



EXCELLENCE THROUGH ACCREDITATION

**Environmental Laboratory Services Ltd. (Cork)** 

Hoffman Park Inchera Cork

T45 PC80 **IRELAND** 

+353 (021) 4536141

F: +353 (021) 453614 Web: www.eurofins.com

Email: CorkQueries@eurofinsenv.ie



22/04/2022

**Client:** Hydro-Environmental Services

22

**Lower Main Street** Dungarvan Co. Waterford. Waterford

**IRELAND** 

AR-22-M3-006890-01 **Certificate Code:** 

Page Number: Page 1 of 8 PO reference: P1508

# **Certificate of Analysis**

Sample number	966-2022-000094	15	Received on		08/04/2022		
Your sample reference	Clonbern PW1		Analysis star	tea on	12/04/2022		
Sample Matrix	Ground water						
Additional Information	Satisfactory		Sample Date		07/04/2022		
Time Sampled	15:00		Campic Date		0170472022		
· · · · · · · · · · · · · · · · · · ·			100 3	SPEC <sup>2</sup>			4000004
Test Code Analyte	SUB <sup>5</sup> Analysis Started	Method	LOQ <sup>3</sup>	SPEC	Result	Units	ACCRED <sup>4</sup>
Alkalinity (Dublin) [BB00B]							
Alkalinity	* 12/04/22 14:27		30		274	mg/l CaCO3	
Sulphate mg/L - Gallery [M300N]							
Sulphate mg/L - Gallery	12/04/22 11:06	EW175	1		85.063	mg/l	CN
Chloride mg/L - Gallery [M300S]							
Chloride mg/L - Gallery	12/04/22 11:06	EW175	5		25.93	mg/l	CN
Ammonium as NH4 (calc) - Galler	y [M300T]						
Ammonium as NH4 (calc) - Gallery	12/04/22 11:06	EW175	0.06		<0.06	mg/l	CN
Phosphate (Ortho/MRP) as P2O5	(Calc) - Gallery [M300V]	l					
Phosphate (Ortho/MRP) as P2O5 (Calc) - Gallery	12/04/22 11:06	EW175	0.11		<0.11	mg/l	
This parameter re	sult is compromised as it wa	s tested outside	of the recommend	ded holding time.			
Ammonia as N - Gallery [M300Z]							
Ammonia as N - Gallery	12/04/22 11:06	EW175	0.05		<0.05	mg/l	CN
Nitrite (as N) - Gallery [M3016]							
Nitrite (as N) - Gallery	12/04/22 11:06	EW175	0.1		<0.1	mg/l	
This parameter re	sult is compromised as it wa	s tested outside	of the recommend	ded holding time.			
Nitrate (as N) - Gallery [M301A]	·			_			
Nitrate (as N) - Gallery	12/04/22 11:06	EW175	1		<1	mg/l	
This parameter re	sult is compromised as it wa	s tested outside	of the recommend	ded holding time.			
Aluminium - Dissolved [M3157]				J			
Aluminium	19/04/22 12:17	EW188			297.715	μg/l	CN
Arsenic - Dissolved [M3159]						. 0	
Arsenic	19/04/22 12:17	EW188			<0.2	μg/l	CN
Calcium - Dissolved [M3165]						. 0	
		11.6.					

## Signed: \_

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- 3. LOQ = Limit of Qualtification or lowest value that can be reported
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- 7A. Deviation: This parameter result is indicative as it was tested outside of the recommended holding time.



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DETAILED IN SCOPE REG NO. 1117

**Client: Hydro-Environmental Services** 

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**Lower Main Street** Dungarvan Co. Waterford. Waterford **IRELAND** 

AR-22-M3-006890-01 **Certificate Code:** 

Page Number: Page 2 of 8

PO reference: P1508

Calcium (Ca)	19/04/22 12:17	EW188	1.08	186.871	mg/l	
Iron - Dissolved [M3172]						
Iron (Fe)	19/04/22 12:17	EW188	5	2969.737	μg/l	
Magnesium - Dissolved [M3174]						
Magnesium (Mg)	19/04/22 12:17	EW188	1.11	12.964	mg/l	CN
Manganese - Dissolved [M3175]						
Manganese (Mn)	19/04/22 12:17	EW188		34.87	μg/l	CN
Potassium - Dissolved [M3180]						
Potassium (K)	19/04/22 12:17	EW188	0.15	4.4	mg/l	CN
Sodium - Dissolved [M3184]						
Sodium (Na)	19/04/22 12:17	EW188	1.5	13.507	mg/l	CN
Total Hardness - Dissolved [M3191]						
Total hardness	21/04/22 19:41	EW188		520.0026	mg/l CaCO3	
pH [M3282]						
рН	12/04/22 10:22	EW158		7.0		
Conductivity [M3283]						
Conductivity	12/04/22 10:22	EW153	100	678.1	μS/cm	CN
Coliforms and E.Coli 100ml Shan [YX	312]					
Escherichia coli	12/04/22 14:02		1	4.1	MPN/100 ml	
Sample was received i	nto the Laboratory outsi	de of the holding	g time for this paran	neter results may be compromised		
Total coliforms	12/04/22 14:02		1	142.1	MPN/100 ml	
Sample was received i	nto the Laboratory outsi	de of the holding	g time for this paran	neter results may be compromised		

### <sup>4</sup> Accreditiation Information

CN: ISO/IEC 17025:2017 INAB 111-T

22/04/2022 Signed: \_

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TESTING DETAILED IN SCOPE REG NO. 1117

AR-22-M3-006890-01 **Certificate Code:** 

Page Number: Page 3 of 8

PO reference: P1508

**Client:** Hydro-Environmental Services

22

**Lower Main Street** Dungarvan Co. Waterford. Waterford **IRELAND** 

Sample number	966-2022-0000941	6	Received on		08/04/2022		
			Analysis starte	ed on	12/04/2022		
Your sample reference	Clonbern BH1						
Sample Matrix	Ground water						
Additional Information	Satisfactory		Sample Date		07/04/2022		
Time Sampled	15:00						
Test Code Analyte	SUB <sup>5</sup> Analysis Started	Method	LOQ <sup>3</sup>	SPEC <sup>2</sup>	Result	Units	ACCRED <sup>4</sup>
Alkalinity (Dublin) [BB00B]							
Alkalinity	* 12/04/22 14:27		30		295	mg/l CaCO3	
Sulphate mg/L - Gallery [M300N]							
Sulphate mg/L - Gallery	12/04/22 11:06	EW175	1		4.815	mg/l	CN
Chloride mg/L - Gallery [M300S]							
Chloride mg/L - Gallery	12/04/22 11:06	EW175	5		13.652	mg/l	CN
Ammonium as NH4 (calc) - Gallery	y [M300T]						
Ammonium as NH4 (calc) - Gallery	12/04/22 11:06	EW175	0.06		1.33	mg/l	
Phosphate (Ortho/MRP) as P2O5	(Calc) - Gallery [M300V]						
Phosphate (Ortho/MRP) as P2O5 (Calc) - Gallery	12/04/22 11:06	EW175	0.11		<0.11	mg/l	
•	sult is compromised as it was	s tested outside	of the recommende	ed holding time.			
Ammonia as N - Gallery [M300Z]							
Ammonia as N - Gallery	12/04/22 11:06	EW175	0.05		1.03	mg/l	
Nitrite (as N) - Gallery [M3016]							
Nitrite (as N) - Gallery	12/04/22 11:06	EW175	0.1		<0.1	mg/l	
This parameter re	sult is compromised as it was	s tested outside	of the recommende	ed holding time.			
Nitrate (as N) - Gallery [M301A]							
Nitrate (as N) - Gallery	12/04/22 11:06	EW175	1		<1	mg/l	
This parameter re	sult is compromised as it was	s tested outside	of the recommende	ed holding time.			
Aluminium - Dissolved [M3157]							
Aluminium	19/04/22 12:17	EW188			24.131	μg/l	CN
Arsenic - Dissolved [M3159]							
Arsenic	19/04/22 12:17	EW188			6.979	μg/l	CN
Calcium - Dissolved [M3165]							
Calcium (Ca)	19/04/22 12:17	EW188	1.08		120.497	mg/l	
Iron - Dissolved [M3172]						-	

Signed:	Alebana	22/04/2022
O.g.1001	Aoife de Barra -	

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**IRELAND** 

AR-22-M3-006890-01 **Certificate Code:** 

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Iron (Fe)	19/04/22 12:17	EW188	5	381.894	μg/l	CN
Magnesium - Dissolved [M3174]						
Magnesium (Mg)	19/04/22 12:17	EW188	1.11	10.543	mg/l	CN
Manganese - Dissolved [M3175]						
Manganese (Mn)	19/04/22 12:17	EW188		116.914	μg/l	CN
Potassium - Dissolved [M3180]						
Potassium (K)	19/04/22 12:17	EW188	0.15	2.25	mg/l	CN
Sodium - Dissolved [M3184]						
Sodium (Na)	19/04/22 12:17	EW188	1.5	10.577	mg/l	CN
Total Hardness - Dissolved [M3191]						
Total hardness	21/04/22 19:41	EW188		344.2971	mg/l CaCO3	
pH [M3282]						
рН	12/04/22 10:22	EW158		6.8		
Conductivity [M3283]						
Conductivity	12/04/22 10:22	EW153	100	545.7	μS/cm	CN
Coliforms and E.Coli 100ml Shan [Y	<b>/</b> X312]					
Escherichia coli	* 12/04/22 14:02		1	<1.0	MPN/100 ml	
Sample was receive	d into the Laboratory outsi	de of the holding	time for this param	neter results may be compromised		
Total coliforms	* 12/04/22 14:02		1	<1.0	MPN/100 ml	
Sample was receive	d into the Laboratory outsi	do of the holding	time for this param	neter results may be compromised		

<sup>4</sup> Accreditiation	Information
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CN: ISO/IEC 17025:2017 INAB 111-T

Signed:	Alebana	22/04/2022

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DETAILED IN SCOPE REG NO. 1117

22/04/2022

TESTING

**Client:** Hydro-Environmental Services

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**Lower Main Street** Dungarvan Co. Waterford. Waterford **IRELAND** 

AR-22-M3-006890-01 **Certificate Code:** 

Page Number: Page 5 of 8

PO reference: P1508

Sample number	966-2022-0000941	17	Received or Analysis sta		08/04/2022 12/04/2022		
Your sample reference	Clonbern BH2		Allalysis sta	irted off	12/04/2022		
Sample Matrix	Ground water						
Additional Information	Satisfactory		Sample Dat	e	07/04/2022		
Time Sampled	15:00		'				
Test Code Analyte	SUB <sup>5</sup> Analysis Started	Method	LOQ <sup>3</sup>	SPEC <sup>2</sup>	Result	Units	ACCRED <sup>4</sup>
Alkalinity (Dublin) [BB00B]							
Alkalinity	* 12/04/22 14:27		30		310	mg/l CaCO3	
Sulphate mg/L - Gallery [M300N]							
Sulphate mg/L - Gallery	12/04/22 11:06	EW175	1		3.629	mg/l	CN
Chloride mg/L - Gallery [M300S]							
Chloride mg/L - Gallery	12/04/22 11:06	EW175	5		20.567	mg/l	CN
Ammonium as NH4 (calc) - Galler	ry [M300T]						
Ammonium as NH4 (calc) - Gallery	12/04/22 11:06	EW175	0.06		1.55	mg/l	
Phosphate (Ortho/MRP) as P2O5	(Calc) - Gallery [M300V]	l					
Phosphate (Ortho/MRP) as P2O5 (Calc) - Gallery	12/04/22 11:06	EW175	0.11		<0.11	mg/l	
This parameter re	esult is compromised as it wa	s tested outside	e of the recommer	nded holding time.			
Ammonia as N - Gallery [M300Z]							
Ammonia as N - Gallery	12/04/22 11:06	EW175	0.05		1.20	mg/l	
Nitrite (as N) - Gallery [M3016]							
Nitrite (as N) - Gallery	12/04/22 11:06	EW175	0.1		<0.1	mg/l	
This parameter re	esult is compromised as it wa	s tested outside	e of the recommer	nded holding time.			
Nitrate (as N) - Gallery [M301A]							
Nitrate (as N) - Gallery	12/04/22 11:06	EW175	1		<1	mg/l	
This parameter re	esult is compromised as it wa	s tested outside	e of the recommer	nded holding time.			
Aluminium - Dissolved [M3157]							
Aluminium	19/04/22 12:17	EW188			36.928	μg/l	CN
Arsenic - Dissolved [M3159]							
Arsenic	19/04/22 12:17	EW188			16.741	μg/l	CN
Calcium - Dissolved [M3165]							
Calcium (Ca)	19/04/22 12:17	EW188	1.08		106.055	mg/l	
Iron - Dissolved [M3172]							

Signed: \_

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AR-22-M3-006890-01 **Certificate Code:** 

Page Number: Page 6 of 8

PO reference: P1508

Iron (Fe)	19/04/22 12:17	EW188	5	3537.443	μg/l	
Magnesium - Dissolved [M3174]						
Magnesium (Mg)	19/04/22 12:17	EW188	1.11	11.351	mg/l	CN
Manganese - Dissolved [M3175]						
Manganese (Mn)	19/04/22 12:17	EW188		80.678	μg/l	CN
Potassium - Dissolved [M3180]						
Potassium (K)	19/04/22 12:17	EW188	0.15	4.749	mg/l	CN
Sodium - Dissolved [M3184]						
Sodium (Na)	19/04/22 12:17	EW188	1.5	21.467	mg/l	CN
Total Hardness - Dissolved [M31	91]					
Total hardness	21/04/22 19:41	EW188		311.5628	mg/l CaCO3	CN
pH [M3282]						
рН	12/04/22 10:22 <sup>7A</sup>	EW158		6.8		
Conductivity [M3283]						
Conductivity	12/04/22 10:22	EW153	100	590.5	μS/cm	CN
Coliforms and E.Coli 100ml Shar	n [YX312]					
Escherichia coli	* 12/04/22 14:02		1	<1.0	MPN/100 ml	
Sample was rec	eived into the Laboratory outsid	le of the holdi	ng time for this parame	ter results may be compromised		
Total coliforms	* 12/04/22 14:02		1	<1.0	MPN/100 ml	
Sample was rec	eived into the Laboratory outsid	le of the holdi	ng time for this parame	ter results may be compromised		

CN: ISO/IEC 17025:2017 INAB 111-T

<sup>4</sup> Accreditiation Information

Signed:	Alebana	22/04/2022
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TESTING DETAILED IN SCOPE REG NO. 1117

AR-22-M3-006890-01 **Certificate Code:** 

Page Number: Page 7 of 8 PO reference: P1508

**IRELAND** Sample number 966-2022-00009418 Received on 08/04/2022 Analysis started on 12/04/2022 Your sample reference Spring Sample Matrix Ground water Additional Information Satisfactory Sample Date 07/04/2022 Time Sampled 15:00

Test Code Analyte	SUB <sup>5</sup> Analysis Started	Method	LOQ <sup>3</sup>	SPEC <sup>2</sup>	Result	Units	ACCRED <sup>4</sup>
Alkalinity (Dublin) [BB00B]							
Alkalinity	* 12/04/22 14:27		30		320	mg/l CaCO3	
Sulphate mg/L - Gallery [M300N]							
Sulphate mg/L - Gallery	12/04/22 11:06	EW175	1		11.599	mg/l	CN
Chloride mg/L - Gallery [M300S]							
Chloride mg/L - Gallery	12/04/22 11:06	EW175	5		18.951	mg/l	CN
Ammonium as NH4 (calc) - Galler	y [M300T]						
Ammonium as NH4 (calc) - Gallery	12/04/22 11:06	EW175	0.06		<0.06	mg/l	CN
Phosphate (Ortho/MRP) as P2O5	(Calc) - Gallery [M300V]	l					
Phosphate (Ortho/MRP) as P2O5 (Calc) - Gallery	12/04/22 11:06	EW175	0.11		<0.11	mg/l	
This parameter re	sult is compromised as it wa	s tested outside	of the recommend	ded holding time.			
Ammonia as N - Gallery [M300Z]							
Ammonia as N - Gallery	12/04/22 11:06	EW175	0.05		<0.05	mg/l	CN
Nitrite (as N) - Gallery [M3016]							
Nitrite (as N) - Gallery	12/04/22 11:06	EW175	0.1		<0.1	mg/l	
This parameter re	sult is compromised as it wa	s tested outside	of the recommend	ded holding time.			
Nitrate (as N) - Gallery [M301A]							
Nitrate (as N) - Gallery	12/04/22 11:06	EW175	1		2.61	mg/l	
This parameter re	sult is compromised as it wa	s tested outside	of the recommend	ded holding time.			
Aluminium - Dissolved [M3157]							
Aluminium	19/04/22 12:17	EW188			<5	μg/l	CN
Arsenic - Dissolved [M3159]							
Arsenic	19/04/22 12:17	EW188			0.446	μg/l	CN
Calcium - Dissolved [M3165]							
Calcium (Ca)	19/04/22 12:17	EW188	1.08		141.976	mg/l	
Iron - Dissolved [M3172]							

Signed:	Alebana	22/04/202	
oignour	Aoife de Barra -	_	

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AR-22-M3-006890-01 **Certificate Code:** 

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PO reference: P1508

Client:	Hydro	-Environmental	Services
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22

**Lower Main Street** Dungarvan Co. Waterford. Waterford **IRELAND** 

Iron (Fe)	19/04/22 12:17	EW188	5	91.01	μg/l	CN
Magnesium - Dissolved [M3174]						
Magnesium (Mg)	19/04/22 12:17	EW188	1.11	5.685	mg/l	CN
Manganese - Dissolved [M3175]						
Manganese (Mn)	19/04/22 12:17	EW188		3.547	μg/l	CN
Potassium - Dissolved [M3180]						
Potassium (K)	19/04/22 12:17	EW188	0.15	3.091	mg/l	CN
Sodium - Dissolved [M3184]						
Sodium (Na)	19/04/22 12:17	EW188	1.5	9.182	mg/l	CN
Total Hardness - Dissolved [M31	91]					
Total hardness	21/04/22 19:41	EW188		377.9249	mg/l CaCO3	
pH [M3282]						
рН	12/04/22 10:22	A EW158		6.6		
Conductivity [M3283]						
Conductivity			400	244.2	0.1	CN
Conductivity	12/04/22 10:22	EW153	100	641.8	μS/cm	0.1
Coliforms and E.Coli 100ml Shar		EW153	100	641.8	μS/cm	0.1
•		EW153	100	641.8	μS/cm MPN/100 ml	O.V
Coliforms and E.Coli 100ml Shar Escherichia coli	* 12/04/22 14:02		1		·	O.V
Coliforms and E.Coli 100ml Shar Escherichia coli	* 12/04/22 14:02		1	1	·	0.1

### <sup>4</sup> Accreditiation Information

CN: ISO/IEC 17025:2017 INAB 111-T

Signed:	Alebana	22/04/2022
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- 6. Deviation: This Parameter result is indicative as no holding time data was provided.
- 7A. Deviation: This parameter result is indicative as it was tested outside of the recommended holding time.



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Client: **Hydro-Environmental Services** 

**Lower Main Street** Dungarvan Co. Waterford. Waterford **IRFLAND** 

Certificate Code: AR-23-M3-019932-01

Page Number: Page 1 of 15

PO reference: P1508

# **Certificate of Analysis**

Sample number	966-2023-0001648	36	Received on Analysis star		30/03/2023 31/03/2023		
Your sample reference	Clonbern-BH1		,				
Sample Matrix	Ground water						
Sample Condition on Arrival	Satisfactory		Sample Date	e	29/03/2023		
Time Sampled	16:00						
Test Code Analyte	SUB <sup>5</sup> Analysis Started	Method	LOQ <sup>3</sup>	SPEC <sup>2</sup>	Result	Units	ACCRED <sup>4</sup>
Biochemical Oxygen Demand (BC	DD) [M3003]						
Biochemical oxygen demand (BOD) 5d	31/03/23 09:23	EW001	1		1.5	mg/l	C6
Total Dissolved Solids (TDS) [M30	006]						
Total dissolved solids @ 180°C	31/03/23 08:31	EW046	15		303	mg/l	C6
Sulphate mg/L - Gallery [M300N]							
Sulphate mg/L - Gallery	31/03/23 10:11	EW175	1		<1	mg/l	C6
Phosphate (Ortho/MRP) as P - Gal	llery [M300P]						
Phosphate (Ortho/MRP) as P - Gallery Chloride mg/L - Gallery [M300S]	31/03/23 10:11	EW175	0.05		0.08	mg/l	C6
Chloride mg/L - Gallery	31/03/23 10:11	EW175	5		14.3	mg/l	C6
Ammonia as N - Gallery [M300Z]						3	
Ammonia as N - Gallery	31/03/23 10:11	EW175	0.05		0.76	mg/l	
Nitrite (as N) - Gallery [M3016]							
Nitrite (as N) - Gallery	31/03/23 10:11	EW175	0.01		<0.01	mg/l	
		Alebana			٥	1/05/2023	
Signed:		Aoife de Barra			3	1/03/2023	
		, tone de Dalle	4				

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Certificate Code: AR-23-M3-019932-01

Page Number: Page 2 of 15

P1508 PO reference:

Nitrate (as N) - Gallery [M301A]	<b>Nitrate</b>	(as N	- Gallery	[M301A]
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**IRELAND** 

Nitrate (as N) - Gallery [M301A]						
Nitrate (as N) - Gallery	31/03/23 10:11	EW175	1	<1	mg/l	
Arsenic - Dissolved [M3159]						
Arsenic	31/03/23 11:09	EW188		22.393	μg/l	
Cadmium - Dissolved [M3164]						
Cadmium (Cd)	31/03/23 11:09	EW188		<0.1	μg/l	C6
Chromium - Dissolved [M3166]						
Chromium (Cr)	31/03/23 11:09	EW188		<1	μg/l	C6
Copper - Dissolved [M3168]						
Copper (Cu)	31/03/23 11:09	EW188	0.003	<0.003	mg/l	C6
Iron - Dissolved [M3172]						
Iron (Fe)	31/03/23 11:09	EW188	5	1392.409	μg/l	
Lead - Dissolved [M3173]						
Lead (Pb)	31/03/23 11:09	EW188	0.51	<0.51	μg/l	C6
Magnesium - Dissolved [M3174]						
Magnesium (Mg)	31/03/23 11:09	EW188	1.11	8.627	mg/l	C6
Manganese - Dissolved [M3175]						
Manganese (Mn)	31/03/23 11:09	EW188		180.682	μg/l	C6
Mercury - Dissolved [M3176]						
Mercury	31/03/23 11:09	EW188	0.03	<0.03	μg/l	C6
Nickel - Dissolved [M3178]						
Nickel (Ni)	31/03/23 11:09	EW188		1.718	μg/l	C6
Zinc - Dissolved [M3194]						
Zinc (Zn)	31/03/23 11:09	EW188	1	2.87	μg/l	C6

31/05/2023 Signed: .

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**Lower Main Street** Dungarvan Co. Waterford.

Waterford **IRFLAND** 

Certificate Code: AR-23-M3-019932-01

Page Number: **Page 3 of 15** 

PO reference: P1508

### TPH 3 Band (C6-10-21-40) in water [M502B]

TPH >C10-C21	* 31/03/23 14:17	0.1	<0.10	μg/l	
TPH >C21-C40	* 31/03/23 14:17	0.1	<0.10	μg/l	
TPH >C6-C10	* 31/03/23 14:17	0.1	<0.10	μg/l	
TPH Total >C6-C40	* 31/03/23 14:17	10	<10	μg/l	,

## <sup>4</sup> Accreditiation Information

C6: ISO/IEC 17025:2017 INAB 138-T YA: Accredited (External Subcontractor)

Signed:	Alebana	31/05/202	
	Aoife de Barra -		

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Certificate Code: AR-23-M3-019932-01

Page Number: Page 4 of 15

P1508 PO reference:

Biochemical Oxygen Demand (Biochemical oxygen demand (BC	. ,	EW001	1		10.4	ma/l	C6	
Test Code Analyte	SUB <sup>5</sup> Analysis Started	Method	LOQ <sup>3</sup>	SPEC <sup>2</sup>	Result	Units	ACCRED <sup>4</sup>	
Sample Condition on Arrival Time Sampled	Satisfactory 16:00		Sample Date		29/03/2023			
Your sample reference Sample Matrix	Clonbern-BH2 Ground water							
Sample number	966-2023-00016487		Received on Analysis started on		30/03/2023 31/03/2023			

Biochemical Oxygen Demand (BOD)	[M3003]					
Biochemical oxygen demand (BOD) 5d	31/03/23 09:23	EW001	1	10.4	mg/l	C6
Total Dissolved Solids (TDS) [M3006]						
Total dissolved solids @ 180°C	31/03/23 08:31	EW046	15	374	mg/l	C6
Sulphate mg/L - Gallery [M300N]						
Sulphate mg/L - Gallery	31/03/23 10:11	EW175	1	<1	mg/l	C6
Phosphate (Ortho/MRP) as P - Gallery	y [M300P]					
Phosphate (Ortho/MRP) as P - Gallery	31/03/23 10:11	EW175	0.05	<0.05	mg/l	C6
Chloride mg/L - Gallery [M300S]						
Chloride mg/L - Gallery	31/03/23 10:11	EW175	5	18.3	mg/l	C6
Ammonia as N - Gallery [M300Z]						
Ammonia as N - Gallery	31/03/23 10:11	EW175	0.05	4.32	mg/l	
Nitrite (as N) - Gallery [M3016]						
Nitrite (as N) - Gallery	31/03/23 10:11	EW175	0.01	<0.01	mg/l	
Nitrate (as N) - Gallery [M301A]						

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Certificate Code: AR-23-M3-019932-01

Page Number: **Page 5 of 15** 

P1508 PO reference:

Nitrate (as N) - Gallery	31/03/23 10:11	EW175	1	<1	mg/l	C6
Arsenic - Dissolved [M3159]						
Arsenic	31/03/23 11:09	EW188		29.895	μg/l	
Cadmium - Dissolved [M3164]						
Cadmium (Cd)	31/03/23 11:09	EW188		<0.1	μg/l	C6
Chromium - Dissolved [M3166]						
Chromium (Cr)	31/03/23 11:09	EW188		<1	μg/l	C6
Copper - Dissolved [M3168]						
Copper (Cu)	31/03/23 11:09	EW188	0.003	<0.003	mg/l	C6
Iron - Dissolved [M3172]						
Iron (Fe)	31/03/23 11:09	EW188	5	8795.599	μg/l	
Lead - Dissolved [M3173]						
Lead (Pb)	31/03/23 11:09	EW188	0.51	<0.51	μg/l	C6
Magnesium - Dissolved [M3174]						
Magnesium (Mg)	31/03/23 11:09	EW188	1.11	3.788	mg/l	C6
Manganese - Dissolved [M3175]						
Manganese (Mn)	31/03/23 11:09	EW188		113.318	μg/l	C6
Mercury - Dissolved [M3176]						
Mercury	31/03/23 11:09	EW188	0.03	<0.03	μg/l	C6
Nickel - Dissolved [M3178]						
Nickel (Ni)	31/03/23 11:09	EW188		22.841	μg/l	C6
Zinc - Dissolved [M3194]						
Zinc (Zn)	31/03/23 11:09	EW188	1	4.32	μg/l	C6
TPH 3 Band (C6-10-21-40) in water [	[M502B]					

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Waterford **IRFLAND** 

Certificate Code: AR-23-M3-019932-01

Page Number: **Page 6 of 15** 

P1508 PO reference:

TPH >C10-C21	* 31/03/23 14:17	0.1	<0.10	μg/l
TPH >C21-C40	* 31/03/23 14:17	0.1	<0.10	μg/l
TPH >C6-C10	* 31/03/23 14:17	0.1	<0.10	μg/l
TPH Total >C6-C40	* 31/03/23 14:17	10	<10	μg/l YA

### <sup>4</sup> Accreditiation Information

C6: ISO/IEC 17025:2017 INAB 138-T YA: Accredited (External Subcontractor)

Signed:	Alebana	31/05/2023
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C6

mg/l

mg/l

Client: **Hydro-Environmental Services** 

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Certificate Code: AR-23-M3-019932-01

< 0.05

< 0.01

Page Number: Page 7 of 15

PO reference: P1508

Sample number	966-2023-0001648	88	Received on		30/03/2023		
			Analysis started	d on	31/03/2023		
Your sample reference	Clonbern-BH5						
Sample Matrix	Ground water						
Sample Condition on Arrival	Satisfactory		Sample Date		29/03/2023		
Time Sampled	16:00						
Test Code	SUB 5 Analysis	Method	LOQ <sup>3</sup>	SPEC <sup>2</sup>	Result	Units	ACCRED <sup>4</sup>
Analyte	Started						
Biochemical Oxygen Demand (BO	D) [M3003]						
Biochemical oxygen demand (BOD)	31/03/23 09:23	EW001	1		2.1	mg/l	C6
5d Total Discolved Solide (TDS) [M20]	061						
Total Dissolved Solids (TDS) [M30	-	=1440.40			400		00
Total dissolved solids @ 180°C	31/03/23 08:31	EW046	15		480	mg/l	C6
Sulphate mg/L - Gallery [M300N]							
Sulphate mg/L - Gallery	31/03/23 10:11	EW175	1		64.8	mg/l	C6
Phosphate (Ortho/MRP) as P - Gal	lery [M300P]						
Phosphate (Ortho/MRP) as P -	31/03/23 10:11	EW175	0.05		<0.05	mg/l	
Gallery							
Chloride mg/L - Gallery [M300S]							
Chloride mg/L - Gallery	31/03/23 10:11	EW175	5		33.1	mg/l	C6
Ammonia as N - Gallery [M300Z]							

31/05/2023 Signed: \_

0.05

0.01

EW175

EW175

### NOTES

Ammonia as N - Gallery

Nitrite (as N) - Gallery

Nitrite (as N) - Gallery [M3016]

Nitrate (as N) - Gallery [M301A]

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31/03/23 10:11

31/03/23 10:11

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**IRFLAND** 

Certificate Code: AR-23-M3-019932-01

Page Number: Page 8 of 15

P1508 PO reference:

Nitrate (as N) - Gallery	31/03/23 10:11	EW175	1	<1	mg/l	C6
Arsenic - Dissolved [M3159]						
Arsenic	31/03/23 11:09	EW188		1.27	μg/l	C6
Cadmium - Dissolved [M3164]						
Cadmium (Cd)	31/03/23 11:09	EW188		<0.1	μg/l	C6
Chromium - Dissolved [M3166]						
Chromium (Cr)	31/03/23 11:09	EW188		<1	μg/l	C6
Copper - Dissolved [M3168]						
Copper (Cu)	31/03/23 11:09	EW188	0.003	<0.003	mg/l	C6
Iron - Dissolved [M3172]						
Iron (Fe)	31/03/23 11:09	EW188	5	<5	μg/l	C6
Lead - Dissolved [M3173]						
Lead (Pb)	31/03/23 11:09	EW188	0.51	<0.51	μg/l	C6
Magnesium - Dissolved [M3174]						
Magnesium (Mg)	31/03/23 11:09	EW188	1.11	15.273	mg/l	C6
Manganese - Dissolved [M3175]						
Manganese (Mn)	31/03/23 11:09	EW188		84.989	μg/l	C6
Mercury - Dissolved [M3176]						
Mercury	31/03/23 11:09	EW188	0.03	<0.03	μg/l	C6
Nickel - Dissolved [M3178]						
Nickel (Ni)	31/03/23 11:09	EW188		3.992	μg/l	C6
Zinc - Dissolved [M3194]						
Zinc (Zn)	31/03/23 11:09	EW188	1	2.70	μg/l	C6
TPH 3 Band (C6-10-21-40) in water [	M502B]					

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**Lower Main Street** Dungarvan Co. Waterford. Waterford

Page Number:

AR-23-M3-019932-01

**Page 9 of 15** 

P1508 PO reference:

TPH >C10-C21	*	31/03/23 14:17	0.1	<0.10	μg/l
TPH >C21-C40	*	31/03/23 14:17	0.1	<0.10	μg/l
TPH >C6-C10	*	31/03/23 14:17	0.1	<0.10	μg/l
TPH Total >C6-C40	*	31/03/23 14:17	10	<10	μg/l
Faecal Coliforms E (Water) [IE Env	<1	>100 /100 ml (0) m-FC Agar-F			
Faecal Coliforms	*	30/03/23 12:25	1	< 1	cfu/100 ml
Coliforms E (Water) [IE Env] <1 >2	420	/100 ml (0) Colilert-18-Q MDW			
Coliforms	*	30/03/23 12:25	1	223	MPN/100 ml
Escherichia Coli E (Water) [IE Env]	<1	>2 420 /100 ml (0) Colilert-18-Q			
Escherichia coli	*	30/03/23 12:25	1	< 1	MPN/100 ml

### <sup>4</sup> Accreditiation Information

C6: ISO/IEC 17025:2017 INAB 138-T YA: Accredited (External Subcontractor)

Signed:	Alebana	31/05/2023
	Aoife de Barra -	

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Certificate Code: AR-23-M3-019932-01

< 0.05

< 0.01

C6

C6

mg/l

mg/l

Page Number: Page 10 of 15

PO reference: P1508

Sample number	966-2023-0001648	89	Received on	30/03/2023		
			Analysis started on	31/03/2023		
Your sample reference	Clonbern-Spring					
Sample Matrix	Ground water					
Sample Condition on Arrival	Satisfactory		Sample Date	29/03/2023		
Time Sampled	16:00					
Test Code Analyte	SUB <sup>5</sup> Analysis Started	Method	LOQ <sup>3</sup> SPEC <sup>2</sup>	Result	Units	ACCRED <sup>4</sup>
Biochemical Oxygen Demand (BO	D) [M3003]					
Biochemical oxygen demand (BOD) 5d Total Dissolved Solids (TDS) [M30		EW001	1	<1	mg/l	C6
Total dissolved solids @ 180°C	31/03/23 08:31	EW046	15	410	mg/l	C6
Sulphate mg/L - Gallery [M300N]						
Sulphate mg/L - Gallery	31/03/23 10:11	EW175	1	8.74	mg/l	C6
Phosphate (Ortho/MRP) as P - Gal	lery [M300P]					
Phosphate (Ortho/MRP) as P - Gallery Chloride mg/L - Gallery [M300S]	31/03/23 10:11	EW175	0.05	<0.05	mg/l	C6
Chloride mg/L - Gallery	31/03/23 10:11	EW175	5	18.6	mg/l	C6
Ammonia as N - Gallery [M300Z]						

31/05/2023 Signed: \_

0.05

0.01

EW175

EW175

### NOTES

Ammonia as N - Gallery

Nitrite (as N) - Gallery

Nitrite (as N) - Gallery [M3016]

Nitrate (as N) - Gallery [M301A]

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31/03/23 10:11

31/03/23 10:11

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Client: **Hydro-Environmental Services** 

**Lower Main Street** Dungarvan Co. Waterford. Waterford

**IRELAND** 

Certificate Code: AR-23-M3-019932-01

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P1508 PO reference:

Nitrate (as N) - Gallery	31/03/23 10:11	EW175	1	1.768	mg/l	C6
Arsenic - Dissolved [M3159]						
Arsenic	31/03/23 11:09	EW188		0.332	μg/l	C6
Cadmium - Dissolved [M3164]						
Cadmium (Cd)	31/03/23 11:09	EW188		<0.1	μg/l	C6
Chromium - Dissolved [M3166]						
Chromium (Cr)	31/03/23 11:09	EW188		<1	μg/l	C6
Copper - Dissolved [M3168]						
Copper (Cu)	31/03/23 11:09	EW188	0.003	<0.003	mg/l	C6
Iron - Dissolved [M3172]						
Iron (Fe)	31/03/23 11:09	EW188	5	12.799	μg/l	C6
Lead - Dissolved [M3173]						
Lead (Pb)	31/03/23 11:09	EW188	0.51	<0.51	μg/l	C6
Magnesium - Dissolved [M3174]						
Magnesium (Mg)	31/03/23 11:09	EW188	1.11	5.023	mg/l	C6
Manganese - Dissolved [M3175]						
Manganese (Mn)	31/03/23 11:09	EW188		1.577	μg/l	C6
Mercury - Dissolved [M3176]						
Mercury	31/03/23 11:09	EW188	0.03	<0.03	μg/l	C6
Nickel - Dissolved [M3178]						
Nickel (Ni)	31/03/23 11:09	EW188		1.322	μg/l	C6
Zinc - Dissolved [M3194]						
Zinc (Zn)	31/03/23 11:09	EW188	1	10.9	μg/l	C6
TPH 3 Band (C6-10-21-40) in water [	M502B]					

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AR-23-M3-019932-01

μg/l

µg/l

ua/l

MPN/100 ml

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< 0.10

< 0.10

< 0.10

PO reference: P1508

TPH >C10-C21	* 31/03/23 14:17	0.1
TPH >C21-C40	* 31/03/23 14:17	0.1
TPH >C6-C10	* 31/03/23 14:17	0.1
TPH Total >C6-C40	* 31/03/23 14:17	10

Faecal Coliforms E (Water) [IE Env] <1 >100 /100 ml (0) m-FC Agar-F \* 30/03/23 12:26 **Faecal Coliforms** 

Coliforms E (Water) [IE Env] <1 >2 420 /100 ml (0) Colilert-18-Q MDW

\* 30/03/23 12:26

Escherichia Coli E (Water) [IE Env] <1 >2 420 /100 ml (0) Colilert-18-Q

Escherichia coli \* 30/03/23 12:26

10	<10	μg/l
1	3	cfu/100 ml

MPN/100 ml

16.9

#### <sup>4</sup> Accreditiation Information

C6: ISO/IEC 17025:2017 INAB 138-T YA: Accredited (External Subcontractor)

Signed:	Alebana	31/05/2023
oignour —	Aoife de Barra -	

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Page Number: Page 13 of 15

P1508 PO reference:

Analyte	Started						
Test Code	SUB 5 Analysis	Method	LOQ <sup>3</sup>	SPEC <sup>2</sup>	Result	Units	ACCRED <sup>4</sup>
Time Sampled	16:00						
Sample Condition on Arrival	Satisfactory		Sample Dat	е	29/03/2023		
Sample Matrix	Ground water						
Your sample reference	Clonbern-Farm V	Vell					
Sample number	966-2023-00016	490	Received or Analysis sta		30/03/2023 31/03/2023		

Biochemical Oxygen Demand (BOD)	[M3003]					
Biochemical oxygen demand (BOD) 5d	31/03/23 09:23	EW001	1	<1	mg/l	C6
Total Dissolved Solids (TDS) [M3006	]					
Total dissolved solids @ 180°C	31/03/23 08:31	EW046	15	565	mg/l	C6
Sulphate mg/L - Gallery [M300N]						
Sulphate mg/L - Gallery	31/03/23 10:11	EW175	1	34.0	mg/l	C6
Phosphate (Ortho/MRP) as P - Galler	ry [M300P]					
Phosphate (Ortho/MRP) as P -	31/03/23 10:11	EW175	0.05	<0.05	mg/l	C6
Gallery Chloride mg/L - Gallery [M300S]						
Chloride mg/L - Gallery	31/03/23 10:11	EW175	5	55.4	mg/l	C6
Ammonia as N - Gallery [M300Z]						
Ammonia as N - Gallery	31/03/23 10:11	EW175	0.05	0.26	mg/l	C6
Nitrite (as N) - Gallery [M3016]						
Nitrite (as N) - Gallery	31/03/23 10:11	EW175	0.01	<0.01	mg/l	C6
Nitrate (as N) - Gallery [M301A]						

Signed:	Alebana	31/05/2023
J.g.1001	Acifo do Barra	<u> </u>

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Certificate Code: AR-23-M3-019932-01

Page Number: Page 14 of 15

P1508 PO reference:

Nitrate (as N) - Gallery	31/03/23 10:11	EW175	1	<1	mg/l	C6
Arsenic - Dissolved [M3159]						
Arsenic	31/03/23 11:09	EW188		1.851	μg/l	C6
Cadmium - Dissolved [M3164]						
Cadmium (Cd)	31/03/23 11:09	EW188		0.107	μg/l	C6
Chromium - Dissolved [M3166]						
Chromium (Cr)	31/03/23 11:09	EW188		<1	μg/l	C6
Copper - Dissolved [M3168]						
Copper (Cu)	31/03/23 11:09	EW188	0.003	<0.003	mg/l	C6
Iron - Dissolved [M3172]						
Iron (Fe)	31/03/23 11:09	EW188	5	271.496	μg/l	C6
Lead - Dissolved [M3173]						
Lead (Pb)	31/03/23 11:09	EW188	0.51	<0.51	μg/l	C6
Magnesium - Dissolved [M3174]						
Magnesium (Mg)	31/03/23 11:09	EW188	1.11	13.806	mg/l	C6
Manganese - Dissolved [M3175]						
Manganese (Mn)	31/03/23 11:09	EW188		654.626	μg/l	
Mercury - Dissolved [M3176]						
Mercury	31/03/23 11:09	EW188	0.03	<0.03	μg/l	C6
Nickel - Dissolved [M3178]						
Nickel (Ni)	31/03/23 11:09	EW188		5.727	μg/l	C6
Zinc - Dissolved [M3194]						
Zinc (Zn)	31/03/23 11:09	EW188	1	5.28	μg/l	C6
TPH 3 Band (C6-10-21-40) in water	[M502B]					

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Certificate Code: AR-23-M3-019932-01

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P1508 PO reference:

TPH >C10-C21	* 31/03/23 14:17	0.1	<0.10	μg/l
TPH >C21-C40	* 31/03/23 14:17	0.1	<0.10	μg/l
TPH >C6-C10	* 31/03/23 14:17	0.1	<0.10	μg/l
TPH Total >C6-C40	* 31/03/23 14:17	10	<10	μg/l
Faecal Coliforms E (Water) [IE	E Env] <1 >100 /100 ml (0) m-FC	Agar-F		
Faecal Coliforms	* 30/03/23 12:26	1	< 1	cfu/100 ml
Coliforms E (Water) [IE Env] <	<1 >2 420 /100 ml (0) Colilert-18	-Q MDW		
Coliforms	* 30/03/23 12:26	1	10	MPN/100 ml
Escherichia Coli E (Water) [IE	Env] <1 >2 420 /100 ml (0) Coli	lert-18-Q		
Escherichia coli	* 30/03/23 12:26	1	< 1	MPN/100 ml

### <sup>4</sup> Accreditiation Information

C6: ISO/IEC 17025:2017 INAB 138-T YA: Accredited (External Subcontractor)

Signed:	Alebana	31/05/2023	
	Aoife de Barra -		

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