

Ecologia's Drilling Division recently completed the installation of 4 monitoring wells in Cheshire on the behalf of the British Geological Survey (BGS). The wells will be used for groundwater monitoring at a large, operational industrial site



# Drilling Services

Installation of monitoring wells using sonic drilling at an operational industrial site in Cheshire.

Previous investigations showed the presence of Alluvium deposits consisting of very silty sand and gravels intercalated with silty clay bands. Groundwater level was determined to be 2m bgl. Previous drilling was hampered by 'blowing sand' silting up the boreholes. The client therefore requested that a sonic drilling technique had to be used in order to minimise the amount of potentially contaminated spoils arising from the drilling and ensuring fast drilling operations.

DRILLING LOG										Ecologia		Date	
Project Name		Borehole No.		BHR	Driller	FD	SMS		24/09/2008		RA		
Tayrols, Deaside		0.801		Technique		Sonic 100mm test core casing		Assistant Driller		LD		Permit to Dig	P.U.W.R
Client		Weather		Overcast		Sheet		of		v		v	
TIME	DEPTH (m)	DRILL CHG'S	FORM. CHG'S	FLUSH	WATER STROKE	SONIC HOLE BEHAVIOUR		SAMPLE DEPTH FROM TO		RECOVERY (%)	CORE OR STRATA DESCRIPTION / COMMENTS		
13.15	0.0-0.5	B	C		at 2m	medium resistance					Probable medium dense sand with occasional clay bands		
13.45	0.5-12.5	B	C			low to medium resistance					Probable Loose to medium dense sand with occasional clay bands		
14.15	12.5-13.0	B	C			medium resistance					Probable firm clay band		
14.25	13.0-15.00	B	C			low to medium resistance					Probable medium dense sand with occasional clay bands		
14.45	15.5-16.0	B	C			medium resistance					Probable firm clay band		
15.15	0.2-0.0	B	C			low to medium resistance					Probable Loose to medium dense sand		
15.15	0.0-20.0	B	C			medium resistance					Probable firm to stiff clay band		
											Installed from the bottom with 50mm OD HDPE. 20m drilled with geo-soak and 2m push with bentonite sealing and flush cover		
SIGNED (FOREMAN DRILLER)													

  

1) DRILLING CHARACTERISTICS		(C)	CONSISTENT / SMOOTH	(D)	UNCONSOLIDATED	(E)	FRAGILE / SOFT / UNSTABLE	(F)	TOTAL LOSS
2) SAMPLE TYPES		(G)	BANDS / HARD / SOFT	(H)	FORMATION CHARACTERISTICS	(I)	GOOD / POOR / STABLE	(J)	SKIN LOSS
		(K)	ROUGH / WEAK	(L)	1) FORMATION CHARACTERISTICS	(M)	REFR TO PENETRATE	(N)	FLOW
		(O)		(P)	1) FLUSH (MUD / WATER)	(Q)	WATER / STEAK	(R)	SW 1
		(S)	CORE (SPT) / SPOON	(T)	UNOBTAINED	(U)	WASH	(V)	
		(W)	UNOBTAINED	(X)	1) DRILLING CHARACTERISTICS	(Y)	1) FLUSH (MUD / WATER)	(Z)	

Sonic drilling using 100mm casings successfully achieved depth up to 30m below ground level with more than 60m of installation completed per working day. A drilling log was also produced for each borehole drilled in order to determine the sequence of the clay layers thus enabling the appropriate design of the monitoring wells.