



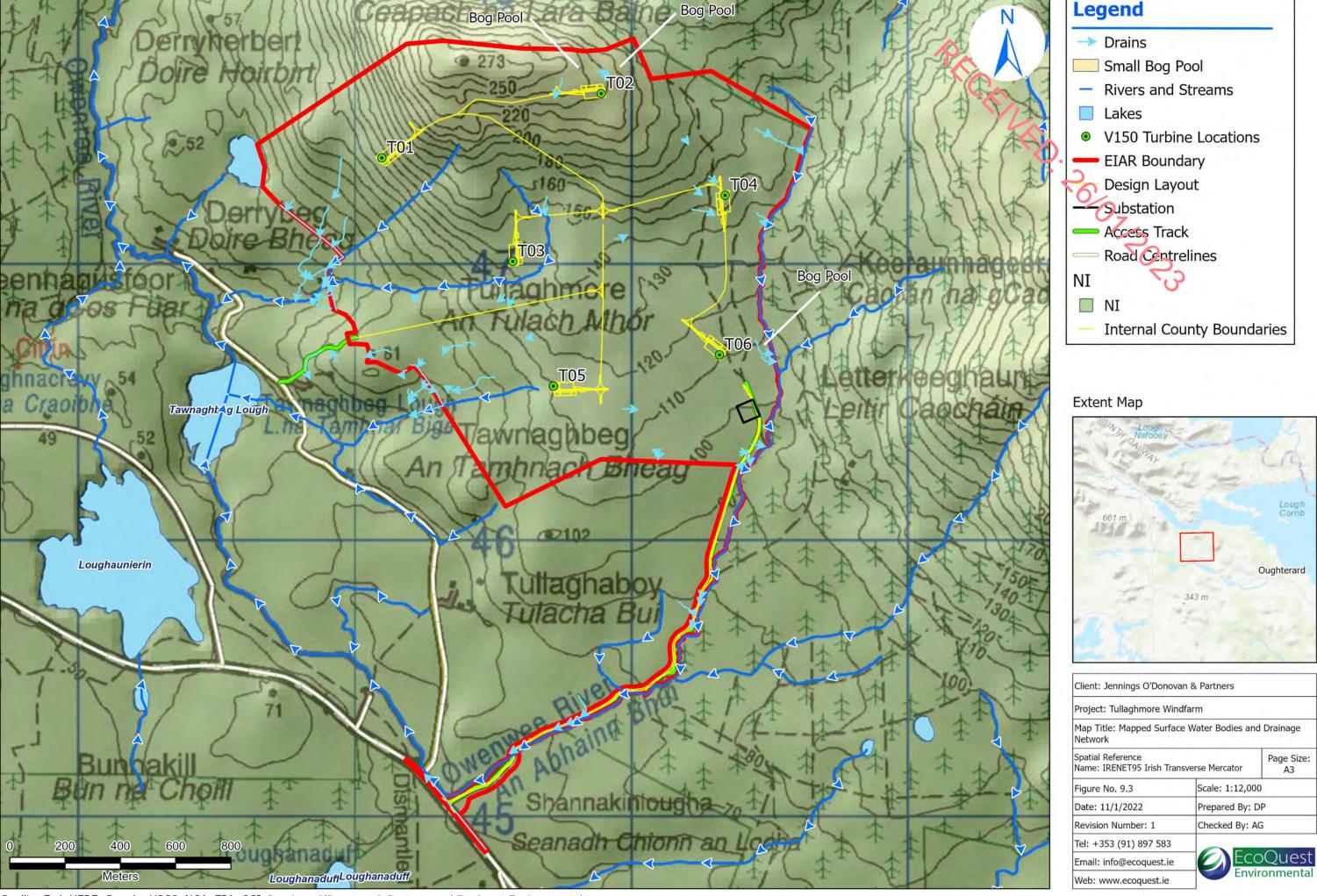
Pre - Existing Artificial Drainage Channel North of the N59 Road

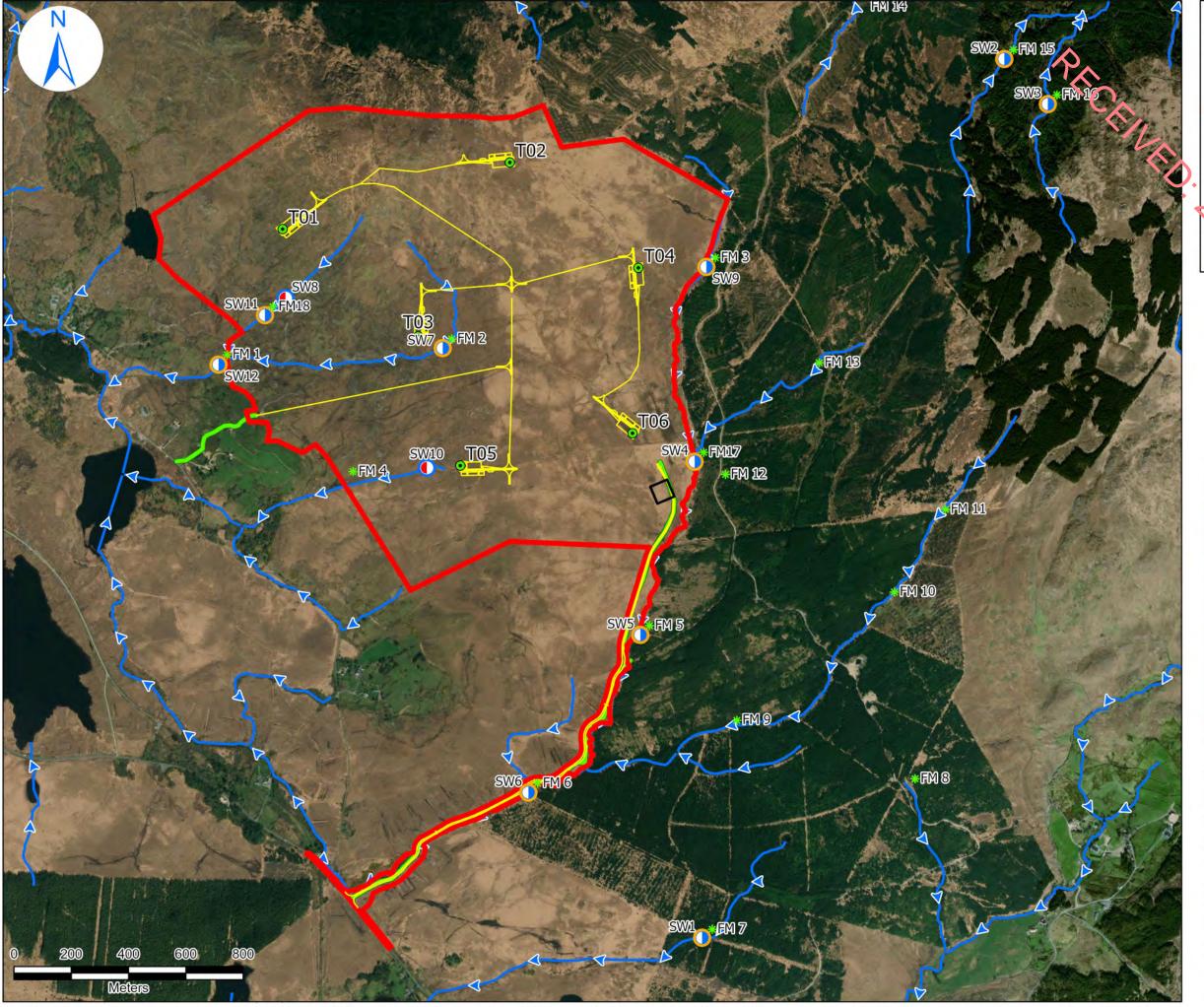


Pre – Existing Vehicle Tracks Acting as Preferential Flow Paths During a Heavy Rainfall Event



Owenwee River at a Pre-Existing Crossing During Storm Flow Conditions





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Legend

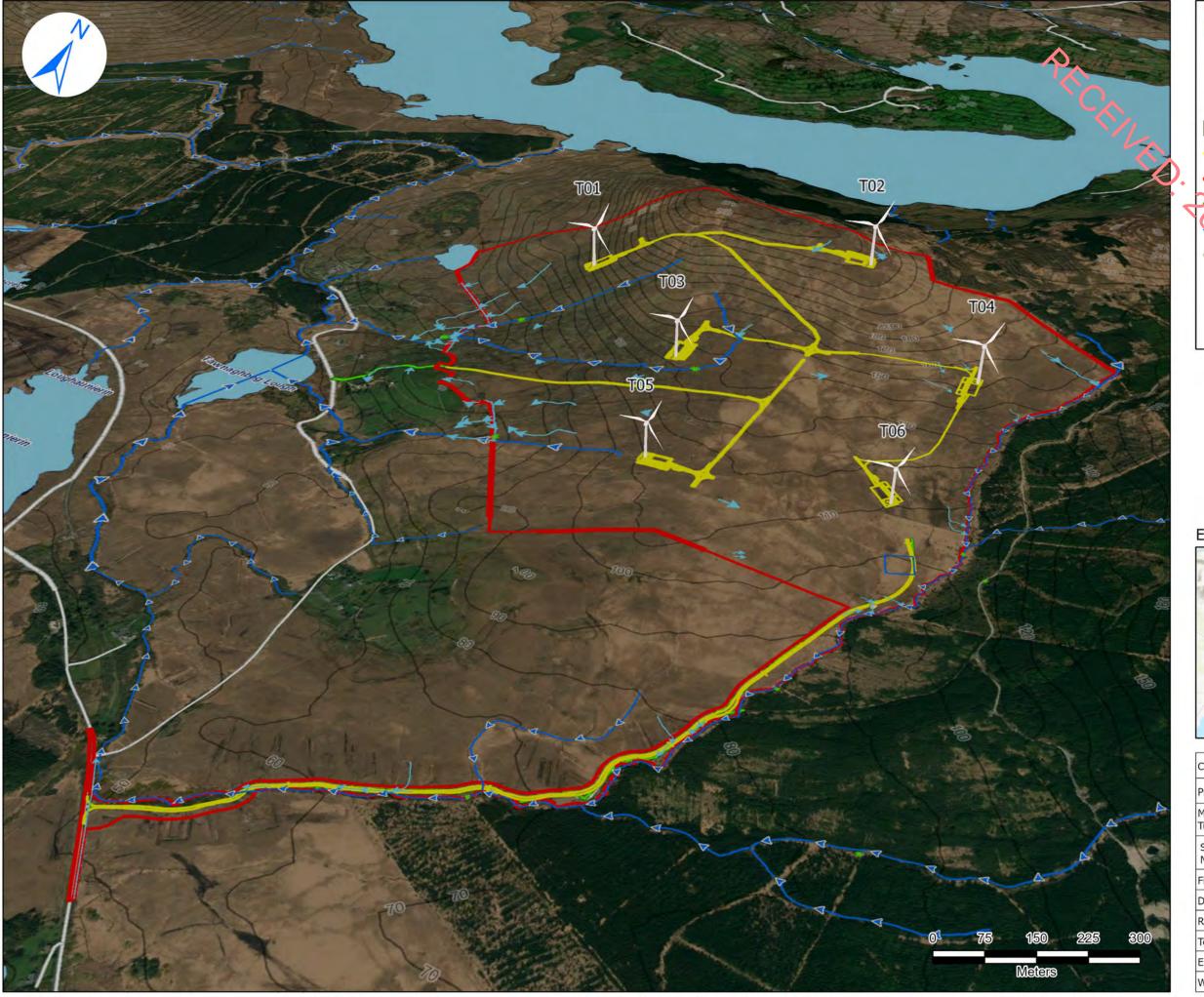
- Local Rivers and Streams
- * Field Monitoring Points
- Lab Analysis Monitoring Locations
- Ephemeral Stream (Often Dry)
- V150 Turbine Locations
- Substation
- Design Layout
- SIAR Boundary
 - Access Track



Extent Map



Duniante Tellanhunava Wind	fa	
Project: Tullaghmore Wind		
Map Title: Water Quality M	onitoring Locatio	ns
Spatial Reference Name: IRENET95 Irish Trans	verse Mercator	Page Size:
Figure No. 9.4	Scale: 1:13,00	00
Date: 11/01/2022	Prepared By:	DP
Revision Number: 1	Checked By: A	AG
Tel: +353 (91) 897 583		
Email: info@ecoquest.ie	EC	oQuest
Web: www.ecoquest.ie	Env	ironmenta



Legend

➤ V150 Turbine Locations

— Rivers and Streams

— Drains

— Small Bog Pool

— Design Layout

— EIAR Boundary

Access Track

Substation

Road Centrelines

— Lakes

— EPA Contours

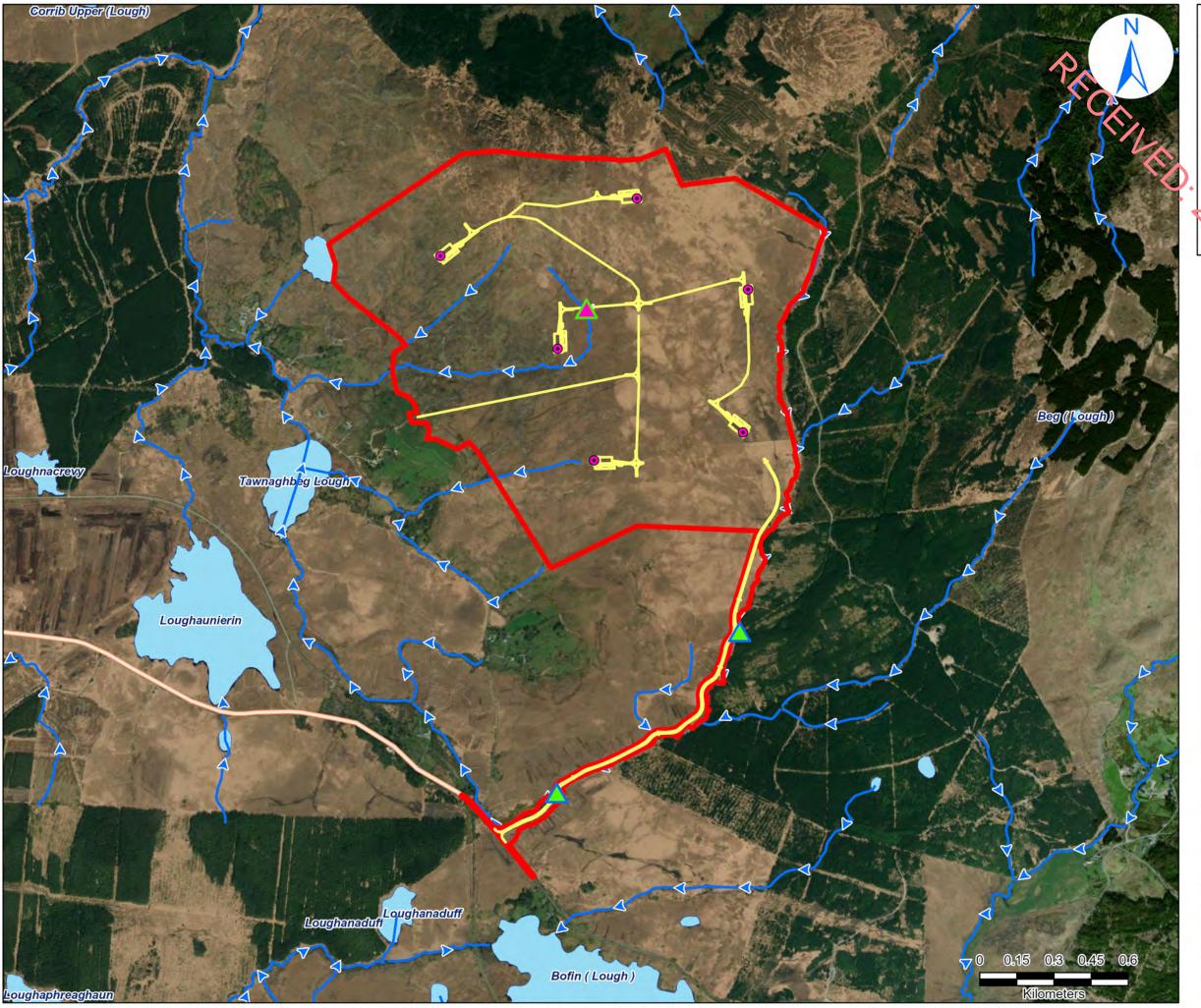
Extent Map



Field Monitoring Points

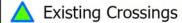
Client: Jennings O'Donovar	n & Partners	
Project: Tullaghmore Wind	farm	
Map Title: 3D Hydrological Tullaghmore Windfarm Site	The state of the s	osed
Spatial Reference Name: IRENET95 Irish Tra	insverse Mercator	Page Size
Figure No. 9.6	Rotation: 30 De	grees
Date: 11/1/2022	Prepared By: DI	P
Revision Number: 1	Checked By: AG	i
Tel: +353 (91) 897 583		
Email: info@ecoquest.ie	Eco Envir	Ques
Web: www.ecoquest.ie	Envir	onmenta

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Legend

A Proposed Crossings



• V150 Turbine Locations

Access Road and Design Layout

EIAR Boundary

Grid Connection Route

Rivers and Streams

Lakes

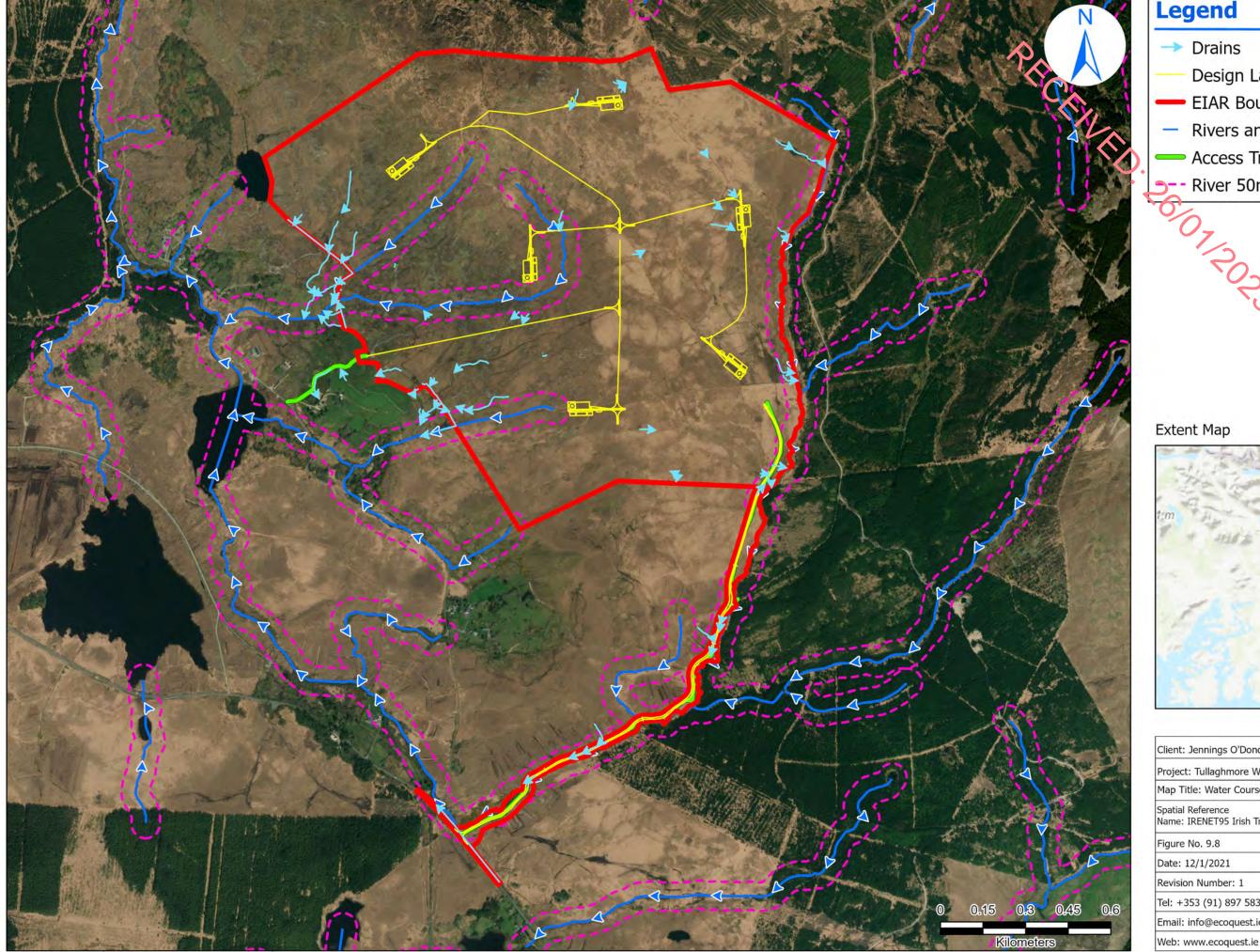
Extent Map



Client: Jennings O'Donovar	n & Partners	
Project: Tullaghmore Wind	farm	
Map Title: Proposed and Pr	re-Existing Crossii	ng Points
Spatial Reference Name: IRENET95 Irish Trans	verse Mercator	Page Size: A3
Figure No. 9.7	Scale: 1:15,00	00
Date: 12/1/2021	Prepared By: DP	
Revision Number: 1	Checked By: AG	
Tel: +353 (91) 897 583		
Email: info@ecoquest.ie	Eco	oQuest ironmental
Weh: www.ecoquest.ie	Envi	ironmental

Web: www.ecoquest.ie

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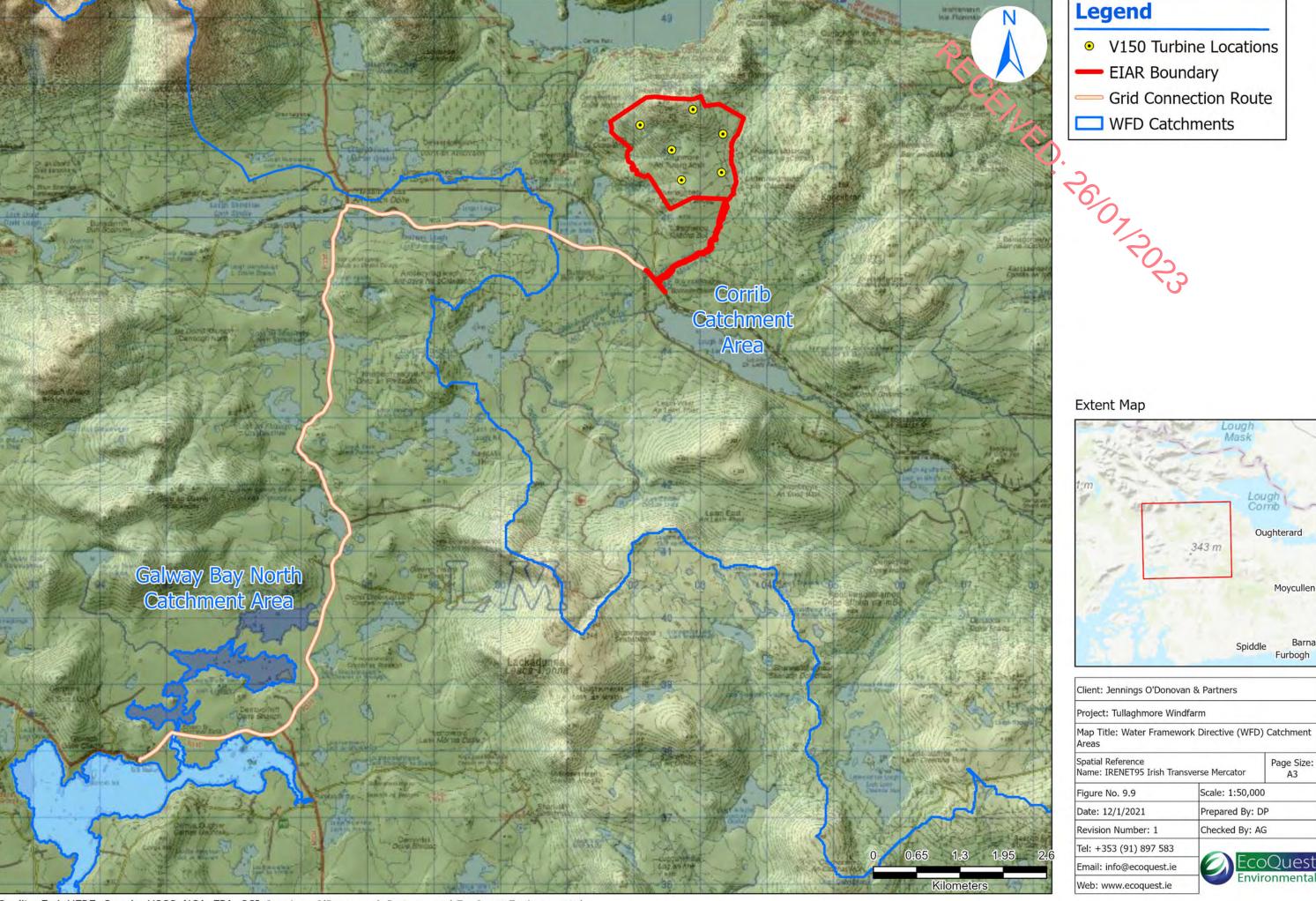
Legend

- **Drains**
- Design Layout
- EIAR Boundary
- Rivers and Streams
- Access Track
- River 50m Buffer

Extent Map



Client: Jennings O'Donovar	T & T di Cito	
Project: Tullaghmore Wind	farm	
Map Title: Water Courses \	With 50 metre But	ffer Zone
Spatial Reference Name: IRENET95 Irish Trans	verse Mercator	Page Size:
Figure No. 9.8	Scale: 1:12,50	0
Date: 12/1/2021	Prepared By: [DP
Revision Number: 1	Checked By: A	AG .
Tel: +353 (91) 897 583		
Email: info@ecoquest.ie	Ecc Envi	oQuest
Web: www.ecoquest.ie	Envi	ronmenta



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Legend

- V150 Turbine Locations
- EIAR Boundary
- Grid Connection Route
- ☐ WFD Subcatchments

26/07/202

Extent Map



lient: Jennings O'Donovar	n & Partners	
roject: Tullaghmore Wind	farm	
lap Title: Water Framewo ubcatchment Areas	rk Directive (WFD))
oatial Reference ame: IRENET95 Irish Trans	verse Mercator	Page Size: A3
gure No. 9.10	Scale: 1:59,40)7
ate: 12/1/2021	Prepared By: DP	
evision Number: 1	Checked By: A	AG .
el: +353 (91) 897 583		
mail: info@ecoquest.ie	EC	oQuest ironmental
John ways occasion in	Env	ironmental

Web: www.ecoquest.ie



Credits: Esri, HERE, Garmin, USGS, NGA, EPA, OSI, EPA, floodinfo.ie, OPW, Jennings O'Donovan & Partners and EcoQuest Environmental.

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Legend

A Reccuring Flood Event Location

EIAR Boundary

— Grid Connection Route

V150 Turbine Locations

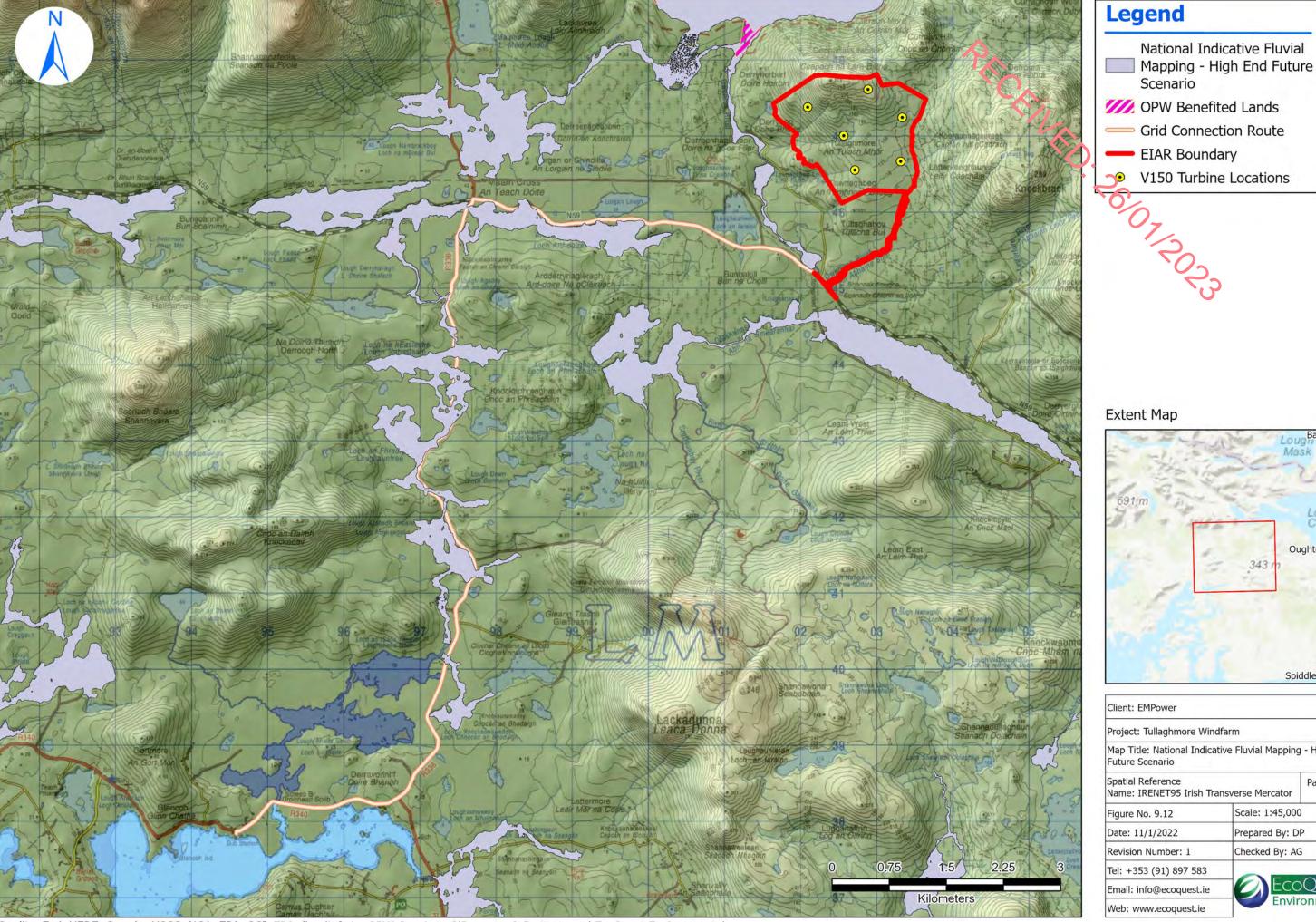
76/07/2025

Extent Map



Client: Jennings O'Donovar	n & Partners	
Project: Tullaghmore Wind	farm	
Map Title: Past Flood Even Proposed Site and Grid Cor		ve to the
Spatial Reference Name: IRENET95 Irish Trans	verse Mercator	Page Size:
Figure No. 9.11	Scale: 1:45,00	10
Date: 11/1/2021	Prepared By: DP	
Revision Number: N/A	Checked By: AG	
Tel: +353 (91) 897 583		
Email: info@ecoquest.ie	Envi	oQuest
Web: www ecoquest ie	Env	ironmenta

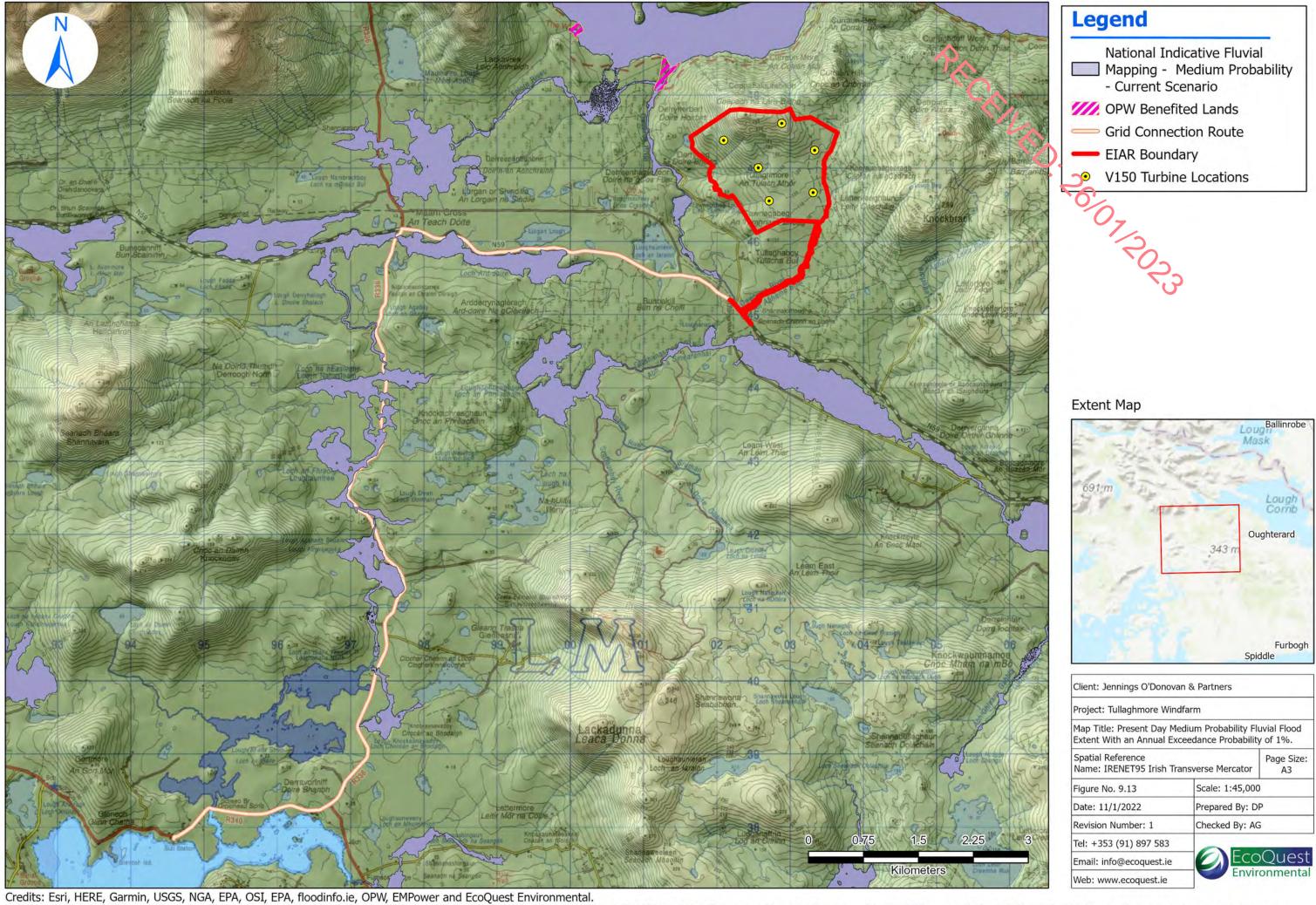
Web: www.ecoquest.ie



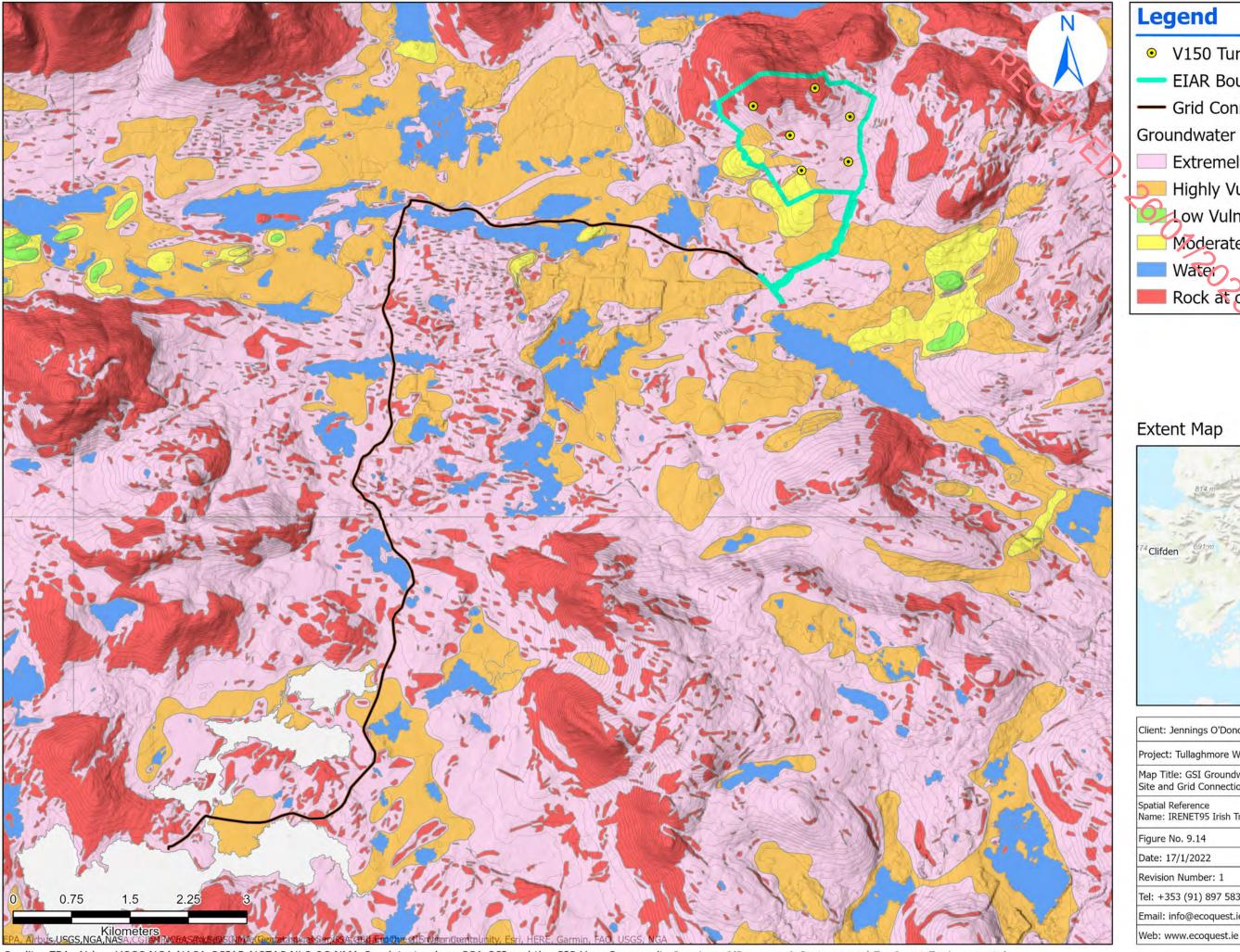


Client: EMPower		
roject: Tullaghmore Wind	dfarm	
Map Title: National Indica outure Scenario	tive Fluvial Mapping	g - High End
patial Reference Jame: IRENET95 Irish Tra	ansverse Mercator	Page Size: A3
igure No. 9.12	Scale: 1:45,000)
Date: 11/1/2022	Prepared By: D	P
Revision Number: 1	Checked By: A	3
el: +353 (91) 897 583		
mail: info@ecoquest.ie	Envir	Quest
Vobs warm occasiost io	Envir	onmental

Credits: Esri, HERE, Garmin, USGS, NGA, EPA, OSI, EPA, floodinfo.ie, OPW, Jennings O'Donovan & Partners and EcoQuest Environmental.



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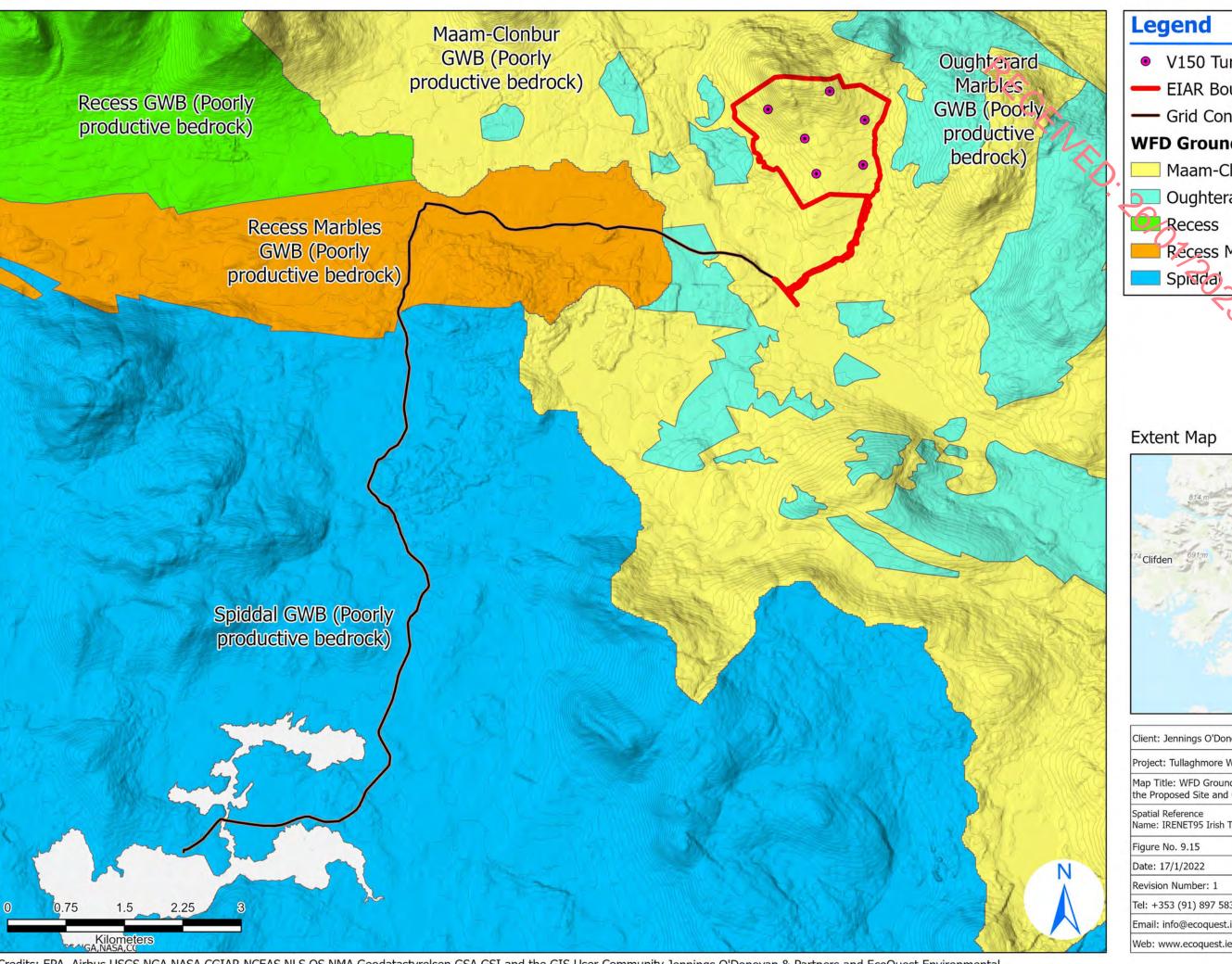


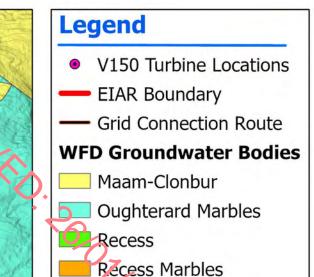
Legend • V150 Turbine Locations **EIAR Boundary** Grid Connection Route **Groundwater Vulnerability** Extremely Vulnerable Highly Vulnerable Low Vulnerability Moderate Vulnerability Water Rock at opnear surface

Extent Map



Client: Jennings O'Donovar	a & Partners	
Project: Tullaghmore Winds	farm	
Map Title: GSI Groundwate Site and Grid Connection R		apping of the
Spatial Reference Name: IRENET95 Irish Trans	verse Mercator	Page Size:
Figure No. 9.14	Scale: 1:45,00	00
Date: 17/1/2022	Prepared By:	DP
Revision Number: 1	Checked By: AG	
Tel: +353 (91) 897 583		
Email: info@ecoquest.ie	EC	oQuest ironmenta
Web: www.ecoquest.ie	Env	ironmenta





Extent Map

Spidda



Client: Jennings O'Donovar	n & Partners	
Project: Tullaghmore Wind	farm	
Map Title: WFD Groundwa he Proposed Site and Grid	, ,	, ,
patial Reference lame: IRENET95 Irish Trans	verse Mercator	Page Size: A3
igure No. 9.15	Scale: 1:45,00	10
Date: 17/1/2022	Prepared By:	DP
Revision Number: 1	Checked By: A	AG
el: +353 (91) 897 583		
mail: info@ecoquest.ie	EC	oQuest ironmental
Valer construction	Env	ironmental



CERTIFICATE OF ANALYSIS

Client David Parkinson

Ecoquest

Galway

Report No.

Date of Receipt Start Date of Analysis

Date of Report Order Number

Sample taken by

424666

31/08/2020 31/08/2020

17/09/2020

Client

Lab No	Sample Description	Test	Ref.	Result	Units
1075791	SW 1 31/08/2020	BOD	I, R	1	mg/l
		Suspended Solids	I, R	<2	mg/l
		Total Nitrogen as N	I, R	0.765	mg/l
		Total Phosphorus as P	I, R	0.05	mg/l
		Chloride	I, R	22.9	mg/l
		Nitrate as NO3	I, R	< 0.44	mg/l
		Nitrite as NO2	I, R	< 0.017	mg/l
		Orthophosphate as PO4-P	I, R	0.148	mg/l
		Ammonia as N	I, R	0.028	mg/l



Approved by:

Laura Finnegan Environmental Scientist

See below for test specifications and accreditation status.

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CLS will test food, water and swabs samples within 24 hours of receipt.

Where samples have been taken by the Client, results apply to the samples as received

Page 1 of 2 of Report 424666

Complete Laboratory Solutions, Ros Muc, Connemara, Co. Galway



In-House Test	Specification	Measurement of Uncertainty	17025	GMP/FDA*	ISO**
BOD	CLS 12	+/- 24 @ 150 mg/l	Yes	No	Yes
Suspended Solids	CLS 13	+/- 43 @ 500 mg/l	Yes	No 6	Yes
Total Nitrogen as N	CLS 152	+/- 9.47 @ 100mg/l	Yes	No O ₇	Yes
Total Phosphorus as P	CLS 151	+/- 0.05 @ 1.0mg/l	Yes	No 🥎	Yes
Chloride	Konelab CLS 36	+/- 12.10 %	Yes	No	Yes
Nitrate as NO3	Konelab CLS 39	+/- 2 @ 17 mg/I NO3	Yes	No	res
Nitrite as NO2	Konelab CLS 37	+/- 0.02 @ 0.2mg/I NO2	Yes	No	Yes
Orthophosphate as PO4-P	Konelab CLS 35	+/- 0.04 @ 0.3 mg/l PO4	Yes	No	Yes
Ammonia as N	Konelab CLS 40	+/- 5.13 %	Yes	No	Yes

^{*}Analysis carried out in a GMP approved, FDA inspected facility (MedPharma site only).
**Laboratory Analysis, Sampling, Food Safety Monitoring and Analysts on Contract are all ISO 9001 certified.

Lab No	Sample ID	Sample Condition on Receipt	Sampling Date
1075791	SW 1 31/08/2020	Good condition	31/08/2020



Complete Laboratory Solutions, Ros Muc, Connemara, Co. Galway



CERTIFICATE OF ANALYSIS

Client : David Parkinson

Ecoquest

Galway

Report No.

Date of Receipt

Start Date of Analysis

Date of Report

Order Number

Sample taken by

424667

31/08/2020 31/08/2020

11/09/2020

Client

Lab No	Sample Description	Test	Ref.	Result	Units
1075792	SW 2 31/08/2020	BOD	I, R	<1	mg/l
		Suspended Solids	I, R	<2	mg/l
	- The state of the	Total Nitrogen as N	I, R	0.560	mg/l
		Total Phosphorus as P	I, R	< 0.05	mg/l
		Chloride	I, R	15.4	mg/l
		Nitrate as NO3	I, R	< 0.44	mg/l
		Nitrite as NO2	I, R	< 0.017	mg/l
		Orthophosphate as PO4-P	I, R	0.031	mg/l
		Ammonia as N	I, R	< 0.005	mg/l



Approved by:

duida Singh

Luiza Singh Operations Supervisor

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Complete Laboratory Solutions, Ros Muc, Connemara, Co. Galway



In-House Test	Specification	Measurement of Uncertainty	17025	GMP/FDA*	ISO**
BOD	CLS 12	+/- 24 @ 150 mg/l	Yes	No	Yes
Suspended Solids	CLS 13	+/- 43 @ 500 mg/l	Yes	No 6	Yes
Total Nitrogen as N	CLS 152	+/- 9.47 @ 100mg/l	Yes	No O ₇	Yes
Total Phosphorus as P	CLS 151	+/- 0.05 @ 1.0mg/l	Yes	No 💫	Yes
Chloride	Konelab CLS 36	+/- 12.10 %	Yes	No	Yes
Nitrate as NO3	Konelab CLS 39	+/- 2 @ 17 mg/l NO3	Yes	No	Yes
Nitrite as NO2	Konelab CLS 37	+/- 0.02 @ 0.2mg/I NO2	Yes	No	Yes
Orthophosphate as PO4-P	Konelab CLS 35	+/- 0.04 @ 0.3 mg/l PO4	Yes	No	Yes
Ammonia as N	Konelab CLS 40	+/- 5.13 %	Yes	No	Yes

^{*}Analysis carried out in a GMP approved, FDA inspected facility (MedPharma site only).

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Lab No	Sample ID	Sample Condition on Receipt	Sampling Date
1075792	SW 2 31/08/2020	Good condition	31/08/2020



Complete Laboratory Solutions, Ros Muc, Connemara, Co. Galway



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Client : David Parkinson

Ecoquest

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^ Galway Report No.

Date of Receipt Start Date of Analysis

Date of Report Order Number

Sample taken by

424668

31/08/2020 31/08/2020

17/09/2020

Client

Lab No	Sample Description	Test	Ref.	Result	Units
1075793	SW 3 31/08/2020	BOD	I, R	<1	mg/l
		Suspended Solids	I, R	<2	mg/l
		Total Nitrogen as N	I, R	< 0.5	mg/l
		Total Phosphorus as P	I, R	< 0.05	mg/l
		Chloride	I, R	15	mg/l
		Nitrate as NO3	I, R	< 0.44	mg/l
		Nitrite as NO2	I, R	< 0.017	mg/l
		Orthophosphate as PO4-P	I, R	0.055	mg/l
		Ammonia as N	I, R	< 0.005	mg/l



Approved by:

Laura Finnegan Environmental Scientist

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Page 1 of 2 of Report 424668

Complete Laboratory Solutions, Ros Muc, Connemara, Co. Galway



In-House Test	Specification	Measurement of Uncertainty	17025	GMP/FDA*	ISO**
BOD	CLS 12	+/- 24 @ 150 mg/l	Yes	No	Yes
Suspended Solids	CLS 13	+/- 43 @ 500 mg/l	Yes	No 6	Yes
Total Nitrogen as N	CLS 152	+/- 9.47 @ 100mg/l	Yes	No O	Yes
Total Phosphorus as P	CLS 151	+/- 0.05 @ 1.0mg/l	Yes	No 🗘	Yes
Chloride	Konelab CLS 36	+/- 12.10 %	Yes	No	Yes
Nitrate as NO3	Konelab CLS 39	+/- 2 @ 17 mg/I NO3	Yes	No	Yes
Nitrite as NO2	Konelab CLS 37	+/- 0.02 @ 0.2mg/I NO2	Yes	No	Yes
Orthophosphate as PO4-P	Konelab CLS 35	+/- 0.04 @ 0.3 mg/l PO4	Yes	No	Yes
Ammonia as N	Konelab CLS 40	+/- 5.13 %	Yes	No	Yes

^{*}Analysis carried out in a GMP approved, FDA inspected facility (MedPharma site only).
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Lab No	Sample I D	Sample Condition on Receipt	Sampling Date
1075793	SW 3 31/08/2020	Good condition	31/08/2020



CERTIFICATE OF ANALYSIS

Client David Parkinson

Ecoquest

Galway

Report No.

Date of Receipt Start Date of Analysis

Date of Report Order Number

Sample taken by

424669

31/08/2020 31/08/2020

17/09/2020

Client

Lab No	Sample Description	Test	Ref.	Result	Units
1075794	SW 4 31/08/2020	BOD	I, R	<1	mg/l
		Suspended Solids	I, R	<2	mg/l
	A STATE OF THE PARTY OF THE PAR	Total Nitrogen as N	I, R	< 0.5	mg/l
		Total Phosphorus as P	I, R	< 0.05	mg/l
		Chloride	I, R	18.6	mg/l
		Nitrate as NO3	I, R	< 0.44	mg/l
		Nitrite as NO2	I, R	< 0.017	mg/l
		Orthophosphate as PO4-P	I, R	0.101	mg/l
		Ammonia as N	I, R	< 0.005	mg/l



Approved by:

Laura Finnegan Environmental Scientist

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Page 1 of 2 of Report 424669

Complete Laboratory Solutions, Ros Muc, Connemara, Co. Galway



In-House Test	Specification	Measurement of Uncertainty	17025	GMP/FDA*	ISO**
BOD	CLS 12	+/- 24 @ 150 mg/l	Yes	No	Yes
Suspended Solids	CLS 13	+/- 43 @ 500 mg/l	Yes	No 6	Yes
Total Nitrogen as N	CLS 152	+/- 9.47 @ 100mg/l	Yes	No O ₇	Yes
Total Phosphorus as P	CLS 151	+/- 0.05 @ 1.0mg/l	Yes	No 💫	Yes
Chloride	Konelab CLS 36	+/- 12.10 %	Yes	No	Yes
Nitrate as NO3	Konelab CLS 39	+/- 2 @ 17 mg/I NO3	Yes	No	Yes
Nitrite as NO2	Konelab CLS 37	+/- 0.02 @ 0.2mg/I NO2	Yes	No	Yes
Orthophosphate as PO4-P	Konelab CLS 35	+/- 0.04 @ 0.3 mg/l PO4	Yes	No	Yes
Ammonia as N	Konelab CLS 40	+/- 5.13 %	Yes	No	Yes

^{*}Analysis carried out in a GMP approved, FDA inspected facility (MedPharma site only).
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Lab No	Sample I D	Sample Condition on Receipt	Sampling Date
1075794	SW 4 31/08/2020	Good condition	31/08/2020



CERTIFICATE OF ANALYSIS

Client : David Parkinson

Ecoquest

Galway

Report No.

Date of Receipt

Start Date of Analysis

Date of Report Order Number

Sample taken by

424670

31/08/2020

31/08/2020

11/09/2020

Client

Lab No	Sample Description	Test	Ref.	Result	Units
1075795	SW 5 31/08/2020	BOD	I, R	<1	mg/l
		Suspended Solids	I, R	<2	mg/l
		Total Nitrogen as N	I, R	< 0.5	mg/l
		Total Phosphorus as P	I, R	< 0.05	mg/l
		Chloride	I, R	15.6	mg/l
		Nitrate as NO3	I, R	< 0.44	mg/l
		Nitrite as NO2	I, R	< 0.017	mg/l
		Orthophosphate as PO4-P	I, R	0.029	mg/l
		Ammonia as N	I, R	0.01	mg/l



Approved by:

duida Singh

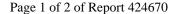
Luiza Singh Operations Supervisor

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CLS will test food, water and swabs samples within 24 hours of receipt.

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Complete Laboratory Solutions, Ros Muc, Connemara, Co. Galway



In-House Test	Specification	Measurement of Uncertainty	17025	GMP/FDA*	ISO**
BOD	CLS 12	+/- 24 @ 150 mg/l	Yes	No	Yes
Suspended Solids	CLS 13	+/- 43 @ 500 mg/l	Yes	No 6	Yes
Total Nitrogen as N	CLS 152	+/- 9.47 @ 100mg/l	Yes	No O	Yes
Total Phosphorus as P	CLS 151	+/- 0.05 @ 1.0mg/l	Yes	No 🗘	Yes
Chloride	Konelab CLS 36	+/- 12.10 %	Yes	No	Yes
Nitrate as NO3	Konelab CLS 39	+/- 2 @ 17 mg/I NO3	Yes	No	Yes
Nitrite as NO2	Konelab CLS 37	+/- 0.02 @ 0.2mg/I NO2	Yes	No	Yes
Orthophosphate as PO4-P	Konelab CLS 35	+/- 0.04 @ 0.3 mg/l PO4	Yes	No	Yes
Ammonia as N	Konelab CLS 40	+/- 5.13 %	Yes	No	Yes

^{*}Analysis carried out in a GMP approved, FDA inspected facility (MedPharma site only).
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Lab No	Sample ID	Sample Condition on Receipt	Sampling Date
1075795	SW 5 31/08/2020	Good condition	31/08/2020



CERTIFICATE OF ANALYSIS

Client : David Parkinson

Ecoquest

Galway

Report No.

Date of Receipt

Start Date of Analysis

Date of Report Order Number

Sample taken by

424671

31/08/2020

31/08/2020 11/09/2020

Client

Lab No	Sample Description	Test	Ref.	Result	Units
1075796	SW 6 31/08/2020	BOD	I, R	<1	mg/l
		Suspended Solids	I, R	< 2	mg/l
	100 mm 1	Total Nitrogen as N	I, R	< 0.5	mg/l
		Total Phosphorus as P	I, R	< 0.05	mg/l
		Chloride	I, R	16.8	mg/l
		Nitrate as NO3	I, R	< 0.44	mg/l
		Nitrite as NO2	I, R	< 0.017	mg/l
		Orthophosphate as PO4-P	I, R	< 0.01	mg/l
		Ammonia as N	I, R	0.005	mg/l



Approved by:

duida Singh

Luiza Singh Operations Supervisor

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Where samples have been taken by the Client, results apply to the samples as received



Complete Laboratory Solutions, Ros Muc, Connemara, Co. Galway



In-House Test	Specification	Measurement of Uncertainty	17025	GMP/FDA*	ISO**
BOD	CLS 12	+/- 24 @ 150 mg/l	Yes	No	Yes
Suspended Solids	CLS 13	+/- 43 @ 500 mg/l	Yes	No 6	Yes
Total Nitrogen as N	CLS 152	+/- 9.47 @ 100mg/l	Yes	No O ₇	Yes
Total Phosphorus as P	CLS 151	+/- 0.05 @ 1.0mg/l	Yes	No 🥎	Yes
Chloride	Konelab CLS 36	+/- 12.10 %	Yes	No	Yes
Nitrate as NO3	Konelab CLS 39	+/- 2 @ 17 mg/l NO3	Yes	No	es
Nitrite as NO2	Konelab CLS 37	+/- 0.02 @ 0.2mg/I NO2	Yes	No	Yes
Orthophosphate as PO4-P	Konelab CLS 35	+/- 0.04 @ 0.3 mg/l PO4	Yes	No	Yes
Ammonia as N	Konelab CLS 40	+/- 5.13 %	Yes	No	Yes

^{*}Analysis carried out in a GMP approved, FDA inspected facility (MedPharma site only).
**Laboratory Analysis, Sampling, Food Safety Monitoring and Analysts on Contract are all ISO 9001 certified.

Lab No	Sample ID	Sample Condition on Receipt	Sampling Date
1075796	SW 6 31/08/2020	Good condition	31/08/2020



CERTIFICATE OF ANALYSIS

Client David Parkinson

Ecoquest Sheeaunroe H91 FW3C Galway

Report No. Date of Receipt

13/10/2020

Start Date of Analysis Date of Report

14/10/2020 29/10/2020

Order Number

Sample taken by Client

Lab No	Sample Description	Test	Ref.	Result	Units
1089573	SW1 13.10.2020 @1.10pm	BOD	I,R	<1	mg/l
	The state of the s	Suspended Solids	I,R	5	mg/l
		Total Nitrogen as N	I,R	< 0.5	mg/l
		Total Phosphorus as P	I,R	< 0.05	mg/l
		Chloride	I,R	23.2	mg/l
		Nitrate as NO3	I,R	< 0.44	mg/l
		Nitrite as NO2	I,R	< 0.017	mg/l
		Orthophosphate as PO4-P	I,R	< 0.01	mg/l
		Ammonia as N	I,R	0.034	mg/l



Approved by:

Laura Finnegan Environmental Scientist

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CLS will test food, water and swabs samples within 24 hours of receipt.

Where samples have been taken by the Client, results apply to the samples as received

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Complete Laboratory Solutions, Ros Muc, Connemara, Co. Galway

Complete Laboratory Solutions, MedPharma Division,

Unit 3a, Small Business Park, Mervue, Galway



In-House Test	Specification	Measurement of Uncertainty	17025	GMP/FDA*	ISO**
BOD	CLS 12	+/- 24 @ 150 mg/l	Yes	NO	Yes
Suspended Solids	CLS 13	+/- 43 @ 500 mg/l	Yes	No	Yes
Total Nitrogen as N	CLS 152	+/- 9.47 @ 100mg/l	Yes	No 6	Yes
Total Phosphorus as P	CLS 151	+/- 0.05 @ 1.0mg/l	Yes	No 07	Yes
Chloride	Konelab CLS 36	+/- 12.10 %	Yes	No 2	Yes
Nitrate as NO3	Konelab CLS 39	+/- 2 @ 17 mg/l NO3	Yes	No 🐪	Yes
Nitrite as NO2	Konelab CLS 37	+/- 0.02 @ 0.2mg/I NO2	Yes	No	Yes
Orthophosphate as PO4-P	Konelab CLS 35	+/- 0.04 @ 0.3 mg/l PO4	Yes	No	Yes
Ammonia as N	Konelab CLS 40	+/- 5.13 %	Yes	No	Yes

^{*}Analysis carried out in a GMP approved, FDA inspected facility (MedPharma site only).

^{**}Laboratory Analysis, Sampling, Food Safety Monitoring and Analysts on Contract are all ISO 9001 certified.

Lab No	Sample I D	Sample Condition on Receipt	Sampling Date	
1089573	SW1 13.10.2020 @1.10pm	Good condition	13/10/2020	

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Complete Laboratory Solutions, Ros Muc, Connemara, Co. Galway



CERTIFICATE OF ANALYSIS

Client David Parkinson

Ecoquest Sheeaunroe H91 FW3C Galway

Report No. Date of Receipt 13/10/2020

Start Date of Analysis Date of Report

14/10/2020

Order Number

29/10/2020

Sample taken by

Client

Lab No	Sample Description	Test	Ref.	Result	Units
1089575	SW2 13.10.2020 @3.45pm	BOD	I,R	<1	mg/l
	The second second second	Suspended Solids	I,R	<2	mg/l
	11 1 1 1 1 1 1 1	Total Nitrogen as N	I,R	< 0.5	mg/l
		Total Phosphorus as P	I,R	< 0.05	mg/l
		Chloride	I,R	16.8	mg/l
		Nitrate as NO3	I,R	< 0.44	mg/l
		Nitrite as NO2	I,R	< 0.017	mg/l
		Orthophosphate as PO4-P	I,R	< 0.01	mg/l
		Ammonia as N	I,R	0.005	mg/l



Approved by:

Laura Finnegan Environmental

Scientist

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Where samples have been taken by the Client, results apply to the samples as received

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Complete Laboratory Solutions, Ros Muc, Connemara, Co. Galway

Complete Laboratory Solutions, MedPharma Division, Unit 3a, Small Business Park, Mervue, Galway

Symbol Reference - I:17025 accredited; S:Subcontracted; R:Analysis carried out in Ros Muc; M:Analysis carried out in MedPharma; F:Field test; O: Tested outside hold time.



In-House Test	Specification	Measurement of Uncertainty	17025	GMP/FDA*	ISO**
BOD	CLS 12	+/- 24 @ 150 mg/l	Yes	NO	Yes
Suspended Solids	CLS 13	+/- 43 @ 500 mg/l	Yes	No	Yes
Total Nitrogen as N	CLS 152	+/- 9.47 @ 100mg/l	Yes	No 6	Yes
Total Phosphorus as P	CLS 151	+/- 0.05 @ 1.0mg/l	Yes	No 07	Yes
Chloride	Konelab CLS 36	+/- 12.10 %	Yes	No 2	Yes
Nitrate as NO3	Konelab CLS 39	+/- 2 @ 17 mg/l NO3	Yes	No Vo	Yes
Nitrite as NO2	Konelab CLS 37	+/- 0.02 @ 0.2mg/I NO2	Yes	No	Yes
Orthophosphate as PO4-P	Konelab CLS 35	+/- 0.04 @ 0.3 mg/I PO4	Yes	No	Yes
Ammonia as N	Konelab CLS 40	+/- 5.13 %	Yes	No	Yes

^{*}Analysis carried out in a GMP approved, FDA inspected facility (MedPharma site only).

^{**}Laboratory Analysis, Sampling, Food Safety Monitoring and Analysts on Contract are all ISO 9001 certified.

Lab No	Sample I D	Sample Condition on Receipt	Sampling Date	
1089575	SW2 13.10.2020 @3.45pm	Good condition	13/10/2020	

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Complete Laboratory Solutions, Ros Muc, Connemara, Co. Galway



CERTIFICATE OF ANALYSIS

Client David Parkinson

Ecoquest Sheeaunroe H91 FW3C Galway

Report No. Date of Receipt 13/10/2020

Start Date of Analysis Date of Report

14/10/2020 29/10/2020

Order Number

Sample taken by Client

Lab No	Sample Description	Test	Ref.	Result	Units
1089578	SW3 13.10.2020 @3.26pm	BOD	I,R	<1	mg/l
	The state of the s	Suspended Solids	I,R	<2	mg/l
	112	Total Nitrogen as N	I,R	< 0.5	mg/l
		Total Phosphorus as P	I,R	< 0.05	mg/l
		Chloride	I,R	15.3	mg/l
		Nitrate as NO3	I,R	< 0.44	mg/l
		Nitrite as NO2	I,R	< 0.017	mg/l
		Orthophosphate as PO4-P	I,R	< 0.01	mg/l
		Ammonia as N	I,R	0.005	mg/l



Approved by:

Laura Finnegan Environmental Scientist

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Complete Laboratory Solutions, Ros Muc, Connemara, Co. Galway

Complete Laboratory Solutions, MedPharma Division,

Unit 3a, Small Business Park, Mervue, Galway



In-House Test	Specification	Measurement of Uncertainty	17025	GMP/FDA*	ISO**
BOD	CLS 12	+/- 24 @ 150 mg/l	Yes	NO	Yes
Suspended Solids	CLS 13	+/- 43 @ 500 mg/l	Yes	No	Yes
Total Nitrogen as N	CLS 152	+/- 9.47 @ 100mg/l	Yes	No 6	Yes
Total Phosphorus as P	CLS 151	+/- 0.05 @ 1.0mg/l	Yes	No 07	Yes
Chloride	Konelab CLS 36	+/- 12.10 %	Yes	No 2	Yes
Nitrate as NO3	Konelab CLS 39	+/- 2 @ 17 mg/l NO3	Yes	No Vo	Yes
Nitrite as NO2	Konelab CLS 37	+/- 0.02 @ 0.2mg/I NO2	Yes	No	Yes
Orthophosphate as PO4-P	Konelab CLS 35	+/- 0.04 @ 0.3 mg/I PO4	Yes	No	Yes
Ammonia as N	Konelab CLS 40	+/- 5.13 %	Yes	No	Yes

^{*}Analysis carried out in a GMP approved, FDA inspected facility (MedPharma site only).

^{**}Laboratory Analysis, Sampling, Food Safety Monitoring and Analysts on Contract are all ISO 9001 certified.

Lab No	Sample I D	Sample Condition on Receipt	Sampling Date	
1089578	SW3 13.10.2020 @3.26pm	Good condition	13/10/2020	

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Complete Laboratory Solutions, Ros Muc, Connemara, Co. Galway



CERTIFICATE OF ANALYSIS

Client David Parkinson

Ecoquest Sheeaunroe H91 FW3C Galway

Report No.

Date of Receipt Start Date of Analysis

13/10/2020 14/10/2020 29/10/2020

Date of Report Order Number

Sample taken by

Client

Lab No	Sample Description	Test	Ref.	Result	Units
1089579	SW4 13.10.2020 @2.26pm	BOD	I,R	<1	mg/l
	The second secon	Suspended Solids	I,R	<2	mg/l
	1119 4 - 1119	Total Nitrogen as N	I,R	< 0.5	mg/l
		Total Phosphorus as P	I,R	< 0.05	mg/l
		Chloride	I,R	17.3	mg/l
		Nitrate as NO3	I,R	< 0.44	mg/l
		Nitrite as NO2	I,R	< 0.017	mg/l
		Orthophosphate as PO4-P	I,R	< 0.01	mg/l
		Ammonia as N	I,R	0.007	mg/l



Approved by:

Laura Finnegan Environmental Scientist

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Complete Laboratory Solutions, Ros Muc, Connemara, Co. Galway

Complete Laboratory Solutions, MedPharma Division,

Unit 3a, Small Business Park, Mervue, Galway

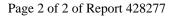


In-House Test	Specification	Measurement of Uncertainty	17025	GMP/FDA*	ISO**
BOD	CLS 12	+/- 24 @ 150 mg/l	Yes	NO	Yes
Suspended Solids	CLS 13	+/- 43 @ 500 mg/l	Yes	No	Yes
Total Nitrogen as N	CLS 152	+/- 9.47 @ 100mg/l	Yes	No 6	Yes
Total Phosphorus as P	CLS 151	+/- 0.05 @ 1.0mg/l	Yes	No O ₇	Yes
Chloride	Konelab CLS 36	+/- 12.10 %	Yes	No 2	Yes
Nitrate as NO3	Konelab CLS 39	+/- 2 @ 17 mg/l NO3	Yes	No	Yes
Nitrite as NO2	Konelab CLS 37	+/- 0.02 @ 0.2mg/I NO2	Yes	No	Yes
Orthophosphate as PO4-P	Konelab CLS 35	+/- 0.04 @ 0.3 mg/l PO4	Yes	No	Yes
Ammonia as N	Konelab CLS 40	+/- 5.13 %	Yes	No	Yes

^{*}Analysis carried out in a GMP approved, FDA inspected facility (MedPharma site only).

**Laboratory Analysis, Sampling, Food Safety Monitoring and Analysts on Contract are all ISO 9001 certified.

Lab No	Sample I D	Sample Condition on Receipt	Sampling Date
1089579	SW4 13.10.2020 @2.26pm	Good condition	13/10/2020



Complete Laboratory Solutions, Ros Muc, Connemara, Co. Galway



CERTIFICATE OF ANALYSIS

Test

BOD

Chloride

Nitrite as NO2

Ammonia as N

Orthophosphate as PO4-P

Client David Parkinson

Lab No

1089581

Ecoquest Sheeaunroe H91 FW3C Galway

Sample Description

SW5 13.10.2020 @2.05pm

Report No.

Date of Receipt Start Date of Analysis

Date of Report Order Number

Sample taken by Client

428278

13/10/2020 14/10/2020 29/10/2020

Ref Result Units I,R < 1 mg/I < 2 Suspended Solids I,R mg/I Total Nitrogen as N I,R < 0.5 mg/I Total Phosphorus as P I,R < 0.05 mg/l I,R 14.9 mg/l Nitrate as NO3 I,R < 0.44 mg/l

I,R

I.R

I,R



Approved by:

Laura Finnegan Environmental Scientist

< 0.017

< 0.01

0.015

mg/l

mg/l

mg/l

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Where samples have been taken by the Client, results apply to the samples as received

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Complete Laboratory Solutions, Ros Muc, Connemara, Co. Galway

Complete Laboratory Solutions, MedPharma Division,



In-House Test	Specification	Measurement of Uncertainty	17025	GMP/FDA*	ISO**
BOD	CLS 12	+/- 24 @ 150 mg/l	Yes	NO	Yes
Suspended Solids	CLS 13	+/- 43 @ 500 mg/l	Yes	No _	Yes
Total Nitrogen as N	CLS 152	+/- 9.47 @ 100mg/l	Yes	No 6	Yes
Total Phosphorus as P	CLS 151	+/- 0.05 @ 1.0mg/l	Yes	No O	Yes
Chloride	Konelab CLS 36	+/- 12.10 %	Yes	No 2	Yes
Nitrate as NO3	Konelab CLS 39	+/- 2 @ 17 mg/I NO3	Yes	No	Yes
Nitrite as NO2	Konelab CLS 37	+/- 0.02 @ 0.2mg/I NO2	Yes	No	Yes
Orthophosphate as PO4-P	Konelab CLS 35	+/- 0.04 @ 0.3 mg/l PO4	Yes	No	Yes
Ammonia as N	Konelab CLS 40	+/- 5.13 %	Yes	No	Yes

^{*}Analysis carried out in a GMP approved, FDA inspected facility (MedPharma site only).

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	Lab No	Sample I D	Sample Condition on Receipt	Sampling Date
I	1089581	SW5 13.10.2020 @2.05pm	Good condition	13/10/2020

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Complete Laboratory Solutions, Ros Muc, Connemara, Co. Galway



CERTIFICATE OF ANALYSIS

Client David Parkinson

Ecoquest Sheeaunroe H91 FW3C Galway

Report No. Date of Receipt

Start Date of Analysis

13/10/2020 14/10/2020

Date of Report

29/10/2020

Order Number

Sample taken by

Client

Lab No	Sample Description	Test	Ref.	Result	Units
1089582	SW6 13.10.2020 @11.56am	BOD	I,R	<1	mg/l
The state of the s		Suspended Solids	I,R	<2	mg/l
	111111111111111111111111111111111111111	Total Nitrogen as N	I,R	< 0.5	mg/l
		Total Phosphorus as P	I,R	0.06	mg/l
		Chloride	I,R	15	mg/l
		Nitrate as NO3	I,R	< 0.44	mg/l
		Nitrite as NO2	I,R	< 0.017	mg/l
	Orthophosphate as PO4-P	I,R	< 0.01	mg/l	
		Ammonia as N	I,R	0.014	mg/l



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Laura Finnegan Environmental Scientist

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Complete Laboratory Solutions, Ros Muc, Connemara, Co. Galway

Complete Laboratory Solutions, MedPharma Division,



In-House Test	Specification	Measurement of Uncertainty	17025	GMP/FDA*	ISO**
BOD	CLS 12	+/- 24 @ 150 mg/l	Yes	NO	Yes
Suspended Solids	CLS 13	+/- 43 @ 500 mg/l	Yes	No	Yes
Total Nitrogen as N	CLS 152	+/- 9.47 @ 100mg/l	Yes	No 6	Yes
Total Phosphorus as P	CLS 151	+/- 0.05 @ 1.0mg/l	Yes	No 07	Yes
Chloride	Konelab CLS 36	+/- 12.10 %	Yes	No 2	Yes
Nitrate as NO3	Konelab CLS 39	+/- 2 @ 17 mg/l NO3	Yes	No Vo	Yes
Nitrite as NO2	Konelab CLS 37	+/- 0.02 @ 0.2mg/I NO2	Yes	No	Yes
Orthophosphate as PO4-P	Konelab CLS 35	+/- 0.04 @ 0.3 mg/I PO4	Yes	No	Yes
Ammonia as N	Konelab CLS 40	+/- 5.13 %	Yes	No	Yes

^{*}Analysis carried out in a GMP approved, FDA inspected facility (MedPharma site only).

^{**}Laboratory Analysis, Sampling, Food Safety Monitoring and Analysts on Contract are all ISO 9001 certified.

Lab No	Sample I D	Sample Condition on Receipt	Sampling Date	
1089582	SW6 13.10.2020 @11.56am	Good condition	13/10/2020	

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Complete Laboratory Solutions, Ros Muc, Connemara, Co. Galway



CERTIFICATE OF ANALYSIS

Client David Parkinson

Ecoquest Sheeaunroe H91 FW3C Galway

Report No.

Date of Receipt Start Date of Analysis

Date of Report Order Number

Sample taken by

13/10/2020 14/10/2020

29/10/2020

Client

Lab No	Sample Description	Test	Ref.	Result	Units
1089583	SW7 13.10.2020 @10.00am	BOD	I,R	<1	mg/l
	The state of the s	Suspended Solids	I,R	13	mg/l
	11444	Total Nitrogen as N	I,R	< 0.5	mg/l
		Total Phosphorus as P	I,R	0.05	mg/l
		Chloride	I,R	12.9	mg/l
		Nitrate as NO3	I,R	< 0.44	mg/l
		Nitrite as NO2	I,R	< 0.017	mg/l
		Orthophosphate as PO4-P	I,R	< 0.01	mg/l
		Ammonia as N	I,R	0.011	mg/l



Approved by:

Laura Finnegan Environmental Scientist

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Where samples have been taken by the Client, results apply to the samples as received

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Complete Laboratory Solutions, Ros Muc, Connemara, Co. Galway

Complete Laboratory Solutions, MedPharma Division,



In-House Test	Specification	Measurement of Uncertainty	17025	GMP/FDA*	ISO**
BOD	CLS 12	+/- 24 @ 150 mg/l	Yes	NO	Yes
Suspended Solids	CLS 13	+/- 43 @ 500 mg/l	Yes	No	Yes
Total Nitrogen as N	CLS 152	+/- 9.47 @ 100mg/l	Yes	No 6	Yes
Total Phosphorus as P	CLS 151	+/- 0.05 @ 1.0mg/l	Yes	No 07	Yes
Chloride	Konelab CLS 36	+/- 12.10 %	Yes	No 2	Yes
Nitrate as NO3	Konelab CLS 39	+/- 2 @ 17 mg/l NO3	Yes	No Vo	Yes
Nitrite as NO2	Konelab CLS 37	+/- 0.02 @ 0.2mg/I NO2	Yes	No	Yes
Orthophosphate as PO4-P	Konelab CLS 35	+/- 0.04 @ 0.3 mg/l PO4	Yes	No	Yes
Ammonia as N	Konelab CLS 40	+/- 5.13 %	Yes	No	Yes

^{*}Analysis carried out in a GMP approved, FDA inspected facility (MedPharma site only).

^{**}Laboratory Analysis, Sampling, Food Safety Monitoring and Analysts on Contract are all ISO 9001 certified.

Lab No	Sample ID	Sample Condition on Receipt	Sampling Date
1089583	SW7 13.10.2020 @10.00am	Good condition	13/10/2020

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Complete Laboratory Solutions, Ros Muc, Connemara, Co. Galway



CERTIFICATE OF ANALYSIS

Client : David Parkinson

Ecoquest Sheeaunroe H91 FW3C Galway Report No. Date of Receipt : 441745 : 04/03/2021 : 04/03/2021

Start Date of Analysis Date of Report 04/03/2021 15/03/2021

Order Number

13/03/20

Sample taken by : Client

Lab No	Sample Description	Test	Ref.	Result	Units
1151007	SW1 04.03.2021 @9.38am	BOD	I,R	<1	mg/l
	The state of the s	Suspended Solids	I,R	< 2	mg/l
	THE PERSON NAMED IN COLUMN TWO IS NOT THE PERSON NAMED IN COLUMN TO PE	Total Nitrogen as N	I,R	< 0.5	mg/l
		Total Phosphorus as P	I,R	< 0.05	mg/l
		Chloride	I,R	20	mg/l
		Nitrate as NO3	I,R	< 0.44	mg/l
		Nitrite as NO2	I,R	< 0.017	mg/l
		Orthophosphate as PO4-P	I,R	< 0.01	mg/l
		Ammonia as N	I,R	0.033	mg/l



Approved by:

James Feighan Scientific Project Manager

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Where samples have been taken by the Client, results apply to the samples as received

Page 1 of 2 of Report 441745

Complete Laboratory Solutions, Ros Muc, Connemara, Co. Galway Complete Laboratory Solutions, MedPharma Division,



In-House Test	Specification	Measurement of Uncertainty	17025	GMP/FDA*	ISO**
BOD	CLS 12	+/- 9.33 %	Yes	NO	Yes
Suspended Solids	CLS 13	+/- 6.44 %	Yes	No _	Yes
Total Nitrogen as N	CLS 152	+/- 8.72 %	Yes	No 6	Yes
Total Phosphorus as P	CLS 151	+/- 10.53 %	Yes	No 07	Yes
Chloride	Konelab CLS 36	+/- 12.10 %	Yes	No 💫	Yes
Nitrate as NO3	Konelab CLS 39	+/- 2 @ 17 mg/l NO3	Yes	No	Yes
Nitrite as NO2	Konelab CLS 37	+/- 7.55 % as N	Yes	No	Yes
Orthophosphate as PO4-P	Konelab CLS 35	+/- 6.87 %	Yes	No	Yes
Ammonia as N	Konelab CLS 40	+/- 5.13 %	Yes	No	Yes

^{*}Analysis carried out in a GMP approved, FDA inspected facility (MedPharma site only).

**Laboratory Analysis, Sampling, Food Safety Monitoring and Analysts on Contract are all ISO 9001 certified.

Ī	Lab No	Sample I D	Sample Condition on Receipt	Sampling Date
ĺ	1151007	SW1 04.03.2021 @9.38am	Good condition	04/03/2021

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Complete Laboratory Solutions, Ros Muc, Connemara, Co. Galway



CERTIFICATE OF ANALYSIS

Client David Parkinson

Ecoquest Sheeaunroe H91 FW3C Galway

Report No. Date of Receipt 04/03/2021

Start Date of Analysis Date of Report

04/03/2023

Order Number

15/03/202

Sample taken by

Client

Lab No	Sample Description	Test	Ref.	Result	Units
1151008	SW2 04.03.2021 @10.52am	BOD	I,R	<1	mg/l
	Suspended Solids	I,R	<2	mg/l	
	Total Nitrogen as N	I,R	< 0.5	mg/l	
	Total Phosphorus as P	I,R	< 0.05	mg/l	
		Chloride	I,R	15	mg/l
		Nitrate as NO3	I,R	0.482	mg/l
		Nitrite as NO2	I,R	< 0.017	mg/l
	Orthophosphate as PO4-P	I,R	< 0.01	mg/l	
		Ammonia as N	I,R	0.005	mg/l



Approved by:

James Feighan Scientific Project Manager

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Page 1 of 2 of Report 441746

Complete Laboratory Solutions, Ros Muc, Connemara, Co. Galway

Complete Laboratory Solutions, MedPharma Division,



In-House Test	Specification	Measurement of Uncertainty	17025	GMP/FDA*	ISO**
BOD	CLS 12	+/- 9.33 %	Yes	NO	Yes
Suspended Solids	CLS 13	+/- 6.44 %	Yes	No	Yes
Total Nitrogen as N	CLS 152	+/- 8.72 %	Yes	No 6	Yes
Total Phosphorus as P	CLS 151	+/- 10.53 %	Yes	No 07	Yes
Chloride	Konelab CLS 36	+/- 12.10 %	Yes	No 2	Yes
Nitrate as NO3	Konelab CLS 39	+/- 2 @ 17 mg/l NO3	Yes	No 🐪	Yes
Nitrite as NO2	Konelab CLS 37	+/- 7.55 % as N	Yes	No	Yes
Orthophosphate as PO4-P	Konelab CLS 35	+/- 6.87 %	Yes	No	Yes
Ammonia as N	Konelab CLS 40	+/- 5.13 %	Yes	No	Yes

^{*}Analysis carried out in a GMP approved, FDA inspected facility (MedPharma site only).

^{**}Laboratory Analysis, Sampling, Food Safety Monitoring and Analysts on Contract are all ISO 9001 certified.

	Lab No	Sample ID	Sample Condition on Receipt	Sampling Date
I	1151008	SW2 04.03.2021 @10.52am	Good condition	04/03/2021

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Complete Laboratory Solutions, Ros Muc, Connemara, Co. Galway



CERTIFICATE OF ANALYSIS

Client David Parkinson

Ecoquest Sheeaunroe H91 FW3C Galway

Report No.

Date of Receipt Start Date of Analysis

Date of Report Order Number

04/03/2021 15/03/2021

04/03/2021

Sample taken by Client

Lab No	Sample Description	Test	Ref.	Result	Units
1151009 SW3 04.03.2021 @10.38am	SW3 04.03.2021 @10.38am	BOD	I,R	<1	mg/l
	The state of the s	Suspended Solids	I,R	<2	mg/l
	Total Nitrogen as N	I,R	< 0.5	mg/l	
		Total Phosphorus as P	I,R	< 0.05	mg/l
		Chloride	I,R	14	mg/l
		Nitrate as NO3	I,R	< 0.44	mg/l
		Nitrite as NO2	I,R	< 0.017	mg/l
	Orthophosphate as PO4-P	I,R	< 0.01	mg/l	
	Ammonia as N	I,R	< 0.005	mg/l	



Approved by:

James Feighan Scientific Project Manager

See below for test specifications and accreditation status.

This report only relates to items tested and shall not be reproduced but in full with the permission of CLS. est. is an estimated count.

CLS will test food, water and swabs samples within 24 hours of receipt.

Where samples have been taken by the Client, results apply to the samples as received

Page 1 of 2 of Report 441747

Complete Laboratory Solutions, Ros Muc, Connemara, Co. Galway

Complete Laboratory Solutions, MedPharma Division,



In-House Test	Specification	Measurement of Uncertainty	17025	GMP/FDA*	ISO**
BOD	CLS 12	+/- 9.33 %	Yes	NO	Yes
Suspended Solids	CLS 13	+/- 6.44 %	Yes	No	Yes
Total Nitrogen as N	CLS 152	+/- 8.72 %	Yes	No 6	Yes
Total Phosphorus as P	CLS 151	+/- 10.53 %	Yes	No 07	Yes
Chloride	Konelab CLS 36	+/- 12.10 %	Yes	No 2	Yes
Nitrate as NO3	Konelab CLS 39	+/- 2 @ 17 mg/l NO3	Yes	No Vo	Yes
Nitrite as NO2	Konelab CLS 37	+/- 7.55 % as N	Yes	No	Yes
Orthophosphate as PO4-P	Konelab CLS 35	+/- 6.87 %	Yes	No	Yes
Ammonia as N	Konelab CLS 40	+/- 5.13 %	Yes	No	Yes

^{*}Analysis carried out in a GMP approved, FDA inspected facility (MedPharma site only).

^{**}Laboratory Analysis, Sampling, Food Safety Monitoring and Analysts on Contract are all ISO 9001 certified.

La	ab No	Sample I D		Sample Condition on Receipt	Sampling Date
11	51009	SW3 04.03.2021 @10.38am	AND STREET OF THE PARTY OF THE	Good condition	04/03/2021

Page 2 of 2 of Report 441747

Complete Laboratory Solutions, Ros Muc, Connemara, Co. Galway



CERTIFICATE OF ANALYSIS

Client David Parkinson

Ecoquest Sheeaunroe H91 FW3C Galway

Report No. Date of Receipt

04/03/2021 04/03/2023

Start Date of Analysis Date of Report

15/03/202

Order Number

Sample taken by Client

Lab No	Sample Description	Test	Ref.	Result	Units
1151010	SW4 04.03.2021 @12.08pm	BOD	I,R	<1	mg/l
	THE PERSON NAMED IN COLUMN TWO IS NOT THE PERSON NAMED IN COLUMN TWO IS NAM	Suspended Solids	I,R	<2	mg/l
		Total Nitrogen as N	I,R	< 0.5	mg/l
		Total Phosphorus as P	I,R	< 0.05	mg/l
		Chloride	I,R	15.6	mg/l
		Nitrate as NO3	I,R	< 0.44	mg/l
		Nitrite as NO2	I,R	< 0.017	mg/l
		Orthophosphate as PO4-P	I,R	< 0.01	mg/l
		Ammonia as N	I,R	0.006	mg/l



Approved by:

James Feighan Scientific Project Manager

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CLS will test food, water and swabs samples within 24 hours of receipt.

Where samples have been taken by the Client, results apply to the samples as received

Page 1 of 2 of Report 441748

Complete Laboratory Solutions, Ros Muc, Connemara, Co. Galway

Complete Laboratory Solutions, MedPharma Division,



In-House Test	Specification	Measurement of Uncertainty	17025	GMP/FDA*	ISO**
BOD	CLS 12	+/- 9.33 %	Yes	NO	Yes
Suspended Solids	CLS 13	+/- 6.44 %	Yes	No _	Yes
Total Nitrogen as N	CLS 152	+/- 8.72 %	Yes	No 6	Yes
Total Phosphorus as P	CLS 151	+/- 10.53 %	Yes	No 7	Yes
Chloride	Konelab CLS 36	+/- 12.10 %	Yes	No 2	Yes
Nitrate as NO3	Konelab CLS 39	+/- 2 @ 17 mg/l NO3	Yes	No Q	Yes
Nitrite as NO2	Konelab CLS 37	+/- 7.55 % as N	Yes	No	Yes
Orthophosphate as PO4-P	Konelab CLS 35	+/- 6.87 %	Yes	No	Yes
Ammonia as N	Konelab CLS 40	+/- 5.13 %	Yes	No	Yes

^{*}Analysis carried out in a GMP approved, FDA inspected facility (MedPharma site only).

**Laboratory Analysis, Sampling, Food Safety Monitoring and Analysts on Contract are all ISO 9001 certified.

Lab No	Sample ID	Sample Condition on Receipt	Sampling Date
1151010	SW4 04.03.2021 @12.08pm	Good condition	04/03/2021

Page 2 of 2 of Report 441748

Complete Laboratory Solutions, Ros Muc, Connemara, Co. Galway



CERTIFICATE OF ANALYSIS

Client David Parkinson

Ecoquest Sheeaunroe H91 FW3C Galway

Report No.

04/03/2021

Date of Receipt Start Date of Analysis Date of Report

04/03/2023

Order Number

15/03/202

Sample taken by

Client

Lab No	Sample Description	Test	Ref.	Result	Units
1151011	SW5 04.03.2021 @13.05pm	BOD	I,R	<1	mg/l
	The state of the s	Suspended Solids	I,R	<2	mg/l
	1197年中国	Total Nitrogen as N	I,R	< 0.5	mg/l
		Total Phosphorus as P	I,R	< 0.05	mg/l
		Chloride	I,R	15.6	mg/l
		Nitrate as NO3	I,R	< 0.44	mg/l
		Nitrite as NO2	I,R	< 0.017	mg/l
		Orthophosphate as PO4-P	I,R	< 0.01	mg/l
		Ammonia as N	I,R	0.01	mg/l



Approved by:

James Feighan Scientific Project Manager

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Where samples have been taken by the Client, results apply to the samples as received

Page 1 of 2 of Report 441749

Complete Laboratory Solutions, Ros Muc, Connemara, Co. Galway

Complete Laboratory Solutions, MedPharma Division,



In-House Test	Specification	Measurement of Uncertainty	17025	GMP/FDA*	ISO**
BOD	CLS 12	+/- 9.33 %	Yes	NO	Yes
Suspended Solids	CLS 13	+/- 6.44 %	Yes	No	Yes
Total Nitrogen as N	CLS 152	+/- 8.72 %	Yes	No 6	Yes
Total Phosphorus as P	CLS 151	+/- 10.53 %	Yes	No 07	Yes
Chloride	Konelab CLS 36	+/- 12.10 %	Yes	No 2	Yes
Nitrate as NO3	Konelab CLS 39	+/- 2 @ 17 mg/l NO3	Yes	No 🐪	Yes
Nitrite as NO2	Konelab CLS 37	+/- 7.55 % as N	Yes	No	Yes
Orthophosphate as PO4-P	Konelab CLS 35	+/- 6.87 %	Yes	No	Yes
Ammonia as N	Konelab CLS 40	+/- 5.13 %	Yes	No	Yes

^{*}Analysis carried out in a GMP approved, FDA inspected facility (MedPharma site only).

^{**}Laboratory Analysis, Sampling, Food Safety Monitoring and Analysts on Contract are all ISO 9001 certified.

Lab No	Sample I D	Sample Condition on Receipt	Sampling Date
1151011	SW5 04 03 2021 @13 05pm	Good condition	04/03/2021



Complete Laboratory Solutions, Ros Muc, Connemara, Co. Galway



CERTIFICATE OF ANALYSIS

Client David Parkinson

Ecoquest Sheeaunroe H91 FW3C Galway

Report No. Date of Receipt 04/03/2021

Start Date of Analysis Date of Report

04/03/2021 15/03/2021

Order Number Sample taken by

Client

Lab No	Sample Description	Test	Ref.	Result	Units
1151012	SW6 04.03.2021 @13.23pm	BOD	I,R	<1	mg/l
	The state of the s	Suspended Solids	I,R	<2	mg/l
		Total Nitrogen as N	I,R	< 0.5	mg/l
		Total Phosphorus as P	I,R	< 0.05	mg/l
		Chloride	I,R	15.6	mg/l
		Nitrate as NO3	I,R	< 0.44	mg/l
	Nitrite as NO2	I,R	< 0.017	mg/l	
	Orthophosphate as PO4-P	I,R	< 0.01	mg/l	
	Ammonia as N	I,R	0.012	mg/l	



Approved by:

James Feighan Scientific Project Manager

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Where samples have been taken by the Client, results apply to the samples as received

Page 1 of 2 of Report 441750

Complete Laboratory Solutions, Ros Muc, Connemara, Co. Galway

Complete Laboratory Solutions, MedPharma Division,



In-House Test	Specification	Measurement of Uncertainty	17025	GMP/FDA*	ISO**
BOD	CLS 12	+/- 9.33 %	Yes	NO	Yes
Suspended Solids	CLS 13	+/- 6.44 %	Yes	No	Yes
Total Nitrogen as N	CLS 152	+/- 8.72 %	Yes	No 6	Yes
Total Phosphorus as P	CLS 151	+/- 10.53 %	Yes	No 07	Yes
Chloride	Konelab CLS 36	+/- 12.10 %	Yes	No 2	Yes
Nitrate as NO3	Konelab CLS 39	+/- 2 @ 17 mg/l NO3	Yes	No 🐪	Yes
Nitrite as NO2	Konelab CLS 37	+/- 7.55 % as N	Yes	No	Yes
Orthophosphate as PO4-P	Konelab CLS 35	+/- 6.87 %	Yes	No	Yes
Ammonia as N	Konelab CLS 40	+/- 5.13 %	Yes	No	Yes

^{*}Analysis carried out in a GMP approved, FDA inspected facility (MedPharma site only).

^{**}Laboratory Analysis, Sampling, Food Safety Monitoring and Analysts on Contract are all ISO 9001 certified.

Lab No	Sample I D	Sample Condition on Receipt	Sampling Date
1151012	SW6 04 03 2021 @13 23pm	Good condition	04/03/2021



Complete Laboratory Solutions, Ros Muc, Connemara, Co. Galway



CERTIFICATE OF ANALYSIS

Client David Parkinson

Ecoquest Sheeaunroe H91 FW3C Galway

Report No. Date of Receipt

04/03/2021 Start Date of Analysis 04/03/2021

Date of Report

15/03/2021

Order Number Sample taken by

Client

Lab No	Sample Description	Test	Ref.	Result	Units
1151013	SW7 04.03.2021 @14.58pm	BOD	I,R	<1	mg/l
	Suspended Solids	I,R	3	mg/l	
	114 4 4 4 4	Total Nitrogen as N	I,R	< 0.5	mg/l
		Total Phosphorus as P	I,R	< 0.05	mg/l
		Chloride	I,R	12.6	mg/l
		Nitrate as NO3	I,R	0.446	mg/l
		Nitrite as NO2	I,R	< 0.017	mg/l
		Orthophosphate as PO4-P	I,R	< 0.01	mg/l
		Ammonia as N	I,R	0.009	mg/l



Approved by:

James Feighan Scientific Project Manager

See below for test specifications and accreditation status.

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CLS will test food, water and swabs samples within 24 hours of receipt.

Where samples have been taken by the Client, results apply to the samples as received

Page 1 of 2 of Report 441751

Complete Laboratory Solutions, Ros Muc, Connemara, Co. Galway

Complete Laboratory Solutions, MedPharma Division,



In-House Test	Specification	Measurement of Uncertainty	17025	GMP/FDA*	ISO**
BOD	CLS 12	+/- 9.33 %	Yes	NO	Yes
Suspended Solids	CLS 13	+/- 6.44 %	Yes	No	Yes
Total Nitrogen as N	CLS 152	+/- 8.72 %	Yes	No 6	Yes
Total Phosphorus as P	CLS 151	+/- 10.53 %	Yes	No 07	Yes
Chloride	Konelab CLS 36	+/- 12.10 %	Yes	No 2	Yes
Nitrate as NO3	Konelab CLS 39	+/- 2 @ 17 mg/l NO3	Yes	No 🐪	Yes
Nitrite as NO2	Konelab CLS 37	+/- 7.55 % as N	Yes	No	Yes
Orthophosphate as PO4-P	Konelab CLS 35	+/- 6.87 %	Yes	No	Yes
Ammonia as N	Konelab CLS 40	+/- 5.13 %	Yes	No	Yes

^{*}Analysis carried out in a GMP approved, FDA inspected facility (MedPharma site only).

^{**}Laboratory Analysis, Sampling, Food Safety Monitoring and Analysts on Contract are all ISO 9001 certified.

Lab No	Sample ID	Sample Condition on Rece	eipt Sampling Date
1151013	SW7 04 03 2021 @14 58pm	Good condition	04/03/2021



Complete Laboratory Solutions, Ros Muc, Connemara, Co. Galway



CERTIFICATE OF ANALYSIS

Client David Parkinson

Ecoquest Sheeaunroe H91 FW3C Galway

Report No. Date of Receipt 04/03/2021

Start Date of Analysis Date of Report

04/03/2021 15/03/2021

Order Number Sample taken by

Client

Lab No	Sample Description	Test	Ref.	Result	Units
1151014	SW9 04.03.2021 @11.32am	BOD	I,R	<1	mg/l
	Suspended Solids	I,R	5	mg/l	
	Total Nitrogen as N	I,R	< 0.5	mg/l	
		Total Phosphorus as P	I,R	< 0.05	mg/l
		Chloride	I,R	14.2	mg/l
		Nitrate as NO3	I,R	< 0.44	mg/l
		Nitrite as NO2	I,R	< 0.017	mg/l
		Orthophosphate as PO4-P	I,R	< 0.01	mg/l
		Ammonia as N	I,R	0.031	mg/l



Approved by:

James Feighan Scientific Project Manager

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Where samples have been taken by the Client, results apply to the samples as received

Page 1 of 2 of Report 441752

Complete Laboratory Solutions, Ros Muc, Connemara, Co. Galway

Complete Laboratory Solutions, MedPharma Division,



In-House Test	Specification	Measurement of Uncertainty	17025	GMP/FDA*	ISO**
BOD	CLS 12	+/- 9.33 %	Yes	NO	Yes
Suspended Solids	CLS 13	+/- 6.44 %	Yes	No _	Yes
Total Nitrogen as N	CLS 152	+/- 8.72 %	Yes	No 6	Yes
Total Phosphorus as P	CLS 151	+/- 10.53 %	Yes	No 07	Yes
Chloride	Konelab CLS 36	+/- 12.10 %	Yes	No 💫	Yes
Nitrate as NO3	Konelab CLS 39	+/- 2 @ 17 mg/l NO3	Yes	No	Yes
Nitrite as NO2	Konelab CLS 37	+/- 7.55 % as N	Yes	No	Yes
Orthophosphate as PO4-P	Konelab CLS 35	+/- 6.87 %	Yes	No	Yes
Ammonia as N	Konelab CLS 40	+/- 5.13 %	Yes	No	Yes

^{*}Analysis carried out in a GMP approved, FDA inspected facility (MedPharma site only).

**Laboratory Analysis, Sampling, Food Safety Monitoring and Analysts on Contract are all ISO 9001 certified.

Lab No	Sample ID		Sample Condition on Receipt	Sampling Date	
1151014	SW9 04.03.2021 @11.32am		Good condition	04/03/2021	

Page 2 of 2 of Report 441752

Complete Laboratory Solutions, Ros Muc, Connemara, Co. Galway



CERTIFICATE OF ANALYSIS

Client : David Parkinson

Ecoquest Sheeaunroe H91 FW3C Galway Report No.

Date of Receipt Start Date of Analysis

Date of Report

Order Number Sample taken by 465766 05/10/2021

05/10/2021 05/10/2021 15/10/2021

Client

Lab No	Sample Description	Test	Ref.	Result	Units
1362646	SW 5 05/10/2021 @9:22am	BOD	I,R	<1	mg/l
1002040	5 V 5 05/10/2021 @ 7.22dill	Suspended Solids	I,R	<2	mg/l
	THE PERSON NAMED IN COLUMN TWO IS NOT THE PERSON NAMED IN COLUMN TRANSPORT NAMED IN COLUMN TWO IS NOT THE PERSON NAMED IN COLUMN TRANSPORT NAMED IN COLUMN TWO IS NAMED IN COL	Total Nitrogen as N	I,R	< 0.5	mg/l
	11/1/1/1/1/1	Total Phosphorus as P	L.R	< 0.05	mg/l
		Chloride	I,R	12.2	mg/l
		Nitrate as NO3	I,R	< 0.44	mg/l
		Nitrite as NO2	I,R	< 0.017	mg/l
		Orthophosphate as PO4-P	L.R	<0.017	mg/l
		Ammonia as N	I,R	< 0.005	mg/l
1362648	SW 4 05/10/2021 @10:13am	BOD	I,R	<1	mg/l
1302040	3W 4 03/10/2021 @ 10. 13dill	Suspended Solids	I,R	<2	mg/l
		Total Nitrogen as N	I.R	<0.5	mg/l
		Total Phosphorus as P	I,R	< 0.05	mg/l
		Chloride	I,R	12.4	mg/l
		Nitrate as NO3	I,R	<0.44	0
		Nitrite as NO2	LR	<0.44	mg/l mg/l
		Orthophosphate as PO4-P	I,R	<0.017	mg/l
		Ammonia as N	I,R	< 0.005	mg/l
1362650	SW 9 05/10/2021 @10:58am	BOD	I,R	<1	mg/l
1302030	300 9 03/10/2021 @10.38dill	Suspended Solids	I.R	<2	mg/l
		Total Nitrogen as N	I,R	<0.5	mg/l
		Total Phosphorus as P	I,R	< 0.05	mg/l
		Chloride	I,R	12.4	mg/l
		Nitrate as NO3	I.R	< 0.44	mg/l
		Nitrite as NO2	I,R	< 0.44	mg/l
		Orthophosphate as PO4-P	L.R	<0.017	mg/l
		Ammonia as N	I,R	< 0.005	mg/l
1362655	SW 7 05/10/2021 @12:18pm	BOD BOD	I.R	<1	mg/l
1302000	3W / 03/10/2021 @12.16piii	Suspended Solids	I,R	<2	mg/l
		Total Nitrogen as N	I,R	<0.5	mg/l
		Total Phosphorus as P	I,R	< 0.05	
		Chloride	I.R	10.9	mg/l
		Nitrate as NO3	I,R	< 0.44	mg/l
		Nitrite as NO2	I,R	<0.44	mg/l mg/l
		Orthophosphate as PO4-P	I,R	<0.017	mg/l
		Ammonia as N	I,R	< 0.005	mg/l
1362657	SW 11 05/10/2021 @13:12pm	BOD	I,R	<1	mg/l
1 30203 /	3vv 11 03/10/2021 @13.12piii	Suspended Solids	I,R	<2	mg/l
		Total Nitrogen as N	I,R	<0.5	mg/l
	1.32	Total Phosphorus as P	I,R	< 0.05	mg/l
		Chloride	I,R	11	mg/l
		Nitrate as NO3	L.R	< 0.44	mg/l
		Nitrite as NO2	I,R	<0.44	mg/l
		Orthophosphate as PO4-P	I,R	<0.017	mg/l
	A A	Ammonia as N	I,R	<0.005	mg/l
1362659	SW 12 05/10/2021 @13:35pm	BOD	I,R	<1	mg/l
1207024	3vv 12 05/10/2021 @13:35pm	Participation of the Control of the		<2	
		Suspended Solids Total Nitrogen as N	I,R		mg/l
		Total Nitrogen as N	I,R	< 0.5	mg/l

Page 1 of 3 of Report 465766

Complete Laboratory Solutions, Ros Muc, Connemara, Co. Galway Complete Laboratory Solutions,

MedPharma Division,



		Total Phosphorus as P	I,R	< 0.05	mg/l
	MITTELL STATE OF THE STATE OF T	Chloride	I,R	1.9	mg/l
MALL TIME		Nitrate as NO3	I,R	< 0.44	mg/l
24004011111		Nitrite as NO2	I,R	< 0017	mg/l
77.63P.030.74T		Orthophosphate as PO4-P	I,R	<0.007	mg/l
		Ammonia as N	I,R	< 0.005	mg/l
1362660	SW 6 05/10/2021 @15:48pm	BOD	I,R	<1	bmg/l
J. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.		Suspended Solids	I,R	<2	mg/l
400000		Total Nitrogen as N	I,R	< 0.5	mg/l
1000		Total Phosphorus as P	I,R	< 0.05	mg/l
		Chloride	I,R	13.9	mg/l
		Nitrate as NO3	I,R	< 0.44	mg/l
		Nitrite as NO2	I,R	< 0.017	mg/l
	The state of the s	Orthophosphate as PO4-P	I,R	< 0.01	mg/l
		Ammonia as N	I,R	< 0.005	mg/l



Approved by:

James Feighan Scientific Project Manager

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CLS will test food, water and swabs samples within 24 hours of receipt.

Where samples have been taken by the Client, results apply to the samples as received



Complete Laboratory Solutions, Ros Muc, Connemara, Co. Galway Complete Laboratory Solutions, MedPharma Division, Unit 3a, Small Business Park, Mervue, Galway

Symbol Reference - I:17025 accredited; S:Subcontracted; R:Analysis carried out in Ros Muc; M:Analysis carried out in MedPharma; F:Field test; O:Tested outside hold time.



In-House Test	Specification	Measurement of Uncertainty	17025	GMR/FDA*	ISO**
BOD	CLS 12	+/- 9.33 %	Yes	No	Yes
Suspended Solids	CLS 13	+/- 6.44 %	Yes	No -	Yes
Total Nitrogen as N	CLS 152	+/- 8.72 %	Yes	No 6	Yes
Total Phosphorus as P	CLS 151	+/- 10.53 %	Yes	No 07	Yes
Chloride	Konelab CLS 36	+/- 12.10 %	Yes	No 2	Yes
Nitrate as NO3	Konelab CLS 39	+/- 2 @ 17 mg/I NO3	Yes	No	<u>Y</u> es
Nitrite as NO2	Konelab CLS 37	+/- 7.55 % as N	Yes	No	Y es
Orthophosphate as PO4-P	Konelab CLS 35	+/- 6.87 %	Yes	No	Yes
Ammonia as N	Konelab CLS 40	+/- 5.13 %	Yes	No	Yes

^{*}Analysis carried out in a GMP approved, FDA inspected facility (MedPharma site only).

^{**}Laboratory Analysis, Sampling, Food Safety Monitoring and Analysts on Contract are all ISO 9001 certified.
For environmental samples of lakes and rivers sampled by CLS, accreditation is not being claimed on this report.

Lab No	Sample ID	Sample Condition on Receipt	Sampling Date
1362646	SW 5 05/10/2021 @9: 22am	Good condition	05/10/2021
1362648	SW 4 05/10/2021 @10:13am	Good condition	05/10/2021
1362650	SW 9 05/10/2021 @10:58am	Good condition	05/10/2021
1362655	SW 7 05/10/2021 @12:18pm	Good condition	05/10/2021
1362657	SW 11 05/10/2021 @13:12pm	Good condition	05/10/2021
1362659	SW 12 05/10/2021 @13:35pm	Good condition	05/10/2021
1362660	SW 6 05/10/2021 @15:48pm	Good condition	05/10/2021