Annual Environmental Report

2023

Roscommon

D0116-01

CONTENTS

7 APPENDIX

7.1 SMALL STREAM RISK SCORE ASSESSMENT

1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2023 AER

This Annual Environmental Report has been prepared for D0116-01, Roscommon, in Roscommon 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.

1.2 TREATMENT SUMMARY

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

- Roscommon WWTP with a Plant Capacity PE of 9550, 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
TPEFF2600D0116SW001	Roscommon WWTP	Treated	Compliant	N/A

1.4 LICENCE SPECIFIC REPORTING

Assessment / Report
Small Stream Risk Score Assessment

2 TREATMENT PLANT PERFORMANCE AND IMPACT SUMMARY

2.1 ROSCOMMON WWTP - TREATED DISCHARGE

2.1.1 INFLUENT MONITORING SUMMARY - ROSCOMMON 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
COD-Cr mg/l	12	672	191
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	12	309	86
Suspended Solids mg/l	12	238	59
Hydraulic Capacity	N/A	6497	4121

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’. The design of the wastewater treatment plant allows for peak values and therefore the peak loads have not impacted on compliance with Emission Limit Values.

2.1.2 EFFLUENT MONITORING SUMMARY - TPEFF2600D0116SW001

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	125	250	N/A	12	N/A	N/A	17	Pass
Suspended Solids mg/l	35	87.5	N/A	12	N/A	N/A	3.94	Pass
pH pH units	9	9	N/A	12	N/A	N/A	7.67	Pass
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	7	14	N/A	12	N/A	N/A	1.24	Pass
Ammonia-Total (as N) mg/l	0.5	1	N/A	12	N/A	N/A	0.036	Pass
ortho-Phosphate (as P) - unspecified mg/l	0.2	0.4	N/A	12	N/A	N/A	0.090	Pass

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):

Not applicable

Significance of Results:

The WWTP is compliant with the ELV's set in the Wastewater Discharge Licence.

2.1.3 AMBIENT MONITORING SUMMARY FOR THE TREATMENT PLANT DISCHARGE TPEFF2600D0116SW001

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	186923, 260919	RS26R070250	No	No	No	No	Moderate
Downstream	188064, 261782	RS26H010300	No	No	No	No	Poor

The table below provides a summary of monitoring results for designated ambient monitoring points. The upstream and downstream annual mean values are shown (mg/l), and the difference between both monitoring stations is given as a percentage of the Environmental Quality Standard (EQS) where relevant.

Parameter Name	Upstream Monitoring Point Location	Upstream Monitoring Point Annual Mean	Downstream Monitoring Point Location	Downstream Monitoring Point Annual Mean	EQS	% of EQS
BOD - 5 days (Total) mg/l	RS26R070250	1.10	RS26H010300	1.59	1.50	32.4
Ammonia-Total (as N) mg/l	RS26R070250	0.025	RS26H010300	0.088	0.065	97.5

Parameter Name	Upstream Monitoring Point Location	Upstream Monitoring Point Annual Mean	Downstream Monitoring Point Location	Downstream Monitoring Point Annual Mean	EQS	% of EQS
ortho-Phosphate (as P) - unspecified mg/l	RS26R070250	0.016	RS26H010300	0.026	0.035	26.8
Dissolved Oxygen mg/l	RS26R070250	8.27	RS26H010300	8.32	N/A	
Dissolved Oxygen % Saturation	RS26R070250	85	RS26H010300	76	N/A	
Temperature °C	RS26R070250	11	RS26H010300	11	N/A	
pH pH units	RS26R070250	7.46	RS26H010300	7.53	N/A	

Significance of Results:

The WWTP discharge was compliant with the ELV's set in the wastewater discharge licence.

The ambient monitoring results do not meet the required EQS at the downstream 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 BOD - 5 days (Total), Ammonia - Total (as N), ortho-Phosphate (as P), concentrations 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 have an observable negative impact on the Water Framework Directive status.

2.1.4 OPERATIONAL PERFORMANCE SUMMARY - ROSCOMMON WWTP

2.1.4.1 Treatment Efficiency Report - Roscommon 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)
TP	N/A	N/A	N/A
COD	249954	22306	91
cBOD	112537	1620	99
TN	N/A	N/A	N/A
SS	77320	5151	93

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

2.1.4.2 Treatment Capacity Report Summary - Roscommon 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.

Roscommon WWTP	
Peak Hydraulic Capacity (m^3/day) - As Constructed	7163
DWF to the Treatment Plant (m^3/day)	2388
Current Hydraulic Loading - annual max (m^3/day)	6497

Roscommon WWTP	
Average Hydraulic loading to the Treatment Plant (m^3/day)	4121
Organic Capacity (PE) - As Constructed	9550
Organic Capacity (PE) - Collected Load (peak week)[Note1]	7875
Organic Capacity (PE) - Remaining	1675
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 - ROSCOMMON 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)	20351	Volume (m3)		1.35	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
There were no relevant environmental complaints in 2023.			

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	Broken Sewer Pipe	No	Yes

3.2.2 SUMMARY OF OVERALL INCIDENTS

Question	Answer
Number of Incidents in 2023	1
Number of Incidents reported to the EPA via EDEN in 2023	1
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 2023 (No. of events)	Total volume discharged in 2023 (m3)	Monitoring Status
SW002	187435,264100	Yes	Low Significance	Meeting Criteria	Unknown	Unknown	Monitored
SW003	187704,263842	Yes	Low Significance	Meeting Criteria	Unknown	Unknown	Monitored
SW005	187942,264553	Yes	Low Significance	Meeting Criteria	Unknown	Unknown	Monitored
SW007	187896,261865	Yes	Low Significance	Meeting Criteria	Unknown	Unknown	Monitored
SW006	187898,261868	Yes	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
TBC	187009,265443	Yes	Low Significance	Meeting Criteria	Unknown	Unknown	Not 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 2023 (No. of events)	Total volume discharged in 2023 (m3)	Monitoring Status
SW004	187898,261868	Yes	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
TBC	187422,263745	Yes	Low Significance	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	187577,263408	Yes	Medium Significance	Not yet Assessed	Unknown	Unknown	Not Monitored
SW005	188982,263845	Yes	Low Significance	Meeting Criteria	Unknown	Unknown	Not Monitored
TBC	187898,261868	Yes	Medium Significance	Not Meeting Criteria	Unknown	Unknown	Not Monitored
SW006	187938,264538	Yes	Low Significance	Not yet Assessed	Unknown	Unknown	Not Monitored

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 (m3)?	Unknown
Is each SWO identified as not meeting DoEHLG Guidance included in the Programme of Improvements?	N/A
The SWO Assessment included the requirements of relevant of WWDL schedules?	Yes
Have the EPA been advised of any additional SWOs / changes to Schedule C3 and A4 under Condition 1.7?	Yes

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
D0116-SIP:01	SW002 to be discontinued	C	31/12/2019	Yes	Works Completed	2023	Completed 2023
D0116-SIP:02	SW003 to be discontinued	C	31/12/2019	Yes	Works Completed	2023	Completed 2023
D0116-SIP:03	SW004 to be discontinued	C	31/12/2019	Yes	Works Completed	2023	Completed 2023
D0116-SIP:04	SW005 to be discontinued	C	31/12/2019	Yes	Works Completed	2023	Completed 2023
D0116-SIP:05	SW006 to be discontinued	C	31/12/2019	Yes	Works Completed	2023	Completed 2023
D0116-SIP:06	SW007 to be discontinued	C	31/12/2019	Yes	Works Completed	2023	Completed 2023

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
D0116-SIP:07	Works required to meet ELVs	C	31/12/2019	Yes	Not Started		Capital works not funded in RC3. Capital works funding post 2024 will be contingent on the project being included in the 2025-2029 investment period
D0116-SIP:08	Works to facilitate the discontinuation of discharges	C	31/12/2019	Yes	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
D0116-01-Priority Substances Assessment	Yes	No
D0116-01-Small Stream Risk Score 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	N/A
List reason e.g. changes to monitoring requirements	N/A
Have these processes commenced?	No
Are all outstanding reports and assessments from previous AERs included as an appendix to this AER	No

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

Signed: Date: 06/03/2024

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 - Small Stream Risk Score Assessment

26 Hol

River: Ros O/S	Code: 3355	Date: 26/0/13	Time: 13:00
Station no.	Location: Hind O/S Ros		Grid (6 figure):
	Stream Order:		Stream flow: Riffle / (Riffle/Glide) / Slow flow

Field Chemistry	
DO%	68.9
DO mg/l	6.92
Temp (°C)	15.3
Conductivity	
pH	
Bank width (cm)	
Wet width (cm)	
Avg Depth (cm)	
Staff gauge	

Velocity	Colour
Torrential	None
Fast	Slight
(Moderate)	Moderate
Slow	High
Very slow	

Clarity	Discharge
(Very clear)	Flood
Clear	(Normal)
Slightly turbid	Low
Highly turbid	Very Low
	Dry
	Recent Flood

Modifications: Y (N) Canalised-widened-bank erosion-arterial drainage

Dominant Types:
Bedrock
Boulder (>128mm)
(Cobble) (32-128mm)
(Gravel) (8-32mm)
(Fine Gravel) (2-8mm)
Sand (0.25-2mm)
Silt (<0.25mm)

Slope: (Low) – Medium – High – Very High

Geology: (Calcareous) Siliceous-Mixed

Substratum Condition: Calcareous-Compacted-(Loose)-Normal

Substratum:
(Stoney bottom) Muddy bottom-Mud over stones

Degree of siltation: Clean (Slight) Moderate-Heavy

Depth of mud (None) <1cm: 1-5cm: 5-10cm: >10cm

Litter: (None) – Present – Moderate - Abundant

Shading: (High) – Moderate – Low - None

Cattle access Y: upstream – downstream or N

Photo: Y / (N)

Filamentous Algae:
None – Present – Moderate - Abundant

Sewage Fungus:
None – Present – Moderate - Abundant

Main land use u/s:
(Pasture) Urban
Bog Tillage
Forestry Other

Sample retained: Y / (N)

Sampled in Minutes:
Pond net x 2 mins
Stone wash x 1 min
Weed sweep x 1 min

General Comments:

Macroinvertebrate Composition

The macroinvertebrates are divided into the following 5 specific groups:

- Group 1 = Ephemeroptera (3-tails) – note that tails may be damaged during sampling
- Group 2 = Plecoptera (2-tails) - note that tails may be damaged during sampling
- Group 3 = Trichoptera
- Group 4 = G.OL.D (Gastropoda, Oligochaeta and Diptera)
- Group 5 = *Asellus*
- Calculate the total number of taxa and relative abundance of each macroinvertebrate group below: (Abundance – Ab)

Relative Abundance	
1-5	1
6-20	2
21-50	3
51-100	4
101+	5

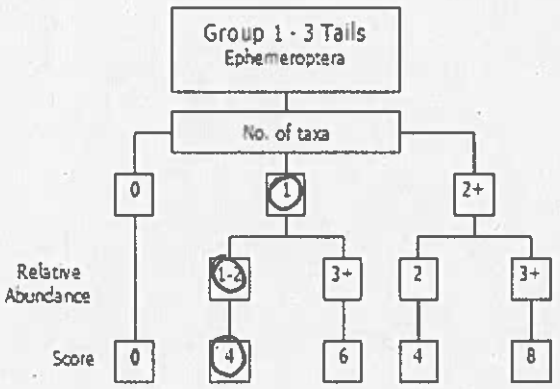
Ephemeroptera:		Plecoptera:	
Ecdyonurus Ab		*Leuctra* Ab	
Rhithrogena Ab		*Isoperla* Ab	
Heptagenia Ab		*Protonemura* Ab	
Ephemerella Ab	1	*Amphinemura* Ab	
Caenis Ab		*Perla* Ab	
Paraleptophlebia Ab		*Dinocras* Ab	
Ephemera danica Ab		Other Plecop Ab	
Other Ephem Ab		Other Plecop Ab	
Total no. of taxa: 1	Total Relative Abundance: 1	Total no. of Taxa: 0	Total Relative Abundance:

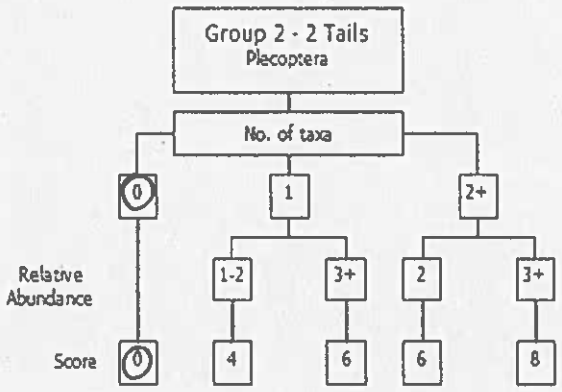
Trichoptera:		G.OL.D:			Asellus:	
Hydropsychidae Ab		*Lymnaea* (G) Ab		Chironomidae (D) Ab		Absent ✓
Polycentropodidae Ab		*Potamopyrgus* (G) Ab		*Chironomus* (D) Ab		Few (1-20)
Rhyacophila Ab		*Planorbis* (G) Ab		Simuliidae (D) Ab	3	Common (>20)
Philopotamidae Ab		*Ancylus* (G) Ab		*Dicranota* (D) Ab	1	
Limnephilidae Ab	3	*Physa* (G) Ab		Tipulidae (D) Ab		
Sericostomatidae Ab		*Lumbriculus* (OJ) Ab		Ceratopogonidae (D) Ab		
Glossosomatidae Ab		*Eiseniella* (OJ) Ab		Other GOLD Ab		
Leptoceridae Ab		Tubificidae (OJ) Ab	8			
Other Trichoptera Ab						
Total no. of Taxa: 1	Total Relative Abundance: 3	Total no. of Taxa: 3		Total Relative Abundance: 12		

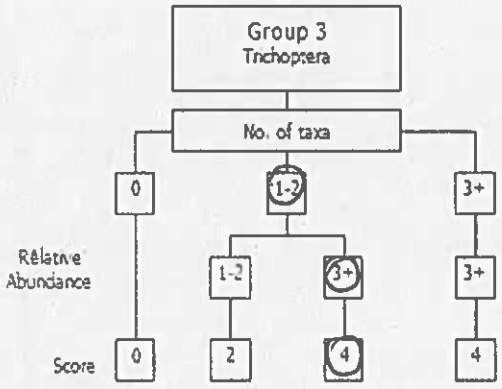
NOTE: *Asellus* must be recorded as absent if none are found

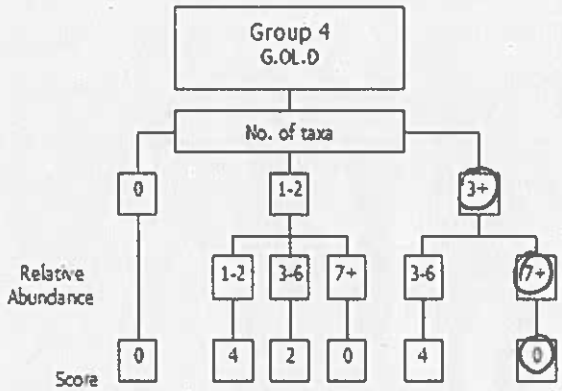
NOTE *Baetis* is an Ephemeropteran and is the most commonly occurring invertebrate genus in streams in Ireland. It is vital that *Baetis* is not counted in SSRS. See Appendix B for more details on how to identify *Baetis*.

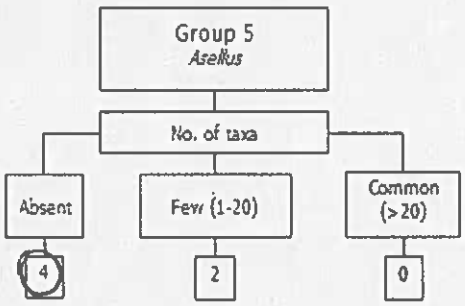
Step 1. Calculate the Index Score by circling the appropriate box representing the total number of taxa and the total abundance calculated from ***each macroinvertebrate group*** calculated from page 1 of the recording sheet and enter in to the boxes in Step 2.











Step 2

a) Index Score Group 1	4
b) Index Score Group 2	0
c) Index Score Group 3	4
d) Index Score Group 4	0
e) Index Score Group 5	4

Step 3. Calculate the Total Index Score, the Average Index Score and the SSR Score using the boxes below

Total Index Score (TIS) sum (a+b+c+d+e)	12	Average Index Score (AIS) TIS/5 (5 for 5 groups)	2.4	SSR Score (AIS x 2)	4.8

Step 4. Assess the stream by comparing the final SSR score with the categories below and tick the appropriate box

> 7.25 Probably not at risk		> 6.5 – 7.25 Indeterminate Stream may be at risk		<6.5 Stream at risk	✓

Surveyor (signed): DK/DR Name (print): DIMITRIOS KONTOGIANNIS Date: 26 / 05 / 17
DANIEL BURKE

26R01

River: Rob U/S	Code: 3954	Date: 26/05/23	Time: 12:00
Station no.	Location: Rocksavage U/S		Grid (6 figure):
	Stream Order:		Stream flow: Riffle / Riffle/Glide / Slow flow

Field Chemistry	
DO%	71.4
DO mg/l	7.62
Temp (°C)	12.5
Conductivity	
pH	
Bank width (cm)	3.5
Wet width (cm)	3.3
Avg Depth (cm)	0.25
Staff gauge	

Velocity	Colour
Torrential	None
Fast	Slight
Moderate	Moderate
(Slow)	High
Very slow	

Clarity	Discharge
(Very clear)	Flood
Clear	(Normal)
Slightly turbid	(Low)
Highly turbid	Very Low
	Dry
	Recent Flood

Modifications: Y (N) Canalised-widened-bank erosion-arterial drainage

Dominant Types:
Bedrock
(Boulder) (>128mm)
(Cobble) (32-128mm)
(Gravel) 8-32mm)
(Fine Gravel) 2-8mm)
(Sand) (0.25-2mm)
Silt (<0.25mm)

Slope: (Low) – Medium – High – Very High

Geology: Calcareous-Siliceous-Mixed

Substratum Condition: Calcareous-Compacted-Loose - Normal

Substratum:
(Stoney bottom) Muddy bottom-Mud over stones

Degree of siltation: (Clear) Slight-Moderate-Heavy

Depth of mud: (None) <1cm: 1-5cm: 5-10cm: >10cm

Litter: (None) – Present – Moderate - Abundant

Shading: High – Moderate – Low - None

Cattle access Y: upstream – downstream or N

Photo: Y / (N)

Filamentous Algae:
None – Present – Moderate - Abundant

Sewage Fungus:
(None) – Present – Moderate - Abundant

Main land use u/s:
(Pasture) Urban
Bog Tillage
Forestry Other

Sample retained: Y / (N)

Sampled in Minutes:
Pond net x 2 min
Stone wash x 1 min
Weed sweep x 1 min

General Comments:

Macroinvertebrate Composition

The macroinvertebrates are divided into the following 5 specific groups:
- Group 1 = Ephemeroptera (3-tails) – note that tails may be damaged during sampling
- Group 2 = Plecoptera (2-tails) - note that tails may be damaged during sampling
- Group 3 = Trichoptera
- Group 4 = G.OL.D (Gastropoda, Oligochaeta and Diptera)
- Group 5 = *Asellus*
- Calculate the total number of taxa and relative abundance of each macroinvertebrate group below: (Abundance – Ab)

Relative Abundance	
1-5	1
6-20	2
21-50	3
51-100	4
101+	5

Ephemeroptera:

Ecdyonurus Ab	16
Rhithrogena Ab	
Heptagenia Ab	
Ephemerella Ab	
Caenis Ab	
Paraleptophlebia Ab	
Ephemera danica Ab	
Other Ephem Ab	
Total no. of taxa	1
Total Relative Abundance	16

Plecoptera:

Leuctra Ab	
Isoperla Ab	
Protonemura Ab	
Amphinemura Ab	
Nemoura Ab	
Dinocras Ab	
Other Plecop Ab	
Other Plecop Ab	
Total no. of Taxa	0
Total Relative Abundance	

Trichoptera:

Hydropsychidae Ab	
Polycentropodidae Ab	
Rhyacophila Ab	
Philopotamidae Ab	
Limnephilidae Ab	3
Sericostomatidae Ab	
Glossosomatidae Ab	
Leptoceridae Ab	1
Other Trichoptera Ab	
Total no. of Taxa	2
Total Relative Abundance	4

G.OL.D:

Lymnaea (G) Ab	
Potamopyrgus (G) Ab	
Planorbis (G) Ab	
Ancylus (G) Ab	
Physa (G) Ab	
Lumbriculus (Ol) Ab	
Eiseniella (Ol) Ab	
Tubificidae (Ol) Ab	
Total no. of Taxa	3
Total Relative Abundance	7

Chironomidae (D) Ab	
Chironomus (D) Ab	
Simuliidae (D) Ab	5
Dicranota (D) Ab	1
Tipulidae (D) Ab	
Ceratopogonidae (D) Ab	1
Other GOLD Ab	

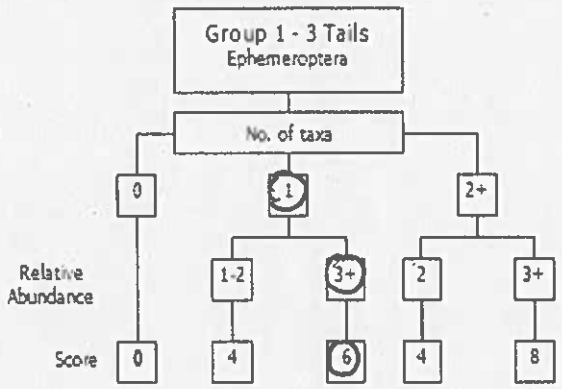
***Asellus*:**

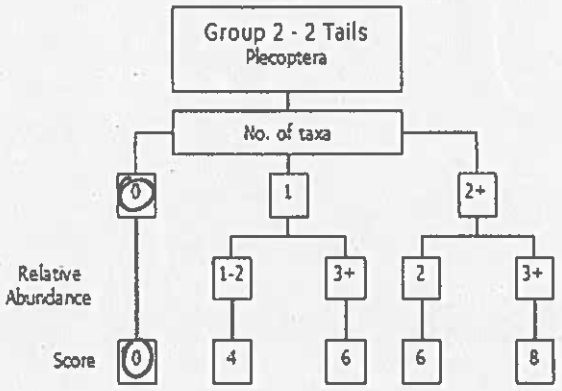
Absent	
Few (1-20)	1
Common (>20)	

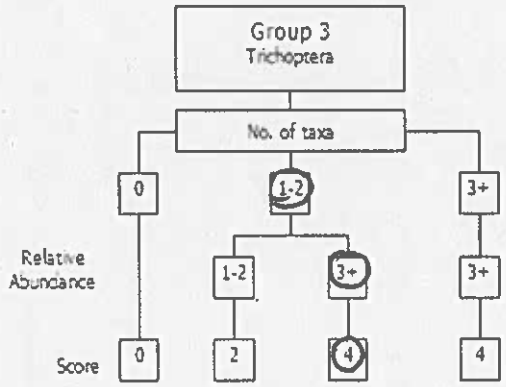
NOTE: *Asellus* must be recorded as absent if none are found

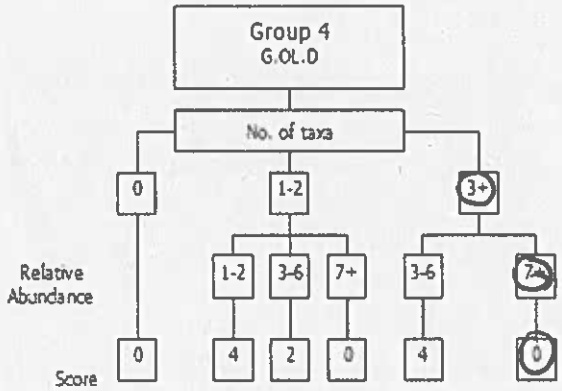
NOTE *Baetis* is an Ephemeropteran and is the most commonly occurring invertebrate genus in streams in Ireland. It is vital that *Baetis* is not counted in SSRS. See Appendix B for more details on how to identify *Baetis*.

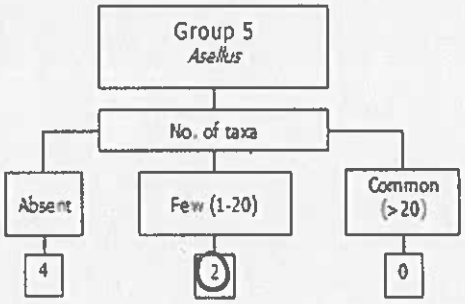
Step 1. Calculate the Index Score by circling the appropriate box representing the total number of taxa and the total abundance calculated from ***each macroinvertebrate group*** calculated from page 1 of the recording sheet and enter in to the boxes in Step 2.











Step 2

a) Index Score Group 1	6
b) Index Score Group 2	0
c) Index Score Group 3	4
d) Index Score Group 4	0
e) Index Score Group 5	2

Step 3. Calculate the Total Index Score, the Average Index Score and the SSR Score using the boxes below

Total Index Score (TIS) sum (a±b±c±d±e) **12**

Average Index Score (AIS) TIS/5 (5 for 5 groups) **2.4**

SSR Score (AIS x 2) **4.8**

Step 4. Assess the stream by comparing the final SSR score with the categories below and tick the appropriate box

> 7.25 Probably not at risk	> 6.5 – 7.25 Indeterminate Stream may be at risk	<6.5 Stream at risk
☐	☐	✓

Surveyor (signed): DK/DB Name (print): DIMITRIOS KONTOGIANNIS DANIEL BURKE Date: 26 / 05 / 23