



Moyvannan Electricity Substation

# Environmental Impact Assessment Report

## Annex 7.3: Laboratory Reports

Energia Renewables ROI Limited

Galetech Energy Services

Clondargan, Stradone, Co. Cavan Ireland

Telephone +353 (0)49 555 5050

[www.galetechenergyservices.com](http://www.galetechenergyservices.com)



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

**Certificate Code:** AR-24-M3-020518-01

**Page Number:** Page 1 of 6

**PO reference:**

## Certificate of Analysis

**Sample number** 966-2024-00024431  
**Your sample reference** P1500-4 Turlough  
**Sample Matrix** Ground water  
**Sample Condition on Arrival** Satisfactory  
**Time Sampled** 10:00

**Received on** 29/08/2024  
**Analysis started on** 29/08/2024  
**Sample Date** 28/08/2024

Test Code Analyte	SUB <sup>5</sup> Analysis Started	Method	LOQ <sup>3</sup>	SPEC <sup>2</sup>	Result	Units	ACCRED <sup>4</sup>
<b>Sulphate mg/L - Gallery [M300N]</b>							
Sulphate mg/L - Gallery	29/08/24 14:00	EW175	1		2.71	mg/l	C6
<b>Chloride mg/L - Gallery [M300S]</b>							
Chloride mg/L - Gallery	29/08/24 14:00	EW175	5		12.1	mg/l	C6
<b>Ammonium as NH<sub>4</sub> (calc) - Gallery [M300T]</b>							
Ammonium as NH <sub>4</sub> (calc) - Gallery	29/08/24 14:00	EW175	0.01		0.0700	mg/l	C6
<b>Phosphate (Ortho/MRP) as P<sub>2</sub>O<sub>5</sub> (Calc) - Gallery [M300V]</b>							
Phosphate (Ortho/MRP) as P <sub>2</sub> O <sub>5</sub> (Calc) - Gallery	29/08/24 14:00	EW175	0.02		0.117	mg/l	C6
<b>Ammonia as N - Gallery [M300Z]</b>							
Ammonia as N - Gallery	29/08/24 14:00	EW175	0.01		0.0540	mg/l	C6
<b>Nitrite (as N) - Gallery [M3016]</b>							
Nitrite (as N) - Gallery	29/08/24 14:00	EW175	0.01		<0.01	mg/l	C6
<b>Nitrate (as N) - Gallery [M301A]</b>							
Nitrate (as N) - Gallery	29/08/24 14:00	EW175	1		<1	mg/l	C6
<b>pH (Robotic Method) [M3051]</b>							
pH	29/08/24 14:03 <sup>7D</sup>	EW152R	4		7.8		
<b>Conductivity at 20°C (Robotic Method) [M3052]</b>							
Conductivity at 20°C	29/08/24 14:03	EW152R	5		274	µS/cm	C6
<b>Aluminium - Dissolved [M3157]</b>							
Aluminium	04/09/24 13:40	EW188	5		<5	µg/l	C6
<b>Arsenic - Dissolved [M3159]</b>							
Arsenic	04/09/24 13:40	EW188			0.879	µg/l	C6
<b>Calcium - Dissolved [M3165]</b>							

Signed: \_\_\_\_\_



05/09/2024

Aoife De Barra - Organics & Instrumentation Team Lead

### NOTES

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IRELAND

**Certificate Code:** AR-24-M3-020518-01

**Page Number:** Page 2 of 6

**PO reference:**

Sample number	966-2024-00024431	Received on	29/08/2024
Your sample reference	P1500-4 Turlough	Analysis started on	29/08/2024
Sample Matrix	Ground water		
Sample Condition on Arrival	Satisfactory	Sample Date	28/08/2024
Time Sampled	10:00		

Test Code Analyte	SUB <sup>5</sup> Analysis Started	Method	LOQ <sup>3</sup>	SPEC <sup>2</sup>	Result	Units	ACCRED <sup>4</sup>
Calcium (Ca)	04/09/24 13:40	EW188	1.08		33.8	mg/l	C6
<b>Iron - Dissolved [M3172]</b>							
Iron (Fe)	04/09/24 13:40	EW188	5		121	µg/l	C6
<b>Magnesium - Dissolved [M3174]</b>							
Magnesium (Mg)	04/09/24 13:40	EW188	1.11		14.4	mg/l	C6
<b>Manganese - Dissolved [M3175]</b>							
Manganese (Mn)	04/09/24 13:40	EW188			54.9	µg/l	C6
<b>Potassium - Dissolved [M3180]</b>							
Potassium (K)	04/09/24 13:40	EW188	0.15		5.47	mg/l	C6
<b>Sodium - Dissolved [M3184]</b>							
Sodium (Na)	04/09/24 13:40	EW188	1.5		6.74	mg/l	C6
<b>Total Hardness - Dissolved [M3191]</b>							
Total hardness	04/09/24 17:10	EW188			144	mg/l CaCO3	C6

#### <sup>4</sup> Accreditation Information

C6: ISO/IEC 17025:2017 INAB 138-T

YA: Accredited (External Subcontractor)

Signed: \_\_\_\_\_



05/09/2024

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IRELAND

**Certificate Code:** AR-24-M3-020518-01

**Page Number:** Page 3 of 6

**PO reference:**

Sample number	966-2024-00024432	Received on	29/08/2024
Your sample reference	P1500-4 Farm Well	Analysis started on	29/08/2024
Sample Matrix	Ground water		
Sample Condition on Arrival	Satisfactory	Sample Date	28/08/2024
Time Sampled	11:00		

Test Code	SUB <sup>5</sup>	Analysis Started	Method	LOQ <sup>3</sup>	SPEC <sup>2</sup>	Result	Units	ACCRED <sup>4</sup>
Analyte								
<b>Sulphate mg/L - Gallery [M300N]</b>								
Sulphate mg/L - Gallery		29/08/24 14:00	EW175	1		10.5	mg/l	C6
<b>Chloride mg/L - Gallery [M300S]</b>								
Chloride mg/L - Gallery		29/08/24 14:00	EW175	5		18.4	mg/l	C6
<b>Ammonium as NH<sub>4</sub> (calc) - Gallery [M300T]</b>								
Ammonium as NH <sub>4</sub> (calc) - Gallery		29/08/24 14:00	EW175	0.01		0.0130	mg/l	C6
<b>Phosphate (Ortho/MRP) as P<sub>2</sub>O<sub>5</sub> (Calc) - Gallery [M300V]</b>								
Phosphate (Ortho/MRP) as P <sub>2</sub> O <sub>5</sub> (Calc) - Gallery		29/08/24 14:00	EW175	0.02		0.0210	mg/l	C6
<b>Ammonia as N - Gallery [M300Z]</b>								
Ammonia as N - Gallery		29/08/24 14:00	EW175	0.01		0.0100	mg/l	C6
<b>Nitrite (as N) - Gallery [M3016]</b>								
Nitrite (as N) - Gallery		29/08/24 14:00	EW175	0.01		<0.01	mg/l	C6
<b>Nitrate (as N) - Gallery [M301A]</b>								
Nitrate (as N) - Gallery		29/08/24 14:00	EW175	1		11.1	mg/l	C6
<b>pH (Robotic Method) [M3051]</b>								
pH		29/08/24 14:03 <sup>7D</sup>	EW152R	4		7.2		
<b>Conductivity at 20°C (Robotic Method) [M3052]</b>								
Conductivity at 20°C		29/08/24 14:03	EW152R	5		775	µS/cm	C6
<b>Aluminium - Dissolved [M3157]</b>								
Aluminium		04/09/24 13:40	EW188	5		<5	µg/l	C6
<b>Arsenic - Dissolved [M3159]</b>								
Arsenic		04/09/24 13:40	EW188			<0.2	µg/l	C6
<b>Calcium - Dissolved [M3165]</b>								
Calcium (Ca)		04/09/24 13:40	EW188	1.08		134	mg/l	
<b>Iron - Dissolved [M3172]</b>								

Signed:



05/09/2024

Aoife De Barra - Organics & Instrumentation Team Lead

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**Page Number:** Page 4 of 6

**PO reference:**

Sample number	966-2024-00024432	Received on	29/08/2024
Your sample reference	P1500-4 Farm Well	Analysis started on	29/08/2024
Sample Matrix	Ground water		
Sample Condition on Arrival	Satisfactory	Sample Date	28/08/2024
Time Sampled	11:00		

Test Code Analyte	SUB <sup>5</sup> Analysis Started	Method	LOQ <sup>3</sup>	SPEC <sup>2</sup>	Result	Units	ACCRED <sup>4</sup>
Iron (Fe)	04/09/24 13:40	EW188	5		<5	µg/l	C6
<b>Magnesium - Dissolved [M3174]</b>							
Magnesium (Mg)	04/09/24 13:40	EW188	1.11		30.2	mg/l	C6
<b>Manganese - Dissolved [M3175]</b>							
Manganese (Mn)	04/09/24 13:40	EW188			<1	µg/l	C6
<b>Potassium - Dissolved [M3180]</b>							
Potassium (K)	04/09/24 13:40	EW188	0.15		0.774	mg/l	C6
<b>Sodium - Dissolved [M3184]</b>							
Sodium (Na)	04/09/24 13:40	EW188	1.5		9.74	mg/l	C6
<b>Total Hardness - Dissolved [M3191]</b>							
Total hardness	04/09/24 17:10	EW188			459	mg/l CaCO3	

#### <sup>4</sup> Accreditation Information

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IRELAND

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**Page Number:** Page 5 of 6

**PO reference:**

Sample number	966-2024-00024433	Received on	29/08/2024
Your sample reference	P1500-4 Cross River	Analysis started on	29/08/2024
Sample Matrix	Surface water		
Sample Condition on Arrival	Satisfactory	Sample Date	28/08/2024
Time Sampled	13:00		

Test Code Analyte	SUB <sup>5</sup> Analysis Started	Method	LOQ <sup>3</sup>	SPEC <sup>2</sup>	Result	Units	ACCRED <sup>4</sup>
<b>Suspended Solids [M3002]</b>							
Suspended Solids	30/08/24 10:12	EW013	5		<5	mg/l	C6
<b>Chemical Oxygen Demand (COD) [M3004]</b>							
Chemical oxygen demand (COD)	02/09/24 12:30	EW094	8		8.00	mg/l	C6
<b>Total Nitrogen [M3007]</b>							
Total Nitrogen	02/09/24 09:41	EW140	1		1.69	mg/l	C6
<b>Sulphate mg/L - Gallery [M300N]</b>							
Sulphate mg/L - Gallery	29/08/24 14:00	EW175	1		10.5	mg/l	C6
<b>Phosphate (Ortho/MRP) as P - Gallery [M300P]</b>							
Phosphate (Ortho/MRP) as P - Gallery	29/08/24 14:00	EW175	0.01		0.0140	mg/l	C6
<b>Fluoride mg/L - Gallery [M300Q]</b>							
Fluoride mg/L - Gallery	29/08/24 14:00	EW175	0.2		<0.2	mg/l	C6
<b>Chloride mg/L - Gallery [M300S]</b>							
Chloride mg/L - Gallery	29/08/24 14:00	EW175	5		17.2	mg/l	C6
<b>Ammonia as N - Gallery [M300Z]</b>							
Ammonia as N - Gallery	29/08/24 14:00	EW175	0.01		0.0200	mg/l	C6
<b>Nitrate (as N) - Gallery [M301A]</b>							
Nitrate (as N) - Gallery	29/08/24 14:00	EW175	1		1.90	mg/l	C6
<b>Biochemical Oxygen Demand (BOD) Robotic Method [M304E]</b>							
Biochemical oxygen demand (BOD) 5d by Robotic Method	29/08/24 17:01	Ew001R	1		<1	mg/l	C6
<b>pH (Robotic Method) [M3051]</b>							
pH	29/08/24 14:03 <sup>7D</sup>	EW152R	4		7.4		
<b>Arsenic - Trace [M3236]</b>							
Arsenic	04/09/24 13:40		0.2		0.399	µg/l	C6
<b>Cadmium - Trace [M3240]</b>							

Signed:



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Your sample reference	P1500-4 Cross River	Analysis started on	29/08/2024
Sample Matrix	Surface water		
Sample Condition on Arrival	Satisfactory	Sample Date	28/08/2024
Time Sampled	13:00		

Test Code Analyte	SUB <sup>5</sup> Analysis Started	Method	LOQ <sup>3</sup>	SPEC <sup>2</sup>	Result	Units	ACCRED <sup>4</sup>
Cadmium	04/09/24 13:40		0.1		<0.1	µg/l	C6
<b>Chromium - Trace [M3242]</b>							
Chromium (Cr)	04/09/24 13:40		1		<1	µg/l	C6
<b>Copper - Trace [M3244]</b>							
Copper (Cu)	04/09/24 13:40		0.003		<0.003	mg/l	C6
<b>Lead - Trace [M3246]</b>							
Lead (Pb)	04/09/24 13:40		0.5		<0.5	µg/l	C6
<b>Mercury - Trace [M3249]</b>							
Mercury	04/09/24 13:40		0.03		<0.03	µg/l	C6
<b>Nickel - Trace [M3251]</b>							
Nickel (Ni)	04/09/24 13:40		0.5		1.18	µg/l	C6
<b>Zinc - Trace [M3269]</b>							
Zinc (Zn)	04/09/24 13:40	EW188	1		<1	µg/l	C6
<b>Nitrite (as N) - Gallery [M3285]</b>							
Nitrite (as N) - Gallery	29/08/24 14:00		0.1		<0.1	mg/l	
<b>TPH 3 Band (C6-10-21-40) in water [M502B]</b>							
TPH >C10-C21	* 29/08/24 14:39		0.1		<0.1	µg/l	
TPH >C21-C40	* 29/08/24 14:39		0.1		<0.1	µg/l	
TPH >C6-C10	* 29/08/24 14:39		0.1		<0.1	µg/l	
TPH Total >C6-C40	* 29/08/24 14:39		10		<10	µg/l	YA
Validation	* 29/08/24 14:39				0		
Validation	* 29/08/24 14:39				0		

#### <sup>4</sup> Accreditation Information

C6: ISO/IEC 17025:2017 INAB 138-T

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