



FORM P 70
SERIES 680

Section of DEEPPDALE FARM (PALTERTON) No. 2 SURFACE BOREHOLE.

Purpose To prove the Second Waterloo and Second Ell Seams
for Arkwright Colliery.

Exact Site National Grid Co-ordinates

E 446 031 metres

N 369 178 metres

Level at which ^{shaft}bore commenced relative to O.D. 73.00 m A.O.D.
~~drift~~

Date of sinking or boring November 1974 - February 1975.

Sinker or borer Foraky Ltd., (W. McDonald)

Cores examined by J.H. Rippon & D.J. Green, N.C.B. Geologists. *Delete as appropriate

6-INCH MAP	B/H REGD. No.
(County, Sheet and Qtr.)	
SK 46 NE / 33 (Nat. Grid, Sheet & Qtr.)	39
Attach tracing from a map or sketch map if possible	

SK46NE
33

GEOLOGICAL CLASSIFICATION	NATURE OF STRATA	THICKNESS		DEPTH	
		m or ft*	cm or in*	m or ft*	cm or in*
	Description of log down to 339.17 deduced from B.P.B. geophysical logs				
<u>MIDDLE COAL</u> <u>MEASURES</u> Mudstones	Gamma highs at 18.90 and 30.40	36	20	36	20
<u>COAL</u>		0	40	36	60
Mudstones	Siltstone bands	3	40	40	00
Sandstone	thin coal at base	2	30	42	30
Mudstone	several gamma highs	14	90	57	20
<u>COAL</u>	dirty	0	50	57	70
Mudstone		1	30	59	00
Sandstone		1	50	60	50
Mudstones	gamma high at 61.20	4	50	65	00
<u>COAL</u>		0	30	65	30

1000 P 71
 1000 080

Section of DEEPDALE FARM (PALTERTON) No. 2 SURFACE BOREHOLE

	G-INCH MAP	B/H
E	SK AGNE	33

*Delete as appropriate

GEOLOGICAL CLASSIFICATION	NATURE OF STRATA	THICKNESS		DEPTH	
		m or ft*	cm or in*	m or ft*	cm or in*
				65	30
Sandstone		2	20	67	50
Mudstones	gamma high at 69•70	5	50	73	00
Siltstones		3	00	76	00
Sandstone	thin fine band in the middle	2	50	78	50
Mudstones		7	50	86	00
Sandstone		1	00	87	00
Mudstones	Clowne roof horizon at 93•90	10	80	97	80
<u>CLOWNE</u>	Coal	1	00	98	80
Siltstones	and mudstones	19	80	118	60
<u>COAL</u>		0	40	119	00
Mudstones		12	50	131	50
Siltstone	coarse	1	50	133	00
Mudstones		12	40	145	40
<u>TWO FOOT</u> <u>(SOUGH)</u>	Coal 60 dirt 120 Coal 60 240	2	40	147	80
Mudstones		6	70	154	50

Form P 71
7-11-65

Section of DEEPDALE FARM (PALTERTON) No. 2 SURFACE BOREHOLE.

G - INCH MAP

B/H

SK AGNE

33

**Delete as appropriate*

[illegible]

→ FORM P 71
50105 680

Section of DEEPDALE FARM (PAL TERTON) No. 2 SURFACE BOREHOLE.

6 - INCH MAP

R. H.

SK 46NE

33

^aDelete as appropriate[illegible]

FORM 51-71
MAY 1962 GPO

Section of DEEPDALE FARM (PALTERTON) No. 2 SURFACE BOREHOLE.

6 - 1 NCH MAP

B/H

SK AGNE

33

*Delete as appropriate

GEOLOGICAL CLASSIFICATION	NATURE OF STRATA	THICKNESS		DEPTH	
		m or ft*	cm or in.*	m or ft*	cm or in.*
Mudstones	and siltstones	10	00	325	00
Sandstone		3	00	335	00
Siltstones		1	17	338	00
				339	17
	CORING FROM 339-17				
Siltstone	medium laminated; faultlets at 339·40, rare sandstone laminae with micaceous carbonaceous planes from 339·50; Cochlichnus at 339·80	0	68		
	passage			339	85
Siltstone	fine laminated, vague burrows and tracks including Cochlichnus; rare sandstone laminae and plant debris below 340·55; plant debris becoming abundant in basal 0·10	1	09		
	sharp			340	94
Mudstone	silty, laminated; occasional ironstones up to 0·04 thick; rare Cochlichnus	0	80		
	passage			341	74
Mudstone	laminated; occasional small poorly preserved thick-shelled non-marine lamellibranchs; extensive horizontal listric surfaces in basal 0·05	0	17		
	sharp			341	91
Mudstone	highly carbonaceous, cleated, locally silty and less carbonaceous, occasional large coaly plants and Stigmaria	0	26		
	core attached			342	17

FORM P 71
SERIES 680

Section of DEEPDALE FARM (PALTERTON) No. 2 SURFACE BOREHOLE.

6 - INCH MAP		B/H
6. SK AGNE		33

*Delete as appropriate

GEOLOGICAL CLASSIFICATION	NATURE OF STRATA	THICKNESS		DEPTH	
		m or ft*	cm or in*	m or ft*	cm or in*
				342	17
<u>COAL & DIRT</u>	Coal clean bright 6½ } attached } Mudstone highly complete carbonaceous abundant } solid core coaly plant fragments 7 } attached } Bat 13½ } 27 } core attached	0	27	342	44
Seat Earth	mudstone carbonaceous, listric, abundant plant debris and Stigmara, not carbonaceous between 342.54 and 342.60 attached	0	16	342	60
<u>BAT</u>	complete solid core attached	0	12	342	72
Seat Earth	mudstone, listric; carbonaceous; abundant coal streaks and plant remains including Lepidodendron, Stigmara sharp	0	58	343	30
Seat Earth	siltstone, fine grey; abundant ironstone nodules, abundant Stigmara; ironstone band 0.02 to 0.04 thick at base sharp lithological change	0	88	344	18
Sandstone,	ripple-bedding disturbed by roots and ironstone nodules; abundant micaceous carbonaceous planes	0	20	344	38
Siltstone	fine, laminated; abundant Cochlichnus and other tracks, occasional roots passage	0	42	344	80
Siltstone,	medium common regular sandstone laminae	0	13	344	93
Siltstone,	fine with abundant irregular sandstone ripples; local tendency to ripple drift; minor scour structures; occasional larger sandstone lenses with erosional bases	0	83	345	76

Form 171
Series 580

Section of DEEPDALE FARM (PALTERTON) No. 2 SURFACE BOREHOLE.

SK AGNE

33

*Delete as appropriate

[illegible]



FORM P 71
SHEET 689

Section of DEEPDALE FARM (PALTERTON) No. 2 SURFACE BOREHOLE.

0-1 INCH MAP

B/N

SK 46 NE

33

*Delete as appropriate

GEOLOGICAL CLASSIFICATION	NATURE OF STRATA	THICKNESS		DEPTH	
		m or ft*	cm or in*	m or ft*	cm or in*
				349	40
Siltstone,	fine occasional sandstone laminae, abundant plant debris; rare sandstone layers up to 0.05 thick, with erosional bases	1	22		
	passage			350	62
Mudstone	silty, laminated; common Cochlichnus; occasional planty planes	0	80		
				351	42
Siltstone	fine with frequent sandstone laminae; abundant planty planes	0	09		
				351	51
Mudstone,	occasional thin ironstone bands; frequent thick-shelled non marine lamellibranchs including Anthracosia; very wormy	1	99		
				353	50
Mudstone,	slightly carbonaceous, occasional faultlets; wormy; frequent coaly streaks in the basal 0.05	0	24		
	core probably fitting			353	74
<u>1ST WATERLOO</u>					
	Coal, dirty, bright 2½ cylinders				
	Bat 2				
	Coal, clean bright 5½				
	Coal including very dirty part core coal 7 & fragments				
	Mudstone highly carbon- aceous, listric with abund-8 ant plants and coal streaks } cylinders				
	Coal clean mostly dull 14 cylinders				
	Coal clean bright 90				
	(Pyritic lenses at 354.58)				
	(Brown Seatearth parting at 354.85)				
	Coal bright, rare dirt partings, pyritic } 10 cylinders				
	Seatearth Mudstone 3				
	Coal dirty bright, pyritic 3				
	145	1	45		
				355	19
Seat Earth	mudstone, silty in top 0.06 increasingly silty below; grey; abundant roots passage	0	17		
				355	36

FORM P 71
SERIES 680

Section of DEEPALE FARM (PALTERTON) No. 2 SURFACE BOREHOLE.

6 - INCH MAP

B. H.

SK ABNE

33

*Delete as appropriate

[illegible]



Form P 71
Series 680

Section of DEEPDALE FARM (PALTERTON) No. 2 SURFACE BOREHOLE.

6-INCH MAP	B.H.
SKAGNE	33

*Delete as appropriate

GEOLOGICAL CLASSIFICATION	NATURE OF STRATA	THICKNESS		DEPTH	
		m or ft*	cm or in*	m or ft*	cm or in*
				360	20
Mudstone	poorly laminated; occasional ironstones, occasional non-marine lamellibranchs including Naiadites and Anthracosia down to 361.20, shelly ironstone 0.07 at 361.27; wormy throughout	1	07	361	27
Mudstone	frequent ironstone bands; abundant non-marine lamellibranchs including Naiadites and Anthracosia, wormy, becoming carbonaceous below 361.84	0	72	361	99
<u>WATERLOO MARKER</u>	fragments of clean bright coal	0	12	362	11
Seat Earth	siltstone fine, muddy near the top; grey; abundant roots; occasional irregular sandstone masses and ironstone nodules below 362.80	1	29	363	40
Seat Earth	siltstone fine and medium, occasional plant remains, including fern leaves and frequent roots	0	40	363	80
Seat Earth	mudstone silty; few roots; reworked texture; grey	0	36	364	16
Seat Earth	siltstone muddy becoming medium towards base; ironstone nodules, re-worked appearance	0	58	364	74
Sandstone	absure bedding; several discontinuous siltstone laminae; bedding dipping at 30° approximate in various directions, slightly root disturbed. Prominent scour structure at 365.00	0	33	365	07
Siltstone,	mostly medium frequent irregular sandstone patched; reworked appearance; occasional ironstone nodules irregular contact	1	37	366	44

Form 17-71
MAY 1969 EDITION

Section of DEEPDALE FARM (PALTERTON) No. 2 SURFACE BOREHOLE

6-INCH MAP	R.H.
SK 46NE	33

*Delete as appropriate

GEOLOGICAL CLASSIFICATION	NATURE OF STRATA	THICKNESS		DEPTH	
		m or ft*	cm or in.*	m or ft*	cm or in.*
				366	44
Cank	silty, frequent roots, vertical mineralized joints irregular contact	0	28	366	72
Siltstone	fine to coarse locally reworked appearance, occasional roots; sandstone layer with irregular ripple bedding from 376·51 to 367·61 with an erosional base occasional small ironstone nodules	1	38	368	10
Seat Earth	siltstone fine grey, with common distorted sandstone laminae, ironstone nodules, and roots; "fern" leaves in parts	0	72	368	82
Siltstone	medium, common roots, common inclined listric surfaces, poorly laminated, occasional small ironstone nodules; large inclined listric surfaces at 369·15; large ironstone nodules and bands up to 0·07 below 369·15	0	65	369	47
Siltstone	fine, laminated; common roots and other plant debris, occasional small ironstone nodules; occasional sandy laminae; rare thicker ironstone bands up to 0·06 rare small faultlets	1	17	370	64
Siltstone	fine, laminated; common plant fragments including Calamites; common ironstone nodules and thin bands	0	55	371	19
Siltstone	medium, unlaminated occasional ironstone nodules, local faultlets; common plant remains fuscinous in parts, including strap plants, Calamites, Pinnularia, Sphenophyllus; occasional sandstone laminae below 372·00	1	24	372	43
Siltstone	medium, poorly laminated; very bioturbated	0	52	372	95

FORM P 71
SERIES 880

Section of DEEPDALE FARM (PALTERTON) No. 2 SURFACE BOREHOLE.

SK 46NE

33

*Delete as appropriate

[illegible]

FORM P 471
SERIES 680

Section of DEEPDALE FARM (PALTERTON) No. 2 SURFACE BOREHOLE.

6 INCH MAP

A/H

SK 46NE

33

*Delete as appropriate

GEOLOGICAL CLASSIFICATION	NATURE OF STRATA	THICKNESS		DEPTH	
		m or ft*	cm or in*	m or ft*	cm or in*
				383	00
Mudstone	shaly; becoming carbonaceous downwards; occasional thin ironstone bands, one shelly, with kaolinite ooliths; rare non-marine lamellibranchs near the top, burrows in parts including Planolite cf. opthalmoides at 383.40; rare ostracods; subcanneloid from 383.62	0	71	383	71
	CORE BOXED 383.71 - 386.79				
Mudstone,	shaly, carbonaceous	0	07	383	78
	unattached				
<u>SECOND</u> <u>WATERLOO</u>	Coal, bright 12 1/2 fragments				
	Coal, bright 7 1/2				
	dirt 17				
	Coal, dirty 1				
	Coal, dull 5				
	Coal, bright 45				
	dirt 20 cylinders				
	Coal, bright 18				
	Coal, dull 2				
	Coal, bright 8				
	dirt 14				
	Coal, dirty 3				
	Coal, bright 41				
	Core lost 10				
	204	2	04		
	Recovery 90%, Dip less than 2°			385	82
Seat Earth,	mudstone slightly silty coal streaks in top 0.04 and bottom 0.24	0	68	386	50
Mudstone	interleaved with bright coal	0	02	386	52
<u>COAL</u>	dirty	0	05	386	57
Seat Earth	mudstone several Coal streaks rotational face	0	05	386	62
<u>COAL</u>	dirty	0	04	386	66

U. S. DEPARTMENT OF AGRICULTURE
WASHINGTON, D. C. 20250

Section of **DEEPDALE FARM (PALTERTON) No. 2 SURFACE BOREHOLE**

6-INCH MAP	B/H
SKAGONE	33

*Delete as appropriate

[illegible]

TABLE IV

Calculated and Experimental Values of χ_{H} and χ_{F}

Section of DEEPDALE FARM (PAL TERTON) No. 2 SURFACE BOREHOLE.

6 - INCH MAP

B. H

SKAUNE

33

*Delete as appropriate

GEOLOGICAL CLASSIFICATION	NATURE OF STRATA	THICKNESS		DEPTH	
		m or ft*	cm or in*	m or ft*	cm or in*
				392	98
<u>COAL</u>					
	Coal bright, clean 14 } Complete solid				
	Coal and dirt 1 } core				
	15	0	15		
	Core detached			393	13
Seat Earth	mudstone grey; abundant roots; abundant ironstone nodules; very listric	0	51	393	64
Seat Earth	siltstone fine, grey, abundant roots, common ironstone nodules	0	76	394	40
Siltstone	fine; abundant roots; poorly laminated, common ironstone nodules	0	63	395	03
	Core detached				
<u>COAL</u>	Bright 11 broken cylinders	0	11	395	14
Seat Earth	mudstone silty; grey abundant roots; common; ironstone nodules, very listric	1	26	396	40
Seat Earth	mudstone, becoming silty below 396.74, ironstone nodules; abundant roots, <u>Neuropteris</u> leaves; grey	1	37	397	77
Seat Earth,	unlaminated; grey; abundant roots and ironstone nodules; common 'ferns', occasional faultlets				
	high hade listric contact	0	70	398	47
Siltstone	fine to medium, slurried down to 98.70; abundant siderite specks, some vaguely elongate; common plant debris; <u>planty</u> , below 398.90 becoming siltstone coarse, slurried with common siderite specks	0	63	399	10
Siltstone	mostly fine, unlaminated except for sandstone laminae in the top 0.05; abundant 'ferns' and occasional <u>Calamites</u> and <u>Pinnularia</u>	0	72	399	82

For example, if
 00000000

Section of **DEEPDALE FARM (PALTERTON) No. 2 SURFACE BOREHOLE.**

6 - INCH MAP

$$R_1^*H$$

SK'ABNE

33

*Delete as appropriate

GEOLOGICAL CLASSIFICATION	NATURE OF STRATA	THICKNESS		DEPTH	
		m or ft*	cm or in*	m or ft*	cm or in*
				399	82
Mudstone	slightly carbonaceous, abundant coal laminae, abundant "strap" plants and "fern" fronds	0	24	400	06
Siltstone	fine to medium, grey, unlaminated abundant plant material including "ferns" and Calamites, approximately 30° hade unmineralized, slightly polished breaks from 402.30? induced by mining, Stigmara ficoides at 403.85, Alethopteris 403.85 rare vague sandstone laminae at 404.60 and at 406.00 occasional Pinnularia	7	74	407	80
Siltstone	medium, abundant vague sandstone laminae; slurried?	0	45	408	25
Siltstone	fine, unlaminated, abundant faultlets abundant plants including Neuropteris and Cyclopteris and "strap" plants, approximately 40° hade unmineralised, polished breaks at 411.80 and locally below; ironstone 0.05 at 412.50	8	27	416	52
Siltstone	fine with common sandstone laminae and thin lenses, local ripple drift, minor scour structures below 417.00, local faultlets, local kinked bedding	0	85	417	37
Siltstone	fine with vague and irregular ironstone lenses; occasional layers of highly disturbed load-casted sandstone laminae local faultlets, local polished partings	0	63	418	00
Siltstone	fine, unlaminated, abundant faultlets	0	64	418	64
Siltstone	fine with common fine wispy sandstone laminae, common faultlets	0	24	418	88
Siltstone	fine, unlaminated; faultlets	0	32	419	20

Forge P 71
Series 680

Section of DEEPDALE FARM (PAL TERTON) No. 2 SURFACE BOREHOLE.

6 - INCH MAP

B/H

SK 96NE

33

*Delete as appropriate

GEOLOGICAL CLASSIFICATION	NATURE OF STRATA	THICKNESS		DEPTH	
		m or ft*	cm or in*	m or ft*	cm or in*
				419	20
Siltstone	fine with abundant sandstone fine laminae and lenses, larger sandstone lenses with erosional bases; abundant faultlets, mineralization of some larger faultlets, local kinked bedding	2	00	421	20
Siltstone	fine to medium, laminated; common faultlets occasional sandstone fine laminae towards the base, occasional tracks	1	07	422	27
Siltstone	fine, common sandstone lenses to 422.41 with minor scour structures common sandstone laminae below 422.41 local kinked bedding, faultlets throughout	0	61	422	88
Siltstone	fine, unlaminated, abundant faultlets, occasional plant fragments including Calamites, Neuropteris, sandstone fine laminae and lenses highly disturbed by faultlets from 425.66 to 425.78, ironstone 0.03 at base	3	62	426	50
Sandstone	mostly small scale irregular cross bedding to 426.70; possible dune set bedding below, local ironstone clasts conglomerate; abundant coaly planes from 427.25; bedding obscure below 428.20:- melange of coal and ironstone, highly contorted in sandstone erosional at base	4	05	430	55
Mudstone	silty, highly carbonaceous; mussels, shelly ironstone bands; gaultlets; vague tracks	0	59	431	14
Mudstone.	highly carbonaceous, shaly; faultlets; abundant non-marine lamellibranchs from 431.33, shelly ironstone bands locally core detached	0	31	431	45
COAL	bright with many dirt partings; core fragmented, largest thickness recorded 0.04; see diversion log at 431.36	(0	04)	(431	49)



Form P 71
GSD 1/80

Section of DEEPDALE FARM (PALTERTON) No. 2 SURFACE BOREHOLE.

6-INCH MAP	B/H
SK 46NE	33

*Delete as appropriate

GEOLOGICAL CLASSIFICATION	NATURE OF STRATA	THICKNESS		DEPTH	
		m or ft*	cm or in*	m or ft*	cm or in*
				431	49
Seat Earth	mudstone grey, abundant roots, ironstone nodules, listric	0	46	431	95
Seat Earth	mudstone carbonaceous, highly listric; abundant ironstone nodules especially near top, occasional roots	0	52	432	47
Seat Earth	mudstone, highly listric, abundant roots	0	50	432	97
Mudstone	listric; ironstone bands; common roots, rare poorly preserved <u>non-marine</u> <u>lamellibranchs</u>	0	49	433	46
Mudstone	highly carbonaceous, faultlets; sub canneloid	0	15	433	61
	detached			433	70
<u>COAL</u>	Coal bright with many dirt partings - core largely fragmented 3				
	Coal clean bright 4 cylinders				
	Cannel clean 2 cylinders				
	9	0	09		
	rotation surface			433	70
Seat Earth	mudstone, grey; iron rich near top; abundant roots; carbonaceous from 433.88 to 433.94, listric, ironstone bands up to 0.08 thick.	0	52	434	22
Seat Earth	mudstone, silty, laminated; local thin ironstone streaks	0	19	434	41
Seat Earth	with common sandstone fine lenses and layers up to 0.04 thick, some with erosional bases local sandstone load structures, common roots and ironstone nodules, irregular ironstone in basal 0.05	0	94	435	35
Siltstone	fine with abundant sandstone fine laminae and lenses, local sandstone layers up to 0.10 thick, local slurries and contorted bedding; minor erosional surfaces local tendency towards ripple drift; occasional roots	1	09	436	44
	passage				

1066 P. 71
1067 1068

Section of DEEFDAL FARM (PAL TERTON) No. 2 SURFACE BOREHOLE.

6 - INCH MAP

B. H

SK 96NE

33

*Delete as appropriate

GEOLOGICAL CLASSIFICATION	NATURE OF STRATA	THICKNESS		DEPTH	
		m or ft*	cm or in*	m or ft*	cm or in*
				436	44
Sandstone	fine with abundant discontinuous siltstone fine laminae common minor scours, occasional possible gas-heave structures, frequent roots	0	71	437	15
Sandstone	very canky with frequent discontinuous siltstone laminae, common roots	0	45	437	60
Siltstone	fine, abundant sandstone lenses; sandstone rippled with discontinuous siltstone laminae from 437.87 to 438.20, occasional 30° hade unmineralized breaks, rare roots towards the top of bed passage	1	18	438	78
Siltstone	fine with frequent non-erosive sandstone lenses, several subvertical mineralised joints and faultlets with throws up to 1.00	0	69	439	47
Mudstone,	silty at top, local non-marine lamellibranchs and wormy tracks, common polished 45° hade breaks and local inclined bedding, core locally very listric and broken, core extremely weak listric and broken from 441.50 to base	2	71	442	18
<u>FAULT</u>	Seat Earth sandstone on both sides of presumed fault zone, separated by approximately 0.38 (vertical) of fault gouge up to 20° hade slickensided breaks separate the sandstone and fault gouge The fault gouge is completely listric mudstone with rare coal streaks and rare stigmairian nodules	0	38	442	56
Seat Earth	sandstone with occasional discontinuous siltstone laminae, common roots near top	0	44	443	00
Sandstone	with occasional siltstone laminae; bedding dips at 45° approximately, common slips mineralized with calcite and pyrites	0	27	443	27



Form PG 71
SHEETS 680

Section of DEEPDALE FARM (PALTERTON) No. 2 SURFACE BOREHOLE.

6-INCH MAP	B/H
SK46NE	33

*Delete as appropriate

GEOLOGICAL CLASSIFICATION	NATURE OF STRATA	THICKNESS		DEPTH	
		m or ft*	cm or in*	m or ft*	cm or in*
				443	27
Siltstone	fine with abundant sandstone laminae beds dip 45° approximately	0	53	443	80
<u>?Fault Gouge</u>	highly fractured silty mudstone and laminated silt/sandstone contained between approximately 45° hade breaks	0	25	444	05
Siltstone	fine becoming muddy downwards; abundant inclined listric surfaces	0	45	444	50
Mudstone	abundant non-marine lamellibranchs including <u>Anthracosia</u> and <u>Naiadites</u> core broken throughout and locally listric	0	50	445	00
Mudstone	very listric, weak condition abundant <u>non-marine lamellibranchs</u>	0	63	445	63
Ironstone		0	05	445	68
Mudstone,	listric more so in the bottom 0.15	0	25	445	93
Mudstone,	silty	0	12	446	05
Mudstone,	listric	0	27	446	32
	detached				
<u>SECOND ELL</u>					
	Coal, bright 31 fragments				
	Coal, bright 27 cylinders				
	Coal 13 fragments				
	71 Ø	0	71		
	Ø See diversion log for true seam thickness			447	03
	Section faulted and disturbed				
Mudstone		0	29	447	32
Seat Earth	mudstone silty towards the top, abundant roots including <u>Stigmara</u> , core often broken and listric, minor bitumen seepages	0	74	448	06

Section of DEEPDALE FARM (PALTERTON) No. 2 SURFACE BOREHOLE.

*Delete as appropriate

Contact BGS: ngdc@bgs.ac.uk

FORM 71
SERIES 680

Section of DEEPDALE FARM (PALTERTON) No. 2 SURFACE BOREHOLE.

6 - INCH MAP	B/H
SK 46NE	33

*Delete as appropriate

GEOLOGICAL CLASSIFICATION	NATURE OF STRATA	THICKNESS		DEPTH	
		m or ft*	cm or in*	m or ft*	cm or in*
	<u>DIVERSION FROM 412.57</u>				
	Cores seen from			422	80
Siltstone	fine, laminated, with sandstone fine laminae and lenses; local ripple bedding	1	01	423	81
Mudstone	silty, locally siltstone fine, faultlets, 45° hade unmineralized breaks, "fern" frond locally passage	1	63	425	44
Siltstone	coarse at top fine, with sandstone fine laminae from 426.20 to 426.50, abundant penecontemporaneous faultlets 25° hade unmineralized breaks; occasional plant remains including "ferns"	1	61	427	05
Sandstone	sharp abundant small, somewhat irregular, micaceous carbonaceous planes; ? dune sized units; ironstone-clast conglomerate in parts, 428.08 to 428.48, brownish sandstone with sub-vertical mineralized breaks with calcites and abundant specks of bitumen	1	73	428	78
Sandstone,	ironstone-clast conglomerate in top 0.10 highly distorted bedding below; abundant coaly debris below 429.02 to 429.18 melange of coal, ironstone and other fragments in sandstone, exhibiting crude slumping structures, from 429.18 to 429.82; 40° hade unmineralized breaks very erosional scoured base	1	12	429	90
Mudstone	carbonaceous, iron-rich; ? large clast; 0.08 to 0.03 thick	0	03	429	93
Sandstone	with crowded coaly plant fragments rotation surface-sharp	0	33	430	26
Mudstone	usually carbonaceous, sometimes silty, abundant non-marine lamellibranchs near top, occasional coaly plants, common siderite-filled non-marine lamellibranchs in the basal 0.10, fish remains in basal 0.05	0	88	431	14
	core detached				

FORM 1-71
SERIAL 680

Section of **DEEPDALE FARM (PALTERTON) No. 2 SURFACE BOREHOLE**

6-INCH MAP	B/H
SK 46NE	33

*Delete as appropriate

GEOLOGICAL CLASSIFICATION	NATURE OF STRATA	THICKNESS		DEPTH	
		m or ft*	cm or in*	m or ft*	cm or in*
				431	14
1ST ELL (Top leaf)	Coal bright with many dirt partings; becoming slightly cleaner towards the base - cylinder	0	22		
	detached			431	36
Seat Earth	mudstone, grey; abundant roots; common ironstone nodules below 432.00				
	slightly carbonaceous from 432.01 to 432.35	1	44		
				432	80
Mudstone,	common listric surfaces, occasional ironstone nodules, common guilielmites wormy in parts, occasional Gyrochorte, ironstone in basal 0.05	0	95		
				433	75
Mudstone	with abundant listric surfaces	0	15		
				433	90
Mudstone	canneloid, occasional coal streaks	0	15		
				434	05
Seat Earth	mudstone silty, laminated, occasional roots, ironstone bands 434.51 to 434.61 with occasional ironstone nodules below	0	87		
				434	92
Siltstone	fine with sandstone fine lenses and laminae, occasional roots and small ironstone nodules, occasional small? burrows; several sandfilled? burrows up to 0.05 deep and 0.02 across in the top 0.16; slumped and slightly kinked bedding below 435.34 to 435.60 sandstone layer 0.10 thick at 435.86 sandstone load structures 435.90 to 435.96 tendency towards "train" drift at 436.00 occasional minor scour structures	2	06		
				436	98
Sandstone	ripple bedded with discontinuous siltstone laminae, canky 437.23 - 437.48 locally passing into fine siltstone with sandstone lenses, local erosional surfaces, several sub-vertical mineralized fractures some with throws up to 0.005	1	21		
				438	19

FORM 71
SERIAL 680

Section of DEEPDALE FARM (PALTERTON) No. 2 SURFACE BOREHOLE.

6-INCH MAP	B/H
SW 46 NE	33

*Delete as appropriate

GEOLOGICAL CLASSIFICATION	NATURE OF STRATA	THICKNESS		DEPTH	
		m or ft*	cm or in*	m or ft*	cm or in*
				438	19
Siltstone	fine with many non-erosional sandstone ripples several sub-vertical mineralized joints, little sand below 438.61	0	91	439	10
Siltstone	fine with occasional sandstone laminae bedding dipping at 35°; Fault from 439.42 to 439.52 hading at 35°, up to 0.02 of fault gouge rare non-marine lamellibranchs from 439.70	0	80	439	90
Mudstone;	common non-marine lamellibranchs wormy in parts, occasional thin ironstone bands core fragmented below 441.00	1	40	441	30
	N.B. The sequence below 441.00 is faulted and highly disturbed with poor core recovery down to 448.30				
Fault Gouge	Highly listric mudstone with occasional ironstone and coherent mudstone inclusions	0	52	441	82
Seat Earth	45° hade unlickensided surface at top sandstone; bedding disturbed by abundant roots; occasional discontinuous siltstone laminae, dip 25°	0	28	442	10
Siltstone	fine with abundant sandstone laminae and lenses; occasional roots, dip 30° sandstone content increases towards base faulted contact; 35° hade	0	57	442	67
Fault Gouge	mudstone highly listric, with siltstone and sandstone incursions locally, core completely fragmented	1	23	443	90
Siltstone	fine with ironstone; core very fractured and poorly recovered	0	55	444	45
Mudstone	completely listric with occasional ironstone nodules; very poorly recovered	1	17	445	62

FORM 1271
REVISED 80

Section of DEEPDALE FARM (PALTERTON) No. 2 SURFACE BOREHOLE.

6-INCH MAP	B/H
SK A6NE	33

*Delete as appropriate

GEOLOGICAL CLASSIFICATION	NATURE OF STRATA	THICKNESS		DEPTH	
		m or ft*	cm or in*	m or ft*	cm or in*
				445	62
Mudstone	shaly with abundant <u>non-marine lamellibranchs</u> core disturbed, very listric and poorly recovered	0	18		
				445	80
	<u>CORE BOXED 445.80 - 448.30</u>				
Mudstone,	<u>non-marine lamellibranchs</u>	0	13		
				445	93
Siltstone,	<u>non-marine lamellibranchs; ironstone</u> lenses	0	22		
				446	15
Mudstone	dark, shaly, <u>non-marine lamellibranchs;</u> ironstone nodules, listric	0	24		
				446	39
Mudstone,	listric	0	24		
	detached			446	63
<u>SECOND ELL</u>	Coal, bright 53) Coal, banded 12) cylinders, fragmented Coal, bright 18) in parts 83	0	83		
	Recovery 100%, dip 27° (fault zone)			447	46
	<u>N.B. thickness corrected for dip = 74</u> See note on casing left in hole, at the end of the log.				
Seat Earth	mudstone, silty few coal streaks	0	84		
				448	30
Siltstone	fine with abundant sandstone laminae, dip 40° - 60°; occasional minor faults with associated crumpling and kinking; fault plane from 49.90 to 450.10 with up to 0.02 of fault gouge	2	22		
				450	52
	End of diversion.				
	N.B. On completion of the drilling, the whole diversion string had to be left in the hole, i.e. 39.71 metres of 5 inch and 6 inch casing, with the base at 452.28				