull/y h-c fl	hydrocarbons	1.32 (25)

CALAIS-3 NT 312764 686386

Sample Number	Depth (ft)	Lithology (percent)	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (no. readings)
CAL11	330-340	calc sh:sst 80:20	mod in sh none in sst	NDP	w + wp	mod/dk ov + w	pty int/y h-c in sst	hydrocarbons	1.32 (25)
CAL 12	360-370	calc sh 100	mod	NDP	wp	mod ov + w	-	-	1.25 (25)
CAL 13	390-400	py calc sh 100	low	NDP	wp	hvy ov	mod/y fl in carb	-	1.27 (25)
CAL 14	450-460	siltst:sst 70:30	mod	NDP	wp	lt ov + w	mod/y h-c in sst dull/deep o matrix fl in siltst	hydrocarbons	1.44 (25)
CAL 15	480-490	sl calc sh 100	mod	NDP	wp	mod/hvy ov + w	-	-	1.51 (25)
CAL 16	500-510	sl calc silty sh:sst 90:10	high in siltst none in sst	NDP	w	mod ov	int/y h-c in sst pty mod/deep o carb fl	hydrocarbons	1.68 (19)
CAL 17	550-560	siltstone 100	mod	NDP		hvy ov	-	-	2.07 (22)
CAL 18	570-580	calc siltst	mod	NDP	wp	v hvy ov + f carb fl	dull/deep o	-	3.08 (15)

Samples provided by Mr. D.J. McPhater

CARRON HARBOUR (COLINSWELL), BURNTISLAND NT 32187 68595

Sample Number	Distance Below Teschenite Sill (ft)	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance % R _v average (n° readings)
CH 2	2	sh	low	NDP	p	lt ov -> bit res	-	hard sh with white trap	2.83 (14)
CH 3	3	calc sh	low	NDP	p	hvy interst -> bit res	-	hard blk sh Py C	5.11 (10)
CH 4	4	v calc + sl py	low	NDP	p	v hvy interst -> bit res	-	EXTRACTED extensive carb alteration py -> Fe ox	3.36 (12)
CH 5	10	calc sh	low	5:25:70	p + w	lt ov	60% int/y w 10% int/y ? algal blotches tr mod/y sp mod/y bkg fl	EXTRACTED blotches probably degraded <i>Bot</i>	0.63 (4)
CH 6	3	calc sh	mod	10:50:40	wp	mod ov -> bit res ab dk blotches	mod-int/y ? algal blotches + <i>Bot</i> frags dull/y carb fl	EXTRACTED same horizon as CH 4, but 10' to east py -> haem ab fish scales	0.89 (7)

CARRON HARBOUR (COLINSWELL), BURNTISLAND NT 32187 68595

Sample Number	Distance Below Teschenite Sill (ft)	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance % R _v average (n ^o readings)
CB 1	14.5	py + calc sh	v high	5:15:80	w	lt/mod ov + ab blobs + st	70% int/y lamalg 10% int/y <i>Bot</i> tr mod/y s p <i>Bot</i> degraded	EXTRACTED 10.9% TOC 666 HI lamalg v fine ab fish frags + coprolites	0.30 (25)

KINGHORN-KIRKALDY COAST SECTION NT 32756873 to NT 32806889

Sample Number	Distance Below Q ^d Sill* (ft)	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance % R _v average (n ^o readings)
AB 1	510	py sh	low	5:80:25	p	v lt ov + f	mod/mid o sp mod/y blotches	ab glauc blobs ab shells sample east of fault	0.87 (5)
AB 1.5	510	sl silty sh	low	10:80:10	p	lt ov	mod/y-o + lt o sp frags ab mod/y blotches	sample west of fault, above Abden Bone Bed	0.82 (8)
AB 2	414	py sh	high	10:60:30	wp + p	lt ov + f	20% mod/y-o + lt o sp frags 10% mod/y w mod/y bkg fl	EXTRACTED 4.8% TOC 100 HI ab glauc blobs	0.70 (14)
AB 3	300	py sh	high	80:20:0	st + w	mod ov	-	EXTRACTED matrix reddened vit oxid py -> haem	1.27 (25)
CBLK	180	coal	-	70:20:10	-	-	mod/lt o sp	Tyrie Coal	0.54 (25)
MK 2	102	silty sh	high	5:25:70	w + p	lt ov	40% mod/y-o + lt o sp frags 25% mod/y w 2 pops vit mod/y bkg fl	EXTRACTED 3.5% TOC 135 HI <i>Bot</i> degraded	0.53 (6) 0.37 (11)

KINGHORN-KIRKALDY COAST SECTION NT 32756873 to NT 32806889

Sample Number	Distance Below Q ^d Sill* (ft)	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance % R _v average (n ^o readings)
MK 1	90	silty sh	mod	20:50:30	p	lt ov + f	20% dull/y-o + lt o sp 10% mod/o-y liptodet	-	0.62 (11)
TK 4	42	silty sh	high	30:70:tr	p	lt ov + w + f	mod/mid o sp frags	-	0.76 (10)
TK 3	9	silty sh	high	40:60:tr	p	lt ov + f	mod/mid + deep o sp	EXTRACTED	0.78 (19)
TK 2	3	siltstone	v high	NDP	p + w	mod ov -> bit res	-	ab Fe ox	1.21 (25)
TK 1	0.25	siltstone	mod	NDP	p + w	hvy interst -> bit res	-	-	1.71 (17)

*Determined from BGS measured section.

All samples collected in the field.

BLAIRMAINS N°2 NS 29712 68604

Sample Number	Depth (ft)	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average
2041	686	coal	-	70:20:10	sl scruffy	-	mod/y+o-y sp tr int/y resin blobs	Jenny Pate Coal	0.65 (25)
2043	982	coal	-	60:20:20	scruffy	-	mod/o-y sp	some cannel layers	0.65 (25)
2045	1471	coal 40% cannel	-	60:20:20	-	-	mod/y-o + lt o sp	ab mic	0.80 (25)
2046	1796	coal	-	60:20:20	-	-	mod/lt o sp	Oakley Upper Coal come cannel bands	0.77 (25)
2048	1933	coal	-	50:30:20	-	-	mod/lt o sp tr mod/y cut	Blairhall Main Coal ab mic	0.89 (25)
2050	2038	coal	-	60:20:20	-	-	mod/lt-mid o sp	-	0.84 (25)
2051	2092	coal	-	60:20:20	-	-	mod/mid o sp	Hartley Coal	0.88 (25)
2052	2139	coal	-	60:20:20	-	-	mod/mid o sp + liptodet	micrinitised areas in vit	0.91 (25)
2053	2235	coal	-	70:10:20	-	-	mod/deep o sp	Comrie Two Foot Coal	0.96 (25)
2054	2289	coal	-	70:20:10	-	-	mod/deep o sp	-	0.98 (25)
2055	2430	coal	-	≈90:10:0	-	-	-	-	1.41 (25)

BLAIRMAINS N°2 NS 29712 68604

Sample Number	Depth (ft)	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average
2056	2572	coal	-	70:20:10	-	-	v dull/deep o + r-o sp tr int/y h-c in fus cells	hydrocarbons	1.18 (25)
2059	2676	coal	-	70:20:10	-	-	dull/deep o sp tr int/y h-c in fus cells	Five Foot Coal hydrocarbons	1.35 (25)
2063	2787	coal	-	80:20:0	-	-	tr int/y h-c in fus cells	EXTRACTED Sulphur Coal hydrocarbons	1.49 (25)
2066	2797	coal	-	90:10:0	-	-	tr int/y h-c in fus cells	EXTRACTED hydrocarbons	1.51 (25)
2067	2840	coal	-	80:20:0	-	-	dull/o h-c + tr int/y h-c	hydrocarbons	1.60 (25)

All samples collected from the NCB palynological collection at Wath-upon-Dearne.

RIGHEAD NS 29717 68820

Sample Number	Depth (ft)	Lithology	Organic Content	V:l:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance % R _y average (n ^o readings)
R 1	214	carbarg	-	30:30:40	w	matrix sat	20% int/y sp 20% int/y w + liptodet	-	0.49 (25)
R 2	277	siltstone	high	5:55:40	w	lt ov pty hvy	20% int/y f 10% int/y-o sp	-	0.47 (2)
R 3	310	sh	low	tr:70:30	wp	no ov + mn w	mod/o-y sp + liptodet	-	0.55 (2)
R 4	545	calc sh	low	0:90:10	-	no ov	mod/o-y sp frags	-	NDP
1549	557	coal	-	70:30:10	scruffy ,	-	mod/y-o sp tr resin	EXTRACTED Jenny Pate Coal mn dispersed mic	0.64 (25)
R 5	952	siltstone	high	10:80:10	w + st	no ov + mn w	mod/y + o-y sp	ab Fe ox vit phyt v small and exuding bituminous/humic om	0.52 (5)
R 6	956	sh	high	20:50:30	w	mod ov	20% mod/o-y + y-o sp 10% mod/o-y + y-o liptodet	-	0.55 (14)

RIGHEAD NS 29717 68820

Sample Number	Depth (ft)	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance % R _v average (n° readings)
1550	959	coal	-	70:20:10	scruffy	-	mod/lt o sp tr int/y resin	EXTRACTED Lyoncross Coal	0.64 (25)
1554	1158	coal + cannel lamns	-	50:20:30	-	-	mod/lt-mid o sp	EXTRACTED	0.71 (25)
R 7	1204	sh	mod	5:55:40	wp	mod ov	30% mod + dull/y w 10% mod/y+ o-y sp	ab Fe ox	0.52 (12)
R 8	1221	sh	low/mod	10:40:50	w + st	lt ov + ab f	30% mod/o-y + y-o liptodet 20% mod/y liptodet	-	0.52 (23)
R 9	1241	py sh	mod	tr:30:70	wp	lt ov	40% int/y f + w 30% mod/y + o-y sp + terrest debris tr int/y lamalg	-	0.52 (2)
R 10	1308	calc sh	mod	tr:50:50	p	no ov	40% mod + int/y algal cysts + w 10% mod/y + o-y sp	ab Fe ox	0.58 (1)
R 11	1335	sh	high	30:40:30	w + st	lt ov + ab f	20% mod/o-y sp 10% mod/y liptodet	-	0.57 (16)
1555	1336	coal + cameloid sh lamns	-	50:20:30	-	-	25% mod/lt o sp 5% mod/y cut	EXTRACTED ab cut sl ox vit - py missing	0.65 (25)

Number	(ft)	Content	(percent)	Morphology	Bitumen	Observations	Information	% R _v average (n ^o readings)
1557	1441	coal + canneloid lamns	60:20:20	-	-	mod/lt o sp	Inzievar Coal	0.68 (25)
R 12	1488	silty sh	high	5:75:20	wp	no ov + f	mod/lt o sp tr int/y f	ab Fe ox 0.64 (5)
R 13	1538	siltstone	high	30:50:20	st	lt ov + w	mod/lt o sp tr Bot	ab Fe ox 0.75 (20)
R 14	1541	calc canneloid sh	high	40:30:30	w + st	v hvy-matrix sat	mod/y + o-y sp tr thin int/y lamal + Bot dull/o carb fl	matrix full of bladed carb crystals 0.67 (25)
1559	1543	coal + cannel layers	-	60:20:20	-	mod/gull mid o sp mn int/y cut	ab mic in spore-rich lamns	0.78 (25)
R 15	1576	calc sh	high	40:20:40	w + st	lt ov + pty hvy o sp 10% int/y liptodet 5% Bot	25% mod/y-o + lt ab bladed carb crystals	0.68 (21)
R 16	1595	marl	mod/high	10:10:80	wp	lt/mod ov 50% int/y w 20% dull/lt o sp 10% mod/o-y Bot	Bot degraded	0.44 (8)

RIGHEAD NS 29717 68820

Sample Number	Depth (ft)	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance % R _y average (n ^o readings)
R 17	1674	calc carbarg	-	10:40:60	w + wp	hvy ov	30% mod/o-y + lt o sp + terrest debris 20% int/y liptodet 10% mod/o-y Bot	-	0.68 (10)
1561	1680	coal + carbarg + cannel lamns	-	50:20:30	-	-	20% mod + dull/mid o sp 10% mod/o-y cut	Upper Wee Hartley Coal	0.80 (25)
R 18	1576	v py sh	v high	20:10:70	w + wp	v hvy ov	40% int/y w + f 20% mod/y + o-y sp 10% mod/o-y Bot	Bot degraded	0.47 (25)
1568	1780	cannel coal	-	40:30:30	-	-	20% mod/mid o sp 5% mod/o-y cut 5% mod/o-y Bot	ab mic in spore-rich lamns	0.83 (25)
1570	1811	coal	-	60:30:10	-	-	mod/lt + mid o sp	EXTRACTED	0.80 (25)
EA 5572	1815	calc canneloid sh	-	50:20:30	st + w	hvy ov	25% mod/o-y sp 5% mod/y Bot	-	0.69 (25)
1571	1827	coal	-	70:20:10	-	-	mod/lt + mid o sp Coal	EXTRACTED Commie Two Foot	0.79 (25)
R 19	1839	calc cannel coal	-	60:10:30	-	-	mod/lt o sp tr Bot	-	0.66 (23)
1572	1855	coal	-	70:20:10	-	-	mod/lt + mid o sp	EXTRACTED	0.81 (25)

RIGHEAD NS 29717 68820

Sample Number	Depth (ft)	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance % R _y average (n ^o readings)
1573	1873	coal + cannel lamns	-	70:20:10	-	-	mod/lt + mid o sp	-	0.85 (25)
1576	1967	coal	-	50:30:20	-	-	mod + dull/mid o sp	Diamond Coal	0.88 (25)
1577	2049	coal	-	60:20:20	-	-	dull/deep o sp	EXTRACTED	0.91 (25)
R 20	2097	calc sh	mod/high	10:70:20	p	lt ov	mod/y-o sp + terrest debris tr <i>Bot</i>	-	0.76 (17)
1579	2099	coal	-	ND	-	-	ND	EXTRACTED	0.98 (25)
1581	2141	coal	-	60:20:20	-	-	v dull/deep o sp	EXTRACTED Lochgelly Splint Coal	0.97 (25)
R 21	2167	sh	high	20:60:20	wp	lt/mod ov	mod/y + o-y sp + debris	-	0.66 (13)
R 22	2471	silty sh	high	NDP	p	hvy ov -> bit res	-	-	3.84 (25)
R 23	2479	sl calc v py sh	high	10:60:40	wp + w	v hvy -> bit res	v dull/deep o sp + <i>Bot</i>	-	1.95 (25)
R 24	2585	silty sh	high	0:100:0	-	hvy ov -> bit res	-	-	NDP

RIGHEAD NS 29717 68820

Sample Number	Depth (ft)	Lithology	Organic Content	V:l:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance % R _y average (n° readings)
1582	2612	coal	-	80:20:0	-	-	-	2 sample popns pty mosaics in vit	4.91 (25) 1.74 (25)
1583	2667	coal + cannel bands	-	80:20:0	-	-	-	EXTRACTED Five Foot Coal	1.62 (25)
R 25	2684	silty sh	high	NDP	wp	lt ov -> bit res	-	-	2.10 (25)
1584	2842	coal	-	50:30:20	-	-	v dull/deep o sp tr int/y h-c in Splint Coal	EXTRACTED Dunfermline hydrocarbons	1.25 (25)
R 26	2855	siltstone	high	NDP	p	no ov + dk w -> bit res	-	-	1.89 (25)
R 27	2866	siltstone	high	0:100:0	-	-	dull/deep o bkg fl	ab Fe ox	
R 28	2904	silty sh	high	tr:100:0	wp	lt ov + blotches	dull/o matrix fl	-	0.96 (9)
R 29	2944	siltstone	high	NDP	p	lt ov + f	dull/deep o matrix fl	-	1.04 (4)
1587	2956	coal	-	60:20:20	p	-	v dull/deep o sp tr int/y h-c in fus	EXTRACTED Sulphur Coal hydrocarbons	1.24 (25)

Samples prefixed R provided by Mr. P. Brand.

Samples prefixed EA provided by Mr. E. Skipsey.

All other samples (coals) collected from the NCB palynological collection at Wath-upon-Dearne.

GARTLOVE N°2 NS 29403 69267

Sample Number	Depth (ft)	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance % R _v average (n° readings)
BEV X	77	coal	-	70:20:10	-	-	mod/o-y sp	-	0.71 (25)
BEV Y	259	vit band	-	0:100:0	scruffy	-	-	-	0.62 (25)
BEV Z	262	coal	-	90:5:5	scruffy	-	mod/lt o sp	-	0.53 (25)
BEV AA	452	vit band	-	0:100:0	-	-	-	white, oxid py coating surfaces	0.54 (25)
GA 1	464	coal + cameloid sh lamns	-	50:20:30	-	-	mod/o-y sp	-	0.48 (25)
GA 2	469	coal	-	60:20:20	scruffy	-	mod/y+o-y sp ir resin st + cut	-	0.48 (25)
GA 3	486	carbarg	-	40:10:50	st	v dk ov	mod/o-y sp ir resin st	-	0.50 (25)
GA 4	562	carbarg	-	50:10:40	st	dk ov	30% mod/lt o sp 10% in/o-y Bot	-	0.58 (25)
GA 5	578	calc sh	high	5:15:80	p	pty lt/mod + w	40% mod/y lamalg 20% mod/o-y Bot 20% int/y w	Bot sl degraded	0.56 (2)
GA 6	735	coal + carbarg lamns	-	70:tr:30	sl scruffy bands + st	hvy ov in carbarg	mod/y-o + lt o sp	sl oxid	0.63 (22)
GA 7	783	coal	-	70:10:20	scruffy	-	mod/y-o + lt o sp	sl oxid	0.72 (24)

GARTLOVE N°2 NS 29403 69267

Sample Number	Depth (ft)	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance % R _y -average (n° readings)
GA 8	808	canneloid sh	high	30:20:50	w	hvy ov	40% mod/lt o sp + terrest debris 10% int/y f tr mod/o-y <i>Bot</i>	-	0.60 (25)
GA 9	811	coal + cannel lamns	-	60:20:20	bands + st	hvy ov in cannel lamns	mod/lt-mid o sp	-	0.65 (25)
GA 10	814	coal + cannel lamns	-	70:10:20	st	hvy ov in lamns	mod/lt o sp mn mod/o-y <i>Bot</i> in cannel lamns	-	0.63 (25)
GA 11	825	cannel coal	-	30:40:30	-	-	20% mod/mid o sp + terrest debris 10% mod/o-y <i>Bot</i>	matrix filled with mic	0.64 (25)
GA 12	842	coal	-	80:0:20	scruffy	-	mod/mid o sp tr resin	sl oxid	0.60 (25)
GA 13	848	py carbarg	-	20:30:50	w + st	dk ov	mod/lt o sp + terrest debris	-	0.55 (20)
GA 14	873	canneloid sh	v high	10:40:50	wp	dk ov matrix sat	25% mod/lt o sp 25% int/y f mn mod/o-y <i>Bot</i>	<i>Bot</i> in liptodet-rich lamns	0.51 (8)
GA 15	1141	siltstone	mod	10:70:20	p + wp	lt ov + w	mod/lt-mid o sp	-	0.69 (10)

GARTLOVE N°2 NS 29403 69267

Sample Number	Depth (ft)	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance % R _v average (n° readings)
GA 16	1236	py sh	high	10:20:70	w + wp	mod ov pty hvy	40% mod/o-y lamalg - 30% mod/lt-mid o sp	-	0.45 (13)
GA 17	1267	carbarg	-	20:20:60	w + st	v hvy ov matrix sat	30% mod/y-o + lt o sp 30% mod/y-o <i>Bot</i>	-	0.50 (25)
GA 18	1270	coal	-	70:20:10	scruffy	-	mod/lt-mid o sp	-	0.69 (25)
GA 19	1293	carbarg	-	40:10:50	w	v dk ov	30% mod/y-o Bot 20% mod/lt o sp	-	0.46 (25)
GA 20	1311	canneloid sh	v high	10:40:50	wp	v dk ov	40% mod/lt-mid o sp 10% mod/y-o <i>Bot</i>	-	0.59 (14)

Samples prefixed BEV provided by Mr. R. Beveridge.

All other samples provided by Mr. P. Brand.

GARTARRY TOLL (BRUCEFIELD) NS 29313 69126

Sample Number	Depth (ft)	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance % R _y average coal %R _y max (n° readings)
GAR 1	810	py sh	mod	tr:60:40	p	no ov + f	30% mod + int/y sp 10% int/y w + f	v small phytis	0.49 (9)
GAR 2	875	sh	mod	10:60:30	w	no ov + w	mod/y-o + lt o sp	v small phytis	0.50 (14)
GAR 3	1024	sh	low/mod	10:85:5	w + st	no ov + w	mod/y-o + lt o sp	-	0.92 (24)
GAR 4	1034	py sh	high	5:45:50	w	no ov	mod/y-o + lt o sp + terrest debris	-	0.65 (10)
GAR 5	1290	py sh	high	10:30:60	w + wp	lt ov	mod/lt o sp + terrest debris tr int/y w	1 tasmanitid	0.49 (10)
GAR 6	1339	sh	low	tr:90:10	p	lt ov + f	mod-dull/lt-mid o sp	vit too small to measure	NDP
GAR 7	1406	sh	low	tr:85:15	p	lt ov + f	10% mod/lt o sp 5% int/y f	-	0.62 (4)
GAR 8	1434	carbarg	-	50:10:40	st + w	mod ov	20% mod/o-y + lt o sp 20% int/y f tr <i>Tasmanites</i> tr <i>Bot</i>	-	0.58 (18)
GAR 9	1479	sl silty sh	mod	20:30:50	wp	no ov + w	mod/lt o sp tr int/y w	vit exuding brown bituminous/ humic om	0.59 (20)

GARTARRY TOLL (BRUCEFIELD) NS 29313 69126

Sample Number	Depth (ft)	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance % R _y average coal %R _y max (n ^o readings)
GAR 10	1598	sl calc sh	mod	5:90:5	p	lt ov + f	mod/mid o sp	-	0.85 (5)
GAR 11	1785	silty py sh	mod/high	5:80:15	p	lt ov + w	mod/y-o + lt o sp	-	0.65 (11)
GAR 12	1804	silty py sh	high	5:40:55	p	mod ov	mod/lt o sp + liptodet	vit phyt v small	0.56 (6)
GAR 13	1864	sl calc py sh	mod	tr:40:60	wp	lt ov	50% mod/y liptodet 10% mod/lt-mid o sp	EXTRACTED	0.52 (3)
GAR 14	1876	sl silty marl	mod	5:90:5	p	v lt ov	dull/mid o sp dull/lt o carb fl	ab sid blotches	0.73 (8)
GAR 15	1916	py sh	mod	tr:20:80	wp	no ov + tr w	70% int/y f + w 10% mod/y-o + lt o sp tr <i>Tasmanites</i>	EXTRACTED	0.64 (3)
GAR 16	2009	py siltst	high	10:30:60	wp + p	dk interst	50% mod/lt-mid o sp + terrest frags 10% int/y f	-	0.66 (6)
GAR 17	2241	sh	high	tr:90:10	p + wp	≈no ov + f	mod/mid + deep o sp	v small phyt v	0.84 (2)
GAR 18	2284	py sh	mod	20:10:70	w + st	lt ov	20% mod/mid o sp 50% coarse int/y lamalg	EXTRACTED	0.43 (25)

GARTARRY TOLL (BRUCEFIELD) NS 29313 69126

Sample Number	Depth (ft)	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance % R _v average coal %R _v max (n ^o readings)
1534	2310	coal	-	50:40:10	-	-	mod/y-o + lt o sp	Upper Hirst Coal sl oxid - py missing some mic assoc with liptinite	0.89 (25)
GAR 19	2414	siltstone	high	20:20:60	wp	mod interst	50% mod/mid + deep o sp 10% int/y w + f	-	0.62 (17)
GAR 20	2618	cannel	-	40:20:40	w + st	-	30% mod/mid o sp 10% mod + int/p-y <i>Bot</i> tr mid/o carb fl	pty carb	0.68 (25)
GAR 21	2788	silty sh	mod	tr:90:10	p	no ov + mn w	mod + dull/deep o sp	pty carb	0.92 (2)
1535	2882	coal	-	70:20:10	-	-	mod/mid + deep o sp	Quarry Coal	0.86 (25)
GAR 22	3086	v calc canneloid sh	high	20:30:50	w	hvy ov	25% mod/mid o sp 25% mod-int/o-y <i>Bot</i>	finely laminated	0.61 (25)
GAR 23	3176	v calc cannel coal	-	40:10:50	w + st	-	40% mod/mid o sp 10% mod/o-y <i>Bot</i>	finely laminated	0.56 (23)

GARTARRY TOLL (BRUCEFIELD) NS 29313 69126

Sample Number	Depth (ft)	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance % R _v average coal %R _v max (n ^o readings)
GAR 24	3222	sl silty py sh	high	20:30:50	w + wp	mod/dk ov	30% mod/mid-deep o sp 20% mod + int/y f	-	0.69 (25)
GAR 25	3281	marl	low	tr:70:30	p	lt ov	mod/y + o-y f	-	0.60 (2)
1536	3353	coal + cannel lamns	-	60:20:20	-	-	mod/mid o sp tr resin blobs	Oakley Upper Coal	0.89 (26)
GAR 27	3468	sh	high	tr:40:60	wp	mod ov	30% mod/lt-mid o sp 30% mod/y-o Bot	-	0.54 (2)
GAR 28	3513	siltstone	mod	20:70:10	w	lt ov + f	v dull/deep o sp dull/deep o carb fl	pty carb	1.07 (25)
1537	3582	coal	-	60:20:20	-	-	mod/mid + deep o sp tr int/y h-c in fus	EXTRACTED Hartley Coal hydrocarbons some mic assoc with liptinite	1.04 (25)
GAR 29	3651	v calc sh	low	tr:20:80	p	mod ov	40% mod-dull/deep o sp 40% mod/lt-mid o Bot dull/deep o carb fl	EXTRACTED ab ostracods	0.63 (2)

GARTARRY TOLL (BRUCEFIELD) NS 29313 69126

Sample Number	Depth (ft)	Lithology	Organic Content	V:l:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance % R _v average coal %R _v max (n° readings)
1538	3719	coal	-	60:30:10	-	-	dull/deep o sp + liptodet tr int/y h-c in fus	EXTRACTED Greenyards Coal hydrocarbons	1.17 (25)
GAR 30	3798	sl silty sh	v high	20:40:40	w	dk ov	v dull/deep o sp	vit v small	0.72 (22)
GAR 31	3892	py silty sh	high	20:20:60	wp	matrix sat	dull/deep o sp	-	1.14 (10)
GAR 32	3964	silty sh	high	NDP	wp	dk ov -> bit res	-	ab dk blobs - heat affected Bot ? widespread mosaics in vit vacuolation	2.69 (24)

Sediments prefixed GAR provided by Mr. P. Brand.

All other smaples (coals) collected from the NCB palynological collection at Wath-upon-Dearne.

INCH OF FERRYTON NS 29078 69015

Sample Number	Depth (ft)	Lithology (percent)	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (no. readings)
IF 1	80	siltst:sh 60:40	mod/high	10:90:tr	wp + w	lt ov + ab f	mod/o-y + y-o sp	ab Fe oxide staining	0.57 (25)
IF 2	200	siltst:carbarg 90:10	mod	10:80:10	p + wp	no ov	mod/o-y sp tr algal om tr cut	-	0.49 (16)
IF 3	900	sst:sh 60:40	mod	tr:100:tr	p	no ov ab f	mod/o-y + y-o f	-	NDP
IF 4	1050	calc sh 100	low/mod	10:80:10	p	no ov + tr w	mod/o-y + lt o sp	-	0.56 (12)
IF 5	1240	sh 100	mod	10:80:10	wp	lt ov	mod/lt o sp	-	0.61 (6)
IF 6	1640	calc sh 100	high	tr:20:80	p + wp	lt/hvy ov	mod/lt o sp mod-dull/o-y matrix fl	-	0.68 (4)
IF 7	1930	siltstone 100	high	tr:80:20	p	lt ov + ab f	mod/y-o + lt o sp	extensive Fe oxide staining	0.95 (3)
IF 8	1940	siltst:sh 60:40	mod	tr:90:10	p	lt ov + ab f	dull/lt o f	-	0.66(3)
IF 9 SWC	1959	sh 100	low/mod	tr:70:30	p	no ov + f	mod/o-y sp + ab f	-	0.76 (5)

INCH OF FERRYTON NS 29078 69015

Sample Number	Depth (ft)	Lithology (percent)	Organic Content	V:l:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (no. readings)
IF 10 SWC	1980	calc sh:sh 90:10	mod/high	10:40:50	wp	lt-mod ov	40% mod/lt o sp + terrest debris 10% Bot	-	0.57 (15)
IF 11 SWC	2074	siltstone 100	high	5:70:25	st + w	lt ov + interst w + blotches	mod/lt o sp	-	0.57 (7)
IF 12	2100	silty sh:sst:coal 20:60:20	high	25:50:25	wp	hvy ov in sh no ov in sst	mod/y-o + o-y sp + terrest debris tr Bot in sh	brecciation in coal	0.75 (19)
IF 13 SWC	2230	sst 100	low	tr:100:tr	p	no ov	tr int/y + o-y f	-	NDP
IF 14	2390	sh:carbarg:coal 75:20:5	high	30:40:30	w + wp	lt/mod ov	15% mod/mid o sp 15% mod/y-o Bot tr cut	25% cavings brecciation in coal	0.97 (23)
IF 15	2410	sh:coal:sst 50:20:20	mod	20:60:20	wp	none in sst lt/dk ov in sh + ab f	mod/lt-mid o sp	25% cavings brecciation in coal	0.89 (25)
IF 16 SWC	2467	sst 100	barren	-	-	-	-	-	NDP
IF 17	2680	sh:coal:sst 60:30:10	high	30:45:25	w + st in sh	mod/hvy ov in sh ab f in sh none in sst	mod/lt-mid o sp	brecciation	1.02 (25)

INCH OF FERRYTON NS 29078 69015

Sample Number	Depth (ft)	Lithology (percent)	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (no. readings)
IF 18 SWC	2692	marl 100	low	tr:100:0	st + p	pty mod ov hvy interst in some places	pty mod-int/o-y carb fl	-	0.88 (13)
IF 19 SWC	2694	calc + sl silty sh 100	high	10:80:10	wp + p	lt/mod ov	dull/mid o f dull/deep o matrix fl	-	1.03 (8)
IF 20 Core	2734	siltstone 100	v high	40:50:10	st + w	mod interst	mod/mid o sp dull/deep o matrix fl	-	0.99 (21)
IF 21 Core	2739	calc sh 100	high	10:70:20	p	lt ov	dull/mid-deep o fl + matrix fl	-	1.09 (12)
IF 22	2750	cann sh:siltst: coal:ssst 40:40:10:10	high	20:60:20	st + w in cann sh p in siltst	hvy in cann sh lt-mod ov in siltst + ab f	dull/mid o sp	-	1.00 (23)
IF 23 SWC	2785	siltstone 100	high	20:60:20	p	lt ov	dull/deep o liptodet + matrix fl	-	1.11 (12)
IF 24 SWC	2840	calc siltst 100	high	20:70:10	w + st	lt/mod ov	mod-dull/mid o sp mod/o-y matrix fl	-	1.08 (15)
IF 25 SWC	2899	v calc sh 100	mod	tr:20:80	wp	mod/hvy ov	80% dull/mid + deep o Bot	matrix filled with NDP carb crystals	

INCH OF FERRYTON NS 29078 69015

Sample Number	Depth (ft)	Lithology (percent)	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (no. readings)
IF 26 SWC	2900	silty sh 100	low	10:90:0	p	lt ov + dk f +w ab f	dull/o matrix fl	some sh lamns with dk bit st	0.89 (8)
IF 27 SWC	2912	calc+silty sh 100	high	10:70:20	w + wp	dk ov some bit res	dull/deep o f + blotches dull/deep o matrix f	tr hydrocarbons	0.96 (11)
IF 28 SWC	3112	carbarg 100	v high	NDP	st + w	v hvy ov -> bit res	v dull/o f	-	1.28 (25)
IF 29 SWC	3206	sst + sh inters 100	low	NDP	wp	no ov	-	-	1.75 (11)
IF 30 SWC	3222	sh 100	low	NDP	p	v hvy ov -> bit res	-	-	1.76 (8)
IF 31	3350	calc sh:siltst:coal 30:40:30	high	20:70:10	p	mod ov in sh + siltst	dull/deep o sp sp + terrest debris int/y h-c	coal caved hydrocarbons in fusinite cavities	1.85 (25)
IF 32 SWC	3370	sst + sh inters 100	low	NDP	p	dk interst	-	brecciation	2.14 (14)
IF 33	3400	coal:sh 60:40	high	NDP	w + st	mod ov	ab dull/o h-c in fus mn int/o-y fl h-c in fus	hydrocarbons in fusinite cells brecciation	1.90 (25)

INCH OF FERRYTON NS 29078 69015

Sample Number	Depth (ft)	Lithology (percent)	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (no. readings)
IF 34 SWC	3490	calc sh 100	high	NDP	p + wp	hvy ov -> bit res	mod/o-y min fl	ab carb patches	2.23 (23)
IF 35 SWC	3494	calc sh 100	high	NDP	p + wp	heavy ov -> bit res	-	-	2.42 (23)
IF 36 SWC	3704	siltstone 100	mod	NDP	p	lt ov	pty dull/deep o min fl	-	3.05 (19)
IF 37	3790	calc sh:sh:silty sh 40:40:20	high	NDP	p + wp	v hvy ov -> bit res	v dull/o pty matrix fl dull/o carb fl	-	3.79 (20)
IF 38 SWC	3822 SWC	silty sh 100	mod	NDP	wp	hvy ov -> bit res	-	-	4.07 (25)
IF 39 SWC	3835	silty sh 100	high	NDP	p	hvy ov -> bit res	-	-	4.00 (25)
IF 40	4660	ign:sh 80:20	low	NDP	p	lt ov in sh tr dk w in sh	-	mosaics in some sh particles	NDP
IF 41	4670	sh:coal 95:5	low	NDP	p	v hvy -> bit res	-	mosaic formation in coal	6.04 (25)
IF 42	4680	calc sh:coal 80:20	mod/high	NDP	st + w	hvy in sh -> bit res	-	widespread mosaics all coal vitrinite mosaiced py C	6.34 (25)

INCH OF FERRYTON NS 29078 69015

Sample Number	Depth (ft)	Lithology (percent)	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (no. readings)
IF 43	4790	py sh:ign 70:30	high	NDP	w + st	v hvy ov -> bit res	-	mosaics common	5.93 (20)
IF 44	4880	py sh 100	mod	NDP	wp	hvy ov -> bit res	-	-	4.28 (14)
IF 45	4990	sh:calc sh 60:40	high	NDP	p	v hvy ov -> bit res	-	-	4.48 (25)
IF 46 SWC	5106	sl calc siltst 100	high	NDP	w	hvy int -> bit res	dull/o fl in carb	-	3.01 (25)
IF 47 SWC	5310	siltstone 100	high	NDP	wp + p	dk ov -> bit res	pty dull/o min fl	-	2.51 (25)
IF 48	5370	calc sh:coal 60:40	high	NDP	p + wp	mod/hvy ov w + f in silty sh	dull/o min fl	widespread mosaics + brecciation brecciated mosaics	2.97 (20)
IF 49	5830	silty sh:coal 60:40	high	NDP	wp	mod/dk ov + dk f	dull/o min fl	-	2.18 (25)
IF 50	5990	sh:calc sh:lst:ign 60:30:5:5	mod	NDP	wp	matrix sat -> bit res	pty dull/o carb fl	20% cavings	2.18 (20)
IF 51	6000	calc sh:sh:lst 30:60:10	mod	NDP	wp	matrix sat -> bit res	-	-	2.28 (18)

INCH OF FERRYTON NS 29078 69015

Sample Number	Depth (ft)	Lithology (percent)	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (no. readings)
IF 52	6100	sh:calc sh:coal:ign 45:40:10:5	mod	NDP	p + wp	mod ov	tr dull/o py min fl	-	1.89 (25)
IF 53 SWC	6128	sh 100	low	0:100:0	p	lt ov + dk w	-	-	1.99 (2)
IF 54	6180	silty sh:calc sh 60:40	low/mod	NDP	p	lt ov	tr dull/deep o sp	30% cavings	2.00 (25)
IF 55	6250	siltst:sh:calc sh: coal 40:30:30:tr	mod	NDP	p	lt/dk ov + mod/hvy f + blobs	-	tr coal	1.99 (16)
IF 56	6314	marl 100	v. low	0:100:0	p	lt ov	v dull/o matrix fl	-	NDP
IF 57	6360	calc sh:silty sh:ss: mod 50:40:10	mod	NDP	wp	dk ov -> bit res in sh	-	tr caved ign + mosaiced coal	2.06 (16)
IF 58	6420	sl calc sh:ss:lst 70:20:10	mod/high	NDP	wp + st	dk ov in sh -> bit res	-	-	2.07 (14)
IF 59	6560	sh:ss 70:30	low	NDP	p	no ov ab dk f	-	py -> haem reddened matrix	1.99 (8)
IF 60	6750	siltst:sh 60:40	low/mod	NDP	p	no ov + tr f	-	oxidised phytoclasts reddened matrix	2.21 (12)
IF 61	6920	sh:siltst 60:40	low/mod	tr:100:0	p	no ov tr f	-	reddened matrix	1.92 (9)

INCH OF FERRYTON NS 29078 69015

Sample Number	Depth (ft)	Lithology (percent)	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (no. readings)
IF 62	7230	silty sh:sh 80:20	low	tr:100:0	p	no ov	-	py -> haem reddened matrix	2.09 (5)
IF 63	7400	siltst:sh 80:20	low	tr:100:0	p	tr f	-	py -> haem reddened matrix	2.09 (4)
IF 64	7580	siltst:sh 90:10	low	tr:100:0	p	no ov	-	intense reddening py -> haem	2.15 (3)
IF 65	7670	siltst:sh 80:20	low	tr:100:0	p	no ov	-	reddened matrix	1.85
IF 66	7720	siltst:sh:coal:ign 50:30:10:10	low	low	p	no ov tr f	-	reddened matrix	2.15 (7)
IF 67	7850	evap:siltst:sh 60:30:10	low	tr:100:0	p	try dk f	-	py -> haem reddened matrix	2.16 (3)
IF 68	7990	siltst:sh 60:40	low	tr:100:0	p	no ov dk ov in cavings	-	20% cavings reddened matrix	2.07 (4)
IF 69	8000	siltst:sh:evap:ign 40:30:20:10	low	tr:100:0	p	no ov tr dk f	-	py -> haem reddened matrix	2.03 (3)

Cored intervals 2713'-2745' and 7996'-8011'

Samples provided by Tricentrol (now Arco British)

KINCARDINE BRIDGE NS 29164 68716

Sample Number	Depth (ft)	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average coal % R _v max (n ^o readings)
1514	1854	coal	-	70:20:10	-	-	mod/lt-mid o sp + degraded sp frags tr <i>Bot</i>	Lower Hirst Coal	0.80 (25)
1515	2568	coal	-	40:30:30	-	-	mod/mid o sp + cut	Quarry Coal ab cannel lamns tr resin st tr <i>Bot</i>	0.94 (25)
1516	2852	coal	-	60:20:20	-	-	mod/lt-mid o sp mn cut tr int/y h-c in fus cells	hydrocarbons	0.85 (25)
1517	2964	coal	-	60:20:20	-	-	dull/mid-deep o sp tr int/y h-c in vit + fus cells	hydrocarbons cannel patches	1.00 (25)
1518	3094	coal	-	60:20:20	-	-	v dull/deep o sp + cut ab int/y h-c in fus	EXTRACTED hydrocarbons ab cannel patches	1.09 (25)
E 3420	3125	silty sh	high	tr:90:10	wp	mod ov + hvy w	dull/mid o sp	-	1.06 (6)

KINCARDINE BRIDGE NS 29164 68716

Sample Number	Depth (ft)	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average coal % R _v max (n° readings)
1519	3170	coal	-	70:15:5	-	-	v dull/deep o-r sp + sp frags mod/y h-c in fus	EXTRACTED Hartley Coal hydrocarbons	1.12 (25)
E 3423	3429	sh	high	tr:80:20	wp	mod ov pty bit res	v dull/deep o f	-	1.33 (2)
1520	3458	coal	-	70:25:5	-	-	v dull/deep o f ab mod/y + o h-c in fus cells	Bannockburn Upper Main Coal	1.29 (25)
1521	3492	coal	-	70:30:0	-	-	ab mod + int/y + o-y h-c in fus cells	Bannockburn Main Coal hydrocarbons cannel layers	1.36 (25)
E 3428	3647	sh	mod	NDP	p	mod ov -> bit res	-	-	1.31 (7)
E 3437	3655	sl cal silty sh	low	0:100:0	-	mod ov	v dull o carb fl	ab Fe ox	NDP
E 3450	3774	marl	high	NDP	wp	hvy ov -> bit res	dull/deep o carb fl	-	1.61 (8)
E 3454	3777	sl calc py sh	high	NDP	p	v hvy matrix sat -> bit res	dull/deep o carb fl	-	1.43 (5)

Samples prefixed E given by Mr. E. Skipsey.
All other samples collected from the NCB palynological collection at Wath-upon-Dearne.

ORCHARD HEAD NS 29237 68412

Sample Number	Depth (ft)	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (n ^o readings)
2957	1970	coal	-	90:5:5	scruffy	-	mod/lt-mid o sp + sp frags	Upper Hirst Coal	0.85 (25)
2958	2000	coal	-	70:20:5	sl scruffy	-	dull/mid o sp tr <i>Bot.</i>	Lower Hirst Coal sl oxid py	1.02 (25)
2959	2276	coal	-	70:20:10	-	-	v dull/deep o sp	vit sl oxid	0.91 (25)
2960	2490	coal	-	70:20:10	-	-	mod/mid o sp + cut	vit sl oxid py missing	0.93 (25)
2961	2547	coal	-	70:20:10	-	-	dull/deep o sp + cut	vit sl oxid	1.02 (25)
2962	2658	coal	-	60:30:10	-	-	dull/deep o sp + cut int/y h-c in calcitised fus cells	hydrocarbons vit sl oxid	1.09 (25)
2963	2949	coal + cannel lamns	-	60:20:20	-	-	vit sl oxid	vit sl ox ab mic assoc with sp	0.94 (25)
2964	3011	coal + cannel lamns	-	60:30:10	-	-	v dull/deep o sp	vit oxid py- missing	1.02 (25)
2965	3024	coal	-	70:20:10	-	-	v dull/deep o sp	vit oxid py missing	1.09 (25)

ORCHARD HEAD NS 29237 68412

Sample Number	Depth (ft)	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (n° readings)
2966	3170	coal	-	70:20:10	-	-	v dull/deep o sp int y/h-c in fus cells	Hartley Coal hydrocarbons	1.21 (25)
2967	3384	coal	-	60:30:10	-	-	v dull/deep o sp int/y h-c in calcitised fus cells	hydrocarbons	1.29 (25)
2968	3440	coal	-	70:30:10	-	-	v dull/v deep o sp mod/y h-c in fus cells	Bannockburn Upper Main Coal hydrocarbons	1.44 (25)
2969	3457	coal	-	80:20:tr	-	-	v dull/v deep o sp mod/y h-c in fus cells	Bannockburn Main Coal hydrocarbons vit sl oxid py missing	1.48 (33)
2970	3518	coal	-	70:30:0	-	-	-	Knott Coal	1.51 (25)

All samples collected from the NCB palynological collection at Wath-upon-Deane.

QUEENSLIE BRIDGE NS 26630 66603

Sample Number	Depth (ft)	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v max (no. readings)
QB 1195	225	coal	-	ND	-	-	ND	Splint Coal	0.78 (25)
QB 1196	289	coal	-	ND	-	-	ND	Blackband Coal	0.77 (25)
QB 1198	452	coal	-	ND	-	-	ND	Kiltongue Coal	0.72 (25)
QB 1199	548	coal	-	ND	-	-	ND	Shotts Gas Coal	0.72 (25)
QB 1200	1607	coal	-	ND	-	-	ND	Possil Wee Coal	0.81 (25)
QB 1203	1717	coal	-	ND	-	-	ND	Ashfield Coking Coal	0.79 (25)
QB 1205	1764	coal	-	ND	-	-	ND	Cloven Coal	0.86 (25)
QB 1209	1824	coal	-	ND	-	-	ND	Jubilee Coal	1.04 (25)

Samples taken from the NCB palynological collection at Wath-upon-Deerne.

CAWDOR CUILT NS 25693 67042

Sample Number	Depth (ft)	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average coals %R _v max (no. readings)
CC 10	126	silty sh	high	10:90:10	wp	no ov + ab f	mod/y-o + lt o sp	-	0.55 (16)
CC 11	195	sh	mod	5:90:5	wp	no ov + ab f	mod/y lptodet	-	0.65 (5)
1192	314	coal	-	ND	-	-	ND	Chapel Green Coal	0.71 (25)
CC 12	429	sh	low	NDP	p	hvy ov -> bit res	-	-	3.66 (9)
CC 13	504	canneloid sh	v high	20:10:70	w	v hvy matrix sat	65% mod/lt-mid o sp 5% Bot dull/deep o bkg fl	-	0.58 (25)
1191	600	coal	-	ND	-	-	ND	Possil Main Coal	0.79 (25)
1190	622	coal	-	ND	-	-	ND	Cloven Coal	0.73 (25)
CC 14	649	sh	mod	10:90:10	p	lt ov + f	mod-dull/mid o + y-o sp + liptodet	-	0.73 (5)
1188	664	coal	-	ND	-	-	ND	Shale Coal	0.76 (25)
CC 15	680	v py carbarg	v high	20:10:70	w	hvy ov	dull/o-y + y-o sp	-	0.56 (20)
1187	682	coal	-	-	-	-	ND	Jubilee Coal	0.74 (25)

CAWDOR CUILT NS 25693 67042

Sample Number	Depth (ft)	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average coals %R _v max (no. readings)
CC 16	713	v py + silty sh	v high	20:20:60	st + w	v hvy ov	40% int/y + o-y liptodet 15% mod/y-o + lt o sp 5% Bot	-	0.47 (25)
1185	715	coal	-	ND	-	-	ND	Knightswood Gas Coal	0.74 (25)
CC 17	871	sh	mod	tr:70:30	p	mod ov	mod/y-o + lt o sp mod/y liptodet	-	0.55 (3)
CC 18	920	sh	high	10:70:20	wp	lt ov + f	mod/lt o-y + y-o sp tr Bot	-	0.67 (10)
CC 19	992	silty sh	high	10:70:20	p	lt ov	mod/lt-mid o sp	ab Fe oxides	0.63 (6)
1184	1010	coal	-	ND	-	-	ND	Garscadden Coal	0.73 (25)
CC 20	1046	sh	v high	10:30:60	w + wp	hvy ov	mod/mid-deep o sp + liptodet	oil cut seen in UV	0.63 (12)
1183	1058	coal	-	ND	-	-	ND	Garibaldi Ironstone Coal	0.79 (25)
CC 21	1079	py sh	v high	tr:30:70	w + wp	v hvy ov	mod/lt o sp	oil cut seen in UV	0.47 (2)
CC 22	1085	silty py sh	v high	tr:20:80	wp	v hvy ov	70% mod/lt o sp 10% Bot	oil cut seen in UV algae degraded	0.38 (4)

CAWDOR CUILT NS 25693 67042

Sample Number	Depth (ft)	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average coals %R _v max (no. readings)
1182	1097	coal	-	ND	-	-	ND	Kilsyth Coking Coal	0.78 (25)

Samples prefixed CC were provided by Mr. P. Brand.

All coals were sampled from the NCB palynological collection at Wath-upon-Dearne.

RIVER CARRON NS 2793 6832

Sample Number	Distance Above	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance % R _v average (n° readings)
CBR	24	sh	≈barren	NDP	p	no ov + dk blotches	-	spotted	3.67 (1)
CBS	54	siltstone	low/mod	NDP	p	no ov + v dk f + w	-	-	1.95 (19)
CBX	60	sh	mod	NDP	p	lt ov + v hvy w	-	-	3.94 (25)
CBT	66	siltstone	low/mod	NDP	p	no ov + ab dk f + w	-	-	4.56 (28)
CBB	126	siltstone	high	NDP	st	lt ov + v dk w + f	-	-	4.28 (25)
CBL	138	siltstone	mod	NDP	p	no ov + interst dk w -> bit res	-	-	4.46 (25)
CBC	198	sst	≈barren	NDP	p	v dk interst bit -> bit res	-	EXTRACTED Lillies Sandstone R _o measured on mosaiced particle	2.68 (1)
CBQ	234	siltstone	high	NDP	wp + st	hvy ov -> bit res	-	ab Fe oxides	4.14 (25)
CBD	240	siltstone	high	NDP	wp + p	v hvy interst -> bit res	-	-	3.00 (25)

RIVER CARRON NS 2793 6832

Sample Number	Distance Above Midland Valley Sill* (ft)	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance % R _y average (n ^o readings)
CB A	264	siltstone	high	NDP	wp	mod ov -> bit res	-	-	2.52 (25)
CB F	282	sst + plant frags	low/mod	NDP	p	tr dk interst w	-	tr mosaiced parts	2.24 (23)
CBE	333	silty sh	high	NDP	st + wp	mod/dk ov -> bit res	-	-	2.50 (25)
CB J	384	silty sh	mod	NDP	p	mod/hvy ov -> bit res	-	-	2.33 (21)
CB H	390	sh	mod	NDP	p	v hvy ov -> bit res	-	-	2.19 (21)
CB I	414	siltstone	high	NDP	st + wp	mod/hvy ov + dk w + f	-	ab Fe ox blotches	2.04 (18)
CB 3	426	coal	-	-	-	-	tr dull/deep o f in fus cells	-	2.16 (25)
CB K	444	siltstone	mod	-	-	v hvy interst	-	-	1.99 (17)
CB G	459	py sh	mod	NDP	w + wp	v hvy ov -> bit res	-	EXTRACTED Banton Clayband Ironstone (in adit)	2.05 (25)
CB P	474	silty sh	high	NDP	p	mod ov	-	ab Fe ox blotches	2.00 (25)

RIVER CARRON NS 2793 6832

Sample Number	Distance Above	Lithology	Organic Content	V:L:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance % R _y -average (n ^o readings)
	Midland Valley Sill* (ft)								
CBO	486	silty sh	high	NDP	wp + st	mod/hvy ov bit res	-	ab Fe ox blotches	1.80 (18)
CBN	516	silty sh	mod	NDP	st + wp	lt ov + ab f	-	-	1.62 (25)

*Approximate distance above Midland Valley Sill from BGS measured section (excluding faulting).

All samples collected in the field.

PART 2

STRATIGRAPHIC HORIZONS

COAL MEASURES - QUEENSLIE MARINE BAND

Sample Number	Borehole Name (BGS Number)*	Lithology	Organic Content	VitE (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (n° readings)
QMB 101	Lands of Dalginch 8A (3)	py sh	high	NDP	p	lt ov -> bit res	-	some py -> haem some phyt's oxid sl silty	1.34 (14)
QMB A41	Wellesley 5 (4)	py sh	barren	-	-	no ov	-	all py -> haem	NDP
QMB 189	Leven Childrens Home 1 (4a)	py + calc sh	low	NDP	w	no ov	-	matrix reddened all py -> haem phyts v small	1.31 (2)
QMB A37	Wellesley 1 (5)	calc sh	mod	NDP	wp + p	mod ov -> bit res ab f	-	-	1.60 (13)
QMB A41	Frances Colliery Sea Mine (6)	py + sl silty sh	mod	NDP	w + p	matrix sat -> bit res	-	-	3.05 (25)
QMB 9946	Shore 750m E41°S of Bowhouse (6a)	py sh	v low	NDP	p	lt ov -> bit res	-	phyts v small reddened matrix	NDP
QMB A43	Frances Colliery Bore (7)	py sh	high	10:20:70	wp + st	mod/hvy ov	50% int/y ?algal cysts 10% mod/y+o-y sp	EXTRACTED	0.38 (25)
QMB A40	Frances Colliery No 1 Whin Mine (8)	calc sh	mod	NDP	p	matrix sat -> bit res	-	-	3.50 (25)

Sample Number	Borehole Name (BGS Number)*	Lithology	Organic Content	V.I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (n° readings)
QMB A4	Seafield Colliery 170 Fathom Mine (9)	py sh	v low	5:90:5	p	lt ov	mod/y-o + o-y f + sp frags	-	0.58 (9)
QMB A2	Firth of Forth Tower 2 (10)	py sh	mod	10:70:20	st + w	mod ov + w pty hv	mod/o-y sp + cysts + w	sl silty 2 vit popns much py -> Fe ox EXTRACTED	0.47 (25) 0.66 (7)
QMB A31	Firth of Forth 1A (11)	py sh	low	NDP	p	lt ov -> bit res	-	much py -> haem tr carb	1.28 (3)
QMB A32	Firth of Forth 2 (12)	py sh	mod	40:60:0	w + wp	mod ov + f	-	-	1.02 (17)
QMB 44a	Westfield Opencast (13)	sl calc sh	low	30:70:0	f + w	lt ov + f + w	-	-	1.20 (25)
QMB 6	Kellybank 1 (28)	sh	low/mod	tr:100:tr	p	mod ov + ab f	dull/lt o + y-o f	ab Fe oxide blotches	1.45 (10)
QMB 66	Harvieston 3/61 (29a)	py sh	mod	tr:100:0	p	lt ov	-	py -> haem	1.59 (10)
QMB 5	Harvieston 20 (30b)	siltstone	high	50:30:20	w + st	lt ov	15% int/y f 5% mod/y-o + lt o sp	humic/bituminous om exuding from vit	0.55 (25)
QMB 72	Harvieston 2/54 (31)	sh	mod	tr:100:tr	p	lt/mod ov	dull/y-o + o-y liptodet	-	0.73 (4)

Sample Number	Borehole Name (BGS Number)*	Lithology	Organic Content	V:lt:E (percent)	Vitritite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (n° readings)
QMB 2	Devon Colliery Cross-Cut (32)	silty sh	high	5:85:10	p	lt ov + ab f	mod-dull/lt + mid o sp tr mod/y w	-	0.67 (4)
QMB 12	Forthbank 3 (34a)	sl silty py sh mod	mod	5:95:tr	p	lt ov + ab dk f	mod/mid + deep o liptodet	py -> Fe oxides	0.70 (17)
QMB 43	Craigrie Farm (34 b)	py siltstone	mod	70:20:10	st + w	lt/mod ov pty hvy interst	tr int/y f tr mod/o-y + y-o sp	-	0.56 (25)
QMB 7	Polkemmet 1 (35)	calc + py sh	mod	5:35:60	wp + p	matrix sat	50% mod/y f 10% mod/y + o-y sp	calcite rhombs in matrix	0.53 (8)
QMB 4	Fauldheads 789 (36a)	sh	mod	NDP	p	hvy ov -> bit res	-	-	3.87 (25)
QMB 69	Arden 5 (37)	py sh	v high	20:10:70	w + wp	matrix sat	60% mod/y + o-y liptodet 10% mod/y + o-y sp frags	tr fish scales	0.46 (10)
QMB 13	Opencast nr Greengairs (38)	v calc sh	low	tr:70:30	w + st	mod/hvy ov	dull/y-o sp tr mod/y w	-	0.44 (3)
QMB 11	Opencast at Grayrigg (39)	calc sh	mod	10:60:30	st + w	matrix sat	25% mod/y liptodet 5% mod-dull/o-y + y-o sp	ab sid blotches tr mosaiced blotches	0.47 (13)

Sample Number	Borehole Name (BGS Number)*	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (n° readings)
QMB 78	Stand 1 (40a)	calc + sl py sh	high	30:10:60	wp	matrix sat	30% mod/y + o-y liptodet 20% mod/y w 10% mod/y + o-y sp	v dull mid o bkg fl	0.48 (23)
QMB 71	Stand 3 (40b)	py sh	high	20:20:20	wp	mod ov pty hvy	mod/y-o + lt o liptodet tr int/y w	ab mosaiced ?bitumen	0.55 (25)
QMB 77	Dalmacoulter 5 (41a)	sl py sh	high	10:90:0	p	hvy ov + dk w	-	-	0.83 (18)
QMB 74	Dalmacoulter 4 (41b)	py sh	mod/high	20:40:40	wp	mod ov + ab dk w	30% mod + dull/ o-y + y-o liptodet 10% mod/y cysts	ab mosaiced ? bitumen 1 tasmanitid	0.55 (18)
QMB 73	Dalmacoulter 3 (41c)	silty sh	mod	30:40:30	wp	matrix sat tr v hvy blotches	mod/y liptodet + wispy cysts	vit phyts v small 1 tasmanitid	0.47 (4)
QMB 46	Dalmacoulter 2 (41d)	py sh	high	30:50:20	w + wp	mod ov ab dk blotches	mod/o-y + y-o sp mn mod/y w	ab mosaiced ? bitumen (%Ro 0.77)	0.61 (25)
QMB 24	Dalmacoulter Opencast (41e)	sh	high	tr:90:10	wp	hvy ov	mod/o-y + y-o sp + liptodet	mosaiced stringers of ?bitumen	0.59 (12)
QMB 76	Airdrie, Stirling Road 6 (42)	sh	mod	10:90:tr	wp	hvy ov	dull/mid o f	-	0.86 (8)
show %EOF									

Sample Number	Borehole Name (BGS Number)*	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (n° readings)
QMB 65	Thrashbush 2 (43)	sh	high	NDP	w + p	v hvy ov -> bit res	-	-	2.30 (25)
QMB 70	Moffat Mills (44b)	py sh	high	NDP	p	v hvy ov -> bit res	-	ab mosaiced ?bitumen	1.67 (24)
QMB 39	Moffat Mills 2 (44d)	py sh	high	NDP	wp	hvy ov -> bit res	-	mosaiced ?bitumen stringers	1.31 (24)
QMB 40	Peterburn 55D (45a)	sl py sh	high	30:40:30	w + wp	mod/hvy ov	mod-dull/o-y f tr mod/y-o sp	ab mosaiced ?bitumen (high Ro)	0.53 (18)
QMB 64	Bellshill-Newarthill Tower 8/2 (46)	marl	low/mod	tr:20:80	p	mod/hvy ov	60% mod/ o f 20% mod/y + o-y w	EXTRACTED ab carb blotches	0.34 (2)
QMB 8	Newhouse 8 (47b)	silty sh	mod	5:65:30	wp	matrix sat	mod/o-y + y-o f + w tr mod/o-y + y-o sp	-	0.48 (5)
QMB 36	Lands of Cleland 11 (49a)	calc sh	high	50:20:30	wp	hvy ov	mod/y f tr mod/y-o + o-y sp frags	ab sid blotches vit exudes humic/bituminous om	0.46 (25)
QMB 31	Stevenstone Estate 1 (49b)	sl silty + calc sh	high	10:20:70	wp	mod/hvy ov	60% mod/y + o-y f + w 10% mod/y sp	-	0.37 (13)

Sample Number	Borehole Name (BGS Number)*	Lithology	Organic Content	V:I:E (percent)	Virinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (n° readings)
QMB 63	Bellside 1 (50)	silty calc sh	low	tr:60:40	p	mod ov	30% mod/y + o-y f 10% mod/lt-mid o liptodet	ab carb blotches	0.52 (7)
QMB 17	Greenheat Moss (52)	silty sh	mod	10:40:50	w + wp	hvy ov	mod/o-y + y-o liptodet tr mod/o-y sp frags	py in places	0.57 (3)
QMB 3	Thornlie 1 (53)	sl silty + py sh	low	tr:70:30	wp	matrix sat	dull/mid o sp + liptodet	-	0.48 (4)
QMB 29	Hopefield Colliery (54)	calc sh	low	o:100:tr	p	mod ov	mod/o-y + y-o sp	ab carb crystals	0.57 (3)
QMB 35	East Parkhead Colliery (55)	silty sh	mod	10:50:40	wp	mod/hvy ov	dull/lt-mid o f tr mod/lt o sp frags	-	0.63 (6)
QMB 67	Coatbridge Ring Road 13 (56a)	sh	high	10:50:40	p	mod ov	30% mod/y + o-y f 10% dull/mid o sp	ab mosaiced ?bitumen	0.52 (11)
QMB 56	Coatbridge Ring Road 16 (56a)	py sh	high	30:30:40	wp	mod ov	20% mod/y w 10% mod/y f 10% mod/y-o sp frags	ab dk bituminous/ humic om exuding from vit	0.48 (9)

Sample Number	Borehole Name (BGS Number)*	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (n° readings)
QMB 62	Coatbridge Alexander St 5 (56b)	sl py sh	high	30:20:50	wp + st	mod ov ply hvy	30% mod/y-o + o-y w 20% mod/y f tr int/y blotches	ab dk bituminous/humic om exuding from vit	0.47 (25)
QMB 59	Coatbridge (56c)	sl silty + py sh	high	10:70:20	wp	mod ov tr bit res	mod/mid o liptodet tr mod/y-o blotches	ab mosaiced w + st of ?bitumen	0.56 (15)
QMB 54	Coatbridge (56c)	py sh	high	10:60:30	p +wp	mod/hvy ov	20% mod y-o w 10% deep/o-y + y-o sp frags	sl silty mn mosaiced ?bitumen st	0.48 (9)
QMB 57	Coatbridge Central 17 (56e)	sh	high	10:70:20	p	lt ov	dull/deep o liptodet dull/y blotches	tr mosaiced ?bitumen w + st	0.58 (11)
QMB 9	Coatbridge Central 12 (56h)	sl silty sh	mod	5:65:30	p	matrix sat	mod/o-y + y-o f tr mod/o-y sp	-	0.57 (8)
QMB 49	Coatbridge Central 9 (56i)	py sh	high	30:30:40	st + w	hvy ov + dk w	30% dull/lt o liptodet 10% int/y f	liptodet degraded	0.54 (25)
QMB 48	Coatbridge Corsewall St 5 (56j)	py sh	v high	20:30:50	st + w	hvy ov + v dk w	30% dull/mid o w 10% int/y f 10% mod/o-y sp	2 vit popns much impregnated vit	0.57 (7) 0.49 (25)

Sample Number	Borehole Name (BGS Number)*	Lithology	Organic Content	V:l:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (n ^o readings)
QMB 41	Coatbridge Corsewall St 1 (56k)	py sh	high	20:40:40	w + wp	hvy ov	mod/o-y f + w tr mod/o-y sp	ab mosaiced ?bitumen EXTRACTED	0.58 (9)
QMB 61	Coatbridge Ring Road 25 (56l)	calc silty sh	mod	10:60:20	p + wp	mod ov + dk w	mod/lt o sp mod/y-o f	ab carb crystals	0.41 (13)
QMB 52	Coatdyke 1 (56m)	sh	mod	tr:80:20	p	mod ov	dull/lt o f	-	0.61 (4)
QMB 58	Coatbridge Central 20 (56n)	sl silty sh	high	20:50:30	wp	mod ov pty bit res	30% mod-dull/mid o sp + liptodet try mod/y blotches	ab mosaiced ?bitumen w + st	0.59 (23)
QMB 51	Coatbridge Central 18 (56o)	sh	high	20:60:20	st + w	mod ov + ab dk blotches	mod/o-y + y-o sp	ab mosaiced ?bitumen	0.58 (18)
QMB 42	Stobcross Works (56p)	sl silty sh	low/mod	tr:50:50	p + wp	mod ov pty hvy blotches	mod/y-o + lt o sp mod/o-y + y-o f	-	0.44 (6)
QMB 45	Coatbridge Sunnyside Road 11 (56q)	py sh	high	20:40:40	st	hvy ov	mod/o-y + y-o + lt o liptodet mod/lt o sp mod/o-y f	ab mosaiced ?bitumen (%Ro 0.77)	0.55 (17)
QMB 10	Queenslie 6 (58)	py sh	high	30:40:30	wp	mod ov + pty hvy blotches lt o sp	20% mod/y f 10% mod/y-o + lt o sp	-	0.53 (25)

Sample Number	Borehole Name (BGS Number)*	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (n ^o readings)
QMB 26	Queenslie 1 (59)	sh	mod	tr:60:40	w + wp	mod/hvy ov	dull/lt-mid o sp frags mod/lt o liptodet	-	0.61 (4)
QMB 22	Queenslie 2 (60)	silty sh	low	tr:100:tr	wp	mod/hvy ov	dull/deep o f	-	0.66 (5)
QMB 50	Stirling Motorway M43 (61)	sl silty sh	low	tr:100:tr	w	mod ov	dull/y-o + o-y liptodet	-	0.78 (5)
QMB 21	Beatties Bakery (62a)	sl silty sh	low	tr:100:tr	wp	mod/hvy ov	dull/deep o f	-	0.90 (6)
QMB 37	Vinegarhill Street (62b)	sl silty sh	low	20:60:20	p	v hvy ov	mod/deep o sp	-	0.58 (8)
QMB 44	Cuthberston Street (63)	1 py sh	high	40:20:40	w + wp	mod ov + w	mod/lt o sp mod/y f	-	0.51 (25)
QMB 34	Gateside Colliery (64b)	3 sl silty + sl calc sh	low	10:50:40	p	mod/hvy ov	dull/lt-mid o f tr mod/mid o sp	2 popns vit ab carb blotches	0.65 (7) 0.41 (5)
QMB 33	Gateside Colliery (65a)	4 calc sh	mod	10:50:40	p	hvy ov	mod/lt o sp frags + f	-	0.47 (3)
QMB 38	Gateside Colliery (65b)	5 sl silty + calc sh	low/mod	20:50:30	p	v hvy ov	dull/lt o f tr dull/deep o sp	ab sid blotches	0.54 (6)

Sample Number	Borehole Name (BGS Number)*	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (n° readings)
QMB 47	Bardynes Colliery 2 (66)	sl silty sh	low	tr:70:30	p	lt/mod ov	dull/deep o liptodet tr mod/o-y sp	-	0.81 (2)
QMB 19	Blantyre 1 Colliery Mine (69)	sl silty + sl calc sh	mod	5:90:5	wp	mod ov	mod/o-y sp	py -> Fe ox tr fish scales	0.62 (18)
QMB 55	Clydesmill-Strathhaven Tower 23 (70)	py sh	mod	tr:100:0	p	no ov	-	py -> haem some phyt oxidised	1.45 (11)
QMB 20	Hamilton Place 2 Colliery 4 (74a)	sl calc sh	mod	5:90:5	wp	mod ov	dull/o-y sp frags	most py -> Fe oxides	0.59 (20)
QMB 18	Hamilton Place 2 Colliery (71b)	sl silty sh	mod	5:70:25	wp	mod ov	mod/o-y + y-o sp frags + w	1 thin tasmanitid	0.60 (13)
QMB 25	River Avon nr Glenavon (74)	silty sh	low	tr:70:30	wp	mod ov	dull/o-y liptodet tr dull/mid o sp	-	0.54 (6)
QMB 60	Dovesdale M4B (75)	calc + silty sh	low/mod	10:80:10	p	mod ov	dull/mid-deep o sp tr mod/y-o + o-y ?algal blotches	ab carb blotches	0.58 (3)

Sample Number	Borehole Name (BGS Number)*	Lithology	Organic Content	V:I:E (percent)	Virinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (n° readings)
QMB 14	Overwood M6 (76a)	sl silty sh	low/mod	5:85:10	p	mod ov tr bit res	mod-dull/y-o f	-	0.56 (17)
QMB 23	Canderrigg 82 (76b)	v calc sh	low	tr:90:10	wp	lt/mod ov	dull/y-o f + w	-	0.53 (7)
QMB 53	Overwood M9 (77)	calc sh	low	20:50:30	p	mod ov	20% mod/y + o-y sp + liptodet 10% mod/y f	ab carb blotches	0.33 (2)
QMB 27	Burnhead Diamond (78)	sl calc siltstone	mod	20:40:40	st	v hvy lamns + no ov	30% mod/o-y + y-o f 10% mod/o-y sp	ab shell + fish scale frags	0.36 (10)

*BGS localities given in Brand, 1977.

QUEENSLIE MARINE BAND SAMPLES NOT INCLUDED IN THE WORK OF BRAND (1977)

Sample Number	Borehole Name Location	Lithology	Organic Content	V:I:E (percent)	Virinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (n° readings)
QMB 1	Dunmore Bore NS 8900 8915	py sh	mod	tr:60:40	wp	hvy ov	mod/y-o + lt o f tr mod/o-y sp frags	-	0.51 (3)
QMB 15	Burnside Road Rutherglen 4 NS 6234 5979	silty sh	mod/high	5:65:30	w + p	mod ov	20% mod/o-y liptodet 10% dull/lt o sp	-	0.56 (15)

Sample Number	Borehole Name Location	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitument	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (n° readings)
QMB 16	Tollcross 1/85 NS 6339 6349	sl py + sl silty sh	low/mod	tr:90:10	p	matrix sat	dull/lt o sp mod/y-o + lt o	-	0.55 (3)
QMB 30	Opencast 800m SW of Hill of Mordoston NS 8185 5764	sh	mod	tr:60:40	p	mod ov	30% mod/y f + w 10% mod/o-y sp	-	0.57 (3)
QMB 32	Dykehead Road Airdrie 42 NS 7602 6716	sh	mod	NDP	p	v hvy -> bit res	-	-	4.93 (24)
QMB 68	Rochsolloch School 1 NS 27508 66494	sl silty sh	mod	tr:90:10	p	lt/mod ov	dull/y-o + lt o w	tr carb blotches	0.58 (4)
QMB 79	Glenmavis 21 NS 7544 6695	silty sh	low	tr:60:40	p	hvy ov	mod-dull/mid o w + f tr mod/mid o sp	-	1.02 (8)
QMB 80	E. Kilbride Rd Burnside 3 NS 6281 5993	sh	low	tr:80:20	p	mod/hvy ov	mod-dull/mid + deep o sp frags mod-dull/o-y f	-	0.64 (5)
QMB 377	Coaltown of Wemyss 1 NT 33227 69582	py sh	low	NDP	p	no ov	sl silty	much py -> haem reddened matrix	0.90 (8)

ADDITIONAL COAL MEASURES SAMPLES

Sample Number	Sample Locality Grid Reference	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitument	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (n° readings)
BEV D	Seafield 2/82 NT 33215 68639	coal	-	60:30:10	-	-	mod/o-y + y-o sp	Chemiss Coal ab mic	0.68 (25)
BEV I	Seafield C31's NT 3314 68624	coal	-	70:20:10	-	-	mod/y-o + lt o sp	Chemiss Coal ab layer mic ab dispersed mic	0.74 (25)
F 3521 A	Francis Pit NT 33100 69377	coal + cannel amns	-	40:40:20	-	-	mod-dull/lt o sp	Bowhouse Coal mic assoc with liptinite	0.62 (25)
BP	Blair Point NT 33140 69390	coal	-	70:20:10	-	-	mod/mid o sp	Wemyss Parrot Coal sl oxid ab mic	0.77 (25)
BUSH	West Wemyss NT 33195 69482	coal	-	70:30:0	-	-	-	Bush Coal py gone, vit sl cracked => oxidised	1.21 (25)
BUSHSH	West Wemyss NT 33195 69482	py sh	low	10:90:0	wp	v lt ov + f	-	EXTRACTED 1.7% TOC 51 HI shale 1.5' above Bush Coal much py -> haem	1.20 (25)

Sample Number	Sample Locality Grid Reference	Lithology	Organic Content	V:IE (percent)	Vitrinite Morphology	Nature of Bitument	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (n° readings)
CHCP	West Wemyss Hotel Car Park NT 33242 69477	coal	-	70:20:10	-	-	dull/mid o sp	?Branxton Coal sl ox	0.84 (25)
BSOS	West Wemyss (building site) NT 33273 69485	carbarg	-	60:10:30	w	matrix sat	mod/y sp	EXTRACTED 20.9% TOC 254 HI shale between Wall and Pilkembare Coals	0.37 (25)
MP 3500 A	Michael Pit NT 3336369624	coal + cannel lamns	-	50:30:20	sl scruffy	-	mod/y-o + lt o sp tr int/y resin blobs ab dispersed mic	Bowhouse Coal	0.64 (25)**
M 4433	East Wemyss Rosie Colliery NT 3459 9771	coal	-	70:20:10	v scruffy	-	mod/y-o + lt o sp	Bush Coal	0.54 (25)
M 4438/1	Leven Colliery NT 33662 69958	coal	-	70:10:20	v scruffy	-	mod/lt + mid o sp	Upper Coxtool Coal sl ox ab mic patches tr int/y resin st	0.61 (25)
SBO 4383	Firth of Forth Tower 3 NT 33954 69818	carbarg	-	40:30:30	st	no ov	mod/y-o + lt o sp	sample 175' below Bush Coal vit exudes bituminous/humic om	0.67 (25)

Sample Number	Sample Locality Grid Reference	Lithology	Organic Content	V:ItE (percent)	Vitrinite Morphology	Nature of Bitument	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (n° readings)
SBO 5489	Wellesley N° 5 NT 33836 69767	coal	-	NDP	-	-	-	seam above Wood Coal	1.35 (25)
SBO 5484	Wellesley 4 U/G	coaly carbarg	-	40:30:30	-	-	20% mod/y-o + o-y sp 5% mod/o-y liptodet 5% int/y resin blobs	More Coal ab mic	0.62 (25)
SBO 6443	Wellesley 11 U/G NT 37616 98150	sl calc sh	low	90:10:0	st + p	no ov	dull/deep o carb fl	88' above Branxton	0.85 (8)
M 16208	Leven 1 and 2 Pits NO 33733 70013	sh	mod	10:90:0	wp	no ov + w	-	Wall Coal vit exudes bituminous/ humic om	0.53 (11)
M 4422/1	Balgonie Colliery NT 33138 69862	coal	-	70:20:10	v scruffy	-	mod/o-y + y-o sp tr int y/cut + res	Dysart Main Coal	0.62 (25)
DAL 18011	Bore 948 Dalginch NT 330962 701232	coal + coannel lamns	-	50:25:25	scruffy	-	mod/o-y + lt o sp	Bowhouse Coal	0.49 (25)
DAL 7700	BH 1049Dalginch NT 331223 701740	coal + cannel lamns	-	60:20:20	sl scruffy	-	mod/o-y sp tr <i>Bot</i> in cannal	Bush Coal tr dispersed mic in cannal	0.47 (25)
LUN 3	Lundin Links NO 3413 7024	coal	-	70:20:10	v scruffy	-	dull/mid-deep o sp	Bancraig Coal ab micn of cell contents	0.76 (25)

Sample Number	Sample Locality Grid Reference	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitument	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (n° readings)
M 4406	Hawkhill Colliery Kincardine NS 2930 6890	sh	mod	10:30:60	w	v lt ov	mod/y-o sp tr int/y cysts tr cut	Tulliallan Shale	0.62 (8)
JP 9749	Powharnall Colliery NS 2655 6254	coal	-	ND	-	-	ND	Upper Diamond Coal	0.67 (25)
JP 8082	Avonhead Colliery NS 2881 6700	coal	-	ND	-	-	ND	Kiltongue Coal	0.80 (25)
JP 8293	Aitkenhead Colliery NS 2945 6944	coal	-	ND	-	-	ND	Coalsnaughton Main Coal	0.50 (25)

**also an average for 10 coals from the Coxtool to Bowhouse seams in this pit.

'True' i.e. unsuppressed ranks are shown for the Queenslie horizon in the Firth of Forth Tower 2, Musselburgh, Esk Mouth and Monkton House boreholes and are prec from the borheole reflectance profiles (see text).

The rank of the additional Westfield sample is estimated from the Coal Measures borehole reflectance profile in this basin (see text).

Source of samples prefixed: QMB - Mr. P. Brand.
 (from Queenslie Marine BEV - Mr. R. Beveridge.
 Band data) F + MP - NCB palynological collection, Wath-upon-Dearne.
 M - Dr. G. Durant.
 DAL - Mr. F. Matheson.
 SBO - Corestore, Murchison House.
 JP - Mr. J. Pearson.
 All others are field samples.

PASSAGE GROUP

Sample Number	Locality	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (n° readings)
SBO 6503	Randolph Colliery No.3 NT 32812 69728	seatearth	v low	100:0:0	w	no ov	-	Lethamwell Coal vitrinite exudes bituminous/humic om	0.53 (5)
JP 7942	Treaton Opencast NT 33270 70170	coal	-	ND	-	-	ND	Dysart Main Coal	0.47 (25)
JP 8299	Aitkenhead Opencast NS 29450 69440	coal	-	ND	-	-	ND	Glenfuir Coal	0.48 (25)
DAL 1579	Dalginch Borehole 968 NT 330564 701314	coal	-	70:20:10	scruffy	-	mod/y-o sp tr cut + resin	Dysart Main Under Coal ab degraded om	0.50 (25)
BEV B	Seafield 1/82 Bore NT 331465 689930	coal	-	70:20:10	-	-	mod/y-o + lt o sp	Lower Dysart Coal (top leaf)	0.82 (25)
BEV C	Seafield 1/82 Bore NT 331565 689930	coal	-	80:15:5	-	-	mod/lt o sp	Lower Dysart Coal (bottom leaf)	0.86 (25)
BEV E	Seafield 1/83Bore NT 331310 690270	coal + cannell lamns	-	50:30:20	-	-	mod/o-y sp + sp frags tr resin	Coronation Coal ab mic lenses + patches	0.80 (25)
BEV 4	Seafield 170 fm sub crosscut NT 331495 686850	coal	-	70:20:10	-	-	mod/lt + mid o sp tr int/y resin	Dysart Main Coal	0.72 (25)

Samples prefixed : BEV provided by Mr. R. Beveridge.

JP provided by Mr. J. Pearson.

DAL provided by Mr. R. Ingerbritsen and Mr. F. Matheson.

SBO provided by Mr. P. Brand.

For additional Passage Group data see Westfield IGS bore and passage group samples from the Westfield Basin.

WESTFIELD BASIN NT 321698

COAL MEASURES

Borehole 2013 (N^o 24 on p.5 in Brand *et al.* 1980)

Sample Number	Depth (ft)	Lithology	Organic Content	V.I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average coals %R _v max (n ^o readings)
W 2.1	69	coal	-	ND	-	-	ND	?N ^o 1 Mine Coal	0.50 (25)
W 2.2	178	coal	-	ND	-	-	ND	2 Foot Coal	0.53 (25)
W 2.3	200	coal	-	ND	-	-	ND	Wee Pit Coal	0.51 (25)
W 2.4	244	coal	-	ND	-	-	ND	Goodall's Coal	0.58 (25)
W 2.5	266	coal	-	ND	-	-	ND	Bogside Ironstone Coal	0.45 (25)

Queenslie Marine Band (N^o 18 on p.5 in Brand *et al.* 1980)

QMB 44	Upper sl calc sh Benches Section NT 32107 69908	low	30:70:0	p	lt ov + f + w	-	1.20 (25)
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PASSAGE GROUP
Borehole 2013

Sample Number	Depth (ft)	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average coals %R _v max (n° readings)
W 2.6	409	coal	-	ND	-	-	ND	A Coal	0.59 (25)
W 2.7	440	coal	-	ND	-	-	ND	-	0.58 (25)
W 2.8	470	coal	-	ND	-	-	ND	-	0.56 (25)
W 2.9	508	coal	-	ND	-	-	ND	H Coal	0.58 (25)
W 2.10	536	coal	-	ND	-	-	ND	H Coal	0.58 (25)
W 2.11	583	coal	-	ND	-	-	ND	I Coal	0.58 (25)
W 2.12	640	coal	-	ND	-	-	ND	J Coal friable	0.51 (25)
W 2.13	700	coal	-	ND	-	-	ND	L Coal ab oxid py in cleats	0.48 (25)
W 1.14	757	coal	-	ND	-	-	ND	M Coal	0.55 (25)
W 2.15	809	coal	-	ND	-	-	ND	P Coal oxidised	0.49 (25)
W 2.16	877	coal	-	ND	-	-	ND	P Coal	0.61 (25)
W 2.17	911	coal	-	ND	-	-	ND	P Coal	0.59 (25)

Sample Number	Depth (ft)	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average coals %R _v max (n° readings)
W 2.18	992	coal	-	ND	-	-	ND	Q Coal	0.61 (25)
Borehole 2004 NT 320897 698792									
W 17.1	475	coal	-	ND	-	-	ND	B Coal	0.54 (25)
W 17.2	504	coal	-	ND	-	-	ND	D Coal	0.53 (25)
W 17.3	531	coal	-	ND	-	-	ND	F Coal	0.47 (25)
W 17.4	559	coal	-	ND	-	-	ND	G Coal	0.48 (25)
W 17.5	595	coal	-	ND	-	-	ND	H Coal	0.58 (25)
W 17.6	670	coal	-	ND	-	-	ND	L Coal	0.44 (25)
W 17.7	700	coal	-	ND	-	-	ND	M Coal	0.48 (25)
W 17.8	759	coal	-	ND	-	-	ND	P Coal	0.56 (25)
Borehole 1990 NT 32074 69853									
W 1.1	257	coal	-	ND	-	-	ND	B Coal	0.55 (25)
W 1.15	294	coal	-	ND	-	-	ND	D Coal	0.57 (25)

Sample Number	Depth (ft)	Lithology	Organic Content	V:I:E (percent)	Vitritinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average coals %R _v max (n ^o readings)
WDCS	295	canneloid sh	v high	5:7:88*	st + w	lt/hvy ov	EXTRACTED	Canneloid Shale 31.8 TOC tr PyC	0.35 (25) torbanitic sh
							775 HI 76% int/y Bot 11% mod/o-y liptodet 1% int/mod/o-y sp		
W 1.2	305	coal	-	ND	-	-	ND	E Coal	0.55 (25)
W 1.3	365	coal	-	ND	-	-	ND	H Coal	0.59 (25)
W 1.4	416	coal	-	ND	-	-	ND	I Coal oxidised	0.56 (25)
W 1.5	457	coal	-	ND	-	-	ND	K Coal oxidised + v friable	0.43 (25)
W 1.6	512	coal	-	ND	-	-	ND	M Coal EXTRACTED	0.56 (25)
W 1.7	551	coal	-	ND	-	-	ND	N Coal oxidised + v friable	0.50 (25)
W 1.8	612	coal	-	ND	-	-	ND	P Coal	0.47 (25)
W 1.9	641	coal	-	ND	-	-	ND	P Coal	0.57 (25)
W 1.10	684	coal	-	ND	-	-	ND	Q Coal	0.59 (25)

Sample Number	Depth (ft)	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average coals %R _v max (n° readings)
W 1.11	691	coal	-	ND	-	-	ND	Q Coal	0.63 (25)

Borehole 1998 (N° 58 on p.5 in Brand *et al.* 1980)

W 15.1	210	cannel coal	-	ND	-	-	ND	B Coal	0.64 (25)
W 15.2	231	coal	-	ND	-	-	ND	D Coal	0.47 (25)
W 15.3	269	coal	-	ND	-	-	ND	F Coal	0.49 (25)
W 15.4	302	coal	-	ND	-	-	ND	H Coal	0.56 (25)
W 15.5	355	coal	-	ND	-	-	ND	J Coal	0.53 (25)
W 15.6	400	coal	-	ND	-	-	ND	K Coal	0.40 (25)
W 15.7	453	coal	-	ND	-	-	ND	M Coal	0.53 (25)
W 15.8	495	coal	-	ND	-	-	ND	P Coal	0.60 (25)
W 15.85	517	coal	-	80:10:10	-	-	mod/o-y sp	P Coal EXTRACTED	0.55 (25)

Sample Number	Depth (ft)	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average coals %R _v max (n° readings)
WDOS	521	sh	v high	3:9:88*	st + w	lt/hvy ov	70% dull-int/y Bot 15% mod/y + o-y liptodet 3% mod/y sp	EXTRACTED 42.9% TOC 694 HI Westfield Oil Shale torbanitic sh Bot variably degraded vit exudes bituminous/humic om	0.38 (25)
W 15.9	543	coal	-	ND	-	-	ND	Q Coal	0.64 (25)

*Point counted

Additional Passage Group Samples

Sample Number	Borehole Locality	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (n° readings)
BEB 4576	Westfield N° 2 NT 321170 697600	siltstone + carbarg lamns	high	40:60:0	st	lt ov + f	-	coal above Westfield Oil Shale	0.53 (25)
BEB 4047	Bogside 2 (N° 30 on p.5 in Brand <i>et al.</i> 1980)	algal coal	-	40:30:30	-	matrix sat	25% int/y Bot 5% dull/mid o sp	middle of Bogside Thick Coal ab mic	0.65 (25)

Sample Number	Borehole Locality	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (n ^o readings)
BEB 4045	Bogside 2 (N ^o 30 on p.5 in Brand <i>et al.</i> 1980)	sh	v high	5:15:80	w	lt ov	int/y Bot	torbanitic shale; possibly the Canneloid Shale	0.31 (12)
BEB 4063	Bogside 5 (N ^o 61 on p.5 in Brand <i>et al.</i> 1980)	seatearth	low	100:0:0	st	no ov	-	Bogside Thick Coal (bottom) dk bituminous/humic om exuding from vit	0.54 (10)
BEB 4064	Bogside 5 (N ^o 61 on p.5 in Brand <i>et al.</i> 1980)	sh	mod	tr:80:20	st	no ov	mod/y-o + lt o sp int/y w	Bogside Thick Coal (bottom)	0.55 (3)
Passge Group Field Samples									
1	NT 321224 699054	coal	-	ND	-	-	ND	G Coal	0.52 (25)
2	NT 321090 698960	coal	-	ND	-	-	ND	G Coal (upper leaf)	0.55 (25)
3	NT 320952 698874	coal	-	ND	-	-	ND	G Coal	0.57 (25)
4	NT 320792 699066	coal	-	ND	-	-	ND	-	0.47 (25)
5	NT 320603 697203	coal	-	ND	-	-	ND	average %R _O from 7 coals from O to Q at this site	0.48 (25)

N.B. Coals A to Q constitute the Boglochy Beds
 Coals A to G constitute the Bogside Thick Coal
 Coal H is the Bogside Main Coal
 Coal M is the Westfield Thick Coal
 Coal P is the Westfield Shale Coal

For Upper Limestone Group sediments see Westfield IGS Borehole data.

CALCIFEROUS SANDSTONE MEASURES

Sample Number	Borehole Locality	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (n° readings)
LOC 4a	Westfield 3038 Bore @ 384' (N° 4 on p.5 of Brand <i>et al.</i> 1980)	sh	low	NDP	-	lt/mod ov -> bit res	-	-	4.06 (8)
LOC 4b	Westfield 3038 Bore @ 393' (N° 4 on p.4 of Brand <i>et al.</i> 1980)	sh	low	NDP	wp	lt/mod ov -> bit res	-	igneous matter in sed	4.04 (7)
LOC 1	Westfield 404m level (N° 1 on p.5 of Brand <i>et al.</i> 1980)	sh	low	NDP	p	mod ov -> bit res	-	-	3.62 (10)

Samples prefixed: LOC, BEB and QMB provided by Mr. P. Brand.

W collected from the coreshed at Westfield Opencast Site.

All others sampled from exposures at the Westfield Excavation.

UPPER LIMESTONE GROUP - CALMY LIMESTONE HORIZON

Sample Number	Locality Depth (ft) Grid Reference	Lithology	Organic Content	V:l:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (n° readings)
C 53	Little Pilmuir 438 NO 34072 70392	calc sh	high	5:90:5	p	lt ov + f	dull/o-y f	-	0.56 (6)
C 54	Dumbarnie 174 NO 34482 70323	silty sh	mod	5:85:10	p	lt ov + f	mod/o-y + y-o sp	-	0.54 (8)
C 57	Balcorno Wood 435 NO 34132 70575	sh	low	tr:95:5	p	no ov	mod/y + o-y f	-	0.55 (3)
C 3	Meggie Den 178 NO 33616 70306	sl calc sh	mod	10:60:30	wp	mod ov + w	20% mod/o-y f 5% mod/y + o-y sp 5% int/y Bot	EXTRACTED	0.40 (16)
C 136	Lochhead 1 2077 NT 33216 69665	sh	low	tr:90:10	p	lt ov + f	mod/y sp	-	0.48 (6)
C 44	Boreland 1797 NT 33039 69422	sh	high	tr:80:20	p	lt ov + f	mod/lt o sp + y-o f	-	0.49 (2)
C 44a	Boreland 1829 NT 33039 69422	sl silty sh	mod	30:50:20	p	lt ov + w	mod/y + o-y sp	-	0.56 (5)

Sample Number	Locality Depth (ft) Grid Reference	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (n° readings)
C 69	Thornton Bridge 1128 NT 32889 69722	sl calc siltstone	high	20:50:30	p	w	mod-dull/mid o sp - + sp frags		0.64 (25)
C 49	Carberry 549 NT 32825 69549	v calc sh	low	5:95:tr	p	lt ov + f	mod/y-o + lt o f	2 pops of vit fossil frags	0.41 (2) 0.72 (2)
C 29	Mid-Strathore 626 NT 32822 69827	siltstone + sst lamns	low	10:80:10	wp	no ov + w	mod-dull/ y-o sp	ab Fe ox	0.48 (7)
C 137a	Mosswood 1690 NT 33109 69673	sh	low	tr:100:tr	p	lt ov	mod/mid o f	ab fossils	0.52 (1)
C 137b	Mosswood 1710 NT 33109 69673	calc siltstone	mod	NDP	p	mod ov -> bit res -		-	3.02 (20)
C 16	West Coaltown 478 NT 32921 69934	silty + py sh	high	20:50:30	w + wp	no ov ab f + w	dull/y + o-y sp + f	-	0.51 (17)
C 504	Westfield Opencast 356m Level NT 32059 69893	sh	mod	5:95:tr	p	lt ov + f	mod/y-o + lt o f	-	0.52 (8)
C 262b	South Pitkinnie 67 NT 31977 69634	silty sh	high	5:85:10	p	lt ov + f + w	mod/lt o sp frags	-	0.62 (12)

Sample Number	Locality Depth (ft) Grid Reference	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (n° readings)
C 38a	Seafield Colliery 170 Fm Mine 389 NT 32800 68917	sh	mod	5:9.5:tr	p	no ov + f	mod/lt o sp frags	-	0.55 (8)
C 1	Firth of Forth Tower 1 NT 33002 68789	sl calc + silty sh	high	5:70:5	p	no ov + f	dull/lt o sp tr Bot frags	-	0.70 (16)
BEB 4445	Shiresmill 175 NT 30005 68752	ashy siltstone	low	tr:100;tr	p	no ov	-	=Orchard Coal ab Fe ox	0.54 (6)
C 380	Cattlemoss 3 274 NT 30019 69152	calc sh	low	tr:90:10	p	lt ov	dull/o-y liptodet + sp frags	-	0.39 (1)
C 428	Standalane 6 97 NT 30144 69237	py sh	v high	10:20:70	w + wp	hvy ov	65% dull/deep o disc lamalg 5% dull/deep o sp dull/deep o matrix fl	EXTRACTED	0.39 (25)
C 379	Cattlemoss 1 184 NT 30019 69138	sl silty sh	low	tr:80:20	p	lt ov + f	dull/y liptodet + sp	-	0.42 (7)
C 499	Shieldbank 190 NT 30085 69403	py sh	v high	20:20:60	w	v hvy + pty matrix sat	50% mod/o-y disc lamalg cysts 10% mid/y-o + lt o sp	EXTRACTED	0.37 (25)

Sample Number	Locality Depth (ft) Grid Reference	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (n° readings)
C 371	Standalane 2 61 NT 30084 69211	sh	low	5:75:20	p	lt ov + f	mod/y sp int y f	ab sid	0.43 (12)
C 423	Standalane 1 NT 30075 69174	sl silty sh	mod	5:70:25	p	lt ov	mod-dull/mid o sp + f	-	0.45 (8)
C 51	Devonside 2 60 NT 30038 69345	mixed lithology: sl calc sh 50% py sh 50%	mod high	tr:90:10 20:20:60	p st + w	lt ov + f matrix sat	mod/mid o sp + f 50% mod/o-y disc lamal cysts 10% mod/y-o + lt o sp	-	0.38 (8) 0.32 (25)
C 36	Langfauld 1 61 NT 30017 69312	py sh	v high	20:20:60	wp + w	lt-mod ov + hvy w + blotches	50% mod/y-o + lt o disc lamalg cysts 10% mod/lt-mid o sp	-	0.37 (25)
C 8	Howfold 446 NT 30047 69528	calc + py sh	high	20:30:50	wp	mod ov + w pty matrix sat	35% mod/o-y + y-o lamalg cysts 10% dull/mid o amorph blotches 5% mod/y-o sp	-	0.36 (25)

Sample Number	Locality Depth (ft) Grid Reference	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (n° readings)
C 262	Saline 3 163 NT 30053 69212	py sh	high	50:30:20	w + wp	lt ov pty v hvy	40% dull/mid- deep o disc lamalg 15% dull/o amorph om 5% dull/mid-deep o sp tr mod/y <i>Bot</i>	-	0.34 (25)
C 79	Solsgrirth 4 79 NT 30111 69417	py sh	high	20:20:60	wp + w	matrix sat + hvy w + blotches	40% dull/mid- deep o long disc lamns 15% dull/mid amorph om 5% dull/mid-deep o sp	ab degraded om	0.37 (25)
SBO 4463	Solsgrirth 4 99 NT 30111 69417	coal	-	60:20:20	v scruffy	-	dull/y-o + o-y sp	≈Janet Peat Coal ab incipient mic formation	0.52 (25)
C 9	Lambhill 1 662 NT 30017 69570	calc + py sh	v high	10:30:40	wp	mod/hvy	40% dull/mid o long disc lamalg 10% dull/mid- deep o sp 10% dull/deep o amorph om	-	0.42 (25)
C 3b	Solsgrirth 1 351 NT 30126 69511	sh	mod	tr:80:20	p	mod ov	mod/y + o-y f tr mod/y + o-y sp	ab Fe ox	0.46 (3)

Sample Number	Locality Depth (ft) Grid Reference	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (n° readings)
C 82	Cattlemoss 438 NS 29977 69164	py sh	mod	30:20:50	wp + p	matrix sat	45% mod/y-o + o-y disc lamalg cysts 5% mod/y-o + lt o sp	EXTRACTED	0.34 (25)
C 4	Solsgirth 2 371 NT 30101 69500	sh	mod	10:20:70:	st	mod ov + dk w	60% dull/mid- deep o disc lamalg 10% dull/mid-deep o sp	-	0.40 (25)
C 59	Dollar 3 852 NS 29778 69606	calc sh	mod	20:50:30	p	lt ov + f	mod/y-o sp frags mod y carb f	-	0.40 (21)
SBO 5477	Mains of Throsk 1 495 NS 28549 69194	coal	-	60:20:20	-	-	mod/y-o + lt o sp	coal above Plean N°1	0.65 (25)
SBO 374	Torwood 764 NS 28354 68434	cannel coal	-	30:30:40	st	-	mod/lt o sp	≈Lower Hirst Coal	0.75 (25)
BEV CC	East Carron 1680 NS 28773 68260	coal	-	70:20:10	-	-	mod-dull/deep o sp	Upper Hirst Coal	1.01 (25)
BEV 5	Balquharn 1657 NS 28694 69676	coal	-	80:10:10	-	-	mod-dull/mid + deep o sp	Upper Hirst Coal	0.84 (25)

Sample Number	Locality Depth (ft) Grid Reference	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (n° readings)
BEV 7	Inglewood 1777 NS 28804 69429	coal	-	70:20:10	-	-	mod/lt-mid o sp	Upper Hirst Coal	0.75 (25)
BEV 8	Polmaise 1/83 U/G 171 NS 28681 69224	coal + sed lamns	-	60:20:20	-	-	mod/o-y + y-o sp	Upper Hirst Coal	0.60 (25)
BEV 9	Castlehill Colliery C 19's NS 29748 69118	coal	-	70:20:10	-	-	mod/lt o sp	Upper Hirst Coal	0.79 (25)
BEV 10	Castlehill Colliery C53's NS 29430 68979	coal	-	70:20:10	-	-	dull/mid + deep o sp	Upper Hirst Coal	0.84 (25)
BEV 11	Castlebridge Colliery coal Castlehill Driveage NS 29391 69256	coal	-	70:20:10	-	-	mod/mid + deep o sp tr int/y h-c	hydrocarbons in fractures	0.84 (25)
BEV 12	Solsgirth C62's NS 29629 69316	coal	-	70:20:10	-	-	mod/lt o sp frags	Upper Hirst Coal	0.61 (25)
BEV 13	Solsgirth S67's NS 29832 69226	coal	-	80:20:tr	-	-	mod/y- o sp	Upper Hirst Coal	0.70 (25)
SK 12	Polmaise Colliery N°4 pit bottom NS 2838 6914	coal	-	70:20:10	sl scruffy	-	mod/lt o sp + terrest frags	Upper Hirst Coal (old workings)	0.74 (25)

Sample Number	Locality Depth (ft) Grid Reference	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (n° readings)
SK 13	Polamise Colliery No4 pit bottom NS 2838 6914	coal + cannel lamns	-	60:25:15	-	-	mod/lt o sp tr int/y resin st	Lower Hirst Coal (old workings)	0.73 (25)
SK 14	Polamise Colliery N°17 gate NS 2840 6940	coal	-	60:20:20	-	-	mod/lt-mid o sp tr mod/y cut	Upper Hirst Coal	0.98 (25)

Samples prefixed: C provided by Mr. P. Brand.
BEV provided by Mr. R. Beveridge.
SK provided by Mr. E. Skipsey.
SBO collected from the BGS corestore at Newbattle Abbey.

UPPER LIMESTONE GROUP - INDEX LIMESTONE HORIZON

Sample Number	Locality Depth (ft) Grid Reference	Lithology	Organic Content	V:I:E (percent)	Vitritite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (n° readings)
I 16	Mackies Mill 2450 NT 33054 69794	carbarg	30:30:40		w	hvy ov	mod/y sp + liptodet	-	0.65 (25)
I 44	Boreland 2535 NT 33039 69422	sh	high	5:90:5	p	lt ov + blotches	mod/y-o sp	-	0.76 (25)
I 136	Lochhead 2977 NT 33216 69665	sl py sh	mod	10:60:30	wp	lt ov + f + blotches	20% mod/y sp 10% mod/y f	-	0.54 (10)
I 69	Thornton Bridge 1515 NT 32889 69722	sh	high	5:70:25	p	lt/mod ov + f	mod/y sp int/y f	-	0.66 (11)
I 367	Skeddoway 291 NT 32592 69828	calc sh	mod	NDP	p	lt ov -> bit res ab f	-	-	1.49 (19)
I 24	Fosterton 226 NT 32564 69646	py sh	high	NDP	wp + st	lt/mod ov -> bit res dk f + w	-	-	1.19 (14)
I 25	Skeddoway- 2 368 NT 32590 69772	silty- sh	high	NDP	p + wp	lt ov -> bit res	-	-	1.56 (16)

Sample Number	Locality Depth (ft) Grid Reference	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (n° readings)
I 29	Mid Strathore 1017 NT 32889 69722	sst	v low	tr:100:0	p	mod interst	-	-	0.58 (2)
I 46	Rothes Colliery N°2 Shaft 1107 NT 32796 69727	silty sh	high	10:85:5	p	no ov + f	dull/y-o + lt o sp tr cut	-	0.62 (7)
I 88	Sandalhall 115 365 NT 32641 69545	siltstone	high	tr:100:0	p	no ov + dk w + f	-	-	0.68 (12)
I 295	Kirkaldy A 11 NT 32813 69138	sl silty sh	high	5:85:10	p	lt ov + w	mod-dull/y-o sp + liptodet	-	0.62 (6)
I 245	St. Mary's Rd, Kirkaldy 2225 NT 32840 69206	silty sh	mod	10:90:tr	p + wp	mod ov	dull/lt o liptodet	ab Fe ox py -> haem	0.78 (5)
I 38a	Seafeld Colliery 170 fm mine 931 NT 32800 68917	py sh + vit lamns	high	85:5:10	st	lt ov + f	int/mod y + o-y sp - + am blotches	-	0.57 (25)
I 1	Firth of Forth Tower 1 2357 NT 33002 68789	sh	mod	5:90:5	p	lt ov + f	mod-dull/y-o + lt o sp	-	0.73 (7)

Sample Number	Locality Depth (ft) Grid Reference	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (n° readings)
I 332	Bowhill 3 Shaft 537 NT 32107 69563	sh	high	10:60:30	p	no ov + f	mod/o-y sp	-	0.53 (7)
I 373	Kinglassie Surface Mine 440 NT 32391 69799	sl calc sh	mod	tr:100:0	p	lt ov + f	-	ab Fe ox	0.81 (3)
I 198	Benarty 5 135 NT 31557 69577	sh	mod	10:85:5	wp + p	lt ov + f	dull/lt o sp mod/o-y ?algal w	-	0.64 (5)
I 262	South Pitkinnie 1116 NT 31977 69634	sh	mod	5:85:15	p	lt ov + f	mod/y-o sp + liptodet	ply v hvy Fe staining	0.62 (7)
I 220	Longannet- Mossmorran 6 99 NT 32037 69376	sh	high	70:20:10	st + w	lt ov hvy w + blotches	int/y sp tr int/y cut + resin	-	0.51 (25)
I 141	Netherton 1 106 NT 31534 69334	silty sh	high	10:85:5	st + wp	no ov + f + blotches	mod/y + o-y sp tr int/y f	ab Fe ox blotches	0.62 (9)
I 546	Lochgelly Industrial Estate 1 125 NT 318446 69464	sh	low	10:80:10	p	no ov + f	mod/y sp + f	-	0.57 (5)

Sample Number	Locality Depth (ft) Grid Reference	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (n° readings)
I 246	Drumtuthill 1 75 NT 30764 69038	siltstone	v low	tr:100:0	p	no ov + tr w	l dull/mid o f only	-	0.73 (2)
I 21	Lethans 2 485 NT 30152 69342	sh	high	5:90:5	wp	mod ov + w	mod/lt o f	-	0.61 (15)
I 34	Balgonar 283 NT 30222 69381	siltstone + sh lamns	mod	5:90:5	p	lt ov + f	dull/lt o sp	-	0.68 (9)
I 262X	Saline 3 944 NT 30053 69212	sl calc sh	mod	5:85:10	p	lt ov + f	mod/lt o sp + liptodet	-	0.75 (10)
I 294	Bickram 578 NT 30066 69126	calc + py sh	high	tr:80:20	p	lt/mod ov	mod-dull/o-y sp	-	0.55 (1)
I 367	Shepherdlands Farm 206 NT 30064 69024	sl calc sh	low	tr:100:tr	p	lt ov + f	mod/o-y sp	-	0.60 (1)
I 11	Cairnfold Farm 1154 NT 30100 69506	silty sh	high	20:70:10	w + st	lt ov + w + f	dull/y-o + lt o sp tr mod/y liptodet	-	0.64 (25)
I 287	Torry 8 561 NT 30110 68760	sl py sh	low	10:80:10	w + wp	lt/mod ov + w	dull/o-y + y-o sp + amorph blotches	ab fossil frags	0.58 (15)

Sample Number	Locality Depth (ft) Grid Reference	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (n° readings)
I 266	Valleyfield 1 708 NT 30042 68718	sh	high	50:25:25	w + st	mod ov ply matrix sat	mod-dull/mid mod/y f	o sp -	0.80 (25)
I 82	Cattlemoss 1267 NS 29977 69164	silty sh	mod	5:80:15	wp	lt ov + f	mod/o-y sp frags tr int/y f	ab sid blotches	0.62 (12)
I 498	Threepsykes 199 NT 30271 69438	silty sh	high	10:70:20	p + wp	mod ov + f	dull/mid + deep o sp + liptodct	-	0.79 (9)
JKV a	Kinneil/Valleyfield Colliery 2130 NT 29775 68427	coal	ND	-	-	-	ND	Blairhall Main Coal	0.92 (25)
JKV b	Kinneil/Valleyfield Colliery 2190 NT 29769 68410	coal	ND	-	-	-	ND	Blairhall Main Coal	0.91 (25)
SBO 453	Torwood 1 1529 NS 28354 68434	carbarg	-	20:50:30	w + st	hvy ov tr bit res	dull/mid-deep o sp	-	0.85

Samples prefixed : I provided by Mr. P. Brand.
SBO collected from the BGS corestore at Newbattle Abbey.
JP provided by Mr. J. Pearson.

LIMESTONE COAL GROUP - KELTY BLACKBAND HORIZON

Sample Number	Locality Depth (ft) Grid Reference	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (n° readings)
BEV J	Bilston Glen Colliery NT 32855 66278	coal	-	80:10:10	sl scruffy	-	mod/y-o + lt o sp	Great Seam	0.76 (25)
BEV F	Monktonhall Colliery coal NT 33227 67069	coal	-	80:10:10	scruffy	-	mod/lt o sp	Gillespie Coal	0.81 (25)
BEV S	Monktonhall 1/83 22 NT 3315 67265	coal	-	80:10:10	sl scruffy	-	mod/lt-mid o sp	Stairhead Coal	0.82 (25)
BEV T	Monktonhall 1/83 61 NT 3315 67265	coal	-	70:15:15	sl scruffy	-	mod/lt-mid o sp	Gillespie Coal (bottom leaf)	0.83 (25)
KBBI 1	Firth of Forth Tower 1 2563 NT 33002 68789	v calc sh	low/mod	10:50:40	st + wp	mod ov + f	dull/y-o + lt o sp + liptodet	1.5% TOC 162 HI vit has brown bituminous/ humic om exuding	0.45 (10)
KBBI 44	Boreland 2738 NT 33039 69422	sh	high	20:30:50	wp	hvy ov	dull/y-o sp int/y f tr Bot	1.1% TOC 88 HI	0.56 (25)
SBO 4102	Scottish Floorcloth and Linoleum Works Kirkaldy 411 NT 328615 692880	silty sh	mod	10:90:tr	wp	lt ov + f	mod/y-o sp	≈Lower Jersey horizon laminated sample; has oily smell	0.64 (5)
Sample	Locality	Lithology	Organic	V:I:E	Vitrinite	Nature of	Fluorescence	Miscellaneous	Reflectance

Number	Depth (ft) Grid Reference	Content	(percent)	Morphology	Bitumen	Observations	Information	%R _v average (n° readings)
KBBI 16	Mackies Mill 2646 NT 33054 69794	siltstone + sandy lamns	low	tr:95:5	p	lt ov + interst mod/o-y sp tr int/y f	0.9% TOC 43 HI	0.50 (4)
KBBI 10	Balfour Mains 2019 NT 33307 69989	calc sh	high	tr:90:10	wp + w	mod ov + f dull/o-y sp tr int/y Bot	2.0% TOC 139 HI vit has brown bituminous/ humic om exuding	0.34 (25)
KBBI 136	Lochhead 3251 NT 33216 69665	calc sh	high	10:50:40	wp	mod/hvy ov mod/y sp tr Bot	-	0.54 (10)
KBBI 35	Tullybreck Farm 2092 NT 33158 69859	silty sh + siltstone lamns	mod	10:50:40	wp	mod/dk ov tr blobs 30% mod/o-y + y-o sp frags 10% mod-dull/ o-y + y-o liptodet surfaces	2.3% TOC 88 HI sample has listric	0.50 (24)
KBBI 195	Windygates 3349 NO 33510 70034	sh	high	20:20:60	wp	mod ov tr blobs 40% mod/lt-mid o sp 20% mod/y f	2.7% TOC 171 HI	0.62 (25)
KBBI 383	Sandalhall 135 50 NT 32493 69509	silty sh	low	10:50:40	wp	lt/mod ov + f + w mod/mid-deep o sp	0.9% TOC 86 HI	0.50 (25)
E 9	BGS bore NT 29 SW 238 67 NT 32238 69492	sh	mod	10:70:20	w + wp	mod ov + w mod/o-y sp tr Bot	-	0.44 (8)

Sample Number	Locality Depth (ft) Grid Reference	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (n° readings)
C 3	BGS bore NT 29 NW 509 64 NT 32224 69504	carbarg	-	5:10:85	wp	matrix sat	35% int/y f 25% mod/y sp 25% int/y <i>Bot</i>	Lochgelly Blackband Ironstone	0.34 (16)
C 2	BGS bore NT 29 NW 508 81 NT 32239 69505	coal	-	70:10:20	-	-	mod/y + o-y sp tr int/y ?algal matter	Kelly Main Coal	0.55 (25)
BEB 4093	Cluny and Dothan N°10 132 NT 32253 69455	coal	-	80:20:0	-	-	-	Middle Davie Coal ab brecciation and calcitisation	0.97 (25)
SBO 5138	Thornton Farm 2439 NT 32969 69750	vit picked from coal	-	95:0:5	-	-	mod/y-o + o-y sp	≈Jersey Coal horizon	0.75 (25)
SBO 5139	Thornton Farm 2439 NT 32969 69750	carbarg	-	40:20:40	st + w	lt ov pty hvy	mod/y-o sp	Jersey Coal horizon	0.76 (25)
KBBI 174	Mary N°1 Pit Downbore 93 NT 31790 69708	py carbarg	-	20:20:60	w + wp	matrix sat	50% mod/o-y sp frags 10% mod/o-y liptodet tr mod-int/y <i>Bot</i>	EXTRACTED 38.1% TOC 181 HI ab fish scale frags	0.50 (25)

Sample Number	Locality Depth (ft) Grid Reference	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (n° readings)
KBBI 381	Wellsgreen 1/79 4149 NT 33342 69833	calc + silty sh	high	10:20:60	w + wp	mod/dk ov	40% mod-dull/o-y - + y-o sp 20% mod-int/y liptodet		0.53 (25)
KBBI 380	Cameron 1 3865 NT 33457 69901	py + calc sh	mod	20:20:60	wp	mod/dk ov + f	50% mod-int/y sp 10% mod/y f tr int/y <i>Bot</i>		0.54 (23)
KBBI 185	Westerton 11b 58 NT 31899 69241	calc + sl silty canneloid sh	v high	10:20:70	st + w	matrix sat	50% mod/y-o + lt o sp 10% mod-int/y liptodet 10% int/y <i>Bot</i>	EXTRACTED 19.5% TOC 155 HI	0.39 (25)
KBBI 548	Westerton Opencast Site B 29 NT 31789 69193	py sh	high	10:20:70	wp	v hvy ov	mod/y+ o-y sp	-	0.34 (25)
KBBI 537	Dora Opencast Area D 94 NT 31795 69150	v py canneloid sh	v high	20:20:60	st + w	hvy ov	50% mod-dull/y-o + lt o sp + sp frags 10% mod-dull/y-o filam lamalg	6.4% TOC 220 HI	0.44 (25)
KBBI 547/2	Cartmore Industrial Estate 2 71 NT 31859 69443	v py carbarg	-	20:30:50	st + w	hvy ov	mod/y + o-y sp + sp frags	EXTRACTED 10.4% TOC 209 HI	0.44 (25)

Sample Number	Locality Depth (ft) Grid Reference	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (n° readings)
KBBI 535/3	Lochgelly Bore 3 52 NT 31826 69381	py siltstone	high	10:20:70	wp	v hvy ov	40% mod/y + o-y sp + sp frags 30% int/y w + f	4.7% TOC 130 HI	0.43 (19)
KBBI 535/9	Lochgelly Bore 9 58 NT 31822 69376	v py sh	v high	10:30:60	w	matrix sat	mod/y + o-y sp tr cut tr resin blobs	EXTRACTED 21.0% TOC 116 HI	0.38 (25)
KBBI 143	Lindsay Pit, Kely 79 NT 3192 6984	carbarg	-	20:10:70	st + w	matrix sat	50% mod/y + o-y sp 20% int/y <i>Bot</i>	finely laminated	0.40 (25)
KBBI 549	Dora Opencast Area E 13 NT 31730 69071	v py sh	high	10:30:60	st + w	matrix sat	40% mod/y sp 20% mod/y f tr int/y <i>Bot</i>	7.3% TOC 81 HI <i>Bot</i> degraded	0.34 (25)
KBBI 140	Lumphinnans No11 Pit 433 NT 31725 69410	calc sh	high	10:20:70	st + w	matrix sat	50% mod/y + o-y sp + sp frags 20% int/y <i>Bot</i> mod/y matrix fl	EXTRACTED 35.2% TOC 382 HI ab sid	0.36 (25)
KBBI 894/2	Kelty 2 53 NT 31421 69400	v calc carbarg	-	20:10:70	matrix sat	st + w	40% mod/y + o-y sp 20% int/y + lt o <i>Bot</i> 10% int/y f tr cut	<i>Bot</i> sl degraded	0.37 (25)

Sample Number	Locality Depth (ft) Grid Reference	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (n° readings)
GR 1730	Greenbank NCB Opencast, 1243.1242 bore NT 31339 69290	coal + cannel patches	-	60:20:20	tr scruffy vit	-	mod/o-y sp	Rough Coal tr dispersed mic	0.54 (25)
GR 1733	Greenbank NCB Opencast, 1243.1242 bore NT 31339 69290	coal	-	70:20:10	-	-	mod/y-o + lt o sp tr int/y cut	Rough Coal	0.52 (25)
GR 1743	Greenbank NCB Opencast, 1244.1240 bore NT 31330 69287	coal + cannel patches	-	50:30:20	-	-	mod-dull/lt o sp	tr dispersed mic	0.53 (25)
GR 1752	Greenbank NCB Opencast, 1248.1245 NT 31320 69285	coal	-	70:20:10	scruffy	-	mod/o-y + y-o + lt o sp + terrest frags	-	0.56 (25)
KBBI 185b	Nol Pit, Mary Colliery 21 NT 3170 6965	v py sh	high	10:30:60	wp	matrix sat	50% mod-int/y + o-y sp + liptodet 10% int/y f + w	EXTRACTED shelly	0.46 (17)
KBBI 829	Cantsdam Bridge 19 21 NT 31409-69235	v calc sh	mod	30:10:60	w + wp	v hvy ov	50% mod/o-y sp 10% int/y Bot	ab sid ab shelly matter	0.40 (25)
KBBI 12	Lambhill 2 2183 NT 30013 69620	py + calc sh	high	30:30:40	w + st	mod/dk ov + dk w	20% int/y Bot 10% int/y sp 10% int/y f	6.7% TOC 359 HI	0.43 (25)

Sample Number	Locality Depth (ft) Grid Reference	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (n ^o readings)
KBBI 382	Cowstrandburn 1 75 NT 30402 69130	v calc sh	mod	10:20:70	w	mod/hvy ov	50% int/y w 10% int/y <i>Bot</i> 10% mod/y + o-y sp	EXTRACTED 6.8% TOC 287 HI	0.46 (25)
KBBI 385	Cowstrandburn 4 49 NT 30312 69123	calc sh	mod	10:20:70	w + wp	mod/hvy ov	40% int/y f + w 20% mod/y-o + lt o sp frags 10% int/y <i>Bot</i>	EXTRACTED 5.3% TOC 408 HI	0.38 (13)
JPK VKBB	Kinneil/Valleyfield; No15 section mid face 2800 NT 29831 68369	coal	-	60:20:10	-	-	mod/lt-mid o sp	Kelty Main Coal	1.03 (25)
SK 1	Polmaise Colliery (east of workings) NS 2860 6925	coal	-	70:20:10	-	-	mod/lt-mid o sp	Hartley Coal	0.90 (25)
SK 2	Polmaise No5 shaft NS 2838 6914	coal	-	80:20:tr	-	-	tr dull/deep o f tr mod/o-y h-c in fus	Hartley Coal (roof) tr hydrocarbons	1.46 (25)
SK 3	Polmaise No5 Shaft NS 2838 6914	coal	-	80:20:0	-	-	-	Hartley Coal (floor)	1.54 (25)
SK 27	Bannockburn 1 228 NS 28176 69063	coal + pty cannel	-	60:20:20	-	-	dull/deep o sp tr mod/o-y h-c in fus	brecciation tr hydrocarbons	1.08 (25)

Sample Number	Locality Depth (ft) Grid Reference	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (n° readings)
BEV NN	Tippetknowe 1960 NS 29180 66180	coal	-	70:30:10	-	-	dull/deep o sp	Jewel Coal	0.99 (25)
BEV JJ	Cardowan Colliery NS 26877 66640 to NS 26889 66639	coal	-	85:10:5	-	-	mod/lt -mid o sp	Meiklehill Main Coal	0.92 (25)
SBO 417	Cardowan Colliery No2 Shaft NS 2665 66836	coal	-	70:20:10	-	-	mod/y-o + lt o sp	Meiklehill Main Coal	0.62 (25)

Samples prefixed : KBBI and C provided by Mr. P. Brand.
BEV provided by Mr. R. Beveridge.
SK provided by Mr. E. Skipsey.
GR provided by Mr. R. Ingerbritsen.
JP provided by Mr. J. Pearson.
BEB and SBO collected from the corestore at Newbattle Abbey.
SBO 5138 and 5139 collected from the corestore at Murchison House.

LIMESTONE COAL GROUP - BLACK METALS HORIZON

Sample Number	Locality Depth (ft) Grid Reference	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (n° readings)
BEV N	Monktonhall 2/82 60 NT 33367 66953	coal + cannel lamns	-	65:20:15	-	-	mod/o-y + y-o sp tr <i>Bot</i> in cannel	Kittlepurse Coal ab mic in cannel	0.75 (25)
BEV O	Monktonhall 2/82 111 NT 33367 66953	coal	-	70:20:10	-	-	mod/o-y + y-o sp	Peacock Coal	0.75 (25)
BEV M	Monktonhall 2/82 158 NT 33367 66953	coal + ply cannel	-	60:20:20	scruffy	-	mod/y-o + lt o sp tr cut + liptinite in cannel	Ball Coal	0.70 (25)
BEV P	Monktonhall 2/82 225 NT 33367 66953	coal + cannel lamns	-	70:10:20	-	-	mod/lt o sp	Bryan's Splint Coal	0.85 (25)
BEV Q	Monktonhall 2/82 189 NT 33367 66953	coal	-	70:20:10	-	-	mod/y-o + lt o sp	Glass Coal	0.80 (25)
BEV U	Monktonhall 1/82 173 NT 33315 67265	coal	-	80:10:10	-	-	mod/mid-deep o sp	Peacock Coal	0.87 (25)
BEV V	Monktonhall 4/82 163 NT 33430 67109	coal + cannel lamns	-	70:20:10	scruffy	-	mod/y-o + lt o sp	Glass Coal	0.74 (25)
BEV W	Monktonhall 4/82 209	coal + ab cannel lamns	-	70:20:10	scruffy	-	mod/o-y + y-o sp	Bryan's Splint Coal	0.74 (25)

Sample Number	Locality Depth (ft) Grid Reference	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (n° readings)
BM 1	Firth of Forth Tower 1 2791 NT 33002 68789	sh	mod	70:20:30	p	v lt ov + w	mod/y-o + lt o sp	-	0.60 (11)
BM 39	Seafield Colliery 300fm Mine 1322 NT 32900 68885	sh	mod	10:85:5	p	v lt ov	dull/y-o + lt o liptodet	-	0.48 (11)
BM 38b	Seafield Colliery 170fm Mine 281 NT 32800 68917	sh	mod	5:95:5	wp	lt ov + f	mod/o-y liptodet	-	0.52 (16)
BM 44	Boreland 3106 NT 33039 69422	sh	high	10:80:10	p	lt ov	mod/mid-deep y-o - + lt o liptodet + sp	-	0.75 (18)
BM 381	Wellsgreen 1/79 4429 NT 33342 69833	calc sh	high	10:70:20	p	lt ov + f	mod/y-o sp tr cut	ab carb blotches	0.73 (9)
BM 380	Cameron 1 4174 NT 33457 69900	silty + sl py sh	high	20:40:40	p	lt ov	30% mod/o-y + y-o sp + sp frags 10% mod/o-y ?algal w	EXTRACTED	0.49 (25)
BM 10	Balfour Mains 3594 NT 33307 69989	sl silty sh	high	10:60:30	w + wp	lt.mod ov + w	int/y f mod/o-y + lt o sp + terrest frags	-	0.60 (25)

Sample Number	Locality Depth (ft) Grid Reference	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (n° readings)
BM 69	Thornton Bridge 1868 NT 32889 69722	siltstone	high	20:50:30	wp + w	hvy interst matrix sat in places	mod/y + o-y sp tr dull/brown bit om tr int/y f	-	0.48 (25)
BM 136	Lochhead 3556 NT 33216 69665	sh	high	10:80:10	p	lt ov + f	mod/lt-mid o sp	-	0.99 (8)
BM 16	Mackies Mill 2812 NT 33054 69794	calc sh	mod	5:75:20	p	lt ov + blotches	mod/y-o + lt o sp + f dull/o carb fl	-	0.82 (10)
BM 98	Barnslee 2 527 NO 33079 70173	py siltstone	high	25:65:10	wp	hvy ov	mod/y sp tr mod/y bit	-	0.54 (16)
BM 195a	Windygates 3612 NO 33510 70034	sh	high	5:70:25	p	lt ov + f	20% mod/y-o sp 5% mod/o-y w tr cut	EXTRACTED	0.66 (10)
BM 18	Dunotter 355 NO 34649 70252	sst + silty lamns	low	10:60:30	wp	mod ov in silty lamns	mod/y + o-y sp frags tr cut	-	0.42 (3)
BM 401	Cluny & Dothan N°2 152 NT 32364 69508	py sh	high	5:90:5	p	v lt ov + f	dull/y-o sp + sp frags	-	0.54 (4)

Sample Number	Locality Depth (ft) Grid Reference	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (n° readings)
BM 45	Roths Colliery N°1 Shaft 1500 NT 32812 69728	py sh	v high	10:80:10	wp	no ov + f	mod/y-o sp + sp frags	some py -> haem	0.55 (12)
BM 24	Fosterton 594 NT 32564 69646	sl silty sh	high	20:75:5	p	lt ov + f	dull/lt-mid o sp frags	-	0.70 (18)
BM 68a	Thornton Farm 2542 NT 32969 69750	sl silty py sh	high	5:85:10	p	lt ov + f	mod/lt o sp + liptodet	-	0.77 (11)
BM 46	Roths Colliery N°2 Shaft NT 32796 69727	sl silty + sl py sh	high	20:60:20	p	lt ov + f + blobs	mod/o-y sp + cut - mod/o-y bit blobs	-	0.55 (13)
BM 326	Bowhill Coliery, Harestanes Section NT 32190 69752	sh	mod	5:90:5	p	lt ov	mod/y sp mod/o-y liptodet	-	0.57 (5)
BM 38	Lochgelly 814 150 NT 32257 69412	sh	mod	5:90:5	p	v lt ov	mod/y-o + lt o sp	-	0.47 (14)
BM 370	Kinglassie Mine, Rising Main to Lochgelly Splint NT 32463 69832	sh	high	10:90:tr	wp + p	lt ov	mod/lt o liptodet	EXTRACTED ab Fe ox blotches	0.69 (25)

Sample Number	Locality Depth (ft) Grid Reference	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (n° readings)
BM 25	Skeddoway 2 640 NT 32590 69772	calc sh	mod	NDP	p	lt ov -> bit res	-	ab sid blotches	1.58 (25)
BM 322	Nicol Street, Kirkaldy NT 32720 69086	sh	high	10:80:10	wp	mod ov pty hvy	dull/y-o sp	ab Fe ox blotches	0.54 (15)
BM 230	Longannet- Mossmorren Tower 8/2 39 NT 32068 69307	sl silty sh	v high	20:50:30	wp	mod/hvy ov	20% mod-int/y-o sp 10% mod/y-o w + liptodet	-	0.44 (25)
BM 228	Langannet- Mossmorran Tower 8/3 80 NT 32063 69312	sh	high	10:65:25	wp + p	lt ov	mod/y-o + lt o sp + amorph om tr <i>Bot</i>	-	0.44 (18)
BM 23	Skeddoway Farm 117 NT 32592 69828	sh	mod	NDP	lt ov -> bit res	lt ov	-	-	1.38 (25)
BM 332	Bowhill 3 Shaft 1018 NT 32107 69563	sh	high	5:95:0	p	no ov + w + f	-	-	0.97 (7)
BM 42	Lochgelly 832 70 NT 32077 69322	sh	high	15:85:5	wp	lt ov + w	dull/o-y sp	-	0.42 (19)

Sample Number	Locality Depth (ft) Grid Reference	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (n° readings)
BM 213	Forth Avenue, Kirkaldy 2 99 NT 32738 69148	calc sh	low	NDP	wp + p	matrix sat -> bit res	v dull/deep o carb - f1		4.46 (10)
BM 237	Kirkaldy Bypass 27A 35 NT 32707 69167	sh	mod	5:90:5	p	mod ov + w	dull/y-o + lt o sp	-	0.59 (13)
BM 10/18	Victoria Hospital 10/18 32 NT 32748 69310	sh	mod	5:90:5	p	lt ov + f	dull/lt-mid o sp	-	0.83 (13)
BM 509	M92 E. Fife Motorway R402 52 NT .31895 69250	sh	mod	30:40:20	wp	lt ov + f	mod/y-o + lt o sp + liptodet tr <i>Bot</i>	-	0.51 (21)
BM 379	Kinglassie Mine 30 NT 32372 69698	sl silty sh	high	25:45:30	w + wp	mod/hvy ov	mod-dull/y-o + lt o amorph om + sp tr <i>Bot</i>	-	0.51 (20)
BM 501	M92 E. Fife Motorway B501 28 NT 32206 69363	sl silty sh	mod	5:90:5	p	lt ov	mod/y-o + lt o sp	ab Fe ox blotches	0.60 (7)
BM 52	Cardenden N°3 216 NT 32266 69481	calc sh	mod	NDP	p	matrix sat -> bit res	v dull/carb fl	-	1.04 (10)

Sample Number	Locality Depth (ft) Grid Reference	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (n° readings)
BMD	Dundonald Farm NT 32302 69409	sh	high	10:80:10	p	mod ov + f	mod/y-o + lt o sp	ab Fe ox	0.43 (3)
M 4379	Dunikier Colliery Kirkaldy NT 32863 69302	coal	-	80:10:10	-	-	mod/o-y sp tr resin	Lochgelly Parrot Coal	0.73 (25)
M 4439	Kinglassie Colliery Lochgelly NT 32378 69824	coal	-	70:20:10	scruffy	-	dull-mod/y-o + lt o sp o sp tr algal om	Lochgelly Parrot Coal	0.70 (25)
BM 556	Cowdenbeath 9 49 NT 31735 69057	silty sh	high	15:75:10	p	mod ov +f	mod/y-o + lt o sp + sp frags	-	0.73 (13)
BM 561	Lochgelly 7 45 NT 31879 69277	sh	high	5:90:5	p	no ov + f blotches	mod-dull/o-y sp frags	EXTRACTED	0.71 (9)
BM 535/1	Lochgelly 1 147 NT 31836 69378	sl py silty sh	high	5.95:5	p	v lt ov + f	mod/lt o sp + resin	some py -> haem	0.80 (18)
BM 457	Colins Knowe 487 45 NT 31901 69157	siltstone	high	10:75:15	wp	no ov + f	dull-mod/o-y sp tr cut frags	-	0.51 (10)
BM 266	Thornton 34 61 NT 31234 69316	v py calc siltst	high	20:20:60	w + wp	dk interst	55% int/y disc lamalg 5% mod/y sp mod/y matrix fl	EXTRACTED	0.36 (25)

Sample Number	Locality Depth (ft) Grid Reference	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (n° readings)
BM 101	E. Fife Regional Road 101 75 NT 31930 69268	sh	mod	30:65:5	p	lt ov + w	mod/y + o-y sp	-	0.49 (25)
BM 806a	Highholm 74 38 NT 31119 69106	py + sl silty sh	v high	10:30:60	w + wp	matrix sat	40% mod-dull/ o-y sp + amorph debris 20% mod/o-y liptodet + w tr int/o-y resin st + blobs	EXTRACTED	0.40 (25)
BM 806b	Highholm 74 90 NT 31119 69106	py sh	v high	30:30:40	w + wp	mod ov pty hvy	mod/y + o-y sp + amorph om	-	0.43 (25)
BM 895/2	Kelty 2 81 NT 31342 69411	silty sh	high	30:40:30	wp + w	matrix sat	mod-dull/y + o-y sp + liptodet tr int/y ?algal om	-	0.44 (25)
M 4376	Kelty Colliery Cowdenbeath NT 31500 69410	coal + sed intercns	-	50:20:30	v scruffy	-	mod/o-y sp tr int/y resin	Glasse Coal ab micn assoc with sp incipient micn in resin-filled cells	0.53 (25)
M 4386	Kelty Colliery Cowdenbeath NT 31500 69410	cannel coal	-	25:40:35	sl scruffy	-	mod/y-o + lt o sp tr mod/y resin tr int/y ?algal om	Glasse Coal	0.84 (25)

Sample Number	Locality Depth (ft) Grid Reference	Lithology	Organic Content	V.I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (n° readings)
M 4426/1	Kelty Colliery Cowdenbeath NT 31500 69410	coal + cannel lamns	-	60:20:20	scruffy	-	dull/mid o sp tr dull/lt o resin tr <i>Bot</i>	Glassee Coal	0.86 (25)
M 4426/2	Kelty Colliery Cowdenbeath NT 31500 69410	sh	high	20:40:40	wp	lt ov + w	mod/y-o + lt o sp	Glassee Coal	0.82 (25)
M 4402/1	Kinnaird Colliery Cowdenbeath NT 31443 69602	coal	-	70:15:15	scruffy	-	dull/y-o + lt o sp	Mynheer Coal	0.72 (25)
M 4402/2	Kinnaird Colliery Cowdenbeath NT 31443 69602	carbarg + coaly lamns	-	40:20:20	st in carbarg	hvy ov + carbarg	mod/y-o sp + liptodet	Mynheer Coal	0.70 (25)
BM 795	Highholm 32 110 NT 31125 69106	siltstone	high	20:70:10	wp	no ov + w	mod/o-y + y-o sp + amorph om	ab Fe ox staining	0.50 (10)
BM 415	Lochgelly 808 128 NT 31773 69180	sh	high	5:75:20	wp + p	lt ov + f	mod/o-y sp + liptodet	ab Fe ox staining	0.48 (10)
BMA 21	E. Fife Regional Road A21 43 NT 31896 69255	sl silty sh	high	5:80:15	p	mod ov	mod/o-y sp + liptodet	-	0.46 (14)

Sample Number	Locality Depth (ft) Grid Reference	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (n° readings)
BM 520	South Street Lochgelly 1 56 NT 31837 69279	sh	mod	15:75:10	wp	lt ov + w	mod-dull/o-y sp + amorph om	-	0.43 (25)
BM A16	E. Fife Regional Road A16 36 NT 31865 69235	sh	mod	5:85:10	p + wp	mod ov + w	mod-dull/o-y sp + sp frags	-	0.47 (19)
BM A23	E. Fife Regional Road A 23 64 NT 31899 69251	silty sh	mod	5:85:10	p + wp	lt/mod ov	mod/y + o-y sp frags tr cut	-	0.44 (25)
BM 173	Mary Pit N°1 801 NT 31701 69649	sh	mod	10:50:40	w + wp	lt ov + f + w	mod/y-o sp + amorph frags	-	0.61 (15)
BM 195	Mary Pit Up-Bore 120 NT 31840 69720	py sh	high	NDP	wp + w	matrix sat -> bit res	-	-	1.69 (25)
BM 542	Dora Opencast 509 88 NT 31785 69177	sh	mod	10:85:5	wp	lt ov + f	mod/y sp + sp frags	-	0.48 (20)
BM 550	Dora Opencast Area G NT 31754 69075	sl silty sh	high	10:80:10	wp + p	lt ov + f	mod/o-y sp tr cut	-	0.51 (18)

Sample Number	Locality Depth (ft) Grid Reference	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (n° readings)
BM 128	Loch Fitty 128 60 NT 31367 69232	sl silty sh	high	10:90:tr	p	lt ov + f	dull/lt o liptodet	-	0.47 (11)
BM 641	Loch Fitty 137 35 NT 31370 69236	sl silty sh	high	5:95:0	p	no ov + f	-	EXTRACTED	0.59 (3)
BM 648	Lochwood 88 19 NT 31233 69185	v calc sh	mod	10:30:60	wp + st	lt ov	50% int/y disc lamalg 10% mod/y sp + liptodet mod/y bkg fl	ab shelly matter lamalg interst to carbonate	0.42 (13)
BM 893/4	Kingseat 4 1895-1935 NT 31269 69040	sh	high	20:50:30	w + wp	lt/mod ov + pty hvy	mod/y + o-y sp + cut tr <i>Bot</i>	pty Fe ox	0.47 (25)
GR 1764	Greenbank Opencast coal: 2 popns Bore 1248.1245 377 NT 31320 69285	high low	- -	NDP 80:10:10	- -	- -	- mod/mid o sp	Lochgelly Parrot Coal	2.64 (25) 0.69 (25)
BM 246	Townhill 53-56 NT 31026 68936	py + silty sh	high	20:40:40	wp	matrix sat	30% mod/y + o-y sp + sp frags 10% mid/o-y liptodet tr int/y disc lamalg	EXTRACTED some py -> Fe ox calc in places	0.48 (25)
BM 242/2	Townhill 2 102 NT 31059 68958	silty sh	high	5:70:25	wp	lt ov + f + blotches	mod/y-o sp tr int/y ?algal blotches	-	0.57 (18)

Sample Number	Locality Depth (ft) Grid Reference	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (n° readings)
BM 27	Lilliehill 3 216 NT 31027 68998	sl py + silty sh	v high	30:40:30	wp + p	matrix sat tr bit res	mod-dull/mid- deep o sp + sp frags	-	0.43 (25)
BM 64	Keirsbeath 3 313 NT 31254 68968	v calc, sl py siltstone	mod	5:65:30	wp	hvy interst	20% int/y + o-y disc lamalg 10% mod/y + o-y sp tr <i>Bot</i>	matrix reddened	0.64 (11)
BM 236	E. Fife Regional Road R 208 108 NT 31449 68933	py sh + silty lamns	high	20:50:30	wp	lt/mod + w	mod/o-y sp + liptodet	-	0.47 (25)
BM 264	E. Fife Regional Road 29A NT 31463 68935	sh	high	5:85:10	p	mod ov + f + blotches	5% mod/o-y sp + w 5% int/y f	-	0.53 (11)
BM 195b	Westermoss 209 NT 31727 68799	sh	high	5:80:15	wp	lt ov + w	mod/y + o-y sp tr mod/y w	-	0.56 (10)
BM 162	Prathouse 241 60 NT 31379 68879	sl py sh	high	10:70:20	p	mod ov	10% mod/y + o-y sp + amorph frags 10% int/y f tr int/y blotches	-	0.46 (16)
BM 41	Donibristle 290 67 NT 31621 68897	silty sh	mod	5:85:10	p	no ov + f	mod/y + o-y sp	ab Fe ox staining	0.50 (8)

Sample Number	Locality Depth (ft) Grid Reference	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (n° readings)
BM 61	Keirsbeath 2 351 NT 31343 68990	siltstone	high	5:85:10	w	lt ov + w	mod/y + o-y sp	-	0.61 (12)
BM 257	E. Fife Regional Road 16 55 NT 31385 68880	sh	high	10:80:10	wp	mod ov + f	mod/o-y sp tr algal cysts tr <i>Bot</i>	-	0.57 (21)
BM 55	Malcolms Beath 5 169	sh	mod	5:90:5	p	lt/mod ov + f	mod/o-y sp	-	0.54 (4)
BM 233/202	M92 Motorway Bore B202 72 NT 31379 68875	py + silty sh	mod	10:70:20	p	mod ov + f	10% mod/y f 10% mod/y + o-y sp	-	0.47 (19)
BM 13	Barnhill 2499 NT 30125 69573	siltstone	mod	30:20:50	st + w	hvy interst	mod/lt-mid o sp + amorph blotches	-	0.63 (25)
BM 196	Townhill 1 98 NT 30992 68944	py sh	high	20:30:50	w	matrix sat	40% mod/y sp + amorph frags 10% mod/o-y liptodet tr <i>Bot</i>	EXTRACTED <i>Bot</i> degraded	0.48 (25)
BM 237	Drumtuthill 69 45 NT 30874 69031	sh	v high	30:30:40	wp + tr w	mod ov + f + w	dull-mod/o-y sp + liptodet	-	0.54 (23)

Sample Number	Locality Depth (ft) Grid Reference	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (n° readings)
BM 230/4	Wellwood 4 105 NT 30909 68915	sh	high	20:50:30	w + wp	lt ov + w	dull/y-o + lt o amorph frags + sp	-	0.46 (25)
BM 354	Bandrum 1 171 NT 30411 69128	calc + py + silty sh	high	NDP	w + wp	matrix sat -> bit res	dull/o-y carb fl	-	1.49 (20)
BM 367	Shepherdlands 881 NT 30064 69024	sh	high	5:90:5	p	lt ov + f	dull/y-o sp	-	0.61 (4)
BM 294	Bickram 1 1446 NT 30066 69126	py sh	high	20:30:50	w + wp	matrix sat + hvy w	30% mod/y-o disc lamalg 20% mod/y + o-y sp frags tr <i>Bot</i>	EXTRACTED	0.45 (25)
BM 12	Lambhill 2 2562 NT 30013 69620	silty + py sh	mod	5:90:5	wp	matrix sat	mod/y-o liptodet	-	0.37 (12)
M 4455	Kilernie Colliery Saline NT 30272 69283	coal	-	70:20:10	-	-	dull/mid-deep o sp	Five Foot Coal	1.12 (25)
M 4483	Killernie Colliery Saline NT 30272 69283	carbarg + coaly lamns	-	50:10:40	w + st	mod ov	35% mod/y-o + lt o sp + sp frags 5% int/y f tr <i>Bot</i>	Five Foot Coal	0.53 (25)

Sample Number	Locality Depth (ft) Grid Reference	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (n° readings)
BM 63	Loch Glow 366 170 NT 30785 69531	py sh	high	10:20:70	wp	matrix sat	60% mod-int/y-o disc lamalg 10% mod/o-y sp + sp frags tr <i>Bot</i>	EXTRACTED	0.40 (25)
BM 262	Saline 3 1733 NT 30053 69216	calc + py sh	mod	10:30:60	p	lt ov	60% mod/o-y sp + sp frags tr int/y ?algal w + f	EXTRACTED py -> Fe ox blotches	0.66 (13)
BM 415/1	Newmills 1 32 NT 30199 68639	sh	low	tr:100:0	p	lt ov	-	-	0.93 (9)
BM 348	Blair 1 148 NT 30336 69048	py + sl calc sh	v high	NDP	wp + w	matrix sat -> bit res	dull/deep o streaks (?lamalg) dull/deep o carb fl	Lingula band above Glassee Coal	1.07 (25)
BM 82	Cattlemoss Farm 1692 NS 29977 69165	py sh	mod	5:40:55	p	lt ov + f	mod-int/o-y sp	EXTRACTED py -> Fe ox	0.61 (6)
SK 5	Millhall Colliery Stirling NS 2812 6921	coal	-	NDP	-	-	-	tip sample severe strain anisotropy 0.44% bireflectance	2.69 (25)
BEV DD	Manor Powis Colliery coal NS 28473 69415	coal	-	NDP	-	-	-	Bannockburn Main Coal 3.41% bireflectance	3.41 (25)

Sample Number	Locality Depth (ft) Grid Reference	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (n° readings)
SK 7	Manor Powis Colliery NS 2828 6969	coal	-	NDP	-	-	-	tip sample severe strain anisotropy 3.97% bireflectance	8.88 (25)
SK 8	Pirnhall Colliery NS 2800 6895	coal	-	NDP	-	-	tr int/y h-c	tip sample tr hydrocarbons	1.38 (25)
SK 9	Plean Colliery NS 2840 6865	coal + carbarg lamns	-	NDP	-	-	dull/deep o fl in carbarg	matrix tip sample	1.29 (25)
SK 15	Herbertshire Colliery Denny NS 2817 6822	coal	-	NDP	-	-	-	tip sample 0.42% bireflectance	4.15 (25)
ES 2707	Mossneuk 3240 NS 28728 68610	silty sh	mod	NDP	-	matrix sat -> bit res	dull/deep o f	-	1.71 (25)
ES 2713	Mossneuk 3246 NS 28728 68610	marl	barren	NDP	-	hvy ov -> bit res	v dull/deep o carb fl	-	NDP
ES 6060	South Letham 3361 NS 28858 68530	sh	mod	NDP	p	hvy ov -> bit res	dull/deep o f tr int/y h-c f	-	1.59 (10)
SBO 454	Torwood 1741 NS 28354 68438	marl	mod	NDP	wp	hvy ov -> bit res	mod-dull/deep o carb fl	sample just above Bannockburn Main Coal	1.60 (13)

Sample Number	Locality Depth (ft) Grid Reference	Lithology	Organic Content	V.I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (n° readings)
SK 32	Bannockburn 1 339 NS 28176 39063	coal	-	NDP	-	-	-	Lochgelly Parrot Coal ab mic sl ox	1.25 (25)
CBP	Carron Glen NS 27953 68313	silty sh	high	NDP	p	mod ov -> bit res	-	ab Fe ox blotches	2.00 (25)
CAS 2	Castlerankine Burn NS 27830 68130	silty sh	mod/high	NDP	wp	lt ov -> bit res hvy blotches	-	approx. at level of Knott Coal	1.92 (25)
BBi	Banton Burn NS 2749 6800	silty sh	mod	NDP	p + wp	hvy ov -> bit res	-	sh above Garibaldi Ironstone	1.22 (14)
BEV II	Cardowan Colliery NS 26877 6640 to NS 26889 66639	coal	-	70:20:10	-	-	dull/mid-deep o sp	Shale Coal	0.86 (25)
BEV 00	Tippelknowe NS 2918 6618	coal	-	70:20:10	-	-	mod-dull/deep o sp	Wilsontown Main Coal	0.98 (25)

Source of samples prefixed:

BM - by Mr. P.J. Brand.
 BEV - Mr. R. Beveridge.
 M - Dr. G. Durant.
 GR - Mr. R. Ingerbritsen and Mr. F. Matheson.
 SK and ES - Mr. E. Skipsey.
 SBO - collected from corestore at Murchison House.

All other samples collected in the field.

LIMESTONE COAL GROUP - JOHNSTONE SHELL BED HORIZON

Sample Number	Locality Depth (ft) Grid Reference	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (n° readings)
BEV K	Bilston Glen Colliery coal NT 32912 66452	coal	-	80:10:10	sl scruffy	-	mod/o-y sp	South Coal	0.75 (25)
BEV L	Bilston Glen Colliery coal NT 33037 66504	coal	-	60:20:20	-	-	mod/o-y sp	Parrot (North) Coal ab mic lamns	0.81 (25)
BEV G	Monktonhall Colliery coal NT 33214 66785	coal	-	70:20:10	scruffy	-	mod/lt of sp	Corbiecraig Coal	0.77 (25)
BEV H	Monktonhall Colliery coal NT 33262 66847	coal	-	60:20:10	scruffy	-	mod/lt o sp	South Coal sulphur on cleats	0.81 (25)
JSB 1	Firth of Forth Tower 1 3017 NT 33002 68789	sl silty sh	mod/high	10:80:10	wp	lt ov + w blotches	dull/mid o sp + liptodet	-	0.85 (25)
JSB 39	Seafield Colliery 300fm Mine 1565 NT 32900 68885	siltstone	mod	5:95:tr	p	no ov + f + w	dull/lt o f	-	0.79 (8)
JSB 38b	Seafield Colliery 170fm Mine 562 NT 32831 68911	silty sh	high	tr:100:0	wp	lt ov + f	-	-	1.36 (18)
JSB 17	Seafield N°1 Mine NT 32719 68965	siltstone	high	5:95:0	wp + p	lt ov + w + f	-	ab Fe ox	0.64 (8)

Sample Number	Locality Depth (ft) Grid Reference	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (n° readings)
JSB 10	Balfour Mains 4159 NT 33307 69989	carbarg	-	30:40:30	st + w	mod ov	int-mod/y + o-y sp tr int/y w tr <i>Bot</i>	EXTRACTED	0.71 (15)
JSB 16	Mackies Mill 3092 NT 33054 69794	sl silty sh	mod	30:70:tr	wp	lt/mod ov	dull/o f	-	0.91 (25)
JSB 35	Tullybreck Farm 2568 NT 33158 69859	silty sh	high	NDP	wp	mod/hvy ov -> bit res	dull/deep o fl	matrix -	1.41 (25)
JSB 137	Mosswood 3130 NT 33109 69673	silty sh	high	NDP	wp	mod ov -> bit res	v dull/deep o matrix fl	-	1.78 (18)
JSB 380	Cameron 1 4640 NT 33457 69901	carbarg	high	10:40:50	w + wp	mod ov + w	mod/lt-mid o sp	-	0.84 (25)
JSB 3	Meggie Den 1140 NO 33616 70306	siltstone	high	NDP	wp	hvy interst -> bit res	-	-	2.67 (25)
JSB 195	Windygates 1/78 4078 NT 33510 70034	sl silty sh	v high	20:50:30	wp + w	mod/dk ov ply matrix sat	dull/mid o sp + liptodet dull/deep o bkg fl	EXTRACTED	0.69 (25)
JSB 18	Dunotter 705 NO 34649 70252	sh	v high	40:30:30	wp	lt/mod ov	mod/y-o sp tr resin blobs + cut	EXTRACTED	0.47 (25)

Sample Number	Locality Depth (ft) Grid Reference	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (n° readings)
CALL 195	Callange 195 NO 34171 71191	siltstone	high	20:60:20	w + st	no ov + f	mod/y + o-y sp int/y w	ab Fe ox	0.54 (17)
JSB 69	Thornton Bridge 2109 NT 32889 69722	silty sh	high	5:70:25	wp	lt ov	dull/mid o sp + liptodet dull/o matrix fl	-	0.78 (2)
JSB 221	Kirkaldy Bypass 1 NT 32725 69320	siltstone	mod	NDP	p	no ov	v dull/deep o bkg fl	-	1.65 (21)
JSB 37	Lochgelly 813 114 NT 32275 69388	siltstone	v high	70:20:10	wp	no ov + blotches + w	mod/deep o sp	-	0.64 (3)
JSB 390	Lochgelly 803 74 NT 31898 69634	siltstone	high	NDP	wp	hvy interst -> bit res	-	-	4.24 (25)
JSB 416	Lochgelly 818 21 NT 31763 69050	siltstone	mod	10:80:10	p	no ov + w	mod/y-o sp	ab Fe ox	0.72 (15)
JSB 417	Lochgelly 820 NT 31780 69065	siltstone	mod	5:85:10	p	v lt o v	mod/y-o + lt o sp + liptodet	ab Fe ox blotches	0.76 (8)
JSB 460	Colins-Knowe 85 NT 31910 69136	siltstone	high	tr:90:10	p	v lt ov	mod/o-y sp	-	0.63 (17)

Sample Number	Locality Depth (ft) Grid Reference	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (n° readings)
JSB 551	Dora 1/J 185 NT 31822 69090	siltstone	high	tr:90:10	p	no ov + f	mod/o-y + y-o sp	-	0.58 (2)
JSB 137	Pieries Burn 10 112 NT 31088 69549	sl py silty sh	high	30:30:40	w	mod/hvy ov + w	30% mod/o-y sp 10% int/y w	-	0.51 (25)
JSB 217	Drumnagoil 16 70-82 NT 31195 69385	silty + sl py sh	v high	35:40:25	w + wp	mod ov + bloiches	20% mod/o-y sp 5% int/y f + ?tasmanitid frags	-	0.44 (25)
JSB 198	Blairbathie 19 67 NT 31260 69416	sl silty sh	high	10:30:60	wp	mod ov + w	mod/o-y sp	EXTRACTED	0.49 (25)
JSB 84	Maryburgh 3 63-71 NT 31440 69580	silty + py sh	high	30:30:40	wp	mod ov	mod/y-o + lt o sp + amorph frags	-	0.50 (25)
JSB 210	Drumnagoil 9 122-133 NT 31174 69380	silty sh	v high	10:20:70	wp	hvy ov + w	mod-int/y sp + f tr int/y amorph om + y long disc lamalg	-	0.55 (25)
JSB 88	Kinnaird 46 80 NT 31466 69634	carbarg	-	NDP	w	v hvy -> bit res	-	-	2.35 (25)
JSB 167	Carden 1 76 NT 32287 69378	silty carbarg	-	30:30:40	st + wp	lt ov + w	mod/y-o + o-y sp tr cut + resin	ab degraded sp	0.55 (23)

Sample Number	Locality Depth (ft) Grid Reference	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (n° readings)
JSB 48	Rothes Colliery 119 NT 32809 69722	siltstone	mod	10:60:30	wp + w	no ov + f	dull/mid o sp	-	0.75 (13)
JSB 217/602	M92 Motorway Bore 602 62 NT 22477 69457	silty sh	high	NDP	wp	mod ov -> bit res	-	-	1.45 (25)
JSB 217/605	M92 Motorway Bore 605 40 NT 32478 69454	silty sh	high	NDP	wp	mod/hvy ov -> bit res	v dull/deep o f	-	1.27 (25)
JSB 334	Bowhill 360fm Mine 68 NT 32104 69621	sl silty py sh	v high	30:20:50	w + wp	mod/dk ov pty matrix sat	mod/mid o sp tr mod/o resin blobs	EXTRACTED	0.65 (25)
JSB 332	Bowhill 3 Shaft 1336 NT 32107 69563	siltstone + sh lamns	mod	30:40:30	st + wp	lt ov + w + p	mod/lt o sp	-	0.63 (20)
M 4446	Chapel Colliery Lochgelly NT 32636 69447	coal + cannel lamns	-	60:30:10	-	-	mod/lt o sp	Smithy Coal mic assoc with with sp	0.70 (25)
M 4412/1	Cluny Colliery Lochgelly NT 32266 69545	coal + cannel patches	-	60:20:20	-	-	mod/y-o + lt o sp	Smithy Coal	0.61 (25)

Sample Number	Locality Depth (ft) Grid Reference	Lithology	Organic Content	V:I:E (percent)	Virinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (n° readings)
M 4412/2	Cluny Colliery Lochgelly NT 32266 69545	silty sh	mod	40:40:20	w	lt/mod ov	mod/y-o + lt o sp tr int/y f	Smithy Coal	0.53 (25) horizon
JSB 44	Maryburgh 6 44 NT 31339 69570	silty sh	high	30:30:40	wp + w	hvy ov	mod/o-y + y-o sp	-	0.54 (12)
JSB 543	Dora 570 51 NT 31794 69070	silty sh	high	10:40:50	p	lt/mod ov	40% mod/y + o-y sp 10% int/y f + w	-	0.42 (25)
JSB 160	Westerton 533 93 NT 31899 69241	siltstone	high	tr:90:10	p + wp	no ov + ab w	mod/lt o sp	ab Fe ox	0.64 (8)
JSB 50	Mary Pit u/g Section NT 31789 69380	siltstone	high	NDP	p	no ov	dull/deep o f	-	1.21 (24)
JSB 412	Cowdenbeath Pit 18 NT 31594 69181	silty sh	high	30:45:25	w	lt ov pty hvy	mod/y-o + lt o sp tr Bot	-	0.70 (16)
JSB 381	Blairbathie 2 148 NT 31230 69444	siltstone	high	10:80:10	p	nov ov	mod-int/y-o sp	ab Fe ox blotches	0.66 (13)
JSB 289	Whitefield Rd 1 76 NT 31136 68820	sl py + silty sh	high	10:30:60	wp	mod ov	mod/y + o-y sp tr int/y ?tasmanitid frags	?tasmanitid frags	0.47 (25)

Sample Number	Locality Depth (ft) Grid Reference	Lithology	Organic Content	V:lt:E (percent)	Virinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (n° readings)
JSB 166	Monziehall 26 26 NT 31584 68799	siltstone	high	5:75:20	p	no ov + f	mod/o-y + y-o sp + liptodet	-	0.54 (12)
JSB 49	Donibristle 401 38 NT 31628 68831	siltstone	mod	5:75:20	p + wp	≈no ov	dull/o-y + y-o sp tr int/y liptodet tr cut	ab Fe ox	0.67 (10)
JSB 183	Prathouse 55 48 NT 31444 68816	siltstone	high	tr:90:10	p	lt/mod ov	mod/o-y + y-o sp	ab Fe ox	0.61 (5)
JSB 154	Prathouse 22 167	siltstone	high	15:80:5	wp	no ov + w	int/y ?algal blotches tr mod/y-o sp	ab Fe ox	0.62 (7)
JSB 26	Lilliehill 2 393 NT 31025 68984	sh	mod	20:55:25	wp	lt/mod ov + blotches	v dull/deep o liptodet	-	0.55 (23)
JSB 493	Comrie 1/79 639 NT 30087 69430	py sh	high	20:30:50	wp	hvy ov	mod/y-o + lt o sp	-	0.72 (25)
JSB 294a	Bickram 1 1854 NT 30066 69126	siltstone	v high	40:20:40	wp	mod ov + w	mod/mid o sp	ab Fe ox	0.82 (25)
JSB 294b	Bickram 1 1926 NT 30066 69126	sh	high	10:40:50	wp	mod/hvy	dull/lt-mid o sp + amorph om	EXTRACTED ab sid blotches	0.87 (25)

Sample Number	Locality Depth (ft) Grid Reference	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (n° readings)
JSB 159	Bandrum 2 195 NT 30453 69148	calc sh	mod	NDP	wp	no ov	dull/y carb fl	-	2.85 (25)
JSB 163b	Bandrum 7 33 NT 30479 69130	siltstone	mod	NDP	w	no ov + blk w	-	-	3.53 (21)
JSB 163	Bandrum 7 70 NT 30479 69130	silty sh	mod	NDP	p	blk w	-	-	2.72 (8)
JSB 358	Bandrum 12 512 NT 30413 69157	sl silty sl py sh	v high	NDP	w	v hvy ov -> bit res	-	-	1.72 (25)
JSB 349	Blair 2 174 NT 30373 69014	calc sh	high	NDP	w	hvy ov -> bit res	mod/y carb fl	-	2.47 (21)
JSB 143	Lethans 1 55 NT 30646 69438	sh	v high	NDP	st + w	lt ov	mod-dull/mid + deep o sp	matrix reddened	1.43 (25)
JSB 21	Lethans 2 1373 NT 30152 69342	siltstone	high	5:85:10	p	lt ov + w	mod/lt + mid o sp	ab Fe ox	0.66 (18)
JSB KH	Knock Hill Mine NT 3055 6935	silty sh	v high	40:60:0	wp	mod ov + w + blotches	-	-	0.60 (25)

Sample Number	Locality Depth (ft) Grid Reference	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (n° readings)
JSB 498	Threepsykes 1132 NT 30271 69438	py sh	high	NDP	wp	hvy ov mn bit res	dull/deep o bkg fl	EXTRACTED	1.11 (23)
JSB 367	Shepherdlands Farm 1487 NT 30064 69024	py carbarg	-	30:30:40	w + st	hvy ov	mod/mid o sp frags	-	0.71 (25)
JSB 497	Comrie 2/81 523 NT 30124 69378	silty sh	high	20:30:50	w	≈no ov + blotches	mod/lt-mid o sp + amorph om tr <i>Bot</i>	-	0.74 (22)
JSB 497b	Comrie 2/81 581 NT 30124 69378	sl calc + silty sh	high	5:75:25	wp + p	lt ov	dull/y-o + lt o sp tr cut	-	0.69 (25)
JSB 13	Barnhill 2856 NT 30125 69573	sl calc siltstone	high	10:90:0	wp	lt/mod ov	dull/y-o matrix fl	EXTRACTED	0.95 (25)
JSB 126	Steelend 14 80 NT 30532 69257	sh	high	NDP	wp	v hvy -> bit res	-	-	2.74 (25)
JSB 399	N. Remiltoun Opencast NT 30315 68805	sl silty + sl calc sh	mod	NDP	w	mod/dk ov	v dull/deep o carb fl	-	1.97 (25)
E 6019	Mossneuk 3538 NS 28728 68610	sh	mod/high	NDP	wp	mod/dk ov -> bit res	dull/o bkg fl	-	1.75 (24)

Sample Number	Locality Depth (ft) Grid Reference	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (n° readings)
CAS 8	Castlerankine Burn NS 2770 8135	siltstone	mod	NDP	p	mod ov -> bit res -	-	pty mosaiced vit	2.72 (25)
BB 2	Banton Burn NS 2749 6800	sl calc + sl py sh	high	NDP	wp	matrix sat -> bit res	v dull/deep o carb fl	-	1.39 (21)
CBD	River Carron NS 27930 68320	siltstone	high	NDP	wp + p	v hvy interst -> bit res	-	-	3.00 (25)
CO 3*	Corrie Burn NS 26880 67893	py sh	v high	30:30:40	w + st	v hvy ov	30% mod/o-y sp 10% mod/o-y liptodet	-	0.63 (25)
CO 5*	Corrie Burn NS 26880 67863	py sh	high	30:30:40	w + st	matrix sat	mod/y-o sp	-	0.64 (25)
CO 6*	Corrie Burn NS 26880 67863	py + silty sh	v high	10:40:50	wp + st	matrix sat	30% mod/o-y w + sp frags + f 20% int/y f	ab <i>Lingula</i>	0.67 (22)
CO 11*	Corrie Burn NS 26880 67863	siltstone	v high	30:40:30	w + st	v hvy interst	20% mod/y-o + lt o sp + terrest frags 10% int/y f	-	0.64 (19)

* Average of four samples between the horizons of the Kilsyth Coking Coal and Top Hosie Limestone plotted for Corrie Burn.

Source of samples prefixed: BEV - Mr. R. Beveridge.

JSB + CALL Mr. P. Brand.

M - Dr. G. Durant.

E - Mr. E. Skipsey.

All other samples collected in the field.

LIMESTONE COAL GROUP - CHAPEL NESS INTRUSION AND CRAIGFORTH NECK NT 3476 6995

Sample Number	Locality	Lithology	Organic Content	V:l:E (percent)	Bitumen Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (no readings)
KIN 1	sediment adjacent to sill	sh	high	20:60:20	w + wp	lt ov + ab dk f	15% mod/mid o sp - 5% mod/mid o cut		0.65 (25)
KIN 2	sediment adjacent to sill	siltstone	high	10:80:10	st + wp	lt ov + ab f	mod/y-o + mid o sp tr int/y <i>Bot</i> + cut exuding from vit	ab bitumnous/humic om	0.51 (13)
KIN 3	vent	carbarg	-	40:20:40	st + w	hvy ov	30% mod/y + o-y sp 5% int/y <i>Bot</i> 5% mod-int/y + o-y cut dull/br fl matrix	-	0.53 (25)
KIN 4	vent	coal	-	75:25:5	-	-	mod/lt o sp tr int/y resin	-	0.55 (25)
KIN 5	vent	sh	low	tr:90:10	p	lt ov + dk f	mod/lt-mid o sp t int/y h-c f	hydrocarbons	1.18 (2)
KIN 6	vent	coal + sed + ash mix	high	30:50:20	p + w	mod ov	mod/o-y + lt o sp tr <i>Bot</i>	-	0.58 (25)
KIN 7	vent	calc + silty sh	high	30:40:30	wp + w	matrix sat	20% int/y <i>Bot</i> 10% mod/o-y + y-o sp ab int/y interst h-c	hydrocarbons calcite replaces <i>Bot</i>	0.45 (25)

Sample Number	Locality	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %Rv average (no readings)
KIN 8	vent	calc siltstone	mod	20:60:20	wp	mod ov + ab f	mod-int/y f tr mod/y sp + Bot ab int/y interst h-c f	hydrocarbons	0.48 (20)
KIN 9	vent	coal	-	100:0:0	-	-	pty dull/y-o carb fl	fibrous in hand specimen heavy calcitisation bituminous/humic om stains carb in places	0.71 (25)
KIN 10	cliff	siltstone	high	10:80:10	st + w + wp	lt ov + ab f	mod/y-o + lt o sp	some vit exuding bituminous/humic om	0.50 (14)
KIN 11	sheared zone ~1M E of KIN 10	siltstone + tuff mix	low	NDP	p + st	pty v hvy	tr int/y h-c f	hydrocarbons	2.57 (15)
KIN 12	clast in sst block	coal	-	70:20:10	-	-	mod/o-y + y-o sp	hvy ox - poor polish	0.46 (25)
KINCRAIG NECK NT 3465 6997									
KIN 13	vent	siltstone	mod	10:90:0	w + wp	hvy interst	tr int/y h-c f	hydrocarbons	0.68 (25)
KIN 14	vent	sh	mod	20:70:10	p	lt ov	mod/lt o sp tr int/y ? algal w	-	0.78 (25)

Sample Number	Locality	Lithology	Organic Content	V:I:E (percent)	Virinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %Rv average (no readings)
KIN 15	vent	coal	-	100:0:0	-	-	-	calcitised bituminous/humic om exuding into calcite	0.58 (25)
KIN 16	vent	coal	-	100:0:0	-	-	-	heavily calcitised v well preserved cell structures, contents + middle lamellae	0.82 (25)
KIN 17	vent	sh	mod	30:50:20	wp	no ov sl	v dull/deep o-r sp	bituminous/humic om exuding into calcite	1.58 (25)
KIN 18	vent	silty sh	high	10:85:5	p	lt ov + f	dull/mid o f	-	0.76 (25)
KIN 19	vent	siltstone	high	10:80:10	p	lt ov + ab f	mod/mid o sp frags	-	0.75 (12)
KIN 20	vent	coal	-	100:0:0	-	-	-	highly calcitised well preserved cell structures + contents bituminous/humic om exuding into calcite	0.59 (25)
SB 6	vent	siltstone	high	tr:90:10	p	no ov + dk w + f	dull/deep o sp frags	-	0.64 (5)
SB 5	vent	coal	-	60:30:10	-	-	dull/y-o + lt o sp	sl ox py -> haem	0.49 (25)

Sample Number	Locality	Lithology	Organic Content	V:f:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (no readings)
SB 4	Shell Bay, 10m from igneous mass contry rock	siltstone	high	5:90:5	p	no ov	dull/lt o sp	-	0.78 (5)
SB 3	Shell Bay country rock	siltstone	high	tr:80:20	p	no ov + f + w	mod/o-y + y-o sp	-	0.61 (3)
SB 2	Shell Bay country rock	silty sh	high	tr:90:10	p	no ov + f	mod/lt-mid o sp	-	0.68 (25)
SB 1	Shell Bay	coal	-	60:20:20	scruffy	-	mod/y + o-y sp	-	0.53 (25)
SB 7	vent	coal+ cannel	-	50:20:30	-	-	mod/y-o + lt o sp	-	0.61 (25)
SB 8	vent	silty sh	high	tr:95:5	p	no ov + ab dk f	dull/mid-deep o sp	-	0.82 (5)
SB 9	vent	siltstone	high	tr:100:tr	p	no ov + ab dk f	dull/deep o f	-	0.71 (8)
SB 10	vent	carbarg	-	30:40:30	st	-	mod/o-y sp tr int/y <i>Bot</i>	-	0.59 (25)
SB 11	vent	siltstone	high	tr:95:5	wp	mod ov	dull/mid-deep o sp	-	0.72 (3)
SB 12	vent	siltstone	high	5:90:5	wp	lt ov + w	dull/deep o f	-	0.75 (15)
SB 13	vent	siltstone + ash mix	mod	20:70:10	wp	mod ov	mod/o-y + y-o sp	-	0.69 (25)
SB 14	vent	silty sh	high	tr:100:tr	wp	lt ov + f	mod/o-y + y-o sp frags	-	0.70 (3)

LOWER LIMESTONE GROUP ≈ CHARLESTOWN MAIN LIMESTONE HORIZON

Sample Number	Locality Depth Grid Reference	Lithology	Organic Content	V:lt:E (percent)	Virinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (no readings)
AB 2	sh below 2nd Abden Limestone NT 3275 6872	py sh	high	10:60:30	wp + p	lt ov + f	20% mod/y-o + lt o sp frags 10% mod/y w	EXTRACTED glauc blobs	0.70 (14)
AB 3	sh below 3rd Abden Limestone NT 3279 6874	py sh	high	80:20:0	st + w	mod ov	-	EXTRACTED matrix reddened vit oxid py -> haem	1.27 (25)
CBLK	coal below Lower Kinniny Limestone NT 3279 6886	coal	-	70:20:10	-	-	mod/lt o sp	Tyric Coal	0.54 (25)
MK 2	sh below Mid Kinniny Limestone NT 3280 6888	silty sh	high	5:25:70	w + p	lt ov	40% mod/y-o + lt o sp frags 25% mod/y w 5% int/y <i>Bot</i> mod/y bkg fl	EXTRACTED 2 popns vit <i>Bot</i> degraded	0.53 (6) 0.37 (11)
MK 1	sh ≈ 15' below Mid Kinniny Limestone NT 3280 6888	silty sh	mod	20:50:30	p	lt ov + f	20% dull/y-o +lt o - sp 10% mod/o-y liptodet	-	0.62 (11)
TK 3	sh 9' below Qd Sill NT 3280 6891	silty sh	high	40:60:0	p	lt ov + f	tr mod/mid + deep o sp	EXTRACTED	0.78 (19)

Sample Number	Locality Depth Grid Reference	Lithology	Organic Content	V:I:E (percent)	Vitritine Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %Rv average (no readings)
TK 2	sh 3' below Qd Sill NT 3280 6891	siltstone	v high	NDP	p + w	mod ov -> bit res -	-	ab Fe ox	1.21 (25)
TK 1	sh 3" below Qd Sill NT 3280 6891	siltstone	mod	NDP	p + w	hvy interst -> bit res	-	-	1.71 (17)
ST 34	Seafield 2 Shaft 190-200 NT 32774 68940	sh	mod	5:75:20	p	lt ov -> bit res	dull/deep o sp	-	1.21 (10)
ST 38b	Seafield Colliery 170 fm Mine 1153 NT 32831 68911	sh	mod	tr:100:tr	wp + p	lt/mod ov + f	mod/lt o f	ab fossils	0.46 (3)
ST 16	Mackies Mill 3558 NT 33054 69794	sh	low	NDP	p	lt ov + blk w	-	-	2.71 (3)
MUIRa	Muircambus 29 NO 34722 70242	py + calc sh	high	tr:30:70	w	matrix sat	40% y-o sp 30% int/y f	-	0.39 (3)
MUIRb	Muircambus 352 NO 34722 70242	sh	high	NDP	wp	v hvy -> bit res	-	-	1.75 (19)
SHELL	Shell Bay 480 NO 34677 70048	silty sh	high	tr:90:10	p	lt ov + f	mod/lt o sp	sh below Mid Kinniny Limestone	0.56 (3)

Sample Number	Locality Depth Grid Reference	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %Rv average (no readings)
ENN*	Elie Harbour Neck NT 3493 6996	silty sh	mod	tr:100:0	p	mod ov + f	-	-	0.58 (4)
ENO*	Elie Harbour Neck NT 3493 6996	siltstone	mod	tr:100:0	p	lt ov	-	-	0.52 (4)
ENR*	Elie Harbour Neck NT 3493 6996	coal + ab cannel lamns	-	30:50:20	-	-	dull/mid-deep o sp	vit cracked sl oxid	0.64 (25)
EV*	Elie, Wood Haven NT 3495 6997	silty sh	high	10:70:20	wp	lt ov	mod/o-y + lt o sp	ab Fe ox	0.51 (6)
EW*	Elie, Wood Haven NT 3495 6997	silty sh	high	tr:70:30	wp	lt ov	mod/o-y sp + terrest frags	-	0.48 (6)
SMW 18	St. Monance Shore NT 35241 70147	coal	-	60:20:20	scruffy	-	mod/o-y sp tr int/y resin	=base Lower Limestone Group	0.53 (25)
SM 6	St. Monance Shore NT 35361 70191	coal	-	80:10:10	scruffy	-	mod/y + o-y sp	-	0.54 (25)
SM 5	St. Monance Shore NO 353361 70191	silty sh	high	70:30:tr	w + p	lt ov + dk st + w	mod/y sp	EXTRACTED 1.7% TOC HI 109 some py -> haem	0.44 (25)
SM 4	St. Monance Shore NO 35337 70181	silty sh	high	70:30:tr	p	no ov + f + w	mod/y sp + liptodet	EXTRACTED 3.7% TOC 87 HI ab Fe ox py -> Fe ox	0.49 (25)

Sample Number	Locality Depth Grid Reference	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %Rv average (no readings)
SM 3	St. Monance Shore NO 35337 70181	sh	mod	40:60:tr	p	no ov + f	mod/y liptodet	-	0.49 (25)
SM 2	St. Monance Shore NO 35293 70164	coal	-	70:20:10	-	-	mod/o-y + y-o sp tr resin	sh below Mid Kinniny Limestone oxid - py missing + ab cracks	0.52 (25)
SM 1	St. Monance Shore NO 35292 70167	sl py + silty sh	high	10:80:10	p + w	lt ov + w	mod/o-y sp tr int/y Bot	EXTRACTED 3.5% TOC 66 HI tr py -> haem	0.50 (7)
CM 103	Higham 90 NO 36746 70941	sh	low	tr:85:15	p	v lt ov	mod-dull/y-o sp	-	0.63 (6)
CALLCM 433 NO 34171 71191	Callange 433 NO 34171 71191	py silty sh	high	30:30:40	w + st	lt ov + pty dk	30% int/y f 10% mod/y + y-o sp	-	0.46 (23)
CM 39	Drumcarro 240 NO 34591 71290	silty sh	mod	tr:90:10	p	mod ov	dull/y-o + lt o sp	-	0.62 (7)
CM 11	Pitteuchar 1 735 NT 32789 96992	sl calc sh	low	NDP	p	mod ov -> bit res	-	-	3.35 (21)
CM 29	Mid Strathore 2115 NT 32822 69827	sl calc sh	mod	NDP	p	lt/mod ov -> bit res	-	-	3.93 (15)

Sample Number	Locality Depth Grid Reference	Lithology	Organic Content	V.i:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %Rv average (no readings)
ST 48	Rothes Colliery 564 NT 32809 69722	sh	low	NDP	p	hvy ov + blk w -> bit res	-	-	2.98 (10)
ST 224	Kirkaldy Relief Rd 5 36 NT 32715 69288	claystone	barren	-	-	no ov + blk f	-	high rank	NDP
CM 334	Bowhill 360fm Mine 530 NT 32104 69621	sh	mod	NDP	p	mod ov -> bit res	-	-	3.86 (25)
CM 248	Glenrothes 89 127 NO 32545 70210	sh	v low	NDP	p	no ov + blk w	-	-	3.32 (1)
CM 249	Glenrothes 90 95 NO 32531 70321	silty sh	mod	NDP	w	hvy ov -> bit res blk w	-	-	3.79 (22)
CM 314A	Glenrothes Tower 5 NO 32538 70278	silty sh	mod	NDP	p	mod/hvy ov -> bit res	-	-	3.62 (25)
CM 9010	Mossmorran C23 24 NT 31853 69010	silty sh	mod	30:50:20	wp	mod ov	mod/lt o sp	-	0.57 (25)
CM 155	Lassodie 1 105 NT 31191 69299	silty sh	mod	tr:90:10	p	mod ov	mod-dull/y-o tr Bot	ab Fe ox	0.62 (7)

Sample Number	Locality Depth Grid Reference	Lithology	Organic Content	V:l:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %Rv average (no readings)
CM 205	Annfield 354 NT 31424 68654	sl silty sh	low	NDP	w	lt ov -> bit res	-	-	1.45 (23)
CM 211	Duloch 56 NT 31345 68685	sh	low	NDP	p	lt ov -> bit res	-	-	2.57 (16)
CM 59	Charlestown 1 77 NT 30640 68422	sh	mod	tr:100:tr	p	mod ov	v dull/deep o f	-	1.06 (25)
SBO 3757	Kinnigars Park 374 NT 30151 68126	sh	low	10:90:0	wp	no ov + f	-	= Victory Coal horizon	1.91 (2)
SBO 3566	Kinneil 2 Shaft 2074 NS 29880 68127	coal	-	NDP	-	-	-	above L. Carriden (N°3) Limestone	2.67 (25)
SBO 3569	Kinneil 2 Shaft 2087 NS 29880 68127	coal	-	NDP	-	-	tr v dull/deep o f in fus cells	above L. Carriden (N°3) Limestone	2.73 (25)
CO 1	Section W of Corrieburn NS 26850 67900	sh	high	tr:90:10	wp	lt ov + f + w	5% mod/y-o + lt o sp 5% int/y liptodet	EXTRACTED Neilson Shell Bed	0.79 (5)
CBR	River Carron NS 27900 68324	sh	v low	NDP	p	no ov	-	sh above Fankerton Limestone	3.67 (1)

*, • denotes averages of these samples plotted on the map.

Source of samples prefixed: CM, ST, CALL, MUIR, SHELL - Mr. P. Brand.

SBO - corestore at Newbattle Abbey.

All others collected in the field.

LOWER LIMESTONE GROUP - ELIE HARBOUR NECK

Sample Number	Locality Depth Grid Reference	Lithology	Organic Content	V:l:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %Rv average (no readings)
Z	sh above St. Monance Brecciated Lst.	sh	low/mod	NDP	p	hvy ov -> bit res	-	-	4.17 (17)
X	sh above Charlestown Main Lst	silty sh	high	5:95:0	p	mod ov + f	-	-	0.94 (7)
W	sediment between Elie Harbour Neck and Charlestown Main Lst.	silty sh	high	tr:70:30	wp	lt ov	mod/o-y sp + terrest debris	-	0.48 (6)
V	as above	silty sh	high	10:70:20	wp	lt ov	mod/y-o + lt o sp	ab Fe ox	0.51 (6)
U	as above	siltstone	mod	10:70:20	wp	lt ov	mod/lt o sp tr Bot	ab Fe ox	0.43 (6)
T	as above	siltstone	high	tr:70:30	w	lt ov + ab f	mod/o-y + y-o sp tr Bot	ab Fe ox vit phys v small	0.50 (2)
S	as above	siltstone	high	tr:70:30	p	lt ov + f	mod/y + o-y sp tr Bot + ?algal w	ab Fe ox	0.44 (8)
H	vent	sl silty sh	mod	NDP	p	hvy ov -> bit res	-	-	2.55 (20)
I	vent	siltstone	mod	NDP	p + wp	hvy interst -> bit res	-	mn vacuolation	3.10 (25)
K	contorted coal at base of sst raft	coal + cannel lamns	-	50:40:10	-	-	dull/deep o sp	heavily brecciated and calcitised	0.93 (25)

Sample Number	Locality Depth Grid Reference	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %Rv average (no readings)
L	1m above K in sst raft	coal	-	80:20:0	scruffy	-	-	sl brecciated ab well preserved cell structures	0.71 (25)
J	vent	cannel coal	-	30:70:0	-	-	-	-	1.07 (25)
G	vent	py sh	low	NDP	p	v hvy -> bit res	-	-	1.49 (12)
C	vent	coal	-	NDP	-	-	-	calcite rim around clast excellent preser- vation of cell structures ab micn of cell contents	1.37 (25) cell walls 1.15 (25) cell contents 1.22 (25) average
D	vent	coal	-	NDP	-	-	-	-	1.25 (25)
E	vent 1m W of C	py sh	low	NDP	w + wp	v hvy ov -> bit res	-	-	1.21 (25)
Q	clast from bomb in sst raft	siltstone	mod	10:90:0	wp	mod interst	-	-	0.84 (25)
M	coal in sst raft	coal	-	30:60:10	-	-	dull/deep o sp	ab micn sl ox + brecciated	0.98 (25)
A	vent	silty sh	mod	NDP	p	hvy ov -> bit res	-	-	0.84 (25)
B	vent	sh	mod	NDP	p	v hvy ov -> bit res	-	mn vesiculation	4.65 (25)

Sample Number	Locality Depth Grid Reference	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %Rv average (no readings)
N	bedded country rock	silty sh	mod	tr:100:0	p	mod ov + f	-	v friable	0.59 (2)
F	vent	carbarg	-	NDP	w + st	v hvy ov -> bit res	-	-	1.03 (25)
P	contact of sst + ash	coal	-	-	-	-	-	pty vesiculation	3.55 (25)
O	base of sst in cliff	siltstone	mod	tr:100:0	p	lt ov	-	-	0.52 (4)
R	coaly patch in cliff	coal + cannel lamns	-	30:50:20	-	-	v dull/mid o sp	ab well preserved cell structures and contents ab ox cracks	0.64 (25)

All samples collected in the field.

CALCIFEROUS SANDSTONE MEASURES - STRATHCLYDE GROUP

LOTHIAN OIL SHALE GROUP (Lothians and South Fife) PATHHEAD BEDS TO FIFE NESS BEDS (Central and East Fife)

Sample Number	Locality Depth Grid Reference	Lithology	Organic Content	V:f:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (no readings)
SBO 3637	Bilston N°1 Shaft 1530 NT 32727 66508	sh	v high	5:5:90	st + w	v hvy ov	85% int/y disc lamalg 5% int/y <i>Bot</i> tr mod/y sp	2' Oil Shale lamosite ab amorph algal matter	0.26 (5)
SBO 3646	Bilston N°1 Shaft 1914 NT 32727 66508	marl	v high	tr:10:90	w	mod interst	int/y disc interst lamalg	=Broxburn Shale horizon lamosite layering of lamalg in places	0.51 (6)
SBO 1698	Cousland N°1 348 NT 3781 6802	sh	high	30:50:20	st + w	mod ov + f	mod/y + o-y sp 15% int/y f 5% <i>Bot</i>	-	0.51 (25)
SBO 1129+	Duncan's Confectionary Works 58 NT 32555 67538	siltstone	low	10:90:0	wp + st	hvy interst	int/y h-c's	= Ravelston Sandstone horizon hydrocarbons	0.84 (11)
SBO 1134+	Duncan's Confectionary Works 125 NT 32555 67538	sl calc sh	mod	5:95:tr	wp	lt ov + f	mod/mid-deep o f	tr Fe ox =Ravelston Sandstone horizon	1.10 (9)

Sample Number	Locality Depth Grid Reference	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %Rv average (no readings)
SBO 1138+	Duncan's Confectionary Works 160 NT 32555 67538	coal + ab cannel lamns	-	50:25:25	-	-	dull/mid-deep o sp tr int/y h-c in fus cavities	≈Ravelston Sandstone horizon hydrocarbons	1.00 (25)
Ca 20	Fells Shale, Tarbrax ≈NT 3042 6656	calc sh	v high	tr:5:95	wp	mod ov	mod-int/y disc lamalg ~5% int/y <i>Bot</i> tr mod/y sp	11.1% TOC lamosite	0.55 (7)
BROX	Linhouse Water Mid Calder NT 3079 6671	calc sh	v high	tr:20:80	wp	mod/hvy ov + st	70% mod-int/y disc lamalg 10% int/y algal cysts mn int/y <i>Bot</i> tr mod/y + o-y sp	Broxburn Oil Shale lamosite	0.55 (8)
SBO 3743	Newliston Pit N°3 108 NT 31077 67271	v calc sh	v high	tr:20:80	wp	mod/dk ov	mod-int/y disc + lay lamalg tr mod/y sp tr int/y <i>Bot</i>	Dunnet Oil Shale lamosite marly in places some amorph bands	0.48 (4)
SBO 3718	Blackness N°1 270 NT 3054 6896	calc canneloid sh	v high	20:20:40	st + w	v hvy ov tr bit res	dull/mid-deep sp	≈Houston Coal horizon 2 popns vit	band vit 0.56 (25) phyts 0.48 (25)
CS 4177	Braefoot Bay E15 48 NT 3182 6835	marl	high	5:10:85	st	lt ov	mod/y disc lamalg -	-	0.39 (14)

Sample Number	Locality Depth Grid Reference	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (no readings)
DUL 2	Duloch 2 446 NT 31345 68685	silty sh	high	NDP	p	lt ov -> bit res	-	-	2.34 (14)
CS 96/106	Burntisland Rig Site 106 66-67 NT 32369 68558	sl silty sh	high	10:85:5	p + wp	lt ov -> f + blotches	mod-dull/y-o + lt o sp + f	-	0.63 (19)
CB 1	Carron Harbour 14.5' below Td Sill NT 32187 68595	py + calc sh	v high	5:15:80	w	lt/mod ov + ab blobs + st	70% int/y disc lamalg 10% int/y <i>Bot</i> tr mod/y sp	EXTRACTED 10.9% TOC 666 HI lamalg v fine <i>Bot</i> degraded ab fish frags + coprolites lamosite	0.30 (25)
MBC	Newbiggin Burntisland NT 3210 6863	coal	-	70:20:10	scruffy	-	mod/y + o-y sp	coal above Birdiehouse Limestone	0.47 (25)
BINN	Binnend Tip, Burntisland NT 32402 68732	coal	-	40:10:50	scruffy	-	40% mod/y + o-y sp 10% int/y <i>Bot</i>	Houston Coal finely laminated lamosite <i>sensu</i> Cook (1987)	0.45 (25)
DS	Whinnyhall N°2 Mine (adit) NT 32403 68700	sh	v high	5:15:80	w + st	mod/hvy ov	70% int/y disc + lay lamalg 5% mod/y sp 5% int/y <i>Bot</i>	EXTRACTED Dunnet Oil Shale 28.9% TOC 803 HI lamosite	0.23 (19)

Sample Number	Locality Depth Grid Reference	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %Rv average (no readings)
SBO 4045	Whinnyhall 576 NT 32427 68703	marl	low	NDP	p	hvy interst -> bit res	-	-	3.45 (9)
CS 33	Burntisland Water Bore NT 32251 68633	sh	mod	NDP	p	lt ov + dk lamns -> bit res	-	-	1.20 (18)
SBO 520	Burntisland Water Bore 368 NT 32251 68633	calc sh	mod	60:30:10	w + wp	mod ov + dk interst	mod-dull/mid o liptodet f	-	0.43 (25)
HIGH	Higham 505 NO 34746 70941	sl silty sh	high	tr:50:50	w	mod ov	20% int/y + y-o sp - 20% int/y w + f 10% int/y algal blotches	-	0.49 (2)
CS	Sypsies, Crail NO 35934 70829 119	sh	mod	20:40:40	wp + st	mod ov	mod/y + o-y sp dull/o-y bkg fl	-	0.41 (16)
CLARE 4	Claremont 45 NO 34518 71419	sh	mod	tr:30:70	p	mod ov	60% int/y f 10% mod/y + o-y sp	-	0.38 (6)
CLARE 2	Claremont 215 NO 4518 1419	sl silty sh	mod	tr:80:20	wp	no ov + f	mod/y-o + lt o sp int/y w	-	0.49 (1)

Sample Number	Locality Depth Grid Reference	Lithology	Organic Content	V.I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (no readings)
DEN 7	Denork 74 NO 34540 71409	sl silty sh	mod/high	10:20:70	w + wp	mod ov + w	60% mod-int/y ? algal cysts 10% int/y + o-y sp matter	vit exudes bituminous/humic	0.39 (2)
DEN 2	Denork 201 NO 34540 71409	sh	high	20:60:30	wp	mod ov + dk w	20% mod/o-y sp 10% int/y w	ab Fe ox	0.49 (14)
MM 6+	Mount Melville Cottages NO 34828 71496	sh	mod	tr:80:20	wp	lt ov + f	mod/mid o sp int/y f tr <i>Bot</i>	-	0.64 (1)
MM 1+	Mount Melville Cottages 1834 NO 34828 71496	sh	low	tr:100:tr	p	lt ov + ply hvy	dull/o-y sp + f	-	0.54 (1)
OS 1	Claremont Burn NO 3470 7149	py sh	v high	5:10:85	wp	matrix sat	75% int/y disc lay lamalg 10% int/y <i>Bot</i> tr mod/y sp	EXTRACTED 14.3% TOC 679 HI sample within Denbrae Farm Marine Band lamosite <i>Bot</i> degraded	0.35 (7)

SOUTH QUEENSFERRY SECTION

Sample Number	Locality Grid Reference	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (no readings)
QF A	Long Craig Pier NT 31440 67868	siltstone	high	10:70:20	w + wp	lt ov + ab f	mod-dull/mid o amorph frags dull/y matrix fl	ab Fe ox	0.72 (18)
QF B	NT 31418 67849	siltstone	high	10:80:10	w	no ov + ab f	mod/y-o + lt o sp	ab Fe ox	0.82 (25)
QF C	NT 31412 67849	py sh	v high	10:20:70	w	mod/hvy ov tr bit res	50% mod/y-o + lt o disc lamalg 10% int/y liptodet Shale (lower) f 5% mod/y <i>Bot</i> 5% mod/o-y sp	EXTRACTED Pumpherston Oil lamalg v compact lamosite	0.39 (15)
QF D	NT 31412 67849	v calc sh	high	5:75:20	wp	mod/hvy interst tr bit res	10% mod/o-y + o-y disc lamalg 5% mod/y <i>Bot</i> 5% mod/o-y + y-o sp dull/mid-deep o carb fl	2 popns vit	0.81 (8) 0.43 (12)
QF 1	contact with white- trap sill NT 31406 67850	siltstone	low	NDP	p	v hvy interst -> bit res	mn interst int/y h-c	hydrocarbons	4.31 (7)
QF 3	1.5m below white- trap sill	sh	low	0:100:tr	p	lt ov tr hvy w	dull/mid o sp	tr mod/y f	NDP

Sample Number	Locality Grid Reference	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %Rv average (no readings)
QF 2	3.5m below white-trap sill	calc sh	high	tr:10:90	p	lt/mod ov	mod/int y disc + lay lamalg int/y h-c in fus	EXTRACTED hydrocarbons Pumpherstons Oil Shale (upper) lamosite	0.62 (1)
QF 4	5m below white-trap sill	calc sh	high	5:15:80	p	mod ov	70% int-mod/disc lamalg 10% int-mod/y Bot	-	0.51 (12)
QF 5	7m below white-trap sill	calc + sl silty sh	high	10:20:70	wp	mod/dk ov + blotches	65% mod/y lamalg f 5% mod/y Bot mod-dull/y bkg fl	Bot degraded lamosite	0.51 (6)
QF E	The Craigs NT 31326 67832	py sh	v high	5:15:80	w + wp	mod/hvy ov	mod-int/y lay lamalg tr int/y Bot	Dunnet Shale lamalg banded + degraded in places lamosite	0.58 (8)
St. ANDREWS SHORE SECTION									
Sample Number	Grid Reference	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %Rv average (no readings)
SA 1	NO 35092 71703	coal	-	75:tr:25	iridescent surfaces	-	mod/y-o + lt o sp mn cut	peacock coal	0.53 (25)
SA 2	NO 35070 71726	carbarg	-	30:40:30	w	mod/hvy ov	dull/deep o sp	-	0.80 (17)

Sample Number	Grid Reference	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (no readings)
SA 3	NO 35132 71690	siltstone	mod	5:80:15	p	no ov + w	mod/o-y + y-o amorph frags + sp	≈St. Andrews Castle Marine Band	0.56 (14)
SA 4	NO 35142 71680	coal	-	70:20:10	-	-	mod/y-o + lt o sp	sl oxid	0.49 (25)
SA 5	NO 35142 71680	siltstone	mod	10:80:10	p	no ov + f	mod/y + o-y sp + liptodet	-	0.53 (16)
SA 6	NO 35068 71704	silty + sl py sh	mod	5:70:25	wp	lt ov + f	mod/lt o sp + liptodet w	Witch Lake Marine Band	0.48 (7)
KINKELL BRAES SECTION									
St A 1	NO 35208 71585	sl silty sh	high	30:40:30	wp	mod ov + ab dk w	20% mod/y-o + lt o sp 10% int/y f 10% mod-int/y Bot	-	0.51 (25)
St A 2	NO 35232 71586	siltstone	mod	30:60:10	st + w	no ov + ab dk f	mod/y-o + lt o sp + liptodet	ab Fe ox	0.53 (18)
St A 3	NO 35260 71590	coal	-	70:20:10	scruffy	-	mod/lt o sp	sl oxid	0.55 (25)
St A 4	NO 35271 71579	sl silty sh	high	30:30:40	w + st	hvy ov	30% mod/o-y sp 10% int/y f tr thin algal om	Marine Band II	0.45 (25)
St A 5	NO 35278 71576	sl silty sh	mod	10:90:0	p	no ov + f	-	-	0.86 (5)

Sample Number	Grid Reference	Lithology	Organic Content	V:IE (percent)	Virinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %Rv average (no readings)
St A 6	NO 35290 71576	coal + carbarg	-	40:30:30	st + w	hvy ov in carbarg	mod/o-y sp	EXTRACTED	0.58 (25)
St A 7	NO 35290 71576	coal	-	70:20:10	-	-	mod/y-o sp tr resin	2m below St.A 6	0.58 (25)
St A 8	NO 35298 71577	silty sh	high	10:40:50	w + wp	v hvy interst	30% mod/y + o-y f + w 20% mod/o-y sp	EXTRACTED Marine Band IV shelly	0.40 (8)
St A 9	NO 35298 71577	sh	high	tr:80:20	p	lt ov + ab f	10% mod/o-y + y-o sp 10% int-mod/y f + liptodet	EXTRACTED Marine Band IV	0.57 (25)
St A 10	NO 35314 71576	siltstone	high	tr:100:0	p	lt ov + f	-	-	0.96 (5)
ROCK AND SPINDLE SECTION									
RS 18	NO 3538 7156	canneloid sh	high	NDP	wp	mod ov -> bit res	-	-	1.29 (25)
RS 19	NO 3538 7156	siltstone	mod/low	NDP	p	mod ov pty hvy	-	-	1.39 (25)
RS 20	NO 3537 7157	sh	mod/high	tr:80:20	p	dull/mid-deep o - sp + ab dk f	-	-	1.21 (25)
RS 21	NO 3537 7157	cannel coal	-	20:50:30	-	-	mod/y-o + lt o sp	calcitised in places	0.58 (25)

Sample Number	Grid Reference	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %Rv average (no readings)
RS 22	NO 3537 7157	silty sh	mod	NDP	p	hvy ov -> bit res	-	-	1.13 (25)
RS 23	NO 3537 7157	calc sh	mod/high	NDP	p	hvy ov -> bit res	-	-	3.63 (25)
RS 24	NO 3537 7157	silty sh	mod	NDP	p	hvy ov -> bit res	-	-	2.45 (25)
RS 25	NO 35382 71552	silty sh	mod	10:70:20	wp	mod ov	mod/y-o sp	-	0.51 (15)
RS 26	NO 35420 71548	siltstone	high	10:90:0	wp + w	hvy interst	-	hvy Fe ox staining	0.59 (7)
RS 27	NO 35423 71538	silty sh	high	20:50:30	w + st + wp	lt ov	20% int/y Bot 10% mod/o-y sp + liptodet	ab Fe ox	0.43 (7)
RS 28	NO 35432 71533	siltstone	high	20:50:30	wp + p	hvy interst	25% mod/o-y w + liptodet 5% mod/o-y + y-o sp	-	0.41 (12)
RS 29	NO 35456 71526	silty sh	high	10:60:30	p	lt - mod ov + f	20% mod/y liptodet 10% mod/o-y + y-o sp	-	0.46 (4)

KINGSBARNs - RANDERSTON - WORMISTONE - FIFE NESS SECTIONS

KING 15	NO 36020 71245 The Lecks	coal	-	60:30:10	v scruffy	-	mod/o-y + y-o sp	-	0.51 (25)
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Sample Number	Grid Reference	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %Rv average (no readings)
KING 16	NO 35991 71274	coal + sed. intercons	-	65:20:15	-	-	mod/o-y + y-o sp + amorph om	sulphur-coated surfaces	0.55 (25)
KING 17	NO 35991 71274	v calc sh	high	50:10:40	w + st	matrix sat	20% mod/y-o + o-y sp 20% mod/y w + liptodet	-	0.44 (14)
SM 24	NO 36108 71135	silty + calc sh	high	55:20:25	w + wp	mod/hvy ov	10% mod/y + o-y sp 10% mod/y liptodet 5% int/y <i>Bot</i> dull/y matrix fl	EXTRACTED 7.6% TOC 353 HI tr sid	0.40 (25)
SM 25	NO 36136 71128	siltstone	mod	70:30:tr	w	mod interst w	tr mod/y-o sp	EXTRACTED 1.3% TOC 209% HI mod/hvy bituminous /humic om exuding from vit	0.38 (25)
SM 26	NO 36136 71128	carbarg	-	50:20:30	st + w	mod/hvy ov	mod/o-y sp mn cut	EXTRACTED 24.2% TOC 82 HI	0.45 (25)

Sample Number	Grid Reference	Lithology	Organic Content	V:I:E (percent)	Virinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %Rv average (no readings)
SM 27	NO 36149 71117	silty sh	high	20:80:0	wp	no ov + f	tr mod/y-o sp	EXTRACTED 1.7% TOC 96 HI sample above nodular algal Limestone IX	0.54 (25)
SM 28	NO 36201 71071	coal	-	75:10:10	-	-	mod/lt o sp	oxid - no py + cracks	0.53 (25)
SM 29	NO 36192 71083	sl silty sh	high	30:70:tr	p	no ov + f	tr mod/o-y sp	EXTRACTED 1.5% TOC 142 HI Wormistone Lower Marine Band	0.55 (25)
SM 30	NO 36183 71079	coal	-	70:10:20	v scruffy	-	mod/o-y sp	-	0.48 (25)
V	NO 36357 71012	sl silty calc sh	mod	tr:30:70	wp	no ov + w	mod/lt o sp tr int/y Bot	-	0.58 (3)
W	NO 36336 71017	v calc sh	low	NDP	w	lt ov -> bit res	-	tr mosaics	4.25 (23)
ANSTRUTHER WESTER - BILLOW NESS - CUNIGER ROCK SECTIONS									
U	NO 35647 70321	sh	mod	30:70:0	wp	no ov + f	-	-	0.62 (25)

Sample Number	Grid Reference	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %Rv average (no readings)
T	NO 35637 70304	sh	v high	30:20:50	w + st	matrix sat	20% mod/lt o sp 20% int/y Bot 10% mod/y-o f dull/mid o matrix (50-100µm) fl	28.8% TOC 343 HI large Bot colonies	0.45 (25)
S	NO 35626 70292	silty sh	mod	70:30:0	wp	no ov + f	-	-	0.97 (19)
R	NO 35620 70235	coal	-	60:20:20	-	-	mod/y-o sp	-	0.67 (25)
Q	NO 35620 70282	py calc sh	v high	5:25:70	w	matrix sat	30% int/y disc lamalg 20% int/y lay lamalg "rip-up" clasts 20% int/y Bot	EXTRACTED 18.0% TOC 525 HI Bot degraded and calcitised 10% high-reflecting bitumen w included as inerts	0.63 (7)
P	NO 35605 70273	coal	-	70:10:20	-	-	mod/o-y sp	-	0.58 (25)

Sample Number	Grid Reference	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %Rv average (no readings)
P sh	NO 35605 70273	v calc + py sh	high	10:10:80	w	matrix sat	50% int/y disc lamalg 25% int-mod/y + mid o <i>Bot</i> 5% mod/o-y sp	EXTRACTED 20.6% TOC 689 HI 2 different coloured <i>Bot</i> popns <i>Bot</i> degraded disc filaments not v well defined + much amorph fluorescing om	0.27 (25)
SM 23	NO 35602 70272	v calc sh	high	20:10:70	w + st	v hvy ov	55% mod-int/y disc lamalg 10% int/y <i>Bot</i> 5% mod/y sp mod/y matrix fl	-	0.37 (25)
SM 22	NO 35581 70270	carbarg	-	30:10:60	w	hvy ov	40% mod/o-y sp 15% int/y w 5% int/y <i>Bot</i> mod/y matrix fl	EXTRACTED 60.5% TOC HI 367 tr py -> haem	0.44 (25)
SM 21	NO 35566 70271	silty sh	mod	65:30:5	w + p	lt ov st	mod/o-y amorph debris	Cuniger Rock Marine Band	0.47 (25)
SM 20	NO 35543 70265	coal	-	25:60:15	-	-	mod/o-y + y-o sp	Kirkclatch Coal oxid - py missing + cracks	0.56 (25)

Sample Number	Grid Reference	Lithology	Organic Content	V:I:E (percent)	Vitritinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %Rv average (no readings)
SM 19	NO 35543 70272	calc carbarg	-	40:30:30	w	mod/hvy ov	20% mod/o-y sp 10% int/y liptodet tr <i>Bot</i>	EXTRACTED 21.7% TOC 162 HI	0.42 (25)
SM 19a	NO 35543 70272	coal	-	70:20:10	-	-	mod/y-o sp	oxid - curved cracks	0.62 (25)
SM 18	NO 35539 70268	sl silty sh	high	20:10:70	w	mod/hvy ov	40% int/y disc lamalg 20% int/y <i>Bot</i> 10% mod/o-y sp mod/y bkg fl	EXTRACTED 23.4% TOC 461 HI calc in places	0.32 (25)
SM 17	NO 35536 70266	sh	mod	5:5:90	w	mod ov	60% int/y liptodet w 20% mod/o-y sp 10% int/y <i>Bot</i> mod/y bkg fl	EXTRACTED	0.31 (15)
SM 16	NO 35530 70258	silty sh	mod	70:30:tr	w + wp	lt ov + f	mod/o-y sp	lower part of Pittenweem Marine Band	0.53 (25)

Sample Number	Grid Reference	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %Rv average (no readings)
SM 15	NO 35530 70258	silty sh	mod	30:50:20	p + wp	v lt ov + f	20% mod/y-o sp tr int/y ?algal cysts	EXTRACTED 2.6% TOC 193 HI vit exudes brown humic/bituminous om upper part of Pittenweem Marine Band	0.46 (25)
PATHHEAD - ST. MONANCE SYNCLINE (EAST LIMB) SECTIONS									
SM 14	NO 35441 70224	carbarg	-	20:40:40	w + st	mod/hvy ov	30% mod/y + o-y sp 10% mod/y liptodet	EXTRACTED 19.5% TOC HI 35	0.58 (25)
SM 13	NO 35427 70225	carbarg	-	70:20:10	v scruffy w	st + mod ov	mod/y-o sp	-	0.54 (25)
SM 12	NO 35421 70225	siltstone	high	50:40:10	p + w	no ov + f + w	mod/y-o sp tr cut	EXTRACTED 3.0% TOC 68 HI ab Fe ox	0.48 (25)
SM 11	NO 35421 70225	coal	-	80:10:10	scruffy	-	mod/y + o-y sp	oxid - curved cracks + v friable	0.50 (25)
SM 10	NO 35390 70209	coal + cannel lamns	-	20:60:10	-	-	mod/y-o sp	py -> haem sl oxid	0.58 (25)

Sample Number	Grid Reference	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %Rv average (no readings)
SM 9	NO 35393 70209	coal + mn sed intercens	-	80:15:5	scruffy	-	mod/y-o sp tr int/y ? algal om	sl oxid	0.59 (25)
SM 8	NO 35416 70227	coal + sh intercens	-	10:60:30	st in sh	mod ov in sh	mod/o-y sp	sl oxid py missing	0.54 (25)
SM 7	NO 355416 70227	py sh	v high	tr:20:80	w	mod/hvy ov	75% mod-int/y disc lamalg 5% int/y Bot tr mod/y sp	EXTRACTED 8.9% TOC 680 HI sh below L. Ardross Limestone sample has yellow sulphurous coating lamosite ab amorph fl areas	0.44 (10)

ST. MONANCE - ARDROSS SECTION (including vents)

Sample Number	Grid Reference Locality	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %Rv average (no readings)
SMW 18	NO 35238 70145 E. of vent	coal	-	60:20:20	scruffy	-	mod/o-y sp	1st coal below St. Monance White Limestone	0.53 (25)
SMW 19	NO 35238 70145 E. of vent	coal	-	70:20:10	-	-	mod/o-y sp	2nd coal below St. Monance White Limestone	0.52 (25)

Sample Number	Grid Reference Locality	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %Rv average (no readings)
1	NO 3522 7013 vent	siltstone	≈barren	NDP	p	no ov	-	ab Fe ox ab ign material	3.07 (1)
2	vent	sl calc sh	mod	NDP	p + st	hvy ov -> bit res	-	py absent => oxid prior to heating? cavities filled with PyC	3.47 (25)
SMW 1	vent	carbarg	-	10:85:5	wp + w	mod/hvy ov	mod/o-y sp + amorph splodges	ab cell structures preserved	0.49 (25)
SMW 2	vent	carbarg	-	NDP	st + w	v hvy -> bit res	-	-	1.77 (25)
3 a	vent	coal + sed intercns	-	NDP	-	hvy ov -> bit res in sed	tr int/y h-c f in sed matrix	calcitised hydrocarbons	1.47 (25)
3 b	vent	siltstone	low	NDP	p	mod ov -> bit res	-	ab Fe ox	1.57 (8)
4 a	back wall of vent adjacent to small dyke cutting country rock and tuffitised sed	coal	-	60:30:20	v scruffy	-	mod-dull/mid o sp	ab mic in cells ab vit at onset of micn	0.67 (25)
4 b	as above dyke contact	siltstone	mod	NDP	p + st	v hvy interst -> bit res	-	sed contains ash frags	1.77 (22)

Sample Number	Grid Reference Locality	Lithology	Organic Content	V.I.E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %Rv average (no readings)
5A1*	NO 35220 70132 back wall of vent - dyke intruding country rock and vent	canneloid sh	v high	30:20:50	st + w	v hvy ov	30% v dull/br 20% v dull/br sp	EXTRACTED <i>Bot</i> looks like bit blobs structure obscured	w 0.57 (25) st 0.67 (25)
5A2*	as above	vit	-	0:100:0	v scruffy	-	-	vit picked from vertical coal seam	0.66 (25)
5B*	~1m W of dyke	coal	-	NDP	-	-	-	EXTRACTED	2.36 (25)
5C*	as above	calc sh	high	NDP	p	v hvy -> bit res	-	-	2.35 (25)
5D6*	as above - west side of dyke contact zone	calc sh	low	NDP	p	hvy ov -> bit res	-	1 mosaiced spore ab calcitisation	3.52 (5)
5D4*	as above 1.5cm from contact	calc sh	mod	NDP	w + p	hvy ov -> bit res	-	EXTRACTED ab calcitisation + veining	2.40 (25)
5D3*	as above 2cm from contact	calc sh	mod	NDP	w + p	hvy ov -> bit res	-	EXTRACTED ab calcitisation + veining	2.09 (9)
5E*	as above east side of dyke contact zone	calc sh	mod/high	NDP	p	v hvy interst -> bit res	-	ab calcite veining ab blk blobs - <i>?Bot</i>	1.39 (19)
5F*	~1.5m W of dyke	cannel coal + vit lamns	-	NDP	-	-	mod-dull/mid- deep o sp	-	0.71 (25)

Sample Number	Grid Reference Locality	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %Rv average (no readings)
5G1	~1m E of dyke	coal + cannel lamns	-	40:20:20	scruffy	-	mod/lt-mid o sp tr int/g + y h-c in fus cells	hydrocarbons	0.68 (25)
SMW 3	vent (SW side)	sh + tuff	low	NDP	p	v hvy -> bit res	-	-	1.76 (25)
SMW 6	vent (SW side)	coal	-	NDP	scruffy	-	-	ab micritinised vit heavily calcitised	2.12 (25)
SMW 7	~NO 35216 70127 vertical hard black shale next to tuffitised sediments	calc sh	low	NDP	p	mod ov -> bit res	-	ab Fe ox	4.15 (4)
SMW 10	~NO 35214 70130 sh leaf in U. Ardross Lst	sh	low	tr:100:0	p	lt ov + f	-	-	0.55 (2)
SMW 15	~NO 35213 70130 crumpled zone (loc c of Francis and Hopgood 1970) (below L. Ardross Lst)	calc sh	mod	NDP	p	hvy ov -> bit res	-	heavily calcitised ab sid	1.87 (15)
SMW 12	as above	sh	low	NDP	p	v hvy ov -> bit res	-	ab sid	2.79 (25)
SMW 13	as above	sh	low	NDP	p	v dk ov -> bit res	-	EXTRACTED	2.86 (22)

Sample Number	Grid Reference Locality	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %Rv average (no readings)
X	≈2m W of above sh above U. Ardross Lst	sh	low	NDP	p	v hvy ov -> bit res	-	ab sid nucleated around phyt	2.56 (14)
Y	as above sh below U. Ardross Lst	calc sh	low	NDP	p	mod ov -> bit res	-	v small phyt ab sid nucleated around phyt	2.81 (2)
SMW 16	≈NO 35210 70130 Davie's Rock Neck sh in brecciated tuff	sh	low	NDP	p	hvy ov -> bit res	-	-	1.58 (16)
Z	as above vent	sh	mod	NDP	p	hvy ov -> bit res	-	matrix full of sid blotches	1.76 (11)
SMW 17	as above edge of brecciated mass	sh	low	NDP	p	v hvy ov -> bit	-	ab sid blotches	2.66 (12)
BB	as above vent	calc + silty sh	high	NDP	p + wp	dk interst -> bit res	-	EXTRACTED ab sid	1.64 (21)
SMW 11	as above vent	calc sh	low	NDP	p	-	-	cracks with Fe-stained mineral infills	3.87 (11)
BBB	as above contact with plug	silty sh	low	NDP	p	no ov	-	1 mosaiced spore ab Fe ox	2.84 (20)
BBBB	as above contact with plug	v calc sh	mod	NDP	wp	mod/dk interst	-	ab sid	1.41 (25)

Sample Number	Grid Reference Locality	Lithology	Organic Content	V.I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %Rv average (no readings)
ZZ	≈NO 35208 70130 country rock ≈4m W of vent	sh	low	NDP	p	-	-	ab Fe mineralisation	1.66 (5)
SMW 9	≈NO 35209 70131 sh below U. Ardross at junction with cliff	sh	high	70:10:20	w + wp	mod/hvy ov	10% mod/y + o-y sp -		0.45 (23)
							10% int/y f tr <i>Bot</i> Tr <i>Tas</i>		
SMW 14	coaly lens from above sample	v py shaly coal	-	40:10:50	st	-	40% mod-dull/o-y EXTRACTED + y-o + lt o sp + degraded <i>Bot</i> terrest ab py pseudo-debris morphing <i>Bot</i> 10% mod-int/y-lt bands of py in some o <i>Bot</i>		0.46 (25)
O/SBLA	≈NO 35203 70125 laminated sh below L. Ardross Lst	py sh	high	tr:10:90	wp	mod ov + hvy blotches + w	mod-int/y disc lamalg mn int/y <i>Bot</i> tr int/y h-c in fus ab amorph areas		0.55 (4)
W	≈NO 35198 70123 ≈3m below U. Ardross Lst	sl calc sh	mod	tr:90:10	p	no ov	mod/o-y sp mod-int/y liptodet ab py -> haem		0.58 (1)
SBUA	as above sh leaf in U. Ardross Lst	sh	low	tr:95:5	p	lt ov	mod/o-y sp mod/y f	ab Fe ox py -> Fe ox	0.55 (6)

Sample Number	Grid Reference Locality	Lithology	Organic Content	V.I:E (percent)	Vitritite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %Rv average (no readings)
V	≈NO 3519 7012 Dovecot Neck vent	sl calc sh	mod	NDP	p + wp	v hvy ov -> bit res ab dk blobs -> bit res	-	ab Fe ox	2.04 (18)
U	as above vent	calc siltstone	low	NDP	p	mod interst -> bit res	-	ab sid	1.79 (19)
OSD	as above vent	v calc sh	v low	NDP	p	hvy ov -> bit res	-	laminated ?former oil shale	1.45 (10)
T	as above vent	py + calc sh	mod	NDP	p + wp	v hvy ov -> bit res	-	mn vacuolation in some phyts	4.66 (17)
NC 1	Newark ≈NO 35171 70116 in anticlinal nose	siltstone	mod	15:80:5	p	lt ov + w + blotches	mod/y + o-y sp + liptodet	v hvy Fe ox staining	0.51 (22)
NC 1.5	≈NO 35173 70120 in intrusive tuff	calc sh	mod	tr:5:95	w	matrix sat	60% mod-int/y disc + lay lamalg 25% int/y <i>Bot</i> 10% mod/y + o-y sp	-	0.39 (2)
NC 2	NO 35163 70119 Newark Neck vent	carbarg	-	60:10:30	st + w	lt ov + hvy w + blotches	mod-dull/lt-mid o sp	ab sid veining	0.50 (25)
NC 3	as above vent	marl	low	NDP	p	mod/hvy ov -> bit res	-	ab mosaics	1.94 (25)

Sample Number	Grid Reference Locality	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %Rv average (no readings)
NC 4	as above vent	silty sh	mod	NDP	p	mod ov -> bit res	-	-	1.05 (15)
NC 5	as above vent	sl silty marl	mod	tr:100:0	p	lt ov + f	-	-	0.73 (4)
NC 6	as above vent	coal	-	70:10:20	-	mod/o-y + y-o sp mn cut	-	brecciated and highly calcitised	0.56 (25)
NC 6b	as above vent	calc sh	mod	5:20:75	w	hvy interst	70% int/y disc lamalg 10% dull/y-o + lt o sp	-	0.44 (25)
NC 7	as above vent	v calc sh	mod	20:70:10	w + wp	lt ov + dk w	mod/y + o-y sp + liptodet	ab hvy sid staining	0.63 (25)
NC 9	as above vent	siltstone	low	NDP	p	v hvy interst -> bit res	-	-	2.96 (25)
NC 8	=NO 35162 70120 country rock	coal	-	60:20:20	scruffy	-	mod/y + o-y sp	-	0.56 (25)
NC 10	NO 35140 70097 Coalyard Hill country rock	calc sh	high	40:40:20	st + w	lt ov + ply hvy	mod/y + o-y sp	listric surfaces on hand specimen	0.53 (25)
NC 11	NO 35131 70098 country rock in cliff	sl calc + silty sh	mod	5:85:15	w + wp	mod ov + w	mod-dull/lt o sp tr Bot	-	0.56 (6)

Sample Number	Grid Reference Locality	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %Rv average (no readings)
NC 12	Coalyard vent	sh	tr	NDP	p	v hvy ov + blk w -> bit res	-	1 mosaiced phyt	4.57 (3)
NC 12.5	Coalyard vent - W side of ash dyke	sh	mod	NDP	w + wp	mod/hvy -> bit res	-	brecciation + calcite veining	1.91 (14)
NC 13	Coalyard vent	calc + silty sh	mod	NDP	wp + p	v hvy ov -> bit res	-	-	4.81 (25)
A 43	Coalyard vent	coal/wood	-	100:0:0	scruffy	-	-	EXTRACTED highly calcitised fine cellular detail preserved	0.59 (25)
A 42	NO 3511 7006 country rock	sh	mod	10:70:20	p	no ov + f	mod/y-o + lt o sp	-	0.57 (19)
A 41	as above country rock	sh	mod	20:70:10	wp + p	lt/mod ov + f + w	mod/y sp	-	0.63 (17)
H	NO 3510 7007 below L. Ardross Lst	py sh	low	5:25:70	wp	hvy ov	45% mod-int/y disc lamalg 20% mod/o-y Bot 5% mod/y sp dull/y matrix fl	-	0.39 (17)
I	as above leaf in L. Ardross Lst	sl silty sh	mod	50:30:20	st + w	lt ov + ab w	mod/y f + sp	bituminous/humic matter exuding from vit	0.47 (25)
J	NO 3510 7008 vent	siltstone	mod	NDP	p	v hvy ov -> bit res	-	tr Fe ox staining	4.14 (16)

Sample Number	Grid Reference Locality	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %Rv average (no readings)
K	vent	siltstone	low	NDP	p	hvy interst -> bit res	-	ab Fe ox blotches	2.30 (10)
L	vent	siltstone	low	NDP	p	v hvy ov -> bit res	-	ab Fe ox blotches	4.29 (10)
M	vent	siltstone	low	NDP	p	v hvy ov -> bit res	-	ab Fe ox veins + blotches	3.04 (10)
ARDROSS - ELIE NESS SECTION									
A 40	NO 3509 7005 country rock	siltstone	high	10:80:10	wp	no ov + w	mod/lt o sp	-	0.65 (8)
A	NO 3508 7006 below Ardross Castle	canneloid sh	v high	30:40:30	w + wp	matrix sat	15% mod/o-y + y-o sp 15% int/y Bot	Bot highly fragmented	0.51 (25)
B	as above	silty sh	high	25:50:25	w + wp	lt-mod ov + blotches	15% mod/y wispy f 10% mod/o-y sp	-	0.41 (25)
C	as above above U. Adross Lst	calc sh	mod	tr:100:tr	p	lt ov + f + blotches	int/y f mod/o-y sp frags	-	0.40 (2)
D	as above below U. Adross Lst	coal + cannel lamns	-	60:20:20	v scuffy	-	-	sl oxid - py missing	0.47 (25)

Sample Number	Grid Reference Locality	Lithology	Organic Content	V.I.E (percent)	Virinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %Rv average (no readings)
E	7" thick coal on headland	coal	-	70:10:20	v scuffy	-	mod/y + o-y sp	sl oxid - cracked vit	0.50 (25)
F	base of above seam	coal	-	50:40:10	-	-	mod/y + o-y sp	sulphur-coated sl oxid - ab cracks + py missing mn micn in vit	0.56 (25)
G	sample 5m below F	silty sh	high	40:50:10	st + w	lt ov + f	mod/y + o-y sp	ab Fe ox	0.42 (25)
A 1	≈3508 7005 NE of Adross Neck country rock	siltstone	high	5:80:15	wp	lt ov + ab f	mod/y-o + lt o sp	-	0.47 (10)
A 39	NE of Adross Neck country rock	siltstone	high	10:80:10	p	no ov + f	tr mod/o-y f + lt o sp	-	0.54 (7)
A 38	vent	siltstone	mod	10:80:10	wp	lt ov	mod/lt o sp	-	0.65 (9)
A 36	vent	coal	-	70:30:10	-	-	mod/y-o + lt o sp tr mod/y resin	-	0.68 (19)
A 34	vent	sh	mod	20:60:20	wp	no ov + tr f	10% mod/y sp 10% int/y f + Bot	-	0.49 (12)
A 33	vent sh	≈barren	tr:100:0	p	hvy ov -> bit res	-	-	-	1.73 (3)
A 32	vent	sh	mod/high	10:90:10	p	lt ov + f	mod/lt-mid o f + sp frags	-	0.82 (3)

Sample Number	Grid Reference Locality	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %Rv average (no readings)
A 31	vent	coal	-	85:5:10	-	-	mod/y + o-y sp tr mod/y h-c f	hydrocarbons heavily veined with calcite	0.75 (25)
A 30	vent	sh	mod	10:100:0	-	lt ov + f	mod/lt-mid o sp	-	0.75 (14)
A 29	vent	coal + sed intercns	-	70:20:10	-	-	mod/lt o sp	sl oxid	0.72 (21)
A 28	vent	coal	-	100:0:tr	-	-	mod/y-o + lt o sp	heavily calcitised	0.72 (14)
A 27	vent	coal	-	80:15:5	-	-	mod/lt-mid o sp tr int/y h-c	hydrocarbons sl oxid	0.73 (12)
A 26	vent	coal	-	60:30:10	-	-	mod/y-o + lt o sp	-	0.51 (25)
A 25	vent	carbarg	-	60:20:20	-	hvy ov	mod/lt-deep o sp frags	calcitised	0.71 (16)
A 24	vent	coal	-	70:20:10	-	-	mod/o-y + lt o sp mn cut	-	0.74 (25)
A 23	vent	silty sh	mod	NDP	p	v hvy ov -> bit res	-	-	4.60 (8)
A 22	vent	carbarg	high	100:0:0	st + w	hvy ov	-	-	0.63 (7)

SEDIMENT INCLUSIONS IN TUFF ADJACENT TO BASALTIC DYKE (loc d of Francis and Hopgood 1970 p.171)

Sample Number	Locality	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %Rv average (no readings)
ARD C	9cm from contact	silty sh	mod	NDP	wp + w	hvy ov -> bit res	-	-	2.57 (24)
ARD D	30cm from contact	sh	low	100:0:0	p + wp	mod/hvy ov + dk blotches	-	bituminous/humic matter exuding from phytopy has alteration rims of haem	0.94 (12)
ARD E	40cm from contact	silty sh	high	20:80:0	p + wp	mod/dk ov + ab dk f	-	-	0.91 (12)
ARD F	70cm from contact	coal	-	60:30:10	-	-	-	sl oxid	0.92 (25)
ARD G	91cm from contact	siltstone	high	10:70:20	p	lt ov + ab dk f	dull/deep o sp	-	0.81 (16)
ARD H	122cm from contact	sh + coaly intercns	mod	30:40:30	p + wp	no ov + ab v dk blotches	dull/mid o sp mod/mid o f	-	0.83 (11)
ARD A	4m left of inclusion suite, 30cm from contact	siltstone	high	NDP	p	v hvy ov + hvy hvy blotches	-	-	2.21 (22)
ARD B	6m left of inclusion suite, 61cm from contact	siltstone	mod/high	NDP	p	v hvy interst	-	-	1.88 (17)
ARD I	8m left of inclusion suite, 30cm from contact	silty sh	mod/high	NDP	wp	hvy ov	-	-	1.31 (14)

SOUTHERN OUTCROP OF ARDROSS NECK

Sample Number	Grid Reference Locality	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %Rv average (no readings)
A 21	≈NO 3504 7001 vent	coal	-	0:95:5	-	-	mod/y + o-y sp tr resin	-	0.84 (25)
A 20	vent	silty sh	low	80:20:tr	wp	mod ov -> bit res	dull/deep o sp	-	1.20 (14)
A 19	vent	silty sh	low	NDP	p	mod ov -> bit res	-	-	5.24 (5)
A 18	vent	ash + sed mix	low	tr:100:0	p	mod ov -> bit res in high popn	-	2 popns vit ab mosaics	1.91 (12) 0.68 (4)
A 17	vent	ash + sed mix	low	tr:100:0	p	pty hvy	-	-	0.67 (4)
A 16	vent	silty sh	high	NDP	wp	mod ov -> bit res	-	strong anisotropy ab coarse mosaics	4.53 (25)
A 15	vent	siltstone	mod	NDP	p	hvy ov -> bit res	-	ab mosaics	4.54 (25)
A 14	vent	calc sh	high	30:40:30	wp	hvy ov	mod/mid-dull o sp tr Bot	tr mosaiced bitumen	0.50 (25)
A 13	vent	ash + sed flecks	tr	NDP	p	lt ov	-	tr high reflecting particles with mosaics	0.73 (5)
A 12	vent	sh	high	40:30:20	wp + w	hvy matrix sat	20% mod/o-y sp 10% int/y f	-	0.53 (25)
A 5	vent	ash + sed mix	mod	5:90:5	wp + p	mod ov in sed	mod/o-y sp	-	0.59 (7)

Sample Number	Grid Reference Locality	Lithology	Organic Content	V:I:E (percent)	Vitrimite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %Rv average (no readings)
A 4	vent	ash + sed frags	mod	10:90:tr	p	lt ov + f	mod/o-y ?algal f	-	0.71 (8)
A 3	vent	sh	low	tr:100:0	p	-	-	extensively reddened matrix ab oxid phyt	0.88 (3)
WADESLEA NECK (NORTH SIDE) NT 3503 6999									
A 11	vent	ash + sed	mod	20:80:0	p	-	-	intimate sed/ash mixture tr coal frags	0.96 (25)
A 10	vent	coal	-	100:0:0	scruffy	-	-	highly calcitised ab cell structures + contents preserved resinous cell infills	0.87 (25)
A 9	vent	coal + cannel lamns	-	30:50:20	w + st	-	mod/mid o sp tr Bot	ab calcitisation in veins + cell infills	0.75 (25)
A 8	vent	siltstone	mod	NDP	wp	lt interst -> bit res	-	-	4.34 (16)
A 7	vent	canneloid sh	v high	20:50:30	w + st	v hvy interst	mod/lt-mid o sp frags	-	0.73 (25)
A 6	vent	ash + sed mix	mod	5:90:5	wp + p	mod ov	mod/o-y sp	-	0.59 (7)

ELIE NESS NECK NT 3496 6993

Sample Number	Grid Reference Locality	Lithology	Organic Content	V:I:E (percent)	Virinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %Rv average (no readings)
ENCO	vent	coal	-	80:20:0	-	-	-	tr micn	1.32 (25)
ENCARB	vent	cannel coal + sh lamns	-	20:60:20	w + st	v hvy in sh	-	-	0.76 (25)
ENSHLT	vent	siltstone	mod	NDP	p	hvy interst -> bit res	tr int/y h-c f	tr hydrocarbons vacuolation	4.67 (25)
ENSIT	vent	siltstone	mod	10:90:10	p	lt ov + ab f	mod/y-o + lt o sp tr Bot	ab Fe ox	0.64 (25)
MM	vent	coal + canneloid sh lamns	-	50:20:30	scruffy + st	hvy ov in sh	-	-	0.65 (25)
II	vent	carbarg	-	80:20:0	w	-	-	brecciated + permeated with calcite	0.51 (25)
JJ	vent	vit	-	100:0:0	-	-	-	calcite infilling cells	0.56 (6)
LL	vent	sh	mod	10:80:10	p	mod ov + f	mod/lt o sp tr int/y ? algal frags	-	0.65 (20)
KK	vent	siltstone	mod	NDP	p + st	hvy ov -> bit res	tr int/y h-c	ab Fe ox hydrocarbons ab mosaiced vit	4.40 (25)

Sample Number	Grid Reference Locality	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %Rv average (no readings)
CG	vent	coal	-	5:90:5	-	-	tr mod/y suberinite ab int/y h-c in matrix mosaiced matrix + ?fluidised coal coal frags	coal frags in mosaiced coal matrix ?fluidised coal breccia	0.38 (6)
EE	vent	siltstone	low	NDP	p	ply hvy ov -> bit res	-	2 popns vit mosaics in both popns lower reflecting popn is ?oxidised prior to igneous activity	5.06 (24) 1.64 (6)
OC	vent	sh	mod	10:80:10	wp	mod ov + f	dull/mid-deep o sp tr int/y h-c f	hydrocarbons	0.53 (16)
DD	vent	sl calc sh	low	NDP	p	v hvy ov -> bit res	-	-	2.60 (5)

+ Average reflectance of these samples plotted on map.

* Photograph of locality shown in Raymond and Murchison 1988a.

Average reflectances for coals analysed from Spilmersford borehole plotted on map (see Jones et al. 1974).

Sample SBO 3745 collected from corestore at Murchison House.

Other samples prefixed SBO collected from the BGS corestore at Newbattle Abbey.

Samples prefixed DUL, MM, CLARE, DEN and CS provided by Mr. P. Brand.

All other samples collected in the field.

CALCIFEROUS SANDSTONE MEASURES - INVERCLYDE GROUP (IN PART)

CEMENTSTONE GROUP (Lothians and South Fife) CLYDE SANDSTONE + BALLAGAN FORMATIONS (rest of Midland Valley)

Sample Number	Locality Depth Grid Reference	Lithology	Organic Content	V:1:E (percent)	Virinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %Rv average (no readings)
SBO 1693	Blackford Avenue 201 NT 325789 671438	ashy siltstone mod		10:90:0	wp	no ov + hvy interst	-	-	1.24 (15)
CS 24*	East Dron 127 NO 31360 71572	silty sh + sh lamns	mod	20:80:0	wp + st	dk ov in sh lamns no ov in silty sh	-	Newburgh Member	0.56 (23)
CS 24.16*	East Dron 527 NO 31360 71572	calc sh	low	tr:95:5	p	no ov	mod/y + o-y sp tr int/y ?algal cysts	Dron Member cysts are ?tasmanitids	0.64 (4)
CS 7	Newburgh 137 NO 32320 71852	sh	v low	tr:90:10	p	no ov	5% mod/o-y sp + 5% int/y f + cysts	-	0.46 (2)
BG 6b	Spout of Ballagan NS 2572 6801 vit picked from sample 3m below contact with lavas	vit	-	100:0:tr	-	-	tr dull/deep o resin st	sl oxid	0.97 (25)

*Average of samples plotted on map.

Samples prefixed CS provided by Mr. P. Brand.

SBO collected from BGS corestore at Newbattle Abbey.

BG 6b collected in field.

PART 3

MISCELLANEOUS SAMPLES

MISCELLANEOUS LOCALITIES

BALLAGAN GLEN NS 2572 6797

Sample Number	Sample Number	Lithology	Organic Content	V:I:E (percent)	Virinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %Rv average
first dyke and fault ≈NS 2570 6798 distance from N contact (ft)									
DU A	0	py sh	v low	NDP	p	no ov	-	tr mosaiced parts	NDP
DU B	1	py sh	≈barren	NDP	p	no ov	-	sl micaceous, mosaiced sp	NDP
DU C	2	py sh	≈barren	NDP	-	no ov	-	sl micaceous	3.40 (2)
DU D	3.5	py sh	tr	NDP	p	no ov	-	1 mosaiced part	1.54 (2)
DU E	6.5	sh	low	NDP	p	v lt ov-> bit res	-	-	2.35 (7)
DU F	15	sh	low	tr:95:5	p	no ov	v dull/v deep o sp	vit too small to measure 1 mosaiced spore	NDP
DU G	sample 1m S of fault	sh	tr	NDP	p	no ov	-	micaceous	1.47 (2)

BALLAGAN GLEN NS 2572 6797 (continued)

Sample Number	Sample Number	Lithology	Organic Content	V:L:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %Rv average
2nd dyke - in fault plane ≈NS 2570 6799 distance from N contact (ft)									
BG 4	0	sl silty sh	low	NDP	p	lt ov	-	-	1.66 (5)
BG 2	1	sh	low	NDP	p	no ov	-	-	2.02 (3)
BG 3	3	sh	low	p	NDP	no ov	-	-	1.77 (7)
BG 5	8	sh	low	tr:95:5	p	no ov	v dull/deep o sp	-	1.76 (4)
BG 1	contact sample S of fault		≈barren	tr:100:0	p	no ov	-	-	1.05 (9)
BGS	~100m S of BG 1		barren	NDP	-	tr hvy interst bit	pty dull/o-y min fl	micaceous	NDP
BG PF	dark clast in above sample		≈barren	tr:100:0	-	no ov	-	-	0.75 (5)
SH CO	contact shale with Ballagan lavas		-	NDP	p + w	v hvy ov -> bit res	-	-	2.74 (25)

MID CALDER-LINHOUSE WATER NT 3079 6671

Sample Name Locality	Sample Number	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %Rv average
Broxburn Oil Shale adit to N of Qd dyke	BROX	v calc sh	v high	tr:20:80	wp	mod/hvy ov + st	70% mod-int/y disc lamalg 10% int/y algal cysts mn int/y <i>Bot</i> tr mod/y + o-y sp	lamosite marly in places description typifies other non heat-affected Broxburn samples at this locality	0.55 (8)
Mid Calder 2.8 Shale ≈2.8m N of Qd dyke	MC 2.8	sh	high	NDP	p	v hvy ov -> bit res	-	tr fish scales lamalg now high rank wisps	2.16 (4)
Mid Calder 2.5 Shale ≈2.5m N of Qd dyke	MC 3	sh	high	NDP	p	hvy ov -> bit res	-	lamalg now high rank wisps	2.16 (14)
Mid Calder Contact N side of Qd dyke	MCC	sh	high	NDP	p	v hvy ov -> bit res	-	v coarse bitumen residue sample v sheared and friable	4.48 (11)
Mid Calder 1 Shale ≈5m S of Qd dyke	MC 1	v calc sh	high	tr:10:90	p	mod/hvy ov + ab blobs	mod-dull/mid- deep o disc lamalg mod/o-y bk g fl tr int/y h-c in fus + some calc areas	lamosite	0.81 (5)

MID CALDER-LINHOUSE WATER (continued)

Sample Name Locality	Sample Number	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %Rv average
Mid Calder 2 Shale ≈2m S of Qd dyke	MC 2	calc + silty	high	tr:10:90	wp	hvy ov -> bit res	dull/deep o disc lamalg tr mod/mid o Bot dull/deep o matrix fl	lamosite	1.05 (8)
Black Sandstone adjacent to S side of Qd dyke	MCS	sst	≈barren	NDP	p	v hvy interst -> bit res	dull/deep o fl in some calc areas tr mod/y h-c in some calc areas	ab interst sid	3.59 (2)

LUNDIN LINKS NO 3411 7024

LUN 1	vent	siltstone	mod	10:85:5	wp	lt ov + f	mod-dull/mid o sp	ab Fe ox	0.56 (11)
LUN 2	vent	silty sh	≈barren	NDP	p	v hvy ov -> bit res	-	vacuolated phyt 1 spore mosaic 1 vit mosaic phyts v small	NDP
LUN 4	10 m above Bamcraig Coal in sst in cliff	siltstone	mod	10:90:0	w	lt ov + pty hvy	-	ab Fe ox v weathered sample ab bituminous/ humic om exuding from vit	0.47 (6)

All samples collected in the field.

MISCELLANEOUS BOREHOLE SAMPLES

Sample Number	Locality Depth Grid Reference	Lithology	Organic Content	V:l:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %Rv average (no readings)
CS 16	Little Freuchie 2 74 NO 32751 70645	sh	low	NDP	p	no ov	dull/y matrix fl	-	1.46 (5)
SBO 3745	Newliston Pit N°3 486 NT 31077 67271	sl calc sh	high	tr:60:40	wp	v hvy	mod/y-o lamalg 10% mod-dull/y f dull/deep o bkg fl	Camps Shale	0.78 (17)
SBO 3746	Newliston Pit N°3 894 NT 31077 67271	sh	high	NDP	wp	v hvy -> bit res	-	position of Pumpherston Shale	2.43 (13)
SBO 3717	Blackness No1 NT 3054 6896	marl	high	tr:20:80	wp	mod ov	75% mod/y interst hydrocarbons lamalg		0.45 (6)

Samples prefixed SBO collected from BGS corestore at Newbattle Abbey.
CS 16 provided by Mr. P. Brand.

BLACKBANDS

Sample Name Locality	Sample Number	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %Rv average
Bogside Ironstone NT 29 NW 441 Bore, Westfield Basin	BLKBD 1	py coal	-	70:tr:30	st + bands	-	mod/mid o sp tr int/y cut	30-40% mineral matter, mainly as sid bands vit forms matrix in which other macerals lie	0.48 (25)
Airdrie Blackband NS 76 NE Darngavil Opencast Site	BLKBD 3	v calc sh	mod	tr:30:70	wp	no ov + dk w	mod/y-o sp tr int/y Bot	sid in the form of bands + lenses	0.46 (3)
Blackband in Musselburgh N°1 Bore at 2949'10"	BLKBD 5	v calc sh	mod ov	20:40:40	st	lt ov + dk bit w	int-mod/y sp tr int/y Bot dull/o-y min fl	lamns of organic- rich layers in a barren calc sh banded with sid	0.59 (15)
Blackband in Tippetcraig Opencast Site NS 8321 7639	BLKBD 7	calc sh	high	75:tr:25	st + lamns	mod ov	mod/lt o sp	vit lamns occur in Fe-impregnated matrix in light layers dk layers are Fe-poor and organic-rich vit forms matrix	0.86 (25) bands 0.72 (25)

Samples provided by Mr. I.H. Forsyth

APPENDIX II

GEOCHEMICAL DATA

Explanation of Parameters based on Terpanes and Steranes.

Parameter	Definition
a	Unsuppressed vitrinite reflectance, unless otherwise indicated by asterisk
b	$\frac{17\alpha(\text{H})-22,29,30\text{-trisorhopane}(\text{Tm})}{18\alpha(\text{H})-22,29,30\text{-trisorneohopane}(\text{Ts})}$
c	$\frac{22\text{S}}{22\text{S}+22\text{R}} 17\alpha(\text{H}), 21\beta(\text{H})\text{-bisorhopane}$
d	$\frac{17\alpha(\text{H}), 21\beta(\text{H})\text{-hopane}}{17\alpha(\text{H}), 21\beta(\text{H})\text{-} + 17\beta(\text{H}), 21\alpha(\text{H})\text{-hopane}}$
e	$\frac{17\alpha(\text{H}), 21\beta(\text{H}), 30\text{-norhopane}}{17\alpha(\text{H}), 21\beta(\text{H})\text{-hopane}}$
f	$\frac{17\alpha(\text{H}), 21\beta(\text{H})\text{-hopane}}{\text{unknown norhopane (peak 34)}}$
g	$\frac{28,30\text{-bisnorhopane}}{17\alpha(\text{H}), 21\beta(\text{H})\text{-hopane}}$
h	$\frac{\text{unknown norhopane (peak 30)}}{17\alpha(\text{H}), 21\beta(\text{H})\text{-hopane}}$
i	$\frac{\text{largest hopane (m/z 191)}}{\text{largest regular sterane (m/z 217)}}$
j	$\frac{\text{largest hopane (m/z 191)}}{\text{largest bicyclic alkane (m/z 123)}}$
k	$\frac{20\text{S}}{20\text{S}+20\text{R}} 24\text{-ethyl-}5\alpha(\text{H}), 14\alpha(\text{H}), 17\alpha(\text{H})\text{-cholestane}$
l	$\frac{20\text{S}+20\text{R } 24\text{-ethyl-}5\alpha(\text{H}), 14\beta(\text{H}), 17\beta(\text{H})\text{-cholestane}}{\text{total } 24\text{-ethyl-}5\alpha(\text{H})\text{-steranes}}$
m	$\frac{20\text{R } 24\text{-ethyl-}5\alpha(\text{H}), 14\alpha(\text{H}), 17\alpha(\text{H})\text{-cholestane}}{20\text{R } 5\alpha(\text{H}), 14\alpha(\text{H}), 17\alpha(\text{H})\text{-cholestane}}$
n	per cent C ₂₇ :C ₂₈ :C ₂₉ 20R-5α(H),14α(H),17α(H) steranes
o	$\frac{\text{largest } 20\text{S}+20\text{R } 13\beta(\text{H}), 17\alpha(\text{H})\text{-diasteranes}}{\text{total } 24\text{-ethyl steranes}}$

Explanation of Parameters based on Aromatic Hydrocarbons.

Parameter	Name	Abbreviation	Definition
a	Methylnaphthalene Ratio	MNR	$\frac{[2]}{[1]} \text{MN}$
b	Dimethylnaphthalene Ratio	DNR	$\frac{[2,6]+[2,7]}{[1,5]} \text{DMN}$
c	Ethynaphthalene Ratio	ENR	$\frac{[2]}{[1]} \text{EN}$
d	Trimethylnaphthalene Ratio - 1	TNR-1	$\frac{[2,3,6]}{[1,3,5]+[1,4,6]} \text{TMN}$
e	Methylphenanthrene Ratio	MPR	$\frac{[2]}{[1]} \text{MP}$
f	Methylphenanthrene Index	MPI	$\frac{1.5[2\text{-MP}]+[3\text{-MP}]}{[P]+[1\text{-MP}]+[9\text{-MP}]}$
g	Methylnaphthalene/Phenanthrene Ratio	MN/P	$\frac{[2\text{-MN}]}{[P]}$
h	Measured Vitrinite Reflectance	R _m	Actual measured reflectance (oil immersion)
i	Unsuppressed Vitrinite Reflectance	R _u	Estimated "true" i.e. unsuppressed reflectance (oil immersion)

Parameters based on Aromatic Hydrocarbons (cont.).

Parameter	Name	Abbreviation	Definition
j	Calculated Vitrinite Reflectance (Radke)	R _C (Rad)	Reflectance derived from MPI using the equations of Radke and co-workers.
k	Calculated Vitrinite Reflectance (Raymond)	R _C (Ray)	Reflectance derived from MPI using the equations developed in this work.
l	Triaromatic/Methyl Triaromatic Ratio	-	$\frac{\Sigma \text{ peaks 3-7 in m/z 231}}{\Sigma \text{ peaks 10-18 in m/z 245}}$
m	Aromatisation Ratio (%)	% Arom	$\frac{\text{C}_{29} \text{ monoaromatic steroid hydrocarbons}^*}{\text{C}_{29} \text{ monoaromatic} + \text{C}_{28}\text{triaromatic steroid hydrocarbons}}$

*
$$\frac{a}{d - c (b/a - 1) + a}$$

a = area of peak 7 in m/z 231 mass fragmentogram

b = area of peak 6 in m/z 231 mass fragmentogram

c = area of peak 20 in m/z 253 mass fragmentogram

d = area of peak 18 in m/z 253 mass fragmentogram

TABLE A.1

PETROGRAPHIC DESCRIPTIONS OF EXTRACTED SAMPLES

LAMOSITES

Sample Name Locality Grid Reference	Sample Number	Lithology	Organic Content	V:I:E (percent)	Virinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	%Rv (n° readings)
Dunnet Shale, Whinnyhall No.2 Mine NT 32403 68700	DS	sh	v high	5:15:80	w + st	mod/hvy ov	70% int/y disc + lay lamalg 5% mod/y sp 5% int/y <i>Bot</i>	Upper Oil Shale Group	0.23 (19)
Carron Harbour Shale 14.5' below Td Sill, Burntisland NT 32187 68595	CB 1	py + calc sh	v high	5:15:80	w	lt/mod ov + ab blobs + st	70% int/y disc lamalg 10% int/y <i>Bot</i> tr mod/y sp	Lower Oil Shale Group lamalg v fine <i>Bot</i> degraded ab fish frags + coprolites	0.30 (25)
St. Monance (east) Shale Section east of St. Monance NO 355416 70227	SM 7	py sh	v high	tr:20:80	w	mod/hvy ov	75% mod-int/y disc lamalg 5% int/y <i>Bot</i> tr mod/y sp	Pathhead Beds shale below L. Ardross Lst sample has yellow sulphurous coating	0.44 (10)
St. Monance (west) Shale Section west of St. Monance NO 35203 70125	O/S BLA	py sh	high	tr:10:90	wp	mod ov + hvy blotches + w	mod-int/y disc lamalg mn int/y <i>Bot</i> tr int/y h-c in fus <i>Bot</i> degraded	Pathhead Beds shale below L. Ardross Lst <i>Bot</i> degraded	0.55 (4)
Claremont Burn Shale NO 3470 7140	OS 1	py sh	v high	5:10:85	wp	matrix sat	75% int/y disc + lay lamalg 10% int/y <i>Bot</i> tr. mod/y sp	Pathhead Beds sample in Denbrae Farm Marine Band	0.35 (7)

LAMOSITES continued

Sample Name Locality Grid Reference	Sample Number	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	%Rv (n° readings)
Queensferry Shale 3.5m below white-trap sill, S. Queensferry NT 31406 67850	QF 2	sh	high	tr:10:90	p	lt/mod ov	mod/int y disc + lay lamalg int/y h-c in fus	Lower Oil Shale Group Upper Pumpherston Oil Shale	0.62 (1)
Pumpherston Shale, S. Queensferry NT 31412 67849	QF C	py sh	v high	tr:20:80	w	mod/hvy ov tr bit res	50% mod/y-o + lt o disc lamalg 10% int/y liptodet f 5% mod/y Bot 5% mod/o-y sp	Lower Oil Shale Group Lower Pumpherston Oil Shale lamalg v compact	0.39 (15)
Dunnet (Pumpherston) Shale, Pumpherston Mine ≈NT 3080 6693	Ca 3	py sh	v high	tr:10:90	wp	lt-hvy ov banded	mod-int/y disc + lay lamalg mn int/y Bot mn mod/y sp	Upper Oil Shale Group	0.50 (8)
Fells Shale, Tarbrax ≈NT 3042 6656	Ca 20	calc sh	v high	tr:5:95	wp	mod ov	mod-int/y disc lamalg ~ 5% int/y Bot tr mod/y sp	Upper Oil Shale Group	0.55 (7)
Broxburn Shale Linhouse Water, Mid Calder NT 3079 6671	BROX	v calc sh	v high	tr:20:80	wp	mod/hvy ov + st	70% mod-int/y disc lamalg 10% int/y algal cysts mn int/y Bot tr mod/y+o-y sp	Upper Oil Shale Group lamosite	0.55 (8)

LAMOSITES continued

Sample Name Locality Grid Reference	Sample Number	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	%Rv (n° readings)
Mid Calder - 1 Shale Linhouse Water ≈5m S of Qd dyke	MC 1	v calc sh	high	tr:10:90	p	mod/hvy ov + ab blobs	mod-dull/mid- deep o disc lamalg mod/o-y bkg fl tr int/y h-c in fus + some calc areas	Lower Oil Shale Group high rank lamosite	0.81 (5)
Mid Calder - 2 Shale Linhouse Water ≈2m S of Qd dyke	MC 2	calc + silty sh	high	tr:10:90	wp	hvy ov -> bit res	dull/deep o disc lamalg tr mod/mid o Bot dull/deep o matrix fl	Lower Oil Shale Group high rank lamosite	1.05 (8)
Mid Calder - 2.5 Shale Linhouse Water, 2.5m N of Qd dyke	MC 3	sh	high	NDP	p	hvy ov -> bit res	-	Lower Oil Shale Group laminated sample high rank lamosite	2.16 (14)
Binny Craig Shale Contact with Qd Sill in Broxburn Shales NT 3043 6736	BC	sh	high	NDP	wp	v hvy ov -> bit res	-	Upper Oil Shale Group high-reflecting lamalginite preserved high rank lamosite	3.30 (25)

TORBANITES AND TORBANITIC SHALES

Sample Name Locality Grid Reference	Sample Number	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	%R _v (n° readings)
Westfield Oil Shale Borehole 1998, Westfield Basin NT 32077 69848	WDOS	sh	v high	3:9:88*	st + w	lt/hvy ov	70% dull-int/y <i>Bot</i> 15% mod/y+o-y liptodet 3% mod/y sp	Passage Group <i>Bot</i> variably degraded vit exudes bituminous/ humic om	0.38 (25)
Westfield Canneloid Shale Borehole 1990, Westfield Basin NT 32074 69853	WDCS	sh	v high	5:7:88*	st + w	lt/hvy ov	76% int/y <i>Bot</i> 11% mod/o-y liptodet 1% int-mod/o-y sp	Passage Group tr Pyc	0.35 (25)
Esk Mouth Torbanite Esk Mouth Bore 50/56 at 1456'	ESC	torbanite	-	5:5:90	st + w	hvy ov	90% int/y <i>Bot</i> tr mod/o-y sp	Passage Group above Esk Mouth Extra Coal <i>Bot</i> sl degraded	0.35 (13)
Lillies Shale Paisley Exact loc. not known ⁺	Ca 9	sh	v high	10:10:80	st	mod/hvy ov	70% mod-int/y <i>Bot</i> 10% int/y liptodet w mod/y matrix fl	Lower Limestone Group	0.47 (7) vit 0.38 (25) phyt

* Point counted.

+ Sample from Hunterian Museum Collection.

"WOODS" AND 'VITRINITES"

Sample Name Locality Grid Reference	Sample Number	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	%Rv (n ^o readings)
Orrock Wood Upper part of vent at Orrock Quarry, Fife NT 3218 6887	ORR W	wood	-	100:0:0	scruffy in places	mod-hvy staining of rock matrix	-	vent forms part of Burntisland Volcanics well preserved cell structures and contents much calcitisation abundant micrinitisation	0.39 (25)
Orrock "Vitrinite" Lower part of vent at Orrock Quarry, Fife NT 3218 6887	ORR V	wood/ "vitrinite"	-	100:0:0	scruffy in places	mod-hvy staining of rock matrix	-	as above	0.39 (25)
East Kirkton "Vitrinite"	EK V	wood/ "vitrinite"	-	100:0:0	scruffy in places	-	-	Lower Limestone Group tr micrinitisation part of coal ball-type structure	0.53 (25)
Coalyard "Vitrinite" Coalyard Hill Vent NO 3512 7008	A 43	wood/ "vitrinite"	-	100:0:0	scruffy	-	-	Pathhead Beds fine cellular detail preserved highly calcitised	0.59 (25)

MISCELLANEOUS HUMIC COALS

Sample Name Locality Grid Reference	Sample Number	Lithology	Organic Content	V:I:E (percent)	Virinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	%Rv (n ^o readings)
Pyotshore Coal Coatbridge Central 14 Bore NS 27252 66500	QMB X	coal	-	70:20:10	-	-	mod/y-o + lt o sp	Middle Coal Measures	0.54 (25)
Coal above Queenslie Marine Band, Firth of Forth Tower - 2 NT 33156 68739	2583	coal	-	ND	-	-	ND	Middle Coal Measures	0.64 (25)
Coal above Westfield Oil Shale Bore 1998, Westfield Basin NT 32077 69848	W15.85	coal	-	80:10:10	scruffy	-	mod/o-y sp	Passage Group P Coal	0.55 (25)

EAST FIFE COAST

ST MONANCE-ANSTRUTHER AND WORMISTONE SECTIONS (including Anstruther Borehole)

Sample Number	Distance from St. Monance Brecciated Limestone*	Lithology	Organic Content	V.I.E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	%Rv (n° readings)
SM 1	+408	sl py + silty sh	high	10:80:10	p + w	lt ov + w	mod/o-y sp tr int/y <i>Bot</i>	Lower Limestone Group tr py -> haem	0.50 (7)
SM 4	+128	silty sh	high	70:30:tr	p	no ov + f + w	mod/y sp + liptodet	Lower Limestone Group ab Fe ox py -> Fe ox	0.49 (25)
SM 5	+112	silty sh	high	70:30:tr	w + p	lt ov + dk st + w	mod/y sp	Lower Limestone Group some py -> haem	0.44 (25)
SM 6	+ 80	coal	-	80:10:10	scruffy	-	mod/y + o-y sp	Lower Limestone Group	0.54 (25)
SM 7	-474	py sh	v high	tr:20:80	w	mod/hvy ov	75% mod-int/y disc + lay lamalg 5% int/y <i>Bot</i> tr mod/y sp	Pathhead Beds sample has yellow sulphurous coating lamosite	0.44 (10)
SM 12	-734	siltstone	high	50:40:10	p + w	no ov + f + w	mod/y-o sp tr cut	Pathhead Beds ab Fe ox	0.48 (25)
SM 14	-1112	carbarg	-	20:40:40	w + st	mod/hvy ov	30% mod/y + o-y sp 10% mod/y liptodet	Sandy Craig Beds	0.58 (25)

ST MONANCE-ANSTRUTHER AND WORMISTONE SECTIONS (including Anstruther Borehole) continued

Sample Number	Distance from St. Monance Brecciated Limestone*	Lithology	Organic Content	V.I.E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	%Rv (n° readings)
SM 15	-3117	silty sh	mod	30:50:20	p + wp	v lt ov + f	20% mod/y-o sp tr int/y ?algal cysts	Pittenweem Beds Pittenweem Marine Band (upper part) vit exudes brown humic/bituminous om	0.46 (25)
SM 17	-3183	sh	mod	5:5:90	w	mod ov	60% int/y liptodet w 20% mod/o-y sp 10% int/y <i>Bot</i> mod/y bkg fl	Pittenweem Beds	0.31 (15)
SM 18	-3213	sl silty sh	high	20:10:70	w	mod/hvy ov	40% int/y disc lamalg 20% int/y <i>Bot</i> 10% mod/o-y sp mod/y bkg fl	Pittenweem Beds sl calc in places	0.32 (25)
SM 19	-3333	calc carbarg	-	40:30:30	w	mod/hvy ov	20% mod/o-y sp 10% int/y liptodet tr <i>Bot</i>	Pittenweem Beds	0.42 (25)
SM 22	-4071	carbarg	-	30:10:60	w	hvy ov	40% mod/o-y sp 15% int/y w 5% int/y <i>Bot</i> mod/y matrix fl	Anstruther Beds tr py-> haem	0.44 (25)

ST MONANCE-ANSTRUTHER AND WORMISTONE SECTIONS (including Anstruther Borehole) continued

Sample Number	Distance from St. Monance Brecciated Limestone*	Lithology	Organic Content	V:IE (percent)	Virinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	%Rv (n° readings)
P sh	-4485	v calc + py sh	high	10:10:80	w	matrix sat	50% int/y disc lamalg 25% int-mod/y + mid o <i>Bot</i> 5% mod/o-y sp	Anstruther Beds 2 different coloured <i>Bot</i> popns <i>Bot</i> degraded disc filaments not v well defined + much amorph fluorescing om	0.27 (25)
Q	-4691	py calc sh	v high	5:25:70	w	matrix sat	30% int/y disc lamalg 20% int/y lay lamalg "rip-up" clasts 20% int/y <i>Bot</i>	Anstruther Beds <i>Bot</i> degraded and calcitised 10% high-reflecting bitumen included as inerts	0.63 (7)
T	-4920	sh	v high	30:20:50	w + st	matrix sat	20% mod/lt o sp 20% int/y <i>Bot</i> 10% mod/y-o f dull/mid o matrix fl	Anstruther Beds large <i>Bot</i> colonies (50-100µm)	0.45 (25)
SBO 7516	-5266	marl	mod	10:30:60	wp	no ov + ab w	40% int/y f 20% mod/o-y sp tr <i>Bot</i>	Anstruther Beds (Anstruther Borehole)	0.47 (9)
SBO 7517	-5342	marl	v low	tr:20:80	p	lt ov + tr w	int/y w mod/y matrix fl	Anstruther Beds (Anstruther Borehole)	0.78 (3)

ST MONANCE-ANSTRUTHER AND WORMISTONE SECTIONS (including Anstruther Borehole) continued

Sample Number	Distance from St. Monance Brecciated Limestone*	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	%Rv (n° readings)
ANST F	-5985	py sh	low	0:20:80	-	no ov	50% int/y f 20% mod/o-y sp 10% Bot	Anstruther Beds (Anstruther Borehole)	NDP
SM 29	-6344	sl silty sh	high	30:70:tr	p	no ov + f	tr mod/o-y sp	Anstruther Beds Wormistone Lower Marine Band	0.55 (25)

*Distance (ft) above or below St. Monance Brecciated Limestone (base of Lower Limestone Group)
+ denotes distance above, - denotes distance below

RANDERSTON SECTION

Sample Number	Distance below Section Top (ft)	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	%Rv (n ^o readings)
SM 24	90	silty + calc sh	high	55:20:25	w + wp	mod/hvy ov	10% mod/y+o-y sp 10% mod/y liptodet 5% int/y <i>Bot</i> dull/y matrix fl	Anstruther Beds tr sid	0.40 (25)
SM 25	230	siltstone	mod	70:30:tr	w	mod interst w	tr mod/y-o sp	Anstruther Beds mod-hvy bituminous/humic om exuding from vit	0.38 (25)
SM 26	234	carbarg	-	50:20:30	st + w	mod/hvy ov	mod/o-y sp mn cut	Anstruther Beds	0.45 (25)
SM 27	350	silty sh	high	20:80:0	wp	no ov + f	tr mod/y-o sp	Anstruther Beds sample above nodular algal Limestone IX	0.54 (25)

KINKELL BRAES SECTION

Grid Reference	Sample Number	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	%Rv (n ^o readings)
NO 35290 71576	St A6	coal + carbarg -		40:30:30	st + w	hvy ov in carbarg	mod/o-y sp	Pittenweem Beds	0.58 (25)
NO 35298 71577	St A8*	silty sh	high	10:40:50	w + wp	v hvy interst	30% mod/y + o-y f + w 20% mod/o-y sp	Sandy Craig Beds Marine Band IV (shelly)	0.40 (8)
NO 35298 71577	St A9+	sh	high	tr:80:20	p	lt ov + ab f	10% mod/o-y + y-o sp 10% int-mod/y f + liptodet	Sandy Craig Beds Marine Band IV	0.57 (25)

*Corresponds to the 8" "black shales, shelly...." horizon on p.164 of MacGregor, 1968.

+Corresponds to the 19' "grey and black shales..." horizon on p.164 of MacGregor, 1968.

MISCELLANEOUS CALCIFEROUS SANDSTONE MEASURES

Sample Locality Grid Reference	Sample Number	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	%Rv (n° readings)
Section West of St. Monance NO 35209 70131	SMW 14	v py shaly coal	-	40:10:50	st	-	40% mod-dull/o-y + y-o + lt o sp + degraded terrest debris 10% mod-int/y-lt o Bot	Pathhead Beds ab degraded Bot ab py pseudo- morphing Bot bands of py in some places	0.46 (25)
Braefoot E15 Bore 48' NT 3182 6835	CS 4177	marl	high	5:10:85	st	lt ov	mod/y disc lamalg	Pittenweem Beds	0.39 (14)
Sypsies Bore 119' NO 35934 70829	CS	sh	mod	20:40:40	wp + st	mod ov	30% mod/ o-y sp 10% int/y f	Anstruther Beds	0.41 (16)
Newburgh Bore 137' NO 32320 71852	CS 7	sh	v low	tr:90:10	p	no ov	5% mod/o-y sp + 5 % int/y f + cysts	Ballagan Beds	0.46 (2)

KINGHORN-KIRKALDY SECTION

Sample Locality Grid Reference	Sample Number	Lithology	Organic Content	V.I.E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	%Rv (n ^o readings)
Shale above Upper Kinniny Limestone (9' below Qd Sill) NT 3280 6891	TK 3	silty sh	high	40:60:0	p	lt ov + f	tr mod/mid + deep o sp	Limestone Coal Group	0.78 (19)
Shale below Mid Kinniny Limestone NT 3280 6888	MK 2	silty sh	high	5:25:70	w + p	lt ov	40% mod/y-o + lt sp frags 25% mod/y w 5% int/y <i>Bot</i> mod/y bkg fl	Lower Limestone Group 2 popns vit <i>Bot</i> degraded	0.53 (6) 0.37 (11)
Shale below 3rd Abden Limestone NT 3279 6874	AB 3	py sh	high	80:20:0	st + w	mod ov	-	Lower Limestone Group matrix reddened vit oxid py -> haem	1.27 (25)
Shale below 2nd Abden Limestone NT 3275 6872	AB 2	py sh	high	10:60:30	wp + p	lt ov + f	20% mod/y-o sp frags 10% mod/y w mod/y bkg fl	Pathhead Beds glauc blobs	0.70 (14)

WEST WEMYSS

Sample Locality Grid Reference	Sample Number	Lithology	Organic Content	V:l:E (percent)	Virinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	%Rv (n ^o readings)
NT 33273 69485	BSOS	carbarg	-	70:10:20	w	matrix sat	mod/y sp	Middle Coal Measures Shale between Wall and Pilkembare coals	0.37 (25)
Shale 1.5' above Bush Coal NT 33195 69482	BUSHSH	py sh	low	10:90:0	wp	v lt ov + f	-	Middle Coal Measures much py -> haem	1.20 (25)

MARINE BANDS

QUEENSLIE MARINE BAND

Sample Locality Grid Reference	Sample Number	Lithology	Organic Content	V.I.E (percent)	Virinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (no. readings)
Frances Colliery Bore NT 33207 69241	QMB A43	py sh	high	10:20:60	wp + st	mod/hvy ov	50% mod/y ?algal cysts 10% mod/y+ o-y sp	-	0.38 (25)
Firth of Forth Tower 2 Bore NT 33156 68739	QMB A2	py sh	mod	10:70:20	st + w	mod ov + w pty hvy	mod/o-y sp + cysts + w	sl silty 2 vit popns much py -> Fe ox	0.47 (25) 0.66 (7)
Arden 5 Bore NS 28113 66939	QMB 69	py sh	v high	20:10:70	w + wp	matrix sat	60% mod/y + o-y liptodet 10% mod/y + o-y sp frags	tr fish scales	0.46 (10)
Bellshill-Newarthill Tower 8/2 Bore NS 27672 66123	QMB 64	marl	low/mod	tr:20:80	p	mod/hvy ov	60% mod/o f 20% mod/y + o-y w	ab carb blotches	0.34 (2)
Corsewall St 1 Bore NS 27279 66524	QMB 41	py sh	high	20:40:40	w + wp	hvy ov	mod/o-y f + w tr mod/o-y sp	ab mosaiced ?bitumen	0.58 (9)

CALMY BLAES

Sample Locality Grid Reference	Sample Number	Lithology	Organic Content	V:IE (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (no. readings)
Meggie Den Bore NO 33616 70306	C 3	sl calc sh	mod	10:60:30	wp	mod ov + w	20% mod/o-y f 5% mod/y + o-y sp 5% int/y <i>Bot</i>	-	0.40 (16)
Balfour Mains Bore NT 33307 69989	C 10	sl calc sh	mod	10:60:30	wp	lt ov + f	int/y f + w tr mod/y sp	-	0.49 (4)
Standalane 6 Bore NT 30144 69237	C 428	py sh	v high	10:20:70	w + wp	hvy ov	65% dull/deep o disc lamalg 5% dull/deep o sp dull/deep o matrix fl	algal filaments ≈ 50-100µm long	0.39 (25)
Cattlemoss Bore NS 29977 69164	C 82	py sh	mod	30:20:50	wp + p	matrix sat	45% mod/y-o + o-y disc lamalg cysts 5% mod/y-o + lt o sp	-	0.34 (25)
Shieldbank Bore NT 30085 69403	C 499	py sh	v high	20:20:60	w	v hvy + pty matrix at	50% mod/o-y disc lamalg cysts 10% mid/y-o + lt o sp	-	0.37 (25)

KELTY BLACKBAND

Sample Locality Grid Reference	Sample Number	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (no. readings)
Westerton 11b Bore NT 31899 69241	KBBI 185	calc + sl silty v canneloid sh	high	10:20:70	st + w	matrix sat	50% mod/y-o + lt o sp 10% mod-int/y liptodet 10% int/y <i>Bot</i>	-	0.39 (25)
Cartmore 2 Bore NT 31859 69443	KBBI 547/2	v py carbarg	-	20:30:50	st + w	hvy ov	mod/y + o-y sp + sp frags	-	0.44 (25)
Lochgelly 9 Bore NT 31822 69376	KBBI 535/9	v py sh	v high	10:30:60	w	matrix sat	mod/y + o-y sp tr cut tr resin blobs	-	0.38 (25)
Lumphinnans No11 Pit NT 31725 69410	KBBI 140	calc sh	high	10:20:70	st + w	matrix sat	50% mod/y + o-y sp + sp frags 20% int/y <i>Bot</i> mod/y matrix fl	ab sid	0.36 (25)
Mary No1 Pit Downbore NT 31790 69708	KBBI 174	py carbarg	-	20:20:60	w + wp	matrix sat	50% mod/o-y sp frags 10% mod/o-y liptodet tr mod-int/y <i>Bot</i>	ab fish scale frags	0.50 (25)
No1 Pit, Mary Colliery NT 3170 6956	KBBI 185b	v py sh	high	10:30:60	wp	matrix sat	40% mod-int/y + o-y sp + liptodet 10% int/ f + w	shelly	0.46 (17)

KELTY BLACKBAND continued

Sample Locality Grid Reference	Sample Number	Lithology	Organic Content	V:I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (no. readings)
Cowstrandburn 1 Bore NT 30402 69130	KBB1 382	v calc sh	low	10:20:70	w	mod/hvy ov	60% int/y w	-	0.46 (25)
							10% int/y <i>Bot</i>		
							10% mod/y + o-y sp		
Cowstrandburn 4 Bore NT 30312 69123	KBB1 385	calc sh	low	10:20:70	w + wp	mod/hvy ov	40% int/y f + w	-	0.38 (13)
							20% mod/y-o + lt		
							o sp frags 10% int/y <i>Bot</i>		

BLACK METALS

Sample Locality Grid Reference	Sample Number	Lithology	Organic Content	V:IE (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (no. readings)
Windygates 1/78 Bore NO 33510 70034	BM 195a	sh	high	5:70:25	p	lt ov + f	20% mod/y-o sp 5% mod/o-y w tr cut	-	0.66 (10)
Cameron 1 Bore NT 33457 69900	BM 380	silty + sl py sh	high	20:40:40	p	lt ov	30% mod/o-y + y-o sp frags 10% mod/o-y ?algal w	ab carb blotches	0.73 (9)
Kinglassie Mine NT 32463 69832	BM 370	sh	high	10:90:tr	wp + p	lt ov	mod/lt o liptodet	ab Fe ox blotches	0.69 (25)
Lochgelly 7 Bore NT 31879 69277	BM 561	sh	high	5:90:5	no ov + f + blotches	p	mod-dull/o-y sp frags	-	0.71 (9)
Loch Fitty 137 Bore NT 31370 69236	BM 641	sl silty sh	high	5:95:0	p	no ov + f	-	-	0.59 (3)
Thornton 34 Bore NT 31234 69316	BM 266	v py, calc siltstone	high	20:20:60	w + wp	dk interst	55% int/y disc lamalg 5% mod/y sp tr int/y Bot	-	0.36 (25)
Highholm 74 Bore NT 31119 69106	BM 806a	py + sl silty sh	v high	10:30:60	w + wp	matrix sat	40% mod-dull/o-y - sp + amorph debris 20% mod/o-y liptodet + w tr int/o-y resin st + blobs	-	0.40 (25)

BLACK METALS continued

Sample Locality Grid Reference	Sample Number	Lithology	Organic Content	V:I:E (percent)	Virinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (no. readings)
Townhill Bore NT 31026 68936	BM 246	py + silty sh	high	20:40:40	wp	matrix sat	30% mod/y + o-y sp + sp frags 10% mod/o-y liptodet tr int/y disc lamalg	some py -> Fe ox calc in places	0.48 (25)
Townhill1 Bore NT 30992 68944	BM 196	py sh	high	20:30:50	w	matrix sat	40% mod/y sp + amorph frags 10% mod/o-y liptodet tr Bot	Bot degraded	0.48 (25)
Loch Glow 366 Bore NT 30785 69531	BM 63	py sh	high	10:20:70	wp	matrix	60% mod-int/y-o - disc lamalg 10% mod/o-y sp + sp frags tr Bot	-	0.40 (25)
Bickram 1 Bore NT 30066 69126	BM 294	py sh	high	20:30:50	w + wp	matrix sat + hvy w	30% mod/y-o disc - lamalg 20% mod/y + o-y sp frags tr Bot	-	0.45 (25)
Saline 3 Bore NT 30053 69216	BM 262	calc + py sh	mod	10:30:60	p	lt ov	50% mod/o-y sp + sp frags 10% int/y ?algal w + f	py -> Fe ox blotches	0.66 (13)
Cattlemoss Farm Bore NS 29977 69165	BM 82	py sh	mod	5:40:55	p	lt ov + f	mod-int/o-y sp	py -> Fe ox	0.61 (6)

JOHNSTONE SHELL BED

Sample Locality Grid Reference	Sample Number	Lithology	Organic Content	Vitrinite (percent)	Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	Reflectance %R _v average (no. readings)
Dunotter Bore NO 34649 70252	JSB 18	sh	v high	40:30:30	wp	lt/mod ov	mod/y-o sp tr resin blobs + cut	-	0.47 (25)
Windygates 1/78 Bore NT 33510 70034	JSB 195	sl silty sh	v high	20:50:30	wp + w	mod/dk ov pty matrix sat	dull/mid o sp + liptodet dull/deep o bkg fl	-	0.69 (25)
Balfour Mains Bore NT 33307 69989	JSB 10	carbarg	-	30:40:30	st + w	mod ov	int-mod/y + o-y sp - tr int/y w tr <i>Bot</i>	-	0.71 (5)
Bowhill 360 Fm Mine NT 32104 69621	JSB 334	sl silty, py sh	v high	30:20:50	w + wp	mod/dk ov pty matrix sat	mod/mid o sp tr mod/o resin blobs	-	0.65 (25)
Blairbathie 19 Bore NT 31260 69416	JSB 198	sl silty sh	high	10:30:60	wp	mod ov + w	mod/o-y sp	-	0.49 (25)
Threepsykes Bore NT 30271 69438	JSB 498	py sh	high	NDP	wp	hvy ov mn vit res	dull/deep o bkg fl -	-	1.11 (23)
Barnhill Bore NT 30125 69573	JSB 13	sl calc siltstone	high	10:90:0	wp	lt/mod ov	dull/y-o matrix fl -	-	0.95 (25)
Bickram 1 Bore NT 30066 69126	JSB 294b	sh	high	10:40:50	wp	mod/hvy ov	dull/lt-mid o sp + amorph om	ab sid blotches	0.87 (25)

MISCELLANEOUS SAMPLES

Sample Locality Locality Grid Reference	Sample Number	Lithology	Organic Content	V.I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	%R _v
Rum Coal W.Wemyss. Fife	M4194	canneloid sh	-	20:30:50	w+st	matrix sat	30% mod/y-o+ lt o <i>Bot</i> 20% mod/y-o+ lt o sp mn liptodet	?Coal Measures matrix filled with micrinite	0.56(25)
Neilson shell Bed Section W of Corrie Burn NS 26050 67900	CO 1	sh	high	tr:90:10	wp	lt ov + f + w	5% mod/y-o + lt o sp 5% int/y liptodet	Lower Limestone Group	0.79 (5)
Lingula Shale above Top Hosie Limestone, Corrie Burn NS 26880 67863	CO 6	py + silty sh	v high	10:40:50	wp + st	matrix sat	30% mod/o-y sp + sp frags 20% int/y f	Limestone Coal Group	0.67 (22)
Firth of Forth Tower -1 FOF 1b at 1326' NT 33002 68789		py carbarg	-	20:10:70	w + st	mod/hvy ov	40% int/y cysts + w 30% mod/lt o sp	Passage Group	0.54 (25)
Best Cannel West Wemyss, Fife*	BC	cannel	-	10:40:50	w + st	-	50% mod-dull/y-o + lt o <i>Bot</i>	?Coal Measures matrix filled with micrinite	0.61 (25)
							mn liptodet		

*Exact locations not known - samples from Hunterian Museum collection.

GARTARRY TOLL (BRUCEFIELD) BOREHOLE NS 29313 69126

Sample Depth (ft)	Sample Number	Lithology	Organic Content	Vit:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	%R _v
1864	GAR 13	sl calc, py sh	mod	tr:40:60	wp	lt ov	50% mod/y liptodet 10% mod/lt-mid o sp	Upper Limestone Group	0.52 (3)
1916	GAR 15	py sh	mod	tr:20:80	wp	no ov + tr w	70% int/y f + w 10% mod/y-o + lt o sp tr <i>Tasmanites</i>	Upper Limestone Group shale above Plean Nº1 Limestone	0.64 (3)
2284	GAR 18	py sh	mod	20:10:70	w + st	lt ov	50% int/y disc lamalg 20% mod/mid o sp	Upper Limestone Group "Parrotty" rib below Calmy Limestone long lamalg filaments ab amorph fl areas	0.43 (25)

ADDITIONAL SAMPLES NEAR IGNEOUS INTRUSIONS

Sample Name Grid Reference	Sample Number	Lithology	Organic Content	V.I.E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	%R _v (n° readings)
Black Sandstone, Carron Glen NS 27923 68326	CBC	sst	≈barren	NDP	p	v dk interst bit -> bit res	-	Lower Liemstone Group Lillies Sandstone Ro measured on mosaiced particle	2.68 (1)
Carron Glen Shale NS 27963 68308	CBG	py sh	mod	NDP	w + wp	v hvy ov -> bit res	-	Limestone Coal Group Banton Clayband Ironstone (in adit)	2.05 (25)
Sample near dyke St. Monance vent* NO 35220 70132	5A 1	canneloid sh	v high	30:20:50	st + w	v hvy ov	30% v dull/br 20% v dull/br sp	Pathhead Beds <i>Bot</i> looks like bit blobs internal structure obscured	w 0.57 (25) st 0.67 (25)
~1m W of dyke*	5B	coal	-	NDP	-	-	-	Pathhead Beds	2.36 (25)
W side of dyke 1.5cm from contact*	5D4	calc sh	mod	NDP	w + p	hvy ov -> bit res	-	Pathhead Beds ab calcitisation + veining	2.40 (25)
W side of dyke* 2cm from contact	5D3	calc sh	mod	NDP	w + p	hvy ov -> bit res	-	Pathhead Beds ab calcitisation + veining	2.09 (9) (2.25av)
≈contorted zone west of St. Monance* NO 35213 70130	SMW 13	calc sh	mod	NDP	p	hvy ov -> bit res	-	Pathhead Beds heavily calcitised ab sid	2.86 (22)

ADDITIONAL SAMPLES NEAR IGNEOUS INTRUSIONS (continued)

Sample Name Grid Reference	Sample Number	Lithology	Organic Content	V.I:E (percent)	Vitrinite Morphology	Nature of Bitumen	Fluorescence Observations	Miscellaneous Information	%R _v (n° readings)
Davies Neck	BB	calc + silty sh	high	NDP	p + wp	dk interst -> bit res	-	ab sid	1.64 (21)
Elie Harbour Neck	L	coal	-	80:20:0	scruffy	-	-	sl brecciated ab well preserved cell structures	0.71 (25)
Carron Harbour 4' below Td Sill NT 32187 68595	CH 4	v calc + sl py sh	low	NDP	p	v hvy interst -> bit res	-	Lower Oil Shale Group extensive carb alteration py -> Fe ox	3.36 (12)
St Monance W.Section loc c of Francis and Hopgood (1970) below Ardross Lst	SMW13	calc sh	mod	NDP	p	v dk ov ->bit res	-		2.86 (22)
Manor Powis Anthracite NS 2828 6969	SK 7	coal	-	NDP	-	-	severe strain anisotropy	Limestone Coal Groups	8.88 (25)

- * Photograph of locality in Raymond and Murchison, 1988a.
- + Extracted sample is a composite of 5D4 and 5D3.
- Locality C of Francis and Hopgood, 1970.

TABLE A.2

SOLUBLE-EXTRACT DATA

LAMOSITES

Sample Name	Sample Weight (g)	EOM (mg)	EOM Yield (%)	Aliphatics (%)	Aromatics (%)	Polars (%)	TOC (%)	EOM/TOC (mg/g)
Dunnet	110.61	1769.0	1.6	31	5	64	28.9	55.3
Carron Harbour	157.12	900.8	0.6	24	7	69	10.9	52.6
St. Monance (East)	159.51	784.3	0.5	42	35	23	10.1	48.7
St. Monance (West)	122.94	900.5	0.7	10	9	81	-	-
Claremont Burn	131.68	748.0	0.6	29	38	33	14.3	39.7
Queensferry	13.74	41.0	0.3	54	11	35	-	-
Pumpherstons, S. Queensferry	154.53	1683.0	1.1	55	28	17	-	-
Dunnet, Pumpherstons Mine	77.78	940.8	1.2	47	12	41	22.8	53.1
Fells	22.34	181.5	0.8	56	22	22	11.1	73.2
Broxburn	93.72	749.8	0.8	51	8	41	-	-
Mid Calder - 1	149.81	717.3	0.5	56	9	35	-	-
Mid Calder - 2	149.39	352.4	0.3	34	20	46	-	-
Mid Calder - 3	122.13	828.5	0.7	51	15	34	-	-
Binny Craig	121.85	1108.0	0.9	63	7	30	-	-

TORBANITES AND TORBANITIC SHALES

Sample Name	Sample Weight (g)	EOM (mg)	EOM Yield (%)	Aliphatics (%)	Aromatics (%)	Polars (%)	TOC (%)	EOM/TOC (mg/g)
Westfield Oil Shale	82.44	239.0	0.3	46	23	31	42.9	6.8
Westfield Canneloid Shale	88.02	360.0	0.4	45	18	37	31.8	12.9
Lillies Oil Shale	84.86	1229.0	1.4	18	17	65	45.8	31.6
Eskmouth Torbanite	5.13	31.0	0.6	16	16	68	-	-

"WOODS" AND "VITRINITES"

Sample Name	Sample Weight (g)	EOM (mg)	EOM Yield (%)	Aliphatics (%)	Aromatics (%)	Polars (%)
Orrock Wood	15.04	363.8	2.4	1	3	96
Orrock "Vitrinite"	-	-	-	-	-	-
East Kirkton "Vitrinite"	11.33	629.9	5.6	16	13	71
Coalyard "Vitrinite"	52.72	375.9	0.7	2	17	81

MISCELLANEOUS HUMIC COALS

Pyotshore Coal	82.30	1760.0	2.1	9	26	65
Coal Above Queenslie Marine Band	1.28	92.4	7.2	4	6	90
Coal Above Westfield Oil Shale	82.90	1708.2	2.1	37	4	59

EAST FIFE COAST

ST MONANCE-ANSTRUTHER AND WORMISTONE SECTIONS (including Anstruther Borehole)

Sample Number	Sample Weight (g)	EOM (mg)	EOM Yield (%)	Aliphatics (%)	Aromatics (%)	Polars (%)	TOC (%)	EOM/TOC (mg/g)
SM 1	135.25	43.0	<0.1	16	23	61	3.5	9.1
SM 4	126.73	88.0	<0.1	5	22	73	3.7	18.8
SM 5	138.84	101.2	<0.1	8	23	69	1.7	42.9
SM 6	18.37	257.9	1.4	15	6	79	-	-
SM 7	159.51	784.3	0.5	42	35	23	10.1	48.7
SM 12	115.13	78.2	<0.1	10	25	65	3.0	22.6
SM 14	113.91	242.3	0.2	13	21	66	19.5	10.9
SM 15	164.77	130.0	<0.1	10	14	76	2.6	30.3
SM 17	117.71	753.0	0.6	19	27	54	10.9	58.7
SM 18	41.98	546.0	1.3	26	33	41	23.4	55.6
SM 19	155.48	719.0	0.5	16	20	64	21.7	21.3
SM 22	91.35	2543.0	0.3	29	25	46	46.0	60.5
P Sh	103.31	905.0	0.9	31	9	60	20.6	42.5
Q	140.90	773.7	0.5	30	4	66	18.0	30.5

ST MONANCE-ANSTRUTHER AND WORMISTONE SECTIONS (including Anstruther Borehole) continued

Sample Number	Sample Weight (g)	EOM (mg)	EOM Yield (%)	Aliphatics (%)	Aromatics (%)	Polars (%)	TOC (%)	EOM/TOC (mg/g)
T	23.09	460.0	1.9	27	17	56	28.8	69.2
SBO 7516	24.84	31.6	0.1	14	25	61	-	-
SBO 7517	22.89	181.8	0.8	26	6	68	-	-
ANST F	22.28	45.1	-	31	8	61	-	-
SM 29	139.80	27.0	<0.1	1	26	72	1.5	12.9

RANDERSTON SECTION

SM 24	149.2	910.0	0.6	14	29	57	7.6	80.3
SM 25	131.96	160.5	0.1	2	32	66	1.3	93.6
SM 26	61.67	363.5	0.6	19	9	72	24.2	24.4
SM 27	148.75	28.0	<0.1	6	16	78	1.7	11.1

KINKELL BRAES SECTION

Sample Number	Sample Weight (g)	EOM (mg)	EOM Yield (%)	Aliphatics (%)	Aromatics (%)	Polars (%)	TOC (%)	EOM/TOC (mg/g)
St A 6	101.51	1933.4	1.9	3	11	86	-	-
St A 8	138.10	1227.5	0.9	8	5	87	-	-
St A 9	132.39	89.7	0.1	4	6	90	-	-

MISCELLANEOUS CALCIFEROUS SANDSTONE MEASURES SAMPLES

SMW 14	52.34	1270.0	2.4	12	15	73	-	-
CS 4177	19.93	126.0	0.6	29	18	53	-	-
CS	13.96	16.0	0.1	12	15	73	-	-
CS 7	19.13	13.0	<0.1	2	12	84	-	-

KINGHORN-KIRKALDY SECTION

Sample Number	Sample Weight (g)	EOM (mg)	EOM Yield (%)	Aliphatics (%)	Aromatics (%)	Polars (%)	TOC (%)	EOM/TOC (mg/g)
TK 3	33.89	40.9	<0.1	-	-	-	-	-
MK 2	166.06	358.6	0.2	7	11	82	3.53	61.2
AB 3	152.83	86.5	0.1	0	27	73	5.4	51
AB 2	159.12	271.2	0.2	10	33	57	4.8	35.5

WEST WEMYSS

BSOS	144.54	1456.0	1.0	9	36	55	20.9	48.2
BUSH SH	155.84	45.2	<0.1	16	28	56	1.7	17.1

MARINE BANDS

QUEENSLIE MARINE BAND

Sample Number	Sample Weight (g)	EOM (mg)	EOM Yield (%)	Aliphatics (%)	Aromatics (%)	Polars (%)	TOC (%)	EOM/TOC (mg/g)
QMB A43	5.56	102.2	1.8	15	12	73	-	-
QMB A2	20.26	23.8	0.1	7	5	88	-	-
QMB 69	7.73	10.2	0.1	19	19	62	-	-
QMB 64	11.91	19.5	0.2	21	18	61	-	-
QMB 41	8.36	24.0	0.3	8	14	78	-	-

CALMY BLAES

C 3	7.05	8.9	0.1	26	18	56	-	-
C 10	11.61	6.3	0.1	31	21	52	-	-
C 428	11.21	27.6	0.2	10	24	66	-	-
C 82	20.17	154.9	0.8	6	15	79	-	-
C 499	10.34	92.0	0.9	3	14	83	-	-

KELTY BLACKBAND IRONSTONE

Sample Number	Sample Weight (g)	EOM (mg)	EOM Yield (%)	Aliphatics (%)	Aromatics (%)	Polars (%)	TOC (%)	EOM/TOC (mg/g)
KBBI 185	7.78	180.0	2.3	6	7	87	19.5	118.6
KBBI 547/2	14.33	130.9	0.9	10	18	72	10.4	87.8
KBBI 535/9	8.29	59.7	0.7	6	2	92	21.0	34.3
KBBI 140	9.76	198.6	2.0	11	9	80	35.2	57.8
KBBI 174	7.74	219.0	2.8	1	7	92	38.1	74.3
KBBI 185b	8.07	176.0	2.2	5	11	84	-	-
KBBI 382	7.33	49.6	0.7	12	5	83	6.8	99.5
KBBI 385	2.47	24.9	1.0	6	17	77	5.3	190.2

BLACK METALS

BM 195a	13.43	29.6	0.2	2	14	84	-	-
BM 380	13.94	19.1	0.1	2	6	92	-	-
BM 370	5.24	10.6	0.2	23	6	71	-	-
BM 561	12.33	21.0	0.2	4	11	85	-	-
BM 641	7.14	16.3	0.2	5	9	86	-	-

BLACK METALS continued

Sample Name	Sample Weight (g)	EOM (mg)	EOM Yield (%)	Aliphatics (%)	Aromatics (%)	Polars (%)	TOC (%)	EOM/TOC (mg/g)
BM 266	7.36	52.0	0.7	10	30	60	-	-
BM 806a	5.21	41.0	0.8	16	13	71	-	-
BM 246	12.19	41.0	0.3	15	18	67	-	-
BM 63	7.76	52.5	0.7	6	26	68	-	-
BM 294	2.71	12.5	0.5	9	10	81	-	-
BM 262	21.51	27.5	0.1	8	13	79	-	-
BM 82	8.66	10.5	0.1	15	46	39	-	-

JOHNSTONE SHELL BED

JSB 18	9.69	63.2	0.7	2	1	97	-	-
JSB 195	28.14	263.9	0.9	3	10	87	-	-
JSB 10	3.49	43.7	1.3	5	23	72	-	-
JSB 334	26.82	44.1	0.2	6	12	82	-	-

JOHNSTONE SHELL BED continued

Sample Name	Sample Weight (g)	EOM (mg)	EOM Yield (%)	Aliphatics (%)	Aromatics (%)	Polars (%)	TOC (%)	EOM/TOC (mg/g)
JSB 498	17.64	36.1	0.2	5	14	81	-	-
JSB 13	13.79	18.3	0.1	12	44	44	-	-
JSB 294b	2.71	12.1	0.4	10	25	65	-	-

MISCELLANEOUS SAMPLES

M 4194	32.04	2073.0	6.5	14	6	80	-	-
CO 1	162.57	162	0.1	1	14	85	-	-
CO 6	71.07	403.2	0.6	22	44	34	-	-
FOF 1b	10.21	873.7	8.6	3	11	86	-	-
BC	17.76	708.2	4.0	13	7	80	-	-

GARTARRY TOLL BOREHOLE

1864'	18.11	69.8	0.4	23	1	76	-	-
1916'	11.93	28	0.2	23	8	69	-	-
2284'	14.14	151.5	1.1	14	3	83	-	-

MUSSELBURGH N°1 VITRINITES

Sample Depths (ft)	Sample Number	% VR	Sample Weight (g)	EOM (mg)	EOM Yield (%)	Aliphatics (%)	Aromatics (%)	Polars (%)
1073 1115	M 1	0.59	1.94	228.4	11.8	2	1	97
2253 2396	M 2	0.70	1.91	838.9	43.9	3	7	90
3113	M 3	0.80	1.80	128.1	7.1	6	8	86
4070 4095 4109	M 4	0.92	4.73	287.4	6.1	1	5	94
4254 4368 4456	M 5	0.99	12.01	729.2	6.1	1	9	90

WEST FIFE VITRINITES

NON HEAT-AFFECTED								
Righead 557	RIG 1	0.64	5.79	215	3.7	5	8	87
Righead 959								
Righead 1336								
Righead 1158	RIG 2	0.71	3.16	256	8.1	3	3	94

WEST FIFE VITRINITES continued

Sample Locality Depths (ft)	Sample Number	% VR	Sample Weight (g)	EOM (mg)	EOM Yield (%)	Aliphatics (%)	Aromatics (%)	Polars (%)
HEAT-AFFECTED								
Righead 1811	RIG 3	0.80	3.25	458.9	14.1	5	3	92
Righead 1827								
Righead 1855								
Righead 2049	RIG 4	0.91	3.70	231.7	6.3	4	10	86
Righead 2099	RIG 5	0.98	3.95	177.6	4.5	3	5	92
Righead 2141								
Gartarry Toll 3852	RIG 6	1.06	1.26	305.2	24.2	3	17	80
Kincardine Bridge 3094								
Kincardine Bridge 3170	RIG 7	1.15	1.57	92.6	5.9	4	10	86
Gartarry Toll 3719								
Righead 2842	RIG 8	1.25	7.07	151.3	2.1	20	9	71
Righead 2956								
Blairmains 2787	RIG 9	1.50	4.58	105.9	2.3	3	23	74
Blairmains 2797								
Righead 2667	RIG 10	1.62	3.16	98.2	3.1	16	14	70

MILTON OF BALGONIE

Sample Depths (ft)	Sample Number	% VR	Sample Weight (g)	EOM (mg)	EOM Yield (%)	Aliphatics (%)	Aromatics (%)	Polars (%)
NON HEAT-AFFECTED								
1340	MOB 1340	0.47	3.26	15.8	2.3	7	3	90
1000	MOB 1000	0.54	4.68	45.2	1.0	1	6	93
4490 5460	MOB F	0.73	5.24	17.3	0.3	27	12	61
5150 5100	MOB G	0.80	5.99	24.3	0.4	17	8	75
5250 5600 5720	MOB H	0.92	7.30	35.6	0.5	5	2	93
HEAT-AFFECTED								
1603 1870	MOB I	0.67	7.43	43.4	0.6	7	5	88
1990 2020	MOB A	0.75	4.46	199.9	4.5	9	9	82
2100	MOB A	0.80	3.72	98.9	2.7	23	1	76
2280	MOB C	0.91	5.09	31.8	0.6	11	9	80
2365 3690	MOB D	1.43	3.93	41.5	1.0	5	9	87

MILTON OF BALGONIE continued

Sample Depths (ft)	Sample Number	% VR	Sample Weight (g)	EOM (mg)	EOM Yield (%)	Aliphatics (%)	Aromatics (%)	Polars (%)
2440	MOBE	1.91	3.14	51.7	1.6	3	4	93
2496	MOB 2496	2.46	1.80	12.8	0.7	3	10	87

ADDITIONAL SAMPLES NEAR IGNEOUS INTRUSIONS

Sample Number	Sample Weight (g)	EOM (mg)	EOM Yield (%)	Aliphatics (%)	Aromatics (%)	Polars (%)
CBC	171.40	10.7	0.1	9	3	88
CBG	173.27	340.2	0.2	58	12	30
5A 1	16.34	151.0	0.9	2	13	85
5B	20.37	15.0	0.1	-	-	-
5D	142.38	37.5	<0.1	-	-	-
BB	57.27	18.5	<0.1	-	-	-
L	6.10	49.8	0.8	-	-	-
CH 4	33.33	40.5	0.1	-	-	-
SMW 13	121.62	54.6	<0.1	-	-	-
SK 7	125.53	33.6	<0.1	-	-	-

OILS AND BITUMENS

Sample Name	Sample Weight (g)	EOM (mg)	EOM Yield (%)	Aliphatics (%)	Aromatics (%)	Polars (%)
D'Arcy Oil	-	-	-	80	16	4
Milton Oil	-	-	-	83	12	5
St. Catherine's Bitumen	-	-	-	20	13	67
Orrock Bitumen	-	-	-	27	8	65
Dyke-Rock Bitumen	-	-	-	29	11	60
Petershill Bitumen	-	-	-	15	10	75
Bitumen in Large Nodule	0.29	127.8	44.5	3	9	88
Bitumen in Small Nodule	10.06	314.0	3.0	30	17	53
Hydrocarbons in Brown Sandstone	157.62	1871.0	1.2	51	14	35
Hydrocarbons in Laminated Sandstone	160.08	2339.0	1.5	69	18	13

TABLE A.3

BASIC GEOCHEMICAL PARAMETERS FROM GAS CHROMATOGRAMS

LAMOSITES

Sample Name	n-alkane distribution	n-alkane maxima	OEP range(s)	CPI nC ₂₃ -nC ₂₇	Pr/nC ₁₇	Ph/nC ₁₈	Pr/Ph
Dunnet	C ₁₀ -C ₃₆	C ₁₅ , C ₂₅	C ₁₅ -C ₁₇ C ₂₃ -C ₂₇	1.38	0.30	0.24	1.76
Carron Harbour	C ₁₁ -C ₃₆	C ₂₅	C ₂₃ -C ₂₇	1.36	0.31	0.15	2.10
St. Monance (East)	C ₁₁ -C ₃₆	C ₁₇ , C ₂₇	C ₁₇ -C ₂₁ C ₂₃ -C ₂₉	1.55	0.59	0.36	1.88
St. Monance (West)	C ₁₀ -C ₃₃	C ₁₅	C ₁₅ -C ₁₉ C ₂₁ -C ₂₉	1.43	1.98	0.92	2.97
Claremont Burn	C ₁₁ -C ₃₆	C ₁₇ , C ₂₇	C ₁₇ -C ₁₉ C ₂₃ -C ₂₉	1.83	0.35	0.45	0.96
Queensferry	C ₁₀ -C ₃₄	C ₁₅	-	1.19	0.19	0.09	2.36
Pumpherstoun	C ₁₀ -C ₃₆	C ₁₅ , C ₂₇	C ₁₅ -C ₁₉ C ₂₁ -C ₂₇	1.18	0.80	0.51	1.79
Dunnet (Pumpherstoun)	C ₁₀ -C ₃₆	C ₁₇	C ₂₃ -C ₂₅	1.14	0.24	0.14	1.96
Fells	C ₉ -C ₃₆	C ₁₅ , C ₂₅	C ₁₅ -C ₁₉ C ₂₁ -C ₂₇	1.18	0.45	0.23	2.49
Broxburn	C ₁₀ -C ₃₃	C ₂₀	C ₁₇ -C ₁₉ C ₂₁ -C ₂₃	1.20	0.17	0.14	1.27

LAMOSITES continued

Sample Name	n-alkane distribution	n-alkane maxima	OEP range(s)	CPI nC ₂₃ -nC ₂₇	Pr/nC ₁₇	Ph/nC ₁₈	Pr/Ph
Mid Calder-1	C ₁₀ -C ₃₈	C ₂₃	C ₁₉ -C ₂₁ C ₂₃ -C ₂₅	1.11	0.26	0.12	2.18
Mid Calder-2	C ₁₀ -C ₃₈	C ₁₅	C ₁₅ -C ₂₅	1.09	0.18	0.09	2.21
Mid-Calder-3	C ₁₁ -C ₃₆	C ₁₇ , C ₂₃	C ₁₇ -C ₂₅	1.12	0.21	0.10	2.20
Binny Craig	C ₁₁ -C ₃₇	C ₂₅	C ₂₃ -C ₂₅	1.04	0.06	0.03	1.67

TORBANITES AND TORBANITIC SHALES

Sample Name	n-alkane distribution	n-alkane maxima	OEP range(s)	CPI nC ₂₃ -nC ₂₇	Pr/nC ₁₇	Ph/nC ₁₈	Pr/Ph
Westfield Oil Shale	C ₁₂ -C ₃₇	C ₂₁	C ₂₁ -C ₂₇	1.08	0.51	0.12	3.90
Westfield Canneloid Shale	C ₁₃ -C ₃₈	C ₂₁	C ₂₃ -C ₂₉	1.17	0.32	0.06	4.27
Eskmouth Torbanite	C ₁₃ -C ₃₆	C ₂₁	C ₂₁ -C ₂₃ C ₂₅ -C ₂₇	1.13	1.44	0.30	4.28
Lillies Shale	C ₉ -C ₃₈	C ₂₃	C ₁₇ -C ₁₉ C ₂₁ -C ₂₇	1.09	0.64	0.16	4.22

WOODS + "VITRINITES"

Sample Name	n-alkane distribution	n-alkane maxima	OEP range(s)	CPI nC ₂₃ -nC ₂₇	Pr/nC ₁₇	Ph/nC ₁₈	Pr/Ph
Orrock Wood	C ₁₁ -C ₂₅	C ₁₃	-	NDP	0.82	0.53	3.11
Orrock "Vitrinite"	C ₁₀ -C ₃₆	C ₂₁	C ₁₅ -C ₁₉ C ₂₁ -C ₂₉	1.61	1.62	0.52	1.61
East Kirkton "Vitrinite"	C ₁₁ -C ₃₁	C ₁₄	C ₁₅ -C ₁₉ *	1.38	0.76	0.40	2.71
Coalyard "Vitrinite"	C ₁₀ -C ₃₅	C ₂₇	C ₁₇ -C ₂₃ C ₂₅ -C ₂₇	1.09	0.16	0.04	3.60

MISCELLANEOUS HUMIC COALS

Pyotshore Coal	C ₁₁ -C ₃₈	C ₂₁	C ₂₃ -C ₂₉	1.11	1.33	0.27	4.73
Coal above Queenslie Marine Band	C ₁₁ -C ₃₆	C ₁₄	C ₂₃ -C ₂₉	1.37	5.16	0.68	7.35
Coal above Westfield Oil Shale	C ₁₀ -C ₃₄	C ₁₉	C ₁₇ -C ₁₉	1.27	0.63	0.12	5.48

* C 1 5 - C 27 f o

EAST FIFE COAST

ST MONANCE-ANSTRUTHER AND WORMISTONE SECTIONS (including Anstruther Borehole)

Sample Name	n-alkane distribution	n-alkane maxima	OEP range(s)	CPI nC ₂₃ -nC ₂₇	Pr/nC ₁₇	Ph/nC ₁₈	Pr/Ph
SM 1	C ₁₂ -C ₃₆	C ₂₇	C ₂₁ -C ₂₉	1.29	1.43	0.33	3.56
SM 4	C ₁₄ -C ₃₆	C ₂₇	C ₂₃ -C ₂₉	1.20	1.35	0.35	3.63
SM 5	C ₁₃ -C ₃₆	C ₂₇	C ₂₁ -C ₂₇	1.53	1.76	0.69	2.73
SM 6	C ₁₀ -C ₃₇	C ₂₇	C ₁₅ -C ₁₉ C ₂₁ -C ₂₉	1.49	3.15	0.55	6.31
SM 7	C ₁₃ -C ₃₆	C ₂₇	C ₁₇ -C ₂₁ C ₂₃ -C ₂₉	1.55	0.59	0.36	1.88
SM 12	C ₁₁ -C ₃₆	C ₂₇	C ₂₃ -C ₂₉	1.32	1.36	0.30	4.53
SM 14	C ₁₃ -C ₃₅	C ₂₇	C ₂₁ -C ₂₉	1.32	1.99	0.30	6.13
SM 15	C ₁₃ -C ₃₆	C ₂₅	C ₂₁ -C ₂₇	1.46	0.93	0.30	2.88
SM 17	C ₁₁ -C ₃₆	C ₂₇	C ₁₇ -C ₂₉	1.50	2.74	1.13	2.79
SM 18	C ₁₁ -C ₃₆	C ₂₇	C ₁₇ -C ₂₉	1.37	0.86	0.32	3.20
SM 19	C ₁₂ -C ₃₆	C ₂₅	C ₁₇ -C ₁₉ C ₂₃ -C ₂₉	1.35	1.14	0.28	5.59
SM 22	C ₁₇ -C ₃₆	C ₂₇	C ₁₇ -C ₂₇	1.34	1.94	0.71	3.37

ST MONANCE-ANSTRUTHER AND WORMISTONE SECTIONS (including Anstruther Borehole) continued

Sample Name	n-alkane distribution	n-alkane maxima	OEP range(s)	CPI nC ₂₃ -nC ₂₇	Pr/nC ₁₇	Ph/nC ₁₈	Pr/Ph
P Sh	C ₁₀ -C ₃₆	C ₂₇	C ₂₃ -C ₂₇	1.24	0.77	0.36	2.24
Q	C ₁₀ -C ₃₆	C ₂₇	C ₁₅ -C ₁₉ C ₂₃ -C ₂₇	1.25	0.34	0.24	1.65
T	C ₁₀ -C ₃₆	C ₂₃	C ₁₅ -C ₁₉ C ₂₁ -C ₂₇	1.30	1.29	0.24	6.35
SBO 7516	C ₁₁ -C ₃₆	C ₁₅ , C ₂₃	C ₁₅ -C ₂₉	1.28	0.60	0.26	3.08
SBO 7517	C ₁₁ -C ₃₆	C ₂₇	C ₁₉ -C ₂₉	1.26	0.58	0.40	2.28
ANST F	C ₁₀ -C ₃₆	C ₂₂	C ₁₇ -C ₁₉	1.07	0.26	0.39	0.79
SM 29	C ₁₂ -C ₃₆	C ₂₁	C ₁₅ -C ₁₉ C ₂₁ -C ₂₉	1.48	2.02	0.66	3.37

RANDERSTON SECTION

SM 24	C ₁₁ -C ₃₆	C ₁₅	C ₁₅ -C ₁₉ C ₂₁ -C ₂₉	1.34	0.87	0.38	3.00
SM 25	C ₁₃ -C ₃₆	C ₂₇	C ₁₉ -C ₂₁ C ₂₃ -C ₂₉	1.46	5.17	2.50	2.07
SM 26	C ₁₂ -C ₃₆	C ₂₇	C ₁₅ -C ₁₉ C ₂₁ -C ₂₇	1.42	4.21	0.73	6.83

RANDERSTON SECTION continued

Sample Name	n-alkane distribution	n-alkane maxima	OEP range(s)	CPI nC ₂₃ -nC ₂₇	Pr/nC ₁₇	Ph/nC ₁₈	Pr/Ph
SM 27	C ₁₃ -C ₃₆	C ₂₇	C ₂₅ -C ₂₉	1.32	0.64	0.15	3.25

KINKELL BRAES SECTION

St A 6	C ₁₀ -C ₃₆	C ₂₇	C ₁₅ -C ₂₇	1.22	5.02	0.57	9.00
St A 8	C ₁₁ -C ₃₆	C ₂₇	C ₁₅ -C ₂₇	1.53	2.72	1.03	3.06
St A 9	C ₁₂ -C ₃₆	C ₂₇	C ₁₅ -C ₂₉	1.32	1.07	0.36	3.04

MISCELLANEOUS CALCIFEROUS SANDSTONE MEASURES

SMW 14	C ₁₂ -C ₃₆	C ₂₁	C ₁₇ -C ₁₉ C ₂₁ -C ₂₇	1.22	2.79	1.05	4.51
CS 4177	C ₁₁ -C ₃₆	C ₂₇	C ₁₅ -C ₁₉ C ₂₃ -C ₂₉	1.41	0.98	0.55	2.15
CS	C ₁₁ -C ₃₆	C ₂₁	C ₁₅ -C ₁₉ C ₂₅ -C ₂₇	1.26	0.57	0.29	2.31
CS 7	C ₁₄ -C ₃₆	C ₂₁	C ₁₇ -C ₁₉ C ₂₁ -C ₂₇	1.45	0.26	0.17	1.81

KINGHORN-KIRKALDY SECTION

Sample Name	n-alkane distribution	n-alkane maxima	OEP range(s)	CPI nC ₂₃ -nC ₂₇	Pr/nC ₁₇	Ph/nC ₁₈	Pr/Ph
TK 3	C ₁₀ -C ₃₅	C ₁₄	C ₂₁ -C ₂₉	1.18	0.67	0.28	3.65
MK 2	C ₁₂ -C ₃₆	C ₁₇	C ₁₅ -C ₂₉	1.28	1.61	0.65	3.21
AB 2	C ₁₃ -C ₃₆	C ₁₇ , C ₂₇	C ₁₇ -C ₂₉	1.23	3.19	2.45	1.52

WEST WEMYSS

BUSH SH	C ₁₂ -C ₃₆	nC ₁₆	C ₂₁ -C ₂₇	1.12	NDP	NDP	NDP
BSOS	C ₁₂ -C ₃₆	C ₂₇	C ₂₁ -C ₂₉	1.73	4.50	1.77	2.55

MARINE BANDS

QUEENSLIE MARINE BAND

Sample Name	n-alkane distribution	n-alkane maxima	OEP range(s)	CPI nC ₂₃ -nC ₂₇	Pr/nC ₁₇	Ph/nC ₁₈	Pr/Ph
QMB A43	C ₁₂ -C ₃₆	C ₁₇	C ₁₅ -C ₂₉	1.25	1.14	1.30	1.53
QMB A2	C ₁₂ -C ₃₆	C ₁₆	C ₁₇ -C ₁₉ C ₂₃ -C ₂₉	1.31	0.77	0.47	2.27
QMB 69	C ₁₁ -C ₃₉	C ₁₇	C ₂₁ -C ₂₇	1.07	0.46	0.22	2.84
QMB 64	C ₁₁ -C ₃₉	C ₁₆	C ₁₈ -C ₂₂ C ₂₃ -C ₂₇	1.14	0.50	0.20	3.00
QMB 41	C ₁₂ -C ₃₉	C ₁₇	C ₁₅ -C ₁₇ C ₂₃ -C ₂₉	1.22	1.67	1.09	1.71

CALMY BLAES

C 3	C ₁₂ -C ₃₆	C ₁₅ , C ₂₇	C ₁₅ -C ₁₇ C ₂₁ -C ₂₉	1.43	0.57	0.42	2.10
C10	C ₁₃ -C ₃₆	C ₁₈	C ₂₅ -C ₂₉	1.05	0.28	0.17	1.50
C 428	C ₁₂ -C ₃₆	C ₁₅	C ₁₅ -C ₁₉ C ₂₅ -C ₂₇	1.18	1.65	3.82	0.80

CALMY BLAES continued

Sample Name	n-alkane distribution	n-alkane maxima	OEP range(s)	CPI nC ₂₃ -nC ₂₇	Pr/nC ₁₇	Ph/nC ₁₈	Pr/Ph
C 82	C ₁₀ -C ₃₅	C ₁₅	C ₁₅ -C ₁₉ C ₂₃ -C ₂₉	1.54	1.29	1.04	0.80
C 499	C ₁₀ -C ₃₆	C ₁₅	C ₁₃ -C ₂₉	1.38	2.25	2.98	1.22

KELTY BLACKBAND

KBBI 185	C ₁₃ -C ₃₆	C ₂₅	C ₁₇ -C ₂₉	1.18	2.26	0.56	4.33
KBBI 547/2	C ₁₁ -C ₃₆	C ₂₇	C ₁₅ -C ₂₉	1.27	2.91	1.06	3.36
KBBI 535/9	C ₁₁ -C ₂₆	C ₂₃	C ₁₇ -C ₂₉	1.55	1.95	0.84	2.96
KBBI 140	C ₁₀ -C ₃₆	C ₂₇	C ₁₅ -C ₂₉	1.31	2.17	0.74	3.43
KBBI 174	C ₁₀ -C ₃₈	C ₂₅	C ₂₁ -C ₂₉	1.17	2.39	0.55	4.29
KBBI 185b	C ₁₂ -C ₃₇	C ₁₅ , C ₂₇	C ₁₅ -C ₁₉ C ₂₁ -C ₂₉	1.37	0.69	0.29	3.19
KBBI 382	C ₁₁ -C ₃₄	C ₂₅	C ₂₅ -C ₂₉	1.22	0.64	0.14	3.42
KBBI 385	C ₁₁ -C ₃₈	C ₂₇	C ₂₃ -C ₂₇	1.15	0.44	0.14	3.00

BLACK METALS

Sample Name	n-alkane distribution	n-alkane maxima	OEP range(s)	CPI nC ₂₃ -nC ₂₇	Pr/nC ₁₇	Ph/nC ₁₈	Pr/Ph
BM 195a	C ₁₀ -C ₃₆	C ₁₇	C ₁₇ -C ₁₉	1.08	0.87	0.22	4.02
BM 380	C ₁₃ -C ₃₈	C ₁₇	C ₁₇ -C ₁₉ C ₂₃ -C ₂₇	1.09	0.94	0.28	3.71
BM 370	C ₁₁ -C ₃₅	C ₁₇	C ₁₅ -C ₁₉	1.05	0.32	0.19	2.21
BM 561	C ₁₃ -C ₃₈	C ₁₇	C ₁₅ -C ₂₉	1.24	1.17	0.39	3.25
BM 641	C ₁₃ -C ₃₆	C ₂₁	C ₁₇ -C ₁₉	1.08	0.52	0.23	2.58
BM 266	C ₁₃ -C ₃₆	C ₂₃	C ₁₇ -C ₁₉ C ₂₃ -C ₂₇	1.16	2.38	0.71	3.88
BM 806a	C ₁₃ -C ₃₆	C ₁₇	C ₁₇ -C ₂₉	1.25	1.13	0.46	2.98
BM 246	C ₁₂ -C ₃₆	C ₂₇	C ₁₅ -C ₂₉	1.29	1.33	0.33	4.67
BM 63	C ₁₃ -C ₃₇	C ₂₇	C ₁₇ -C ₁₉ C ₂₁ -C ₂₉	1.30	1.44	0.71	2.23
BM 294	C ₁₃ -C ₃₆	C ₂₇	C ₁₇ -C ₂₉	1.16	1.29	0.44	3.09
BM 262	C ₁₂ -C ₃₈	C ₁₇	C ₁₇ -C ₁₉	1.10	0.42	0.22	2.42

BLACK METALS continued

Sample Name	n-alkane distribution	n-alkane maxima	OEP range(s)	CPI nC ₂₃ -nC ₂₇	Pr/nC ₁₇	Ph/nC ₁₈	Pr/Ph
BM 82	C ₁₃ -C ₃₈	C ₂₁	C ₁₇ -C ₁₉ C ₂₅ -C ₂₉	1.17	0.59	0.30	2.29

JOHNSTONE SHELL BED

JSB 18	C ₁₂ -C ₃₆	C ₂₇	C ₂₁ -C ₂₉	1.47	2.02	0.66	2.18
JSB 195	C ₁₂ -C ₃₆	C ₂₁	C ₁₉ -C ₂₇	1.12	0.84	0.16	5.11
JSB 10	C ₁₁ -C ₃₆	C ₂₃	C ₁₇ -C ₂₇	1.15	1.06	0.17	5.88
JSB 334	C ₁₂ -C ₃₇	C ₁₅	C ₁₅ -C ₂₇	1.11	1.08	0.26	4.73
JSB 498	C ₁₁ -C ₃₃	C ₁₉	C ₁₉ -C ₂₁ C ₂₅ -C ₂₉	1.20	1.18	0.42	2.04
JSB 13	C ₁₁ -C ₃₈	C ₁₆	-	1.07	0.31	0.10	3.74
JSB 294b	C ₁₁ -C ₃₇	C ₁₇	C ₁₇ -C ₂₇	1.13	1.07	0.23	5.00

MISCELLANEOUS SAMPLES

Sample Name	n-alkane distribution	n-alkane maxima	OEP range(s)	CPI nC ₂₃ -nC ₂₇	Pr/nC ₁₇	Ph/nC ₁₈	Pr/Ph
M 4194	C ₁₀ -C ₃₆	C ₂₇	C ₂₁ -C ₂₇	1.11	1.32	0.31	4.10
CO 1	C ₉ -C ₃₆	C ₁₅	C ₁₅ -C ₁₉ C ₂₁ -C ₂₇	1.17	0.90	0.22	4.42
CO 6	C ₁₁ -C ₃₆	C ₁₅	C ₁₃ -C ₂₇	1.14	0.57	0.21	3.50
FOF 1b	C ₁₁ -C ₃₁	C ₁₅	C ₁₃ -C ₁₉ C ₂₁ -C ₂₉	1.23	2.25	2.11	1.76
BC	C ₁₁ -C ₃₆	C ₁₇	C ₁₇ -C ₁₉	1.07	0.19	0.07	3.00

GARTARRY TOLL BOREHOLE

Sample Name	n-alkane distribution	n-alkane maxima	OEP range(s)	CPI nC ₂₃ -nC ₂₇	Pr/nC ₁₇	Ph/nC ₁₈	Pr/Ph
1864	C ₁₃ -C ₃₈	C ₂₇	C ₁₇ -C ₂₉	1.20	1.03	0.50	2.12
1916	C ₁₁ -C ₃₆	C ₁₉	C ₁₅ -C ₂₉	1.31	1.51	1.92	0.92
2284	C ₁₁ -C ₃₆	C ₁₅	C ₁₅ -C ₂₉	1.13	0.56	0.44	1.54

MUSSELBURGH VITRINITES

Sample Name	n-alkane distribution	n-alkane maxima	OEP range(s)	CPI nC ₂₃ -nC ₂₇	Pr/nC ₁₇	Ph/nC ₁₈	Pr/Ph
M 1	C ₁₃ -C ₃₄	C ₁₇	C ₁₉ -C ₂₉	1.19	3.16	0.72	5.81
M 2	C ₁₁ -C ₃₄	C ₁₅	C ₁₇ -C ₂₅	1.15	1.69	0.35	6.09
M 3	C ₁₀ -C ₃₆	C ₁₅	C ₁₇ -C ₂₁	1.13	1.27	0.23	6.23
M 4	C ₁₀ -C ₃₃	C ₁₃	C ₁₉ -C ₂₁ C ₂₅ -C ₂₇	1.07	1.68	0.28	6.67
M 5	C ₁₀ -C ₃₄	C ₁₃	C ₁₇ -C ₁₉	1.03	0.98	0.17	6.00

CARRINGTON SAMPLES

660	C ₁₁ -C ₃₉	C ₂₇	C ₁₃ -C ₁₇ C ₁₉ -C ₂₉	1.22	6.49	0.76	7.83
1600	C ₁₁ -C ₄₂	C ₁₇ , C ₂₇	C ₁₇ -C ₂₉	1.14	0.84	0.27	3.39
2600	C ₁₁ -C ₃₈	C ₁₆	-	1.07	0.52	0.32	1.92
3100	C ₁₁ -C ₄₂	C ₁₅	-	1.09	0.33	0.25	1.66
3800	C ₁₁ -C ₄₂	C ₁₅ , C ₂₅	C ₁₅ -C ₂₇	1.07	0.26	0.08	3.44
4779	C ₁₀ -C ₄₁	C ₁₃	-	1.03	0.08	0.04	2.25
5310	C ₁₀ -C ₄₁	C ₁₄	-	1.02	0.07	0.03	2.67

WEST FIFE VITRINITES

Sample Name	n-alkane distribution	n-alkane maxima	OEP range(s)	CPI nC ₂₃ -nC ₂₇	Pr/nC ₁₇	Ph/nC ₁₈	Pr/Ph
NON HEAT-AFFECTED							
RIG 1	C ₁₀ -C ₃₃	C ₁₄	C ₁₉ -C ₂₃ C ₂₅ -C ₂₇	1.14	4.10	0.67	7.64
RIG 2	C ₁₀ -C ₃₃	C ₁₃ , C ₁₄	C ₁₉ -C ₂₇	1.15	5.08	0.61	9.37
HEAT-AFFECTED							
RIG 3	C ₁₁ -C ₃₄	C ₁₅ , C ₂₁	C ₁₅ -C ₂₁ , C ₂₁ -C ₂₇	1.13	5.07	0.52	10.50
RIG 4	C ₁₀ -C ₃₄	C ₁₄	C ₁₇ -C ₂₇	1.08	4.02	0.47	9.38
RIG 5	C ₁₀ -C ₃₅	C ₁₄ , C ₁₅	C ₂₅ -C ₂₇	1.08	0.76	0.11	8.23
RIG 6	C ₁₀ -C ₃₅	C ₁₄	-	1.03	1.33	0.19	8.00
RIG 7	C ₁₀ -C ₃₆	C ₁₅	-	1.01	0.80	0.14	6.23
RIG 8	C ₁₀ -C ₃₅	C ₁₃	-	1.04	0.65	0.12	6.06
RIG 9	C ₉ -C ₃₃	C ₁₂	-	1.05	0.35	0.11	3.67
RIG 10	C ₁₀ -C ₃₄	C ₁₃	-	1.06	0.30	0.11	3.17

MILTON OF BALGONIE

Sample Name	n-alkane distribution	n-alkane maxima	OEP range(s)	CPI nC ₂₃ -nC ₂₇	Pr/nC ₁₇	Ph/nC ₁₈	Pr/Ph
NON HEAT-AFFECTED							
MOB 1340	C ₁₁ -C ₃₈	C ₁₃ , C ₂₇	C ₁₉ -C ₂₉	1.29	2.97	0.68	5.93
MOB 1000	C ₁₂ -C ₃₅	C ₁₄	C ₂₁ -C ₂₉	1.32	0.97	0.40	3.50
MOB F	C ₁₁ -C ₃₃	C ₁₅	-	1.11	0.27	0.16	2.00
MOB G	C ₁₀ -C ₃₄	C ₁₅	-	1.07	0.28	0.20	1.86
MOB H	C ₉ -C ₃₄	C ₁₄	-	1.09	0.34	0.17	2.18
HEAT-AFFECTED							
MOB I	C ₁₀ -C ₃₂	C ₁₄	C ₂₅ -C ₂₇	1.13	1.03	0.31	4.36
MOB A	C ₁₀ -C ₃₃	C ₁₃	-	1.06	0.58	0.11	6.15
MOB B	C ₁₀ -C ₃₅	C ₁₉	C ₁₇ -C ₂₁	1.05	0.52	0.10	5.30
MOB C	C ₁₀ -C ₃₄	C ₁₄	C ₂₃ -C ₂₇	1.10	0.45	0.19	2.67
MOB D	C ₁₀ -C ₃₄	C ₁₄	-	1.05	0.13	0.05	2.80
MOB E	C ₁₀ -C ₃₄	C ₁₄	-	1.01	0.30	0.10	3.60
MOB 2496	C ₁₃ -C ₃₈	C ₁₆	C ₂₅ -C ₃₃	1.08	0.20	0.19	2.00

ADDITIONAL SAMPLES NEAR IGNEOUS INTRUSIONS

Sample Name	n-alkane distribution	n-alkane maxima	OEP range(s)	CPI nC ₂₃ -nC ₂₇	Pr/nC ₁₇	Ph/nC ₁₈	Pr/Ph
CBC	C ₁₃ -C ₃₈	C ₁₉	-	1.07	0.22	0.09	2.13
CBG	C ₉ -C ₃₅	C ₁₄	NDP	1.00	0.29	0.17	2.00
5A1	C ₁₀ -C ₃₆	C ₂₇	C ₁₇ -C ₂₉	1.17	0.57	0.24	3.52
5B	C ₁₄ -C ₃₄	C ₁₇	C ₂₅ -C ₂₉	1.07	0.31	0.29	1.28
5D	C ₉ -C ₃₆	C ₁₅ , C ₂₇	C ₂₅ -C ₂₉	1.16	0.32	0.13	3.00
SM W13	C ₁₀ -C ₂₈	C ₁₅	NDP	NDP	0.24	0.24	3.20
BB	C ₉ -C ₃₄	C ₁₅ , C ₂₃	C ₁₇ -C ₁₉	1.08	0.17	0.06	3.00
L	C ₁₀ -C ₃₆	C ₁₅	C ₁₉ -C ₂₇	1.02	1.06	0.24	6.00
CH ₄	C ₁₀ -C ₃₄	C ₁₄	-	1.05	0.28	0.20	2.25
SK 7	C ₁₀ -C ₁₈	C ₁₄	-	NDP	0.24	0.24	3.20

OILS AND BITUMENS

Sample Name	n-alkane distribution	n-alkane maxima	OEP range(s)	CPI nC ₂₃ -nC ₂₇	Pr/nC ₁₇	Ph/nC ₁₈	Pr/Ph
D'Arcy Oil	C ₁₀ -C ₃₆	C ₁₅	C ₁₅ -C ₁₇ C ₁₉ -C ₂₁	1.08	0.14	0.07	2.30
Milton Oil	C ₉ -C ₃₉	C ₁₅	C ₁₅ -C ₂₁ C ₂₃ -C ₂₅	1.03	0.17	0.07	2.33
St. Catherine's Bitumen	-	-	-	-	-	-	-
Orrock Bitumen	C ₁₁ -C ₃₆	C ₂₇	C ₂₁ -C ₂₇	1.18	2.95	1.09	2.33
Dyke-Rock Bitumen	C ₂₃ -C ₃₉	C ₂₉	-	-	-	-	-
Petershill Bitumen	-	-	-	-	-	-	-
Bitumen from Large Nodule	C ₁₇ -C ₃₈	C ₂₅	C ₂₅ -C ₂₇	1.13*	-	-	-
Bitumen from Small Nodule	C ₁₇ -C ₄₀	C ₂₇	C ₂₅ -C ₂₉	1.11*	-	-	-
Hydrocarbons in Brown Sandstone	C ₁₂ -C ₃₆	C ₂₇	C ₂₃ -C ₂₇	1.12	2.86	1.51	1.13
Hydrocarbons in Laminated Sandstone	C ₁₂ -C ₃₈	C ₂₁	C ₁₇ -C ₂₅	0.97	0.19	0.09	2.23

*C₂₅-C₂₇

TABLE A.4

PARAMETERS BASED ON TERPANES

LAMOSITES

Sample	%VR	Tm Ts	C ₃₂ αβ22S 22S+22R	C ₃₀ αβ αβ+βα	C ₂₉ αβ C ₃₀ αβ	C ₃₀ αβ peak 34	C ₂₈ bis C ₃₀ αβ	peak 30 C ₃₀ αβ	hopane sterane	hopane bicyclic
Parameter	a	b	c	d	e	f	g	h	i	j
Dunnet	0.50	1.21	0.46	0.84	0.58	11.80	-	0.39	8	16.1
Carron Harbour	0.55	1.73	0.45	0.81	0.80	4.88	0.13	0.47	7	11.6
St. Monance (East)	0.55	2.38	0.41	0.85	0.38	16.60	0.05	0.18	8	9.2
St. Monance (West)	0.55	-	0.25	0.67	0.56	5.50	0.10	-	6	2.7
Claremont Burn	0.52	2.14	0.35	0.79	0.34	7.92	0.02	0.24	5	tr
Queensferry	0.62	4.00	0.55	0.79	0.86	15.90	-	tr x	13	2.0
Pumpherstoun	0.81	2.63	0.54	0.87	0.71	12.10	-	0.38	46	10.6
Dunnet (Pumpherstoun)	0.50*	0.96	0.59	0.85	0.67	22.00	-	0.44	38	10.9
Fells	0.55*	1.06	0.58	0.87	0.66	12.90	-	0.38	28	12.5
Broxburn	0.55*	1.92	0.56	0.87	1.06	13.86	0.05	0.23	18	26.7
Mid Calder-1	0.81	1.30	0.57	0.83	0.52	14.86	tr bis	0.27	66	12.6
Mid Calder-2	1.05	1.18	0.60	0.85	0.51	17.33	tr bis	0.29	73	5.6
Mid Calder-3	2.16	1.05	0.59	0.86	0.74	-	-	0.31	16	10.3

LAMOSITES continued

Sample	%VR	$\frac{T_m}{T_s}$	$\frac{C_{32}\alpha\beta 22S}{22S+22R}$	$\frac{C_{30}\alpha\beta}{\alpha\beta+\beta\alpha}$	$\frac{C_{29}\alpha\beta}{C_{30}\alpha\beta}$	$\frac{C_{30}\alpha\beta}{\text{peak 34}}$	$\frac{C_{28}\text{ bis}}{C_{30}\alpha\beta}$	$\frac{\text{peak 30}}{C_{30}\alpha\beta}$	$\frac{\text{hopane}}{\text{sterane}}$	$\frac{\text{hopane}}{\text{bicyclic}}$
Parameter	a	b	c	d	e	f	g	h	i	j
Binny Craig	3.30	1.33	0.60	0.87	0.68	-	-	0.15	23	7.4

TORBANITES AND TORBANITIC SHALES

Westfield Oil Shale	0.55	22.3	0.43	0.68	0.81	7.29	-	0.16	37	6.2
Westfield Canneloid Shale	0.56	-	0.23	0.63	0.90	7.85	-	-	7	49.8
Esk Mouth Torbanite	0.68	9.75	0.52	0.76	0.69	3.67	0.05	0.29	16	16.0
Lillies Shale	0.44*	7.13	0.57	0.71	0.89	3.78	0.04	0.36	35	7.6

'WOODS' AND 'VITRINITES'

Sample	%VR	$\frac{T_m}{T_s}$	$\frac{C_{32}\alpha\beta 22S}{22S+22R}$	$\frac{C_{30}\alpha\beta}{\alpha\beta+\beta\alpha}$	$\frac{C_{29}\alpha\beta}{C_{30}\alpha\beta}$	$\frac{C_{30}\alpha\beta}{\text{peak 34}}$	$\frac{C_{28}\text{ bis}}{C_{30}\alpha\beta}$	$\frac{\text{peak 30}}{C_{30}\alpha\beta}$	$\frac{\text{hopane}}{\text{sterane}}$	$\frac{\text{hopane}}{\text{bicyclic}}$
Parameter	a	b	c	d	e	f	g	h	i	j
Orrock "Wood"	0.39	4.24	0.29	0.76	0.59	0.65	0.32	-	4	0.9
Orrock "Vitrinite"	0.39	2.90	0.47	0.71	0.65	1.98	0.08	-	5	17.8
Kirktron "Vitrinite"	0.53	7.29	0.60	0.82	1.02	2.41	0.10	-	4	0.3
Coalyard "Vitrinite"	0.59	7.85	0.47	0.62	1.25	10.40	0.03	-	2	8.9

MISCELLANEOUS HUMIC COALS

Pyotshore Coal	0.54	-	0.46	0.63	1.13	1.84	-	-	11	7.1
Coal Above Queensland Marine Band	0.64	-	0.33	0.62	0.86	1.82	-	-	10	28.1
Coal Above Westfield Oil Shale	0.55	-	0.29	0.64	0.67	3.36	-	-	22	19.0

EAST FIFE COAST

ST. MONANCE-ANSTRUTHER AND WORMISTONE SECTIONS (including Anstruther Borehole)

Sample	%VR	$\frac{T_m}{T_s}$	$\frac{C_{32\alpha\beta 22S}}{22S+22R}$	$\frac{C_{30\alpha\beta}}{\alpha\beta+\beta\alpha}$	$\frac{C_{29\alpha\beta}}{C_{30\alpha\beta}}$	$\frac{C_{30\alpha\beta}}{\text{peak } 34}$	$\frac{C_{28\text{ bis}}}{C_{30\alpha\beta}}$	$\frac{\text{peak } 30}{C_{30\alpha\beta}}$	$\frac{\text{hopane}}{\text{sterane}}$	$\frac{\text{hopane}}{\text{bicyclic}}$
Parameter	a	b	c	d	e	f	g	h	i	j
SM 1	0.50	-	0.26	0.56	0.66	3.17	-	-	6	tr bic
SM 4	0.53	-	0.27	0.60	0.72	2.21	-	-	15	1.2
SM 5	0.53	tr T _S	0.23	0.65	0.59	2.64	-	-	15	-
SM 6	0.54	-	0.28	0.65	0.66	1.55	-	-	5	4.3
SM 7	0.55	2.38	0.41	0.85	0.38	16.60	0.05	0.18	8	9.2
SM 12	0.56	-	0.24	0.68	0.66	1.65	-	-	5	-
SM 14	0.58	-	0.27	0.62	1.17	1.94	-	-	6	17.0
SM 15	0.63	-	0.29	0.59	0.75	8.00	-	-	27	tr bic
SM 17	0.63	2.61	0.40	0.60	0.59	3.15	-	0.40	10	51.7
SM 18	0.63	8.50	0.35	0.70	0.63	3.57	0.11	-	5	13.3
SM 19	0.63	-	0.39	0.59	0.85	3.15	-	-	17	60.0
SM 22	0.63	6.86	0.45	0.74	0.65	5.82	0.04	0.36	8	22.2
P Sh	0.63	3.00	0.44	0.81	0.60	10.90	-	0.27	10	17.0

ST. MONANCE-ANSTRUTHER AND WORMISTONE SECTIONS (including Anstruther Borehole) continued

Sample	%VR	$\frac{T_m}{T_s}$	$\frac{C_{32\alpha\beta 22S}}{22S+22R}$	$\frac{C_{30\alpha\beta}}{\alpha\beta+\beta\alpha}$	$\frac{C_{29\alpha\beta}}{C_{30\alpha\beta}}$	$\frac{C_{30\alpha\beta}}{\text{peak 34}}$	$\frac{C_{28\text{ bis}}}{C_{30\alpha\beta}}$	$\frac{\text{peak 30}}{C_{30\alpha\beta}}$	$\frac{\text{hopane}}{\text{sterane}}$	$\frac{\text{hopane}}{\text{bicyclic}}$
Parameter	a	b	c	d	e	f	g	h	i	j
Q	0.63	3.88	0.53	0.82	0.69	11.40	0.04	0.24	12	13.2
T	0.65	-	0.47	0.64	0.88	6.93	-	-	39	3.8
SBO 7516	0.75	24.5	0.52	0.65	0.76	18.50	-	-	17	10.2
SBO 7517	0.78	1.89	0.48	0.84	0.58	14.70	tr bis	0.26	13	27.3
ANST F	0.83	2.00	0.55	0.83	0.42	21.80	-	0.20	5	5.9
SM 29	0.55	-	0.23	0.69	0.45	1.54	0.07	-	7	20.8

RANDERSTON SECTION

SM 24	0.54	-	0.21	0.60	0.73	6.94	-	-	32	22.1
SM 25	0.54	-	0.27	0.74	0.43	1.75	0.08	-	5	-
SM 26	0.54	-	0.21	0.61	0.70	1.37	-	-	31	12.6
SM 27	0.54	-	0.29	0.49	0.75	14.10	-	-	12	-

KINKELL BRAES SECTION

Sample	%VR	$\frac{T_m}{T_s}$	$\frac{C_{32}\alpha\beta 22S}{22S+22R}$	$\frac{C_{30}\alpha\beta}{\alpha\beta+\beta\alpha}$	$\frac{C_{29}\alpha\beta}{C_{30}\alpha\beta}$	$\frac{C_{30}\alpha\beta}{\text{peak 34}}$	$\frac{C_{28}\text{ bis}}{C_{30}\alpha\beta}$	$\frac{\text{peak 30}}{C_{30}\alpha\beta}$	$\frac{\text{hopane}}{\text{sterane}}$	$\frac{\text{hopane}}{\text{bicyclic}}$
Parameter	a	b	c	d	e	f	g	h	i	j
St A6	0.58	-	0.22	0.56	0.90	1.47	-	-	28	7.1
St A8	0.57	-	0.21	0.65	0.44	2.40	0.15	-	11	14.7
St A9	0.57	-	0.29	0.51	0.74	3.03	tr bis	-	13	7.9

MISCELLANEOUS CALCIFEROUS SANDSTONES MEASURES

SMW 14	0.55	tr T_s	0.28	0.65	1.84	2.19	0.11	-	21	13.7
CS 4177	0.39*	2.30	0.48	0.74	0.56	5.83	-	-	5	17.6
CS	0.41*	tr T_m	0.40	0.63	0.68	13.90	-	-	17	8.6
CS 7	0.46*	21.6	0.53	0.70	0.84	-	-	-	6	14.0

KINGHORN-KIRKALDY SECTION

TK 3	0.78	tr T _s	0.37	0.56	1.52	16.00	-	-	18	0.5
MK 2	0.53	-	0.28	0.64	0.56	8.58	-	-	11	-
AB 2	0.70	-	0.23	0.63	0.41	3.70	-	tr x	10	11.8

WEST WEMYSS

Sample	%VR	$\frac{T_m}{T_s}$	$\frac{C_{32}\alpha\beta 22S}{22S+22R}$	$\frac{C_{30}\alpha\beta}{\alpha\beta+\beta\alpha}$	$\frac{C_{29}\alpha\beta}{C_{30}\alpha\beta}$	$\frac{C_{30}\alpha\beta}{\text{peak 34}}$	$\frac{C_{28}\text{ bis}}{C_{30}\alpha\beta}$	peak 30 $\frac{C_{30}\alpha\beta}{C_{30}\alpha\beta}$	$\frac{\text{hopane}}{\text{sterane}}$	$\frac{\text{hopane}}{\text{bicyclic}}$
Parameter	a	b	c	d	e	f	g	h	i	j
BUSH SH	1.21	0.62	0.59	0.79	1.80	6.00	-	-	24	-
BSOS	0.37*	-	0.19	0.65	0.62	3.55	0.05	-	12	17.8

MARINE BANDS

QUEEENSLIE MARINE BAND

Sample	%VR	$\frac{T_m}{T_s}$	$\frac{C_{32\alpha\beta 22S}}{22S+22R}$	$\frac{C_{30\alpha\beta}}{\alpha\beta+\beta\alpha}$	$\frac{C_{29\alpha\beta}}{C_{30\alpha\beta}}$	$\frac{C_{30\alpha\beta}}{\text{peak 34}}$	$\frac{C_{28\text{ bis}}}{C_{30\alpha\beta}}$	$\frac{\text{peak 30}}{C_{30\alpha\beta}}$	$\frac{\text{hopane}}{\text{sterane}}$	$\frac{\text{hopane}}{\text{bicyclic}}$
Parameter	a	b	c	d	e	f	g	h	i	j
QMB A43	0.38*	5.67	0.52	0.75	0.46	8.50	0.17	0.20	3	7.5
QMB A2	0.66	17.60	0.37	0.65	0.56	7.14	-	-	7	4.2
QMB 69	0.46*	4.09	0.49	0.70	0.57	5.89	0.06	-	14	5.1
QMB 64	0.34*	6.17	0.53	0.70	0.47	9.63	0.05	-	12	5.6
QMB 41	0.58	10.20	0.44	0.73	0.56	12.00	-	-	5	4.2

CALMY BLAES

C 3	0.50	6.33	0.33	0.76	0.31	10.50	0.08	0.13	12	13.5
C10	0.60	tr T _s	0.45	0.63	0.64	11.55	0.05	-	11	40.6
C82	0.34*	tr T _s	0.35	0.66	0.36	10.50	-	0.08	14	2.9
C 499	0.37*	tr T _s	0.28	0.68	0.33	9.45	-	0.10	9	8.2

KELTY BLACKBAND

Sample	%VR	Tm Ts	C ₃₂ αβ22S 22S+22R	C ₃₀ αβ αβ+βα	C ₂₉ αβ C ₃₀ αβ	C ₃₀ αβ peak 34	C ₂₈ bis C ₃₀ αβ	peak 30 C ₃₀ αβ	hopane sterane	hopane bicyclic
Parameter	a	b	c	d	e	f	g	h	i	j
KBBI 185	0.39*	13.30	0.55	0.52	1.09	3.76	0.21	-	6	8.0
KBBI 547/2	0.44*	-	0.41	0.68	0.88	2.10	0.61	-	5	5.6
KBBI 535/9	0.38*	17.30	0.32	0.67	0.35	2.33	0.51	-	5	8.4
KBBI 140	0.36*	2.19	0.42	0.80	0.67	3.35	0.25	0.46	23	13.2
KBBI 185b	0.46*	-	0.33	0.66	0.70	2.51	0.05	-	11	5.2
KBBI 385	0.38*	3.75	0.60	0.79	0.72	-	-	0.19	55	7.7

BLACK METALS

BM 195a	0.66	-	0.60	0.72	1.12	-	-	-	5	4.4
BM 380	0.49*	14.20	0.54	0.68	0.99	9.00	-	-	17	-
BM 561	0.71	-	0.31	0.64	0.68	10.10	-	-	9	8.7
BM 641	0.59*	11.00	0.60	0.61	1.36	-	0.05	-	13	4.0
BM 266	0.36*	5.44	0.44	0.67	0.64	3.57	0.46	-	6	9.8
BM 806a	0.40*	-	0.39	0.69	0.68	3.61	0.19	0.08	8	4.6
BM 246	0.48*	8.40	0.46	0.70	0.69	8.17	0.28	0.13	14	9.7

JOHNSTONE SHELL BED

Sample	%VR	$\frac{T_m}{T_s}$	$\frac{C_{32}\alpha\beta 22S}{22S+22R}$	$\frac{C_{30}\alpha\beta}{\alpha\beta+\beta\alpha}$	$\frac{C_{29}\alpha\beta}{C_{30}\alpha\beta}$	$\frac{C_{30}\alpha\beta}{\text{peak } 34}$	$\frac{C_{28}\text{ bis}}{C_{30}\alpha\beta}$	$\frac{\text{peak } 30}{C_{30}\alpha\beta}$	$\frac{\text{hopane}}{\text{sterane}}$	$\frac{\text{hopane}}{\text{bicyclic}}$
Parameter	a	b	c	d	e	f	g	h	i	j
JSB 18	0.58	-	0.29	0.65	0.60	1.90	-	-	9	9.0
JSB 10	0.71	-	0.60	0.72	1.01	8.42	-	-	26	4.0
JSB 334	0.65	25.00	0.60	0.75	0.96	6.12	0.03	-	33	2.6
JSB 498	1.11	tr T_s	0.36	0.64	0.73	3.85	0.02	-	11	5.8
JSB 13	0.95	-	0.60	0.85	0.85	-	-	-	8	0.9
JSB 294b	0.87	tr T_s	0.60	0.79	0.95	-	-	-	39	2.2

MISCELLANEOUS SAMPLES

Sample	%VR	$\frac{T_m}{T_s}$	$\frac{C_{32}\alpha\beta 22S}{22S+22R}$	$\frac{C_{30}\alpha\beta}{\alpha\beta+\beta\alpha}$	$\frac{C_{29}\alpha\beta}{C_{30}\alpha\beta}$	$\frac{C_{30}\alpha\beta}{\text{peak } 34}$	$\frac{C_{28} \text{ bis}}{C_{30}\alpha\beta}$	$\frac{\text{peak } 30}{C_{30}\alpha\beta}$	$\frac{\text{hopane}}{\text{sterane}}$	$\frac{\text{hopane}}{\text{bicyclic}}$
Parameter	a	b	c	d	e	f	g	h	i	j
M 4194	0.56*	12.30	0.52	0.73	0.79	-	-	-	54	17.4
CO 1	0.78	tr T_s	0.59	0.62	1.06	9.90	-	-	17	5.9
CO 6	0.67	10.60	0.55	0.66	0.76	5.78	-	-	24	2.7
FOF 1b	0.68	-	0.46	0.67	0.63	4.11	0.05	-	4	5.3
BC	0.61*	tr T_s	0.60	0.77	0.80	-	-	-	130	1.0

GARTARRY TOLL BOREHOLE

1864	0.85	11.00	0.59	0.75	0.42	6.47	0.21	0.11	12	7.3
1916	0.85	4.00	0.60	0.79	0.49	15.40	-	-	8	4.6
2284	0.90	6.38	0.60	0.76	0.61	-	-	-	22	1.6

MUSSELBURGH N°1 VITRINITES

Sample	%VR	$\frac{T_m}{T_s}$	$\frac{C_{32\alpha\beta 22S}}{22S+22R}$	$\frac{C_{30\alpha\beta}}{\alpha\beta+\beta\alpha}$	$\frac{C_{29\alpha\beta}}{C_{30\alpha\beta}}$	$\frac{C_{30\alpha\beta}}{\text{peak 34}}$	$\frac{C_{28\text{ bis}}}{C_{30\alpha\beta}}$	$\frac{\text{peak 30}}{C_{30\alpha\beta}}$	$\frac{\text{hopane}}{\text{sterane}}$	$\frac{\text{hopane}}{\text{bicyclic}}$
Parameter	a	b	c	d	e	f	g	h	i	j
M1	0.59	-	0.38	0.65	0.94	2.71	tr bis	-	11	19.0
M2	0.70	-	0.52	0.66	1.24	3.56	-	-	16	8.0
M3	0.80	-	0.58	0.67	1.29	4.58	tr C ₂₈	-	26	6.7
M4	0.92	tr T _s	0.60	0.75	1.27	4.89	-	-	37	5.2
M5	0.99	tr T _s	0.59	0.76	0.99	5.29	-	-	35	3.8

CARRINGTON SAMPLES

660	0.61	tr T _s	0.44	0.65	0.99	1.75	0.04	-	12	ND
1600	0.65	9.45	0.50	0.73	0.68	3.11	0.09	-	14	ND
2600	0.70	41.30	0.57	0.68	1.12	2.18	-	-	13	ND
3100	0.75	3.46	0.57	0.79	0.79	7.00	-	-	24	ND
3800	0.86	2.54	0.57	0.80	0.79	6.75	0.14	0.50	36	ND
4779	0.82	1.01	0.59	0.89	0.54	-	0.27	0.58	36	ND
5310	0.92	1.43	0.57	0.87	0.77	-	0.19	0.35	14	ND

WEST FIVE VITRINITES

Sample	%VR	$\frac{T_m}{T_s}$	$\frac{C_{32\alpha\beta}22S}{22S+22R}$	$\frac{C_{30\alpha\beta}}{\alpha\beta+\beta\alpha}$	$\frac{C_{29\alpha\beta}}{C_{30\alpha\beta}}$	$\frac{C_{30\alpha\beta}}{\text{peak 34}}$	$\frac{C_{28\text{ bis}}}{C_{30\alpha\beta}}$	$\frac{\text{peak 30}}{C_{30\alpha\beta}}$	$\frac{\text{hopane}}{\text{sterane}}$	$\frac{\text{hopane}}{\text{bicyclic}}$
Parameter	a	b	c	d	e	f	g	h	i	j
NON HEAT-AFFECTED										
RIG 1	0.64	τT_s	0.58	0.67	1.62	1.48	0.07	-	8	2.1
RIG 2	0.71	-	0.54	0.66	1.21	2.48	-	-	20	5.9
HEAT-AFFECTED										
RIG 3	0.80	-	0.56	0.65	1.40	2.58	-	-	18	8.7
RIG 4	0.91	-	0.58	0.66	1.37	5.47	-	-	32	7.0
RIG 5	0.97	τT_s	0.59	0.69	1.30	14.30	-	-	28	5.3
RIG 6	1.06	12.30	0.60	0.91	0.88	11.20	-	-	46	1.8
RIG 7	1.15	6.86	0.59	0.90	0.92	10.10	-	-	39	1.5
RIG 8	1.25	4.56	0.59	0.87	0.81	18.50	-	-	52	0.5
RIG 9	1.50	23.30	0.57	0.69	1.45	2.30	-	-	19	1.6
RIG 10	1.62	1.53	0.58	0.80	0.90	10.40	-	-	5	-

MILTON OF BALGONIE

Sample	%VR	$\frac{T_m}{T_s}$	$\frac{C_{32}\alpha\beta 22S}{22S+22R}$	$\frac{C_{30}\alpha\beta}{\alpha\beta+\beta\alpha}$	$\frac{C_{29}\alpha\beta}{C_{30}\alpha\beta}$	$\frac{C_{30}\alpha\beta}{\text{peak 34}}$	$\frac{C_{28}\text{ bis}}{C_{30}\alpha\beta}$	$\frac{\text{peak 30}}{C_{30}\alpha\beta}$	$\frac{\text{hopane}}{\text{sterane}}$	$\frac{\text{hopane}}{\text{bicyclic}}$
Parameter	a	b	c	d	e	f	g	h	i	j
NON HEAT-AFFECTED										
MOB 1340	0.47	-	0.40	0.68	1.37	1.44	0.13	0.13	17	3.9
MOB 1000	0.54	tr T_s	0.42	0.63	0.87	2.06	0.05	0.04	8	4.3
MOB F	0.73	1.90	0.59	0.86	0.83	13.70	-	0.23	23	0.6
MOB G	0.80	1.60	0.61	0.88	0.80	14.00	-	0.28	25	0.9
MOB H	0.92	2.53	0.61	0.85	0.81	10.50	-	0.16	27	1.1
HEAT-AFFECTED										
MOB I	0.67	33.00	0.55	0.66	1.48	2.56	0.03	-	23	6.7
MOB A	0.75	31.50	0.60	0.69	1.78	3.41	tr bis	-	24	4.0
MOB B	0.80	19.30	0.61	0.71	2.10	4.55	-	-	36	3.9
MOB C	0.91	4.36	0.61	0.81	0.97	10.10	-	tr x	21	2.3
MOB D	1.44	1.10	0.61	0.87	0.61	-	-	0.28	13	1.0
MOB E	1.91	0.88	0.61	0.87	0.67	11.60	-	0.20	8	1.7
MOB 2496	2.46	1.50	0.60	0.87	0.83	9.36	-	0.24	5	-

ADDITIONAL SAMPLES NEAR INTRUSIONS

Sample	%VR	$\frac{T_m}{T_s}$	$\frac{C_{32\alpha\beta 22S}}{22S+22R}$	$\frac{C_{30\alpha\beta}}{\alpha\beta+\beta\alpha}$	$\frac{C_{29\alpha\beta}}{C_{30\alpha\beta}}$	$\frac{C_{30\alpha\beta}}{\text{peak 34}}$	$\frac{C_{28\text{ bis}}}{C_{30\alpha\beta}}$	$\frac{\text{peak 30}}{C_{30\alpha\beta}}$	$\frac{\text{hopane}}{\text{sterane}}$	$\frac{\text{hopane}}{\text{bicyclic}}$
Parameter	a	b	c	d	e	f	g	h	i	j
CBC	2.68	0.79	0.61	0.86	0.49	11.33	-	0.31	19	12.1
CBG	2.05	1.61	0.52	0.75	0.91	-	-	0.16	5	1.6
5A1	0.67	tr T_s	0.33	0.55	1.22	14.90	-	-	7	2.3
5B	2.36	7.56	0.42	0.62	1.11	8.17	-	-	13	-
5D	2.25	tr T_s	0.36	0.51	1.09	18.50	-	-	8	3.5
BB	1.64	8.14	0.47	0.69	1.17	18.80	tr bis	-	11	0.7
L	0.71	-	0.60	0.60	1.84	-	-	-	88	2.2
CH4	3.36	6.45	0.46	0.61	1.33	-	tr bis	-	11	0.1
SMW 14	-	-	-	-	-	-	-	-	-	-
SK 7	-	-	-	-	-	-	-	-	-	-

OILS AND BITUMENS

Sample	%VR	$\frac{T_m}{T_s}$	$\frac{C_{32}\alpha\beta 22S}{22S+22R}$	$\frac{C_{30}\alpha\beta}{\alpha\beta+\beta\alpha}$	$\frac{C_{29}\alpha\beta}{C_{30}\alpha\beta}$	$\frac{C_{30}\alpha\beta}{\text{peak}34}$	$\frac{C_{28}\text{ bis}}{C_{30}\alpha\beta}$	$\frac{\text{peak } 30}{C_{30}\alpha\beta}$	$\frac{\text{hopane}}{\text{sterane}}$	$\frac{\text{hopane}}{\text{bicyclic}}$
Parameter	a	b	c	d	e	f	g	h	i	j
D'Arcy Oil		0.78	0.60	0.84	0.57	13.40	tr bis	0.41	47	5.4
Milton Oil		0.71	0.60	0.87	0.50	14.60	tr bis	0.31	41	5.0
St Catherine's Bitumen		0.70	0.60	0.90	0.61	-	-	0.40	45	-
Orrock Bitumen		4.00	0.43	0.73	0.65	1.68	-	0.58	31	124.9
Dyke-Rock Bitumen		6.62	0.55	0.68	1.11	-	-	0.19	40	76.3
Petershill Bitumen		1.14	0.58	0.85	0.64	-	-	0.38	21	59.2
Bitumen From Large Nodule		1.37	0.55	0.86	0.79	12.90	-	0.30	70	45.5
Bitumen From Small Nodule		1.18	0.60	0.86	0.63	14.70	-	0.33	38	104.7
Hydrocarbons In Brown Sandstone		0.59	0.60	0.87	0.52	11.60	-	0.40	50	4.8
Hydrocarbons In Laminated Sandstone		0.57	0.60	0.87	0.51	11.44	-	0.43	44	6.6

TABLE A.5

PARAMETERS BASED ON STERANES

LAMOSITES

Sample	%VR	$\frac{C_{29}\alpha\alpha\alpha 20S}{20S+20R}$	$\frac{C_{29}\alpha\beta\beta}{C_{29}\alpha\beta\beta+\alpha\alpha\alpha}$	$\frac{C_{29}\alpha\alpha\alpha 20R}{C_{27}\alpha\alpha\alpha 20R}$	$C_{27}:C_{28}:C_{29}$	$\frac{\text{diasterane}}{\text{sterane}}$
Parameter	a	k	l	m	n	o
Dunnet	0.50	0.09	0.18	1.98	24:28:48	0.13
Carron Harbour	0.55	0.20	0.22	1.53	24:40:36	0.35
St Monance (East)	0.55	0.14	0.30	1.59	26:33:41	0.35
St Monance (West)	0.55	0.11	0.28	1.49	34:15:51	0.51
Claremont Burn	0.52	0.10	0.26	1.66	26:30:44	0.11
Queensferry	0.62	0.20	0.18	2.00	21:38:41	0.16
Pumpherstoun	0.81	0.21	0.26	1.16	37:21:42	0.34
Dunnet (Pumpherstoun)	0.50*	0.36	0.39	2.27	23:24:53	0.15
Fells	0.55*	0.25	0.29	1.77	30:18:52	0.11
Broxburn	0.55*	0.32	0.24	2.00	24:27:49	-
Mid Calder-1	0.81	0.49	0.44	1.31	29:34:37	0.31
Mid Calder-2	1.05	0.54	0.44	0.76	28:33:29	0.33
Mid Calder-3	2.16	0.42	0.55	2.24	22:28:50	0.14
Binny Craig	3.30	0.55	0.58	1.43	30:27:43	0.41

TORBANITES AND TORBANITIC SHALES

Sample	%VR	$\frac{C_{29}\alpha\alpha\alpha 20S}{20S+20R}$	$\frac{C_{29}\alpha\beta\beta}{C_{29}\alpha\beta\beta+\alpha\alpha\alpha}$	$\frac{C_{29}\alpha\alpha\alpha 20R}{C_{27}\alpha\alpha\alpha 20R}$	$C_{27}:C_{28}:C_{29}$	$\frac{\text{diasterane}}{\text{sterane}}$
Parameter	a	k	l	m	n	o
Westfield Oil Shale	0.55	0.15	0.41	0.88	42:21:37	0.83
Westfield Cannelold Shale	0.56	0.06	-	3.40	15:33:52	0.22
Esk Mouth Torbanite	0.68	0.24	0.25	2.61	22:20:58	0.53
Lillies Shale	0.44*	0.41	0.34	2.02	24:28:48	0.47

'WOODS' AND 'VITRINITES'

Sample	%VR	$\frac{C_{29}\alpha\alpha\alpha 20S}{20S+20R}$	$\frac{C_{29}\alpha\beta\beta}{C_{29}\alpha\beta\beta+\alpha\alpha\alpha}$	$\frac{C_{29}\alpha\alpha\alpha 20R}{C_{27}\alpha\alpha\alpha 20R}$	$C_{27}:C_{28}:C_{29}$	$\frac{\text{diasterane}}{\text{sterane}}$
Parameter	a	k	l	m	n	o
Orrock "Wood"	0.39	0.24	0.56	5.17	12:23:65	0.70
Orrock "Vitrinite"	0.39	0.10	0.27	3.31	15:36:49	0.74
Kirkton "Vitrinite"	0.53	0.28	0.28	0.70	40:31:29	1.42
Coalyard "Vitrinite"	0.59	0.10	-	6.94	10:22:68	0.21

MISCELLANEOUS HUMIC COALS

Pyotshore Coal	0.54	0.18	tr $\alpha\beta\beta$	8.23	7:38:55	0.54
Coal Above Queenslie Marine Band	0.64	0.18	tr $\alpha\beta\beta$	8.23	7:38:55	0.54
Coal Above Westfield Oil Shale	0.55	0.14	0.39	1.74	25:32:43	0.65

EAST FIFE COAST

ST MONANCE-ANSTRUTHER AND WORMISTONE SECTIONS (including Anstruther Borehole)

Sample	%VR	$\frac{C_{29}\alpha\alpha\alpha20S}{20S+20R}$	$\frac{C_{29}\alpha\beta\beta}{C_{29}\alpha\beta\beta+\alpha\alpha\alpha}$	$\frac{C_{29}\alpha\alpha\alpha20R}{C_{27}\alpha\alpha\alpha20R}$	$C_{27}:C_{28}:C_{29}$	$\frac{\text{diasterane}}{\text{sterane}}$
Parameter	a	k	l	m	n	o
SM 1	0.50	0.08	0.22	2.61	23:18:59	0.29
SM 4	0.53	0.16	0.26	2.65	20:26:54	0.49
SM 5	0.53	0.09	0.26	1.94	27:22:51	0.64
SM 6	0.54	0.08	0.20	12.10	4:50:46	0.57
SM 7	0.55	0.14	0.30	1.59	26:33:41	0.35
SM 12	0.56	0.09	0.32	2.16	13:15:72	0.51
SM 14	0.58	0.11	-	10.00	5:47:48	0.68
SM 15	0.63	0.12	0.19	1.39	35:15:50	0.24
SM 17	0.63	0.06	0.15	1.11	39:18:43	0.38
SM 18	0.63	0.14	0.16	2.92	20:21:59	0.14
SM 19	0.63	0.11	0.21	3.68	17:20:63	0.48
SM 22	0.63	0.12	0.26	2.04	27:18:55	0.36
P Sh	0.63	0.13	0.29	1.63	28:26:46	0.16

ST MONANCE-ANSTRUTHER AND WORMISTONE SECTIONS (including Anstruther Borehole) continued

Sample	%VR	$\frac{C_{29}\alpha\alpha\alpha20S}{20S+20R}$	$\frac{C_{29}\alpha\beta\beta}{C_{29}\alpha\beta\beta+\alpha\alpha}$	$\frac{C_{29}\alpha\alpha\alpha20R}{C_{27}\alpha\alpha\alpha20R}$	$C_{27}:C_{28}:C_{29}$	$\frac{\text{diasterane}}{\text{sterane}}$
Parameter	a	k	l	m	n	o
Q	0.63	0.20	no $\alpha\beta\beta$	1.81	24:32:44	0.06
T	0.65	0.17	0.20	4.35	13:30:57	0.32
SBO 7516	0.75	0.15	no $\alpha\beta\beta$	1.93	28:18:56	0.33
SBO 7517	0.78	0.14	0.19	1.58	32:18:50	0.13
ANST F	0.83	0.29	0.26	1.62	30:21:49	0.31
SM 29	0.55	0.14	0.36	4.95	13:14:73	0.55

RANDERSTON SECTION

SM 24	0.54	0.10	tr $\alpha\beta\beta$	2.00	28:17:55	0.39
SM 25	0.54	0.10	0.25	5.67	13:15:72	0.65
SM 26	0.54	0.16	0.40	5.10	10:36:54	0.70
SM 27	0.54	0.07	no $\alpha\beta\beta$	3.12	20:16:64	0.12

KINKELL BRAES SECTION

Sample	%VR	$\frac{C_{29}\alpha\alpha\alpha20S}{20S+20R}$	$\frac{C_{29}\alpha\beta\beta}{C_{29}\alpha\beta\beta+\alpha\alpha\alpha}$	$\frac{C_{29}\alpha\alpha\alpha20R}{C_{27}\alpha\alpha\alpha20R}$	$C_{27}:C_{28}:C_{29}$	$\frac{\text{diasterane}}{\text{sterane}}$
Parameter	a	k	l	m	n	o
St A6	0.58	0.08	0.35	6.29	10:27:63	-
St A8	0.57	0.19	0.27	2.06	26:35:39	0.17
St A9	0.57	0.09	0.21	1.67	28:26:46	-

MISCELLANEOUS CALCIFEROUS SANDSTONE MEASURES

SMW 14	0.55	0.19	0.33	2.30	22:28:50	0.48
CS 4177	0.39*	0.13	no $\alpha\beta\beta$	3.18	17:28:55	0.11
CS	0.41*	0.16	0.29	1.96	28:16:56	0.23
CS 7	0.46*	0.35	0.16	1.20	35:23:42	-

KINGHORN-KIRKALDY SECTION

TK 3	0.78	0.14	no $\alpha\beta\beta$	1.10	39:19:42	0.42
MK 2	0.53	0.06	0.17	1.66	29:22:49	0.42
AB 2	0.70	0.06	tr $\alpha\beta\beta$	0.99	43:16:41	0.37

WEST WEMYSS

Sample	%VR	$\frac{C_{29}\alpha\alpha\alpha 20S}{20S+20R}$	$\frac{C_{29}\alpha\beta\beta}{C_{29}\alpha\beta\beta+\alpha\alpha\alpha}$	$\frac{C_{29}\alpha\alpha\alpha 20R}{C_{27}\alpha\alpha\alpha 20R}$	$C_{27}:C_{28}:C_{29}$	$\frac{\text{diasterane}}{\text{sterane}}$
Parameter	a	k	l	m	n	o
BUSH SH	1.21	0.57	0.48	0.21	63:23:14	0.88
BS OS	0.37*	0.14	tr $\alpha\beta\beta$	1.59	30:23:47	0.24

MARINE BANDS

QUEENSLIE MARINE BAND

Sample	%VR	$\frac{C_{29\alpha\alpha\alpha}20S}{20S+20R}$	$\frac{C_{29\alpha\beta\beta}}{C_{29\alpha\beta\beta}+\alpha\alpha\alpha}$	$\frac{C_{29\alpha\alpha\alpha}20R}{C_{27\alpha\alpha\alpha}20R}$	$C_{27}:C_{28}:C_{29}$	$\frac{\text{diasterane}}{\text{sterane}}$
Parameter	a	k	l	m	n	o
QMB A43	0.60	0.29	0.25	0.51	57:13:30	0.63
QMB A2	0.66	0.14	0.22	0.72	50:14:36	0.58
QMB 69	0.46*	0.23	0.24	0.83	44:19:37	0.64
QMB 64	0.34*	0.23	0.25	1.24	32:28:40	0.69
QMB 41	0.58	0.16	0.18	0.83	44:19:37	0.63

CALMY BLAES

C 3	0.50	0.09	0.25	1.43	31:24:45	0.22
C 10	0.60	0.18	0.24	0.97	43:16:41	0.48
C 82	0.34*	0.18	0.28	0.39	57:21:22	0.82
C 499	0.37*	0.14	0.30	0.39	60:17:23	0.78

KELTY BLACKBAND

Sample	%VR	$\frac{C_{29}\alpha\alpha\alpha20S}{20S+20R}$	$\frac{C_{29}\alpha\beta\beta}{C_{29}\alpha\beta\beta+\alpha\alpha\alpha}$	$\frac{C_{29}\alpha\alpha\alpha20R}{C_{27}\alpha\alpha\alpha20R}$	$C_{27}:C_{28}:C_{29}$	$\frac{\text{diasterane}}{\text{sterane}}$
Parameter	a	k	l	m	n	o
KBBI 185	0.39*	0.34	0.33	2.04	27:16:57	0.54
KBBI 547/2	0.44*	0.34	0.32	1.44	25:19:56	0.54
KBBI 535/9	0.38*	0.27	0.42	2.08	27:17:56	0.48
KBBI 140	0.36*	0.40	0.41	1.32	34:20:46	0.59
KBBI 185b	0.46*	0.19	0.37	1.88	26:26:48	0.76
KBBI 385	0.38*	0.37	0.43	0.69	50:16:34	0.36

BLACK METALS

BM 195a	0.66	0.42	-	2.07	26:21:53	-
BM 380	0.49*	0.43	-	1.67	25:32:43	-
BM 561	0.71	0.09	$\pi\alpha\beta\beta$	1.35	37:14:49	0.22
BM 641	0.59*	0.44	0.48	0.71	49:16:35	0.40
BM 266	0.36*	0.38	0.24	1.17	35:25:40	0.33
BM 806a	0.40*	0.25	0.32	1.88	29:16:55	0.60
BM 246	0.48*	0.37	0.17	1.35	34:21:45	0.27

JOHNSTONE SHELL BED

Sample	%VR	$\frac{C_{29}\alpha\alpha\alpha20S}{20S+20R}$	$\frac{C_{29}\alpha\beta\beta}{C_{29}\alpha\beta\beta+\alpha\alpha\alpha}$	$\frac{C_{29}\alpha\alpha\alpha20R}{C_{27}\alpha\alpha\alpha20R}$	C ₂₇ :C ₂₈ :C ₂₉	$\frac{\text{diasterane}}{\text{sterane}}$
Parameter	a	k	l	m	n	o
JSB 18	0.58	0.09	0.25	3.57	15:32:53	0.40
JSB 10	0.71	0.38	0.35	2.83	20:23:57	0.35
JSB 334	0.65	0.53	0.32	1.83	24:33:43	0.63
JSB 498	1.11	0.16	0.26	1.98	24:28:48	0.54
JSB 13	0.95	0.42	0.53	1.26	34:23:43	0.37
JSB 294b	0.87	0.36	0.42	1.75	30:19:51	0.38

MISCELLANEOUS SAMPLES

Sample	%VR	$\frac{C_{29}\alpha\alpha\alpha20S}{20S+20R}$	$\frac{C_{29}\alpha\beta\beta}{C_{29}\alpha\beta\beta+\alpha\alpha\alpha}$	$\frac{C_{29}\alpha\alpha\alpha20R}{C_{27}\alpha\alpha\alpha20R}$	$C_{27}:C_{28}:C_{29}$	$\frac{\text{diasterane}}{\text{sterane}}$
Parameter	a	k	l	m	n	o
M 4194	0.56	0.26	0.14	2.15	25:22:53	0.22
CO 1	0.78	0.41	0.17	1.92	26:23:51	0.24
CO 6	0.67	0.41	0.29	1.64	28:26:46	0.52
FOF 1b	0.68	0.18	0.34	1.96	28:17:55	0.43
BC	0.61	0.45	0.42	2.18	25:20:55	0.35

GARTARRY TOLL BOREHOLE

1864	0.85	0.53	0.25	0.56	35:45:20	0.75
1916	0.85	0.29	0.26	0.51	53:20:27	1.34
2284	0.90	0.58	0.41	0.42	37:47:16	1.12

MUSSELBURGH N°1 VITRINITES

Sample	%VR	$\frac{C_{29}\alpha\alpha20S}{20S+20R}$	$\frac{C_{29}\alpha\beta\beta}{C_{29}\alpha\beta\beta+\alpha\alpha}$	$\frac{C_{29}\alpha\alpha20R}{C_{27}\alpha\alpha20R}$	$C_{27}:C_{28}:C_{29}$	$\frac{\text{diasterane}}{\text{sterane}}$
Parameter	a	k	l	m	n	o
M 1	0.59	0.14	0.33	4.50	13:27:59	0.55
M 2	0.70	0.29	0.23	4.81	12:32:56	0.36
M 3	0.80	0.41	0.27	4.16	14:29:57	0.43
M 4	0.92	0.46	0.38	5.15	10:38:52	0.39
M 5	0.99	0.48	0.39	4.04	13:28:59	0.41

CARRINGTON SAMPLES

660	0.61	0.16	0.30	7.50	8:32:60	ND
1600	0.65	0.37	0.38	1.92	25:27:48	ND
2600	0.70	0.42	0.25	4.54	13:28:59	ND
3100	0.75	0.50	0.39	1.25	36:19:45	ND
3800	0.86	0.37	0.38	3.19	21:12:67	ND
4779	0.82	0.48	0.64	1.26	31:30:39	ND
5310	0.92	0.39	0.53	-	-	ND

WEST FIFE VITRINITES

Sample	%VR	$\frac{C_{29}\alpha\alpha\alpha20S}{20S+20R}$	$\frac{C_{29}\alpha\beta\beta}{C_{29}\alpha\beta\beta+\alpha\alpha\alpha}$	$\frac{C_{29}\alpha\alpha\alpha20R}{C_{27}\alpha\alpha\alpha20R}$	$C_{27}:C_{28}:C_{29}$	$\frac{\text{diasterane}}{\text{sterane}}$
Parameter	a	k	l	m	n	o
NON HEAT-AFFECTED						
RIG 1	0.64	0.39	0.34	3.95	13:38:49	0.88
RIG 2	0.71	0.29	0.24	4.65	12:32:56	0.41
HEAT-AFFECTED						
RIG 3	0.80	0.40	0.22	9.72	6:39:55	0.30
RIG 4	0.91	0.41	0.33	8.23	8:31:61	0.30
RIG 5	0.97	0.40	0.30	9.08	6:38:56	0.19
RIG 6	1.06	0.47	0.52	4.25	13:33:54	0.32
RIG 7	1.15	0.51	0.55	3.14	16:35:49	0.37
RIG 8	1.25	0.52	0.53	3.25	16:30:54	0.35
RIG 9	1.50	0.33	0.26	5.20	11:32:57	0.29
RIG 10	1.62	0.49	0.53	1.06	35:29:36	0.34

MILTON OF BALGONIE

Sample	%VR	$\frac{C_{29}\alpha\alpha\alpha20S}{20S+20R}$	$\frac{C_{29}\alpha\beta\beta}{C_{29}\alpha\beta\beta+\alpha\alpha\alpha}$	$\frac{C_{29}\alpha\alpha\alpha20R}{C_{27}\alpha\alpha\alpha20R}$	$C_{27}:C_{28}:C_{29}$	$\frac{\text{diasterane}}{\text{sterane}}$
Parameter	a	k	l	m	n	o
NON HEAT-AFFECTED						
MOB 1340	0.47	0.33	0.33	2.09	22:31:47	1.11
MoB 1000	0.54	0.14	0.31	4.81	11:37:52	0.65
MOB F	0.73	0.43	0.51	1.47	30:26:44	0.56
MOB G	0.80	0.50	0.57	1.60	27:30:43	0.52
MOB H	0.92	0.49	0.57	1.89	26:25:49	0.57
HEAT-AFFECTED						
MOB I	0.67	0.33	0.36	4.61	12:34:54	0.43
MOB A	0.75	0.39	0.27	4.39	12:35:53	0.38
MOB B	0.80	0.42	0.37	3.85	13:35:52	0.37
MOB C	0.91	0.49	0.62	1.80	27:24:49	0.42
MOB D	1.44	0.43	0.60	1.21	36:20:44	0.57
MOB E	1.91	0.48	0.60	1.08	39:19:42	0.49
MOB 2496	2.46	0.47	0.52	0.92	41:22:37	0.35

ADDITIONAL SAMPLES NEAR IGNEOUS INTRUSIONS

Sample	%VR	$\frac{C_{29}\alpha\alpha\alpha20S}{20S+20R}$	$\frac{C_{29}\alpha\beta\beta}{C_{29}\alpha\beta\beta+\alpha\alpha\alpha}$	$\frac{C_{29}\alpha\alpha\alpha20R}{C_{27}\alpha\alpha\alpha20R}$	$C_{27}:C_{28}:C_{29}$	$\frac{\text{diasterane}}{\text{sterane}}$
Parameter	a	k	l	m	n	o
CBC	2.68	0.40	0.41	1.49	31:24:45	0.33
CBG	2.05	0.36	0.29	1.16	38:18:44	-
5A1	0.67	0.10	-	1.67	26:30:44	-
5B	2.36	0.28	0.45	1.46	31:24:45	0.48
5D	2.25	0.10	-	2.22	23:27:50	0.06
BB	1.64	0.22	$\text{tr } \alpha\beta\beta$	1.68	29:22:49	0.46
L	0.71	0.40	$\text{tr } \alpha\beta\beta$	2.68	20:26:52	0.23
CH4	3.36	0.14	-	0.63	53:14:33	0.49
SMW13	2.86	-	-	-	-	-
SK 7	8.88	-	-	-	-	-

OILS AND BITUMENS

Sample	$\frac{C_{29}\alpha\alpha\alpha 20S}{20S+20R}$	$\frac{C_{29}\alpha\beta\beta}{C_{29}\alpha\beta\beta+\alpha\alpha\alpha}$	$\frac{C_{29}\alpha\alpha\alpha 20R}{C_{27}\alpha\alpha\alpha 20R}$	$C_{27}:C_{28}:C_{29}$	$\frac{\text{diasterane}}{\text{sterane}}$	
Parameter	a	k	l	m	n	o
D'Arcy Oil		0.52	0.62	1.26	36:20:44	0.57
Milton Oil		0.57	0.59	1.03	41:16:43	0.65
St Catherine's Bitumen		0.44	0.49	1.59	29:25:46	0.68
Orrock Bitumen		0.22	0.47	1.03	37:24:39	1.22
Dyke-Rock Bitumen		0.45	0.27	1.25	30:33:37	-
Petershill Bitumen		-	-	1.23	35:22:43	-
Bitumen From Large Nodule		0.30	0.38	2.42	18:39:43	-
Bitumen from Small Nodule		0.39	0.36	2.76	20:26:54	0.14
Hydrocarbons Brown Sandstone		0.52	0.52	1.02	41:17:42	0.67
Hydrocarbons In Laminated Sandstone		0.57	0.53	1.00	41:18:41	0.63

TABLE A.6

**PARAMETERS BASED ON AROMATIC
HYDROCARBONS**

LAMOSITES

Sample	MNR	DNR	ENR	TNR-1	MPR	MPI	MN/P	R _m	R _u	Rc(Rad)	Rc(Ray) 231/245	m/z	%Arom
Parameter	a	b	c	d	e	f	g	h	i	j	k	l	m
Dunnet	0.79	1.33	1.17	0.37	0.54	0.44	3.71	0.23	0.50	0.66	0.65	1.86	29
Carron Harbour	1.35	2.80	1.47	0.52	0.75	0.49	1.20	0.30	0.50	0.69	0.71	1.75	19
St. Monance (East)	1.06	1.85	1.73	0.59	1.02	0.48	1.39	0.44	0.55	0.69	0.70	2.16	23
St. Monance (West)	1.47	2.54	1.63	0.55	0.80	0.46	2.04	0.55	0.55	0.68	0.68	0.61	10
Claremont	0.71	1.96	1.00	0.55	0.79	0.39	0.41	0.35	0.52	0.64	0.59	1.72	15
Queensferry	0.78	1.27	1.44	0.61	1.17	0.66	0.33	0.62	-	0.80	0.92	4.37	65
Pumpherston	1.44	2.23	1.67	0.58	0.93	0.78	2.42	0.39	0.81	0.87	1.08	2.25	63
Fells	1.02	1.95	1.33	0.78	0.79	0.40	3.23	0.55	-	0.64	0.60	2.91	79
Broxburn	1.05	2.67	2.00	0.72	0.89	0.51	2.17	0.55	-	0.71	0.74	5.30	58
Mid Calder-1	2.67	1.00	1.33	0.52	1.70	1.21	0.80	0.81	-	1.13	1.61	3.35	76
Mid Calder-2	1.72	3.67	2.67	1.10	1.76	0.88	0.60	1.05	-	0.93	1.20	2.44	82
Mid Calder-3	0.91	1.47	1.38	0.63	1.50	1.03	0.10	2.16	-	1.68	2.35	3.09	83
Binny Craig	1.70	3.61	1.11	1.56	1.70	0.77	0.18	3.30	-	1.84	2.87	-	-

TORBANITES AND TORBANITIC SHALES

Sample	MNR	DNR	ENR	TNR-1	MPR	MPI	MN/P	R _m	R _u	Rc(Rad)	Rc(Ray)	m/z 231/245	%Arom
Parameter	a	b	c	d	e	f	g	h	i	j	k	l	m
Westfield Oil Shale	0.64	2.33	1.46	0.69	0.64	0.39	5.40	0.35	0.55	0.63	0.59	1.03	42
Westfield Canneloid Shale	0.81	1.28	1.80	0.57	0.79	0.34	4.07	0.38	0.56	0.60	0.53	1.07	23
Lillies Shale	1.44	2.92	1.53	0.80	0.98	0.46	3.23	0.44	-	0.68	0.68	2.02	58

"WOODS" + "VITRINITES"

Sample	MNR	DNR	ENR	TNR-1	MPR	MPI	MN/P	Rm	Rc(Rad)	Rc(Ray)	m/z 231/245	%Arom
Parameter	a	b	c	d	e	f	g	h	j	k	l	m
Orrock "Wood"	1.17	1.61	1.15	0.39	0.84	0.39	0.39	0.39	0.63	0.59	0.51	12
Orrock "Vitrinite"	0.88	0.95	1.36	0.34	0.77	0.57	0.53	0.39	0.74	0.80	0.47	13
Kirkton "Vitrinite"	0.88	1.67	0.86	0.86	0.86	0.64	0.28	0.53	0.78	0.90	1.40	49
Coalyard "Vitrinite"	0.68	1.12	-	0.88	1.62	0.64	0.11	0.59	0.78	0.90	-	-

MISCELLANEOUS HUMIC COALS

Pyotshore Coal	1.24	2.46	1.36	0.85	1.08	0.62	0.68	0.54	0.77	0.88	0.34	27
Coal above Queenslie Marine Band	1.44	0.54	1.80	0.50	0.90	0.34	0.30	0.64	0.60	0.53	0.25	22
Coal above Westfield Oil Shale	1.51	2.55	1.50	0.84	0.63	0.35	0.17	0.55	0.61	0.54	0.26	21

EAST FIFE COAST

ST MONANCE-ANSTRUTHER AND WORMISTONE SECTIONS (including Anstruther Borehole)

Sample	m/z											%Arom
Parameter	a	b	c	d	e	f	h	i	j	k	l	m
SM 1	0.80	1.38	0.71	0.74	1.24	0.50	0.50	0.50	0.70	0.73	-	-
SM 4	0.89	1.77	1.69	0.84	1.06	0.48	0.49	0.53	0.69	0.70	0.60	27
SM 5	1.45	2.11	1.88	0.81	0.90	0.48	0.44	0.53	0.69	0.70	0.47	14
SM 6	1.22	2.73	1.58	0.81	1.04	0.60	0.54	0.54	0.76	0.85	0.60	21
SM 7	1.06	1.85	1.73	0.59	1.02	0.48	0.44	0.55	0.69	0.70	2.16	23
SM 12	1.38	2.73	1.56	0.77	1.07	0.44	0.48	0.56	0.76	0.65	-	-
SM 14	0.94	2.00	1.67	0.91	0.86	0.56	0.58	0.58	0.74	0.80	0.49	31
SM 15	1.25	2.38	2.00	0.66	0.95	0.49	0.46	0.63	0.69	0.71	-	-
SM 17	0.59	1.00	-	0.47	1.27	0.46	0.31	0.63	0.68	0.68	1.41	42
SM 18	0.86	1.40	1.29	0.53	0.65	0.33	0.32	0.63	0.60	0.51	0.92	36
SM 19	0.58	0.88	0.83	0.76	0.75	0.33	0.42	0.63	0.60	0.51	0.35	26
SM 22	0.50	1.61	1.70	0.56	0.72	0.53	0.44	0.65	0.72	0.76	0.48	38
P Sh	-	-	-	0.80	0.62	0.46	0.27	0.63	0.68	0.68	6.42	76
Q	0.73	0.58	0.50	0.67	0.58	0.16	0.63	0.63	0.50	0.30	5.96	68
T	0.92	1.56	1.50	0.60	0.53	0.35	0.45	0.65	0.61	0.54	0.80	69

ST MONANCE-ANSTRUTHER AND WORMISTONE SECTIONS (including Anstruther Borehole) continued

Sample	m/z Rc(Ray) 231/245											%Arom
Parameter	a	b	c	d	e	f	h	i	j	k	l	m
SBO 7516	1.79	3.71	2.33	1.12	1.26	0.55	0.47	0.75	0.73	0.79	1.75	66
SBO 7517	1.18	2.44	1.00	0.69	1.07	0.65	0.78	0.78	0.79	0.91	3.16	73

RANDERSTON SECTION

SM 25	1.33	2.05	1.87	0.68	0.82	0.46	0.38	0.54	0.68	0.68	0.23	9
SM 26	1.20	1.85	1.67	0.60	0.69	0.34	0.45	0.54	0.60	0.53	0.33	10
SM 27	1.58	1.46	1.90	0.73	1.02	0.41	0.54	0.54	0.65	0.61	1.03	54

KINKELL BRAES SECTION

St A6	1.17	2.10	1.44	0.69	0.63	0.40	0.58	0.58	0.64	0.60	0.16	25
St A8	1.27	1.35	2.00	0.43	0.91	0.33	0.40	0.57	0.60	0.51	0.78	16
St A9	1.13	1.06	1.23	0.49	0.78	0.38	0.57	0.57	0.63	0.58	1.63	28

MISCELLANEOUS CALCIFEROUS SANDSTONE MEASURES SAMPLES

Sample	MNR	DNR	ENR	TNR-1	MPR	MPI	R _m	R _u	Rc(Rad)	Rc(Ray)	m/z 231/245	%Arom
Parameter	a	b	c	d	e	f	h	i	j	k	l	m
SMW 14	1.24	2.73	1.52	0.59	0.86	0.58	0.46	0.55	0.75	0.83	0.81	18
CS 7	1.60	1.09	-	0.61	1.32	0.13	0.46	0.46	0.48	0.26	-	-

KINGHORN-KIRKALDY SECTION

TK 3	1.92	2.82	2.08	0.90	1.35	0.53	0.78	0.78	0.72	0.76	1.24	-
MK 2	1.38	3.00	1.62	0.81	0.81	0.48	0.53	0.53	0.69	0.70	0.57	19
AB 2	1.28	2.27	1.63	0.54	0.86	0.54	0.70	0.70	0.72	0.78	-	-

WEST WEMYSS

BSOS	0.91	1.80	1.79	0.56	0.94	0.68	0.37	0.60+	0.81	0.95	0.41	19
BUSHSH	0.67	-	-	-	0.75	0.03	1.21	1.21	0.42	0.14	-	-

MARINE BANDS

QUEENSLIE MARINE BAND

Sample	MNR	DNR	ENR	TNR-1	MPR	MPI	MN/P	R _m	R _u	Rc(Rad)	Rc(Ray)	m/z 231/245	%Arom
Parameter	a	b	c	d	e	f	g	h	i	j	k	l	m
QMB A43	0.77	1.77	1.13	0.66	0.68	0.24	0.13	0.38	0.60+	0.54	0.40	1.10	22
QMB A2	0.76	1.19	-	0.66	1.01	0.40	1.25	0.66	0.66	0.64	0.60	0.99	25
QMB 69	0.78	-	-	-	0.70	0.36	0.09	0.46	-	0.62	0.55	-	-
QMB 64	0.94	1.44	1.00	0.50	0.90	0.38	0.62	0.34	-	0.63	0.58	-	-
QMB 41	1.01	1.48	1.13	0.46	0.85	0.44	0.78	0.58	0.58	0.66	0.65	2.21	41

CALMY BLAES

C 3	-	-	2.57	0.77	1.49	0.46	0.18	0.40	70.50	0.68	0.68	0.95	31
C 10	-	0.77	-	0.98	0.88	0.27	0.69	0.49	0.60	0.56	0.44	-	-
C 428	1.36	1.33	-	1.40	1.20	0.67	1.54	0.39	-	0.80	0.94	-	-
C 82	1.20	1.86	1.35	0.56	1.01	0.63	2.70	0.34	-	0.78	0.89	1.13	31
C 499	1.50	1.71	1.43	0.58	1.00	0.37	2.38	0.37	-	0.62	0.56	-	-

KELTY BLACKBAND

Sample	MNR	DNR	ENR	TNR-1	MPR	MPI	MN/P	R _m	R _u	Rc(Rad)	Rc(Ray)	m/z 231/245	%Arom
Parameter	a	b	c	d	e	f	g	h	i	j	k	l	m
KBBI 185	1.02	1.75	1.25	0.42	0.84	0.29	0.93	0.39	-	0.57	0.46	0.18	21
KBBI 547/2	-	2.29	1.56	0.43	0.32	0.35	0.23	0.44	-	0.61	0.54	-	-
KBBI 535/9	1.37	1.64	2.08	0.49	0.95	0.37	1.41	0.38	-	0.62	0.56	0.83	21
KBBI 140	1.87	2.29	1.50	0.47	0.75	0.35	1.06	0.36	-	0.61	0.54	0.86	42
KBBI 174	4.26	2.50	1.11	0.68	0.75	0.37	2.86	0.50	-	0.62	0.56	-	-
KBBI 185b	1.09	2.17	2.44	0.58	0.58	0.31	1.85	0.46	-	0.59	0.49	1.33	49
KBBI 382	1.38	2.20	1.40	0.70	0.95	0.53	0.78	0.46	-	0.72	0.76	1.84	87
KBBI 385	1.33	2.20	0.33	0.43	1.10	0.45	0.50	0.38	-	0.67	0.66	-	-

BLACK METALS

BM 195a	1.58	3.30	1.70	1.22	1.00	0.52	2.27	0.66	0.66	0.71	0.75	-	-
BM 380	1.48	3.78	1.63	1.36	1.19	0.55	2.33	0.49	0.70	0.73	0.79	-	-
BM 370	-	-	-	1.00	1.15	0.43	-	0.69	0.69	0.66	0.64	-	-
BM 561	1.40	1.50	2.06	0.63	0.72	0.35	0.34	0.71	0.71	0.61	0.54	-	-
BM 641	1.79	1.70	2.28	0.87	1.30	0.60	0.88	0.59	0.59+	0.76	0.85	1.32	-

BLACK METALS (continued)

Sample	MNR	DNR	ENR	TNR-1	MPR	MPI	MN/P	R _m	R _u	Rc(Rad)	Rc(Ray)	m/z 231/245	%Arom
Parameter	a	b	c	d	e	f	g	h	i	j	k	l	m
BM 266	-	1.34	-	0.63	0.88	0.37	0.06	0.36	0.36+	0.62	0.56	1.71	51
BM 806a	1.24	1.79	2.11	0.63	0.94	0.47	1.82	0.40	-	0.68	0.69	1.10	31
BM 246	1.37	2.05	1.80	0.53	0.72	0.40	1.20	0.48	-	0.64	0.60	2.10	47
BM 63	-	-	-	-	1.30	0.57	-	0.40	-	0.74	0.81	-	-
BM 294	-	-	-	0.71	0.97	0.40	-	0.45	-	0.64	0.60	-	-
BM 262	1.48	2.38	1.47	0.83	0.84	0.39	0.56	0.66	-	0.63	0.59	-	-
BM 82	1.30	2.11	1.53	0.77	0.71	0.37	0.37	0.61	-	0.62	0.56	-	-

JOHNSTONE SHELL BED

JSB 18	1.40	1.77	1.33	0.51	0.76	0.33	0.72	0.47	0.58	0.60	0.51	0.54	24
JSB 195	1.57	3.35	1.41	1.21	1.07	0.60	3.23	0.69	0.69	0.76	0.85	-	-
JSB 10	1.70	3.55	1.36	1.00	0.82	0.48	2.13	0.71	0.71	0.69	0.70	-	-
JSB 334	1.40	2.31	1.56	0.94	0.97	0.46	1.23	0.65	NDP	0.67	0.68	1.75	-
JSB 498	1.49	2.69	2.40	1.21	1.20	0.73	1.93	1.11	1.11	0.84	1.01	-	-
JSB 13	2.19	5.90	4.10	1.31	1.67	0.70	1.82	0.95	0.95	0.82	0.98	-	-
JSB 294b	1.22	2.48	1.67	1.13	1.03	0.41	-	0.87	0.87	0.65	0.61	-	-

MISCELLANEOUS

Sample	MNR	DNR	ENR	TNR-1	MPR	MPI	R _m	R _u	Rc(Rad)	Rc(Ray)	m/z 231/245	%Arom
Parameter	a	b	c	d	e	f	h	i	j	k	l	m
CO 1	1.67	2.89	2.00	1.38	0.84	0.36	0.78	0.78	0.62	0.55	-	-
C 3	0.81	1.35	1.00	0.46	0.67	0.35	0.34	0.34+	0.61	0.54	0.53	26
FOF 1b	1.20	2.11	1.33	1.10	0.60	0.36	0.54	0.68	0.62	0.55	1.02	41
BC	0.98	1.09	1.13	0.56	0.71	0.35	0.61	NDP	0.61	0.54	1.17	-
M4194	0.77	0.65	1.00	0.38	0.43	0.40	0.56	NDP	0.64	0.60	1.84	84

GARTARRY TOLL BOREHOLE

1864	1.26	2.50	1.52	0.76	1.00	0.40	0.52	0.85	0.64	0.60	2.14	84
1916	1.29	2.42	1.35	0.45	0.96	0.68	0.64	0.85	0.81	0.95	3.57	78
2284	1.24	1.93	1.29	0.66	0.78	0.66	0.43	0.90	0.80	0.93	5.52	98

MUSSELBURGH VITRINITES

Sample	MNR	DNR	ENR	TNR-1	MPR	MPI	MN/P	Rm	Rc(Rad)	Rc(Ray)	m/z 231/245	%Arom
Parameter	a	b	c	d	e	f	g	h	j	k	l	m
M 1	1.10	2.00	1.40	0.81	0.99	0.47	1.33	0.59	0.68	0.69	0.36	29
M 2	1.13	2.25	1.20	1.07	0.86	0.46	1.62	0.70	0.68	0.68	0.45	64
M 3	1.16	2.96	1.36	1.20	0.93	0.57	3.23	0.80	0.74	0.81	0.54	75
M 4	1.29	3.77	1.88	1.39	1.08	0.67	3.34	0.92	0.80	0.94	0.65	83
M 5	1.45	3.67	1.56	1.28	1.03	0.63	3.96	0.99	0.78	0.89	0.70	81

CARRINGTON SAMPLES

660	1.29	1.35	0.82	0.81	0.45	0.40	0.57	0.61	0.64	0.60	-	54
1600	1.45	1.97	1.41	0.93	0.77	0.42	1.69	0.65	0.65	0.63	-	39
2600	1.37	2.54	1.50	0.88	0.90	0.52	1.19	0.70	0.71	0.75	-	70
3100	1.33	2.43	1.50	0.89	0.89	0.54	2.27	0.75	0.72	0.78	-	82
3800	1.18	2.89	0.81	1.32	0.75	0.59	0.64	0.86	0.75	0.84	-	-
4779	1.44	3.10	-	1.26	0.84	0.60	2.70	0.82	0.76	0.85	-	-
5310	1.94	5.00	2.30	1.64	1.14	0.72	3.45	0.92	0.83	1.00	-	-

WEST FIFE VITRINITES

Sample	MNR	DNR	ENR	TNR-I	MPR	MPI	MN/P	Rm	Rc(Rad)	Rc(Ray)	m/z 231/245	%Arom
Parameter	a	b	c	d	e	f	g	h	j	k	l	m
NON HEAT-AFFECTED												
RIG 1	1.37	2.88	1.30	0.84	0.77	0.47	1.89	0.64	0.68	0.69	0.35	46
RIG 2	1.51	2.83	1.30	1.05	0.80	0.52	2.13	0.71	0.71	0.75	0.78	50
HEAT-AFFECTED												
RIG 3	1.26	4.07	1.89	1.16	0.87	0.46	0.81	0.80	0.68	0.90	0.53	73
RIG 4	1.26	2.61	1.25	0.98	0.85	0.47	1.19	0.91	0.68	0.92	0.83	86
RIG 5	1.35	2.86	1.29	1.12	0.80	0.47	1.20	0.97	0.68	0.92	0.83	89
RIG 6	1.35	2.96	1.71	1.06	0.98	0.54	1.66	1.06	0.72	1.06	0.68	84
RIG 7	1.42	3.04	1.80	1.10	1.11	0.65	2.16	1.15	0.79	1.28	0.64	85
RIG 8	1.51	3.64	2.00	1.07	1.08	0.57	4.00	1.25	0.74	1.12	0.64	96
RIG 9	1.59	4.95	1.67	1.21	1.62	0.75	6.44	1.50	0.85	1.48	0.49	61
RIG 10	1.43	3.65	2.50	1.09	1.37	0.83	4.09	1.62	0.90	1.64	0.75	46

MILTON OF BALGONIE

Sample	MNR	DNR	ENR	TNR-1	MPR	MPI	MN/P	Rm	Rc(Rad)	Rc(Ray)	m/z 231/245	%Arom
Parameter	a	b	c	d	e	f	g	h	j	k	l	m
NON HEAT-AFFECTED												
MOB 1340	1.40	0.53	1.40	0.53	0.56	0.33	0.46	0.47	0.60	0.51	0.25	21
MOB 1000	1.43	2.21	1.82	0.88	0.76	0.42	1.89	0.54	0.65	0.62	0.21	32
MOBF	1.32	2.81	1.44	1.01	0.95	0.47	1.26	0.73	0.68	0.69	1.62	81
MOBG	1.28	2.89	1.38	1.17	1.01	0.51	1.93	0.80	0.71	0.74	1.26	69
MOBH	1.59	3.83	2.00	1.18	0.98	0.49	0.93	0.92	0.69	0.71	1.58	81
HEAT-AFFECTED												
MOBI	1.14	2.10	1.33	0.90	0.84	0.38	0.26	0.67	0.63	0.74	0.70	73
MOBA	1.65	2.55	1.67	0.97	0.77	0.36	3.57	0.75	0.62	0.70	0.79	87
MOBB	1.25	2.21	1.67	0.88	0.81	0.39	2.29	0.80	0.63	0.76	0.73	88
MOBC	1.32	2.21	1.56	0.89	1.04	0.50	1.05	0.91	0.70	0.98	1.10	76
MOBD	1.85	4.75	2.17	1.23	1.48	0.70	1.65	1.44	0.82*	1.38	1.94	43
MOBE	3.21	12.40	4.00	1.90	3.08	0.97	3.03	1.91	0.98*	1.92	1.48	63
MOB 2496	2.59	3.76	2.64	1.16	2.71	0.26	0.15	2.46	2.14	2.50	0.94	72

* Values calculated according to Radke's equation for samples <1.35% VR.

ADDITIONAL SAMPLES NEAR INTRUSIONS

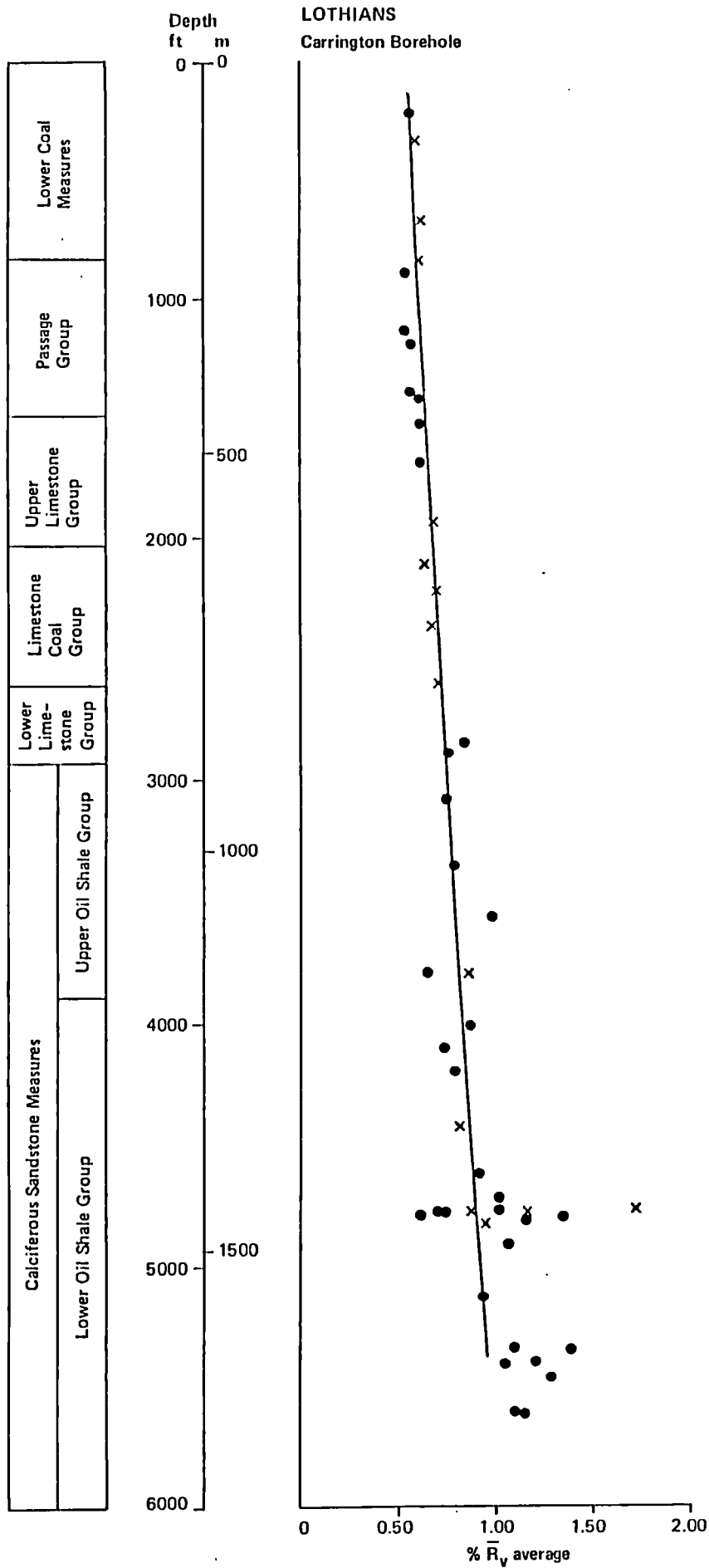
Sample	MNR	DNR	ENR	TNR-1	MPR	MPI	MN/P	Rm	Rc(Rad)	Rc(Ray)	m/z 231/245	%Arom
Parameter	a	b	c	d	e	f	g	h	j	k	l	m
CBC	1.53	4.58	2.12	1.35	3.75	0.32	0.24	2.68	2.11	2.47	-	-
CBG	2.20	11.20	4.70	1.13	2.05	1.09	1.36	2.05	1.65	2.04	-	-
5A 1	0.78	1.41	0.85	0.72	0.88	0.68	0.06	0.67	0.81	0.95	1.28	58
5 B	1.67	3.04	2.13	1.00	2.35	0.29	0.92	2.36	2.13	2.49	-	-
5 D	1.44	1.55	1.48	0.80	1.40	0.69	1.83	2.25	1.89	2.26	3.16	-
SMW 13	1.90	4.33	3.00	1.24	1.77	0.72	1.51	2.86	1.87	2.98	-	-
BB	1.53	5.78	2.88	1.44	2.06	0.66	1.94	1.64	1.90	0.93	-	-
L	1.54	2.64	1.22	0.59	1.26	0.69	0.25	0.71	0.81	0.95	0.92	-
CH ₄	1.72	2.42	2.56	0.77	1.56	0.46	1.17	3.36	2.02	3.50	-	-
SK 7	2.95	4.48	2.67	0.90	2.92	0.16	1.71	8.88	2.20	4.51	-	-

OILS AND BITUMENS

Sample	MNR	DNR	ENR	TNR-I	MPR	MPI	Rc(Rad)	Rc(Ray)	m/z 231/245	%Arom
Parameter	a	b	c	d	e	f	j	k	l	m
D'Arcy Oil	1.40	4.73	2.80	0.97	1.03	0.74	0.84	1.03	2.20	56
Milton Oil	1.30	2.78	1.56	0.64	1.00	0.68	0.81	0.95	1.44	56
St. Catherine's Oil	-	-	-	-	-	-	-	-	2.27	58
Orrock Bitumen	1.12	1.59	1.53	0.44	0.73	0.35	0.61	0.54	0.84	1
Dyke-Rock Bitumen	-	-	-	-	1.24	0.94	0.96	1.28	2.71	-
Petershill Bitumen	-	-	-	-	-	-	-	-	1.47	77
Bitumen from Large Nodule-	-	-	-	-	-	-	-	-	4.07	49
Bitumen from Small Nodule-	-	-	-	-	-	-	-	-	4.27	-
Hydrocarbons in Brown sandstone	-	-	-	0.55	0.77	0.43	0.66	0.64	1.84	61
Hydrocarbons in Laminated Sandstone	1.82	1.86	0.90	0.47	0.89	0.42	0.65	0.63	1.59	55

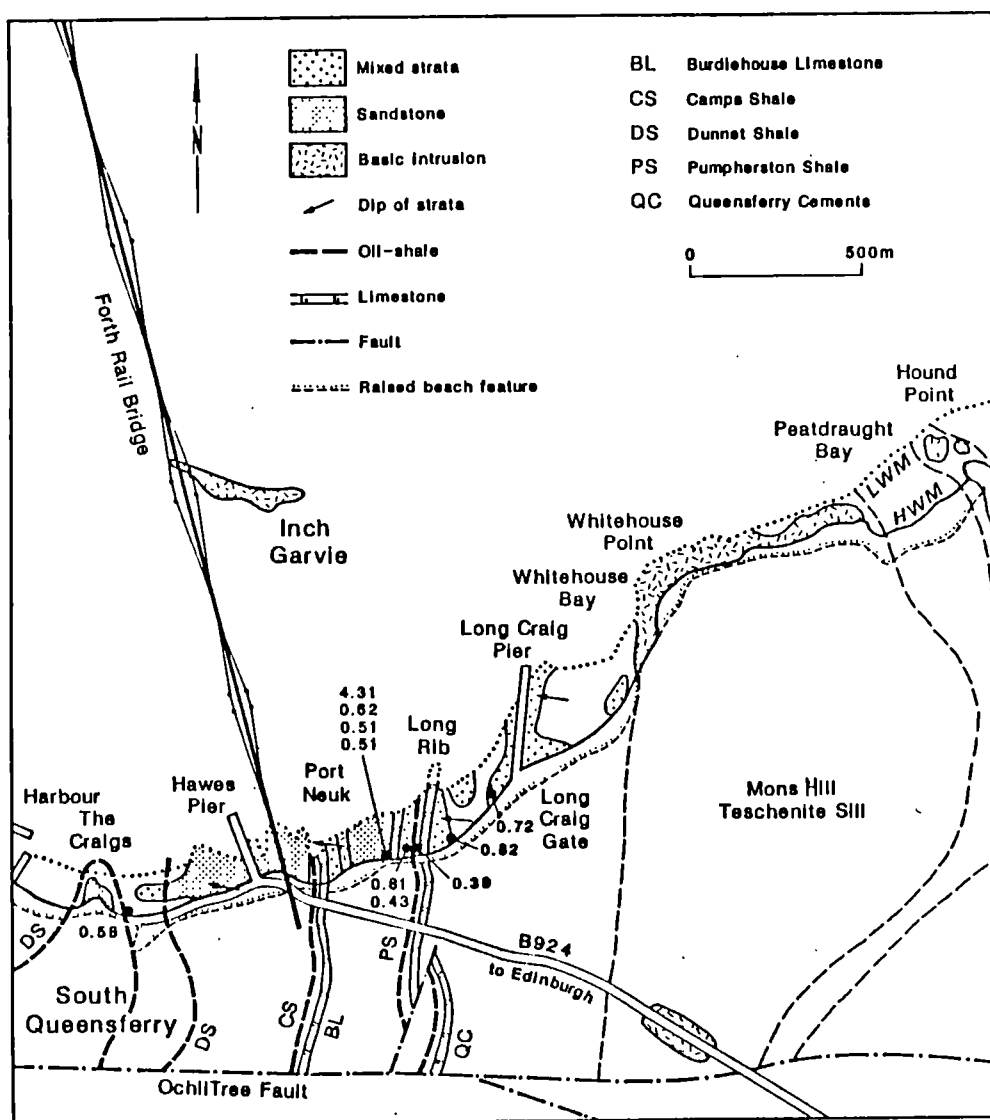
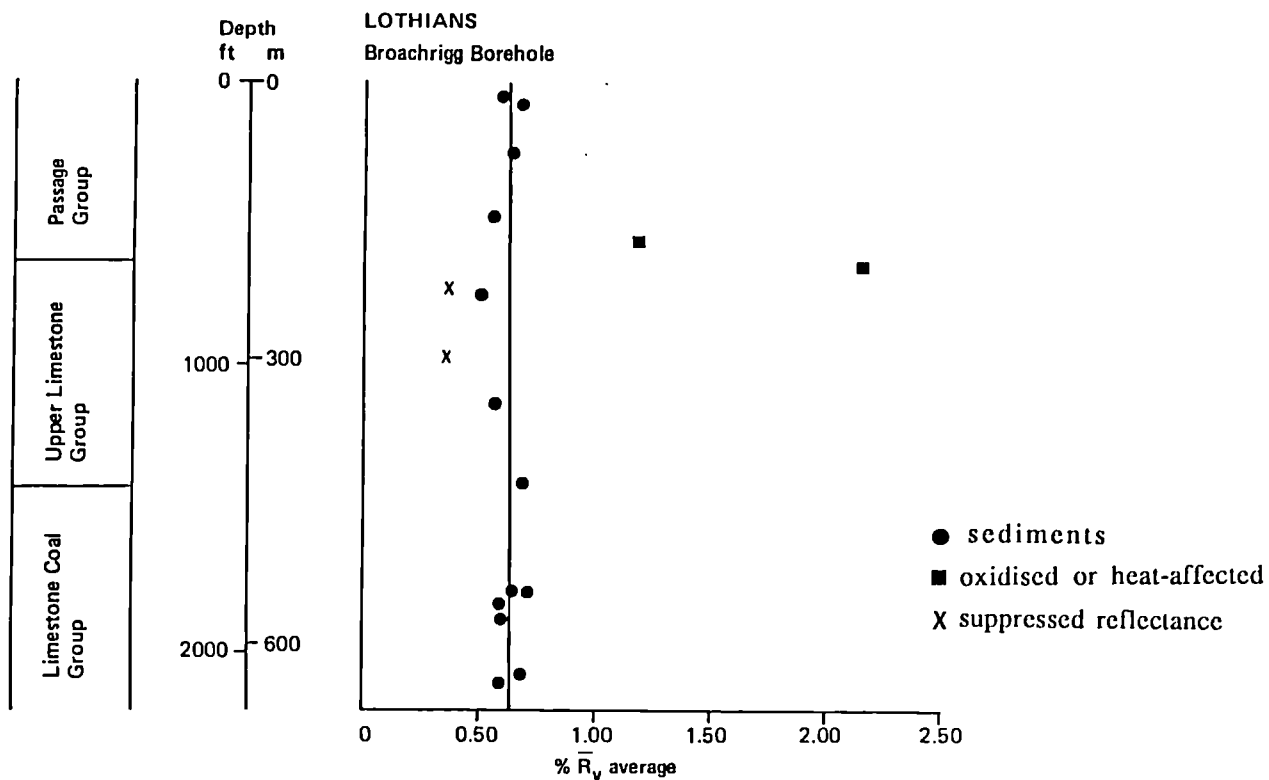
APPENDIX III

MISCELLANEOUS BOREHOLES AND FIELD SECTIONS



X coals

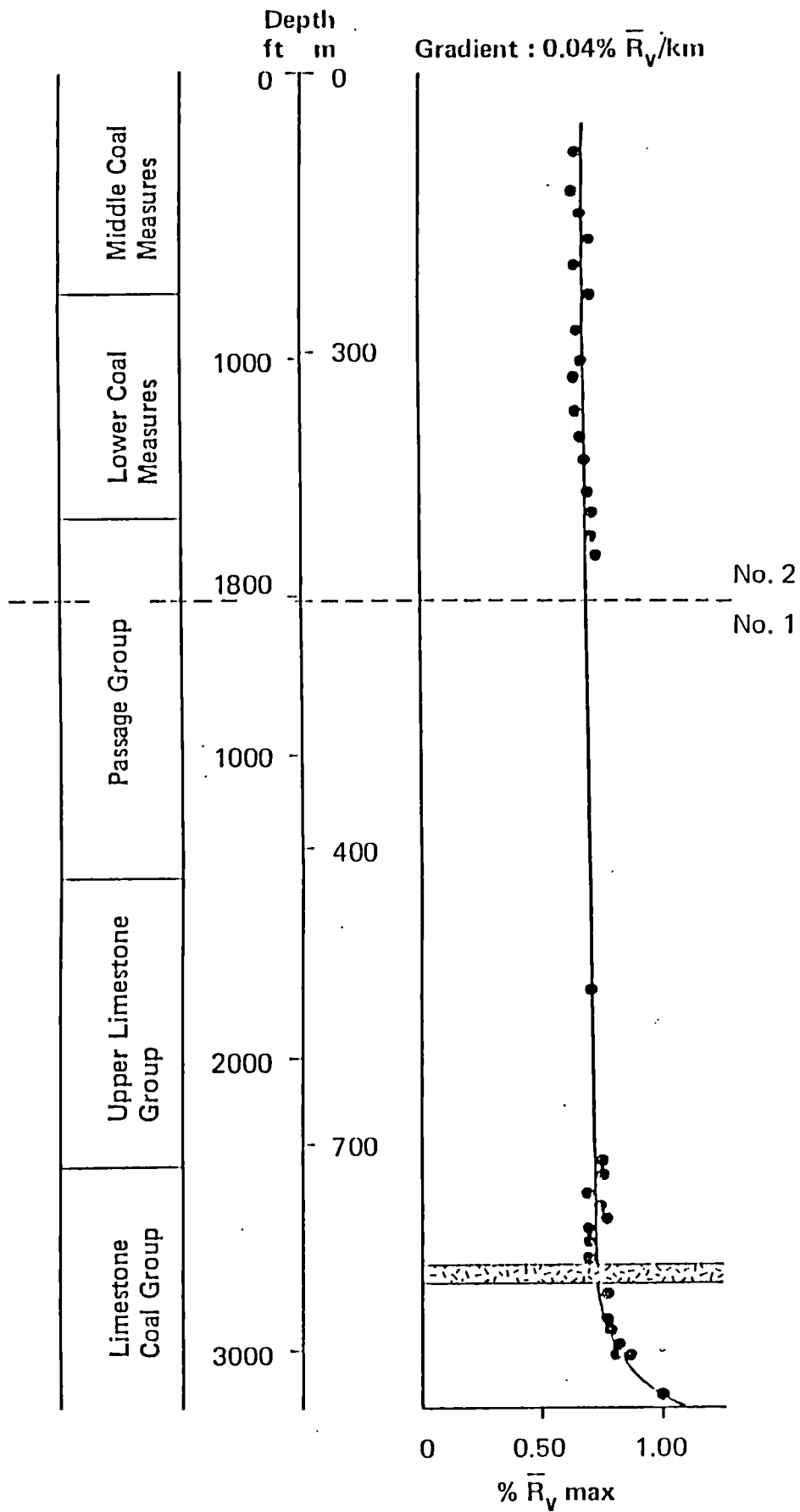
● sediments

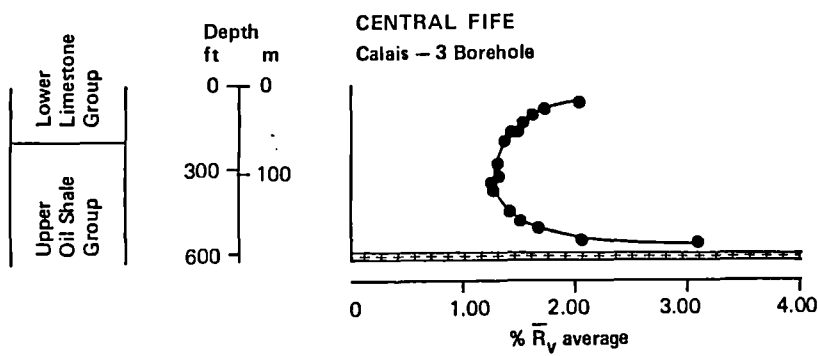
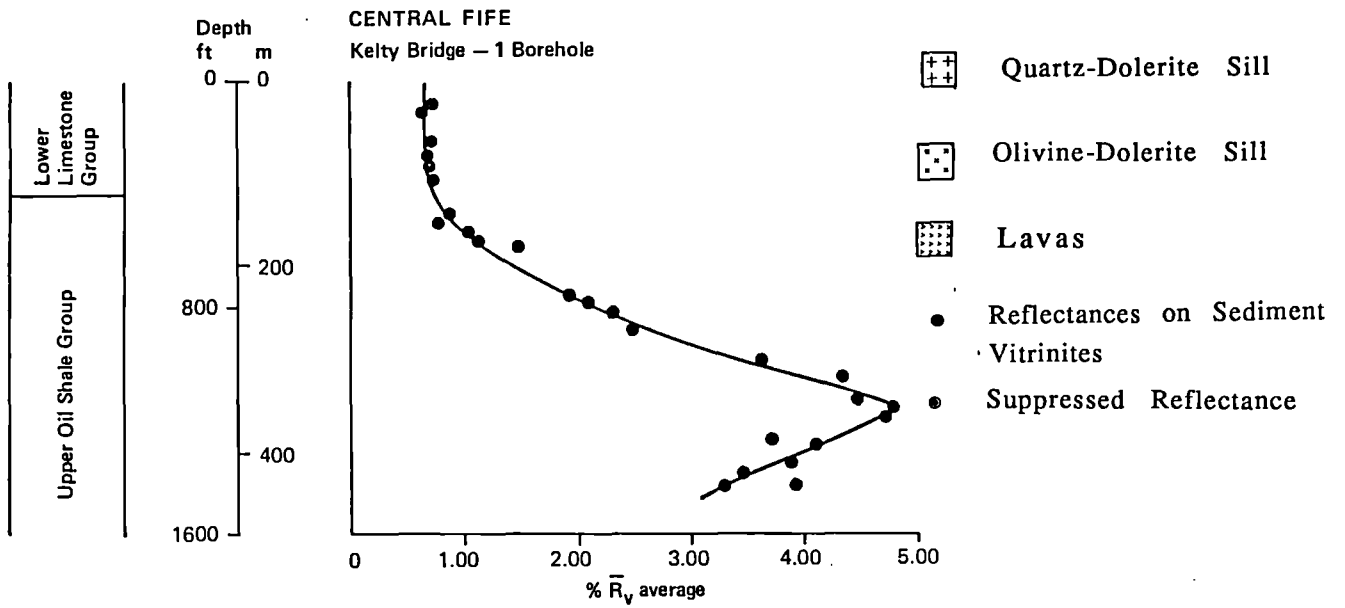
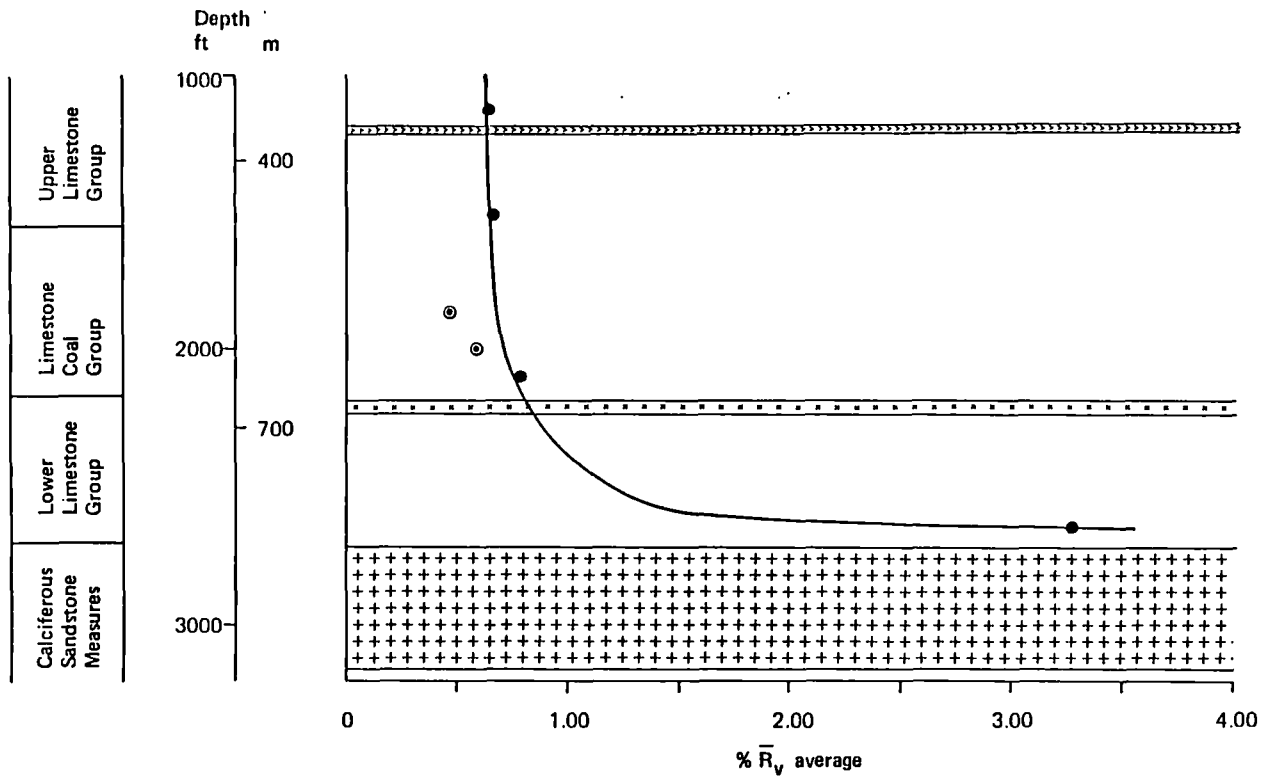


South Queensferry Section

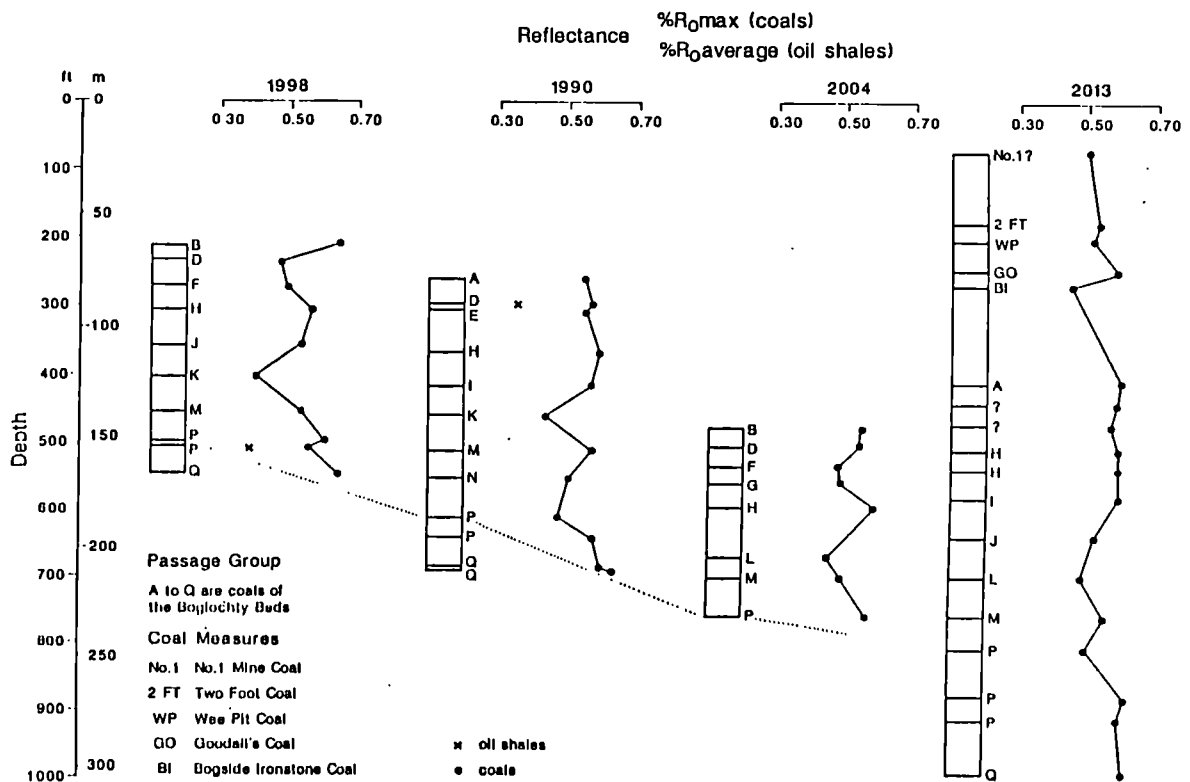
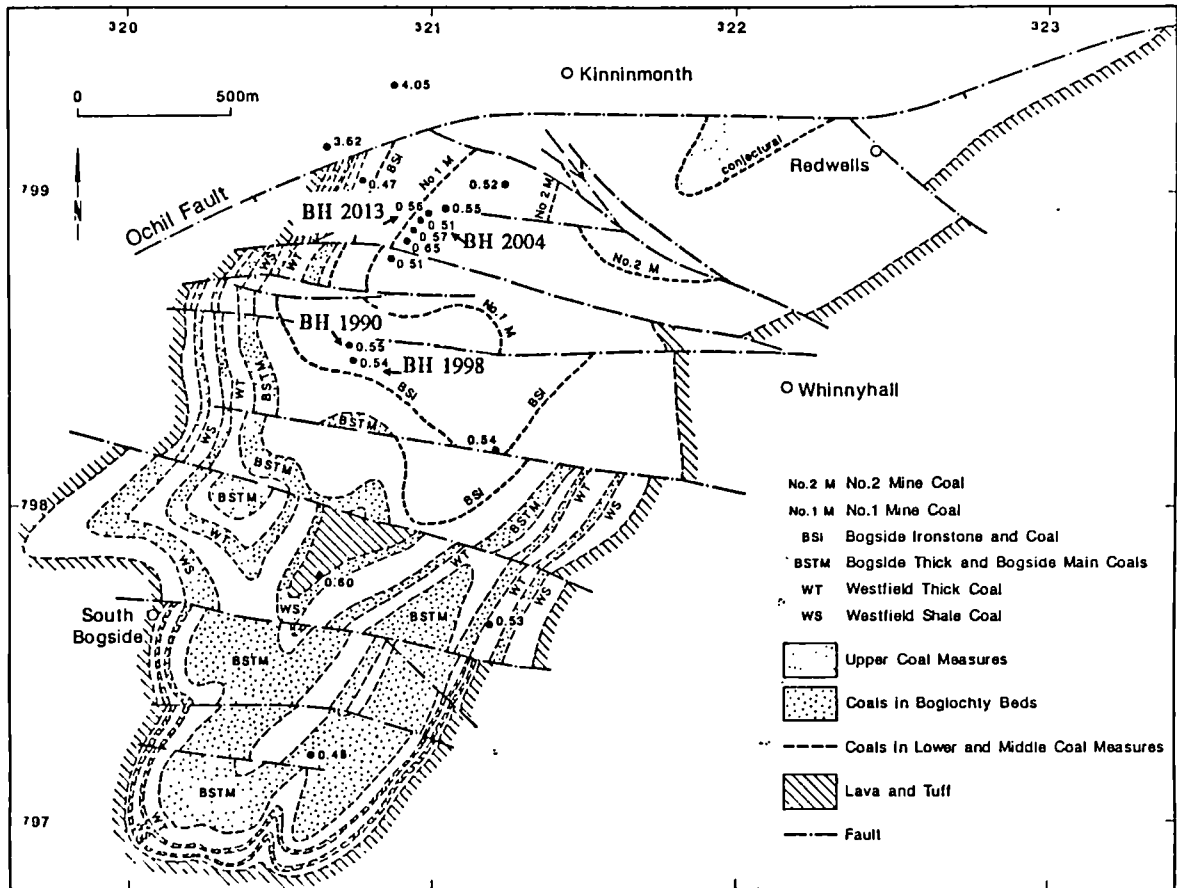
FIFE MIDLOTHIAN BASIN

Firth of Forth Tower Boreholes Nos 1 and 2

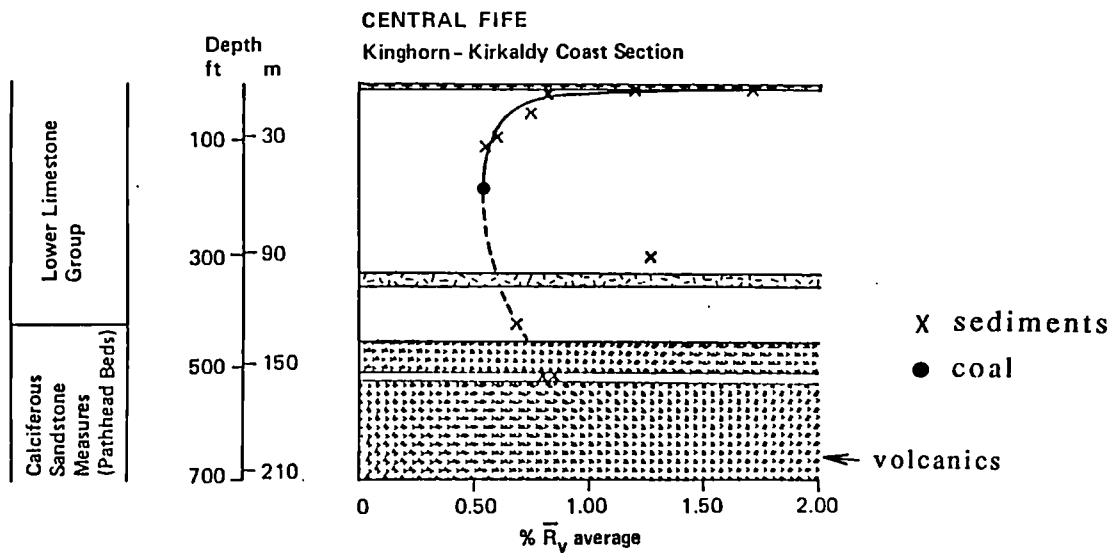
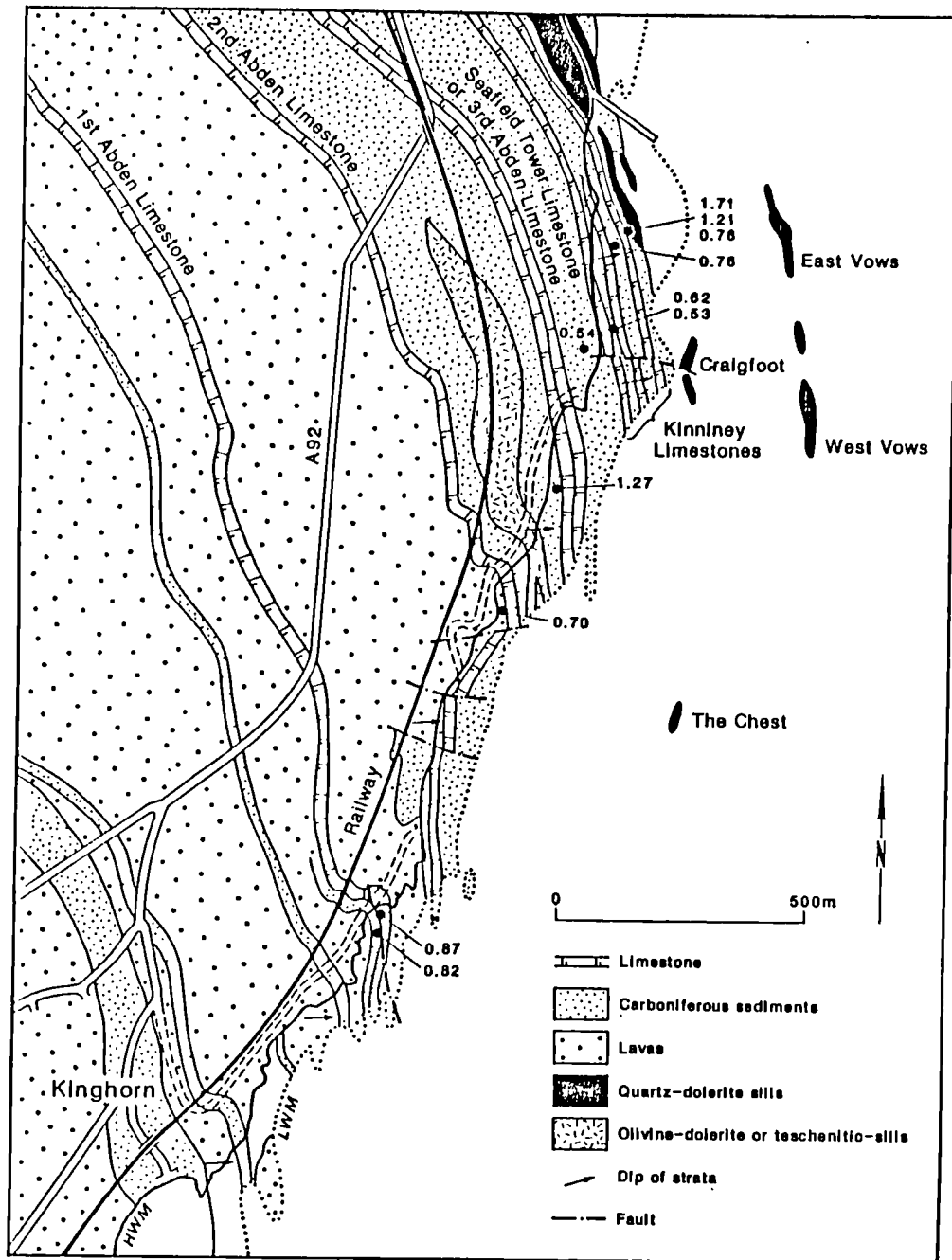
Gradient : 0.04% $\bar{R}_V$ /km

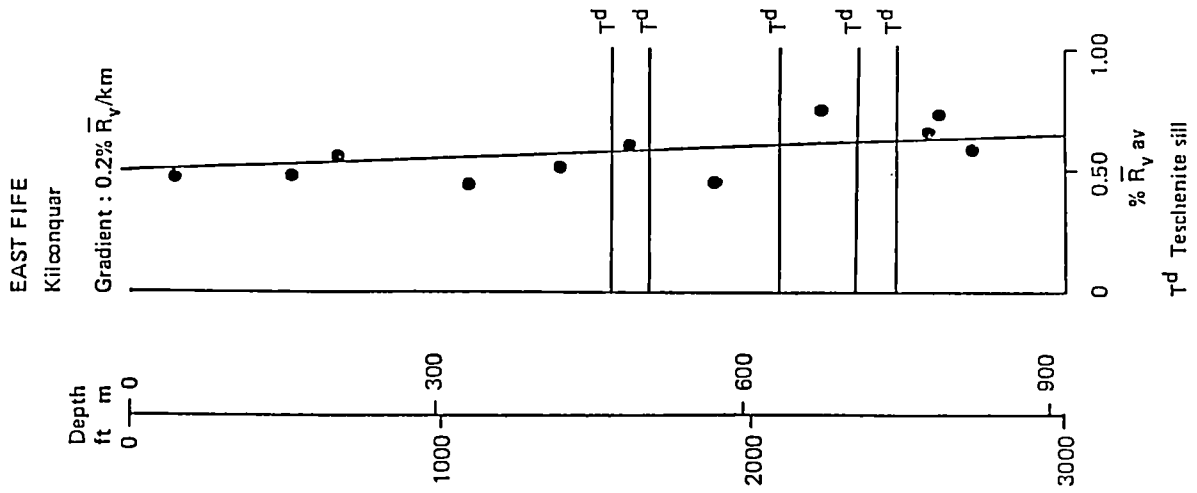
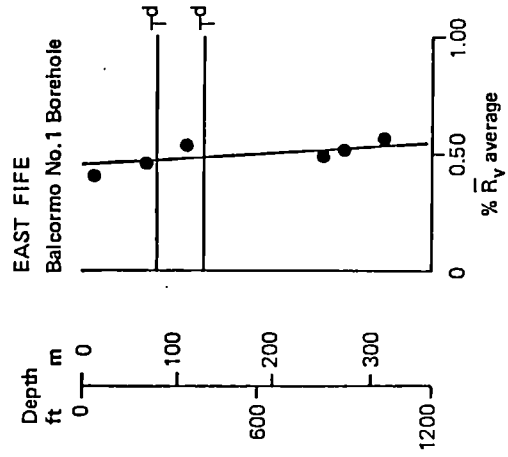
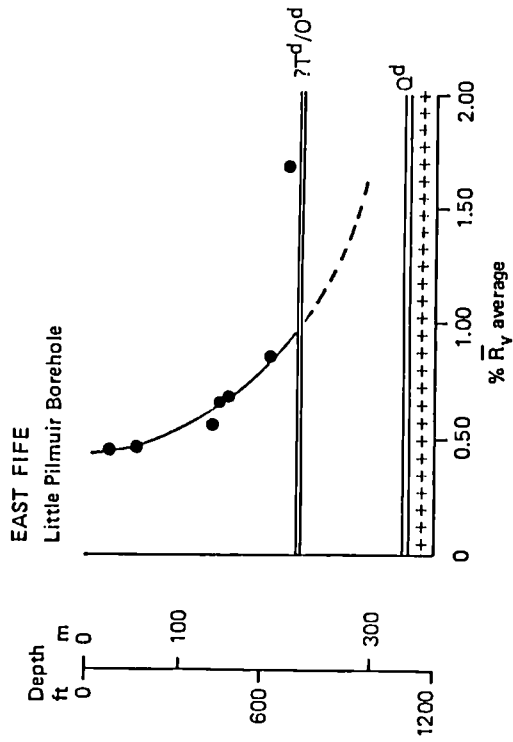


Westfield Basin



Kinghorn-Kirkaldy Section



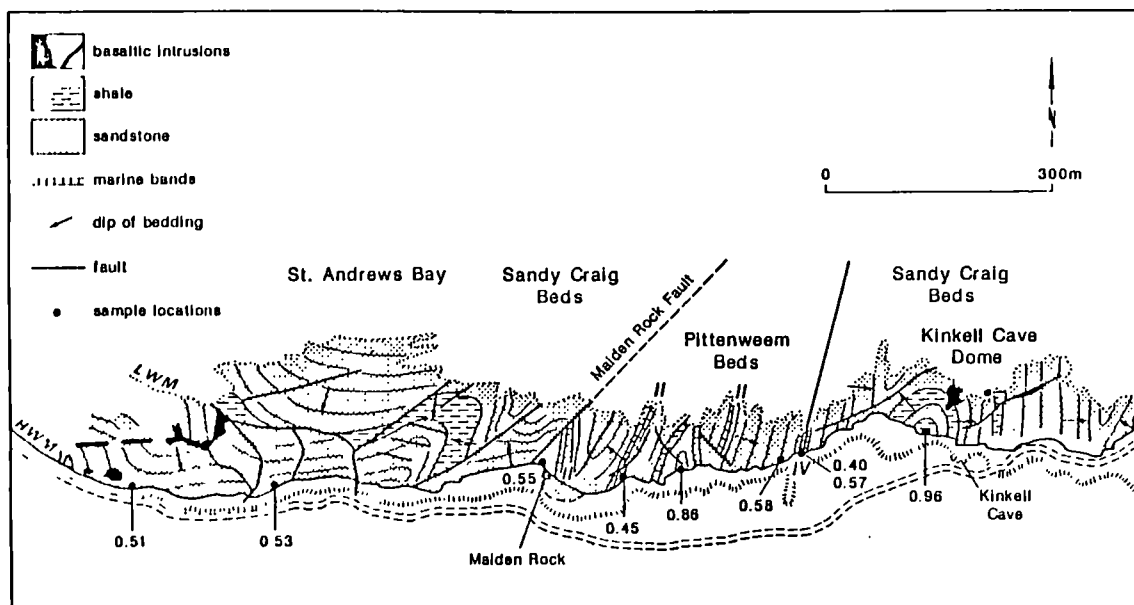


CALCIFEROUS SANDSTONE MEASURES		
Pittenweem Beds	Sandy Craig Beds	Pathhead Beds

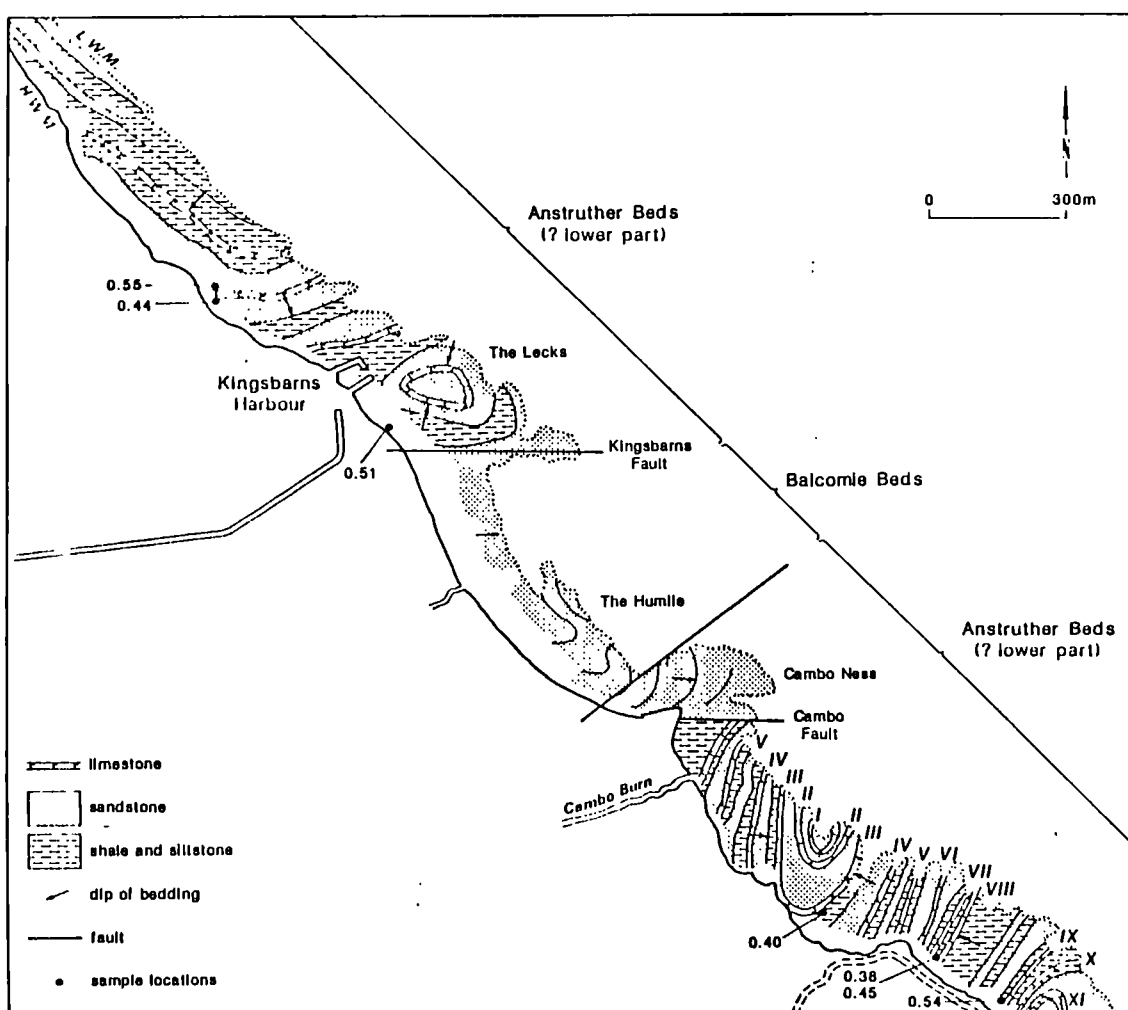
● Sediments

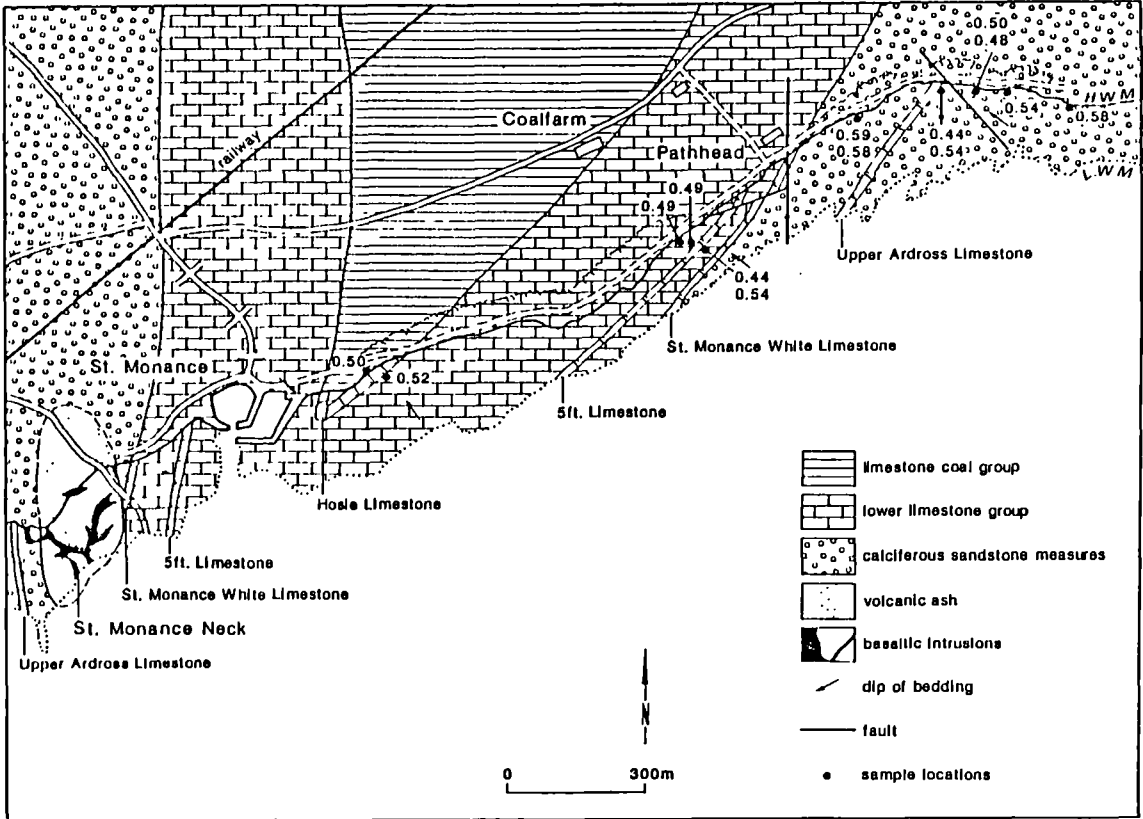
⊞⊞⊞ Quartz-Dolerite Sill

St. Andrews-Kinkell Braes Section



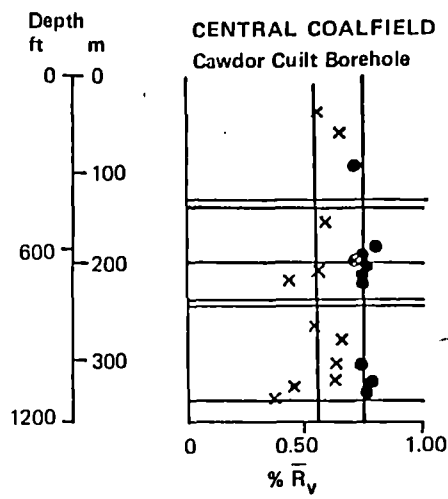
Kingsbarns-Randerston Section



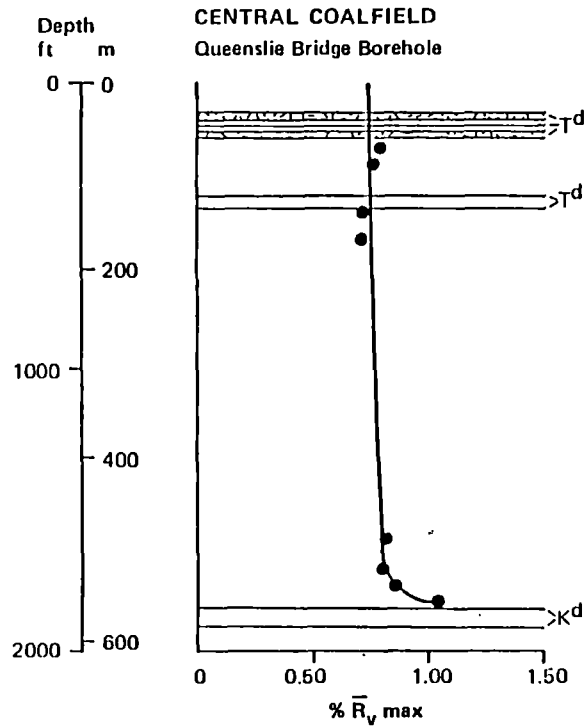


St. Monance-Pathhead Section

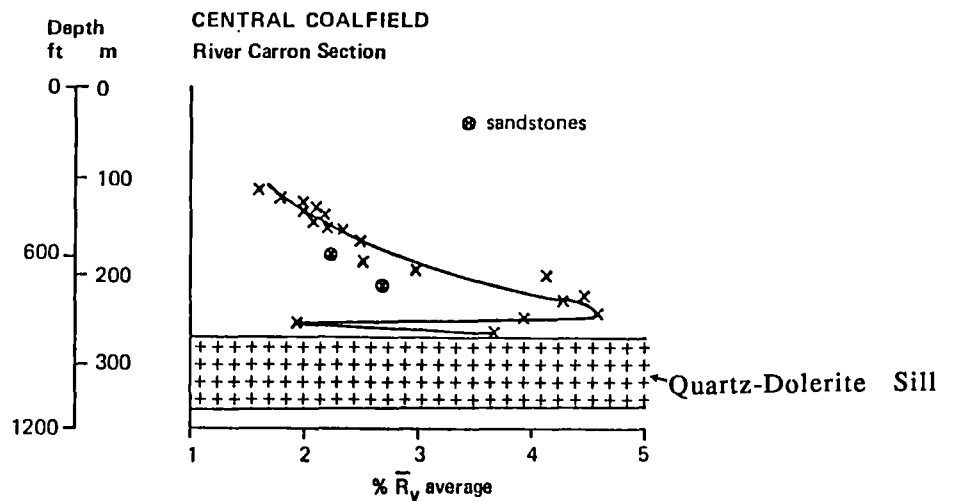
Upper Limestone Group
Limestone Coal Group



Middle Coal Measures
Lower Coal Measures
Passage Group
Upper Limestone Group
Limestone Coal Group



Limestone Coal Group
Lower Limestone Group



x sediments

● coals