APPENDIX 8-2

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GROUNDWATER QUALITY DATA

PECEILED. 0907 RORA

P1601-0				$\hat{\mathcal{P}}_{\alpha}$	
Lomaunaghbaun Proposed Sand and Gravel Pit, Co. Ga	lway	ID	ID		
Groundwater Laboratory Data Parameter	Units	BH01	вноз	Drinking Water Regs (S.I. 122/2014)	Groundwater Regs (S.I. 9/2010)
		08/06/2023	08/06/2023	Ň.	
Biochemical Oxygen Demand (BOD)	mg/l	<]	<1	0	-
Chemical Oxygen Demand (COD)	mg/l	19	62	- 9	-
Total Dissolved Solids (TDS)	mg/l	354	371	-	0
Total Nitrogen	mg/l	<]	<]	-	13-
Sulphate (SO4)	mg/l	27.7	<]	250	187.5
Phosphate (Ortho/MRP) as P	mg/l	<0.05	< 0.05	-	6.03
Chloride	mg/l	21.2	25.7	-	187.5
Nitrite (as NO2)	mg/l	<0.01	<0.01	0.05	0.375 (as NO ₂)
Nitrate (as NO3)	mg/l	<4.46	<4.46	50	37.5 (as NO ₃)
Total Phosphorus as P	mg/l	<0.2	0.31	-	-
Boron, dissolved	mg/l	<0.21	<0.21	1000	750
Cadmium, dissolved	mg/l	< 0.0001	<0.0001	5	3.75
Copper, dissolved	mg/l	<0.003	< 0.003	2	1.5
Iron, dissolved	mg/l	0.01	0.0078	200	-
Lead, dissolved	mg/l	<0.00051	<0.00051	10	18.75
Magnesium, dissolved	mg/l	17.7	17.48	-	-
Manganese, dissolved	mg/l	0.0328	0.028	50	-
Nickel, dissolved	mg/l	0.004	0.012	20	15
Potassium, dissolved	mg/l	1.446	1.55	-	-
Sodium, dissolved	mg/l	19.5	28.086		
Zinc, dissolved	mg/l	0.0694	0.0158	-	-
Ammonia N	mg/l	0.1	0.12	-	-
pH (field measurement)	pH Units	7.3	7.3	6.5 - 9.5	-
Conductivity @20 C° (field measurement)	mS/cm	520	536	2500	1875
TPH>C10-C21	mg/l	<0.0001	< 0.0001	-	-
TPH>C21-C40	mg/l	<0.0001	<0.0001	-	-
TPH>C6-C10	mg/l	<0.0001	<0.0001	-	-
TPH Total	mg/l	<0.01	<0.01	-	-
Oils, fats and grease water	mg/l	<20	<20	-	-
Coliforms	MPN/100ml	<]	<]	-	-
Faecal Coliforms	cfu/100ml	<1	<1	0	-
E Coli	MPN/100ml	<]	<]	-	-



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Client: **Hydro-Environmental Services** 22 Lower Main Street Dungarvan Co. Waterford. Waterford **IRELAND**

Certificate Code: AR-23-M3-022455-01 Page Number: Page 1 of 8 P1601 **PO reference:**

Certificate of Analysis

Sample number	966-2023-0002715	57	Received on Analysis sta		09/06/2023 09/06/2023		
Your sample reference	Lomaunabaun BH	1					
Sample Matrix	Ground water						
Sample Condition on Arrival	Satisfactory		Sample Date	e	08/06/2023		
Time Sampled	15:00						
Test Code Analyte	SUB ⁵ Analysis Started	Method	LOQ ³	SPEC ²	Result	Units	ACCRED ⁴
Biochemical Oxygen Demand (BOD) [M3003]						
Biochemical oxygen demand (BOD) 5d	10/06/23 09:30	EW001	1		<1	mg/l	C6
Chemical Oxygen Demand (COD) [I	M3004]						
Chemical oxygen demand (COD)	15/06/23 15:31	EW094	8		19	mg/l	C6
Total Dissolved Solids (TDS) [M300	6]						
Total dissolved solids @ 180°C	12/06/23 10:36	EW046	15		354	mg/l	C6
Total Nitrogen [M3007]							
Total Nitrogen	20/06/23 13:34	EW140	1		<1	mg/l	C6
Sulphate mg/L - Gallery [M300N]							
Sulphate mg/L - Gallery	12/06/23 16:48	EW175	1		27.7	mg/l	C6
Phosphate (Ortho/MRP) as P - Galle	ery [M300P]						
Phosphate (Ortho/MRP) as P - Gallery	12/06/23 16:48	EW175	0.05		<0.05	mg/l	C6
Chloride mg/L - Gallery [M300S]			_				
Chloride mg/L - Gallery	12/06/23 16:48	EW175	5		21.2	mg/l	C6
		Junt Way			2	21/06/2023	
Signed:	Niamh Ward -	Analytical Se	rvices Technicia	n			

Niamh Ward - Analytical Services Technician

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21/06/2023

Client:	Hydro-Environmental 22 Lower Main Street Dungarvan Co. Waterford. Waterford IRELAND	Services			<i>Certificate Code: Page Number: PO reference:</i>	AR-23-M3-022 Page 2 of 8 P1601	2455-01	
Ammonia a	as N - Gallery [M300Z]							
Ammonia a	s N - Gallery	12/06/23 16:48	EW175	0.05		0.10	mg/l	C6
Nitrite (as	N) - Gallery [M3016]							
Nitrite (as N	l) - Gallery	12/06/23 16:48	EW175	0.01		<0.01	mg/l	C6
Nitrate (as	N) - Gallery [M301A]							
Nitrate (as l	N) - Gallery	12/06/23 16:48	EW175	1		<1	mg/l	C6
	phorus-TP [M3045]							
Total Phosp		13/06/23 09:39	EW146	0.2		<0.2	mg/l	C6
	ssolved [M3163]							
Boron (B)		12/06/23 10:43	EW188	0.21		<0.21	mg/l	C6
	- Dissolved [M3164]	12/06/23 10:43	EW188			<0.1	ug/l	C6
Cadmium (issolved [M3168]	12/00/23 10.43				<0.1	µg/l	0
Copper - D Copper (Cu		12/06/23 10:43	EW188	0.003	<	<0.003	mg/l	C6
	olved [M3172]	12,00,20 10.10	Lititoo	0.000		0.000		
Iron (Fe)		12/06/23 10:43	EW188	5	1	10.131	µg/l	C6
	solved [M3173]						10	
Lead (Pb)		12/06/23 10:43	EW188	0.51		<0.51	µg/l	C6
Magnesiun	n - Dissolved [M3174]							
Magnesium	n (Mg)	12/06/23 10:43	EW188	1.11	1	17.777	mg/l	C6
Manganes	e - Dissolved [M3175]							
Manganese	e (Mn)	12/06/23 10:43	EW188		3	32.832	µg/l	C6
	ssolved [M3178]							
Nickel (Ni)		12/06/23 10:43	EW188			4.008	µg/l	C6

Signed:

Niamh Ward - Analytical Services Technician

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21/06/2023

Client:	Hydro-Environmenta 22 Lower Main Street Dungarvan Co. Waterford. Waterford IRELAND		Services			Certificate Code: Page Number: PO reference:	AR-23-M3 Page 3 of P1601		
Potassium	- Dissolved [M3180]								
Potassium ((Κ)		12/06/23 10:43	EW188	0.15		1.446	mg/l	C6
	issolved [M3184]								
Sodium (Na	,		12/06/23 10:43	EW188	1.5	1	9.502	mg/l	C6
	olved [M3194]								
Zinc (Zn)			12/06/23 10:43	EW188	1		69.4	µg/l	C6
pH [M3282]							7.0		
pH	t. 1100001		10/06/23 14:12 ^{7A}	EW158			7.8		
Conductivity Conductivity			10/06/23 14:12	EW153	100		715.7	μS/cm	C6
•	/ d (C6-10-21-40) in water ∣	M		EVVISS	100		/ 13./	µ3/cm	00
TPH >C10-			09/06/23 15:09		0.1		<0.1	µg/l	
TPH >C21-			09/06/23 15:09		0.1		<0.1	µg/l	
TPH >C6-C			09/06/23 15:09		0.1		<0.1	μg/l	
TPH Total >			09/06/23 15:09		10		<10	μg/l	
	nd grease water (HEM) g				10		10	P9/1	
	grease (HEM)		09/06/23 11:52		10		<20	mg/l	JV
	iforms E (Water) [IE Env]			FC Agar-F					
Faecal Colif			09/06/23 11:52	- -	1		< 1	cfu/100 ml	
Coliforms I	E (Water) [IE Env] <1 >2	120	/100 ml (0) Colilert-	18-Q MDW					
Coliforms		*	09/06/23 11:52		1		< 1	MPN/100 ml	
Escherichi	a Coli E (Water) [IE Env]	<1	>2 420 /100 ml (0) C	olilert-18-Q					
Escherichia	coli	*	09/06/23 11:52		1		< 1	MPN/100 ml	

Signed:

Niamh Ward - Analytical Services Technician

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Client: **Hydro-Environmental Services** 22 Lower Main Street Dungarvan Co. Waterford. Waterford **IRELAND**

Certificate Code: Page Number: **PO reference:**

AR-23-M3-022455-01 Page 4 of 8 P1601

⁴ Accreditiation Information

C6: ISO/IEC 17025:2017 INAB 138-T JV: SFS-EN ISO/IEC 17025:2017 FINAS T039

Signed:

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Client:	t: Hydro-Environmental Services	Certificate Code:	AR-23-M3-022455-01
	22 Lower Main Street	Page Number:	Page 5 of 8
	Dungarvan	PO reference:	P1601
	Co. Waterford.		
	Waterford		
	IRELAND		

Sample number	966-2023-0002715	58	Received on Analysis started on	09/06/2023 09/06/2023		
Your sample reference	Lomaunabaun BH	3				
Sample Matrix	Ground water					
Sample Condition on Arrival	Satisfactory		Sample Date	08/06/2023		
Time Sampled	15:00					
Test Code Analyte	SUB ⁵ Analysis Started	Method	LOQ ³ SPEC ²	Result	Units	ACCRED ⁴
Biochemical Oxygen Demand (BO	D) [M3003]					
Biochemical oxygen demand (BOD) 5d		EW001	1	<1	mg/l	C6
Chemical Oxygen Demand (COD)	[M3004]					
Chemical oxygen demand (COD)	15/06/23 15:20	EW094	8	62	mg/l	C6
Total Dissolved Solids (TDS) [M30	06]					
Total dissolved solids @ 180°C	12/06/23 10:36	EW046	15	371	mg/l	C6
Total Nitrogen [M3007]						
Total Nitrogen	20/06/23 13:34	EW140	1	<1	mg/l	C6
Sulphate mg/L - Gallery [M300N]						
Sulphate mg/L - Gallery	12/06/23 16:48	EW175	1	<1	mg/l	
Phosphate (Ortho/MRP) as P - Gal	llery [M300P]					
Phosphate (Ortho/MRP) as P - Gallery	12/06/23 16:48	EW175	0.05	<0.05	mg/l	
Chloride mg/L - Gallery [M300S]			_			
Chloride mg/L - Gallery	12/06/23 16:48	EW175	5	25.7	mg/l	C6
Ammonia as N - Gallery [M300Z]						

Signed:

21/06/2023

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21/06/2023

Client:	Hydro-Environmental 22 Lower Main Street Dungarvan Co. Waterford. Waterford IRELAND	Services			Certificate Code: Page Number: PO reference:	AR-23-M3-022 Page 6 of 8 P1601	2455-01	
Ammonia a	as N - Gallery	12/06/23 16:48	EW175	0.05		0.12	mg/l	C6
Nitrite (as	N) - Gallery [M3016]							
Nitrite (as N	N) - Gallery	12/06/23 16:49	EW175	0.01		<0.01	mg/l	
	N) - Gallery [M301A]							
	N) - Gallery	12/06/23 16:49	EW175	1		<1	mg/l	C6
	phorus-TP [M3045]	10/00/00 00 00	E14/4 40	0.0		0.04		06
Total Phose		13/06/23 09:38	EW146	0.2		0.31	mg/l	C6
Boron - Di Boron (B)	ssolved [M3163]	12/06/23 10:43	EW188	0.21		<0.21	mg/l	C6
	- Dissolved [M3164]	12/00/20 10.40	LWI00	0.21		-0.21	iiig/i	
Cadmium (12/06/23 10:43	EW188			<0.1	µg/l	C6
,	Dissolved [M3168]						10	
Copper (Cu		12/06/23 10:43	EW188	0.003	<	<0.003	mg/l	C6
Iron - Diss	olved [M3172]							
Iron (Fe)		12/06/23 10:43	EW188	5		7.79	µg/l	C6
	solved [M3173]							
Lead (Pb)		12/06/23 10:43	EW188	0.51		<0.51	µg/l	C6
-	m - Dissolved [M3174]					- 100		00
Magnesium		12/06/23 10:43	EW188	1.11	1	17.482	mg/l	C6
Manganes Manganese	e - Dissolved [M3175]	12/06/23 10:43	EW188			28.208	µg/l	C6
Ū	ssolved [M3178]	12/00/23 10.43			2	-0.200	P9/1	00
Nickel (Ni)		12/06/23 10:43	EW188			11.809	µg/l	C6
()	ı - Dissolved [M3180]	·····				-	1.5	

Signed:

Niamh Ward - Analytical Services Technician

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21/06/2023

22 Low Dun Co. Wat	ro-Environmental S ver Main Street Igarvan Waterford. erford LAND	Services			Certificate Code: Page Number: PO reference:	AR-23-M3- Page 7 of 8 P1601		
Potassium (K)		12/06/23 10:43	EW188	0.15	1	.553	mg/l	C6
Sodium - Dissolv	ed [M3184]							
Sodium (Na)		12/06/23 10:43	EW188	1.5	2	8.086	mg/l	C6
Zinc - Dissolved	[M3194]							
Zinc (Zn)		12/06/23 10:43	EW188	1		15.8	μg/l	C6
рН [М3282]								
рН		10/06/23 14:12 ^{7A}	EW158			7.6		
Conductivity [M3	283]							
Conductivity		10/06/23 14:12	EW153	100		650	μS/cm	C6
TPH 3 Band (C6-1	10-21-40) in water [M	502B]						
TPH >C10-C21	*	09/06/23 15:09		0.1		<0.1	μg/l	
TPH >C21-C40	*	09/06/23 15:09		0.1		<0.1	μg/l	
TPH >C6-C10	*	09/06/23 15:09		0.1		<0.1	µg/l	
TPH Total >C6-C4	0 *	09/06/23 15:09		10		<10	μg/l	
Oils, fats and gre	ase water (HEM) gra	vimetric [RZPGR]						
Oil, fat and grease	(HEM) *	09/06/23 11:52		10		<20	mg/l	JV
Faecal Coliforms	E (Water) [IE Env] <	1 >100 /100 ml (0) m-	FC Agar-F					
Faecal Coliforms	*	09/06/23 11:52		1		< 1	cfu/100 ml	
Coliforms E (Wat	er) [IE Env] <1 >2 420) /100 ml (0) Colilert-	18-Q MDW					
Coliforms	*	09/06/23 11:52		1		< 1	MPN/100 ml	
Escherichia Coli	E (Water) [IE Env] <1		olilert-18-Q					
Escherichia coli	*	09/06/23 11:52		1		< 1	MPN/100 ml	

Signed:

Niamh Ward - Analytical Services Technician

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Client: **Hydro-Environmental Services** 22 Lower Main Street Dungarvan Co. Waterford. Waterford **IRELAND**

Certificate Code: Page Number: **PO reference:**

AR-23-M3-022455-01 Page 8 of 8 P1601

21/06/2023

⁴ Accreditiation Information

C6: ISO/IEC 17025:2017 INAB 138-T JV: SFS-EN ISO/IEC 17025:2017 FINAS T039

Signed:

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