2014 ADDENDUM TO THE 2013 ANNUAL REPORT FOR EL25/2008

Mineral Resources Tasmania

Department of Infrastructure Energy and Resources

Period Covered 18th September 2012 to 17th September 2013

Licensee: Tiger Coal Pty Ltd

CAN 130 087 697

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Data Provider: Karen Adams (Ron Gregory Prospecting)

Date of Report: 15 January 2014

The purpose of this Addendum is to provide the Lithic and Graphic logs for the drilling of holes OJ009 to OJ029 conducted in 2013

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APPENDIX 16

Hole ID: OJ009

Collar:
Northing: 5308999 mN
Easting: 524250 mE
Elevation: 386 m
Tenement:
Location:

Datum: GDA
Locating Method: Survey
Accuracy: mm
EL25/2008 Melton Mowbray
Northumbria, Jericho

Surveys:

Depth	Dip	Azimuth

Company: South East Asia Resources (Tasmania)

Depth: 59.55 m
Azimuth: n/a degrees
Dip -90 degrees

Drilling Method: Diamond (HQ3)
Date Drilled: 8/6/2013 - 11/6/2013
Drilling Company: Whole Core

Site Geologist: Karen Adams
Logging Geologist: Karen Adams

Sampled:

11.08	m	to	11.3	m	Zonally bright coal & carbonaceous mudstone. 5-10% vitrinite
11.54	m	to	11.95	m	Carbonaceous mudstone and coal ~1% vitrinite
22.46	m	to	23.1	m	Zonally bright, heavy dull coal & carbonaceous mudstone
43.65	m	to	44.5	m	Dominantly heavy dull coal. 1-2% vitrinite downhole

Results:

mFrom	mTo	Interval	Relative Density	Ash%	Total Sulphur	Calories Kcal/Kg	Moisture
11.08	11.3	0.22					
11.54	11.95	0.41					
22.46	23.1	0.64					
43.65	44.5	0.85					

Notes: PVC lined to

Drill Hole ID: OJ009

Project: Southern Midlands Coal
License: EL25/2008
Date Drilled: 8/6/2013 - 11/6/2013

Collar: Easting: 55 524250
Northing: 5 308999
Elevation: 386
(GDA - Survey)

Azimuth: n/a
Dip: -90 degrees

mFrom	mTo	Description
0	3.2	Core Loss - Broken ground
3.2	5.95	Orange to pale cream, medium to coarse-grained lithic sandstone with frequent fracturing and some low angle jointing
5.95	6.11	Core Loss
6.11	7.9	Zonally grey but dominantly pale orange/cream medium to coarse-grained lithic sandstone
7.9	7.98	Core Loss - Ground away
7.98	9.28	Pale grey (with zonal pale orange) medium to coarse-grained lithic sandstone
9.28	9.35	Core Loss - Broken ground
9.35	10.11	Pale orange, medium to fine-grained lithic sandstone with low angle jointing around 10m
10.11	10.13	Clay
10.13	10.27	Pale orange to brown, fine-grained lithic sandstone
10.27	11.08	Carbonaceous mudstone with minor mudstone
11.08	11.3	Zonally bright coal with some carbonaceous mudstone and approximately 5-10% vitrinite
11.3	11.56	Grey mudstone and some clay
11.56	11.95	Zonally bright coal with carbonaceous mudstone and approximately 10% vitrinite
11.95	12.6	Grey mudstone with minor fine-grained sandstone bands
12.6	12.88	Carbonaceous mudstone with minor coal and minor mudstone downhole
12.88	13	Broken, brittle coal
13	13.66	Grey to light grey, interbedded mudstones and fine to medium-grained sandstone
13.66	21.69	Medium to coarse-grained, grey lithic sandstone with flacer banding present around 17m and minor large mudstone clasts at 15.8m. Appears to be a series of upwardly fining sequences with minor small clasts of mudstone, carbonaceous mudstone and coal occasisionally present.
21.69	21.94	Mud from cave in and broken mudstone
21.94	22.12	Carbonaceous mudstone and heavy, dull coal with some mudstone
22.12	22.46	Mudstone and carbonaceous mudstone with minor vitrinite bands (less than 1%)
22.46	23.1	Moderately heavy, dull coal with approximately 1% vitrinite and minor calcite veining uphole
23.1	29.29	Grading from dark grey to grey, upwardly fining sequence of fine to coarse-grained lithic sandstones
29.29	29.79	Grey to pale grey, coarse to very coarse-grained lithic sandstone with clasts of mudstone around 29.72m
29.79	31.5	Fine to medium-grained, pale grey lithic sandstone with discontinuous flacer banding downhole
31.5	32.15	Coarse to very coarse-grained, pale grey lithic sandstone with 2-5mm clasts of mudstone and coal from 31.62-31.7m and 15mm clasts at 31.84m. Possibly an upwardly fining sequence
32.15	33.66	Grey, fine to medium-grained lithic sandstone with angular 2-4mm coal/carbonaceous mudstone clasts around 33.1m
33.66	34.74	Medium-grained, grey lithic sandstone
34.74	35.03	Medium to very coarse-grained, grey lithic sandstone with elongated mudstone clasts up to 3cm by 1cm in size
35.03	43.65	Grey, medium to coarse-grained lithic sandstone (appears to be upwardly fining) with minor flacer banding from 36.7-37m and coal/carbonaceous mudstone clasts, approximately 2mm in size at 37.27m. Minor to very minor flacer banding.
43.65	44.5	Moderately heavy, dull coal and carbonaceous mudstone with calcite veining (some along remnant bedding planes) and approximately 1% vitrinite
44.5	44.86	Carbonaceous mudstone with some coal and minor mudstone downhole
44.86	45.1	Grey to dark grey silicious mudstone (or pyroclastic ash zone)
45.1	46.28	Pale grey, medium to fine-grained lithic sandstone with occasional coal clasts from 45.77-45.82m
46.28	46.62	Interbedded grey to pale grey mudstone and lithic sandstone with minor carbonaceous mudstone
46.62	46.74	Fine-grained, grey lithic sandstone
46.74	46.8	Grey mudstone with minor fine-grained grey sandstone beds
46.8	50.62	Medium to fine-grained, pale grey lithic sandstone with flacer banding from 48.9-49m
50.62	52.19	Grey-green, silica-sericite(?) altered, medium to coarse-grained lithic sandstone
52.19	52.33	Dark green-grey, sericite-silica altered mudstone and carbonaceous mudstone
52.33	54.35	Green-grey, medium-grained, silica-sericite altered lithic sandstone
54.35	54.67	Black, altered carbonaceous sandstone (possibly 'meta-coal' and sandstone)
54.67	54.9	Grey mudstone and clay (fault zone?)
54.9	55.58	Interbedded grey sandstone and mudstone
55.58	59.55	Grey, medium grained lithic sandstone with tensional calcite veining uphole and flacer banding downhole
	EOH	

Drill Hole ID: OJ009

Detailed Logs

mFrom	mTo	Description
10.13	10.27	Pale orange/brown, fine-grained lithic sandstone
10.27	10.5	Dark grey to black carbonaceous mudstone
10.5	10.55	Very broken black carbonaceous mdstone and coal with iron-rich alteration
10.55	10.62	Dark grey to black carbonaceous mudstone with multiple clay seams
10.62	11.08	Grey mudstone and minor arbonaceous mudstone
11.08	11.2	Coal and carbonaceous mudstone with 5-10% vitrinite banding
11.2	11.3	Bright coal: 70-80% vitrinite
11.3	11.54	Grey mudstone
11.54	11.56	Mudstone and clay fault(?)
11.56	11.65	Carbonaceous mudstone and coal with less than 1% vitrinite
11.65	11.67	Vitrinite
11.67	11.71	Dull coal and carbonaceous mudstone
11.71	11.9	Bright coal with minor calcite cleating and approximately 60% vitrinite. Very broken from around 11.87m
11.9	11.95	Very broken, brittle vitrinite and black clay
11.95	12	Broken grey mudstone
12	12.6	Grey mudstone with minor fine-grained sandstone bands
12.6	12.8	Broken, dark grey to black carbonaceous mudstone and coal with minor mudstone and clay
12.8	12.88	Dark grey mudstone and carbonaceous mudstone
12.88	13	Very broken, brittle coal
13	13.66	Grey to light grey interbedded mudstones and fine to medium-grained sandstones
21.69	21.94	Mudstone and cave-in from faulting (?)
21.94	22.01	Black carbonaceous mudstone +/- heavy, dull coal
22.01	22.03	Clay/mudstone band
22.03	22.12	Black carbonaceous mudstone and heavy, dull coal with approximately 1% vitrinite
22.12	22.43	Mudstone and carbonaceous mudstone with minor, less than 1% vitrinite banding
22.43	22.46	Clay band
22.46	22.58	Moderately heavy, dull coal with 2-5% vitrinite and 2% calcite veining
22.58	23.1	Heavy, dull coal and carbonaceous mudstone with minor calcite veining uphole and very minor vitrinite banding (<1%)
23.1	23.65	Grading from black to dark grey medium to fine-grained lithic sandstone
23.65	29.29	Grading from dark grey to grey, medium to coarse-grained lithic sandstone
40	43.65	Grey, medium to coarse-grained lithic sandstone
43.65	43.74	Dull, heavy coal
43.74	43.76	Dull, heavy coal with frequent calcite veining along remnant bedding
43.76	44.5	Moderately dull, heavy coal (+/- carbonaceous mudstone) with 1-2% vitrinite (increasing downhole) and approximately 1% calcite veining
44.5	44.7	Broken, dark grey carbonaceous mudstone
44.7	44.74	Dull, heavy coal with approximately 1% vitrinite (+/- carbonaceous mudstone)
44.74	44.84	Dark grey to grey mudstone with minor carbonaceous mudstone
44.84	44.86	Carbonaceous mudstone (+/- coal)
44.86	45.1	Sericite altered(?) grey to dark grey mudstone or ash/pyroclastic zone
45.1	46.28	Pale grey, medium to fine-grained lithic sandstone with occasional coal clasts from 45.77-45.82m

OJ009 - Structure						
m From	m To	Structure	Angle to Core Axis	Alteration	Form	Comments
5.12	5.13	jt	80		PR	No alteration
5.17	5.7	jt	7	Fe	UR	Minor iron alteration
9.93	10.06	jt	30		UR	
10.5	10.62	fx				fault(?)
11.9	12	fx				fault(?) in coal
12.88	13	fx				fault(?) in coal
13.3	13.37	bd	85			
17.1	17.15	bn	70			Flacer banding
17.3	17.6	fx	2		UR	
17.94	17.96	bd	75			bedding and flacer banding
18.64	18.74	bd	80			
20.65	20.99	jt	15	Cy	UR	minor clay
22.43	22.46	ft	80	Cy		clay seam or fault(?)
28.1	28.26	fx	0		UR	
30.22	30.32	jt	35	Ca	UR	
31.2	31.5	bn	75			discontinuous flacer banding
32.98	33	jt	70		PR	
34.38	34.64	jt	80		PS	
35.2	35.3	jt	25		UR	
36.7	37	bn	70			Flacer banding
38.91	39.1	jt	25		UR	
39.39	39.48	jt	30	Ca	UR	
40.12	40.46	jt	30		UR	joint set
40.12	40.46	jt	60		UR	
40.12	40.46	jt	10		UR	
40.94	40.94	bd	90			
43.65	43.65	bd	85			contact - bedding
45	45.1	jt	40		PS	
45.1	45.33	jt	15		PR	
45.73	45.86	jt	20		PR	
46.28	46.43	bd	75			
46.62	46.62	bd	65			
47.05	47.15	jt	40		PS	
47.65	47.67	jt	70		PS	
47.73	47.77	jt	70		PS	opposite to previous set
48.44	48.49	jt	30		PR	
48.8	49	bn	75			flacer banding
52	52.1	jt	30		PR	
52.3	52.6	jt	20		PR	
53	53.2	jt	20		PR	
54.2	54.4	jt	10		UR	
55.4	55.65	jt	40		PR	
55.4	55.65	jt	70		PR	
55.4	55.65	jt	60		PR	
58.85	59.05	jt	20		UR	
59.2	59.55	jt	20		UR	

Hole ID: OJ010

Collar:	Northing:	5308789	mN	Datum:	GDA
	Easting:	524919	mE	Locating Method:	Survey
	Elevation:	390	m	Accuracy:	mm
	Tenement:			EL25/2008 Melton Mowbray	
	Location:			Northumbria, Jericho	

Surveys:

Depth	Dip	Azimuth

Company: South East Asia Resources (Tasmania)

Depth: 52.6 m
Azimuth: n/a degrees
Dip: -90 degrees

Drilling Method: Diamond (HQ3)
Date Drilled: 14/6/2013 - 15/6/2013
Drilling Company: Whole Core

Site Geologist: Karen Adams
Logging Geologist: Karen Adams

Sampled:					
16.78	m	to	17.34	m	Heavy dull coal (+/- carbonaceous mudstone)
18.54	m	to	19.16	m	Heavy dull coal 5-10% vitrinite & brecciated downhole contact
32.32	m	to	33	m	Grading from dull to moderately bright coal
33.8	m	to	34.5	m	Mudstone, carbonaceous mudstone & coal breccia zone
42.15	m	to	42.93	m	Very broken, heavy dull coal (+/- carbonaceous mudstone)

Results:

mFrom	mTo	Interval	Relative Density	Ash%	Total Sulphur	Calories Kcal/Kg	Moisture
16.78	17.34	0.56					
18.54	19.16	0.62					
32.32	33	0.68					
33.8	34.5	0.7					
42.15	42.93	0.78					

Notes:
PVC lined to 33m
Dolerite at 48.8m
Frequent cave-ins including in coal seam (sent for assay?)

Drill Hole ID: OJ010

Project: Southern Midlands Coal
License: EL25/2008
Date Drilled:

Collar: Easting: 55 524 919
Northing: 5 308 789
Elevation: 390
(GDA - Surveyed)

Azimuth: n/a
Dip: -90 degrees

mFrom	mTo	Description
0	1.22	Core Loss
1.22	2.7	Soft, pale brown/cream, highly degraded medium-grained lithic sandstone
2.7	4.7	Core Loss
4.7	5.8	Soft, pale brown/orange/cream, highly degraded medium-grained lithic sandstone
5.8	7	Soft, iron altered, pale cream/brown weathered/degraded lithic sandstone
7	7.1	Core Loss - Ground away
7.1	8.5	Soft, iron altered, pale cream/brown weathered/degraded lithic sandstone
8.5	8.61	Core Loss - Ground away
8.61	10.7	Soft, iron altered, pale cream/brown weathered/degraded lithic sandstone
10.7	10.8	Core Loss - Washed away
10.8	11.5	Very soft, pale orange, medium-grained lithic sandstone
11.5	11.96	Soft grey, medium-grained lithic sandstone
11.96	12.8	Grey, medium-grained lithic sandstone with frequent flacer banding
12.8	13.51	Grey to dark grey, medium to coarse-grained lithic sandstone with calcite veining, irregular flacer banding and coal clasts
13.51	14.53	Grey to pale grey, medium to coarse-grained lithic sandstone with some irregular flacer banding, coal clasts, and mudstone clasts up to 3cm in size
14.53	15.8	Frequently fractured grey mudstone with minor carbonaceous mudstone
15.8	15.9	Core Loss - Broken ground
15.9	16.78	Frequently fractured grey mudstone with minor carbonaceous mudstone
16.78	17.4	Heavy, dull coal (+/- carbonaceous mudstone). Moderately frequent jointing
17.4	17.45	Core Loss - Ground away
17.45	17.78	Dark grey to grey mudstone and carbonaceous mudstone
17.78	18.24	Grey mudstone (tuffaceous?) with minor darker carbonaceous mudstone layer
18.24	18.54	Carbonaceous mudstone and grey mudstone
18.54	19.16	Heavy, dull coal (+/- carbonaceous mudstone) with 5-10% vitrinite and brecciated downhole contact
19.16	20.2	Very broken grey mudstone. (sericite-silica altered?)
20.2	21.44	Moderately to heavily broken, pale grey, sericite-silica altered interbedded mudstone and fine to medium-grained sandstone with calcite vein at 20.7m and minor cross-bedding downhole
21.44	21.7	Dark grey to grey, flacer banded, fine-grained lithic sandstone
21.7	23.5	Pale grey, upwardly fining, coarse to fine-grained lithic sandstone
23.5	23.6	Core Loss - Ground away
23.6	27.14	Medium to coarse-grained, poorly consolidated, grey lithic sandstone with minor flacer banding and large, low angle calcite vein at around 27m
27.14	27.4	Core Loss - Broken ground
27.4	27.5	Calcite pieces from vuggy veining (passage of water)
27.5	27.65	Core Loss - Broken ground

27.65	29.35	Medium to coarse-grained, grey lithic sandstone (with a slight green tinge). Overall soft and poorly consolidated with zones of broken ground
29.35	29.4	Core Loss - Broken ground
29.4	30.45	Soft grey, frequently fractured, medium-grained lithic sandstone
30.45	30.6	Core Loss - Ground away
30.6	31.26	Grey, soft, medium to coarse-grained lithic sandstone with frequent coal rip-up clasts containing minor calcite downhole
31.26	31.9	Grey coarse-grained lithic sandstone with rounded mudstone clasts of up to 2cm at 31.3m
31.9	32.32	Grey, fine-grained lithic sandstone with 1mm coal clasts uphole
32.32	33	Dull, heavy coal (+/- carbonaceous mudatone) grading to brittle, moderately bright coal with some calcite cleating and approximately 10% vitrinite
33	34.43	Very broken grey mudstone and carbonaceous mudstone with coal breccia zone and large calcite veining at around 33.9m. Significant amounts of cave-in
34.43	34.7	Coal, approximately 1% vitrinite, zonally heavy and dull with some carbonaceous mudstone and mudstone. (Possibly some cave-in material present)
34.7	38.35	Interbedded grey mudstone, pale grey to dark grey medium-grained lithic sandstone with some carbonaceous material contained downhole
38.35	38.4	Core Loss
38.4	40.65	Dark grey to black, medium to fine-grained lithic sandstone with some carbonaceous mudstone. Coal/calcite clast at approximately 39.6m.
40.65	40.7	Core Loss
40.7	42.15	Dark grey to black, medium to fine-grained lithic sandstone with coarse, blebby, disseminated pyrite
42.15	42.93	Dominantly moderately to strongly broken, heavy, dull coal +/- carbonaceous mudstone
42.93	44.44	Dark grey to grey mudstone with some interbedded fine-grained lithic sandstone. Mudstone rip-up clasts around 44m
44.44	45.9	Pale grey, coarse to medium-grained lithic sandstone with minor flacer banding uphole and mudstone bedding at 44.85m and gradational downhole alteration contact
45.9	48.8	Green-grey, sericite-silica-chlorite altered, medium to coarse-grained lithic sandstone with irregular uphole contact. Chlorite spotting from 47.5m and 2-3cm thick calcite vein at 46.4m
48.8	51.45	Strongly fractured, dark green-grey brecciated dolerite with zonally strong calcite veining and infill
51.45	51.95	Core Loss
51.95	52.6	Strongly fractured, dark green-grey brecciated dolerite with zonally strong calcite veining and infill
	EOH	

Drill Hole ID: OJ010

Detailed Logs

mFrom	mTo	Description
14	14.53	Grey to pale grey, medium to coarse-grained lithic sandstone with large (up to 3cm) mudstone clasts and 2-8mm coal bands with calcite cleats from 14.4-14.53m
14.53	15.8	Frequently fractured grey mudstone minor carbonaceous mudstone
15.8	15.9	Core Loss
15.9	16.78	Frequently fractured grey mudstone minor carbonaceous mudstone
16.78	17.34	Moderately to frequently jointed heavy dull coal
17.34	17.4	Dark grey to brown mudstone and carbonaceous mudstone
17.4	17.45	Core Loss - Ground away
17.45	17.59	Grey to dark grey mudstone
17.59	17.64	Dark grey carbonaceous mudstone and mudstone
17.64	17.73	Grey mudstone
17.73	17.78	Dark grey silica-sericite altered carbonaceous mudstone
17.78	18.16	Tuffaceous (?) grey mudstone
18.16	18.22	Carbonaceous mudstone
18.22	18.24	Grey (tuffaceous?) mudstone
18.24	18.3	Carbonaceous mudstone
18.3	18.4	Grey mudstone
18.4	18.54	Very broken, grey to dark grey mudstone and carbonaceous mudstone
18.54	19.16	Heavy dull coal with approximately 5-10% vitrinite bands and mm mudstone bands present from 19.01m and brecciated downhole contact
19.16	20.2	Very broken, grey mudstone
20.2	21.44	Pale grey, silica-sericite altered, interbedded mudstone and fine to medium-grained sandstone
31.05	31.26	Grey, soft medium to coarse-grained lithic sandstone with frequent coal rip-up clasts containing minor calcite
31.26	31.9	Grey, coarse-grained lithic sandstone with rounded mudstone clasts up to 2cm in size at 31.3m
31.9	32.32	Grey, fine-grained lithic sandstone with 1mm coal clasts uphole
32.32	32.37	Dull heavy coal
32.37	32.38	Vitrinite
32.38	33	Very broken, brittle, moderately bright coal with some calcite cleating. Approximately 10% vitrinite
33	33.8	Very broken grey mudstone (with some cave-in material)
33.8	34.43	Very broken mudstone, carbonaceous mudstone and coal breccia zone with large calcite vein at 33.9m and calcite cleating in large coal fragment at approximately 34.3m
34.43	34.5	Coal with calcite veining and cleating and approximately 5% vitrinite
34.5	34.7	Coal, carbonaceous mudstone and mudstone
34.7	35.44	Grey, silica-sericite altered mudstone
35.44	37.53	Grey to pale grey medium to fine-grained lithic sandstone
37.53	38.35	Dark grey to black medium to fine-grained lithic sandstone
38.35	38.4	Core Loss
38.4	40.65	Dark grey to black medium to fine-grained lithic sandstone with coal and calcite clast at 39.6m
40.65	40.7	Core Loss
40.7	42.15	Dark grey to black medium to fine-grained lithic sandstone with disseminated coarse, blebby pyrite throughout
42.15	42.93	Dominantly moderate to strongly broken heavy dull coal and some carbonaceous mudstone
42.93	44	Dark grey to grey mudstone with some interbedded fine-grained lithic sandstone

Structure - OJ010							
Hole ID	**m From**	**m To**	**Structure**	**Angle to Core Axis**	**Alteration**	**Form**	**Comments**
OJ010	8.77	8.84	jt	40		PS	
OJ010	9.18	9.2	bn	65			flacer banding
OJ010	12	12.4	bn	90			flacer banding
OJ010	12.05	12.1	jt	60		PS	
OJ010	12.3	12.4	jt	30		PS	
OJ010	13.2	13.22	jt	70		US	
OJ010	14.6	14.6	bd	85			
OJ010	16	16.1	bd	70			
OJ010	16.77	16.8	bd	70			contact
OJ010	16.9	17.3	jt	70		PR	along bedding plane
OJ010	18.4	20.6	ft				fault? With in situ breccia 19.16-19.14m
OJ010	20.6	20.9	vn	20	Ca		
OJ010	21.44	21.7	bn	80			flacer banding
OJ010	23.6	23.8	jt	45		PS	
OJ010	23.6	23.8	jt	30		PS	
OJ010	24.38	24.47	jt	30		PS	
OJ010	26	26.2	jt	70		PS	
OJ010	26.3	26.5	ft				fault?
OJ010	27.14	27.65	ft		Ca		fault zone? Calcite veining with open space infil. Water passage
OJ010	29.4	30.1	fx				fracture zone in soft sandstone
OJ010	31.06	31.12	jt	60		PS	
OJ010	31.35	31.44	jt	40		US	
OJ010	32.38	35.4	fx				very broken ground fault?
OJ010	35.4	35.42	bd	70			
OJ010	36.4	36.45	jt	30		PS	
OJ010	36.7	36.8	jt	70		PS	multiple
OJ010	38.12	38.45	fx				fracture zone
OJ010	39.16	39.33	jt	70		PS	
OJ010	39.16	39.33	jt	30		PR	
OJ010	39.16	39.33	jt	20		UR	
OJ010	39.44	41.3	fx	70			moderately fractured zone, dominantly 70 degrees but some 30.
OJ010	39	39.4	bd	70			
OJ010	42.15	45	ft				Very broken, fault zone.
OJ010	46	46.65	jt	60		PR	
OJ010	46.48	46.52	vn	40	Ca		
OJ010	46.8	47	fx				fracture zone
OJ010	47.5	47.5	jt	40		PR	
OJ010	47.7	47.9	jt	25		PS	
OJ010	48.7	49	ft	20	Ca-Ch		vein fill, annealed fault?
OJ010	48.8	52.6	ft				zonally brecciated fault zone

Hole ID: OJ019

Collar:	Northing:	5310113 mN	Datum:	GDA	
	Easting:	523899 mE	Locating Method:	GPS	
	Elevation:	399 m	Accuracy:	5 m	
	Tenement:	EL25/2008 Melton Mowbray			
	Location:	Northumbria, Jericho			

Surveys:

Depth	Dip	Azimuth

Company: South East Asia Resources (Tasmania)

Depth: 60.3 m
Azimuth: n/a degrees
Dip: -90 degrees

Drilling Method: Diamond (HQ3)
Date Drilled: 16/7/13 - 18/7/13
Drilling Company: KMR Drilling

Site Geologist: Karen Adams
Logging Geologist: Karen Adams (Claire Thomas)

Sampled:

16.3	m	to	16.74	m	Carbonaceous mudstone and possible heavy, dull coal
16.74	m	to	17.2	m	Moderately to strongly broken, heavy, dull coal
16.7	m	to	17.3	m	Cave In
17.2	m	to	17.54	m	Moderately brittle, bright coal. Calcite cleating/veining
17.84	m	to	18.24	m	Heavy dull coal & carbonaceous mudstone
31.3	m	to	31.95	m	Carbonaceous mudstone and heavy dull coal
31.95	m	to	32.38	m	Moderately broken, heavy dull coal. Some calcite veining

Results:

mFrom	mTo	Interval	Relative Density	Ash%	Total Sulphur	Calories Kcal/Kg	Moisture
16.3	16.74	0.44					
16.74	17.2	0.46					
16.7	17.3	0.6					
17.2	17.54	0.34					
17.84	18.24	0.4					
31.3	31.95	0.65					
31.95	32.38	0.43					

Notes: Dolerite at 54.65m
PVC lined

Drill Hole ID: OJ019

Project: Southern Midlands Coal
License: EL25/2008
Date Drilled: 16th to the 18th of July, 2013

Collar: Easting: 55 523 899
Northing: 5 310 113
Elevation: 399
(GDA - GPS)

Azimuth: n/a
Dip: -90 degrees

mFrom	mTo	Description
0	4.1	No Core - Cutting bit
4.1	5.7	Brown, weathered, moderately clay-richcoarse to very coarse-grained lithic sandstone with zonal mudstone with large (up to 5cm) mudstone and carbonaceous mudstone clasts uphole
5.7	6	Core Loss
6	11.8	Orange (with some black) weathered, coarse-grained lithic sandstone with zonally prominent, irregular flacer banding and minor mudstone downhole
11.8	12	Core Loss
12	12.64	Orange to grey weathered, moderately clay-rich mudstone
12.64	14.7	Grey mudstone and minor carbonaceous mudstone with minor flacer banded fine-grained sandstone uphole
14.7	14.8	Core Loss
14.8	16.3	Strongly laminated grey mudstone with minor carbonaceous mudstone
16.3	16.74	Carbonaceous mudstone and possible heavy, dull coal
16.74	17.2	Moderately to strongly broken, heavy, dull coal
17.2	17.54	Moderately brittle, bright coal with frequent calcite cleating and veining and approximately 2% vitrinite
17.54	17.84	Grey mudstone with irregular ash banding
17.84	18	Heavy, dull coal with minor calcite cleating
18	18.13	Mudstone and carbonaceous mudstone
18.13	18.24	Moderately heavy, dull coal with calcite veining
18.24	18.45	Carbonaceous mudstone
18.45	18.7	Strongly bedded, grey mudstone with very minor fine-grained sandstone and possible eroded flame structures
18.7	19.14	Dark grey mudstone and carbonaceous mudstone
19.14	20.1	Soapy grey, sericite altered mudstone
20.1	20.24	Strongly weathered carbonaceous mudstone and possibly coal. Fault (?)
20.24	20.78	Soapy grey, sericite altered mudstone
20.78	31.3	Grey, zonally green, medium-grained lithic sandstone with chlorite spotting from approximately 27.8m, coal/calcite clasts at 28.3m and flacer banding from approximately 30m
31.3	31.45	Stongly laminated carbonaceous mudstone and mudstone
31.45	31.68	Carbonaceous mudstone and heavy dull coal with approximately 1% vitrinite and some calcite cleating
31.68	31.76	Very broken, heavy dull coal with possible carbonaceous mudstone
31.76	31.95	Strongly laminated, heavy dull coal and carbonaceous mudstone
31.95	32.38	Moderately broken, heavy dull coal with some calcite veining and approximately 1% vitrinite
32.38	33.46	Moderately to strongly broken, interbedded grey mudstone and carbonaceous mudstone
33.46	37.94	Grey-green medium to fine-grained lithic sandstone with cross-bedding at 33.7m and minor discontinuous coal banding with calcite cleating at approximately 36m
37.94	41.54	Pale grey-green (and zonally dark grey), medium to coarse-grained lithic sandstone with some flacer banding and weak sericite-silica alteration and minor chlorite spotting
41.54	45.22	Somewhat leached, pale grey to white, chlorite spotted medium-grained lithic sandstone
45.22	45.59	Green-grey, sericite-silica altered mudstone
45.59	47.5	Pale grey-green, sericite-silica altered, medium to fine-grained lithic sandstone
47.5	47.56	Core Loss
47.56	47.8	Grey mudstone with calcite veining
47.8	54.36	Soapy grey, silica-sericite altered mudstone and fine-grained sandstone with calcite veining and zones of mottled chlorite alteration at 49.1-49.25m
54.36	54.65	Strongly altered/annealed fault with colloform-like texture
54.65	60.3	Green-grey, fine to medium-grained dolerite with moderately frequent calcite veining uphole and calcite filled vessicles from approximately 57m to 59m
	EOH	

Drill Hole ID: OJ019

Detailed Logs

mFrom	mTo	Description
14.8	16.3	Strongly laminated grey mudstone with minor carbonaceous mudstone
16.3	16.74	Carbonaceous mudstone and possible heavy, dull coal
16.74	17.2	Moderately to strongly broken, heavy, dull coal
17.2	17.54	Moderately brittle, bright coal with frequent calcite cleating and veining and approximately 2% vitrinite
17.54	17.84	Grey mudstone with irregular ash banding
17.84	18	Heavy, dull coal with minor calcite cleating
18	18.13	Mudstone and carbonaceous mudstone
18.13	18.24	Moderately heavy, dull coal with calcite veining
18.24	18.45	Carbonaceous mudstone
18.45	18.7	Strongly bedded, grey mudstone with very minor fine-grained sandstone and possible eroded flame structures
18.7	19.14	Dark grey mudstone and carbonaceous mudstone
30	31.3	Grey, zonally green, medium-grained lithic sandstone with chlorite spotting and flacer banding
31.3	31.45	Stongly laminated carbonaceous mudstone and mudstone
31.45	31.68	Carbonaceous mudstone and heavy dull coal with approximately 1% vitrinite and some calcite cleating
31.68	31.76	Very broken, heavy dull coal with possible carbonaceous mudstone
31.76	31.95	Strongly laminated, heavy dull coal and carbonaceous mudstone
31.95	32.38	Moderately broken, heavy dull coal with some calcite veining and approximately 1% vitrinite
32.38	33.46	Moderately to strongly broken, interbedded grey mudstone and carbonaceous mudstone

Structure	OJ019						
Hole ID	**m From**	**m To**	**Structure**	**Angle to Core**	**Alteration**	**Form**	**Comments**
OJ019	4.1	4.6	fx			UR	
OJ019	4.6	4.57	bd	50			
OJ019	4.77	5.53	fx		Fe	UR	
OJ019	5.57	5.65	jt	45		UR	
OJ019	6.12	6.94	jt	60		UR	
OJ019	6.4	7.31	jt	45			
OJ019	6.17	6.9	bd	60			
OJ019	7.75	9.85	fx	60			
OJ019	8.8	10.38	fx	60		UR	
OJ019	10.84	11.36	bd	60		PR	
OJ019	11.64	11.8	fx			UR	
OJ019	12.28	12.46	jt	90	Cy	PS	
OJ019	12.58	13.02	fx	60			
OJ019	13.32	13.42	fx	50			
OJ019	13.67	13.72	fx	70		UR	
OJ019	16.66	16.8	jt	45		UR	
OJ019	17.37	18.5	jt	70		UR	
OJ019	18.03	18.93	jt	45		UR	
OJ019	19.73	19.82	fx				
OJ019	20.44	21.7	fx	80		PS	
OJ019	21.15	21.18	fx	85		UR	
OJ019	21.17	21.23	fx	70		UR	
OJ019	22.18	22.56	jt	70		UR	
OJ019	22.66	22.7	fx			UR	
OJ019	23.72	22.97	fx	80		US	
OJ019	23.02	23.7	fx	60		UR	
OJ019	24.24	24.73	jt	70		UR	
OJ019	24.57	24.7	fx				
OJ019	25.35	25.43	fx	70		PS	
OJ019	25.61	25.69	fx				
OJ019	26.17	26.4	jt	70		UR	
OJ019	27.02	27.04	fx				
OJ019	27.04	27.66	fx	70		UR	
OJ019	28.47	28.56	fx			UR	
OJ019	28.22	28.88	fx			PS	
OJ019	28.96	28.94	jt	70		PS	
OJ019	29.1	29.94	jt	75		UR	
OJ019	30.05	30.9	jt	70		UR	
OJ019	30.98	31.14	jt	60		UR	
OJ019	31.2	31.48	fx				
OJ019	31.78	32.13	fx	70		PS	
OJ019	33.24	32.8	fx				
OJ019	32.94	33.42	fx				
OJ019	33.7	33.75	fx	70			
OJ019	34.16	34.2	fx	70			
OJ019	34.52	34.55	jt	85		US	
OJ019	35.58	35.72	jt	30		UR	
OJ019	35.1	35.72	fx				
OJ019	35.57	35.6	jt	70		US	
OJ019	35.77	35.94	fx				
OJ019	36.06	36.62	jt	70		UR	

Hole ID: OJ023

Collar:
Northing: 5306914 mN
Easting: 524032 mE
Elevation: 387 m
Tenement:
Location:

Datum: GDA
Locating Method: Survey
Accuracy: mm
EL25/2008 Melton Mowbray
Northumbria, Jericho

Surveys:

Depth	Dip	Azimuth

Company: South East Asia Resources (Tasmania)

Depth: 43 m
Azimuth: n/a degrees
Dip -90 degrees

Drilling Method: Open Hole
Date Drilled: 4/07/2013
Drilling Company: KMR Drilling

Site Geologist: Karen Adams (Claire Thomas)
Logging Geologist: Karen Adams

Sampled:

	m	to	m	
	m	to	m	
	m	to	m	
	m	to	m	

Results:

mFrom	mTo	Interval	Relative Density	Ash%	Total Sulphur	Calories Kcal/Kg	Moisture

Notes:
Water at 16m
PVC lined to 43m

Drill Hole ID: OJ023

Project: Southern Midlands Coal
License: EL25/2008
Date Drilled: 4th July, 2013

Collar: Easting: 55 524 914
Northing: 5 306 914
Elevation: 387
(GDA - Survey)

Azimuth: n/a
Dip: -90 degrees

mFrom	mTo	Description
0	1	Brown-orange weathered mudstones and fine-grained sandstone
1	2	Orange-grey, fine to medium-grained sandstone
2	3	Orange-grey, fine-grained sandstone and mudstone
3	5	Light-brown mudstone and fine-grained sandstone
5	7	Light-brown to grey mudstone and fine-grained sandstone
7	8	Pale-grey to cream mudstone
8	10	Pale-grey fine to medium-grained sandstone
10	12	Pale-grey mudstone
12	13	Pale-grey to orange mudstone
13	14	Pale-grey fine-grained sandstone and mudstone
14	15	Grey mudsotne and fine-grained sandstone
15	16	Grey fine-grained sandstone and mudstone
16	17	Grey mudstone and minor fine-grained sandstone with minor pale orange pieces
17	18	Grey to dark-grey mudstone
18	20	Grey mudstone
20	21	Pale-grey, fine-grained sandstone and mudstone
21	23	Grey mudstone and minor pale-grey, fine-grained sandstone
23	24	Grey mudstone and some paler grey fine-grained sandstone
24	25	Grey mudstone and fine-grained sandstone
25	26	Grey fine-grained sandstone and mudstone
26	27	Pale-grey fine-grained sandstone and mudstone
27	28	Grey mudstone and some fine-grained sandstone
28	29	Pale-grey medium to fine-grained lithic sandstone, grey mudstone and minor to very minor carbonaceous mudstone
29	30	Pale-grey, fine to medium-grained lithic sandstone and some grey mudstone
30	31	Pale-grey to pale-orange-cream, fine-grained sandstone and some grey mudstone
31	32	Pale-grey to grey mudstone with some pink, altered mudstone
32	33	Pink, grey, pale-grey and pale-yellow-cream mudstone
33	34	Pale-grey and pink mudstone
34	35	Pale-brown, pink and minor grey mudstone
35	36	Pale-yellow-orange, grey and minor pink mudstone
36	37	Pale-yellow-orange, pink and minor dark grey mudstone
37	38	Orange-brown, pink, yellow and pale-grey mudstone
38	40	Pale-pink, pale-orange and pale grey mudstone and fine-grained sandstone
40	41	Pale-pink, pale-orange and pale grey mudstone
41	42	Pink-red, white-cream, pale-yellow and grey mudstone
42	43	Pink-red, grey, pale-green-yellow and white mudstone
	EOH	

Drill Hole ID: OJ023

Detailed Logs

mFrom	mTo	Description
n/a		

Structure	n/a						
Hole ID	**m From**	**m To**	**Structure**	**Angle to Core**	**Alteration**	**Form**	**Comments**
OJ023							

APPENDIX 17

MIDLANDS ENERGY

DRILL HOLE No OJ009

SHEET 1 OF 3

Survey Depth	Azimuth	Dip	Hole Co-ordinates	GDA
0	–	–	Easting_	524 250
			Northing_	5 308 999
			Elevation (m)	386
			Azimuth_ Mag	–
			Dip	-90°

PROJECT:	SOUTHERN MIDLANDS COAL
PROSPECT:	JERICHO (EL25/2008)
DATE:	08-06-13 TO 11-06-13
LOGGED BY:	KAREN ADAMS

HOLE DEPTH	CORE RECOVERY	RQD	SAMPLE NO PREFIX	SULPHIDES % .1 .3 1 3 5	PICTORIAL LOG STRUCT	PICTORIAL LOG ALT	GRAPHIC LOG mm 0.06 0.5 2 8 32 64	GEOLOGY NOTES	SUMMARY LOG
1	0	0						0.00-3.20: CORE LOSS (BROKEN GROUND)	
2	0	0							CL
3	0	0							
4	80	6						3.20-5.95: ORANGE-PALE CREAM, MEDIUM TO COARSE-GRAINED LITHIC SANDSTONE WITH FREQUENT FRACTURING AND SOME LOW ANGLE JOINTING	
5	100	89				Fe			SS
6	95	37			JH 80° JH 7°				
								5.95-6.11: CORE LOSS	CL
7	89	45				Fe		6.11-7.90: ZONALLY GREY BUT DOMINANTLY PALE ORANGE-CREAM, MEDIUM TO COARSE-GRAINED LITHIC SANDSTONE	SS
8	92	91						7.90-7.98: CORE LOSS (GROUND AWAY)	
9	100	92				(Fe)		7.98-9.28: PALE GREY (WITH ZONAL PALE ORANGE) MEDIUM TO COARSE GRAINED LITHIC SANDSTONE	CL SS
								9.28-9.35: CORE LOSS (BROKEN GROUND)	CL
10	93	83			JH 30°	Fe		9.35-10.13: PALE ORANGE, MEDIUM TO FINE-GRAINED LITHIC SANDSTONE WITH CLAY SEAM @ 10.11-10.13 AND LOW ANGLE JOINT AT 10m	SS
						Fe		10.13-10.27: PALE ORANGE TO BROWN, FINE-GRAINED LITHIC SANDSTONE	SS
11	100	14			fx (FI)			10.27-11.08: CARBONACEOUS MUDSTONE WITH MINOR MUDSTONE	CMS
12	100	23			fx (FI?)			11.08-11.30: ZONALLY BRIGHT COAL WITH SOME CARBONACEOUS MUDSTONE AND APPROX. 5-10% VITRINITE 11.30-11.56: GREY MUDSTONE AND SOME CLAY 11.56-11.95: ZONALLY BRIGHT COAL WITH SOME CARBONACEOUS MUDSTONE AND APPROXIMATELY 10% VITRINITE	MS
13	100	40			fx (FI)			11.95-12.60: GREY MUDSTONE WITH MINOR FINE-GRAINED SANDSTONE BANDS 12.60-12.88: CARBONACEOUS MUDSTONE WITH MINOR COAL AND MINOR MUDSTONE DOWN HOLE	MS CMS
14	100	100			Bd 85°			12.88-13.00: BROKEN BRITTLE COAL 13.00-13.66: GREY TO LIGHT GREY, INTERBEDDED MUDSTONE AND FINE TO MEDIUM-GRAINED SANDSTONE	MS (cs)
15	100	91						13.66-21.69: MEDIUM TO COARSE-GRAINED, GREY LITHIC SANDSTONE WITH FLACER BANDING PRESENT AROUND 17m AND MINOR LARGE MUDSTONE CLASTS AT 15.8m. APPEARS TO BE A SERIES OF UPWARDLY FINING SEQUENCES WITH MINOR SMALL CLASTS OF MUDSTONE, CARBONACEOUS MUDSTONE AND COAL OCCASIONALLY PRESENT	
16	100	100							
17	100	100							SS
18	100	30			Bn 70° fx 2° Bd 75°				
19	100	36			Bd 80°				
20	100	100							

REMARKS HQ3 DRILLED BY 'WHOLE CORE'

MIDLANDS ENERGY

DRILL HOLE No OJ009

SHEET 2 OF 3

Survey Depth	Azimuth	Dip	Hole Co-ordinates	
			Easting_	
			Northing_	
			Elevation (m)	
			Azimuth_Mag	
			Dip	

PROJECT:	SOUTHERN MIDLANDS COAL
PROSPECT:	JERICHO (EL25/2008)
DATE:	08-06-13 TO 11-06-13
LOGGED BY:	KAREN ADAMS

HOLE DEPTH	CORE RECOVERY	RQD	SAMPLE NO PREFIX	SULPHIDES % .1 .3 1 3 5	PICTORIAL LOG STRUCT	PICTORIAL LOG ALT	GRAPHIC LOG mm 0.06 0.5 2 8 32 64	GEOLOGY NOTES	SUMMARY LOG
21	100	63				Jt 15°			SS
22	100	69						21.69-21.94: MUD FROM CAVE-IN AND BROKEN MUDSTONE	MS
23	100	85				ft 80°		21.94-22.12: CARBONACEOUS MUDSTONE AND HEAVY, DULL COAL WITH SOME MUDSTONE 22.12-22.46: MUDSTONE AND CARBONACEOUS MUDSTONE WITH LESS THAN 1% VITRINITE BANDS	CMS MS
24	100	69						22.46-23.10: MODERATELY HEAVY, DULL COAL WITH APPROX 1% VITRINITE AND MINOR CALCITE VEINING UP HOLE. 23.10-29.29: GRADING FROM DARK GREY TO GREY, UPWARDLY FINING SEQUENCE OF FINE TO COARSE-GRAINED LITHIC SANDSTONES	
25	100	99							
26	100	100							SS
27	100	91							
28	100	100							
29	100	53				fx 0°			
30	100	99						29.29-29.79: GREY TO PALE-GREY, COARSE TO VERY COARSE-GRAINED LITHIC SANDSTONE WITH CLASTS OF MUDSTONE AROUND 29.72m	SS
31	100	100				Jt 35°		29.79-31.50: FINE TO MEDIUM-GRAINED, PALE-GREY LITHIC SANDSTONE WITH DISCONTINUOUS FLACER BANDING DOWNHOLE	SS
32	100	100				bn 75°		31.50-32.15: COARSE TO VERY COARSE-GRAINED, PALE GREY LITHIC SANDSTONE WITH 2-5mm CLASTS OF MUDSTONE AND COAL FROM 31.62-31.7m AND 15mm CLASTS AT 31.84m. POSSIBLE UPWARD FINING SEQUENCE	SS
33	100	100				Jt 70°		32.15-33.66: GREY, FINE TO MEDIUM-GRAINED LITHIC SANDSTONE WITH ANGULAR 2-4mm COAL/CARBONACEOUS MUDSTONE CLASTS AROUND 33.1m	SS
34	100	100						33.66-34.74: MEDIUM-GRAINED, GREY LITHIC SANDSTONE	
35	100	88				Jt 80°		34.74-35.03: MEDIUM TO VERY COARSE-GRAINED, GREY LITHIC SANDSTONE WITH ELONGATED MUDSTONE CLASTS UP TO 3cm X 1cm IN SIZE	SS SS
36	100	100				Jt 25°		35.03-45.65: GREY, MEDIUM TO COARSE-GRAINED LITHIC SANDSTONE (APPEARS TO BE UPWARDLY FINING) WITH MINOR FLACER BANDING FROM 36.7-37m AND COAL/CARBONACEOUS MUDSTONE CLASTS, APPROXIMATELY 2mm IN SIZE AT 37.27m. MINOR TO VERY MINOR FLACER BANDING	
37	100	100				bn 70°			
38	100	100							SS
39	100	100				Jt 25°			
40	100	100				Jt 30°			

REMARKS

MIDLANDS ENERGY

DRILL HOLE No OJ009

SHEET 3 OF 3

Survey Depth	Azimuth	Dip	Hole Co-ordinates	
			Easting_	
			Northing_	
			Elevation (m)	
			Azimuth_ Mag	
			Dip	

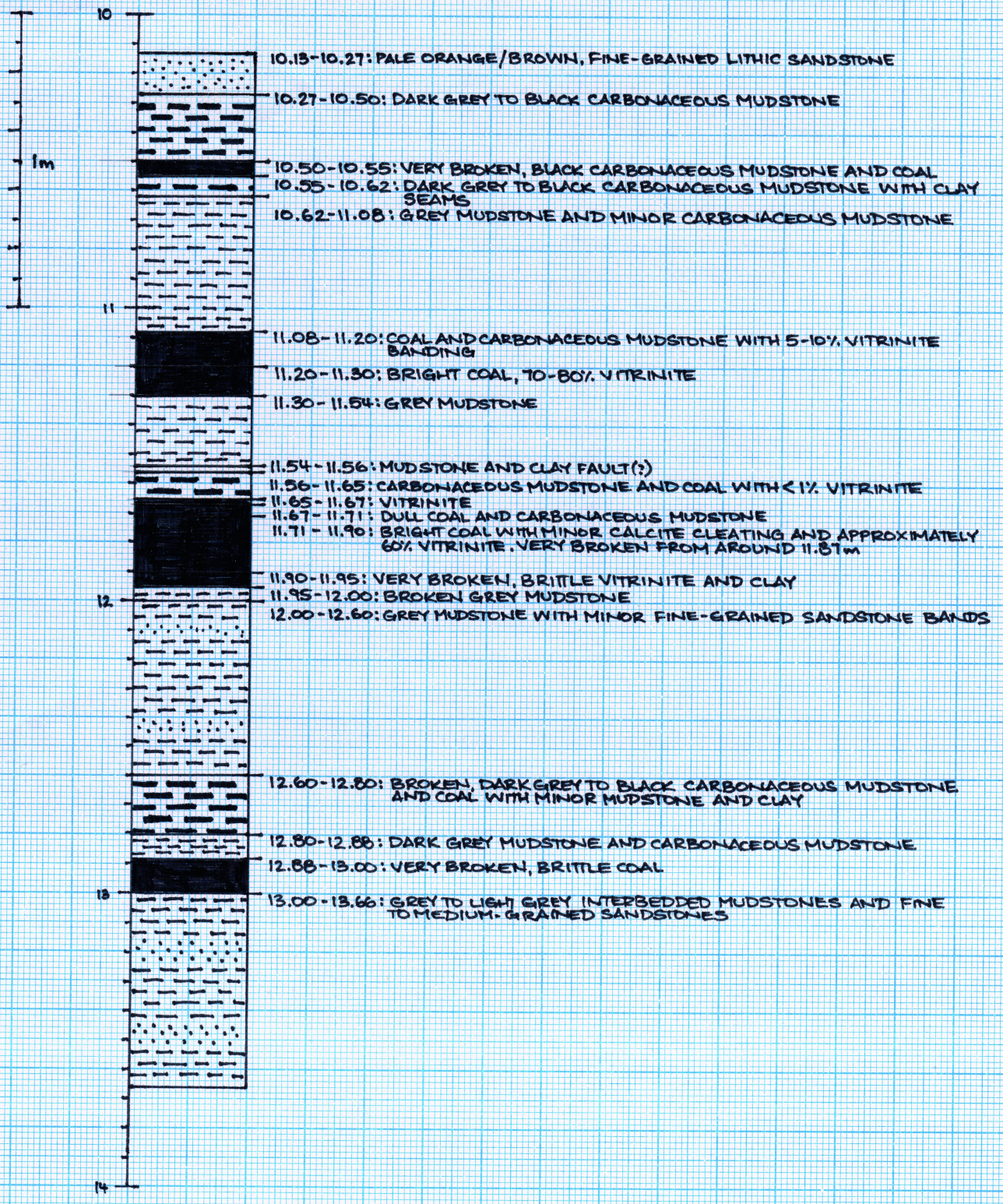
PROJECT:	SOUTHERN MIDLANDS COAL
PROSPECT:	JERICHO (EL 25/2008)
DATE:	08-06-13 TO 11-06-13
LOGGED BY:	KAREN ADAMS

HOLE DEPTH	CORE RECOVERY	RQD	SAMPLE NO PREFIX	SULPHIDES % .1 .3 1 3 5	PICTORIAL LOG STRUCT	PICTORIAL LOG ALT	GRAPHIC LOG mm 0.06 0.5 2 8 32 64	GEOLOGY NOTES	SUMMARY LOG
41	100	64				Jt 30° 60° 10°			
						bd 90°			
42	100	80							SS
43	100	100							
44	100	88				bd 85°		43.65-44.50: MODERATELY HEAVY, DULL COAL AND CARBONACEOUS MUDSTONE WITH CALCITE VEINING (SOME ALONG REMNANT BEDDING PLANES) AND APPROX. 1% VITRINITE	
45	100	49						44.50-44.86: CARBONACEOUS MUDSTONE WITH SOME COAL AND MINOR MUDSTONE DOWN HOLE	CMS
						Jt 15°		44.86-45.10: GREY TO DARK GREY SILICIOUS MUDSTONE (OR PYROCLASTIC ASH ZONE)	
46	100	53				Jt 20°		45.10-46.28: PALE GREY, MEDIUM TO FINE-GRAINED LITHIC SANDSTONE WITH OCCAISIONAL COAL CLASTS FROM 45.77-45.82m	SS
47	100	100			Bd 75° 65°			46.28-46.62: INTERBEDDED GREY TO PALE GREY MUDSTONE AND LITHIC SANDSTONE WITH MINOR CARBONACEOUS MUDSTONE	MS/SS
					Jt 40°			46.62-46.74: FINE-GRAINED, GREY LITHIC SANDSTONE	
48	100	71			Jt 70° Jt 70°			46.74-46.80: GREY MUDSTONE WITH MINOR FINE-GRAINED GREY SANDSTONE	
								46.80-50.62: MEDIUM TO FINE-GRAINED, PALE GREY LITHIC SANDSTONE WITH PLACER BANDING FROM 48.9-49m	
49	100	78			Jt 30°				SS
					bn 75°				
50	100	100							
51	100	100						50.62-52.19: GREY-GREEN, SILICA-SERICITE (?) ALTERED, MEDIUM TO COARSE-GRAINED LITHIC SANDSTONE	
52	100	88				Si Se			SS
					Jt 20°			52.19-52.33: DARK GREEN-GREY, SILICA-SERICITE ALTERED MUDSTONE AND CARBONACEOUS MUDSTONE.	
53	100	48			Jt 20° Jt 20°			52.33-54.35: GREEN-GREY, MEDIUM-GRAINED, SILICA-SERICITE ALTERED LITHIC SANDSTONE	
54	100	80				Si Se			SS
55	100	10			Jt 10°			54.35-54.67: BLACK, ALTERED CARBONACEOUS SANDSTONE (POSSIBLE 'META-COAL' AND SANDSTONE)	
								54.67-54.90: GREY MUDSTONE AND CLAY (FAULT ZONE?)	MS
56	100	47			Jt 40° 70° 60°			54.90-55.58: INTERBEDDED GREY SANDSTONE AND MUDSTONE	SS/ MS
								55.58-59.55: GREY, MEDIUM-GRAINED LITHIC SANDSTONE WITH TENSIONAL CALCITE VEINING UPHOLE AND PLACER BANDING DOWNHOLE	
57	100	91							
58	100	100							SS
59	100	85			Jt 20°				
	100	8			Jt 20°				
59.55 EOH									

REMARKS

1mm Squares

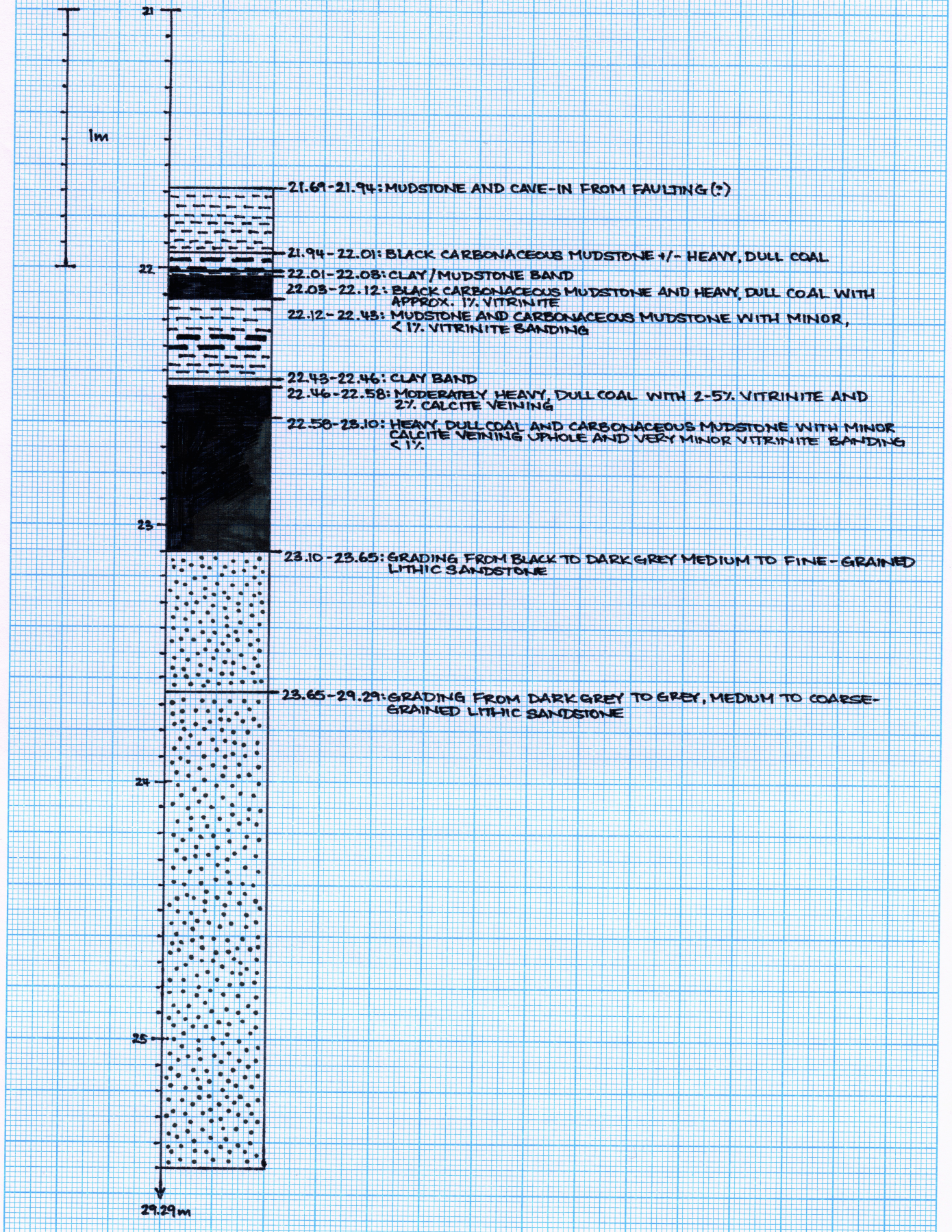
OJ009 DETAILED LOG: SEAM ONE SCALE 1:20



1mm Squares

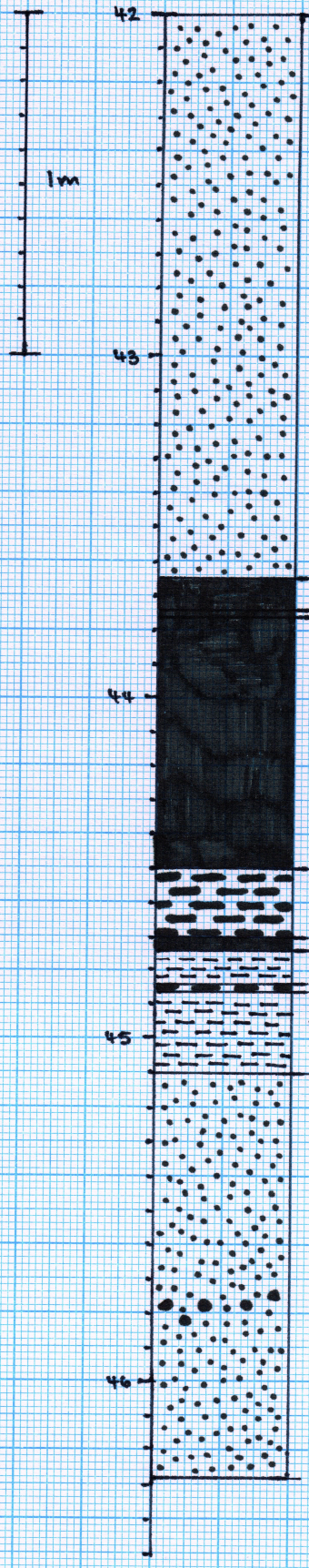
OJ009 DETAILED LOG: SEAM TWO

SCALE 1:20



1mm Squares

OJ009 DETAILED LOG : SEAM THREE SCALE 1: 20



40.00-43.65: GREY, MEDIUM TO COARSE-GRAINED LITHIC SANDSTONE

43.65-43.74: DULL, HEAVY COAL

43.74-43.76: DULL, HEAVY COAL WITH FREQUENT CALCITE VEINING ALONG REMNANT BEDDING

43.76-44.50: MODERATELY DULL, HEAVY COAL (+/- CARBONACEOUS MUDSTONE) WITH 1-2% VITRINITE (INCREASING DOWNHOLE) AND APPROX. 1% CALCITE VEINING

44.50-44.70: BROKEN, DARK GREY CARBONACEOUS MUDSTONE

44.70-44.74: DULL, HEAVY COAL WITH APPROX. 1% VITRINITE (+/- CARBONACEOUS MUDSTONE)

44.74-44.84: DARK GREY TO GREY MUDSTONE WITH MINOR CARBONACEOUS MUDSTONE

44.84-44.86: CARBONACEOUS MUDSTONE (+/- COAL)

44.86-45.10: SERICITE (?) ALTERED GREY TO DARK GREY MUDSTONE OR ASH/ PYROCLASTIC ZONE

45.10-46.28: PALE GREY, MEDIUM TO FINE-GRAINED LITHIC SANDSTONE WITH OCCASIONAL COAL CLASTS FROM 45.77-45.82m

MIDLANDS ENERGY

DRILL HOLE No OJ010

SHEET 1 OF 3

Survey Depth	Azimuth	Dip	Hole Co-ordinates	GDA
			Easting_	524919
			Northing_	5308789
			Elevation (m)	390
			Azimuth_Mag	–
			Dip	-90°

PROJECT:	SOUTHERN MIDLANDS COAL
PROSPECT:	JERICHO (EL25/2008)
DATE:	14-06-13 TO 15-06-13
LOGGED BY:	KAREN ADAMS

HOLE DEPTH	CORE RECOVERY	RQD	SAMPLE NO PREFIX	SULPHIDES % .1 .3 1 3 5	PICTORIAL LOG STRUCT	PICTORIAL LOG ALT	GRAPHIC LOG mm 0.06 0.5 2 8 32 64	GEOLOGY NOTES	SUMMARY LOG
1	0	0						0.00 - 1.22: CORE LOSS	CL
2	78	0				Fe		1.22 - 2.70: SOFT, PALE BROWN/CREAM, HIGHLY DEGRADED MEDIUM-GRAINED LITHIC SANDSTONE	SS
3	70	0							
4	0	0						2.70 - 4.70: CORE LOSS	CL
5	30	0							
6	100	0				Fe		4.70 - 5.80: SOFT, PALE BROWN/ORANGE/CREAM, HIGHLY DEGRADED MEDIUM-GRAINED LITHIC SANDSTONE	
7	100	0				Fe		5.80 - 7.00: SOFT, IRON-ALTERED, PALE CREAM/BROWN WEATHERED/DEGRADED LITHIC SANDSTONE	SS
								7.00 - 7.10: CORE LOSS - GROUND AWAY	CL
8	90	100				Fe		7.10 - 8.50: SOFT, IRON-ALTERED, PALE CREAM/BROWN WEATHERED/DEGRADED LITHIC SANDSTONE	SS
	89	91						8.50 - 8.61: CORE LOSS - GROUD AWAY	CL
9					jt 40°			8.61 - 10.70: SOFT, IRON-ALTERED, PALE CREAM/BROWN WEATHERED/DEGRADED LITHIC SANDSTONE	
10	100	109			bn 65°	Fe			SS
	90	60						10.70 - 10.80: CORE LOSS - WASHED AWAY	CL
11						Fe		10.80 - 11.50: VERY SOFT, PALE ORANGE, MEDIUM-GRAINED LITHIC SANDSTONE	
12	100	0						11.50 - 11.96: SOFT, GREY MEDIUM-GRAINED LITHIC SANDSTONE	
13	100	34			bn 90° jt 60° 30°			11.96 - 12.80: GREY, MEDIUM-GRAINED LITHIC SANDSTONE WITH FREQUENT FLACER BANDING	SS
14	100	94			jt 70°			12.80 - 13.51: GREY TO DARK GREY, MEDIUM TO COARSE-GRAINED LITHIC SANDSTONE WITH CALCITE VEINING, IRREGULAR FLACER BANDING AND COAL CLASTS	
								13.51 - 14.53: GREY TO PALE GREY, MEDIUM TO COARSE-GRAINED LITHIC SANDSTONE WITH SOME IRREGULAR FLACER BANDING, COAL CLASTS AND MUDSTONE CLASTS UP TO 3cm IN SIZE	
15	100	66			bd 85°			14.53 - 15.80: FREQUENTLY FRACTURED GREY MUDSTONE WITH MINOR CARBONACEOUS MUDSTONE	MS
16	90	15						15.80 - 15.90: CORE LOSS - BROKEN GROUND	CL
17	100	12			bd 70°			15.90 - 16.78: FREQUENTLY FRACTURED GREY MUDSTONE WITH MINOR CARBONACEOUS MUDSTONE	MS
					bd 70° jt 70°			16.78 - 17.40: HEAVY, DULL COAL (+/- CARBONACEOUS MUDSTONE) MODERATELY FREQUENT JOINTING	
18	95	11						17.40 - 17.45: CORE LOSS - GROUND AWAY	CL
19	100	0			ft			17.45 - 17.78: DARK GREY TO GREY MUDSTONE AND CARBONACEOUS MUDSTONE	MS
								17.78 - 18.24: GREY, TUFFACEOUS? MUDSTONE? WITH MINOR DARKER CARBONACEOUS MUDSTONE	
								18.24 - 18.54: CARBONACEOUS MUDSTONE AND GREY MUDSTONE	CMS
								18.54 - 19.16: HEAVY, DULL COAL (+/- CARBONACEOUS MUDSTONE) WITH 5-10% VITRINITE AND BRECCIATED	
								DOWN HOLE CONTACT	
20	100	0				SeS		19.16 - 20.20: VERY BROKEN GREY MUDSTONE (SERICITE-SILICA ALTERED?)	MS

REMARKS DRILLED WITH HQ3 BY WHOLE CORE

MIDLANDS ENERGY

DRILL HOLE No OJ010

SHEET 2 OF 3

Survey Depth	Azimuth	Dip	Hole Co-ordinates	
			Easting_	
			Northing_	
			Elevation (m)	
			Azimuth_Mag	
			Dip	

PROJECT:	SOUTHERN MIDLANDS COAL
PROSPECT:	JERICHO (EL25/2008)
DATE:	14-06-13 TO 15-06-13
LOGGED BY:	KAREN ADAMS

HOLE DEPTH	CORE RECOVERY	RQD	SAMPLE NO PREFIX	SULPHIDES % (.1 .3 1 3 5)	PICTORIAL LOG STRUCT	PICTORIAL LOG ALT	GRAPHIC LOG mm (0.06 0.5 2 8 32 64)	GEOLOGY NOTES	SUMMARY LOG
21	100	0			vn 20°	Si Sa		20.20-21.44: MODERATELY TO HEAVILY BROKEN, PALE GRY, SILICA-SERICITE ALTERED, INTERBEDDED MUDSTONE AND FINE TO MEDIUM-GRAINED SANDSTONE WITH CALCITE VEIN AT 20.7m AND MINOR CROSS-BEDDING DOWN HOLE	MS SS
22	100	16			bn 80°			21.44-21.70: DARK GREY TO GREY, FLACER BANDED, FINE-GRAINED LITHIC SANDSTONE	SS
23	100	90						21.70-23.50: PALE GREY, UPWARDLY FINING, COARSE TO FINE-GRAINED LITHIC SANDSTONE	SS
24	90	0			jt 45° 30°			23.50-23.60: CORE LOSS-GROUND AWAY	CL
25	100	47			jt 30°			23.60-27.14: MEDIUM TO COARSE-GRAINED, POORLY CONSOLIDATED, GREY LITHIC SANDSTONE WITH MINOR FLACER BANDING AND LARGE, LOW ANGLE CALCITE VEIN AT AROUND 27m	
26	100	19							SS
27	100	0			jt 70° ft ft				
28	69	0						27.14-27.40: CORE LOSS - BROKEN GROUND	CL
29	100	0						27.40-27.50: CALCITE PIECES FROM VUGGY VEINING (WATER PASSAGE) 27.50-27.65: CORE LOSS-BROKEN GROUND 27.65-29.35: MEDIUM TO COARSE-GRAINED, GREY LITHIC SANDSTONE (WITH SLIGHT GREEN TINGE). OVERALL SOFT AND POORLY CONSOLIDATED WITH ZONES OF BROKEN GROUND	CL
30	95	14						29.35-29.40: CORE LOSS-BROKEN GROUND	CL
	85	30						29.40-30.45: SOFT GREY, FREQUENTLY FRACTURED, MEDIUM-GRAINED LITHIC SANDSTONE	SS
31								30.45-30.60: CORE LOSS-GROUND AWAY	CL
32	100	50			jt 60° jt 40°			30.60-31.26: GREY, SOFT, MEDIUM TO COARSE-GRAINED LITHIC SANDSTONE WITH FREQUENT COAL RIP-UP CLASTS CONTAINING MINOR CALCITE DOWN HOLE 31.26-31.90: GREY, COARSE-GRAINED LITHIC SANDSTONE WITH ROUNDED MUDSTONE CLASTS OF UP TO 2cm AT 31.3m	SS
33	100	0			fx			31.90-32.32: GREY FINE-GRAINED LITHIC SANDSTONE WITH 1mm COAL CLASTS UP HOLE 32.32-38.00: DULL, HEAVY COAL (+/- CARBONACEOUS MUDSTONE) GRADING TO BRITTLE, MODERATELY BRIGHT COAL WITH SOME CALCITE VEINING/CLEATING AND APPROXIMATELY 10% VITRINITE	
34	100	0						38.00-34.43: VERY BROKEN GREY MUDSTONE AND CARBONACEOUS MUDSTONE WITH COAL BRECCIA ZONE AND LARGE CALCITE VEINING AT AROUND 33.9m. SIGNIFICANT AMOUNTS OF CAVE-IN.	MS CMS
35	100	0						34.43-34.70: COAL, APPROXIMATELY 1% VITRINITE, ZONALLY HEAVY AND DULL WITH SOME CARBONACEOUS MUDSTONE AND MUDSTONE (POSSIBLY SOME CAVE-IN MATERIAL)	
36	100	58			bd 70°			34.70-38.35: INTERBEDDED GREY MUDSTONE, PALE GREY TO DARK GREY MEDIUM-GRAINED LITHIC SANDSTONE WITH SOME CARBONACEOUS MATERIAL CONTAINED DOWN HOLE	MS
37	100	47			jt 90° jt 70°				SS
38	100	14							
39	95	32			fx			38.35-38.40: CORE LOSS	CL
40	100	28			jt 70° 30° 20°			38.40-40.65: DARK GREY TO BLACK, MEDIUM TO FINE-GRAINED LITHIC SANDSTONE WITH SOME CARBONACEOUS MUDSTONE. COAL/CALCITE CLASTS AT APPROXIMATELY 39.6m	SS

REMARKS

MIDLANDS ENERGY

DRILL HOLE No OJ010

SHEET 3 OF 3

Survey Depth	Azimuth	Dip	Hole Co-ordinates	
			Easting_	
			Northing_	
			Elevation (m)	
			Azimuth_ Mag	
			Dip	

PROJECT: SOUTHERN MIDLANDS COAL
PROSPECT: JERICHO (EL25/2008)
DATE: 14-06-13 TO 15-06-13
LOGGED BY: KAREN ADAMS

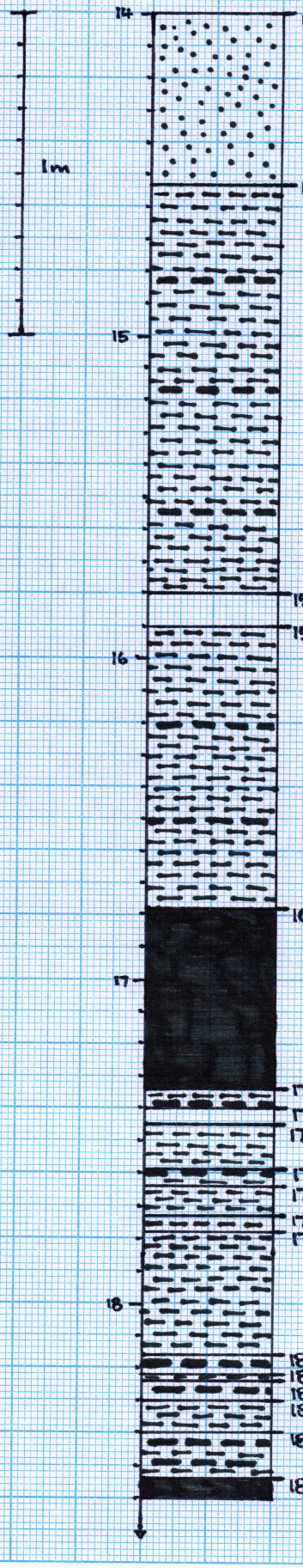
HOLE DEPTH	CORE RECOVERY	RQD	SAMPLE NO PREFIX	SULPHIDES % .1 .3 1 3 5	PICTORIAL LOG STRUCT	PICTORIAL LOG ALT	GRAPHIC LOG mm 0.06 0.5 2 8 32 64	GEOLOGY NOTES	SUMMARY LOG
	95	0						40.65-40.70: CORE LOSS	SS
41								40.70-42.15: DARK GREY TO BLACK, MEDIUM TO FINE-GRAINED LITHIC SANDSTONE WITH COARSE, BLEBBY, DISSEMINATED PYRITE	CL
	100	71							SS
42					ft				
	100	0						42.15-42.93: MODERATELY TO STRONGLY BROKEN HEAVY, DULL COAL +/- CARBONACEOUS MUDSTONE	
43								42.93-44.44: DARK GREY TO GREY MUDSTONE WITH SOME INTERBEDDED FINE-GRAINED LITHIC SANDSTONE. MUDSTONE RIP-UP CLASTS AROUND 44m	
	100	0							
44									
	100	0						44.44-45.90: PALE GREY, COARSE TO MEDIUM-GRAINED LITHIC SANDSTONE WITH MINOR FLACER BANDING UPHOLE AND MUDSTONE BEDDING AT 44.85m AND GRADATIONAL DOWN HOLE ALTERATION CONTACT	
45									
	100	100						45.90-48.80: GREEN-GREY, SERICITE-SILICA-CHLORITE ALTERED, MEDIUM TO COARSE-GRAINED LITHIC SANDSTONE WITH IRREGULAR UPHOLE CONTACT. CHLORITE SPOTTING FROM 47.5m AND 2-3cm THICK CALCITE VEIN AT 46.4m	SS
46									
	100	13			vn 40° jt 60° fx	Se-Si-Ch			
47									
	100	57			jt 40° jt 25°				
48									
	100	0			ft 20 ft				
49								48.80-51.45: STRONGLY FRACTURED, DARK GREEN-GREY BRECCIATED DOLERITE WITH ZONALLY STRONG CALCITE VEINING AND BRECCIA INFILL	
	100	0							
50									
	100	0							DOL
51									
	50	0						51.45-51.95: CORE LOSS	CL
52									
	100	0						51.95-52.60: STRONGLY FRACTURED, DARK GREEN-GREY BRECCIATED DOLERITE WITH ZONALLY STRONG CALCITE VEINING AND BRECCIA INFILL	DOL
52.6 EOH									

REMARKS

1mm Squares

OJO10 DETAILED LOG: SEAM ONE

SCALE 1:20



14.00-14.53: GREY TO PALE GREY, MEDIUM TO COARSE-GRAINED LITHIC SANDSTONE WITH LARGE (UP TO 3cm) MUDSTONE CLASTS AND 2-8mm COAL BANDS WITH CALCITE CLEATS FROM 14.4-14.53m

14.53-15.80: FREQUENTLY FRACTURED GREY MUDSTONE AND MINOR CARBONACEOUS MUDSTONE

15.80-15.90: CORE LOSS

15.90-16.78: FREQUENTLY FRACTURED GREY MUDSTONE AND MINOR CARBONACEOUS MUDSTONE

16.78-17.34: MODERATELY TO FREQUENTLY JOINTED HEAVY, DULL COAL

17.34-17.40: DARK GREY TO BROWN MUDSTONE AND CARBONACEOUS MUDSTONE

17.40-17.45: CORE LOSS - GROUND AWAY

17.45-17.59: GREY TO DARK GREY MUDSTONE

17.59-17.64: DARK GREY CARBONACEOUS MUDSTONE AND MUDSTONE

17.64-17.73: GREY MUDSTONE

17.73-17.78: DARK GREY SILICA-SERICITE ALTERED CARBONACEOUS MUDSTONE

17.78-18.16: TUFFACEOUS (?) GREY MUDSTONE

18.16-18.22: CARBONACEOUS MUDSTONE

18.22-18.24: GREY TUFFACEOUS (?) MUDSTONE

18.24-18.30: CARBONACEOUS MUDSTONE

18.30-18.40: GREY MUDSTONE

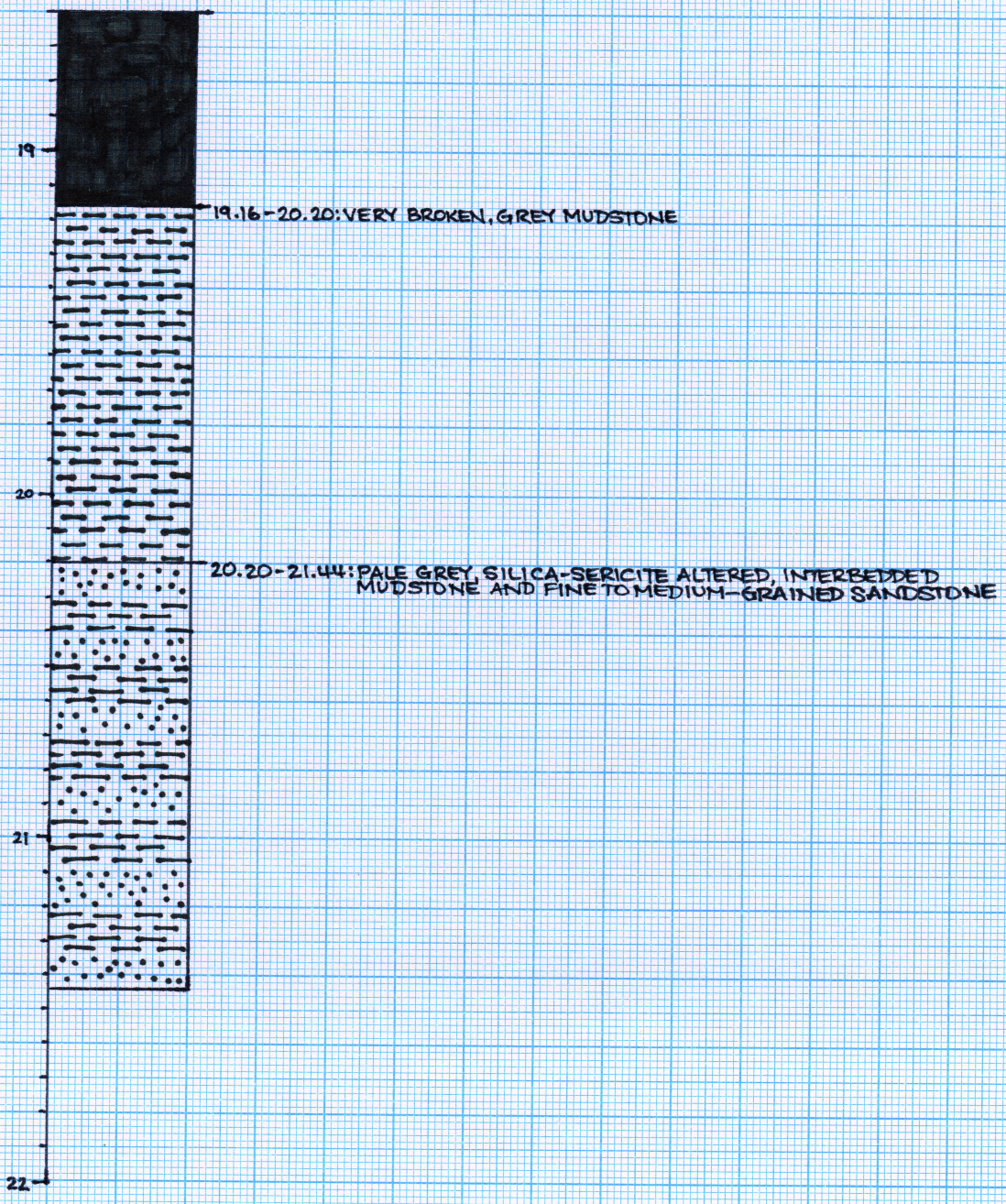
18.40-18.54: VERY BROKEN, GREY TO DARK GREY MUDSTONE AND CARBONACEOUS MUDSTONE

18.54-19.16: HEAVY DULL COAL WITH APPROXIMATELY 5-10% VITRINITE BANDS AND mm MUDSTONE BANDS PRESENT FROM 19.01m AND BRECCIATED DOWNHOLE CONTACT

1mm Squares

OJO10 DETAILED LOG : SEAM ONE CONTINUED

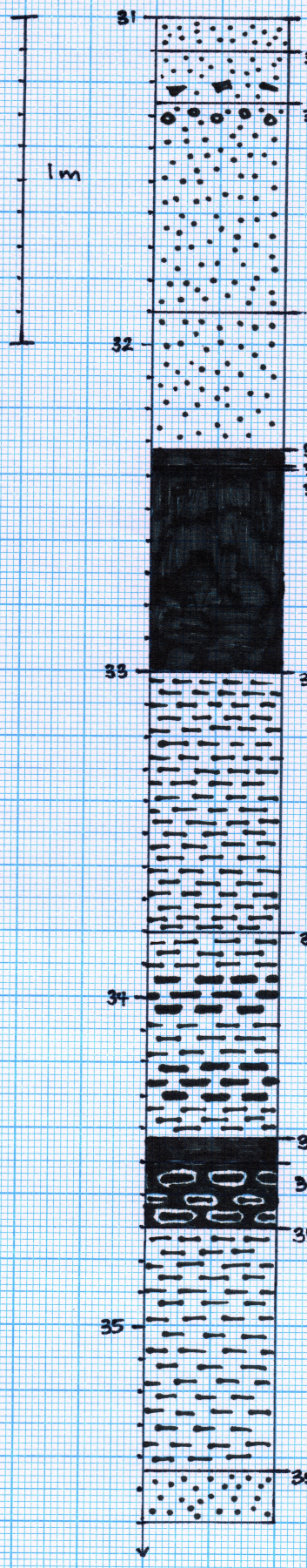
SCALE 1:20



1mm Squares

OJO10 DETAILED LOG: SEAM TWO

SCALE 1:20



31.05-31.26: GREY, SOFT MEDIUM TO COARSE-GRAINED LITHIC SANDSTONE WITH FREQUENT COAL RIP-UP CLASTS CONTAINING MINOR CALCITE

31.26-31.90: GREY, COARSE-GRAINED LITHIC SANDSTONE WITH ROUNDED MUDSTONE CLASTS UP TO 2cm IN SIZE AT 31.3m

31.90-32.32: GREY, FINE-GRAINED LITHIC SANDSTONE WITH 1mm COAL CLASTS UP HOLE

32.32-32.37: DULL, HEAVY COAL

32.37-32.38: VITRINITE

32.38-33.00: VERY BROKEN, BRITTLE, MODERATELY BRIGHT COAL WITH SOME CALCITE CLEATING. APPROXIMATELY 10% VITRINITE

33.00-33.80: VERY BROKEN GREY MUDSTONE WITH SOME CAVE-IN MATERIAL

33.80-34.48: VERY BROKEN MUDSTONE, CARBONACEOUS MUDSTONE AND COAL BRECCIA ZONE WITH LARGE CALCITE VEIN AT 33.90m AND CALCITE CLEATING IN LARGE COAL FRAGMENT AT APPROXIMATELY 34.3m

34.48-34.50: COAL WITH CALCITE VEINING AND CLEATING AND APPROXIMATELY 5% VITRINITE

34.50-34.70: COAL, CARBONACEOUS MUDSTONE AND MUDSTONE

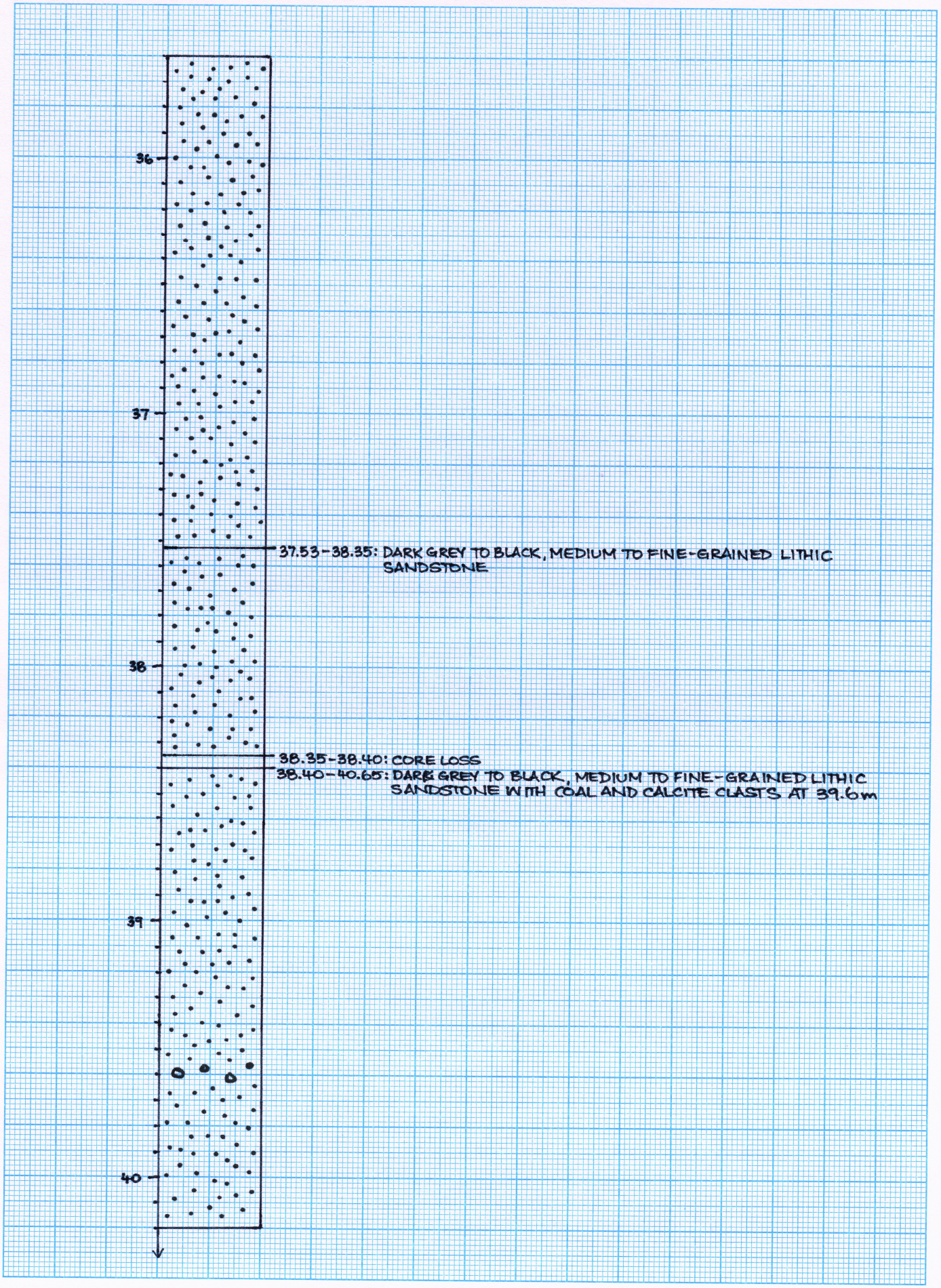
34.70-35.44: GREY, SILICA-SERICITE ALTERED MUDSTONE

35.44-37.53: GREY TO PALE GREY MEDIUM TO FINE-GRAINED LITHIC SANDSTONE

1mm Squares

OJ010 DETAILED LOG : SEAM TWO CONTINUED

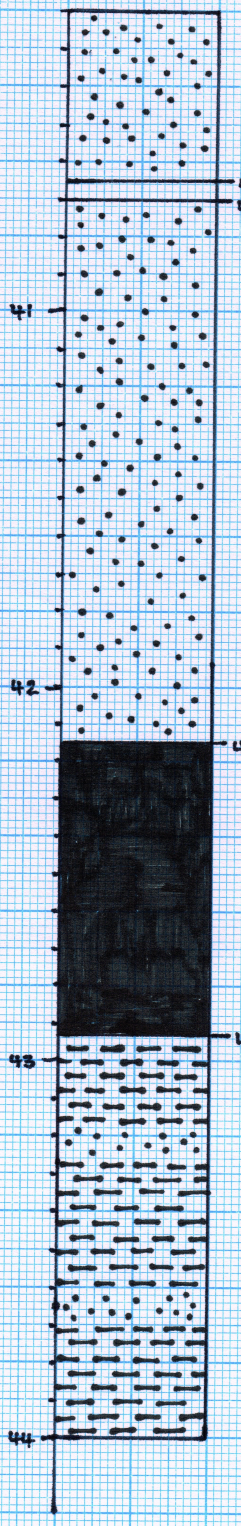
SCALE 1:20



1mm Squares

OJ010 DETAILED LOG: SEAM TWO CONTINUED (SEAM3)

SCALE 1:20



40.65-40.70: CORE LOSS

40.70-42.15: DARK GREY TO BLACK MEDIUM TO FINE-GRAINED LITHIC SANDSTONE WITH DISSEMINATED COARSE, BLEBBY PYRITE THROUGHOUT

42.15-42.93: DOMINANTLY, MODERATE TO STRONGLY BROKEN HEAVY, DULL COAL AND SOME CARBONACEOUS MUDSTONE

42.93-44.00: DARK GREY TO GREY MUDSTONE WITH SOME INTERBEDDED FINE-GRAINED LITHIC SANDSTONE

MIDLANDS ENERGY

DRILL HOLE No OJ019

SHEET 1 OF 4

Survey Depth	Azimuth	Dip	Hole Co-ordinates	GDA
			Easting_	523 899
			Northing_	5 310 113
			Elevation (m)	399
			Azimuth_ Mag	–
			Dip	-90°

PROJECT: SOUTHERN MIDLANDS COAL
PROSPECT: JERICHO (EL25/2008)
DATE: 16-07-13 TO 18-07-13
LOGGED BY: KAREN ADAMS (CLAIRE THOMAS)

HOLE DEPTH	CORE RECOVERY	RQD	SAMPLE NO PREFIX	SULPHIDES % .1 .3 1 3 5	PICTORIAL LOG STRUCT	PICTORIAL LOG ALT	GRAPHIC LOG mm 0.06 0.5 2 8 32 64	GEOLOGY NOTES	SUMMARY LOG
1	0	0						0.00-4.10: NO CORE - CUTTING BIT - COLLAR	
2	0	0							
3	0	0							
4	0	0							
5	90	45			fx Bd 55°	FeCy		4.10-5.70: BROWN, WEATHERED, MODERATELY CLAY-RICH, COARSE TO VERY COARSE-GRAINED LITHIC SANDSTONE WITH ZONAL MUDSTONE WITH LARGE (UP TO 5cm) MUDSTONE AND CARBONACEOUS MUDSTONE CLASTS UPHOLE	SS
	70	0			Jt 45°				
6								5.70-6.00: CORE LOSS	CL
7	100	0			Jt 60° Jt 45° Bd 60°			6.00-11.80: ORANGE (WITH SOME BLACK) WEATHERED, COARSE-GRAINED LITHIC SANDSTONE WITH ZONALLY PROMINENT, IRREGULAR FLACER BANDING AND MINOR MUDSTONE DOWN HOLE	
8	100	75			fx 60°				
9	100	76			fx 60°	Fe			SS
10	100	71							
11	100	79			Bd 60°				
12	80	42			fx				
13	100	62			Jt 90° fx 60°	FeCy		11.80-12.00: CORE LOSS 12.00-12.64: ORANGE TO GREY WEATHERED, MODERATELY CLAY-RICH MUDSTONE	CL MS
14	100	49			fx 55° fx 70°			12.64-14.70: GREY MUDSTONE AND MINOR CARBONACEOUS MUDSTONE WITH MINOR FLACER BANDED FINE-GRAINED SANDSTONE UPHOLE	CMS MS
15	90	61						14.70-14.80: CORE LOSS	
16	100	100						14.80-16.30: STRONGLY LAMINATED GREY MUDSTONE WITH MINOR CARBONACEOUS MUDSTONE	CL MS CMS
17	100	31			Jt 45°			16.30-16.74: CARBONACEOUS MUDSTONE AND POSSIBLE HEAVY DULL COAL 16.74-17.20: MODERATELY TO STRONGLY BROKEN HEAVY, DULL COAL	CMS
18	100	12			Jt 70°			17.20-17.54: MODERATELY BRITTLE, BRIGHT COAL WITH FREQUENT CALCITE CLEATING AND VEINING AND APPROXIMATELY 2% VITRINITE 17.54-17.84: GREY MUDSTONE WITH IRREGULAR ASH SANDING	MS
19	100	34			Jt 45°			17.84-18.00: HEAVY DULL COAL WITH MINOR CALCITE CLEATING 18.00-18.13: MUDSTONE AND CARBONACEOUS MUDSTONE 18.13-18.24: MODERATELY HEAVY DULL COAL WITH CALCITE VEINING	MS CMS MC MS CMS
20	100	86			fx	Se		18.24-18.45: CARBONACEOUS MUDSTONE 18.45-19.70: STRONGLY BEDDED, GREY MUDSTONE WITH VERY MINOR FINE-GRAINED SANDSTONE AND POSSIBLE ERODED FLAME STRUCTURES	MS

REMARKS

MIDLANDS ENERGY

DRILL HOLE No OJ019

SHEET 2 OF 4

Survey Depth	Azimuth	Dip	Hole Co-ordinates	
			Easting_	
			Northing_	
			Elevation (m)	
			Azimuth_Mag	
			Dip	

PROJECT:	SOUTHERN MIDLANDS COAL
PROSPECT:	JERICHO (EL 25/2008)
DATE:	16-07-13 TO 18-07-13
LOGGED BY:	KAREN ADAMS (CLAIRE THOMAS)

HOLE DEPTH	CORE RECOVERY	RQD	SAMPLE NO PREFIX	SULPHIDES % .1 .3 1 3 5	PICTORIAL LOG STRUCT	PICTORIAL LOG ALT	GRAPHIC LOG mm 0.06 0.5 2 8 32 64	GEOLOGY NOTES	SUMMARY LOG
21	100	81			fx 80°	Se		18.70-19.14: DARK GREY MUDSTONE AND CARBONACEOUS MUDSTONE 19.14-20.10: SOAPY GREY SERICITE ALTERED MUDSTONE 20.10-20.24: STRONGLY WEATHERED CARBONACEOUS MUDSTONE AND POSSIBLE COAL. FAULT (?)	MS
22	100	94			fx 85° fx 70°			20.24-20.78: SOAPY GREY, SERICITE ALTERED MUDSTONE 20.78-31.50: GREY, ZONALLY GREEN, MEDIUM-GRAINED LITHIC SANDSTONE WITH CHLORITE SPOTTING FROM APPROXIMATELY 27.8m, COAL/CALCITE CLASTS AT 28.3m AND FLACER BANDING FROM APPROXIMATELY 30m	
23	100	28			jt 70° fx				
24	100	77			fx 60° fx 80°				
25	100	46			jt fx 70°				
26	100	71			fx fx 70°				SS
27	100	64			jt 70°				
28	100	65			fx fx 70°				
29	100	85			fx fx jt 70° jt 75°	Ch			
30	100	87							
31	100	65			jt 70° jt 60°				
32	100				fx fx 70°			31.50-31.45: STRONGLY LAMINATED CARBONACEOUS MUDSTONE AND MUDSTONE 31.45-31.68: CARBONACEOUS MUDSTONE AND HEAVY DULL COAL WITH APPROXIMATELY 1% VITRINITE AND SOME CALCITE CLEATING	CMS MS CMS
33	100	0			fx fx			31.68-31.76: VERY BROKEN, HEAVY DULL COAL WITH POSSIBLE CARBONACEOUS MUDSTONE 31.76-31.95: STRONGLY LAMINATED, HEAVY DULL COAL AND CARBONACEOUS MUDSTONE	MS
34	100	0			fx 70°			31.95-32.38: MODERATELY BROKEN, HEAVY DULL COAL WITH SOME CALCITE VEINING AND APPROXIMATELY 1% VITRINITE 32.38-33.46: MODERATELY TO STRONGLY BROKEN, INTERBEDDED GREY MUDSTONE AND CARBONACEOUS MUDSTONE	CMS
35	100	48			fx 70° jt 85°			33.46-37.94: GREY-GREEN MEDIUM TO FINE-GRAINED LITHIC SANDSTONE WITH CROSS-BEDDING AT 33.7m AND MINOR DISCONTINUOUS COAL BANDING WITH CALCITE CLEATING AT APPROXIMATELY 36m	
36	100	64			fx jt 30° 70°				SS
37	100	87			jt 70°				
38	100	46			jt 70° jt 80°				
39	100	40			fx 80° fx 85° fx 45°	SaSi (Ch)		37.94-41.54: PALE GREY-GREEN (AND ZONALLY DARK GREY) MEDIUM TO COARSE-GRAINED LITHIC SANDSTONE WITH SOME FLACER BANDING AND WEAK SERICITE-SILICA ALTERATION AND MINOR CHLORITE SPOTING	
40	100	18			fx 70° jt 45°				SS

REMARKS

MIDLANDS ENERGY

DRILL HOLE No OJ019

SHEET 3 OF 4

Survey Depth	Azimuth	Dip	Hole Co-ordinates	
			Easting_	
			Northing_	
			Elevation (m)	
			Azimuth_Mag	
			Dip	

PROJECT:	SOUTHERN MIDLANDS COAL
PROSPECT:	JERICHO (EL 25/2008)
DATE:	16-07-13 TO 18-07-13
LOGGED BY:	KAREN ADAMS

HOLE DEPTH	CORE RECOVERY	RQD	SAMPLE NO PREFIX	SULPHIDES % (.1 .3 1 3 5)	PICTORIAL LOG STRUCT	PICTORIAL LOG ALT	GRAPHIC LOG mm (0.06 0.5 2 8 32 64)	GEOLOGY NOTES	SUMMARY LOG
41	100	34			Jt 50° Jt 85°	SeS (Ch)			SS
42	100	47			fx 80°			41.54-45.22: SOMEWHAT LEACHED, PALE GREY TO WHITE, CHLORITE SPOTTED MEDIUM-GRAINED LITHIC SANDSTONE	
43	100	59							
44	100	72				Ch			SS
45	100	50			fx 45°				
46	100	29				SeS		45.22-45.59: GREEN-GREY, SERICITE-SILICA ALTERED MUDSTONE	
					Jt 45° Jt 80°			45.59-47.50: PALE GREY-GREEN, SERICITE-SILICA ALTERED MEDIUM TO FINE-GRAINED LITHIC SANDSTONE	MS
47	100	43			Jt 80° fx 45°	SeS			SS
48	94	33			fx			47.50-47.56: CORE LOSS	CL
					fx 10°			47.56-47.80: GREY MUDSTONE WITH CALCITE VEINING	MS
49	100	0						47.80-54.36: SOAPY GREY SILICA-SERICITE ALTERED MUDSTONE AND FINE-GRAINED SANDSTONE WITH CALCITE VEINING AND ZONES OF MOTTLED CHLORITE ALTERATION	
50	100	27			Jt 45° Jt 45° Jt 70°				
51	100	74				SiSe (Ch)			MS
52	100	15							SS
53	100	57			Jt 45° Jt 40°				
54	100	28			fx				
55	100	83			Ft/Vn			54.96-54.65: STRONGLY ALTERED/ANNEALED FAULT WITH COLLOFORM-LIKE TEXTURE	FT
					Jt 70°			54.65-60.30: GREEN-GREY, FINE TO MEDIUM-GRAINED DOLERITE WITH MODERATELY FREQUENT CALCITE VEINING UP HOLE AND CALCITE FILLED VESSICLES FROM APPROXIMATELY 57m TO 59m	
56	100	68			Jt 85° Jt 80°				
57	100	90			Jt 60° Jt 45°				
58	100	89			Jt 70°				DOL
59	100	100							
60	100	100							

REMARKS

MIDLANDS ENERGY

DRILL HOLE No OJ019

SHEET 4 OF 4

Survey Depth	Azimuth	Dip	Hole Co-ordinates	
			Easting_	
			Northing_	
			Elevation (m)	
			Azimuth_Mag	
			Dip	

PROJECT:	SOUTHERN MIDLANDS COAL
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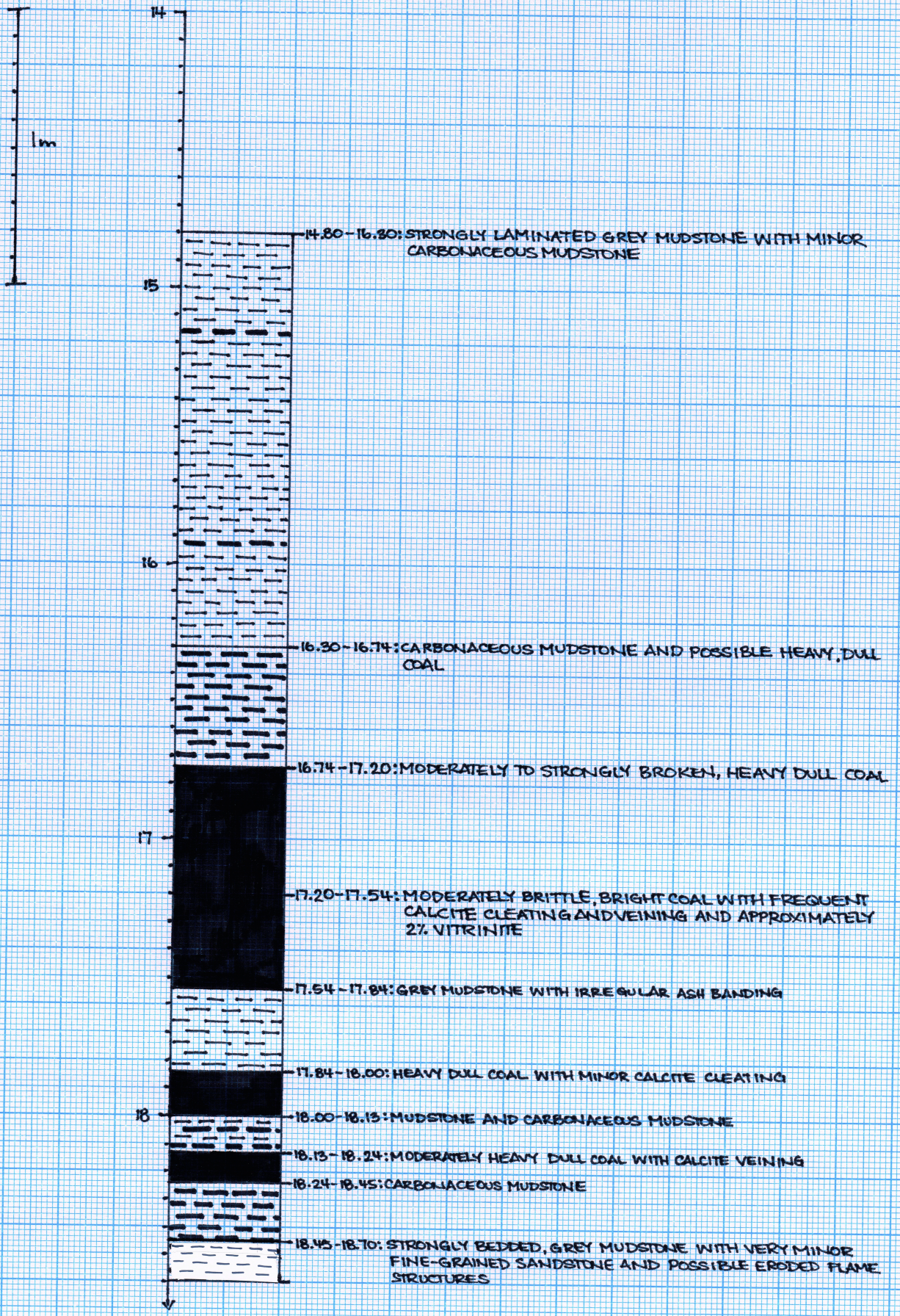
HOLE DEPTH	CORE RECOVERY	RQD	SAMPLE NO PREFIX	SULPHIDES % .1 .3 1 3 5	PICTORIAL LOG STRUCT	PICTORIAL LOG ALT	GRAPHIC LOG mm 0.06 0.5 2 8 32 64	GEOLOGY NOTES	SUMMARY LOG
	100	100							
60.30 EOH									

REMARKS

OJ019 DETAILED LOG : SEAM ONE

SCALE: 1:20

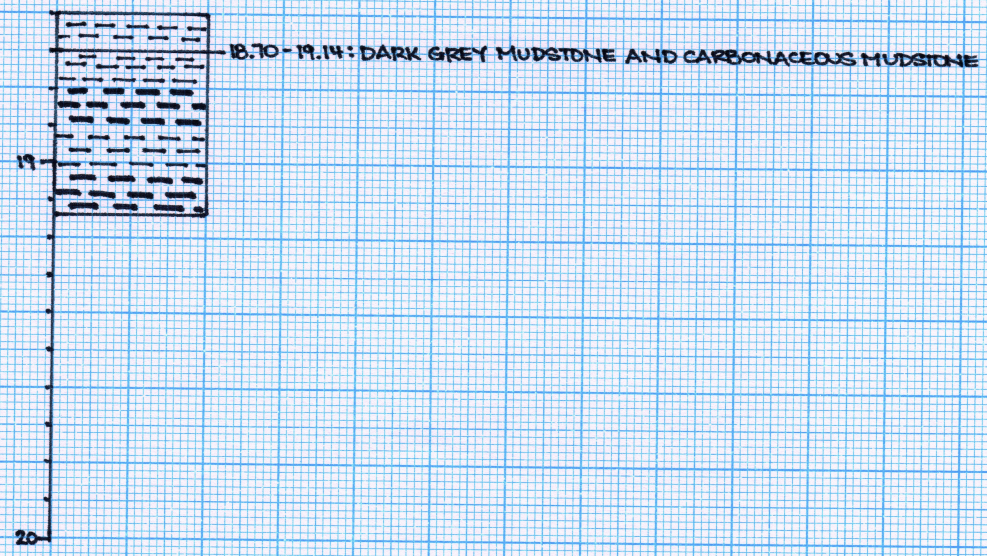
1mm Squares



OJ019 DETAILED LOG : SEAM ONE CONTINUED

1mm Squares

SCALE 1:20



OJO19 : DETAILED LOG : SEAM TWO

1mm Squares

SCALE 1:20

