

REPORT NUMBER

13696

DRILLHOLE NO RC08 CONTRACT Dublin Central Development - Draft SHEET Sheet 11 of 33 GROUND LEVEL (m) CO-ORDINATES(_) DATE STARTED 13/09/2008 102 CORE DIAMETER (mm) DATE COMPLETED 14/09/2008 -90 INCLINATION CLIENT **DRILLED BY** Millennium Dublin Central Developments Ltd. **ENGINEER** AGL Consulting Engineers FLUSH Polymer Gel LOGGED BY A. Mahony Details Downhole Depth Core Run Depth (N Value) Fracture zones Spacing Description Discontinuities Standpipe E R.Q.D.% Elevation (mm) Legend Depth (ď SPT (T.C.I S.C.I 250 ستسسلسسس SYMMETRIX OPEN 000 HOLE DRILLING: 00 000 Observed by driller as returns of gravel. (continued) 000 000 000 000 000 000 000 000 000 000 000 000 000 000 000 000 00 000 000 11/11/08 000 GDT 000 GSL REMARKS INSTALLATION REMARKS Hand dug inspection pit to 1.2m. Headworks. NEWLOG 1M PER PG **GROUNDWATER DETAILS** Hole Casing Depth to Water Date Comments Depth Depth **INSTALLATION DETAILS** Date Tip Depth RZ Top RZ Base Type 14-09-08 13.00 6.00 13.00 50mm SP 14-09-08 32.50 50mm SP



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13696

DRILLHOLE NO Dublin Central Development - Draft CONTRACT RC08 SHEET Sheet 12 of 33 GROUND LEVEL (m) CO-ORDINATES() DATE STARTED 13/09/2008 CORE DIAMETER (mm) 102 DATE COMPLETED 14/09/2008 INCLINATION -90 CLIENT Dublin Central Developments Ltd. DRILLED BY Millennium **ENGINEER** AGL Consulting Engineers **FLUSH** Polymer Gel LOGGED BY A. Mahony E E zones (shaded) Downhole Depth (Details Core Run Depth SPT (N Value) Fracture Spacing Description Discontinuities Standpipe Œ % (mm) Elevation % Legend 0 Depth (œ œ Ö S.C. T.C. 250 œ DCC PLAN N = 2861/21 SYMMETRIX OPEN 000 HOLE DRILLING: 000 Observed by driller as returns of gravel. (continued) 000 000 000 000 000 000 000 000 000 000 000 000 000 0 11.70 SYMMETRIX OPEN HOLE DRILLING: Observed by driller as returns of gravelly clay. 11/11/08 GDT IGSL REMARKS INSTALLATION REMARKS GPJ Hand dug inspection pit to 1.2m. Headworks. 1M PER PG **GROUNDWATER DETAILS** Hole Casing Depth to Water Date Comments Depth Depth NEWLOG **INSTALLATION DETAILS** Tip Depth RZ Top RZ Base Date RC ! Type 14-09-08 13.00 6.00 13.00 50mm SP 14-09-08 26.50 32.50 50mm SP



REPORT NUMBER

CONTRACT	Dubl	in Central Developmer	nt - Draft					DRILLI SHEET	HOLE NO	0	RCO	18 et 13 of 33
O-ORDINA			-4- 1 4d	COR	OUND LEVEL (m) E DIAMETER (mm) INATION		102	DATE S	STARTE		13/09	9/2008 9/2008 nnium
LIENT		in Central Developmer Consulting Engineers	its Ltd.	FLUS			Polymer Ge	DRILLE				ahony
Downhole Depth (m) Core Run Depth (m) T.C.R.%	S.C.R.%	250	Legend	Non-intact zones (shaded)	Description	Depth (m)	Disc	continuities		Elevation	Standpipe Details	SPT (N Value)
12				H O re	YMMETRIX OPEN OLE DRILLING: bbserved by driller as eturns of gravelly cla continued)	y.						
REMARKS Hand dug ins	spection	pit to 1.2m.			INSTALLA		IARKS					***
3					Headworks		TAUC					
					GROUNDV	Hole	Casing	Depth to	Corre	onto		
NSTALLAT Date 14-09-08		TAILS th RZ Top RZ Base 6.00 13.00		ype nm SP	Date	Depth	Depth	Depth to Water	Comm	nents		



REPORT NUMBER

																/	_	1
COORDINATES(_) GROUND LEVEL (m) CORE DIAMETER (mm) 102 DATE STARTED 13:00 DATE COMPLETED 14:00 DATE COMPLETED 15:00 DATE COMPLETED 15:00 DATE COMPLETED 15:00 DATE COMPLETED 15:00 DATE COMPLETED 15:	8 t 14 of 33		O							aft	nt - Dra	evelopme	Central D	ublin	D	ACT	NTR	СО
ENGINEER AGL Consulting Engineers FLUSH Polymer Gel LOGGED BY A Minute of the control of the con	/2008	13/09		TE STARTE	DATE	02	1							_)	ΓES(INA	-ORE	co
SYMMETRIX OPEN HOLE DRILLING: Observed by driller as returns of gravelly clay, (continued) DCC PLAN RECEIVED RECEIVED REMARKS INSTALLATION REMARKS								ON			nts Ltd.	-				ER		
HOLE DRILLING Observed by driller as returns of gravelly clay. (continued) To T	SPT (N Value)	Standpipe Details	Elevation	ies	ontinuities	Discor	Depth (m)	escription	De	Non-intact zones (shaded)	Legend	n)	Spac (mr	R.Q.D.%	S.C.R.%	T.C.R.%	Core Run Depth (m)	
III and the first of the A.O.	2861/21 /06/2021			DCC : RECE				PRILLING: ad by driller as of gravelly clay. ed)	HOLE I Observe returns									
						ARKS	N REM						to 1.2m.	on pit	pecti			_
ODOUNDMATES SETAN S						TAIL C	TED DE											
GROUNDWATER DETAILS Date Hole Casing Depth to Depth Depth Depth Water Comments			nents	to Comm	Depth to	Casing	Hole											
Depth Depth Water Comments				31 - 31.71	vvater	Depth	∪epth											
INSTALLATION DETAILS Date Tip Depth RZ Top RZ Base Type										Typo		R7 Rasa						NS
Date Tip Depth RZ Top RZ Base Type 14-09-08 13.00 6.00 13.00 50mm SP 14-09-08 32.50 26.50 32.50 50mm SP								1	SP	mm (50	13.00	6.00	00	13.0	80	-09-	



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	ORE		TES(Central Developm	ent - Dra	C	GROUND LEVEL (m)		102	DATE	HOLE N T STARTE COMPL	ED	13/09 14/09	t 15 of 33 /2008
	ENT				Central Developments	ents Ltd		NCLINATION LUSH		-90 Polymer Ge		ED BY ED BY		Millen A. Ma	
Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing (mm)	Legend	Non-intact zones (shaded)	Description	Depth (m)	Disc	continuities		Elevation	Standpipe Details	SPT (N Value)
								SYMMETRIX OPEN HOLE DRILLING: Observed by driller as returns of gravelly clay. (continued)						KIN	
	MAR d du		pecti	on pit	t to 1.2m.			Headworks.	ON REM	ARKS					
								GROUNDWA	TER DE	TAILS					
								Date	Hole Depth	Casing Depth	Depth to Water	Comm	ents		
14-	Date -09-0)8		00	RZ Top RZ Base 6.00 13.00 26.50 32.50	50	Type mm 8 mm 8	SP							- 1



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		DINA		V-C-37	Control Devel		C	GROUND LEVEL (m) CORE DIAMETER (mm)		102	DATE	STARTE		13/09	t 16 of 33 9/2008 9/2008
	GINE				Central Developme onsulting Engineers			LUSH		Polymer Gel		ED BY			nnium ahony
Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing (mm)	Legend	Non-intact zones (shaded)	Description	Depth (m)	Disc	ontinuities		Elevation	Standpipe Details	SPT (N Value)
15	15.00							SYMMETRIX OPEN HOLE DRILLING: Observed by driller as returns of gravelly clay. (continued)	16.00				LAN		2861/21 /06/2021
	MAR nd du		pecti	on pit	to 1.2m.			INSTALLATION Headworks.		ARKS					
								GROUNDWATE	R DET	AILS					
								Date H	łole	Casing	Depth to Water	Comm	ents		
14	Date -09-0	18		00	RZ Top RZ Base 6.00 13.00 26.50 32.50	50r	Гуре nm S	SP SP	epth	Depth	rvatei				



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CONT	RA	СТ	D	ublin	Central Developme	ent - Drai	ft				DRILLI SHEET	HOLE NO	0	RC	08 et 17 of 33
CO-O	RDI	NAT	ES(_)			С	GROUND LEVEL (m) ORE DIAMETER (mm)		102	DATE	STARTE		13/0	9/2008 9/2008
CLIEN		R			Central Developme onsulting Engineers	ents Ltd.		LUSH		90 Polymer Ge	DRILLI				nnium ahony
Downhole Depth (m)		T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing (mm)	Legend	Non-intact zones (shaded)	Description	Depth (m)	Disc	ontinuities		Elevation	Standpipe Details	SPT (N Value)
16 16.		100	0	0				Stiff brown sandy gravelly CLAY (gravel is predominantly fine, angular to sub-rounded							
REM/	1000000		pecti	on pi	t to 1.2m.			INSTALLATI	ON REM	ARKS				N/J I	Δ
		,	,	PI				Headworks.	TER DE	TAILC					
								Date	Hole	Casing	Depth to Water	Comm	ents		
								Date	Depth	Depth	Water	30/1111			
INST							Typo								•
	ate 9-0		13.0		6.00 RZ Base		Type mm (



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CONTRACT Dublin Central Development - Draft DRILLHOLE NO RC08 SHEET Sheet 18 of 33 GROUND LEVEL (m) CO-ORDINATES(_) DATE STARTED 13/09/2008 CORE DIAMETER (mm) 102 DATE COMPLETED 14/09/2008 INCLINATION -90 CLIENT Dublin Central Developments Ltd. **DRILLED BY** Millennium AGL Consulting Engineers **ENGINEER FLUSH** Polymer Gel LOGGED BY A. Mahony $\widehat{\Xi}$ E Downhole Depth Standpipe Details Core Run Depth (N Value) Fracture zones Spacing Description Discontinuities (E) (mm) S.C.R.% Elevation R.Q.D.9 Legend T.C.R. Depth (250 17.00 N = 55/31 mm 17.05 (25, 45, 55) Stiff brown sandy gravelly CLAY (gravel is DCC PLAN N 261/21 MEIVED: 06/2021 predominantly fine, angular to sub-rounded and locally rounded) 100 0 0 11/11/08 GDT IGSL REMARKS INSTALLATION REMARKS GPJ Hand dug inspection pit to 1.2m. Headworks. NEWLOG 1M PER PG **GROUNDWATER DETAILS** Hole Casing Depth to Water Date Comments Depth Depth INSTALLATION DETAILS Date Tip Depth RZ Top RZ Base RC Type 14-09-08 13.00 6.00 13.00 50mm SP GSL 14-09-08 32.50 50mm SP



REPORT NUMBER

CO-ORE				Central Developme	ent - Draf	G	GROUND LEVEL (m) ORE DIAMETER (mm)	1	02	DRILLH SHEET DATE S DATE C	TARTE)	13/09	08 t 19 of 33 0/2008
CLIENT	ER			Central Developme	ents Ltd.		NCLINATION LUSH		90 Polymer Gel	DRILLE			Miller A. Ma	
Downhole Depth (m) Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing (mm)	Legend	Non-intact zones (shaded)	Description	Depth (m)	Disco	ntinuities		Elevation	Standpipe Details	SPT (N Value)
18.50	100	0	0				Stiff brown sandy gravelly CLAY (gravel is predominantly fine, angular to sub-rounded and locally rounded) (continued)							N = 50/20 mm (25, 50, 50)
REMAR Hand d		spect	tion pi	it to 1.2m.			Headworks.	N REM	ARKS					
							GROUNDWAT	ER DE	TAILS					
							Date	Hole Depth	Casing Depth	Depth to Water	Comme	ents		
Date 14-09-14-09-	08		Depth 00	RZ Top RZ Base 6.00 13.00 26.50 32.50	501	Type mm mm	e SP							



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13696

DRILLHOLE NO CONTRACT Dublin Central Development - Draft **RC08** SHEET Sheet 20 of 33 GROUND LEVEL (m) CO-ORDINATES(_) DATE STARTED 13/09/2008 CORE DIAMETER (mm) 102 DATE COMPLETED 14/09/2008 INCLINATION -90 CLIENT Dublin Central Developments Ltd. DRILLED BY Millennium **ENGINEER** AGL Consulting Engineers **FLUSH** Polymer Gel LOGGED BY A. Mahony Downhole Depth (m) E Non-intact zones (shaded) Details Core Run Depth (N Value) Fracture Spacing Description Discontinuities Standpipe Depth (m) Q.D.% Elevation (mm) % % S.C.R. œ SPT (T.C.I 250 œ سسسلسسس 861/21 06/2021 Stiff brown sandy gravelly CLAY (gravel is predominantly fine, angular to sub-rounded DCC PLAN RECEIVED: and locally rounded) (continued) 100 0 0 19.40 Firm (19.4-19.6) to soft green brown SILT 11/11/08 19.90 19.90 Firm slightly gravelly green brown CLAY GDT 100 0 0 IGSL 20.00 REMARKS INSTALLATION REMARKS Hand dug inspection pit to 1.2m. Headworks. NEWLOG 1M PER PG **GROUNDWATER DETAILS** Hole Casing Depth to Water Date Comments Depth Depth **INSTALLATION DETAILS** Tip Depth RZ Top RZ Base Date Type RC 13.00 14-09-08 13.00 6.00 50mm SP 14-09-08 32.50 50mm SP 32.50 26.50



REPORT NUMBER

CONTRACT	r [Dublin	Central Developme	nt - Dra	ft					DRILLI- SHEET		0	RC	08 et 21 of 33
CO-ORDINA	ATES	(_)			С	GROUND LEVEL (m) ORE DIAMETER (mm	1)		02	DATE S	STARTE		13/0	9/2008 9/2008
LIENT NGINEER			Central Developme onsulting Engineers	nts Ltd.		ICLINATION LUSH			90 Polymer Gel	DRILLE				nnium ahony
Downhole Depth (m) Core Run Depth (m) T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing (mm)	Legend	Non-intact zones (shaded)	Description		Depth (m)	Disco	ontinuities		Elevation	Standpipe Details	SPT (N Value)
20.00	0 31	26				Mottled brown black clayey, very gravelly SAND (medium grained) with local cobbles. Gravel is predominantly coarse and rounded to sub-angular.		08.0		uities are s ir and clay Dips are	mooth			N = 39/30 mm (25, 61, 39)
REMARKS land dug in		tion pi	t to 1.2m.			INSTALLA Headworks		EM/	ARKS				10///	
		•				GROUND		DET	'All S					
						Date	Hole Dept	е	Casing Depth	Depth to Water	Comm	nents		
							Dept	u I	Debru	v v alei				(
Date 14-09-08 14-09-08		Depth .00	RZ Top RZ Base 6.00 13.00 26.50 32.50	501	Type mm 8	SP			====					

DCC PLAN NO.2861/21
RECEIVED REPORT NUMBER!



GEOTECHNICAL CORE LOG RECORD

	_																
CON	ΓRΑ	СТ	D	ublin	Central D	evelopm	nent - Di	aft					DRILL SHEE	HOLE NO)	RC0	B 22 of 33
0-0	RD	INAT	ES(_)						LEVEL (m) METER (mm)		102	DATE	STARTE COMPLE		13/09/	2008
LIE		R			Central Donsulting E				NCLINATION TUSH	ON		-90 Polymer Ge		ED BY		Millen A. Ma	
	Core Kun Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fract Spac (mr	n)	Legend	Non-intact zones (shaded)		scription	Depth (m)		continuities		Elevation	Standpipe Details	SPT (N Value)
21	50								strong, t bedded, black, fir ARGILL LIMEST slightly a moderat Pyrite di througho calcite v (continu	out. Local eining.	21.87	Discontinus meared sub-10°.	nuities are s ar and clay I. Dips are (continued 10° with ha bient clay sr	smooth / t. Dips irline			
	ARK	s							slightly a	installation	ON REM		throughou	t.			
EM			pectio	on pit	to 1.2m.					Headworks.							
										0001		TA II C					
										GROUNDWA	TER DET						
										D-4-	Hole	Casing	Depth to	0	nmt-		
										Date	Hole Depth	Casing Depth	Depth to Water	Comme	ents		
Hand	ALI	ATIO	ח מכ	ETAI	LS					Date			Depth to Water	Comme	ents		
NST	ALL ate	Т				RZ Bas	е	Туре	3	Date			Depth to Water	Comme	ents	_ =	



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CONTRACT	Du	blin C	Central Developme	nt - Dra	aft						DRILLI	HOLE N	0	RCC	18 t 23 of 33
CO-ORDINAT	ES(_	_)			0		METER (mm)		102		DATE	STARTE		13/09	9/2008
CLIENT ENGINEER			Central Developme nsulting Engineers	nts Ltd		NCLINATIO FLUSH	ON		-90 Polymer G	iel	DRILLI				nnium ahony
	S.C.R.%	R.Q.D.%	Fracture Spacing (mm)	Legend	Non-intact zones (shaded)		scription	Depth (m)	47 45 45 5		tinuities		Elevation	Standpipe Details	SPT (N Value)
22.80	0	0				Pyrite dis Incipient common Moderate moderate bedded t black, ca SHALE. slightly a moderate Pyrite dis Incipient	fractures ely strong to ely weak, thin to laminated, ilcareous Fresh to nd locally ely weathered	ly	and plan smeare are sub	nar, d thr -10° pien s thr	es are s and clay oughout with hait t clay sm oughout	Dips			
REMARKS Hand dug insp	nectio	n pit t	to 1.2m				INSTALLA	TION RE	MARKS				1	K/A K	
aug mo		Pic					Headworks.								
							GROUNDW	Hole	Casing		epth to	Comm	ents		
							Date	Depth	Depth	+	epth to Water	Comm	ients		4
NSTALLATIO	010101010101				_										
	13.00)	RZ Top RZ Base 6.00 13.00 26.50 32.50		Type mm mm	SP									



DCC PLAN NO 2861/21

	-ORE)INA			Control D		C	GROUND LEVEL (m) GORE DIAMETER (mm) NCLINATION		02 90	DATE	STARTE		13/09/ 14/09/	/2008
	ENT	ER			Central Developme onsulting Engineers	ents Ltd.		LUSH		Polymer Gel	0.0000000000000000000000000000000000000	ED BY		Millen A. Ma	
Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing (mm)	Legend	Non-intact zones (shaded)	Description	Depth (m)	Discor	ntinuities		Elevation	Standpipe Details	SPT (N Value)
23	23.10				54			Moderately strong to moderately weak, thinly bedded to laminated, black, calcareous SHALE. Fresh to slightly and locally moderately weathered. Pyrite dispersed. Incipient fractures common. (continued) Strong to very strong, thin to medium bedded, grey to dark grey, fine grained SILICEOUS LIMESTONE. Fresh to slightly and locally moderately weathered. Pyrite dispersed throughout. Local calcite veining.	23.46	Discontinui and planar, smeared the are sub-10 and insipile fractures the (continued). Discontinui and planar, sub-10° with calcite fractions.	and clay roughou with ha no clay srange of the clay	t. Dips irline neared t.			
		100	57	50											
_	MARI		ar 200.00 4**		1.10			INSTALLATIO	ON REMA	ARKS				K/A N	
ıar	ia au	g ins	pectio	on pit	to 1.2m.			Headworks.							
								GROUNDWA							
								Date	Hole Depth	Casing [Depth	Depth to Water	Comme	ents		
	TALI Date			ETAI	LS RZ Top RZ Base		Гуре								



REPORT NUMBER

O-ORI				Control Developmen		C	ROUND LEVEL (m) ORE DIAMETER (mm) ICLINATION		102 -90	DATE	COMPLE		14/09	9/2008
NGINE				Central Developme onsulting Engineers	ents Ltd.		LUSH		Polymer Gel	LOGG				nnium ahony
Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing (mm)	Legend	Non-intact zones (shaded)	Description	Depth (m)		ntinuities		Elevation	Standpipe Details	SPT (N Value)
24							Strong to very strong, thin to medium bedded grey to dark grey, fine grained SILICEOUS LIMESTONE. Fresh to slightly and locally moderately weathered. Pyrite dispersed throughout. Local calcite veining. (continued)		Discontinu and planar sub-10° w calcite frac (continued	r. Dips are ith local su cture.	9			
							Moderately strong to moderately weak, thinly bedded to laminated, black, calcareous SHALE. Fresh to slightly and locally	24.37	Discontinuand planar smeared. sub-10° w fractures.	r and local Dips are	ly clay			
24.60	0						moderately weathered. Pyrite dispersed. Incipient fractures common. Strong to moderately strong, thin to medium bedded, dark grey to		Discontinu and planal smeared. sub-10° w fractures.	r and clay Dips are				
	100	0	0				black, fine grained ARGILLACEOUS LIMESTONE. Fresh to slightly and locally moderately weathered. Pyrite dispersed throughout. Local calcite veining.							
24.80	0						Moderately strong to moderately weak, thinly bedded to laminated, black, calcareous SHALE. Fresh to slightly and locally moderately weathered. Pyrite dispersed. Incipient fractures		Discontinu and plana smeared. sub-10°.	r and clay	mooth			
REMAR	RKS			<u> </u>			common.	ION REM	IARKS					
		spect	ion pi	t to 1.2m.			Headworks.							
							GROUNDWA	ATER DE	TAILS					
							Date	Hole Depth	Casing Depth	Depth to Water	Comm	ents		
NOTAL	ΙΔΤ	ION I	DETA	JI S										



CO	NTR	ACT	D	ublin	Central Deve	lopmer	nt - Draf	t						100230000000000000000000000000000000000	HOLE N	0	RC0	
CO	-ORI	OINA'	TES(_)						LEVEL (m))	1	02		STARTE COMPL		13/09/	
	ENT	ER			Central Deve		nts Ltd.	IN	ICLINATIO				90 Polymer G	- 22.00	ED BY		Millen A. Ma	
Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing (mm)	500	Legend	Non-intact zones (shaded)	#	scription		Ceptil (III)	Dis	continuities		Elevation	Standpipe Details	SPT (N Value)
25									moderat bedded black, ca SHALE. slightly a moderat Pyrite dis Incipient	ely strong to ely weak, thi to laminated, alcareous Fresh to and locally ely weathere spersed. t fractures h. (continued	d.	21	and plan	nuities are s par and clay d. Dips are (continued				
		100	75	45					strong, t bedded, black, fir ARGILL LIMEST slightly a moderat Pyrite dis	out. Local	m to	den S	and plan	nuities are s ar and clay d. Dips are				
									Strong to	you strong	25	72	Disconti	puities are s	mooth			
									thin to m grey to d grained : LIMEST slightly a moderate Pyrite dis	out. Local	ed, e		and plan	nuities are s ar and clay I. Dips are	mooth			
	MARI									INSTALLA	TION RE	MA	RKS				A CALLY	
Han	id du	g ins	pectio	on pit	to 1.2m.					Headworks								
										GROUNDY	VATER I	ET	AILS					
										Date	Hole Depth		Casing Depth	Depth to Water	Comm	ents		
		ATIO	ח אכ	ETAI	18													
INS	ΤΔΙΙ											- 1						
INS	TALI Date					Base	Т	ype										



REPORT NUMBER

_	NTRA				Central Developme	ent - Dra	_					SHEET			RC0 Shee	18 t 27 of 33
Э.	-ORD	TANI	ES(_)			(METER (mm)		02		STARTE			9/2008
	ENT	ER			Central Developme onsulting Engineers	ents Ltd.		FLUSH	ON		90 Polymer Ge	DRILLI LOGGI			Miller A. Ma	nnium ahony
Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing (mm)	Legend	Non-infact zones (shaded)	Des	scription	Depth (m)		continuities		Elevation	Standpipe Details	SPT (N Value)
26										26.11	and plans smeared	uities are s ar and clay Dips are (continued)				
					[moderate bedded t black, ca SHALE. slightly a	ely strong to ely weak, thinly o laminated, llcareous Fresh to nd locally ely weathered.	20.11	to slightly	uities are s rough and Dips are sub	V A R SESSON			
	26.30							Pyrite dis Incipient common	spersed. fractures	26.32	Discontin	uities are s	mooth			
		100	30	0				strong, the bedded, black, fin ARGILL/LIMESTO slightly a moderate Pyrite dis	nin to medium dark grey to le grained ACEOUS ONE. Fresh to ind locally lely weathered. spersed but. Local		and plans smeared sub-10°	untees are s ar and sligh . Dips are with iron oxi ub-vertical	tly clay			
	26.60															
									- 1							
	MAR		nooti	on nit	to 1.2m				INSTALLATIO	N REM	ARKS					
ıaı	nd at	ig ins	pecti	on pit	t to 1.2m.				Headworks.							
									GROUNDWAT	ER DET	TAILS					
									Date	Hole Depth	Casing Depth	Depth to Water	Comm	nents		
	Date				ILS RZ Top RZ Base 6.00 13.00		Тур	e SP								

DCC PLAN NO 2861/21 RECEIVED REPORT NUMBER 1

	-ORI	DINA			Central Developme	ent - Dra	(GROUND LEVEL (m)			SHEE	STARTE	D	13/09	28 of 33 /2008
	ENT	ER			Central Developme	ents Ltd.	11	CORE DIAMETER (mm) NCLINATION TUSH		90 Polymer Gel	DRILL	COMPLIED BY	ETED	Millen A. Ma	nium
□ Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing (mm) 0 ²⁵⁰ 500	Legend	Non-intact zones (shaded)	Description	Depth (m)		ntinuities		Elevation	Standpipe Details	SPT (N Value)
21		100	61	7				Strong to moderately strong, thin to medium bedded, dark grey to black, fine grained ARGILLACEOUS LIMESTONE. Fresh to slightly and locally moderately weathered. Pyrite dispersed throughout. Local calcite veining. (continued)		Discontinu and planar smeared. sub-10° wi stained sul fracture. (c	and sligh Dips are th iron ox o-vertical	itly clay			
								Moderately strong to	27.52	Discontinui	ities are s	mooth			
								moderately weak, thinly bedded to laminated, black, calcareous SHALE. Fresh to slightly and locally moderately weathered. Pyrite dispersed. Incipient fractures common.		and planar smeared. sub-10°.	and clay				
_	MAR nd du		pecti	on pit	to 1.2m.			INSTALLATIO Headworks.	N REM	ARKS					
														11 , 1,	
								GROUNDWAT	Hole		Depth to	0			
								Date	epth	Depth	Depth to Water	Comme	ents		
INS	TALI	_ATI	ON E	ETAI	LS										
	Date	7	ip D	epth	RZ Top RZ Base		Гуре								
11	-09-0	8	13.0		6.00 13.00 26.50 32.50		nm S								



REPORT NUMBER

CONTRA				Central Developme	ent - Dra	_				DRILLI	HOLE NO		RC0	8 29 of 33
CO-ORE	DINAT	TES(_)				ROUND LEVEL (m) ORE DIAMETER (mm)		102		COMPLET		13/09/ 14/09/	
CLIENT				Central Developmensulting Engineers	ents Ltd.		ICLINATION LUSH		90 Polymer Gel	DRILLE			Millen A. Ma	
Downhole Depth (m) Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing (mm)	Legend	Non-intact zones (shaded)	Description	Depth (m)	Disco	ntinuities		Elevation	Standpipe Details	SPT (N Value)
28 28.00	100	58	0				Moderately strong to moderately weak, thinly bedded to laminated, black, calcareous SHALE. Fresh to slightly and locally moderately weathered. Pyrite dispersed. Incipient fractures common. (continued)		Discontinu and planar smeared. sub-10°. (d	and clay Dips are				
28.40	100	83	69	7	50		Strong to very strong, thin to medium bedded grey to dark grey, fine grained SILICEOUS LIMESTONE. Fresh to slightly and locally moderately weathered. Pyrite dispersed throughout.	0	Discontinu and planar sub-10°.					
Hand do		pecti	on pit	to 1.2m.			Headworks.	ION KEN	AKKS					
							GROUNDW	ATER DE	TAILS					
							Date	Hole Depth	Casing Depth	Depth to Water	Comme	nts		
INSTAL						T								
14-09- 14-09-	08	13.0 32.5	00	RZ Top RZ Base 6.00 13.00 26.50 32.50	50	Type mm s mm s	SP							



REPORT NUMBER

0-	ORD	INAT	ES(_)				GROUND LI	EVEL (m) ETER (mm)	1	02	120000000000000000000000000000000000000	STARTE COMPLE		13/09/	
	INE	ER			Central Developme onsulting Engineers	ents Ltd.		NCLINATIO LUSH	N		90 Polymer G	The state of the s	ED BY ED BY		Millen A. Ma	
Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%		Fracture Spacing (mm)	Legend	Non-intact zones (shaded)	Des	cription	Depth (m)	Dis	continuities		Elevation	Standpipe Details	SPT (N Value)
29										29.17	and plan	nuities are s nar. Dips an (continued	е			
								moderate bedded to black, cal SHALE.	Fresh to		and plan	nuities are s lar and clay d. Dips are	mooth			
								Pyrite dis Incipient common. Strong to thin to me grey to da grained S	ly weathered. persed.		and plan	nuities are s lar and clay d. Dips are	mooth			
2	9.50							slightly ar moderate Pyrite dis throughou Strong to strong, th bedded, of black, fine	nd locally ly weathered. persed ut. moderately in to medium dark grey to e grained	25.10	to slightl	nuities are s y rough and d. Non-intad	clay			
								slightly ar	ONE. Fresh to nd locally ly weathered. persed	29.79	and sligh	nuities are s ntly undulos sub-10°.				
		100	27	27				thin to me grey to da grained S LIMESTO slightly ar	ly weathered. persed		and plan sub-10°	nuities are s iar. Dips an with undulo ical fracture	e se			
	IAR								INSTALLATI	ON REMA	ARKS				··· <u>चि</u>	
lan	d du	g insp	pectio	on pit	to 1.2m.				Headworks.							
									GROUNDWA				_			
									Date	Hole Depth	Casing Depth	Depth to Water	Comme	ents		
	TALL Date			ETAI	LS RZ Top RZ Base		Туре									



REPORT NUMBER

_	_	7													130	
0	NTRA	ACT	D	ublin	Central Developm	nent - Dra	ft					DRILLI SHEET	HOLE NO	0	RC08	31 of 33
0	-ORE	DINA	TES(_)				GROUND I	LEVEL (m)	4	02	DATE	STARTE		13/09/ 14/09/	2008
11	ENT		-	ublin	Central Developm	ente I td	-	NCLINATION			90	DRILL		IED	Millen	
	SINE				onsulting Engineers			LUSH		F	Polymer Ge				A. Mai	
⊗ Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing (mm)	Legend	Non-intact zones (shaded)		scription	Depth (m)		ontinuities	mooth	Elevation	Standpipe Details	SPT (N Value)
. 4	30.10						thin to m grey to d grained LIMEST slightly a moderat Pyrite di	nedium bedded, dark grey, fine SILICEOUS ONE. Fresh to and locally ely weathered.		and plana sub-10° v	ar. Dips are with undulo cal fracture.	se e				
								moderat bedded black, ca SHALE. slightly a moderat Pyrite di	fractures	30.26	and plana gravel inf	uities are s ar with local fill (30.32-3 .48m). Dip	l clay 0.34m,			
		100	76	58		510		strong, t bedded, black, fir ARGILL LIMEST slightly a moderat Pyrite di	out. Local	30.51	and plana	uities are s ar, slightly c Dips are				
										30.95						
									T							
_	MAR nd du		pecti	on nit	to 1.2m.				INSTALLATIO	N REMA	ARKS					
		9 1110		J., pil					Headworks.							
									GROUNDWAT	ER DET	TAILS					
									Date	Hole Depth	Casing Depth	Depth to Water	Comm	ents		
NS	TAL	LATI	ON [DETA	ILS											
	Date		Tip D	epth	RZ Top RZ Bas		Туре									
14	-09-0	80	13.0		6.00 13.00 26.50 32.50		mm									

DCC PLAN NO. 2861/21 RECEIVE REPORT NUMBER 21



GEOTECHNICAL CORE LOG RECORD

										-		
ONTRACT	Dublin	Central Developme	ent - Dra	ft				DRILL SHEE	HOLE N	0	RC0 Shee	8 t 32 of 33
O-ORDINATE	ES(_)				JND LEVEL (m) DIAMETER (mm)	1	102	DATE	STARTE		13/09	0/2008 0/2008
LIENT		Central Developme onsulting Engineers	ents Ltd.	INCL	NATION H		90 Polymer Gel		ED BY		Miller A. Ma	
Core F	S.C.R.% R.Q.D.%	Fracture Spacing (mm)	Legend	Non-intact zones (shaded)	Description	Depth (m)	Discor	ntinuities		Elevation	Standpipe Details	SPT (N Value)
100	17 0			th grand of the gr	ong to very strong, in to medium bedded, by to dark grey, fine inned SILICEOUS MESTONE. Fresh to ghtly and locally iderately weathered. The dispersed oughout. (continued) ong to moderately ong, thin to medium dided, dark grey to ck, fine grained IGILLACEOUS MESTONE. Fresh to ghtly and locally iderately weathered. The dispersed oughout. Ong to very strong, in to medium bedded, by to dark grey, fine inned SILICEOUS MESTONE. Fresh to ghtly and locally iderately weathered. The medium bedded, by to dark grey, fine inned SILICEOUS MESTONE. Fresh to ghtly and locally iderately weathered. The dispersed oughout.	31.19	Discontinui to slightly ro smeared. I Discontinui and planar. sub-10° wit sub-vertica fracture. Discontinui and planar. sub-10° wit sub-vertica fracture.	ties are s Dips ar h undulol calcite v	mooth e se s			
31.70				the Si st be	ong to moderately ong, thin to medium dded, dark grey to ck, fine grained (GILLACEOUS MESTONE. Fresh to ghtly and locally derately weathered. The dispersed oughout. Local cite veining. The dispersed oughout of the dispersed oughout of the dispersed oughout. The dispersed oughout of the dispersed oughout. The dispersed oughout of the dispersed oughout. Fresh to ghtly and locally derately weathered. The dispersed oughout oughout. Local cite veining.	31.72						
EMARKS			H		INSTALLATIO	31.99 N REMA	ARKS					
and dug inspe	ection pit	t to 1.2m.			Headworks.							
					GROUNDWAT	ER DET	AILS					
					Date	Hole	Casing [Depth to Water	Comm	ents		
						Depth	Depth	vvaler				
NSTALLATIO		ILS RZ Top RZ Base		ype								



REPORT NUMBER

CONTRACT	Du	ublin (Central Developme	ent - Dra	ft						DRILL SHEET	HOLE N	0	RC0 Sheet	8 t 33 of 33
O-ORDINA	TES(_)				GROUND L	EVEL (m) IETER (mm)		1	02	DATE	STARTE			/2008
LIENT			Central Developme	ents Ltd.		NCLINATIO LUSH	N			90 olymer Ge		ED BY ED BY		Miller A. Ma	
Downhole Depth (m) Core Run Depth (m) T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing (mm)	Legend	Non-intact zones (shaded)		scription		Depth (m)	Disc	continuities		Elevation	Standpipe Details	SPT (N Value)
32.50		50				strong, the bedded, oblack, fin. ARGILLA IMESTO strong to thin to me grey to digrained Strong to strong, the bedded, black, fin ARGILLA LIMESTO slightly al moderate Pyrite distrougho calcite versions to black, fin ARGILLA LIMESTO slightly al moderate Pyrite distrougho calcite versions to black, fin ARGILLA LIMESTO slightly al moderate pyrite distrougho calcite versions.	DNE. Fresh to nd locally ely weathered. persed ut. Local eining. edium bedded ark grey, fine SILICEOUS DNE. Fresh to nd locally eining. en moderately nin to medium dark grey to e grained ACEOUS DNE. Fresh to nd locally ely weathered. SPEED DNE. Fresh to nd locally ely weathered ace on moderately en moderately en moderately en moderately en moderately ely weathered. En moderately en moderately ely weathered. En moderately en moderately ely weathered. En moderately ely ely weathered. En moderately ely ely ely ely ely ely ely ely ely	3	2.35	Discontinand plans sub-10°. Discontinand plans sub-10° valcite very pyrite len	nuities are s ar. Dips are (continued) nuities are s ar. Dips are with sub-ve ein fracture. use 32.34m nuities are s ar. Dips are	emooth errical			
REMARKS	oposti	on nit	to 1.2m				INSTALLAT	ION	REM/	ARKS					
Hand dug in	specil	on pit	. t⊍ 1.∠∏.				Headworks.								
							GROUNDWA	ATER Ho		Casing	Depth to		22.2		
NSTALLAT Date 14-09-08 14-09-08	10/-2000	epth	ILS RZ Top RZ Base 6.00 13.00	50	Type mm mm	SP	Date	Der	77.77	Depth	Depth to Water	Comm	nents		



/	NTR		D	ublin	Central Developm			AL COI	RE LOG RE	COR		DRILL	HOLE NO	0	RC1	696 6 t 1 of 15
0-	ORE	OINA'	TES(_)					LEVEL (m) METER (mm)		102	DATE	STARTE COMPLI		18/11	/2008
	ENT	ER			Central Developmonsulting Ltd	ents Ltd		NCLINATIO	ON		-90 Polymer G		ED BY		19/11 Miller A. Ma	/2008 nnium ahony
Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing (mm)	Legend	Non-intact zones (shaded)	De	scription	Depth (m)	Dis	continuities		Elevation	Standpipe Details	SPT (N Value)
1 1 1								SYMME HOLE D	TRIX OPEN PRILLING: ad by driller as of fill (concrete, ack/brown clay) TRIX OPEN PRILLING: ad by driller as of clayey cobbles	1.20						
2FN	MARI	KS							INSTALLATIO	RFM	ARKS					
8/1 nsp	1/08 ectio	8- 63/4 on pit	hrs U (wide	Inloa	d sludge tanks, load due to pipe) and m	d & erec	t fen	cing, dig nt onto								
	tion.				A Company of Company		en e		GROUNDWATE	R DET	TAILS					
									Date 1	lole epth	Casing Depth	Depth to Water	Comme	ents		1
NS.	ΤΔΙΙ	ΔΤΙ	ON D	FΤΔ	ILS					(19)	100					
	Date				RZ Top RZ Base		Type									



REPORT NUMBER

	4						0, 12 0							13	696
ONTRA	СТ	Di	ublin	Central De	evelopme	nt - Draf	t				DRILLI SHEET	HOLE NO)	RC'	16 et 2 of 15
O-ORD	INAT	res(_)					ID LEVEL (m) NAMETER (mm) 1	102		STARTE		18/1	1/2008
LIENT	R			Central De		nts Ltd	INCLINA FLUSH			90 Polymer Ge	DRILLI	ED BY			1/2008 nnium lahony
Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fractu Spacir (mm	ng i)	Legend	Non-intact zones (shaded)	Description	Depth (m)	Disc	continuities		Elevation	Standpipe Details	SPT (N Value)
						000000000000000000000000000000000000000	HOL Obsereturi grave	METRIX OPEN E DRILLING: erved by driller as ns of clayey elly cobbles tinued)	3						
							HOL Obse	METRIX OPEN E DRILLING: erved by driller a: ns of gravelly cla	5						(20, 5, 1, 1, 1, 1)
EMARI	KS					1—4		INSTALLA	TION REM	ARKS					4
3/11/08 spectio	8- 6 ³ / ₄	hrs L	Jnloa	id sludge ta	anks, load e) and mo	l & erect	fencing, d	ig	TION REM	ARKS					4
3/11/08 spectio	8- 6 ³ / ₄	ihrs L (wide	Jnloa ened	d sludge ta due to pipe	anks, load e) and mo	I & erect	fencing, d pment onto	ig	VATER DE						Z
3/11/08 spectio	8- 6 ³ / ₄	ihrs U (wide	Jnloa ened	d sludge ta due to pipe	anks, load e) and mo	l & erect	fencing, d	ig			Depth to Water	Comm	ents		A
3/11/08 spectio cation.	8- 63/4 on pit	(wide	ened	due to pipe	anks, load e) and mo	I & erect	fencing, d	GROUND	WATER DET	TAILS Casing	Depth to Water	Comm	ents		4
EMARI 8/11/08 spection cation.	B- 63/4 on pit	(wide	DETA	due to pipe	e) and mo	ove equi	fencing, d	GROUND	WATER DET	TAILS Casing	Depth to Water	Commi	ents		4

00	38				GEOT	ECHN	IC/	AL CO	RE LOG	RECO	RD			REP		UMBER 696
СО	NTR	ACT		ublin	Central Developm	ent - Dra	ft					DRILL	HOLE N	0	RC1	
co	-ORE	OINA.	TES(_)					LEVEL (m) METER (mn	n)	102		STARTI COMPL		18/11	et 3 of 15 1/2008
	ENT	ER			Central Developm	ents Ltd	11	LUSH			-90 Polymer		ED BY			1/2008 nnium ahony
Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing (mm)	Legend	Non-intact zones (shaded)	D€	escription	Depth (m)	D	iscontinuities		Elevation	Standpipe Details	SPT (N Value)
4								HOLE [ETRIX OPEN DRILLING: ed by driller a of gravelly cl ed)	ıs						N = 22 (1, 12, 8, 6, 1, 7) N = 45 (1, 4, 7, 9, 12, 17)
18/		3- 63/4			d sludge tanks, loa				INSTALL	ATION RE	MARKS					
	ection.		(wid	ened	due to pipe) and m	nove equi	pme	nt onto	CDOUNTS	MATER	ETAUC					
									Date	Hole	Casing		Comm	ents		
	Date	1			ILS RZ Top RZ Base 4.50 8.00		Type		Date	Depth	Depth	Water	Coniii	or Ito		



108	SL	/		Ì	52012	-01114	10,	AL 001	L LOO	ILLO		_				136	696
CONT	RAC	r [ublin	Central D	Developme	ent - Dra	ft						DRILL	HOLE NO		RC1	6 t 4 of 15
CO-OI	RDIN	ATES	_)					GROUND L	EVEL (m) METER (mm)	1	02	DATE	STARTED			/2008
CLIEN				Central D	Developme Ltd	ents Ltd		LUSH	ON			90 Polymer Ge		ED BY		19/11 Miller A. Ma	72008 nnium ahony
Downhole Depth (m)	TCR%	S.C.R.%	R.Q.D.%	Frac Spac (m)	cing m)	Legend	Non-intact zones (shaded)		scription		Depth (m)	Disc	continuities		Elevation	Standpipe Details	SPT (N Value)
inspec	/08- 6	3/4hrs	Unioa	d sludge	tanks, load		t fen	HOLE Di Observer returns o (continue	TRIX OPEN RILLING: d by driller as f gravelly cla ed)	s ay	REMA	ARKS					N = 41 (1, 2, 2, 4, 15, 20)
locatio		or (wid	GI ICU	aue to bit	ocjana m	ove equi	pine	THE OFFICE	GROUNDV	VATER	DET	AILS					
									Date	Ho Dep		Casing Depth	Depth to Water	Commer	nts		
INSTA	ALLA	TION	DETA	AILS													
Da	ate	Tip [Depth	RZ Top			Туре										
19-1 19-1		8.0 25.	00	4.50 20.00	8.00 25.00	50r 50r	nm S	SP SP									

2					(GEOTI	ECHN	IC/	AL CO	RE LOG	RECOR	RD			REP		UMBER 696
co	NTR	ACT	D	ublin	Central [Developm	ent - Dra	ft					DRII	LHOLE N	0	RC1	
co	-ORE	OINA"	TES(_)						LEVEL (m)				E START		18/1	et 5 of 15 1/2008
	ENT	ED			Central [Developm	ents Ltd	-	NCLINATI	METER (mn	,	102 -90	DRII	LED BY	ETED	19/1 Miller	1/2008 nnium
		EK	A	GL C	onsulling	Ltd			FLUSH			Polymer (el LOG	GED BY		A. Ma	ahony
Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Spa		Legend	Non-intact zones (shaded)	De	escription	Depth (m)	Di	scontinuitie	es	Elevation	Standpipe Details	SPT (N Value)
RE E	MAR	KS							HOLE D		ıs						N = 46 (2, 4, 8, 10, 12, 16)
8/ 1sp	11/08 pectio	B- 63/4				tanks, loa be) and m											
Ca	ation.	3								GROUND	WATER DE	TAILS					
										Date	Hole Depth	Casing Depth	Depth t Water	O Comm	ents		
10	т	A rest	011.5	ETA													
	Date				RZ Top	RZ Base		Гуре	9	-							
_	-11-0		8.0	0	4.50 20.00	8.00 25.00	50r	nm S	SP								



10	38	4														130	696
ON	ITR/	ACT	D	ublin	Central D	evelopme	nt - Draf	ft					DRILLI	HOLE N	0	RC1	6 t 6 of 15
0-0	ORD	INA	TES(_)					GROUND L	LEVEL (m) METER (mm)	1	02		STARTE			1/2008
	INE	ER			Central Donsulting L	evelopme _td	nts Ltd		NCLINATIO	ON		90 Polymer Ge	DRILLI LOGG				72008 nnium ahony
_	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Frac Spac (mi	n) 500	Legend	Non-intact zones (shaded)		scription	Depth (m)	Disc	continuities		Elevation	Standpipe Details	SPT (N Value)
0 1	0.00	87	0	0			000000000000000000000000000000000000000		Dark bro	d and coarse). own, firm, sand CLAY. Gravel	10.20 y						N = 50 (2, 3, 3, 1 17, 19)
1	0.40						0. 0.		is rounde grained.	ed and medium							
							0 0		gravelly	own, slightly (fine) SAND	10.85						
		100	0	0			0		Dark bro	own, firm to stift sandy, gravelly Gravel is fine to	5						
							0		medium, sub-rour	, sub-angular to	0						
1	1.90										11.90						
EN	IAR	KS					<u> </u>			INSTALLAT	ION REMA	ARKS				K///2	
sp	ectic	n pit	hrs L (wide	Inloa ened	d sludge t due to pip	tanks, load be) and mo	& erect	fen pme	ncing, dig ent onto								
d	tion.									GROUNDWA	ATER DET	TAILS					
										Date	Hole Depth	Casing Depth	Depth to Water	Comm	ents		
6.	TAI	LATI	ONIF	ETA	II S												
_	Date				-	RZ Base		Гуре	9								
	11-0	08	8.0 25.0	0	4.50 20.00	8.00 25.00	50n 50n	nm	SP								
19-	Date 11-0	08	Γip D 8.0	epth 0	RZ Top 4.50	8.00	50n	nm	SP		Hole	Casing	Depth to Water	Comm	ents		-



2	*	1				GEOT	ECLIA	110	AL CO.	DE LOC DE		D			REP	ORT NU	MBER
00	38	الح				GEUII	CHI	VIC/	AL CO	RE LOG RE	COR	ט				136	96
CO	NTR	ACT	D	ublin	Central	Developm	ent - Dr	aft					DRILL	HOLE N	0	RC16	3 7 of 15
co	-ORE	DINA	TES(_)						LEVEL (m) METER (mm)	1	02	DATE	STARTE		18/11/	
	ENT	ER			Central onsulting	Developm Ltd	ents Ltd		NCLINATI	ON		90 Polymer G		ED BY		19/11/ Millenr A. Mał	
Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Spa (n	acture acing nm)	Legend	Non-intact zones (shaded)	De	escription	Depth (m)	Dis	continuities		Elevation	Standpipe Details	SPT (N Value)
12	12.30	100	0	0					slightly s CLAY w cobbles to coars								
									cobbles LIMEST moderat	yey olack) gravelly of argillaceous ONE (probable te to highly ed bedrock).	12.60						
13		100	41	9					moderat bedded black, ca SHALE. slightly v	tely strong to tely weak, thinly to laminated, alcareous Fresh to weathered with tractures.	13.03	and plar and sligh stained	nuities are s nar. Clay sm ntly iron oxic (13.51m-13 s sub-10°.	eared de			
	13.90								to mediu to dark of grained LIMEST	ely strong, thin im bedded, grey grey, fine SILICEOUS ONE. Fresh to veathered.	13.70	to slightly planar. I 13.7m-1 clay sme 13.9m-1 sub-10°	4.02m. Dip	d ained vily			
18/1	1/08	- 63/4	nrs U	nload	d sludae	tanks, load	d & erec	ct fend	cing, dia	INSTALLATIO	N REMA	ARKS					
nsp	ection.	n pit	(wide	ned	due to pi	pe) and m	ove equ	ipme	nt onto								
										GROUNDWATI							
											lole epth	Casing Depth	Depth to Water	Comm	ents		
		ATIO	ON D	ETA	ILS												
NS	TALI	-															
	TALI Date		ip De	epth	RZ Top	RZ Base		Type									

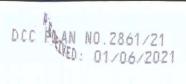


100	1				GEOTE	CHN	IIC	CAL COF	RE LOG	RE	COR	D			REF	136	
01	NTRA	СТ	D	ublin	Central Developme	ent - Dra	aft						DRILL	HOLE N	0	RC1	6
:0-	ORD	INA	ΓES(_)				GROUND L	EVEL (m)				DATE	STARTE	ED	Sheet 18/11	8 of 15 /2008
LII	ENT			ublin	Central Developme	ents Ltd		CORE DIAM	METER (mm) ON)		02 90		COMPL ED BY	ETED	19/11/ Millen	/2008 nium
	SINE	ER			onsulting Ltd			FLUSH			P	olymer Ge	LOGG	ED BY		A. Ma	
Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing (mm)	Legend	Non-intact zones (shaded)	De	scription		Depth (m)	Disc	continuities		Elevation	Standpipe Details	SPT (N Value)
4								moderati bedded t black, ca SHALE. slightly v	ely strong to ely weak, thir to laminated, alcareous Fresh to veathered wit fractures.		14.02/ 14.28	and plans smeared with varia	nuities are s ar and heav . Dips are s able fracture	vily clay sub-10° es.			
			100 43 29				Strong to thin to m grey to d grained	o very strong, nedium bedde dark grey, fine SILICEOUS ONE. Fresh.	ed, e	14.48	and plan sub-10°.	nuities are s ar. Dips are					
		100					moderat bedded	ely strong to ely weak, thir to laminated, alcareous Fresh	nly		and plan	ar. Clay sm 14.71m. D	eared				
								strong, t	o moderately hin to mediur	m	14.90	and plan	nuities are s ar. Clay sn		-		
5								grained ARGILL LIMEST locally si weather		to		Sub-10°. Discontir to slightly planar. D	Dips are nuities are s y rough and Dips are sub	i			
	15.40							bedded, grey, find SILICEO LIMEST slightly v	grey to dark e grained		15.28	Discontin	nuities are s ar. Dips are		-		
								moderat bedded black, ca	tely strong to tely weak, thin to laminated, alcareous Fresh. Pyri 5.36m.								
											15.84		nuities are s ar. Dips ar				
8/	MAR 11/08 pection	3- 63/4	hrs Unload sludge tanks, load & erd it (widened due to pipe) and move ed		d & erec	ct fe	encing, dig	INSTALLA	OITA	N REM	ARKS						
	ation.		,		F-7-1-11	- 770			GROUNDV	VATE	R DET	TAILS					
									Date	H	lole epth	Casing Depth	Depth to Water	Comm	nents		
19	Date -11-0	08		00	RZ Top RZ Base 4.50 8.00 20.00 25.00	50	mr	pe m SP m SP									

	38							AL CO	RE LOG RI	ECOR	RD				136	
0	NTR	ACT	D	ublin	Central Developme	ent - Dra	aft					DRILL SHEE	HOLE N Г	0	RC1 Sheet	6 9 of 15
00	-ORE	OINA"	TES(_)				GROUND	LEVEL (m)				STARTI	ED	18/11	
							-		METER (mm)		102	DATE	COMPL	ETED	10/11	/2008
ENG	ENT	ER			Central Developme onsulting Ltd	ents Ltd	·	INCLINATI FLUSH	ON		90 Polymer Ge		ED BY ED BY		19/11 Millen A. Ma	
Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing (mm)	Legend	Non-infact zones (shaded)	De	escription	Depth (m)	Disc	continuities		Elevation	Standpipe Details	SPT (N Value)
16	17.10	100	94	82				strong, bedded grained ARGILL LIMEST locally s weather	ed. (continued)	17.20	and plans sub-10°.	uities are s ar. Dips an (continued	e))			
REI	MAR	100 KS	100	100				modera to media to dark grained LIMEST argillace Slightly	o locally tely strong, thin um bedded, grey grey, fine SILICEOUS ONE with ous zones. weathered with tical calcite vein out.		to slightly planar. D with sub- fracture t	uities are s rough and ips are sub vertical cal hroughout.	 -10°			
18/	11/08	3- 6 ³ / ₄			d sludge tanks, load due to pipe) and m											
	ation.	pit	(****		add to pipe, and m	oqu	-101110	o. It of ito	GROUNDWAY.	TEP DET	2 11 47					
									GROUNDWA*	Hole	Casing	Depth to Water	Comm	nents		
INS	TAL			ETAI						Depth	Depth	vvater	John		Ī	
19	Date -11-0 -11-0	8	8.00 25.0	0	RZ Top RZ Base 4.50 8.00 20.00 25.00	50	Type mm mm	SP								



100					GEOTE	CHN	IIC	CAL COR	RE LOG	RE	COR	D			REP	136	IMBER 696
:01	NTR/	ACT	D	ublin	Central Developme	ent - Dra	aft							HOLE N	0	RC1	
:0-	ORD	INA.	TES(_)				GROUND L)	1	02		STARTE COMPL		18/11	10 of 15 /2008
	ENT	ER			Central Developme	ents Ltd		INCLINATION FLUSH	ON			90 Polymer Ge		ED BY		19/11 Millen A. Ma	/2008 Inium Ihony
Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing (mm)	Legend	Non-infact zones (shaded)	Des	scription		Depth (m)	Disc	continuities		Elevation	Standpipe Details	SPT (N Value)
118	18.20							to mediu to dark g grained S LIMESTO argillaceo Slightly v sub-verti	ely strong, the m bedded, g	ith ein		to slightly planar. D with sub-	nuities are s y rough and Dips are sub- vertical cal throughout	b-10° cite			
		100	100	91													
9	9.00	100	43	33				strong, the bedded, grained ARGILL/ LIMESTO siliceous locally sl	o moderately nin to mediul dark grey, fir ACEOUS ONE (slightly). Fresh to ightly ad. Pyrite let	m ne y	18.92	and plan sub-10°	nuities are s ar. Dips ar with sub-ve s 19.14m-1	e ertical			
	19.80							moderate bedded t black, ca SHALE. slightly w	ely strong to ely weak, thi o laminated, licareous Fresh to loo reathered. fractures	nly	19.68 19.80	and plan sub-10°. Discontin to slightly	nuities are s ar. Dips are nuities are s y rough and Dips are sul	smooth			
_	/AR		her !	lm!-	d aluda - 1 - 1	10-			INSTALLA	ATION	REMA	ARKS				(V//A)	
isp	ectic	on pit			d sludge tanks, load due to pipe) and mo												
ca	tion.								GROUNDY	NATE	R DET	AILS					
									Date		ole	Casing Depth	Depth to Water	Comm	nents		
	TAL Date	_		DETA epth	ILS RZ Top RZ Base		Тур	pe			- pr M I						
	-11-0 -11-0		8.0 25.0		4.50 8.00 20.00 25.00			n SP n SP									



3	1	2)			GEOTE	CHN	IIC A	۵۱ ۲۵۱	RE LOG	RECO	PD)			KEP	ORT NU	
0	38	5			GLOTE	.orn	110/	AL COI	NL LUG	RECO	תא	,				136	696
01	NTRA	ACT	D	ublin	Central Developme	ent - Dra	aft						DRILL	HOLE N	0	RC1	6 11 of 15
0-	ORD	INA	TES(_)					LEVEL (m) METER (mm)	102	2	DATE	STARTE			/2008
LIE	ENT		D	ublin	Central Developme	nts Ltd	11	NCLINATI	ON		-90)	DRILL	ED BY		19/11 Millen	/2008 nium
NG	SINE	ER	Α	GL C	onsulting Ltd		F	LUSH			Pol	lymer Gel	LOGG	ED BY		A. Ma	
Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%		Fracture Spacing (mm)	Legend	Non-intact zones (shaded)	De	escription	Depth (m)		Disco	ntinuities		Elevation	Standpipe Details	SPT (N Value)
0					61			thin to m grey to d grained LIMEST argillace	o very strong nedium bedde dark grey, fine SILICEOUS ONE, locally cous zones. continued)	ed,	ti F	Discontinu to slightly r planar. Dip (continued	ough and s are sub				
		100	59	57				strong, t bedded, grained ARGILL		to	E as s	Discontinui and planar sub-10° wi fractures 2	Dips ar	e ertical			
21								thin to m grey to d grained LIMEST	o very strong, nedium bedde dark grey, fine SILICEOUS ONE. Fresh, nse 20.93 &	ed,	to to	Discontinui to slightly r planar. Dip with sub-ve 20.88m-20	ough and s are sub ertical fra	 -10°			
2	21.20							Moderat moderat bedded, calcared Fresh to	tely strong to tely weak, thir black, ous SHALE. locally slight ed with incipie	у	a ir C	Discontinui and planar infilled 21.2 Dips are su	Black cl 2m-21.24 lb-10°.	ay m.			
								strong, t bedded, grained ARGILL LIMEST locally s		e	a s fr 2	Discontinui and planar sub-10° wit fractures 2 21.76m-21 22.45m-22 smeared.	Dips and the sub-version of the	e rtical 88m,			
								weather	ed.								
	IAR					0		-1	INSTALLA	TION REI	MAR	KS					
ispe	ectio				l sludge tanks, load lue to pipe) and mo												
cat	tion.								GROUNDW	ATER DE	ETAI	LS					
									Date	Hole Depth	C		Depth to Water	Comme	ents		
NST	ΓALL	ATIO	ON D	ETAI	LS					La Septit		- Spill					
	Date	Т	ip De	epth	RZ Top RZ Base		Туре										
10-	11-0 11-0		8.00 25.0		4.50 8.00 20.00 25.00		mm S										



REPORT NUMBER

														596
ONTRACT	Du	ublin C	entral Developme	nt - Draf	ft						IOLE N	0	RC1	
O-ORDINA	TES/)			GR	OUND L	EVEL (m)			DATE S	STARTE	D		t 12 of 15 /2008
JUNDINA	. 23(_ /					ETER (mm)	1	02		COMPLI		10/11	72000
LIENT	Dı	ublin C	entral Developme	ents Ltd	INC	LINATIO	N	-6	90	DRILLE	D BY		19/11 Miller	/2008 inium
NGINEER			sulting Ltd		FLU	JSH		Р	olymer Ge				A. Ma	
E E					(pa									
Core Run Depth (m) T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing (mm)	Legend	Non-intact zones (shaded)	Des	ecription	Depth (m)	Disc	continuities		Elevation	Standpipe Details	SPT (N Value)
100	55	47				strong, the bedded, of grained ARGILLA LIMESTO locally sli	moderately in to medium dark grey, fine ACEOUS DNE. Fresh to ghtly d. (continued)		and plan sub-10° fractures 21.76m- 22.45m-	nuities are si ar. Dips are with sub-ver 21.51-21.6 21.92m and 22.69m-clay . (continued	tical 8m,			
								22.70						
22.90						thin to me grey to di grained S			to slightly	nuities are si y rough and Dips are sub-				
100	100	87												
23.50					13	Strong to	moderately	23.50	Disconti	nuities are s	mooth			
						strong, the bedded, grained ARGILL/LIMESTO locally sli	nin to medium dark grey, fine ACEOUS ONE. Fresh to	23.99	23.5m-2 sub-10°	aar. Clay sm 3.58m. Dip				
REMARKS							INSTALLATIO	N REM	ARKS					
			sludge tanks, load ue to pipe) and me											
ocation.							GROUNDWA	TER DET	TAILS					
							Date	Hole Depth	Casing Depth	Depth to Water	Comm	nents		
NSTALLAT														
Date	Tip D	epth F	RZ Top RZ Base 4.50 8.00		Type mm SF									

DCC PLAN NO. 2861/21 REPORT NUMBER 6/2021

GEOTECHNICAL CORE LOG RECORD

CO	NTRA	ACT	D	ublin	Central D	evelopme	ent - Dra	aft					DRILL	HOLE N	0	RC1	6 13 of 15
0	ORD	INA	ΓES(_)						EVEL (m) METER (mm)	1	102		STARTE		18/11/	/2008
	ENT	ER			Central Donsulting L		ents Ltd		NCLINATIO	ON		90 Polymer Ge		ED BY		19/11/ Millen A. Ma	
Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fract Spac (mr	m)	Legend	Non-intact zones (shaded)	De	scription	Depth (m)	Disc	continuities		Elevation	Standpipe Details	SPT (N Value)
24	24.90	100	91	73					moderate bedded black, case SHALE. (continu Strong to strong, the bedded, grained ARGILL LIMEST locally site weather 24.35m.	o moderately hin to medium dark grey, fine ACEOUS ONE. Fresh to	24.21	and plan sub-10°. Disconting and plan sub-10°.	nuities are are nuities are are nuities are are are nuities are nu	smooth			
REI	MARI	100 KS	100	95						INSTALLATIO	26.00 ON REM	ARKS					
18/	11/08	- 6 ³ / ₄	hrs U (wide	nloa	d sludge to due to pip	anks, load	d & erec	t fen	cing, dig nt onto								
	ition.						13.5	fi)		GROUNDWAT	ER DET	AILS					
										Date	Hole Depth	Casing Depth	Depth to Water	Comm	ents		
N	TA:-		DN: -								- vpt N.I	= Spall					
NS	Date	_ATIO			RZ Top	RZ Raso		Туре									
				Pull	· - 10P	000		mm S									



REPORT NUMBER

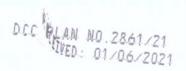
102F	/														130	90
CONTRAC	T [Dublin	Central D	evelopme	ent - Draf	ft						133.571153	HOLE NO	0	RC1	
O-ORDIN	ATES	(_)					GROUND L	EVEL (m)		1	02		STARTE		18/11	14 of 15 /2008
LIENT			Central Donsulting L	evelopme _td	ents Ltd		INCLINATION FLUSH	N			90 Polymer Ge	DRILL LOGG			19/11. Millen A. Ma	
Core Run Depth (m)	S.C.R.%	R.Q.D.%	Frac Spac (mr	cing m)	Legend	Non-intact zones (shaded)	Des	scription		Depth (m)	Disc	continuities		Elevation	Standpipe Details	SPT (N Value)
26							strong, the bedded, grained ARGILLA LIMESTO Strong to thin to m grey to d grained Strong strong to describe the strong to the strong to describe the strong the strong to describe the strong transfer the strong to describe the strong transfer transfer the strong transfer transfer the strong transfer tr	o moderately nin to medium dark grey, fin ACEOUS ONE. Fresh. o very strong, edium bedde lark grey, fine SILICEOUS ONE. Fresh.	e d,	26.22	and plan sub-10°.	nuities are s ar. Dips are nuities are s y rough and lips are sub	mooth			
26.50							moderate bedded, calcareoi Fresh Strong to strong, the bedded, grained ARGILL/ LIMESTO interbedd limeston	ely strong to ely weak, thir black, us SHALE. o moderately nin to mediur dark grey, fin ACEOUS ONE with ded siliceous e. Fresh. nse 27.0m.	n ne	26.56	and plan sub-10°. Discontir	nuities are s ar. Dips are	mooth			
1	00 97	87					moderate bedded, calcareo Fresh Strong to strong, the bedded, grained ARGILL	ely strong to ely weak, thir black, us SHALE. o moderately hin to mediur dark grey, fir ACEOUS ONE. Fresh.	n n ne	27.44	and plan sub-10°.	nuities are s ar. Dips are	mooth			
							thin to m grey to d grained	o very strong, edium bedde lark grey, fine SILICEOUS ONE. Fresh	ed,	27.78	to slightly	nuities are s y rough and Dips are sub				
REMARKS		11-1	4 -1. 1	and a f	10			INSTALLA	TION	REMA	ARKS					
nspection	b%hrs pit (wid	Unioa dened	a sludge t due to pip	tanks, load be) and me	a & erect ove equi	pm	ncing, dig ent onto									
ocation.								GROUNDY	VATE	R DET	AILS					
								Date	Н	ole epth	Casing Depth	Depth to Water	Comm	ents		
										ψul	Deptil	· rate				
INSTALLA	ATION	DETA	ILS													
Date 19-11-08		Depth 00	RZ Top 4.50	RZ Base 8.00		Тур	e SP									
19-11-08		.00	20.00	25.00			SP									

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00	35				(GEOTE	CHN	IICA	AL COI	RE LOG	RE	COR	D				136	
co	NTR	ACT	D	ublin	Central [Developme	ent - Dra	aft						DRILL SHEE	HOLE N	0	RC1	6 15 of 15
co	-ORE	OINA'	TES(_)				100		LEVEL (m) METER (mm)	1	02	DATE	STARTE		18/11	/2008
	GINE	ER			Central E	Developme Ltd	ents Ltd		LUSH	ON			90 Polymer G	The second second	ED BY ED BY		19/11 Millen A. Ma	
Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Frac Spa (m ₀ 25	cing m)	Puegend	Non-intact zones (shaded)	De	scription		Depth (m)	Dis	continuities		Elevation	Standpipe Details	SPT (N Value)
28												28.10						
	28.10								strong, t bedded, grained ARGILL	o moderately hin to mediun dark grey, fin ACEOUS ONE. Fresh	n ne	20.10		nuities are s ar. Dips an				
												28.48						
									moderat bedded,	tely strong to tely weak, thin black, ous SHALE.	nly	28.70		nuities are s ar. Dips are				
29		100	86	74					thin to m grey to d grained	o very strong nedium beddt dark grey, find SILICEOUS ONE. Fresh	ed, e		to slightl	nuities are s y rough and Dips are sub				
									Strong to	o moderately		29.25	Disconti	nuities are s	mooth			
									strong, t bedded, grained ARGILL	hin to mediui dark grey, fir ACEOUS ONE. Fresh lightly	ne			ar. Dips an				
	29.80				11 2		H		End of C	Corehole at 2	9.8	29.80	P					
									(m)	SOLUTION OF ELL	0.0							
REI	MAR	KS								INSTALLA	TION	REMA	ARKS					
18/	11/08 pectio	- 63/4	hrs U (wide	nload	d sludge t due to pip	anks, load e) and me	d & erec	t fend ipmer	cing, dig nt onto									
oca	ation.									GROUNDV	VATE	R DET	AILS					
										Date		ole epth	Casing Depth	Depth to Water	Comm	ents		
NS	ТДІ	ΔТІ	ON D	ETA	ILS													
	Date	-	Γip D	epth	RZ Top	RZ Base		Туре										
	-11-0 -11-0		8.00		4.50	8.00 25.00		mm S										

APPENDIX 3 Soil Sampling Protocol





STANDARD OPERATING PROCEDURE

SOIL SAMPLING

The soil sampling technique described below will be followed to ensure that soil samples are representative of the environment which they are intended to characterise.

1.0 SAMPLING

- (A) Locate the soil sampling station in accordance with the workplan which will specify the number and type of samples to be taken. Place a wooden stake into the ground one metre from the sample location and record sample location on the stake.
- (B) Record the location in the field logbook and, if possible, photograph the location.
- (C) Collect soil samples from the depth specified in the workplan and record the depth in the field notebook. Describe the colour and texture of each sample and record in notebook.
- (D) Wear appropriate level of protection when taking samples (gloves, safety glasses, hard hat etc.) as specified in the workplan. Collect soil samples as specified in the workplan using decontaminated stainless steel trowel, soil corer, or similar device. Collect discrete soil samples from each station.
- (E) If required by the workplan, composite discreet soil samples by placing equal volumes of soil into the container and mixing thoroughly to a homogenous mixture. Samples may be hand picked, if necessary, to remove larger materials, such as leaves, sticks, gravel, rocks etc., if specified in the workplan. Record in notebook the nature of any materials removed from soil samples.
- (F) Deposit each soil sampled into a (clean, pre-washed) container. At the time of collection, the sample bottle will be filled to the top with soil sample.
- (G) Fill out labels with waterproof ink and attach to the sample container. The following information will be recorded on each sample label: -
 - Client/Site Name
 - Date Collected
 - Time Collected
 - Analysis
 - Preservative
 - Sample Identification Number