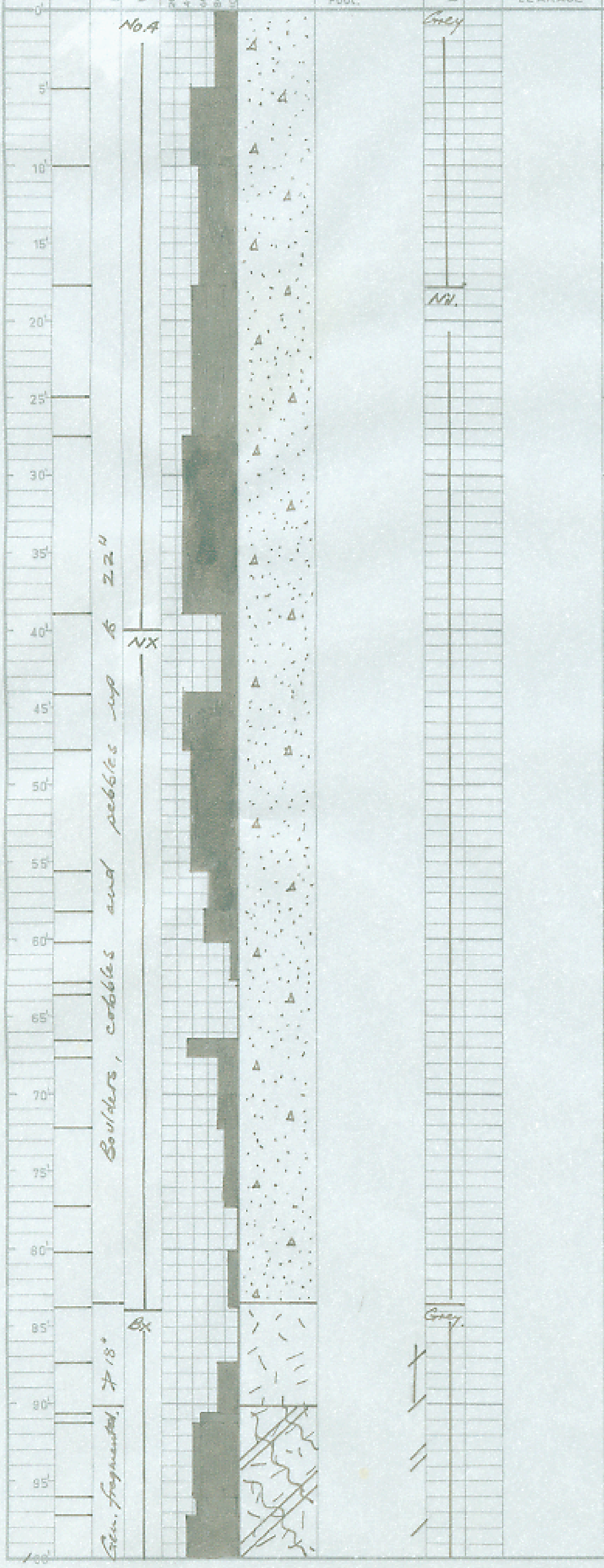
FORM No. H.E. 443

DRILLING RECORD

AREA: MERSEY FORTH POWER DEVELOPMENT	POSITION: CO-ORDINATES:	E: 427.1585	N: 868.1700.	HOLE No. 5919
LOCATION: FISHER SCHEME TUNNEL, OFFSET LINE.	ON LINE:	BEARING:	AT CH:	
GEOLOGICAL PLAN: SURVEY PLAN: 34-426 866 D.	AT STN:	BEARING:	DIST:	FILE No.
DATES (a) DRILLED: April – June 1966 (b) WATER TABLE:	LEVEL: SURFACE	COLLAR	WATER TABLE	
METHOD: D.D. DIAMETER: No. 4, NX, BX, AX	2748			SHEET 1 OF 5 SHEETS
SITE REMARKS: Hole sited 1280' S.W. of proposed tunnel line on bench below Ticks.	INCL.: HOLE DRILLED	ANGLE FROM HORIZONTAL	DIRECTION	
	VERT/~~HOR~~/~~INC~~	90°		

DEPTH	CORE DRAWN	CORE LENGTH	CASING	RECOVERY % (20 40 60 80 100)	GRAPHIC LOG	JOINTS No. Per Foot.	FLUID RETURN	GROUND WATER	WATER PRESSURE TESTS LEAKAGE	REMARKS



0–83'6" Boulders, cobbles and pebbles of medium grained light – dark grey dolerite. Material fresh, weathered or showing decomposed surfaces. Boulders up to 22" occasionally showing close jointing. Represents Scree & talus.

83'6" – 90'2" Fresh, dark grey, medium grained dolerite showing prominent vertical joint (88'–90'2") strongly decomposed.

90'2" – 101'2" Weathered, decomposed fragmented dolerite. Core generally short, one stick 14".

FORM No. H.E. 443

DRILLING RECORD

AREA: MERSEY FORTH POWER DEVELOPMENT.

LOCATION: FISHER SCHEME TUNNEL – OFFSET LINE

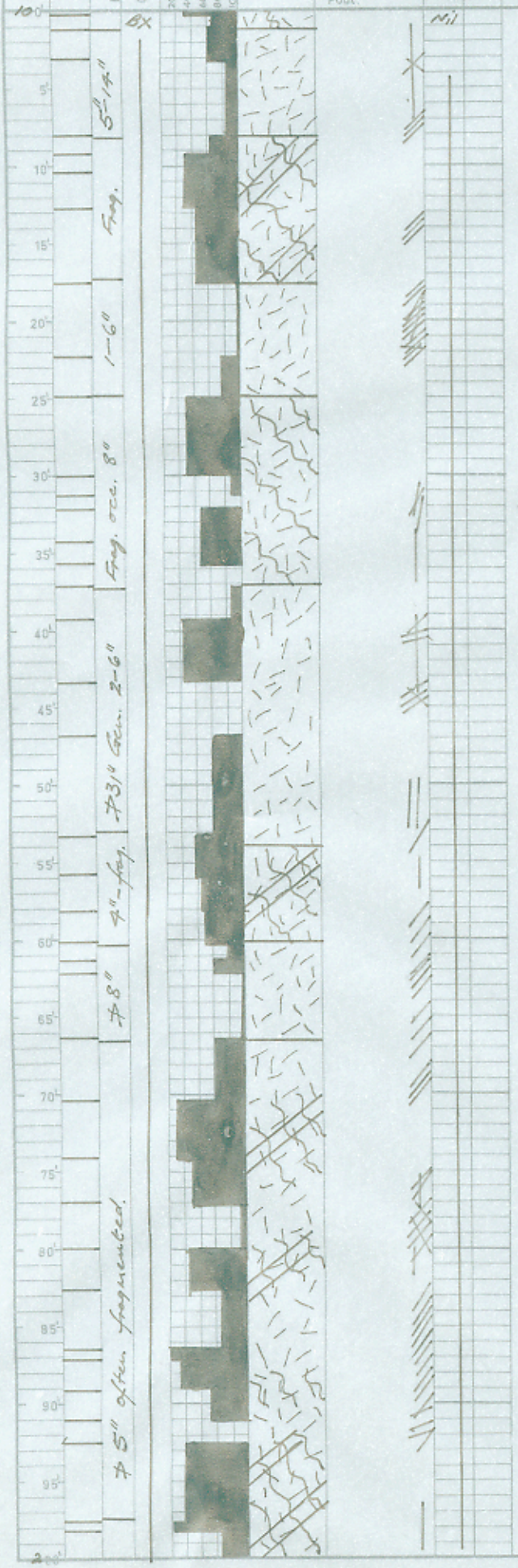
GEOLOGICAL PLAN: SURVEY PLAN: 54-426866 D.

DATES (a) DRILLED: April – June 1966. (b) WATER TABLE:

METHOD: D.D. DIAMETER: No. 4, NX, BX, AX.

SITE REMARKS: Hole sited 1280' S.W. of proposed tunnel line on bench below Tiers.

POSITION	CO-ORDINATES:	E: 427.1585	N 868.1700	HOLE No. 519
	ON LINE:	BEARING:	AT CH:	
	AT STN:	BEARING:	DIST:	FILE No
LEVEL.	SURFACE	COLLAR	WATER TABLE	
	2748			
INCL.	HOLE DRILLED	ANGLE FROM HORIZONTAL	DIRECTION	SHEET 2 OF 5 SHEETS
	VERT./~~HOR./INC.~~	90°		



REMARKS

10½"– 108'. Grey medium grained jointed dolerite. Joints often near vertical showing weathering and/or decomposition.

108'– 117'6" Fragmented, weathered or slightly decomposed dolerite. Joints closely spaced.

117'6"– 124'11" Fine to medium grained dolerite showing strong system of 11 oblique joints. Calcite and/or decomposed dolerite seen along some joints.

124'11"– 137'1" Fragmented weathered and occasionally decomposed dolerite showing occasional longer sticks up to 8". Dolerite fine to medium grained. Probably broken along vertical joint.

137'1"– 153'9" Medium grained grey dolerite showing major joints generally weathered or decomposed.

153'9"– 160'1" Fragmented, jointed, medium grained dolerite. Small amount of dolerite clay present at 157'10".

160'1"– 166'6" Fine to medium grained dark grey dolerite. Joints fresh to weathered.

166'6"– 237'10" Medium grained grey dolerite showing prominent joints and areas of high core loss. Most joints weathered, many probably decomposed and lost. Oblique joints close and common.

FORM No. H.E. 443

DRILLING RECORD

AREA: Mersey Forth Power Development

LOCATION: Fisher Scheme Tunnel, offset line

GEOLOGICAL PLAN: SURVEY PLAN: S.F. - 426866 D.

DATES (a) DRILLED: April – June '66 (b) WATER TABLE:

METHOD: D.D. DIAMETER: No. 4, NX, BX, AX

SITE REMARKS: Hole sited 1280' S.W. of proposed tunnel line on bench below Tier.

POSITION	CO-ORDINATES:	E. 427.1585	N. 868.1700	HOLE No. 5919
	ON LINE:	BEARING:	AT CH:	
	AT STN:	BEARING:	DIST:	FILE No.
LEVEL	SURFACE	COLLAR	WATER TABLE	
	2748			
INCL.	HOLE DRILLED	ANGLE FROM HORIZONTAL	DIRECTION	SHEET 3 OF 5 SHEETS
	VERT./~~HOR./INC~~	90°		

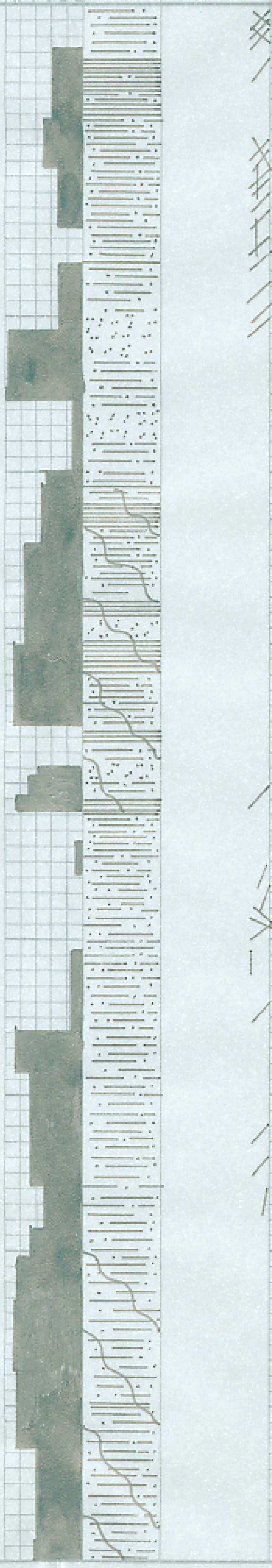
DEPTH	CORE DRAWN	CORE LENGTH	CASING	RECOVERY %	GRAPHIC LOG	JOINTS No. Per Foot.	FLUID RETURN	GROUND WATER	WATER PRESSURE TESTS LEAKAGE	REMARKS
20'			BX				Nil			
5'										
10'										209'0" – 214'4" dolerite becomes much finer grained.
15'										214'4" – 219'0" dolerite becomes very fine grained and dense. Rock black – dark grey, closely jointed and seems to represent contact.
20'										
25'										
30'		Generally fragmented.								
35'		1–5"								
40'			AX							237'10" – 256" dark & light grey medium grained dolerite. Rock fresh overall, joint occasionally decomposed.
45'										
50'		4'13"								
55'										
60'		46 frac. frag.			Coring					256' – 268'2" Closely jointed dark grey dolerite showing much decomposition along joints.
65'										268'2" – 279'1" Good solid light & dark grey dolerite. Joints widely spaced weakened or slightly decomposed.
70'										
75'		4'2"								
80'										279'1" – 295'1" Medium grained dolerite becoming progressively finer towards junction. Very fine grained 291'5" – 295'1". Rock very closely jointed but showing only slight decomposition along joints. decomposition increases from 292'4".
85'										
90'		1–4"								295'1" – 303'4" light grey & green-grey argillite – siltstone with occ. sandstone lenses. Rock shows light discoloured joints.
95'										
300'										

FORM No. H.E. 443

DRILLING RECORD

AREA: MERSEY FORTH POWER DEVELOPMENT	POSITION	CO-ORDINATES:	E 427.1585	N 868.1700	HOLE No. 5919
LOCATION: FISHER SCHEME TUNNEL - OFFSET LINE		ON LINE:	BEARING:	AT CH:	
GEOLOGICAL PLAN: SURVEY PLAN: 34-426866 D.		AT STN:	BEARING:	DIST:	FILE No.
DATES (a) DRILLED: April - June '66 (b) WATER TABLE:	LEVEL	SURFACE	COLLAR	WATER TABLE	
METHOD: D.D. DIAMETER: No 4., NX, BX, AX		2748			SHEET 4 OF 5 SHEETS
SITE REMARKS: Hole sited 1280' S.W. of proposed tunnel line on bench below Tiers.	INCL.	HOLE DRILLED	ANGLE FROM HORIZONTAL	DIRECTION	
		VERT/~~HOR/INC~~	90°		

DEPTH	CORE DRAWN	CORE LENGTH	CASING	RECOVERY % (20 40 60 80 100)	GRAPHIC LOG	JOINTS No. Per Foot.	FLUID RETURN	GROUND WATER	WATER PRESSURE TESTS LEAKAGE	REMARKS
300		Generally 1 - 3" often fragmented.	AX				Nil			303'4" – 307'1" Grey-brown fragmented – brecciated? – mudstone with occasional siltstone bands.
5										
10										307'1" – 316'5" Light brown siltstone becoming locally sandy and grey. Joints well weathered core much broken up.
15										
20										316'5" – 330'11" Light grey to light brown quartzose siltstones to fine grained sandstones showing erratic pebbles of quartz, quartzite mudstone and possibly schist. Brachiopod casts seen. Occasional bands of sandstone. Much core loss probably due to interbedded mudstones.
25										
30										
35										330'11" – 352'0" Black interbedded mudstone and siltstone with occasional intercalations of grey fine grained sandstone. Rock badly weathered, recovery poor, occasional erratic pebbles of sandstone or conglomerate.
40										
45										
50										
55										352'0" – 411'8" Black fine-grained siltstone – mudstone, occasionally weathered but generally fresh down to 379'. Joints few, rock uniform, occasional thin calcite veins.
60		Lengths up to 8" where fresh								
65										
70										
75										
80										
85										
90										
95										
400										

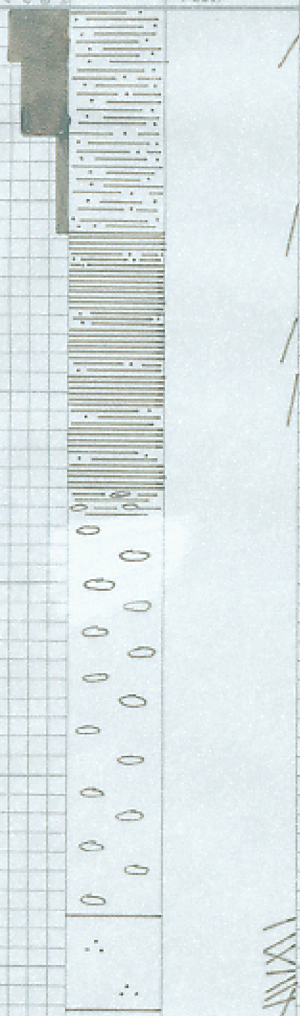


FORM No. H.E. 443

DRILLING RECORD

AREA: MERSEY FORTH POWER DEVELOPMENT	POSITION — CO-ORDINATES:	E: 427. 1585	N. 868. 1700	HOLE No. 5919
LOCATION: ASHER SCHEME TUNNEL – OFFSET LINE	ON LINE:	BEARING:	AT CH:	
GEOLOGICAL PLAN: SURVEY PLAN: S. 4-426866D.	AT STN:	BEARING:	DIST:	FILE No.
DATES (a) DRILLED: April – June '66 (b) WATER TABLE:	LEVEL — SURFACE	COLLAR	WATER TABLE	
METHOD: D.D. DIAMETER: No 4, NX, BX, AX	2748			
SITE REMARKS: Hole sited 1280' S.W. of proposed tunnel line on bench below Tiers	INCL. — HOLE DRILLED	ANGLE FROM HORIZONTAL	DIRECTION	SHEET 5 OF 5 SHEETS
	VERT/~~HOR/INC~~	90°		

DEPTH	CORE DRAWN	CORE LENGTH	CASING	RECOVERY % (20 40 60 80 100)	GRAPHIC LOG	JOINTS No. Per Foot.	FLUID RETURN	GROUND WATER	WATER PRESSURE TESTS LEAKAGE	REMARKS
400'		Lengths up to 8" where fresh.					Nil			
411'8" – 425'0"										411'8" – 425'0" Black mudstone with occasional siltstone. Joints very sparse. Thin calcite veins present.
425'0" – 447'3"		≯ 12"								425'0" – 447'3" Black mudstone with erratic pebbles of quartzite developing into quartzite conglomerate at 425'10". Pebbles of well rounded to sub-rounded quartzite, foliated quartzite, and schistose quartzite set in a sandy silt matrix. Material poorly sorted. 445'4" – 447'3" Matrix becomes more clayey + softer allowing core to break up. Fragments become more angular.
447'3" – 452'2"		1–10"								447'3" – 452'2" Light-grey to green-grey well foliated quartzite. Foliation 70°–90° Rock moderately closely to closely jointed, rock fresh, chlorite along foliation planes.
500'										



Hole completed 452'2"

Logged by G. E. Rawlings

28.6.66.