Annual Environmental Report

2024

Upper Liffey Valley Sewerage Scheme

D0002-01

CONTENTS

1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2024 AER

1.1 Annual Statement of Measures

1.2 Treatment Summary

1.3 ELV Overview

1.4 License Specific Report Included in AER

2 TREATMENT PLANT PERFORMANCE AND IMPACT SUMMARY

2.1 Osberstown/ Upper Liffey Valley WWTP - Treated Discharge

2.1.1 Influent Summary - Osberstown/ Upper Liffey Valley WWTP

2.1.2 Effluent Monitoring Summary - Osberstown/ Upper Liffey Valley WWTP

2.1.3 Ambient Monitoring Summary for The Treatment Plant Discharge

2.1.4 Operational Reports Summary for Osberstown/ Upper Liffey Valley WWTP

2.1.5 Sludge/Other Inputs to Osberstown/ Upper Liffey Valley WWTP

3 COMPLAINTS AND INCIDENTS

3.1 COMPLAINTS SUMMARY

3.2 REPORTED INCIDENTS SUMMARY

3.2.1 Summary of Incidents

3.2.2 Summary of Overall Incidents

4 INFRASTRUCTURAL ASSESSMENT AND PROGRAMME OF IMPROVEMENTS

4.1 STORM WATER OVERFLOW IDENTIFICATION AND INSPECTION REPORT

4.1.1 SWO Identification and Inspection Summary Report

4.2 REPORT ON PROGRESS MADE AND PROPOSALS BEING DEVELOPED TO MEET THE IMPROVEMENT PROGRAMME REQUIREMENTS

4.2.1 Specified Improvement Programme Summary

4.2.2 Improvement Programme Summary

4.2.3 Sewer Integrity Risk Assessment

5 LICENCE SPECIFIC REPORTS

5.1 Drinking Water Abstraction Point Risk Assessment

5.2 Priority Substances Assessment

6 CERTIFICATION AND SIGN OFF

6.1 Summary of AER Contents

7 APPENDIX

1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2024 AER

This Annual Environmental Report has been prepared for D0002-01, Upper Liffey Valley Sewerage Scheme, in Kildare in accordance with the requirements of the wastewater discharge licence for the agglomeration. Specified reports where relevant are included as an appendix to the AER.

1.1 ANNUAL STATEMENT OF MEASURES

A summary of any improvements undertaken is provided where applicable.

There were no capital works, significant changes or operational changes undertaken at the WwTP in 2024.

1.2 TREATMENT SUMMARY

The agglomeration is served by a wastewater treatment plant(s)

- Osberstown/ Upper Liffey Valley WWTP with a Plant Capacity PE of 130000, the treatment type is 3P - Tertiary P removal.

1.3 ELV OVERVIEW

The overall compliance of the final effluent with the Emission Limit Values (ELVs) is shown below. More detailed information on the below ELV's can be found in Section 2.

Discharge Point Reference	Treatment Plant	Discharge Type	Compliance Status	Parameters failing if relevant
TPEFF1400D0002SW001	Osberstown/ Upper Liffey Valley WWTP	Treated	Non-Compliant	Total Phosphorus (as P) mg/l

1.4 LICENCE SPECIFIC REPORTING

Assessment / Report
Priority Substances Assessment

2 TREATMENT PLANT PERFORMANCE AND IMPACT SUMMARY

2.1 OSBERSTOWN/ UPPER LIFFEY VALLEY WWTP - TREATED DISCHARGE

2.1.1 INFLUENT MONITORING SUMMARY - OSBERSTOWN/ UPPER LIFFEY VALLEY WWTP

A summary of influent monitoring for the treatment plant is presented below. This monitoring is primarily undertaken in order to determine the overall efficiency of the plant in removing pollutants from the raw wastewater.

Parameters	Number of Samples	Annual Max	Annual Mean
ortho-Phosphate (as P) - unspecified mg/l	49	4.70	3.07
Total Nitrogen mg/l	49	55	32
Suspended Solids mg/l	49	378	203
pH pH units	49	7.80	7.57
BOD, 5 days with Inhibition (Carbonaceous) mg/l	49	279	147
Ammonia-Total (as N) mg/l	49	34	24
COD-Cr mg/l	49	558	373
Total Phosphorus (as P) mg/l	49	9.50	5.13
Hydraulic Capacity	N/A	84350	34458

If other inputs in the form of sludge / leachate are added to the WWTP then these are included in Section 2.1.5 if applicable.

Significance of Results:

The annual mean hydraulic loading is less than the peak Treatment Plant Capacity. The annual maximum hydraulic loading is less than the peak Treatment Plant Capacity. Further details on the plant capacity and efficiency can be found under the sectional 'Operational Performance Summary'.

2.1.2 EFFLUENT MONITORING SUMMARY - TPEFF1400D0002SW001

Parameter	WWDL ELV (Schedule A)	ELV with Condition 2 Interpretation included Note 1	Interim % reduction from influent concentration	Number of sample results	Number of exceedances	Number of exceedances with Condition 2 Interpretation included	Annual Mean	Overall Compliance (Pass/Fail)
COD-Cr mg/l	100	200	N/A	50	N/A	N/A	29	Pass
Suspended Solids mg/l	35	87.5	N/A	50	N/A	N/A	15	Pass
Total Oxidised Nitrogen (as N) mg/l	20	24	N/A	49	N/A	N/A	8.52	Pass
Total Nitrogen mg/l	20	24	N/A	49	N/A	N/A	9.30	Pass
Fats, Oils and Greases mg/l	15	18	N/A	12	N/A	N/A	5.69	Pass
BOD, 5 days with Inhibition (Carbonaceous) mg/l	10	20	N/A	49	N/A	N/A	2.17	Pass
pH pH units	6	9	N/A	50	N/A	N/A	7.85	Pass

Parameter	WWDL ELV (Schedule A)	ELV with Condition 2 Interpretation included Note 1	Interim % reduction from influent concentration	Number of sample results	Number of exceedances	Number of exceedances with Condition 2 Interpretation included	Annual Mean	Overall Compliance (Pass/Fail)
Ammonia-Total (as N) mg/l	0.9	1.08	N/A	50	N/A	N/A	0.024	Pass
Total Phosphorus (as P) mg/l	0.9	1.08	N/A	49	1	1	0.537	Fail
ortho-Phosphate (as P) - unspecified mg/l	0.5	0.6	N/A	50	N/A	N/A	0.198	Pass
Nitrate (as N) mg/l	N/A	N/A	N/A	49	N/A	N/A	8.44	
Kjeldahl Nitrogen mg/l	N/A	N/A	N/A	49	N/A	N/A	0.871	
Nitrite (as N) mg/l	N/A	N/A	N/A	49	N/A	N/A	0.044	
Faecal coliforms cfu/100ml	N/A	N/A	N/A	12	N/A	N/A	13931	

Notes:
1 – This represents the Emission Limit Values after the Interpretation provided for under Condition 2 of the licence is applied
2 – For pH the WWDA specifies a range of pH 6 - 9

Cause of Exceedance(s):

Inadequate Operational/Training Procedures.

Significance of Results:

The WWTP is non compliant with the ELV's set in the Wastewater Discharge Licence. The impact on receiving waters is assessed further in Section 2

2.1.3 AMBIENT MONITORING SUMMARY FOR THE TREATMENT PLANT DISCHARGE TPEFF1400D0002SW001

A summary of monitoring from ambient monitoring points associated with the wastewater discharge is provided in the sections below. For discharges to rivers upstream (U/S) and downstream (D/S) location data is provided. For other ambient points in lakes, coastal or transitional waters, monitoring data from the most appropriate monitoring station is selected.

The table below provides details of ambient monitoring locations and details of any designations as sensitive areas.

Ambient Monitoring Point from WWDL (or as agreed with EPA)	Irish Grid Reference	River Station Code	Bathing Water	Drinking Water	FWPM	Shellfish	WFD Ecological Status
Upstream	285423, 220755	RS09L011100	No	No	No	No	Good
Downstream	287711 222643	RS09L011300	No	Yes	No	No	Good
Downstream	286940, 221639	RS09L011200	No	Yes	No	No	Good

The results for ambient results and / or additional monitoring data sets are included in the **Appendix 7.1 - Ambient monitoring summary.**

Significance of Results:

The WWTP discharge was not compliant with the ELV's set in the wastewater discharge licence for the following: Total Phosphorus (as P) mg/l.

The ambient monitoring results do not meet the required EQS at the upstream monitoring location. The EQS relates to the Oxygenation and Nutrient Conditions set out in the Surface Water Regulations 2009.

Based on ambient monitoring results a deterioration in Ammonia concentrations at station RS09L011200 and at station RS09L011300 downstream of the effluent discharge is noted.

A deterioration in water quality has been identified, however it is not known if it or is not caused by the WWTP.

Other causes of deterioration in water quality in the area are unknown.

The discharge from the wastewater treatment plant does not have an observable negative impact on the Water Framework Directive status.

2.1.4 OPERATIONAL PERFORMANCE SUMMARY - OSBERSTOWN/ UPPER LIFFEY VALLEY WWTP

2.1.4.1 Treatment Efficiency Report - Osberstown/ Upper Liffey Valley WWTP

Treatment efficiency is based on the removal of key pollutants from the influent wastewater by the treatment plant. In essence the calculation is based on the balance of load coming into the plant versus the load leaving the plant. The efficiency is presented as a percentage removal rate.

A summary presentation of the efficiency of the treatment process including information for all the parameters specified in the licence is included below:

Parameter	Influent mass loading (kg/year)	Effluent mass emission (kg/year)	Efficiency (% reduction of influent load)
TN	389614	111899	71
TP	62992	6458	90
SS	2496156	178996	93
COD	4580590	352340	92
cBOD	1800967	26082	99

Note: The above data is based on sample results for the number of dates reported.

2.1.4.2 Treatment Capacity Report Summary - Osberstown/ Upper Liffey Valley WWTP

Treatment capacity is an assessment of the hydraulic (flow) and organic (the amount of pollutants) load a treatment plant is designed to treat versus the current loading of that plant.

Osberstown/ Upper Liffey Valley WWTP	
Peak Hydraulic Capacity (m^3/day) - As Constructed	85500
DWF to the Treatment Plant (m^3/day)	28500
Current Hydraulic Loading - annual max (m^3/day)	84350
Average Hydraulic loading to the Treatment Plant (m^3/day)	34458
Organic Capacity (PE) - As Constructed	130000
Organic Capacity (PE) - Collected Load (peak week)[Note1]	100143
Organic Capacity (PE) - Remaining	29857
Will the capacity be exceeded in the next three years? (Yes/No)	No

Nominal design capacities can be based on conservative design principles. In some cases assessment of existing plants has shown organic capacities significantly higher than the nominal design capacity. Accordingly plants that appear to be overloaded when comparing a collected peak load with the nominal design capacity can be fully compliant due to the safety factors in the original design.

2.1.5 SLUDGE / OTHER INPUTS - OSBERSTOWN/ UPPER LIFFEY VALLEY WWTP

'Other inputs' to the waste water treatment plant are summarised in table below

Input type	Quantity	Unit	P.E.	% of load to WWTP	Included in Influent Monitoring (Y/N)?	Is there a leachate/sludge acceptance procedure for the WWTP?	Is there a dedicated leachate/sludge acceptance facility for the WWTP? (Y/N)
Landfill Leachate (delivered by sewer network)	19208	Volume (m3)	234	0.15	Yes	No	No
Other	10297.54	Tonnes	125	0.08	Yes	Yes	Yes
Waterworks Sludge	600.26	Tonnes	7.31	0.004	Yes	Yes	Yes

3 COMPLAINTS AND INCIDENTS

3.1 COMPLAINTS SUMMARY

A summary of complaints of an environmental nature related to the discharge(s) to water from the WWTP and network is included below.

Number of Complaints	Nature of Complaint	Number Open Complaints	Number Closed Complaints
1	Water Pollution	0	1

3.2 REPORTED INCIDENTS SUMMARY

Environmental incidents that arise in an agglomeration are reported on an on-going basis in accordance with our waste water discharge licences. Where an incident occurs and it is reportable under the licence, it is reported to the Environmental Protection Agency through their Environmental Data Exchange Network, or in some instances by telephone. Some incidents which arise in the agglomeration are recorded by Uisce Éireann but may not be reportable under our licence for example where the incident does not have an impact on environmental performance.

A summary of reported incidents is included below.

3.2.1 SUMMARY OF INCIDENTS

Incident Type	Cause	Recurring (Y/N)	Closed (Y/N)
Uncontrolled release	Emergency overflow caused by ragging or blocking	No	Yes
Uncontrolled release	SWO exceptional rainfall and overflow expected	No	Yes
Uncontrolled release	Emergency overflow caused by power failure	No	Yes

Incident Type	Cause	Recurring (Y/N)	Closed (Y/N)
Uncontrolled release	Network Infrastructure	No	Yes
Uncontrolled release	Blocked Sewer	No	Yes
Uncontrolled release	Blocked Sewer	No	Yes
Uncontrolled release	SWO exceptional rainfall and overflow expected	No	Yes
Breach of ELV	Inadequate Operational Procedures/Training	No	Yes
Uncontrolled release	SWO exceptional rainfall and overflow expected	No	Yes

3.2.2 SUMMARY OF OVERALL INCIDENTS

Question	Answer
Number of Incidents in 2024	9
Number of Incidents reported to the EPA via EDEN in 2024	9
Explanation of any discrepancies between the two numbers above	N/A

4 INFRASTRUCTURAL ASSESSMENTS AND PROGRAMME OF IMPROVEMENTS

4.1 STORM WATER OVERFLOW IDENTIFICATION AND INSPECTION REPORT

A summary of the operation of the storm water overflows and their significance where known is included below:

4.1.1 SWO IDENTIFICATION

WWDL Name / Code for Storm Water Overflow (chamber) where applicable	Irish Grid Ref. (outfall)	Included in Schedule of the WWDL	Significance of the overflow(High / Medium / Low)	Assessed against DoEHLG Criteria	No. of times activated in 2024 (No. of events)	Total volume discharged in 2024 (m^3)	Monitoring Status
GW2	278157, 210416	Yes	High Significance	Not Meeting Criteria	Unknown	Unknown	Monitored
SW019	281185, 216905	Yes	High Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
SW10	290250, 221496	Yes	High Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
SW11	291938, 221572	Yes	High Significance	Meeting Criteria	Unknown	Unknown	Monitored
SW13	288495, 223661	Yes	High Significance	Meeting Criteria	Unknown	Unknown	Monitored
SW14	282894, 227675	Yes	High Significance	Meeting Criteria	Unknown	Unknown	Monitored

WWDL Name / Code for Storm Water Overflow (chamber) where applicable	Irish Grid Ref. (outfall)	Included in Schedule of the WWDL	Significance of the overflow(High / Medium / Low)	Assessed against DoEHLG Criteria	No. of times activated in 2024 (No. of events)	Total volume discharged in 2024 (m^3)	Monitoring Status
SW15	294105, 224021	Yes	High Significance	Not Meeting Criteria	Unknown	Unknown	Monitored
SW16	294122, 223047	Yes	High Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
SW17	284096, 209917	Yes	High Significance	Meeting Criteria	Unknown	Unknown	Monitored
SW18	288003, 227114	Yes	High Significance	Meeting Criteria	Unknown	Unknown	Monitored
SW19	281841, 212369	Yes	High Significance	Meeting Criteria	Unknown	Unknown	Monitored
SW2	286904, 220669	Yes	High Significance	Meeting Criteria	Unknown	13358	Monitored
SW2	278959, 208228	Yes	High Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
SW20	279004, 208215	Yes	High Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
SW21	276234, 206829	Yes	High Significance	Meeting Criteria	Unknown	Unknown	Monitored
SW22	284960, 221155	Yes	High Significance	Meeting Criteria	Unknown	Unknown	Monitored

WWDL Name / Code for Storm Water Overflow (chamber) where applicable	Irish Grid Ref. (outfall)	Included in Schedule of the WWDL	Significance of the overflow(High / Medium / Low)	Assessed against DoEHLG Criteria	No. of times activated in 2024 (No. of events)	Total volume discharged in 2024 (m^3)	Monitoring Status
SW3	285213, 219831	Yes	High Significance	Meeting Criteria	Unknown	Unknown	Monitored
SW5	281664, 217255	Yes	High Significance	Not Meeting Criteria	Unknown	Unknown	Monitored
SW6	280695, 215432	Yes	High Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
SW8	280791, 214479	Yes	High Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
SW9	290251, 221506	Yes	High Significance	Meeting Criteria	Unknown	Unknown	Monitored
TBC	281356, 213626	Yes	High Significance	Not Meeting Criteria	Unknown	Unknown	Not Monitored
TBC	281841, 212369	Yes	High Significance	Meeting Criteria	Unknown	Unknown	Monitored

The contents presented in this table include the most up to date information available at the time of writing. Any TBC SWO(s) were identified as part of the on-going National SWO programme and will be updated in subsequent AER(s) once the information is confirmed.

SWO Summary	
How much wastewater discharge by metered SWOs during the year (m^3)?	13358
Is each SWO identified as not meeting DoEHLG Guidance included in the Programme of Improvements?	Yes
The SWO Assessment included the requirements of relevant of WWDL schedules?	Yes

SWO Summary	
Have the EPA been advised of any additional SWOs / changes to Schedule C3 and A4 under Condition 1.7?	No

4.2 REPORT ON PROGRESS MADE AND PROPOSALS BEING DEVELOPED TO MEET THE IMPROVEMENT PROGRAMME REQUIREMENTS

4.2.1 SPECIFIED IMPROVEMENT PROGRAMME SUMMARY

A wastewater discharge licence may require a number of reports on specific subject areas to be prepared for the agglomeration in question. These reports are submitted to the EPA as part of the Annual Environmental Report. This section provides a list of the various reports required for this agglomeration and a brief summary of their recommendations.

Specified Improvement Programmes (under Schedule A and C of WWDL)	Description	Licence Schedule	Licence Completion Date	Date Expired? (N/NA/Y)	Status of Works	Timeframe for Completing the Work	Comments
D0002-SIP:01	Infiltration programme	C	31/03/2013	Yes	Works Completed		
D0002-SIP:02	Infiltration programme	C	31/03/2013	Yes	Works Completed		
D0002-SIP:03	Upgrade of the Monread Road Pumping Station (associate with SW9)	C	31/03/2013	Yes	Works Completed		
D0002-SIP:04	Upgrade of the Newhall Pumping Station (associated with SW3),	C	31/03/2013	Yes	Works Completed		

Specified Improvement Programmes (under Schedule A and C of WWDL)	Description	Licence Schedule	Licence Completion Date	Date Expired? (N/NA/Y)	Status of Works	Timeframe for Completing the Work	Comments
D0002-SIP:05	Upgrade to Blessington Road Pumping Station	C	31/03/2011	Yes	Works Completed		
D0002-SIP:06	Upgrading of sewer network to ensure all SWO comply with the criteria outlined in the DoEHLG 'Procedures and Criteria in relation to Storm Water Overflows, 1995'	C	31/12/2020	No	Works Completed		
D0002-SIP:07	Waste water sewer network rehabilitation programme	C	31/03/2013	Yes	Works Completed		
D0002-SIP:08	Waste Water treatment plant upgrade and ancillary works	C	31/03/2013	Yes	Works Completed		
D0002-SIP:09	Waste Water works network rehabilitation programme	C	31/03/2013	No	Works Completed		

A summary of the status of any other improvements identified by under Condition 5 assessments- is included below.

4.2.2 IMPROVEMENT PROGRAMME SUMMARY

Improvement Identifier	Improvement Description / or any Operational Improvements	Improvement Source	Expected Completion Date	Comments
No additional improvements planned at this time.				

4.2.3 SEWER INTEGRITY RISK ASSESSMENT

The utilisation of multiple capital maintenance programmes and the outputs of the workshops with the Local Authority Operations Staff held under the programme can be used to satisfy the requirements of Condition 5 regarding network integrity. Improvement works identified by way of these programmes and workshops will be included in the Improvements Summary Tables 4.2.1 and 4.2.2.

5 LICENCE SPECIFIC REPORTS

A wastewater discharge licence may require a number of reports on specific subject areas to be prepared for the agglomeration in question. These reports are submitted to the EPA as part of the Annual Environmental Report. This section provides a list of the various reports required for this agglomeration and a brief summary of their recommendations.

Licence Specific Report	Required by licence	Included in this AER
D0002-01-Drinking Water Abstraction Point Risk Assessment	Yes	No
D0002-01-Priority Substances Assessment	Yes	Yes

6 CERTIFICATION AND SIGN OFF

6.1 SUMMARY OF AER CONTENTS

Parameter	Answer
Does the AER include an Executive Summary?	Yes
Does the AER include an assessment of the performance of the Waste Water Works (i.e. have the results of assessments been interpreted against WWDL requirements and or Environmental Quality Standards)?	Yes
Is there a need to advise the EPA for Consideration of a Technical Amendment/Review of the Licence?	Yes
List reason e.g. additional SWO identified	Additional SWOs
Is there a need to request/advise the EPA of any modification to the existing WWDL with respect to condition 4 changes to monitoring location, frequency etc	Yes
List reason e.g. changes to monitoring requirements	Ambient Monitoring Location Changes
Have these processes commenced?	No
Are all outstanding reports and assessments from previous AERs included as an appendix to this AER	Yes

I certify that the information given in this Annual Environmental Report is truthful, accurate and complete:

Date: 26/04/2025

This AER has been produced by Uisce Éireann's Environmental Information System (EIMS) and has been electronically signed off in that system for and on behalf of,

Eleanor Roche

Head of Environmental Regulation.

7 APPENDIX

Appendix
Appendix 7.1 - Ambient Monitoring Summary
Appendix 7.2 - Priority Substances Assessment

ULVSS Ambient Monitoring Summary 2024

Ambient Monitoring Point from WWDL (or as agreed with EPA)	Irish National Grid Reference (Easting, Northing)	EPA Feature Coding Tool code	Receiving Waters Designation (Yes/No)			
			Bathing Water	Drinking Water	FWPM	Shellfish
Upstream Monitoring Point	285423, 220755	RS09L011100	No	No	No	No
Downstream Monitoring Point #1	286940, 221639	RS09L011200	No	Yes	No	No
Downstream Monitoring Point #2	287711, 222643	RS09L011300	No	Yes	No	No

Ambient Monitoring Point from WWDL (or as agreed with EPA)	Current WFD Status	cBOD	o-Phosphate (as P)	Ammonia (as N)
Upstream Monitoring Point	Good	2.593	0.013	0.019
Downstream Monitoring Point #1	Good	1.030	0.007	0.031
Downstream Monitoring Point #2	Good	0.756	0.007	0.032
Difference between Upstream and Downstream #1		-1.563	-0.006	0.012
Difference between Upstream and Downstream #2		*-1.838*	*-0.006*	*0.013*
EQS		1.500	0.035	0.065
% of EQS *#1*		-104.21%	-16.35%	18.29%
% of EQS *#2*		-122.50%	-16.35%	20.37%

2024 ULVSS Ambient Monitoring Data

Upstream Results										
Station Name	Sample Date	Temperature oC	pH pH units	BOD mg/ l	DO mg/l	Total Nitrogen mg/l	Faecal Coliforms cfu	Ammonia mg/l	Ortho-Phosphate mg/l	OFG mg/l
u/s SW1	10/01/2024	5	7.81	< 1	12.09	1.3	1000	0.042	< 0.01	7
u/s SW1	14/02/2024	9.8	7.71	3	10.78	2.2	430	< 0.015	< 0.01	5
u/s SW1	10/04/2024	9.9	7.92	3	10.76	2.4	320	< 0.015	< 0.01	< 2
u/s SW1	17/04/2024	10.2	7.8	4	10.59	1.7	56			6
u/s SW1	08/05/2024	13.3	8.15	5	10.24	2.2	240	< 0.015	< 0.01	< 2
u/s SW1	10/06/2024	13.1	8.03	3	9.94	1.9	230	0.02	< 0.01	12
u/s SW1	10/07/2024	14.5	8.06	5	9.01	2.2	930	< 0.015	< 0.01	15
u/s SW1	14/08/2024	16.9	7.59	< 1	8.84	1.3	460	< 0.015	0.07	9
u/s SW1	11/09/2024	13.6	7.64	2	9.47	1.3	240	0.061	< 0.01	6
u/s SW1	16/10/2024	12.7	7.91	2	9.43	1.3	2400	< 0.015	< 0.01	< 2
u/s SW1	13/11/2024	7.7	8.29	2	11.55	2.5	860	< 0.015	< 0.01	6
u/s SW1	11/12/2024	7.4	7.62	< 1	11.53	1.4	120	< 0.015	< 0.01	12
Mean		**11.175**	**7.878**	**2.593**	**10.353**	**1.808**	**607.167**	**0.019**	**0.013**	**6.854**
95%ile		**15.580**	**8.213**	**5.000**	**11.793**	**2.445**	**1,630.000**	**0.052**	**0.039**	**13.350**

Downstream Results										
Station Name	Sample Date	Temperature oC	pH pH units	BOD mg/ l	DO mg/l	Total Nitrogen mg/l	Faecal Coliforms cfu	Ammonia mg/l	Ortho-Phosphate mg/l	OFG mg/l
d/s SW1	10/01/2024	5	8.01	< 1	12.22	1.5	190	0.082	< 0.01	10
d/s SW1	14/02/2024	9.8	7.93	< 1	10.81	1.9	800	< 0.015	< 0.01	7
d/s SW1	10/04/2024	9.7	8.12	1	10.5	2.3	150	0.042	< 0.01	< 2
d/s SW1	17/04/2024	10.1	7.99	< 1	10.62	1.7	1400			4
d/s SW1	08/05/2024	13.5	8.31	< 1	9.96	2.5	510	< 0.015	< 0.01	3
d/s SW1	10/06/2024	13	8.17	< 1	9.7	2.3	290	0.028	< 0.01	8
d/s SW1	10/07/2024	14.1	8.2	< 1	8.99	2.4	6000	< 0.015	< 0.01	< 2
d/s SW1	14/08/2024	16.6	7.93	< 1	8.68	1.8	1400	0.024	< 0.01	8
d/s SW1	11/09/2024	13.3	7.91	< 1	9.39	1.4	280	0.099	< 0.01	10
d/s SW1	16/10/2024	12.8	8.1	4	9.39	2	3500	< 0.015	< 0.01	< 2
d/s SW1	13/11/2024	8.1	8.3	< 1	11.29	1.8	200	< 0.015	< 0.01	8
d/s SW1	11/12/2024	7.1	7.84	1	11.83	1.3	60	< 0.015	< 0.01	4
Mean		**11.092**	**8.068**	**1.030**	**10.282**	**1.908**	**1,232**	**0.031**	**0.007**	**5.520**
95%ile		**15.225**	**8.305**	**2.350**	**12.006**	**2.445**	**4,625**	**0.091**	**0.007**	**10.000**

Downstream Results										
Station Name	Sample Date	Temperature oC	pH pH units	BOD mg/ l	DO mg/l	Total Nitrogen mg/l	Faecal Coliforms cfu	Ammonia mg/l	Ortho-Phosphate mg/l	OFG mg/l
d/s SW2	10/01/2024	5	8.05	< 1	12.16	1.3	200	0.1	< 0.01	22
d/s SW2	14/02/2024	9.3	8.06	< 1	10.79	1.9	600	0.017	< 0.01	4
d/s SW2	10/04/2024	9.6	8.16	< 1	10.49	2.3	630	< 0.015	< 0.01	3
d/s SW2	17/04/2024	10.1	8.06	< 1	10.65	1.7	2600			13
d/s SW2	08/05/2024	13.6	8.39	< 1	9.91	2.6	540	< 0.015	< 0.01	6
d/s SW2	10/06/2024	13	8.22	< 1	9.58	2.2	390	< 0.015	< 0.01	3
d/s SW2	10/07/2024	14.3	8.25	< 1	9.09	2.3	520	< 0.015	< 0.01	4
d/s SW2	14/08/2024	16.6	8.01	1	8.66	1.8	900	0.044	< 0.01	8
d/s SW2	11/09/2024	13.4	7.99	< 1	9.34	1.4	320	< 0.015	< 0.01	3
d/s SW2	16/10/2024	13	8.1	1	9.28	2.3	13000	<0.015	< 0.01	<2
d/s SW2	13/11/2024	8.4	8.33	<1	11.22	2.2	280	<0.015	< 0.01	16
d/s SW2	11/12/2024	7.2	7.93	<1	11.86	1.3	70	<0.015	< 0.01	4
Mean		**11.125**	**8.129**	**0.756**	**10.253**	**1.942**	**1,671**	**0.022**	**0.007**	**7.285**
95%ile		**15.335**	**8.357**	**1.000**	**11.995**	**2.435**	**7,280**	**0.072**	**0.007**	**18.700**

Note: Where the concentration in the result is less than the limit of detection (LOD), a value of LOD/sqrt(2) was used in calculating the mean and 95%ile concentrations.

t m s environment ltd

TMS Environment Ltd
53 Broomhill Drive
Tallaght
Dublin 24

Phone: +353-1-4626710
Fax: +353-1-4626714
Web: www.tmsenv.ie

ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 150T

Plant Name **Osberstown**
Date issued **28/02/2025**
Sample date **31/07/2024**
Sample Ref Number **33585-2 Rev.1.0**

Parameter	Result	Measurement Unit	Accredited	Target LOQ (EPA / UE requirement)	Notes
1,2-Dichloroethane	< 0.3	µg/l	Yes Subcontracted	0.1	LOD raised due to matrix
Alachlor	< 0.02	µg/l	Yes Subcontracted	0.01	LOD raised due to matrix
Aldrin	< 0.02	µg/l	Yes Subcontracted	0.003	LOD raised due to matrix
Anthracene	< 0.01	µg/l	Yes Subcontracted	0.005	LOD raised due to matrix
Halogenated organic compounds (as AOX)	59	µg/l	Yes Subcontracted	10	
Arsenic and compounds (as As)	0.54	µg/l	Yes Subcontracted	0.5	
Atrazine	< 0.02	µg/l	Yes Subcontracted	0.02	
Benzene	< 0.3	µg/l	Yes Subcontracted	0.1	LOD raised due to matrix
Benzo(g,h,i)perylene	< 0.01	µg/l	Yes Subcontracted	0.005	LOD raised due to matrix
C10-C13 Chloroalkanes	< 1	µg/l	Yes Subcontracted	50	
Cadmium and compounds (as Cd)	< 0.02	µg/l	Yes Subcontracted	0.45	
Chlorfenvinphos	< 0.02	µg/l	Yes Subcontracted	0.15	
Chlorides (as total Cl)	96	mg/l	Yes in House	Not applicable	
Chlorpyriphos	< 0.02	µg/l	Yes Subcontracted	0.05	
Chromium and compounds (as Cr)	0.56	µg/l	Yes Subcontracted	1	
Copper and compounds (as Cu)	2.9	µg/l	Yes Subcontracted	1	
Cyanides (as total CN)	< 5	µg/l	Yes Subcontracted	10	
Di(2-ethylhexyl) phthalate (DEHP)	< 1	µg/l	Yes Subcontracted	2	
Dieldrin	< 1	ng/l	Yes Subcontracted	5	
Diuron	< 0.02	µg/l	Yes Subcontracted	0.03	
Endrin	< 0.02	µg/l	Yes Subcontracted	0.003	LOD raised due to matrix
Ethylbenzene	< 0.3	µg/l	Yes Subcontracted	0.5	
Fluoranthene	< 0.01	µg/l	Yes Subcontracted	0.005	LOD raised due to matrix
Fluorides (as total F)	< 0.5	mg/l	Yes in House	Not applicable	
gamma-BHC / HCH (Lindane)	< 0.02	µg/l	Yes Subcontracted	0.005	LOD raised due to matrix
Heptachlor	< 0.02	µg/l	Yes Subcontracted	0.003	LOD raised due to matrix

Hexachlorobenzene	< 0.3	µg/l	Yes Subcontracted	0.05	LOD raised due to matrix
Hexachlorobutadiene	< 1	µg/l	Yes Subcontracted	0.1	LOD raised due to matrix
Isodrin	< 0.02	µg/l	Yes Subcontracted	0.05	
Isoproturon	< 0.1	µg/l	Yes Subcontracted	0.1	
Lead and compounds (as Pb)	< 0.09	µg/l	Yes Subcontracted	1	
Mercury and compounds (as Hg)	< 0.0010	µg/l	Yes Subcontracted	0.2	
Methylene Chloride / Dichloromethane	< 0.3	µg/l	Yes Subcontracted	0.5	
Mirex	< 0.20	µg/l	Yes Subcontracted	0.01	LOD raised due to matrix
Naphthalene	< 0.05	µg/l	Yes Subcontracted	0.005	LOD raised due to matrix
Nickel and compounds (as Ni)	6.4	µg/l	Yes Subcontracted	1	
Nonylphenol ethoxylates (Sum)	< 1	µg/l	Yes Subcontracted	0.6	LOD raised due to matrix
Organo-Tin compounds	< 1	µg/l	Yes Subcontracted	0.05	LOD raised due to matrix
PCBs (Total)	< 1.0	µg/l	Yes Subcontracted	0.07	LOD raised due to matrix
Phenols (Total)	< 1	µg/l	Yes Subcontracted	50	
Polyaromatic Hydrocarbons (PAH) -Sum	< 0.20	µg/l	Yes Subcontracted	0.03	LOD raised due to matrix
Simazine	< 0.02	µg/l	Yes Subcontracted	0.02	
Tetrachloroethylene	< 0.3	µg/l	Yes Subcontracted	0.1	LOD raised due to matrix
Toluene	< 0.3	µg/l	Yes Subcontracted	0.1	LOD raised due to matrix
Toxaphene	< 20.0	µg/l	Yes Subcontracted	0.1	LOD raised due to matrix
Tributyltin and compounds	< 1.0	µg/l	Yes Subcontracted	0.02	
Trichlorobenzene (all isomers)	< 0.3	µg/l	Yes Subcontracted	0.01	LOD raised due to matrix
Trichloroethene (all isomers)	< 0.3	µg/l	Yes Subcontracted	0.1	LOD raised due to matrix
Trifluralin	< 0.02	µg/l	Yes Subcontracted	0.05	
Triphenyltin and compounds	< 1	µg/l	Yes Subcontracted	0.05	LOD raised due to matrix
Vinyl Chloride	< 0.3	µg/l	Yes Subcontracted	0.1	LOD raised due to matrix
Xylenes (Total)	< 0.3	µg/l	Yes Subcontracted	0.1	LOD raised due to matrix
Zinc and compounds (as Zn)	120	µg/l	Yes Subcontracted	8	
Total Organic Carbon (TOC)	20	mg/l	Yes in House	Not applicable	

** On-site accredited tests: pH, conductivity, dissolved oxygen, temperature

Approved by:

Dr Prathibha Ganesh Nair
Laboratory Manager

t m s environment ltd

TMS Environment Ltd
53 Broomhill Drive
Tallaght
Dublin 24

Phone: +353-1-4626710
Fax: +353-1-4626714
Web: www.tmsenv.ie

ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 150T

Plant Name **Osberstown**
Date issued **28/02/2025**
Sample date **28/08/2024**
Sample Ref Number **33692-2 Rev.1.0**

Parameter	Result	Measurement Unit	Accredited	Target LOQ (EPA / UE requirement)	Notes
1,2-Dichloroethane	< 0.3	µg/l	Yes Subcontracted	0.1	LOD raised due to matrix
Alachlor	< 0.02	µg/l	Yes Subcontracted	0.01	LOD raised due to matrix
Aldrin	< 0.02	µg/l	Yes Subcontracted	0.003	LOD raised due to matrix
Anthracene	< 0.01	µg/l	Yes Subcontracted	0.005	LOD raised due to matrix
Halogenated organic compounds (as AOX)	195	µg/l	Yes Subcontracted	10	
Arsenic and compounds (as As)	0.46	µg/l	Yes Subcontracted	0.5	
Atrazine	< 0.02	µg/l	Yes Subcontracted	0.02	
Benzene	< 0.3	µg/l	Yes Subcontracted	0.1	LOD raised due to matrix
Benzo(g,h,i)perylene	< 0.01	µg/l	Yes Subcontracted	0.005	LOD raised due to matrix
C10-C13 Chloroalkanes	< 1	µg/l	Yes Subcontracted	50	
Cadmium and compounds (as Cd)	0.02	µg/l	Yes Subcontracted	0.45	
Chlorfenvinphos	< 0.02	µg/l	Yes Subcontracted	0.15	
Chlorides (as total Cl)	98.5	mg/l	Yes in House	Not applicable	
Chlorpyriphos	< 0.02	µg/l	Yes Subcontracted	0.05	
Chromium and compounds (as Cr)	0.46	µg/l	Yes Subcontracted	1	
Copper and compounds (as Cu)	1.7	µg/l	Yes Subcontracted	1	
Cyanides (as total CN)	1.4	µg/l	Yes Subcontracted	10	
Di(2-ethylhexyl) phthalate (DEHP)	< 1	µg/l	Yes Subcontracted	2	
Dieldrin	< 1	ng/l	Yes Subcontracted	5	
Diuron	< 0.02	µg/l	Yes Subcontracted	0.03	
Endrin	< 0.02	µg/l	Yes Subcontracted	0.003	LOD raised due to matrix
Ethylbenzene	< 1	µg/l	Yes Subcontracted	0.5	
Fluoranthene	< 0.01	µg/l	Yes Subcontracted	0.005	LOD raised due to matrix
Fluorides (as total F)	< 0.5	mg/l	Yes in House	Not applicable	
gamma-BHC / HCH (Lindane)	< 0.02	µg/l	Yes Subcontracted	0.005	LOD raised due to matrix
Heptachlor	< 0.02	µg/l	Yes Subcontracted	0.003	LOD raised due to matrix

Hexachlorobenzene	< 0.3	µg/l	Yes Subcontracted	0.05	LOD raised due to matrix
Hexachlorobutadiene	< 1	µg/l	Yes Subcontracted	0.1	LOD raised due to matrix
Isodrin	< 0.02	µg/l	Yes Subcontracted	0.05	
Isoproturon	< 0.1	µg/l	Yes Subcontracted	0.1	
Lead and compounds (as Pb)	0.37	µg/l	Yes Subcontracted	1	
Mercury and compounds (as Hg)	0.001	µg/l	Yes Subcontracted	0.2	
Methylene Chloride / Dichloromethane	< 0.3	µg/l	Yes Subcontracted	0.5	
Mirex	< 0.20	µg/l	Yes Subcontracted	0.01	LOD raised due to matrix
Naphthalene	< 0.05	µg/l	Yes Subcontracted	0.005	LOD raised due to matrix
Nickel and compounds (as Ni)	6.6	µg/l	Yes Subcontracted	1	
Nonylphenol ethoxylates (Sum)	< 1	µg/l	Yes Subcontracted	0.6	LOD raised due to matrix
Organo-Tin compounds	< 1	µg/l	Yes Subcontracted	0.05	LOD raised due to matrix
PCBs (Total)	< 1.0	µg/l	Yes Subcontracted	0.07	LOD raised due to matrix
Phenols (Total)	< 1	µg/l	Yes Subcontracted	50	
Polyaromatic Hydrocarbons (PAH) -Sum	< 0.20	µg/l	Yes Subcontracted	0.03	
Simazine	< 0.02	µg/l	Yes Subcontracted	0.02	
Tetrachloroethylene	< 0.3	µg/l	Yes Subcontracted	0.1	LOD raised due to matrix
Toluene	< 0.3	µg/l	Yes Subcontracted	0.1	LOD raised due to matrix
Toxaphene	< 20.0	µg/l	Yes Subcontracted	0.1	LOD raised due to matrix
Tributyltin and compounds	< 1.0	µg/l	Yes Subcontracted	0.02	LOD raised due to matrix
Trichlorobenzene (all isomers)	< 0.3	µg/l	Yes Subcontracted	0.01	LOD raised due to matrix
Trichloroethene (all isomers)	< 0.3	µg/l	Yes Subcontracted	0.1	LOD raised due to matrix
Trifluralin	< 0.02	µg/l	Yes Subcontracted	0.05	
Triphenyltin and compounds	< 1	µg/l	Yes Subcontracted	0.05	LOD raised due to matrix
Vinyl Chloride	< 0.3	µg/l	Yes Subcontracted	0.1	LOD raised due to matrix
Xylenes (Total)	< 0.3	µg/l	Yes Subcontracted	0.1	LOD raised due to matrix
Zinc and compounds (as Zn)	56	µg/l	Yes Subcontracted	8	
Total Organic Carbon (TOC)	< 15	mg/l	Yes in House	Not applicable	

** On-site accredited tests: pH, conductivity, dissolved oxygen, temperature

Approved by:

Dr Prathibha Ganesh Nair
Laboratory Manager

t m s environment ltd

TMS Environment Ltd
53 Broomhill Drive
Tallaght
Dublin 24

Phone: +353-1-4626710
Fax: +353-1-4626714
Web: www.tmsenv.ie

ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 150T

Plant Name **Osberstown**
Date issued **28/02/2025**
Sample date **25/09/2024**
Sample Ref Number **33809-2 Rev.1.0**

Parameter	Result	Measurement Unit	Accredited	Target LOQ (EPA / UE requirement)	Notes
1,2-Dichloroethane	< 0.3	µg/l	Yes Subcontracted	0.1	LOD raised due to matrix
Alachlor	< 0.02	µg/l	Yes Subcontracted	0.01	LOD raised due to matrix
Aldrin	< 0.02	µg/l	Yes Subcontracted	0.003	LOD raised due to matrix
Anthracene	< 0.01	µg/l	Yes Subcontracted	0.005	LOD raised due to matrix
Halogenated organic compounds (as AOX)	44	µg/l	Yes Subcontracted	10	
Arsenic and compounds (as As)	0.41	µg/l	Yes Subcontracted	0.5	
Atrazine	< 0.02	µg/l	Yes Subcontracted	0.02	
Benzene	< 0.3	µg/l	Yes Subcontracted	0.1	LOD raised due to matrix
Benzo(g,h,i)perylene	< 0.01	µg/l	Yes Subcontracted	0.005	LOD raised due to matrix
C10-C13 Chloroalkanes	< 1	µg/l	Yes Subcontracted	50	
Cadmium and compounds (as Cd)	< 0.02	µg/l	Yes Subcontracted	0.45	
Chlorfenvinphos	< 0.02	µg/l	Yes Subcontracted	0.15	
Chlorides (as total Cl)	30	mg/l	Yes in House	Not applicable	
Chlorpyriphos	< 0.02	µg/l	Yes Subcontracted	0.05	
Chromium and compounds (as Cr)	< 0.25	µg/l	Yes Subcontracted	1	
Copper and compounds (as Cu)	1.2	µg/l	Yes Subcontracted	1	
Cyanides (as total CN)	0.9	µg/l	Yes Subcontracted	10	
Di(2-ethylhexyl) phthalate (DEHP)	< 1	µg/l	Yes Subcontracted	2	
Dieldrin	< 1	ng/l	Yes Subcontracted	5	
Diuron	< 0.02	µg/l	Yes Subcontracted	0.03	
Endrin	< 0.02	µg/l	Yes Subcontracted	0.003	
Ethylbenzene	< 0.3	µg/l	Yes Subcontracted	0.5	LOD raised due to matrix
Fluoranthene	< 0.01	µg/l	Yes Subcontracted	0.005	LOD raised due to matrix
Fluorides (as total F)	< 0.5	mg/l	Yes in House	Not applicable	
gamma-BHC / HCH (Lindane)	< 0.3	µg/l	Yes Subcontracted	0.005	LOD raised due to matrix

Heptachlor	< 0.3	µg/l	Yes Subcontracted	0.003	
Hexachlorobenzene	< 0.3	µg/l	Yes Subcontracted	0.05	LOD raised due to matrix
Hexachlorobutadiene	< 0.3	µg/l	Yes Subcontracted	0.1	LOD raised due to matrix
Isodrin	< 0.02	µg/l	Yes Subcontracted	0.05	
Isoproturon	< 0.02	µg/l	Yes Subcontracted	0.1	
Lead and compounds (as Pb)	< 0.09	µg/l	Yes Subcontracted	1	
Mercury and compounds (as Hg)	0.0012	µg/l	Yes Subcontracted	0.2	
Methylene Chloride / Dichloromethane	< 0.3	µg/l	Yes Subcontracted	0.5	
Mirex	< 0.02	µg/l	Yes Subcontracted	0.01	LOD raised due to matrix
Naphthalene	< 0.05	µg/l	Yes Subcontracted	0.005	LOD raised due to matrix
Nickel and compounds (as Ni)	2.9	µg/l	Yes Subcontracted	1	
Nonylphenol ethoxylates (Sum)	< 1	µg/l	Yes Subcontracted	0.6	LOD raised due to matrix
Organo-Tin compounds	< 0.1	µg/l	Yes Subcontracted	0.05	LOD raised due to matrix
PCBs (Total)	< 0.01	µg/l	Yes Subcontracted	0.07	
Phenols (Total)	< 1	µg/l	Yes Subcontracted	50	
Polyaromatic Hydrocarbons (PAH) -Sum	< 0.20	µg/l	Yes Subcontracted	0.03	LOD raised due to matrix
Simazine	< 0.02	µg/l	Yes Subcontracted	0.02	
Tetrachloroethylene	< 0.3	µg/l	Yes Subcontracted	0.1	LOD raised due to matrix
Toluene	< 0.3	µg/l	Yes Subcontracted	0.1	LOD raised due to matrix
Toxaphene	< 2.0	µg/l	Yes Subcontracted	0.1	LOD raised due to matrix
Tributyltin and compounds	< 0.1	µg/l	Yes Subcontracted	0.02	LOD raised due to matrix
Trichlorobenzene (all isomers)	< 0.3	µg/l	Yes Subcontracted	0.01	LOD raised due to matrix
Trichloroethene (all isomers)	< 0.3	µg/l	Yes Subcontracted	0.1	LOD raised due to matrix
Trifluralin	< 0.02	µg/l	Yes Subcontracted	0.05	
Triphenyltin and compounds	< 0.1	µg/l	Yes Subcontracted	0.05	LOD raised due to matrix
Vinyl Chloride	< 0.3	µg/l	Yes Subcontracted	0.1	LOD raised due to matrix
Xylenes (Total)	< 0.3	µg/l	Yes Subcontracted	0.1	LOD raised due to matrix
Zinc and compounds (as Zn)	26	µg/l	Yes Subcontracted	8	
Total Organic Carbon (TOC)	< 15	mg/l	Yes in House	Not applicable	

** On-site accredited tests: pH, conductivity, dissolved oxygen, temperature

Approved by:

Dr Prathibha Ganesh Nair
Laboratory Manager

t m s environment ltd

TMS Environment Ltd
53 Broomhill Drive
Tallaght
Dublin 24

Phone: +353-1-4626710
Fax: +353-1-4626714
Web: www.tmsenv.ie

ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 150T

Plant Name **Osberstown**
Date issued **03/03/2025**
Sample date **27/11/2024**
Sample Ref Number **34025-2 Rev.1.0**

Parameter	Result	Measurement Unit	Accredited	Target LOQ (EPA / UE requirement)	Notes
1,2-Dichloroethane	< 0.3	µg/l	Yes Subcontracted	0.1	LOD raised due to matrix
Alachlor	< 0.02	µg/l	Yes Subcontracted	0.01	LOD raised due to matrix
Aldrin	< 1.0	µg/l	Yes Subcontracted	0.003	LOD raised due to matrix
Anthracene	< 0.01	µg/l	Yes Subcontracted	0.005	LOD raised due to matrix
Halogenated organic compounds (as AOX)	47	µg/l	Yes Subcontracted	10	
Arsenic and compounds (as As)	0.5	µg/l	Yes Subcontracted	0.5	
Atrazine	< 0.02	µg/l	Yes Subcontracted	0.02	
Benzene	< 0.3	µg/l	Yes Subcontracted	0.1	LOD raised due to matrix
Benzo(g,h,i)perylene	< 0.01	µg/l	Yes Subcontracted	0.005	LOD raised due to matrix
C10-C13 Chloroalkanes	< 0.1	µg/l	Yes Subcontracted	50	
Cadmium and compounds (as Cd)	< 0.02	µg/l	Yes Subcontracted	0.45	
Chlorfenvinphos	< 0.02	µg/l	Yes Subcontracted	0.15	
Chlorides (as total Cl)	126	mg/l	Yes in House	Not applicable	
Chlorpyriphos	< 0.02	µg/l	Yes Subcontracted	0.05	
Chromium and compounds (as Cr)	4.3	µg/l	Yes Subcontracted	1	
Copper and compounds (as Cu)	2.7	µg/l	Yes Subcontracted	1	
Cyanides (as total CN)	1.3	µg/l	Yes Subcontracted	10	
Di(2-ethylhexyl) phthalate (DEHP)	< 1	µg/l	Yes Subcontracted	2	
Dieldrin	< 1.0	ng/l	Yes Subcontracted	5	
Diuron	< 0.02	µg/l	Yes Subcontracted	0.03	
Endrin	< 1.0	µg/l	Yes Subcontracted	0.003	LOD raised due to matrix
Ethylbenzene	< 0.3	µg/l	Yes Subcontracted	0.5	LOD raised due to matrix
Fluoranthene	< 0.01	µg/l	Yes Subcontracted	0.005	LOD raised due to matrix
Fluorides (as total F)	< 0.50	mg/l	Yes in House	Not applicable	
gamma-BHC / HCH (Lindane)	< 0.3	µg/l	Yes Subcontracted	0.005	LOD raised due to matrix

Heptachlor	< 0.3	µg/l	Yes Subcontracted	0.003	LOD raised due to matrix
Hexachlorobenzene	< 0.3	µg/l	Yes Subcontracted	0.05	LOD raised due to matrix
Hexachlorobutadiene	< 0.3	µg/l	Yes Subcontracted	0.1	LOD raised due to matrix
Isodrin	< 0.02	µg/l	Yes Subcontracted	0.05	
Isoproturon	< 0.02	µg/l	Yes Subcontracted	0.1	
Lead and compounds (as Pb)	0.25	µg/l	Yes Subcontracted	1	
Mercury and compounds (as Hg)	0.0016	µg/l	Yes Subcontracted	0.2	
Methylene Chloride / Dichloromethane	< 0.3	µg/l	Yes Subcontracted	0.5	
Mirex	< 0.02	µg/l	Yes Subcontracted	0.01	
Naphthalene	< 0.05	µg/l	Yes Subcontracted	0.005	LOD raised due to matrix
Nickel and compounds (as Ni)	6	µg/l	Yes Subcontracted	1	
Nonylphenol ethoxylates (Sum)	< 1	µg/l	Yes Subcontracted	0.6	LOD raised due to matrix
Organo-Tin compounds	< 0.1	µg/l	Yes Subcontracted	0.05	LOD raised due to matrix
PCBs (Total)	< 0.01	µg/l	Yes Subcontracted	0.07	
Phenols (Total)	< 1	µg/l	Yes Subcontracted	50	
Polyaromatic Hydrocarbons (PAH) -Sum	< 0.20	µg/l	Yes Subcontracted	0.03	LOD raised due to matrix
Simazine	< 0.02	µg/l	Yes Subcontracted	0.02	
Tetrachloroethylene	9	µg/l	Yes Subcontracted	0.1	
Toluene	< 0.3	µg/l	Yes Subcontracted	0.1	LOD raised due to matrix
Toxaphene	< 2.0	µg/l	Yes Subcontracted	0.1	
Tributyltin and compounds	< 0.1	µg/l	Yes Subcontracted	0.02	LOD raised due to matrix
Trichlorobenzene (all isomers)	< 0.3	µg/l	Yes Subcontracted	0.01	LOD raised due to matrix
Trichloroethene (all isomers)	< 0.3	µg/l	Yes Subcontracted	0.1	LOD raised due to matrix
Trifluralin	< 0.02	µg/l	Yes Subcontracted	0.05	
Triphenyltin and compounds	< 0.1	µg/l	Yes Subcontracted	0.05	LOD raised due to matrix
Vinyl Chloride	< 0.3	µg/l	Yes Subcontracted	0.1	LOD raised due to matrix
Xylenes (Total)	< 0.3	µg/l	Yes Subcontracted	0.1	LOD raised due to matrix
Zinc and compounds (as Zn)	110	µg/l	Yes Subcontracted	8	
Total Organic Carbon (TOC)	20.1	mg/l	Yes in House	Not applicable	

** On-site accredited tests: pH, conductivity, dissolved oxygen, temperature

Approved by:

Dr Prathibha Ganesh Nair
Laboratory Manager