Wicklow Uplands SUAS EIP

Water Quality Monitoring Report

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Section 1 Introduction

CDM Smith was engaged by the Sustainable Uplands Agri-Environment Scheme (SUAS) to carry out macroinvertebrate and water quality monitoring at 29 locations in the Wicklow and Dublin uplands. The macroinvertebrate data is compared to small stream risk score (SSRS) data collected at the same locations in 2020. The water quality data is assessed in terms of the macroinvertebrate community and the anthropogenic pressures in the associated catchment.

Monitoring was carried out by Áine O'Shea over nine days (18, 19, 20 & 21 July; 10, 11, 29 & 30 August and 01 September 2022).

The methodology is presented in Section 2. The results and discussion are contained in Section 3, and recommendations are provided in Section 4. The original copies of the field sheets and laboratory reports are contained in **Appendix A**.



Section 2 Methodology

2.1 Monitoring Locations

Monitoring was carried out at twenty eight of twenty nine locations. Sampling was not undertaken at location Slievemweel 2 as there was no flow.

Table 1: Monitoring Locations

Sampling day	Sub catchment	Site number	Stream	GPS
	Powerscourt	1	Glen River	O 18478 10816
1	Powerscourt	2	Unnamed watercourse – tributary River Dargle	O 17731 11245
1	Powerscourt	3	Unnamed watercourse – tributary River Dargle	O 18353 12072
	Powerscourt	4	Glen River	O 18965 11493
	Granamore	1	Douglas River	S 98976 97975
2	Granamore	2	Douglas River – unnamed tributary	S 99345 98133
2	Granamore	3	Douglas River - unnamed	S 99347 98741
	Granamore	4	Douglas River - Leeawn	S 99493 98934
	Carrigeenduff	1	Lavarnia River	O 10565 08049
	Carrigeenduff	2	Cornagrainya Brook East (Inchavore River)	O 10246 07622
3	Carrigeenduff	3	Cornagrainya Brook West (Inchavore River)	O 09756 06901
	Carrigeenduff	4	Cyowck Brook (Inchavore River)	O 09433 06359
	Glassavullaun	1	Slade Brook	O 10301 19788
4	Glassavullaun	2	Slade Brook	O 09831 18741
	Glassavullaun	3	Glassamucky Brook	O 09510 20771
	Slievemweel	1	Corndog Stream (Askanagap Stream 010)	T 04732 80529
5	Slievemweel	2	Slievemweel Stream (Askanagap Stream 010)	T 05552 80709
	Ballybeg	1	Ballycumber South Stream	T 04582 76775
6	Glassnamullen	1	Glasnamullen Stream	O 19193 09621
0	Glassnamullen	2	Glasnamullen Stream	O 18643 09762
	Corrasillagh	1	Leolassier Brook	T 07160 91377
7	Corrasillagh	2	Carrawaystick River	T 06147 91158
	Corrasillagh	3	Carrawaystick River	T 08656 92000
8	Mullaghcleevaun / Ballynultagh	1	Ballydonnell Brook	O 08169 07870



Sampling day	Sub catchment	Site number	Stream	GPS
	Carrigeenduff	5	Carrigeenshinnagh/Duff Brook (Inchavore River)	O 13855 03035
	Carrigeenduff	6	Inchavore Brook (Inchavore River)	O 13956 04212
	Granamore	5	Douglas River - Roundhill Brook	S 99339 99273
9	Granamore	6	Douglas River	S 98603 99290
	Granamore	7	Douglas River	S 98265 00112

2.2 Water Quality Monitoring

Field physico-chemical parameters (pH, temperature, conductivity, oxidation-reduction potential and dissolved oxygen) were measured in-situ using a YSI multi-parameter water quality probe which was calibrate daily before use.

Grab water samples were collected at all locations. The samples were collected in laboratory-supplied sampling containers and stored in a cooler box at a temperature below 4°C prior to delivery to the laboratory. The samples were sent by DHL courier to ALS Environmental, Dublin. ALS Environmental are an INAB ISO 17025 accredited laboratory. Chain of custody (COC) documentation was included with all samples. The methodologies were all ISO/CEN approved or equivalent.

Table 2 Sampling Procedures Standards

ISO Standard	Description
ISO 5667-1-2020	Guidance on the design of sampling programmes and sampling techniques
ISO 5667-3-2018	Guidance on sample preservation and handling
ISO 5667-14-2014	Guidance on quality assurance of environmental sampling and handling
ISO 5667-6-2014	Guidance on sampling of rivers and streams

2.3 Macroinvertebrate Monitoring

Two-minute kick samples were performed at each site and the dislodged fauna were captured in a standard 1-mm mesh pond net attached to a metal frame. The net was positioned in the water approximately 0.5m downstream from where the sampler was standing. The sampler disturbed the stream bed by kicking the substrate to dislodge macroinvertebrates from the rocks, and other substrate, into the net. All material collected in the net was transferred to a white plastic tray for identification. In addition, individual stones and rocks were picked from the river bottom and inspected, and attached organisms were collected and noted as part of the sample.

Sorting and identification of macroinvertebrates was carried out onsite. Two large, white identification trays were filled with stream water and placed on a flat surface. The contents of the net were rinsed and placed into the trays. Large stones and organic material (leaves, twigs, algae, etc.) were examined for any macroinvertebrates present and then removed from the sorting tray. The examination process took at least 30 minutes per sample to ensure all macroinvertebrates were identified to the lowest possible taxonomic level. Each



macroinvertebrate was assigned to one of the five groups (A to E) for classification of sensitivity to potential pollutants.

The small stream risk score (SSRS) scoring criteria are outlined in Table 3.

Table 3: SSRS score criteria

SSRS score	Description
> 7.25	Probably not at risk
> 6.5 - 7.25	Intermediate (Steam may be at risk)
< 6.5	Stream at risk



Section 3 Results and Discussion

3.1 Results

The macroinvertebrate field data, laboratory data and the field physico-chemical data are presented in Table 4.

The complete field sheets including supplementary notes and the full laboratory reports are presented in Appendix A.

Ortho-phosphate, ammoniacal nitrogen and dissolved oxygen (% saturation) are compared to their respective European Communities Environmental Objectives (Surface Waters) Regulations, 2009 (S.I. No. 272 of 2009) Ecological Quality Standards (EQS) thresholds for "good status":

- 0.035 mg/L for ortho-phosphate;
- 0.065 mg/L for ammoniacal nitrogen as N; and
- 80-120 % for dissolved oxygen % saturation.

Exceedances of these thresholds are indicated by orange fill in Table 4.

Note, these thresholds are ordinarily for comparison with annual average (AA) values based on a dataset of at least eight datapoints.

Total nitrogen comprises the ammoniacal nitrogen, nitrite and nitrate. Nitrite is generally rapidly nitrified to nitrate in the natural environment and concentrations of nitrite in the natural environment are generally low relative to the nitrate concentrations. Thus, the total nitrogen concentration less the ammoniacal nitrogen concentration is a reasonable approximation of the nitrate concentration. There is no Ecological Quality Standards (EQS) threshold for nitrate as it is generally not the nutrient of ecological concern in surface freshwater bodies (phosphate is generally the nutrient that controls primary production in these settings). However, information on nitrate concentrations can be useful for understanding pressures in the surrounding catchment. Nitrate detections are indicated by green fill in Table 4.

The SSRS numerical values are explained as:

- >7.25 = Probably not at risk
- >6.5 7.25 = Intermediate (Steam may be at risk)
- <6.5 = Stream at risk</p>



Table 4: Macroinvertebrate SSRS, Field Physico-chemical Data and Laboratory Data Summary

					SSRS resu	lts	L	aboratory data			Field v	vater quality data	l		
Date	Site Name	Commonage / Location	River	SSRS Score (2020)	SSRS Score (2022)	SSRS score status	Ortho as P (mg/l)	Ammoniacal Nitrogen as N (mg/l)	Nitrogen, Total as N (mg/l)	DO (%)	Temp	Electrical Conductivity	рH	ORP	Predominant land-uses upstream and/or adjacent to catchment
18-Jul-22	Powerscourt 1	Powerscourt Paddock	Glen River	6.4	4.8	Unchanged	<0.02	<0.06	<0.5	82	17.9	40.2	6.48	109.1	Bog
18-Jul-22	Powerscourt 2	Powerscourt Paddock	Unnamed watercourse – tributary River Dargle	5.6	8.0	Improved	<0.02	<0.06	<0.5	66.5	16.2	45.2	5.56	99.6	Bog
18-Jul-22	Powerscourt 3	Powerscourt Paddock	Unnamed watercourse – tributary River Dargle	4.8	4.8	Unchanged	<0.02	<0.06	<0.5	84.2	18	38.2	6.86	106.2	Bog
18-Jul-22	Powerscourt 4	Powerscourt Paddock	Glen River	7.2	4.8	Disimproved	<0.02	<0.06	<0.5	93.4	14.1	40.4	6.64	33.7	Bog
19-Jul-22	Granamore 1*	Granamore	Douglas River	7.2	2.4	Disimproved	<0.02	<0.06	0.6	76.1	14.6	38.4	4.71	68.9	Bog & forestry
19-Jul-22	Granamore 2*	Granamore	Douglas River – unnamed tributary	4.8	7.2	Improved	<0.02	0.24	1.1	62	14.3	37.5	5.62	122.6	Bog & forestry
19-Jul-22	Granamore 3	Granamore	Douglas River - unnamed	4.8	6.4	Unchanged	<0.02	<0.06	<0.5	93.5	14.7	117.2	7.72	68.5	Bog & forestry
19-Jul-22	Granamore 4	Granamore	Douglas River - Leeawn	4.0	6.4	Unchanged	<0.02	<0.06	0.6	88.6	14.1	61.5	7.39	105.9	Bog & forestry
01-Sep- 22	Granamore 5	Granamore	Douglas River - Roundhill Brook	3.2	7.2	Improved	<0.02	<0.06	<0.5	77.6	14.3	68.4	6.43	-219.6	Bog & forestry
01-Sep- 22	Granamore 6	Granamore	Douglas River	8.0	8.8	Unchanged	<0.02	<0.06	<0.5	98.6	15.8	52.1	6.55	-193.9	Bog & forestry
01-Sep- 22	Granamore 7	Granamore	Douglas River	5.6	6.4	Unchanged	<0.02	<0.06	<0.5	100.7	15.8	52.9	6.18	-182.5	Bog & forestry
20-Jul-22	Carrigeenduff 1	Carrigeenduff	Lavarnia River	4.8	7.2	Improved	<0.02	<0.06	<0.5	101.5	13.3	32.5	6.53	91.3	Bog
20-Jul-22	Carrigeenduff 2	Carrigeenduff	Cornagrainya Brook East (Inchavore River)	4.8	8.0	Improved	<0.02	<0.06	<0.5	93.2	11.8	30.6	6.35	101.8	Bog
20-Jul-22	Carrigeenduff 3	Carrigeenduff	Cornagrainya Brook West (Inchavore River)	5.6	7.2	Improved	<0.02	<0.06	<0.5	96.5	16.4	32.9	6.82	107.5	Bog
20-Jul-22	Carrigeenduff 4	Carrigeenduff	Cyowck Brook (Inchavore River)	5.6	7.2	Improved	<0.02	<0.06	4.1	98.9	16.3	29.3	6.68	112.5	Bog
30-Aug- 22	Carrigeenduff 5	Carrigeenduff	Carrigeenshinnagh/Duff Brook (Inchavore River)	6.4	6.4	Unchanged	<0.02	<0.06	<0.5	91.7	15.1	32.7	5.39	***	Bog
30-Aug- 22	Carrigeenduff 6	Carrigeenduff	Inchavore Brook (Inchavore River)	7.2	7.2	Unchanged	<0.02	<0.06	<0.5	95.4	14.8	38.8	5.3	-122.5	Bog
21-Jul-22	Glassavullaun 1	Glassavullaun	Slade Brook	5.6	6.4	Unchanged	<0.02	<0.06	1	93.2	13.8	50.3	7.39	111	Bog, forestry & agriculture
21-Jul-22	Glassavullaun 2	Glassavullaun	Slade Brook	7.2	8.0	Improved	<0.02	<0.06	<0.5	99.6	12.7	52.5	6.99	94	Bog, forestry & agriculture
21-Jul-22	Glassavullaun 3	Glassavullaun	Glassamucky Brook	4.8	8.0	Improved	<0.02	<0.06	2.8	76.9	13.1	44.5	7.03	103.8	Bog, forestry & agriculture
10-Aug- 22	Slievemweel 1*	Slievemweel	Corndog Stream (Askanagap Stream 010)	4.0	4.8	Unchanged	<0.02	<0.06	0.6	91.2	14.9	57.2	5.83	-312.7	Bog, forestry & agriculture
10-Aug- 22	Slievemweel 2**	Slievemweel	Slievemweel Stream (Askanagap Stream 010)	4.0	-	-	-	-	-	-	-	-	-	-	Bog & forestry
10-Aug- 22	Ballybeg	Ballybeg	Ballycumber South Stream	5.6	8.0	Improved	<0.02	<0.06	0.8	104.1	14.1	56.4	5.83	243.8	Bog, forestry & agriculture
11-Aug- 22	Glassnamullan 1	Glassnamullen	Glasnamullen Stream	4.8	7.2	Improved	<0.02	<0.06	1.2	95.2	17.7	43.9	5.74	-189.5	Bog & forestry



					SSRS resu	lts	L	aboratory data			Field v	vater quality data			Predominant land-uses upstream and/or adjacent to catchment
Date Site N	Site Name	Commonage / Location	- RIVER	SSRS Score (2020)	SSRS Score (2022)	SSRS score status	Ortho as P (mg/l)	Ammoniacal Nitrogen as N (mg/l)	Nitrogen, Total as N (mg/l)	DO (%)	Temp	Electrical Conductivity	pН	ORP	
11-Aug- 22	Glassnamullan 2	Glassnamullen	Glasnamullen Stream	2.4	5.6	Unchanged	<0.02	<0.06	0.9	92.6	13.8	39.5	5.22	-255.1	Bog & forestry
29-Aug- 22	Corrasillagh 1	Corrasillagh	Leolassier Brook	5.6	6.4	Unchanged	<0.02	<0.06	<0.5	101.2	14.2	33.1	6.31	-288.7	Bog, forestry & agriculture
29-Aug- 22	Corrasillagh 2	Corrasillagh	Carrawaystick River	7.2	7.2	Unchanged	<0.02	<0.06	<0.5	122.9	15.4	33.6	5.91	***	Bog, forestry & agriculture
29-Aug- 22	Corrasillagh 3	Corrasillagh	Carrawaystick River	7.2	7.2	Unchanged	<0.02	<0.06	<0.5	116.4	16.6	32.7	6.02	-156.7	Bog, forestry & agriculture
30-Aug- 22	Mullaghcleevaun / Ballynultagh	Ballynultagh / Mullacleevaun	Ballydonnell Brook	6.4	5.6	Unchanged	<0.02	<0.06	<0.5	101	12.6	23.8	5.33	-196	Bog



^{*}SSRS location dry; therefore SSRS undertaken downstream of designated SSRS location
**Stream dry 300 metres downstream of actual SSRS location, therefore no SSRS undertaken.
***ORP not recorded due to field error

3.2 Discussion

The SSRS of most sites remained unchanged (15) or improved (11), with only two sites disimproving (2). Further details are provided below, at a catchment level.

3.2.1 Observation of Land Use

Deer and sheep grazing were observed in every catchment surveyed. Cows were observed grazing in the Glassavullaun and Corrasillagh catchments.

- Bog was the most frequently observed land-use upstream and/or in each catchment.
- Bog & forestry land-uses were observed upstream and/or in ten of the 29 catchments.
- Bog, forestry & agriculture land-uses were observed upstream and/or in eight of the 29 catchments.

3.2.2 Powerscourt Paddock

In general, the ecological health of this stream, as indicated by the macroinvertebrate community, is unchanged.

- Powerscourt 2 improved from 'Stream at risk' in 2020, to 'Probably not at risk' in 2022.
- Powerscourt 1 and Powerscourt 3 remained unchanged between 2020 and 2022, with a score of 'Stream at risk'.
- Powerscourt 4 disimproved from 'Intermediate Steam may be at risk' in 2020 to 'Stream at risk' in 2022.

Ortho-phosphate, ammoniacal nitrogen and nitrogen concentrations were below the LOD (limit of detection) across all four Powerscourt Paddock locations. The dissolved oxygen at Powerscourt 2 was below the EQS range for Good status (80-120%), at 66.5%. The field pH data was below the EQS value range of (6.9-9.5) at each of the four Powerscourt Paddock locations. All other field parameters were within the EQS good status thresholds and expected ranges for all four locations.

Deer and sheep were observed throughout Powerscourt Paddock, which may have an impact water quality. Bog and forestry are adjacent to each of the four Powerscourt Paddock locations, which also may impact water quality. High proliferation of algal growth was noted at all four locations in Powerscourt Paddock. This may indicate nutrient enrichment in this catchment.



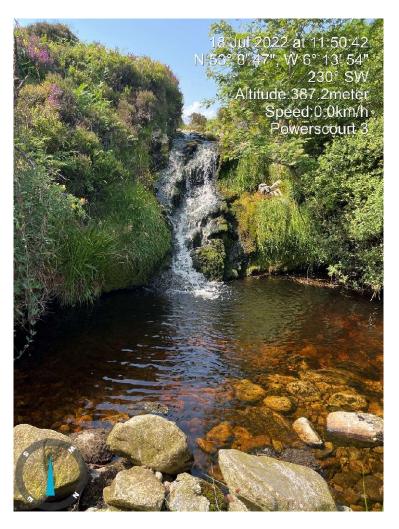


Figure 1: Powerscourt Paddock 3 monitoring location

3.2.3 Granamore

In general, the ecological health of this stream, as indicated by the macroinvertebrate community, is unchanged.

- Granamore 2 and Granamore 5 improved from 'Stream at risk' in 2020, to 'Intermediate -Steam may be at risk' in 2022.
- Granamore 3, Granamore 4 and Granamore 7 remain unchanged between 2020 and 2022, with a score of 'Stream at risk'.
- Granamore 6 remains unchanged between 2020 and 2022 with a score of 'Probably not at risk'.
- Granamore 1 disimproved from 'Intermediate Steam may be at risk' in 2020 to 'Stream at risk' in 2022.

Ortho-phosphate was below the LOD at each of the seven Granamore locations. The field dissolved oxygen was outside the EQS Good status range (80-120%) at Granamore 1, Granamore 2 and Granamore 5.



The concentration of ammoniacal nitrogen was 0.24 mg/l at Granamore 2, which exceeds the EQS threshold for 'good status' (0.065 mg/l). While the absolute SSRS score for Granamore 2 improved, it still remains in the 'at risk' classification. Ammoniacal nitrogen inputs may be contributing to this status. Elevated ammoniacal nitrogen was not detected at any other location in this stream or catchment, however there were detections of total nitrogen at three locations (Granamore 1, Granamore 2 and Granamore 4). The nitrate may be derived from either a nitrate source such as synthetic fertiliser, or more likely given the surrounding landuse, ammoniacal nitrogen from animal waste which was nitrified to ammonia in transit to the stream.

Deer and sheep grazing was observed throughout the Granamore catchment. Bog and forestry are adjacent to each of the Granamore monitoring locations.

Granamore 1 was dry and therefore monitoring was undertaken approximately 80 metres downstream of the designated monitoring location. This change of location may have impacted the SSRS score.

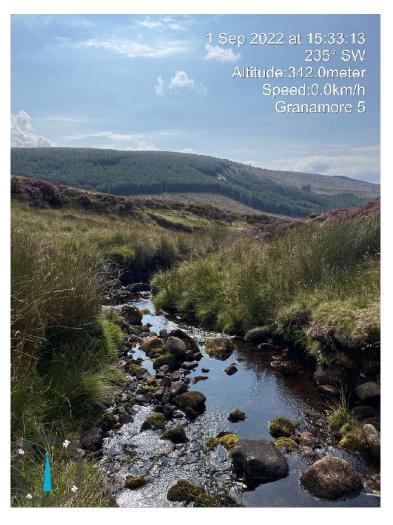


Figure 2: Granamore 5 monitoring location



3.2.4 Carrigeenduff and Ballynultagh/Mullacleevaun

In general, the ecological health of this catchment, as indicated by the macroinvertebrate community, has improved.

- Carigeenduff 2 improved from 'Stream at risk' in 2020 to 'Probably not at risk' in 2022.
- Carrigeenduff 1, 3 and 4 improved from 'Stream at risk' in 2020, to 'Intermediate Steam may be at risk' in 2022.
- Carrigeenduff 5 and 6, remained unchanged between 2020 and 2022, with a score of 'Intermediate - Steam may be at risk'.
- Ballynultagh / Mullacleevaun remained unchanged between 2020 and 2022, with a score
 of 'Steam at risk'.

Ortho-phosphate was below the LOD at all of the Carrigeenduff and Ballynultagh / Mullacleevaun locations. Ammoniacal nitrogen was below the LOD all of the Carrigeenduff and Ballynultagh / Mullacleevaun locations. The concentration of total nitrogen was 4.1 mg/l at Carrigeenduff 4, which may indicate distant ammoniacal nitrogen inputs. Nitrogen as nitrate is not as consequential for surface water bodies as nitrogen in ammoniacal form; ammoniacal nitrogen is toxic to macroinvertebrates at relatively low concentrations.

Field dissolved oxygen was within the EQS good status range (80-120%) at all of the Carrigeenduff and Ballynultagh / Mullacleevaun locations. All other field and laboratory parameters were within the thresholds and expected ranges.

Deer and sheep grazing was observed throughout the Carrigeenduff and Ballynultagh / Mullacleevaun catchment. Bog is adjacent to each of the Carrigeenduff and Ballynultagh / Mullacleevaun SSRS locations.





Figure 3: Carrigeenduff 2 macroinvertebrate sample in identification tray

3.2.5 Glassavullaun

In general, the ecological health of this stream, as indicated by the macroinvertebrate community, has improved.

- Glassavullaun 1 remains unchanged between 2020 and 2022 with a score of 'Stream at risk'.
- Glassavullaun 2 improved from 'Intermediate Steam may be at risk' in 2020, to 'Probably not at risk in 2022'.
- Glassavullaun 3 improved from 'Steam at risk' in 2020 to 'Probably not at risk' in 2022.

Ortho-phosphate and ammoniacal nitrogen were below the LOD and the DO field data was within the EQS good status range (80-120%) at all three Glassavullain locations. The concentration of total nitrogen at Glassavullaun 1 and Glassavullaun 3 were 1 mg/l and 2.8 mg/l, respectively, which may indicate distant ammoniacal nitrogen inputs. All other parameters were within their expected ranges.

Deer and sheep grazing was observed throughout the Glassavullaun catchment. Bog, forestry & agriculture were noted adjacent to each of the Glassavullaun monitoring locations.



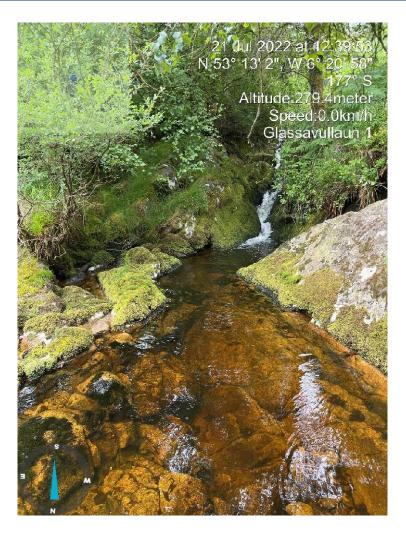


Figure 4: Glassavullaun 1 Monitoring location

3.2.6 Slievemweel and Ballybeg

In general, the ecological health of this stream as indicated by the macroinvertebrate community, has improved.

- Slievemweel 1 remains unchanged between 2020 and 2022 with a score of 'Stream at risk'
- Ballybeg improved from 'Steam at risk' in 2020 to 'Probably not at risk' in 2022.
- Slievemweel 2 was dry, therefore no SSRS or water sampling took place.

Ortho-phosphate and ammoniacal nitrogen concentrations were below the LOD and the DO field data was within the EQS good status range (80-120%) at Slievemweel 1 and Ballybeg. Total nitrogen was detected at 0.8 mg/l at Ballybeg, which may indicate distant ammoniacal nitrogen inputs.

Deer and sheep grazing was observed throughout the Slievemweel 1 and Ballybeg catchment. Bog, forestry & agricultural land uses were noted adjacent to Slievemweel 1 and Ballybeg.





Figure 5: Ballybeg macroinvertebrates on petri dish

3.2.7 Glassnamullen

In general, the ecological health of this stream as indicated by the macroinvertebrate community, remains unchanged.

- Glassnamullen 1 improved from 'Stream at risk' in 2020 to 'Intermediate (Steam may be at risk) in 2022.
- Glassnamullen 2 remains unchanged between 2020 and 2022 with a score of 'Stream at risk'.

Ortho - phosphate and ammoniacal nitrogen were below the LOD and the DO field data was within the EQS good status range (80-120%) at Glassnamullen 1 and 2. Total nitrogen was detected at both locations, possibly indicating a distant ammonia input.

Deer and sheep grazing was observed throughout the Glassnamullen catchment. Bog and forestry land-uses were noted adjacent to Glassnamullen 1 and 2.



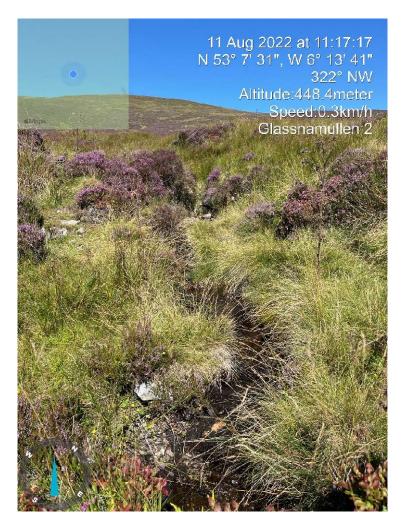


Figure 6: Glassnamullen 2 monitoring location

3.2.8 Corrasillagh

In general, the ecological health of this stream as indicated by the macroinvertebrate community, remains unchanged.

- Corrasillagh 1 remains unchanged between 2020 and 2022 with a score of 'Stream at risk'.
- Corrasillagh 2 and 3 remains unchanged between 2020 and 2022 with a score of 'Intermediate - Steam may be at risk'.

Ortho-phosphate and ammoniacal nitrogen were below the LOD, and the DO field reading was within the EQS good status range (80-120%) at Corrasillagh 1, 2 and 3.

Deer, sheep and cow grazing was observed throughout the Corrasillagh catchment. Bog, forestry and agricultural land uses were noted adjacent to Corrasillagh.



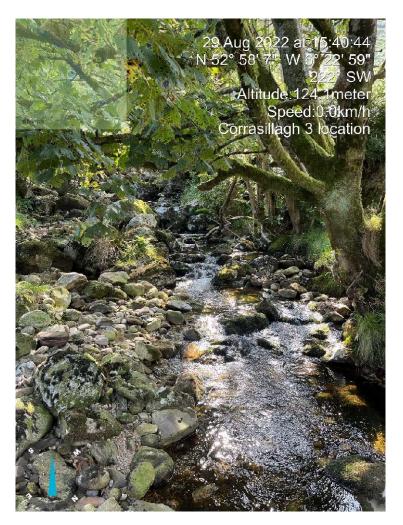


Figure 7: Corrasillagh 3 monitoring location



Section 4 Recommendations

Three locations were dry: Granamore 1, Granamore 2 & Slievemweel 2, and thus monitoring was carried out downstream of Granamore 1 and Granamore 2. Monitoring was not carried out downstream of Slievemweel 2 as the stream was dry for 300 metres downstream. It is recommended to repeat macroinvertebrate monitoring at the correct locations during spring when flows are higher and there is likely to be flow at these locations.

Macroinvertebrate monitoring is most useful when undertaken in winter/spring/early summer months, as the most sensitive macroinvertebrates should be present (within the constraints of H&S (accessing streams during higher flow etc.)). The data is expected to be most representative when macroinvertebrate identification and enumeration are carried out in-situ. It is recommended to undertake SSRS within the same time period e.g. within two or three weeks from year to year to compare like with like and with the macroinvertebrate assessment carried out in-situ.



Appendix A: Field Sheets & Laboratory Reports



Date: 10 Avig 22 River: Time: Code: Station go. Grid (6 figure): Location: Stream flow: Stream Order: 600 Riffle Modifications: Y/MCanalised-widened-bank erosion-Field Chemistry Riffe/Glide DC194 104. arterial drainage Slow flow Dominant Types: Bedrock 10 DO mg/l 10.21 Temp (°C) arinh 4.1 Boulder (>128mm) \ 0 Conductivity 56.4 Cobble (32-128mm) 20 Gravel (8-32mm) (0 OH .23 Fine Gravel (2-8mm) 10 Sand (0.25-2mm) 2 Bank width (cm) 80 Wet width (cm) 100 Silt (<0.25mm) 20 Avg Depth (cm) 30 Slope: Low - Maium - High - Very High Staff gauge Shading: Hid - Moderate - Low - None Geology: Calcareous-Siticeous-Miles Velocity Colour Tomential None Substratum Condition: Calcareous-Compacted-Cattle access Y: upstream - downstream or 17 CEAG Fast Loose - Normal Moderate Moderate Substratum: Sioney bottom-Muddy bottom-Mud aver stones WOR High Photo: O/ N Very slow Degree of siltation: Clean-Sight-Moderate-Heavy Clarity Discharge Depth of mud: None: <10n: 1-5cm: 5-10cm: >10cm Very dear Flood Litter: Wore - Present - Moderate - Abundant Clar Nogo Sewage Fungus: Nede – Present – Moderate - Abundant Filamentous Algae: Slightly turbid Low Node - Present - Moderate - Abundant Main land use u/s: Highly turbid Very Low Sample Sampled in Minutes: Pasture Urban retained: Pond net x 2 Dry YIN Recent Flood BO Tillage Stone wash x 72 Forestry Other Weed sweep x / Much oragnost overhaying the stream. Stream is gonse, being & ruster presont leve. **Macroinvertebrate Composition** Relative The macroinvertebrates are divided into the following 5 specific groups: **Abundance** Group 1 = Ephemeroptera (3 tails) - note that tails may be damaged during sampling 1-5 Group 2 = Pleasplera (2-tails) - note mor calls may be damaged during sampling 6.70 7 Group 3 = Trichoptera 71-50 Group 4 = G.OLD (GOLDER, BASER BASER DECO) 31-100 d Group 5 = Asellus 101+ 5 Calculate the total number of taxa and relative abundance of each macroinvertebrate-group below: (Abundance - Ab) Ecolyponurus Ab Ephemeroptera: Plecoptera: Leuctra Ab Rhithrogena Ab Isoperia Ab Heptagenia Ab Protonemura Ab Ephemerella Ab Amphinemura Ab Caenis Ab Perla Ab Paraleptophlebia Ab Dinogras Ab Ephemera danica Ab Other Plecop Ab Other Ephem Ab Other Plecop Ab Total no. of taxa Total Relative Abundance Total no. of Taxa Total Relative Abundance Hydropsychidae Ab G.OLD: Lymnaea (G) Ab Chironomidae (D) Ab Asellus: Trichoptera: Polycentropodidae Ab Potamopyrgus (G) Ab Chironomus (D) Ab Absent Rhyacophila Ab Planorbis (G) Ab Simulidae (D) Ab Few/Low Philopotamidae Ab Ancylus (G) Ab Dicranota (D) Ab Common/ Numerous Limnephilidae Ab Physa (G) Ab this. Tipulidae (D) Ab Ceratopogonidae (D) Ab L Sericostomatidae Ab Lumbriculus (OI) Ab NOTE: Aselus Glossosomatidae Ab Eiseniella (OI) Ab Other GOLD Ab must be Lepidostomatidae Ab Tubificidae (OI) Ab recorded as GoendidA Other Trichoptera Ab absent if none are found Total no. of Total Relativ

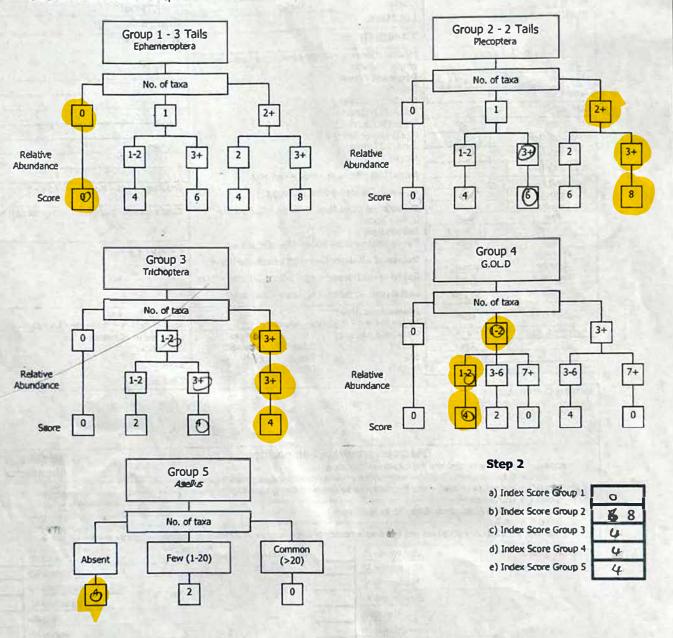
Taxa

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

Total no. of Taxa

Total Rebive Abunda

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

Average Index Score (AIS)

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

TIS/S (5 for 5 groups)

Total Index Score (TIS)

sum (a+b+c+d+e)

> 7.25 > 6.5 - 7.25 <6.5 Probably not at risk Indeterminate Stream at risk Stream may be at risk Stra Date: 10 / 08/ Surveyor (signed): (Name (print):

SSR Score

(AIS x 2)

River: Code: Date: 30 . Ang. 22 Time: 11.50 Station no. Ballynul hagh will a cleen Location: Grid (6 figure): Stream Order: Stream flow: Riffle Field Chemistry Modifications: Y/OCanalised-widened-bank erosion-Riffle/Olide DO% 101.0 arterial drainage Slow flow DO mg/1 10.73 **Dominant Types:** Temp (°C) Bedrock O .6 Boulder (>128mm) to Conductivity 3.8 Cobble (32-128mm) 10 5.33 Gravel (8-32mm) 20 Fine Gravel (2-8mm) 20 Bank width (cm) 150 Sand (0.25-2mm) 20 Wet width (cm) 100 Silt (<0.25mm) 10-Avg Depth (cm) 15. Slope: Low - Medium - High - Very High Staff gauge Shading: High - Moderate - None Geology: Calcareous-Siliceous-Mixed Velocity Colour Torrential None Substratum Condition: Calcareous-Compacted-Cattle access Y: upstream - downstream or 10 Fast Stont Loose - Normal Moderate Moderate Substratum: Stoney bottom-Muda bottom-Mud over stones Slow High Photo: W N Very slow Degree of siltation: Clean-Slight-Moderate-Heavy Clarity Discharge Very clear Depth of mud: None: < com: 1-5cm: 5-10cm: >10cm Flood See Litter: Noie - Present - Moderate - Abundant Nepmal Filamentous Algae: Slightly turbid Sewage Fungus: Low None - Present - Moderate - Abundant Main land use u/s: Note - Present - Moderate - Abundant Highly turbid Very Low Sample Sampled in Minutes: Dry Pasture Urban retained: Pond net x 2 Recent Flood Bed Tillage DIN Stone wash x 0 5 Forestry Other Weed sweep x O-C General Comments: this AREA. Lond guarounding stream is blanker sleep + olela ope Azing in healten + musles + grass **Macroinvertebrate Composition** Relative The macroinvertebrates are divided into the following 5 specific groups: Abundance Group 1 = Ephemeroptera (3-tails) - note-that tails may be damaged during sampling 195 Group 2 = Plecoptera (2-tails) - note that tails may be damaged during sampling 6-20 Group 3 = Trichoptera 21-50 Group 4 = G.OL.D (Gastropoda, Oligochaeta and Diptera) 51-100 Group 5 = Asellus 101+ Calculate the total number of taxa and relative abundance of each macroinvertebrate group below: (Abundance - Ab) Ephemeroptera: Ecdyonurus Ab Plecoptera: Leuctra Ab Rhithrogena Ab Isoperla Ab Heptagenia Ab Protonemura Ab Ephemerella Ab Amphinemura Ab Caenis Ab Perla Ab Paraleptophiebia Ab Dinocras Ab Ephemera danica Ab Other Plecop Ab Other Ephem Ab Other Plecop Ab Total no. of taxa Total Relative Abundance Total no. of Taxa **Total Relative Abundance** Trichoptera: Hydropsychidae Ab G.OL.D Lymnaea (G) Ab Chironomidae (D) Ab Polycentropodidae Ab Potamopyrgus (G) Ab Chironomus (D) Ab Absent Rhyacophila Ab Planorbis (G) Ab Simulidae (D) Ab Few/Low Philopotamidae Ab Ancylus (G) Ab Dicranota (D) Ab Commony Numerous Umnephilidae Ab Physa (G) Ab Tipulidae (D) Ab Sericostomatidae Ab Lumbriculus (OI) Ab 50 Ceratopogonidae (D) Ab H4 HH II NOTE: Asellus Glossosomatidae Ab Eiseniella (OI) Ab Other GOLD must be Lepidostomatidae Ab Tubificidae (OI) Ab Gendila recorded as Other Trichoptera Ab absent if none Total no. of **Total Relative** are found Total no. of Taxa 2 Total Relative Abundance

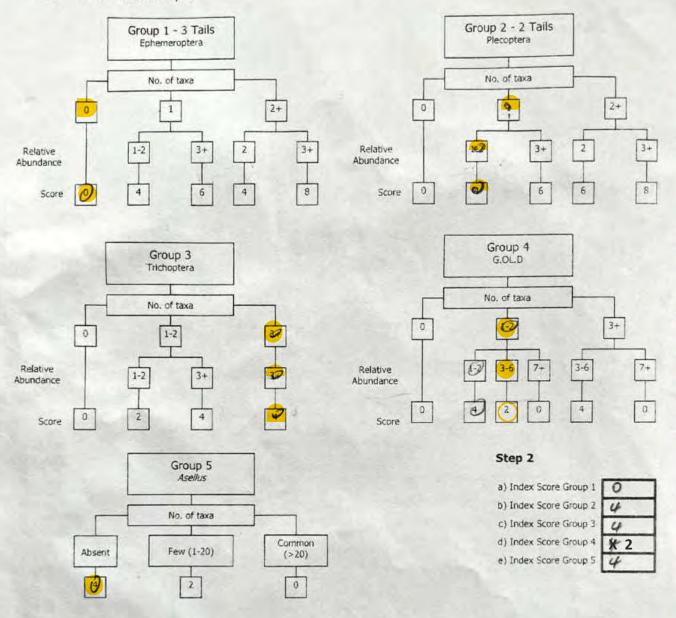
NOTE Baetis is an Ephemeropteran and is the most commonly occurring invertebrate genus in streams in Ireland. It is vital that Baetis is not counted in SSRS. See Appendix B for more details on how to identify Baetis.

Abundance

Taxa

out:

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

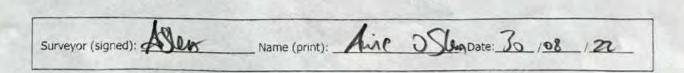
Indeterminate

Stream may be at risk

Probably not at risk

Total Index Score (TIS) Average Index Score (AIS) 3% 2.8 Score (AIS x 2) SSR Score (AIS x 2) Step 4. Assess the stream by comparing the final SSR score with the categories below and tick the appropriate box > 7.25 > 6.5 - 7.25 <6.5

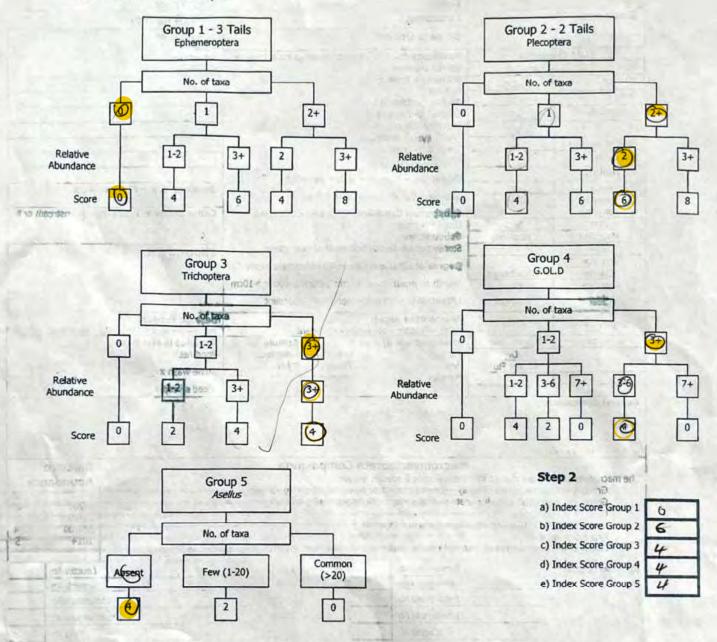
Stream at risk



River:		Code:	Date:	20. July . 2	L Hiller	0:30		-
Station no.		Location:			Grid (6 figure)			_
Canargeendul	11	Stream Order:			Stream flow:			
		Modifications: Y/		ALhank erosion	Riffle			
Field Che		Modifications: Y/E arterial drainage	Canaliseu-wideri	EL-DBIK COSION	Reffe/Glide Slow flow			
DO mg/I	101.5	Dominant Types:			SION HOW			
	10.63	Bedrock 0	15			11		
Temp (°C)	13-3	Boulder (>128mm)	25			-	-	
Conductivity	32.5 use	Cobble (32-128mm)	25		1.3	_	_	_
pH	6.53	Gravel (8-32mm) 2 Fine Gravel (2-8mm				_	-	_
Bank width (cm)	1-2m	Sand (0.25-2mm)				-		_
Wet width (cm)	1m	Silt (<0.25mm) 10					-	_
Avg Depth (cm)	10cm	Slope: Low - Media	m - High - Very	High		1.000		
Staff gauge	/	Geology: Calcareou			Shading: High - Mo	derate -	Low - Nor	ne
Velocity	Colour				Cattle access Y: up	ctveam -	downstrea	m or N
Torrential	None	Substratum Cond	ition: Calcareous	-Compacteu-	Catue access 1. up	30 Cum	00111100101	
Fast	Stight	Loose - Nemal Substratum:						
Moderate	Moderate High	Staney pottom-Mud	dy battom-Mud ov	er stones	Photo: (7) / N	119	1	
Very slow	nigh	Degree of siltatio			7110001 ()/ 11			
Clarity	Discharge							
Very clear	Flood	Depth of mud: No			0			
(29)	Nermal	Litter: Worle - Pres	ent - Moderate - A	Abundant	-			
		Filamentous Alga	e:	-	Sewage Fungus:		F LAV	-
Slightly turbid	Low	None - Present - M	oderate - Abundar	nt	None - Present - Mo	derate - /	Abundant	
Highly turbid	Very Low	Main land use u/s		Sample	Sampled in Minute	s:		
	Dry	Pasture	Urban	retained:	Pond net x 2			
	Recent Flood	B49		ON N	Stone wash x 2			
6	GREAT THE	Forestry	Other		Weed sweep x)			
Maria Carlo	-	Macroinverteb	rate Composi	tion			elative	
The macroinvertebra	ates are divided into	the following 5 specials) - note that tails m	hc groups:	rice compline		100	5	ice 1
Group 1 = E	lecontera (2-tails)	note that tails may be	damaged during	sampling	-		-20	- 2
Group 3 = T	richootera		Management of the Parket				1-50	- 3
Group 4 = G	OLD (Gastropoda,	Oligochaeta and Dipt	era)				1-100	5
Group 5 = A	sellus	ra and relative abund	ance of each macr	oinvertebrate or	oup below: (Abundance	Ab)	01+	,
Calculate the	total number or to	-	and the second second second	The second second			uctra Ab	8
Ephemeroptera:		Ecdyonurus Ab	Plecopte	wa:	M M			N)
	12	Rhithrogena Ab	_	-			perla Ab	
		Heptagenia Ab		_			mura Ab	-
		Ephemerella Ab		_		Amphine		
		Caenis Ab		-	11		Perla Ab	
	Pau	raleptophlebia Ab			111	Din	ocras Ab	X
		nemera danica Ab				Other P	lecop Ab	
		Other Ephem Ab		-		Other Pl	-	
			- Instant	- Tam 13	Total Rela	-		2
Total no. of tax	and the second second second	ative Abundance 0		A PROPERTY OF THE PARTY OF THE	AND DESCRIPTION OF THE PARTY OF			_
Trichoptera:	Hydropsychida						Abea	nt ×
	I Polycentropodida		Potamopyrgus		Chironomus (D) Ab			
	II Rhyacophii	The state of the s	Planorbis	CONTRACTOR OF THE PARTY OF THE	Simuliidae (D) Ab	-	Few/Lov Common	
	l Philopotamida		Ancylus		Dicranota (D) Ab		Numerous	
	Limnephilida			177	/// Tipulidae (D) Ab			_
	1 Sericostomatida		Lumbriculus		Ceratopogonidae (D) Ab		NOTE: A	sellus
	Glossosomatida		Eiseniella		Other GOLD Ab		must be	
	Lepidostomatida		Tubificidae	(UI) AD			recorded	
	The second secon	AA THE A						
	Other Trichoptera						absent if	none
Total no. of			Total no. o	Taxa 3	Total Relative Abundance	X	absent if it are found	none

backs present 5

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.

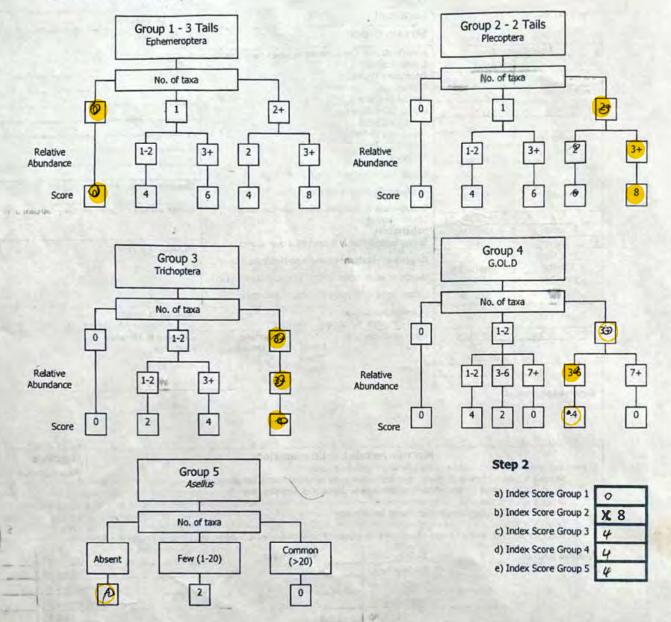


Step 3. Calculate the Total Index Score, the Average Index Score and the SSR Score using the boxes below

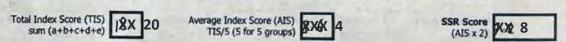
Step 4. Assess the stre	am by comparing the fina	SSR score with the	he categories below a	and tick the appropriate bo
In the second second	COUNTY OF THE PARTY OF THE PART			
Probably not at risk	> 6.5 – 7.25 Indeterminate Stream may be at risk	Stream at	6.5 t risk	
ADD				

Station no.	100000	Code: Location:	Date	: 20 Jul		Time:	Time: 12 15 Grid (6 figure):				
anigeende	16. 2	Stream Order:				tream flow:	e):				
		The state of the s			R	iffle					
DO%	nemistry	Modifications: Y/N	Canalised-wid	lened-bank er	osion- R	in elolide					
DO mg/I	93.2	Dominant Types:			S	low flow					
Temp (°C)	10.09	Bedrock 25									
	11.8	Boulder (>128mm) 2									
Conductivity	30.6 Mem	Cobble (32-128mm)	25								
pH	6.35	Gravel (8-32mm) (7) Fine Gravel (2-8mm)	5								
Bank width (cm)	10	Sand (0.25-2mm) 5	-								
Wet width (cm)	0.5m	Silt (<0.25mm) 5									
Avg Depth (cm)	Som	Slope: Low - Medium	n - High - Ve	ry High							
Staff gauge		Geology: Calcareous			S	hading: Righ -	Modera	te - Low - No	one		
Velocity	Colour			Marian Control of the Control				S. A. S. S. S.			
Torrential Fast	None	Substratum Condit Loose - Normal	ion: Calcareo	us-Compacted	- 0	attle access Y:	upstrea	m – downstr	eam		
(Moderate)	Moderate	Substratum:									
Slow	High	Stone Posttom-Muddy	y bottom-Mud	over stones		hoto:(7)/ N			_		
Very slow	HORSE CO.	Degree of siltation:	Clean-Slight-	Moderate-Hea		110.00.07					
Clarity	Discharge	VINCENCE CONTROL OF THE PARTY O									
Very clear	Flood	Depth of mud: None			TUCIN						
Clear	Normal	Litter: None - Preser	nt – Moderate	- Abundant							
Slightly turbid	Low	Filamentous Algae:		a		ewage Fungus					
Highly turbid	Very Low	None - Present - Mod Main land use u/s:		Sample		ne - Present -		te - Abundant			
Dry		Pasture	Urban	retained:		ampled in Mini	ites:				
	Recent Flood	1809	Tillage	(V) N	1.00						
		F@vestry	Other	-		tone wash x /					
General Commen SSNS windlight SSNS windlight NO Steep pu	when down when dis after went Deen	in confluence; dosenved in	befor for	estry		A (Cos)		ORP 101	_		
SSMS under the No Sleep pro	when dis Afde went Deen ates are divided into	Macroinvertebra the following 5 specific	te Compo groups:	sition	he b			Relative	e		
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The macroinvertebra Group 1 = E Group 2 = P	about Dela ates are divided into Ephemeroptera (3-tails)—	Macroinvertebra the following 5 specific	te Compo groups: be damaged	sition during sampli	he b			Relative Abunda 1-5 6-20	е		
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The macroinvertebra Group 1 = E Group 2 = P Group 3 = T Group 4 = G Group 5 = A Calculate the	ates are divided into phemeroptera (3-tails)— richoptera (3-tails)	Macroinvertebra the following 5 specific ils) — note that tails may note that tails may be d Oligochaeta and Diptera xa and relative abundan Ecdyonurus Ab Rhithrogena Ab Heptagenia Ab Ephemerella Ab Caenis Ab raleptophlebia Ab hemera danica Ab Other Ephem Ab ative Abundance	rte Compo groups: y be damaged damaged during a) ce of each ma	during sampling sampling acroinvertebratesters;	ng te group be	A (Cops)	Prot Prot Ampl	Relative Abunda 1-5 6-20 21-50 51-100 101+ Leuctra Ab Isoperia Ab tonemura Ab Perla Ab Dinocras Ab er Plecop Ab r Plecop Ab	2		
Total no. of taxx	ates are divided into phemeroptera (3-ta) plecoptera (2-tails) richoptera (3-OLD) (Gastropoda; Asellus e total number of tail	Macroinvertebra the following 5 specific its) — note that tails may note that tails may be d Oligochaeta and Diptera xa and relative abundan Ecdyonurus Ab Rhithrogena Ab Heptagenia Ab Ephemerella Ab Caenis Ab raleptophlebia Ab nemera danica Ab Other Ephem Ab ative Abundance D ie Ab GOLD:	rte Compo groups: y be damaged damaged during a) ce of each ma	during sampling sampl	ng te group be	A (Cess).	Prot Prot Othe Other	Relative Abunda 1-5 6-20 21-50 51-100 101+ Leuctra Ab Isoperia Ab tonemura Ab hinemura Ab Perla Ab Dinocras Ab er Plecop Ab r Plecop Ab Abundance	1 2		
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Total no. of taxa	a local Dela Africa de la Composition del Composition de la Composition del Composition de la Composition de la Composition de la Composition de la Composition del Composition del Composition de la Composition de la Composition del Composition de la Composition del Composition del Composition del Composition de la Composition de la Composition de la Composition de la Composition del Composit	Macroinvertebra the following 5 specific its) — note that tails may note that tails may be d Oligochaeta and Diptera xa and relative abundan Ecdyonurus Ab Rhithrogena Ab Heptagenia Ab Ephemerella Ab Caenis Ab raleptophlebia Ab nemera danica Ab Other Ephem Ab ative Abundance pe Ab GOLD: ie Ab Caenis Ab GOLD:	Total n Lymnae Potamopyrgu Planorb	during sampling sampling sampling sampling acroinvertebral otera:	ng te group be	How: (Abundance Total Renironomidae (D)	Protein Ample Other Ample Ampl	Relative Abunda 1-5 6-20 21-50 51-100 101+ Leuctra Ab Isoperia Ab tonemura Ab hinemura Ab Perla Ab. Dinocras Ab er Plecop Ab r Plecop Ab Abundance Asellus: Abse Few/Low Common	e inc		
Total no. of taxa	a local Dela Africa de la Composition del Composition de la Composition del Composition del Composition del Composition de la Composition del Composition de la Composition del Composition del Composition de la Composition de la Composition de la Composition del Co	Macroinvertebra the following 5 specific its) — note that tails may note that tails may be d Oligochaeta and Diptera xa and relative abundan Ecdyonurus Ab Rhithrogena Ab Heptagenia Ab Ephemerella Ab Caenis Ab raleptophlebia Ab nemera danica Ab Other Ephem Ab ative Abundance pe Ab GOLD: ie Ab	Total n Lymnae Potamopyrgu Planorb Ancylu Plyss	during sampling sampl	rig le group be	Total Renironomidae (D) Chironomus (D) Simuliidae (D) Tipulidae (D)	Other Other Ampl	Relative Abunda 1-5 6-20 21-50 51-100 101+ Leuctra Ab Isoperia Ab tonemura Ab hinemura Ab Peria Ab Pinocras Ab er Piecop Ab Abundance Aseilus: Abse Few/Lon	e inc		
Total no. of taxa	a local Dela Dela Dela Dela Dela Dela Dela De	Macroinvertebra the following 5 specific its) — note that tails may note that tails may be d Oligochaeta and Diptera ca and relative abundan Ecdyonurus Ab Rhithrogena Ab Heptagenia Ab Ephemerella Ab Caenis Ab raleptophlebia Ab nemera danica Ab Other Ephem Ab ative Abundance pe Ab GOLD: e Ab	Total n Lymnae Potamopyrgu Planorb Ancylu Phys Lumbriculus	during sampling sampl	rig le group be	Total Renironomidae (D) Chironomus (D) Simuliidae (D) Tipulidae (D) topogonidae (D)	Protection of the Control of the Con	Relative Abunda 1-5 6-20 21-50 51-100 101+ Leuctra Ab Isoperta Ab Isoperta Ab Perla Ab Perla Ab Perla Ab Perla Ab Perla Ab Telecop Ab Perla Ab Abundance Aselfus: Few/Loc Common Numerou	1 2 2 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2		
Total no. of taxa	a local Supplies a local supplies are divided into Ephemeroptera (3-tails)-irichoptera (3-tails)-irichoptera (3-coll) (Gastropoda, Asellus e total number of tails) e total number of tails a local supplies a loc	Macroinvertebra the following 5 specific its) — note that tails may note that tails may be d Oligochaeta and Diptera xa and relative abundan Ecdyonurus Ab Rhithrogena Ab Heptagenia Ab Ephemerella Ab Caenis Ab raleptophlebia Ab nemera danica Ab Other Ephem Ab ative Abundance De Ab GOLD: ie Ab ie Ab ie Ab ie Ab ie Ab ie Ab	Total n Lymnae Potamopyrgu Planorb Ancylu Eisenielle	during sampling sampl	rig le group be	Total Renironomidae (D) Chironomus (D) Simuliidae (D) Tipulidae (D) Topogonidae (D)	Other Other Ampl	Relative Abunda 1-5 6-20 21-50 51-100 101+ Leuctra Ab Isoperta Ab Perla Ab Perla Ab Perla Ab Perla Ab Perla Ab Perla Ab Abundance Aselfus: Abse Few/Los Common Numerou	1 2 2 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2		
Total no. of taxa	a local Dela Africa de la Composición del Composición de la Composición de la Composición de la Composición del Composición de la Composic	Macroinvertebra the following 5 specific its)—note that tails may note that tails may be d Coligochaeta and Diptera a and relative abundan Ecdyonurus Ab Rhithrogena Ab Heptagenia Ab Ephemerella Ab Caenis Ab raleptophiebia Ab nemera danica Ab Other Ephem Ab ative Abundance ite Ab GOLD: ite Ab	Total n Lymnae Potamopyrgu Planorb Ancylu Phys Lumbriculus	during sampling sampl	rig le group be	Total Renironomidae (D) Chironomus (D) Simuliidae (D) Tipulidae (D) topogonidae (D)	Protection of the Control of the Con	Relative Abunda 1-5 6-20 21-50 51-100 101+ Leuctra Ab Isoperla Ab Isoperla Ab Innemura Ab Perla Ab. Dinocras Ab er Plecop Ab r Plecop Ab	1 2 2 1 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2		
Total no. of taxa	a local Dela Africa de la Composición del Composición de la Composición de la Composición de la Composición del Composición de la Composic	Macroinvertebra the following 5 specific its)—note that tails may note that tails may be d Coligochaeta and Diptera a and relative abundan Ecdyonurus Ab Rhithrogena Ab Heptagenia Ab Ephemerella Ab Caenis Ab raleptophiebia Ab nemera danica Ab Other Ephem Ab ative Abundance ite Ab GOLD: ite Ab	Total n Lymnae Potamopyrgu Planorb Ancylu Eisenielle	during sampling sampl	rig 2 Cl	Total Renironomidae (D) Chironomus (D) Simuliidae (D) Tipulidae (D) topogonidae (D)	Protection of the Ample Other Other Albah Ab I Ab	Relative Abunda 1-5 6-20 21-50 51-100 101+ Leuctra Ab Isoperia Ab Isoperia Ab Peria Ab. Dinocras Ab er Plecop Ab r Plecop Ab Abundance Asellus: Abse Few/Loo Common Numerou	1 2 1 1 1 2 2 1 1 1 2 2 1 1 1 1 1 1 1 1		

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



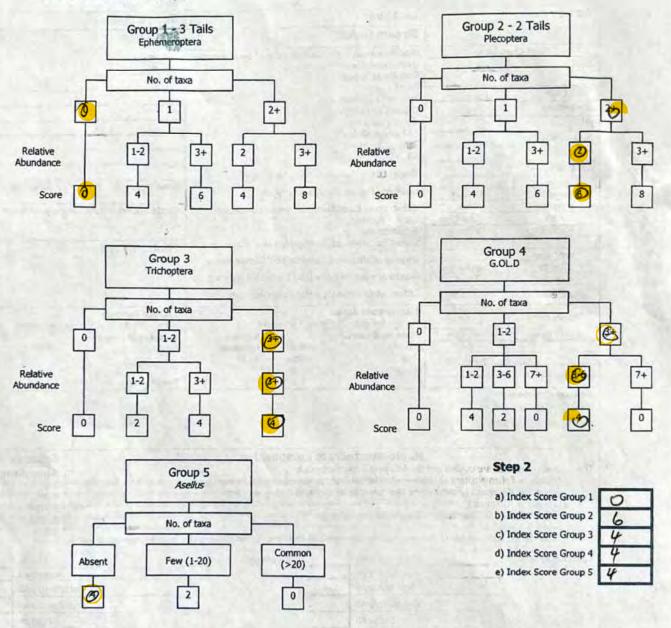
Step 4. Assess the stream by comparing the final SSR score with the categories below and tick the appropriate box



River:		Code:		Date:	20 July	22.	Time: 14:	00.		
Station no.,		Locati	on:)		rid (6 figure):			
Station no.	7.3	Stream	n Order:				ream flow:			
Field Ch		Modific	atione: VIII	OCanalised-wid	ened-bank erosio		ifié			
00%	96.5	arterial o	frainage	y contained the	CIRCO DOI IN COUNT	1.00	Tie/Chide ow flow			
DO mg/I	9.45		int Types:			SK	JV HOW			
Temp (°C)	16.4	- Bedrock								
Conductivity			(>128mm)			-	_		_	_
pH	329		32-128mm)			1		-		
	6.82		8-32mm) / 5 vel (2-8mm					-		
Bank width (cm)	3-hm	Sand (0.	25-2mm) /4	119			1			
Wet width (cm)	2-3m	Sit (<0.	25mm)/c	175			1-1			
Avg Depth (cm)	15cm	Slopet	ow - Madis	um – High – Ve	ry High	RE		Ta. J		
staff gauge		The state of the s				Sh	ading: High - Moo	derate	- (COV) - NO	ne
Velocity	Colour	1000000		us-Siliceous-Mis					_	
Torrential	None			ition: Calcareo	us-Compacted-	Ca	ttle access Y: ups	tream -	- downstre	am op N
Fast	(Slight)	Moose -	CONTRACTOR OF THE PARTY OF THE							_
Moderate	Moderate	Substra		dy bottom-Mud	muse change					
Very slow	High						notor N N			
Clarity	Discharge	Degree	of siltatio	n: Cléan-900ht	Moderate-Heavy					
Very clear	Flood	Depth o	of mud: No	e: <1cm: 1-50	m: 5-10cm: >10	cm				
Oear	(Normal)	Litter:	None - Pres	ent - Moderate	- Abundant					
	(Normal)	-			Abbilloone			_		_
Slightly turbid	(LOW)	ntous Alga		dans.		wage Fungus: - Present - Mod		Abordent		
None – Present – McGrate - Abundant Highly turbid Very Low Main land use u/s: Sample							mpled in Minutes		ADUNGANI	-
2.021.07	Dry Pasture Urban retained: Pond net x 2									
	Recent Flood	800		Tillage	1 N					
		Forestry		Other		-	one wash x / eed sweep x /			
lone macro	physe you	act on	scrowo.	reru .						
		Macroi	nverteb	rate Compo	cition			-	Relative	
The macroinvertebr	rates are divided in			that is not written to the control of the	Sidoli				Abunda	
	Ephemeroptera (3-					-			1-5	1
	Plecoptera (2-tails)	-note that	tails may be	damaged duri	ng sampling	-		-	6-20	- 2
Group 3 = 1	G.OL.D (Gastropod	Olionehaa	ta and Dint	ara)					21-50	3
Group 5 = 2		a, Ongocrac	ta and orpi				arrest but the		51-100	-
Calculate th	e total number of t	axa and rela	ative abunda	ance of each m	acroinvertebrate	group be	low: (Abundance -	Ab)-	101+	5
Ephemeroptera:		Ecdyone	urus Ab	Pleco	ptera:		LI1	1	euctra Ab	11
	1/2000	Rhithrog	ena Ab						operia Ab	
		Heptage	enia Ab		-	1	100		emura Ab	
		Ephemei	refla Ah		-	-	0.7	1. 2. 0.00	emura Ab	1
	-			_	-	-	11 /	иприн		-
	-		enis Ab	_	-				Perla Ab	
	-	Paraleptophie	ebia Ab		-			Di	nocras Ab	
	E,	phemera dai	nica Ab		-		STATE OF THE	Other	Plecop Ab	
		Other Eph	nem Ab		-				lecop Ab	
Total no. of tax	a O Total R	elative Abune	dance o	Total	o. of Taxa	2	Total Relat		10000	X 2
Trichoptera:	Hydropsychie		G.OLD	- department	ea (G) Ab	Ch	ironomidae (D) Ab		Asellus:	11.
A A TOWN	And the second second second		G.ULD.	2011010						
1	Polycentropodia Rhyacon	-		Potamopyrg			Chironomus (D) Ab	1	Abse Faut/Los	
		hila Ab	-	A CONTRACTOR OF THE PARTY OF TH	bis (G) Ab	11	Simuliidae (D) Ab	1	Few/Lo	
	1 Philopotamie		-		us (G) Ab	11	Dicranota (D) Ab	-	Numerou	
	111 Umnephili				sa (G) Ab	11	Tipulidae (D) Ab	1	Humeroc	10
11			1	Lumbricule		Cera	topogonidae (D) Ab		NOTE:	Scallen
3	O Glossosomati			-	la (OI) Ab		Other GOLD Ab		MOTE: A	Scills
	Lepidostomati							recorded as		
	Other Trichopte								absent if	
Total no. of		elative ndance	8	Total no.	of Taxa	Total	Relative Abundance	X) 2	are found	t
Taxa	O. I ADU	ndance)	10	2112315				72 3	1000	

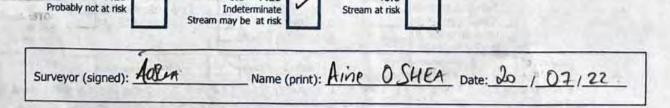
bactis present: less than 20.

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 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) 18 Average Index Score (AIS) 3. 6 SSR Score (AIS x 2) 7.25 (AIS x 2) 3. 6 SSR Score (AIS x 2) 7.25 > 6.5 - 7.25 (AIS x 2) 7.25

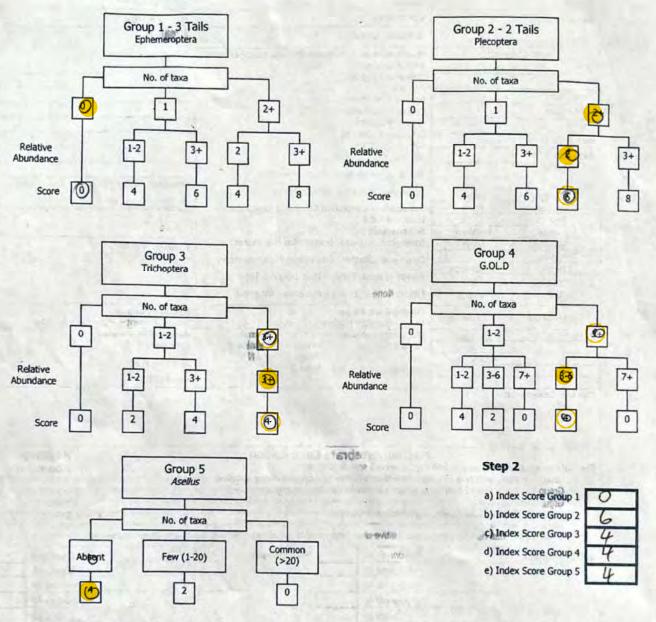


River: Code: Date: 22 Time: 15:00 Station no. Location: Grid (6 figure): Carenigeen Stream flow: Stream Order: Riffle Field Chemistry Modifications: Y/N Canalised-widened-bank erosion-Rifferslide D0% 98.9 arterial drainage Slow flow DO mg/l Dominant Types: 9.79 Bedrock 🔊 Temp (°C) 3.3 Boulder (>128mm)/5 Conductivity 29.3 Cobble (32-128mm) 2.5 Gravel (8-32mm) | * 6-68 Fine Gravel (2-8mm) 15 Bank width (cm) 300 Sand (0.25-2mm) 15 Wet width (cm) 150 Silt (<0.25mm) 15 Avg Depth (cm) 20 Slope: Low - Medium - High - Very High Staff gauge Shading: High - Moder te - Low - None Geology: Calcareous-Siliceous-Mixed Velocity Colour Torrential None Substratum Condition: Calcareous-Compacted-Cattle access Y: upstream - downstream or P Fast Stott Loose - Normal Moderate Moderate Substratum: Slow Stoney bottom-Muddy bottom-Mud over stones High Photo: (7)/ N Very slow Degree of siltation: Clean-Slight-Moderate-Heavy Clarity Discharge Depth of mud: None: <1cm: 1-5cm: 5-10cm: >10cm Very clear Flood Clear Nemal Litter: None - Present - Moderate - Abundant Filamentous Algae: Sewage Fungus: Slightly turbid Low None - Present - Moderate - Abundant None - Present - Moderate - Abundant Highly turbid Very Low Main land use u/s: Sample Sampled in Minutes: retained: Pasture Dry Urban Pond net x 1.5 Recent Flood B04 Tillage Stone wash x ! Other Weed sweep x observed. Deen observed in this men. Adjacent, bondening + **Macroinvertebrate Composition** Relative The macroinvertebrates are divided into the following 5 specific groups: Abundance 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 1-5 6-20 クニ Group 3 = Trichoptera 21-50 3 Group 4 = G.OLD (Gastropode, Oligochaeta and Diptera) 51-100 Group 5 = Asellus 101+ 5 Calculate the total number of taxa and relative abundance of each macroinvertebrate group below: (Abundance - Ab) Ecdyonurus Ab Ephemeroptera: Plecoptera: I Leuctra Ab Rhithrogena Ab Isoperla Ab Heptagenia Ab Protonemura Ab Ephemerella Ab 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 Total Relative Abundance Total no. of Taxa Total Relative Abundance X Trichoptera: Hydropsychidae Ab G.OL.D: Lymnaea (G) Ab Chironomidae (D) Ab Asellus: Polycentropodidae Ab Potamopyrgus (G) Ab Chironomus (D) Ab Absen Rhyacophila Ab 2 Planorbis (G) Ab Simuliidae (D) Ab Few/Low Philopotamidae Ab Ancylus (G) Ab Dicranota (D) Ab Common/ Limnephilidae Ab Numerous Physa (G) Ab Tipulidae (D) Ab Sericostomatidae Ab Lumbriculus (OI) Ab Ceratopogonidae (D) Ab NOTE: Asellus 2.0 Glossosomatidae Ab Eiseniella (OI) Ab Other GOLD must be Lepidostomatidae Ab Tubificidae (OI) Ab recorded as Other Trichoptera Ab absent if none Total no. of Total Relative are found Total Relative Abundance Total no. of Taxa 4%

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.

onp:

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

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

Total Index Score (TIS)

sum (a+b+c+d+e)

Step 4. Assess the strea	m by comparing the final SSR so	core with the	categories below and	I 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):	Name (print):	Aine 0	Shea Date: Lo	0 107 14

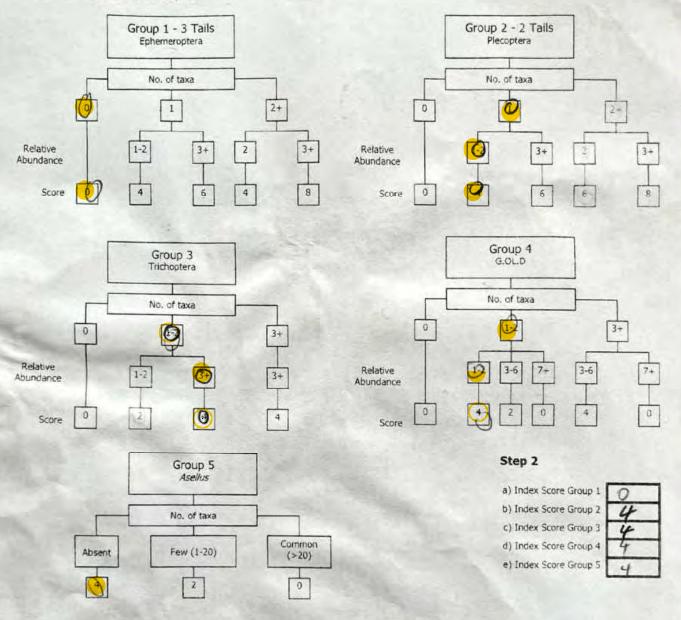
SSR Score

(AIS x 2)

Date: 10 Ang. River: Time: 18 00 Code: Station no. Grid (6 figure): Location: Stream flow: Allegendu Stream Order: Riffle Field Chemistry Modifications: Y/N Canalised-widened-bank erosion-Riffie/Slide D0% arterial drainage Slow flow Dominant Types: DO mg/1 Bedrock A Temp (°C) 14.8 Boulder (>128mm) 20 Conductivity Cobble (32-128mm) 20 Gravel (8-32mm)20 Fine Gravel (2-8mm) 20 pH Bank width (cm) 300 Sand (0.25-2mm) 10 Wet width (cm) 150 Silt (<0.25mm) 10-Avg Depth (cm) 20 Slope: Low - Maditim - High - Very High Shading: High - Moderate - Low - None Staff gauge Geology: Calcareous-Siliceous-Mixed Colour Velocity Torrential Substratum Condition: Calcareous-Compacted-Cattle access Y: upstream - downstream or N None Fast Slight Loose - Normal Substratum: Moderate Moderate Stored bottom-Muddy bottom-Mud over stones Slow High Photo: Y / N Very slow Degree of siltation: Clean-Sligh-Moderate-Heavy Discharge Clarity Depth of mud: Note <1cm: 1-5cm: 5-10cm: >10cm Very clear Flood Litter: N - Present - Moderate - Abundant Normal Deag Sewage Fungus: Filamentous Algae: Slightly turbid LOW None - Present - Moderate - Abundant None - Resent - Moderate - Abundant Sampled in Minutes: Highly turbid Very Low Main land use u/s: Sample retained: Urban Pond net x2 Pasture Dry BON Tillage Recent Flood Stone wash x O-5 Forestry Other Weed sweep x 25 General Comments: steep Macroinvertebrate Composition Relative The macroinvertebrates are divided into the following 5 specific groups: Abundance Group 1 = Ephemeroptera (3-tails) - note that tails may be damaged during sampling 1-5 Group 2 = Plecoptera (2-tails) - note that tails may be damaged during sampling 6-20 Group 3 = Trichoptera 21-50 Group 4 = G.OL.D (Gastropoda, Oligochaeta and Diptera) 51-100 Group 5 = Asellus TOT+ Calculate the total number of taxa and relative abundance of each macroinvertebrate group below: (Anundance - Ab) Leuctra Ab Ecdyonurus Ab Plecoptera: Ephemeroptera: Isoperla Ab Rhithrogena Ab Protonemura Ab Heptagenia Ab Ephemerella Ab Amphinemura Ab Perla Ab Caenis Ab Paraleptophlebia Ab Dinocras Ab Other Plecop Ab Ephemera danica Ab Other Plecop Ab Other Ephem Ab Total Relative Abundance Total Relative Abundance Total no. of Taxa Total no. of taxa Asellus: Chironomidae (D) Ab Hydropsychidae Ab G.OL.D Lymnaea (G) Ab Trichoptera: rironomus (D) Ab Absen Polycentropodidae Ab Potamopyrgus (G) Ab Simulidae (D) Ab Few/Low Planorbis (G) Ab Rhyacophila At Dicranota (D) Ab Common/ Ancylus (G) Ab Philopotamidae Ab Numerous Limnephilidae Ab Physia (G) Ab Tipulidae (D) Ab Lumbriculus (OI) Ab Sericostomatidae Ab Ceratopogonidae (D) Ab NOTE: Asellus Glossosomatidae Ab Eiseniella (OI) Ab Other GOLD must be Lepidostomatidae Ab Tubificidae (OI) Ab recorded as Other Trichoptera Ab absent if none are found **Total Relative** Total no. of X 2 Total no. of Taxa Total Relative Abundance Abundance Taxa

NOTE Baetis is an Epherneropteran 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 3. Calculate the Total Index Score, the Average Index Score and the SSR Score using the boxes below

Average Index Score (AIS) SSR Score (AIS) TIS/5 (5 for 5 groups) 3 7

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

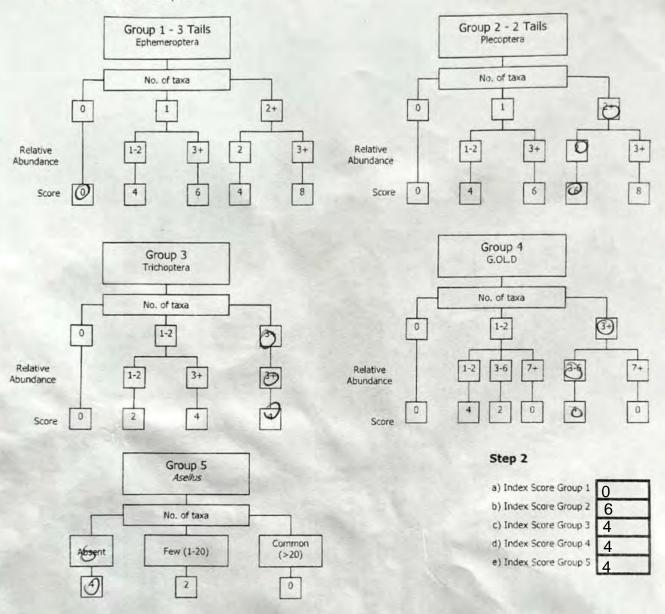
Stream may be at risk

Stream may be at risk

Surveyor (signed): Ablen Name (print) Aine OSle4 Date: 3 / 22

		Code:	Date: 30.		Time:	5:10	
Station no.	and a	Location:	Dute.		Grid (6 figure):		-
Annigeend	m96.	Stream Order: Stream flow:					_
Field Ch	emistry	Modifications: Y/HoCa	and bank widowad bank	Aronion -	Riffle		
D0%	91.7	arterial drainage	Hallsed-Widerled-balls	Ci OsiOii-	Riffle/Glide Slow Row		
DO mg/l	9.22	Dominant Types:					
Temp (°C)	15.1	Bedrock O			Very Slow &	Dus . 14	16
Conductivity	32.7	Boulder (>128mm) lo Cobble (32-128mm) 2			Most of wh	la +	-
pH	5.39	Gravel (8-32rnm) 72			NOW & WAT	KA	_
Bank width (cm)	120	Fine Gravel (2-8mm) 2			V		_
Wet width (cm)	60	Sand (0.25-2mm) 25		-			
Avg Depth (cm)		Silt (<0.25mm) 10 -	CONTRACTOR OF				-
Staff gauge	10.	Slope: Low - Medium -	High - Very High	-	Charles U.S. Hade	and I am N	ratus.
Velocity	Colour	Geology: Calcareous-Si	liceous-Mi ro d		Shading: Hga - Mode	rate - Low - N	ione
Torrential	MODE	Substratum Condition	: Calcareous-Compact	ted-	Cattle access Y: upstre	eam - downstr	eam or N
Fast	Slight	Loose - Normal	0		COMPANY CANADA STREET		
Moderate	Moderate	Substratum:					
Sign	High	Stone Dittom-Muddy be	ottom-Mud over stone	5	Photo:(Y)/ N		
Very slow Clarity	Discharge	Degree of siltation:	ean-Slight-Moderate-H	leavy			
Very clear	Flood	Depth of mud: NODe.	clcm: 1-5cm: 5-10cm	>10cm			
Chap	Normal	Litter: None - Present -					
	rediting		Proceduce - Abdition		F-1		
Slightly turbid	\$20W	Filamentous Algae: None – Present – Modera	ate - Abundant		Sewage Fungus: None - Present - Moder	ate - Ahundani	i i
Highly turbid	Vegow	Main land use u/s:	Sample		None - Present - Moderate - Abundant Sampled in Minutes:		
	Dry	Pasture	Urban retaine		Pond net x 1-5		
	Recent Flood	Forestry	Tillage Ø/N		Stone wash x !		
		Forestry Other			Weed sweep x 2 5		
General Comment KULINS, gonse Sloop + does	"; leatlen pricent le	on petts barn ou. No cours o	the much o deemed.	ierhan	g + shading		
	*	on ruls barrier. No couls of Macroinvertebrate of the following 5 specific growth of t	Composition	rechan	g + shadiiy	Relative	The same of the sa
The macroinvertebra Group 1 = Ep	tes are divided into	Macroinvertebrate of the following 5 specific growids) — note that tails may be	Composition oups: damaged during same	pling	g + Shading	Relative Abunda	The same of the sa
The macroinvertebra Group 1 = Ep Group 2 = Pl	tes are divided into themeroptera (3-ta ecoptera (2-tails) –	Macroinvertebrate of the following 5 specific gro	Composition oups: damaged during same	pling	g + Shadiiy	Abunda 1-5 6-20	nce
The macroinvertebra Group 1 = Ep Group 2 = Pl Group 3 = Tr	tes are divided into shemeroptera (3-ta ecoptera (2-tails) – ichoptera	Macroinvertebrate the following 5 specific grails) — note that fails may be note that tails may be dam	Composition oups: damaged during same	pling	g + Shadiiy	Abunda 1-5 6-20 21-50	nce 1 2 3
The macroinvertebra Group 1 = Ep Group 2 = Pl Group 3 = Tr	tes are divided into hemeroptera (3-ta ecoptera (2-tails) – ichoptera OLD (Gastropoda	Macroinvertebrate of the following 5 specific growids) — note that tails may be	Composition oups: damaged during same	pling	g + Shadiiy	Abunda 1-5 6-20 21-50 51-100	1 2 3
The macroinvertebra Group 1 = Ep Group 2 = Pl Group 3 = Tr Group 4 = G. Group 5 = As	ites are divided into shemeroptera (3-ta ecoptera (2-tails) - ichoptera OLD (Gastropode, sellus	Macroinvertebrate the following 5 specific grails) — note that fails may be note that tails may be dam	Composition oups: damaged during sam laged during sampling	pling	y + Shadiiy	Abunda 1-5 6-20 21-50 51-100 101+	nce 1 2 3
The macroinvertebra Group 1 = Ep Group 2 = Pl Group 3 = Tr Group 4 = G. Group 5 = As Calculate the	ites are divided into shemeroptera (3-ta ecoptera (2-tails) - ichoptera OLD (Gastropode, sellus	Macroinvertebrate the following 5 specific gro ils) — note that tails may be note that tails may be dam Oligochaeta and Oliptera)	Composition oups: damaged during sam laged during sampling	pling	y + Shadiiy	Abunda 1-5 6-20 21-50 51-100 101+	1 2 3 4
The macroinvertebra Group 1 = Ep Group 2 = Pl Group 3 = Tr Group 4 = G. Group 5 = As Calculate the	ites are divided into shemeroptera (3-ta ecoptera (2-tails) - ichoptera OLD (Gastropode, sellus	Macroinvertebrate the following 5 specific gra- its) — note that fails may be note that fails may be dam Oligochaeta and Diptera) xa and relative abundance of	Composition oups: damaged during sampling aged during sampling of each macroinverteb	pling	y + Shadiiy	Abunda 1-5 6-20 21-50 51-100 101+	1 2 3 4
The macroinvertebra Group 1 = Ep Group 2 = Pl Group 3 = Tr Group 4 = G. Group 5 = As Calculate the	ites are divided into shemeroptera (3-ta ecoptera (2-tails) - ichoptera OLD (Gastropode, sellus	Macroinvertebrate of the following 5 specific gravits)—note that tails may be note that tails may be dam Oligochaeta and Diptera) xa and relative abundance of Ecdyonurus Ab	Composition oups: damaged during sampling aged during sampling of each macroinverteb	pling	g + Shading below: (Abundance - Ab	Abunda 1-5 6-20 21-50 51-100 101+ Leuctra Ab	1 2 3 4
The macroinvertebra Group 1 = Ep Group 2 = Pl Group 3 = Tr Group 4 = G. Group 5 = As Calculate the	ites are divided into shemeroptera (3-ta ecoptera (2-tails) - ichoptera OLD (Gastropode, sellus	Macroinvertebrate of the following 5 specific grounds; its) — note that rails may be dam Oligochaeta and Oliptera) ixa and relative abundance of Ecdyonurus Ab Rhittnogena Ab Heptagenia Ab	Composition oups: damaged during sampling aged during sampling of each macroinverteb	pling	g a Shading pelow: (Abundance - Ab	Abunda 1-5 6-20 21-50 51-100 101+ Leuctra Ab Isoperla Ab	1 2 3 4
The macroinvertebra Group 1 = Ep Group 2 = Pl Group 3 = Tr Group 4 = G. Group 5 = As Calculate the	ites are divided into shemeroptera (3-ta ecoptera (2-tails) - ichoptera OLD (Gastropode, sellus	Macroinvertebrate of the following 5 specific grounds) — note that tails may be note that tails may be dam Oligochaeta and Diptera) and relative abundance of Ecdyonurus Ab Rhithrogena Ab Heptagenia Ab Ephemerella Ab	Composition oups: damaged during sampling aged during sampling of each macroinverteb	pling	g a Shading pelow: (Abundance - Ab	Abunda 1-5 6-20 21-50 51-100 101+ Leuctra Ab Isoperia Ab phinemura Ab	1 2 3
The macroinvertebra Group 1 = Ep Group 2 = Pl Group 3 = Tr Group 4 = G. Group 5 = As Calculate the	ites are divided into shemeroptera (3-ta ecoptera (2-tails) - ichoptera OLD (Gastropode, sellus total number of tai	Macroinvertebrate of the following 5 specific grounds) — note that tails may be note that tails may be dam Oligochaeta and Oliptera) and relative abundance of Ecdyonurus Ab Rhithrogena Ab Heptagenia Ab Ephemerella Ab Caenis Ab	Composition oups: damaged during sampling aged during sampling of each macroinverteb	pling	g a Shading pelow: (Abundance - Ab	Abunda 1-5 6-20 21-50 51-100 101+ Leuctra Ab Isoperia Ab phinemura Ab Peria Ab	1 2 3 4
The macroinvertebra Group 1 = Ep Group 2 = Pl Group 3 = Tr Group 4 = G. Group 5 = As Calculate the	tes are divided into shemeroptera (3-ta ecoptera (2-tails) - schoptera OLD (Gastropoda sallus total number of tai	Macroinvertebrate of the following 5 specific gro- ints) — note that tails may be note that tails may be dam Oligochaeta and Diptera) ixa and relative abundance of Ecdyonurus Ab Rhithrogena Ab Heptagenia Ab Ephemerella Ab Caenis Ab raleptophiebia Ab	Composition oups: damaged during sampling aged during sampling of each macroinverteb	pling	pelow: (Abundance - Ab Pro Am	Abunda 1-5 6-20 21-50 51-100 101+ Leuctra Ab Isoperia Ab obinemura Ab Peria Ab Dinocras Ab	1 2 3 4
The macroinvertebra Group 1 = Ep Group 2 = Pi Group 3 = Tr Group 4 = G. Group 5 = As	tes are divided into shemeroptera (3-ta ecoptera (2-tails) - ichoptera OLD (Gastropoda, sellus total number of tai	Macroinvertebrate of the following 5 specific gro- inis) — note that tails may be note that tails may be dam Oligochaeta and Diptera) ixa and relative abundance of Ecdyonurus Ab Rhithrogena Ab Heptagenia Ab Ephemerella Ab Caenis Ab raleptophiebia Ab nemera danica Ab	Composition oups: damaged during sampling aged during sampling of each macroinverteb	pling	pelow: (Abundance - Ab Pro Amp	Abunda 1-5 6-20 21-50 51-100 101+ Leuctra Ab Isoperia Ab otonemura Ab Peria Ab Dinocras Ab ner Plecop Ab	1 2 3
The macroinvertebra Group 1 = Ep Group 2 = Pi Group 3 = Tr Group 4 = G. Group 5 = As Calculate the Ephemeroptera:	tes are divided into shemeroptera (3-ta ecoptera (2-tails) - ichoptera OLD (Gastropoda sallus total number of tai	Macroinvertebrate of the following 5 specific grains)—note that tails may be note that tails may be dam Oligochaeta and Diptera) ixa and relative abundance of Ecdyonurus Ab Rhithrogena Ab Heptagenia Ab Ephemerella Ab Caenis Ab raleptophiebia Ab otemera danica Ab Other Ephem Ab	Composition oups: damaged during sam aged during sampling of each macroinverteb Plecoptera:	pling ate group	pelow: (Abundance - Ab Pro Amp	Abunda 1-5 6-20 21-50 51-100 101+ Leuctra Ab Isoperia Ab otonemura Ab peria Ab Dinocras Ab ner Plecop Ab er Plecop Ab	1 2 3 4 5 5
The macroinvertebra Group 1 = Ep Group 2 = Pi Group 3 = Tr Group 4 = G. Group 5 = As Calculate the Ephemeroptera: Total no. of taxa	tes are divided into shemeroptera (3-ta ecoptera (2-tails) - ichoptera OLD (Gastropoda sallus total number of tai	Macroinvertebrate of the following 5 specific gro- inis) — note that tails may be note that tails may be dam Oligochaeta and Diptera) ixa and relative abundance of Ecdyonurus Ab Rhithrogena Ab Heptagenia Ab Ephemerella Ab Caenis Ab raleptophiebia Ab nemera danica Ab	Composition oups: damaged during sampling aged during sampling of each macroinverteb	pling ate group	Delow: (Abundance - Ab Pro Amp Otto Total Relative	Abunda 1-5 6-20 21-50 51-100 101+ Leuctra Ab Isoperia Ab otonemura Ab phinemura Ab Peria Ab Dinocras Ab ner Plecop Ab er Plecop Ab Abundance	1 2 3 4 5 5
The macroinvertebra Group 1 = Ep Group 2 = Pi Group 3 = Tr Group 4 = G. Group 5 = As Calculate the Ephemeroptera: Total no. of taxa	tes are divided into themeroptera (3-ta ecoptera (2-tails) - ichoptera OLD (Gastropoda; sellus total number of tail Pair Eph	Macroinvertebrate of the following 5 specific growins)—rote that tails may be note that tails may be dam Oligochaeta and Diptera) ixa and relative abundance of Ecdyonurus Ab Rhithrogena Ab Heptagenia Ab Ephemerella Ab Caenis Ab raleptophiebia Ab otemera danica Ab Other Ephem Ab ative Abundance e Ab I G.OL.D:	Composition outs: damaged during sampling of each macroinverteb Plecoptera: Total no. of Taxa Lymnaea (G) Ab	pling ate group	Octow: (Abundance - Ab Pro- Amp Ottorion Relative Total Relative	Abunda 1-5 6-20 21-50 51-100 101+ Leuctra Ab Isoperia Ab otonemura Ab otonemura Ab ohinemura Ab peria Ab Dinocras Ab ner Plecop Ab er Plecop Ab Abundance Asellus:	1 2 3 4 5 5 1 () 1
The macroinvertebra Group 1 = Ep Group 2 = Pi Group 3 = Tr Group 4 = G. Group 5 = As Calculate the Ephemeroptera: Total no. of taxa	tes are divided into themeroptera (3-ta ecoptera (2-tails) - ichoptera (OLD (Gastropoda; sellus total number of tail Eph Total Reli	Macroinvertebrate of the following 5 specific gravitis)—note that fails may be denote that tails may be dam Oligochaeta and Diptera) Xa and relative abundance of Ecdyonurus Ab Rhithrogena Ab Heptagenia Ab Ephemerella Ab Caenis Ab raleptophiebia Ab other Ephem Ab ative Abundance e Ab GOL.D: e Ab Pol	Composition outs: damaged during sam aged during sampling of each macroinverteb Plecoptera: Total no. of Taxa	pling ate group	Octor (Abundance - Ab Pro Amp Ott Total Relative Thironomidae (D) Ab Chironomus (D) Ab	Abunda 1-5 6-20 21-50 51-100 101+ Leuctra Ab Isoperia Ab otonemura Ab phinemura Ab peria Ab Dinocras Ab ner Plecop Ab er Plecop Ab Abundance Asellus: Abse	1 2 3 4 5 5 l l l l
The macroinvertebra Group 1 = Ep Group 2 = P Group 3 = Tr Group 4 = G. Group 5 = A: Calculate the Ephemeroptera: Total no. of taxa Trichoptera:	tes are divided into themeroptera (3-ta ecoptera (2-tails) - ichoptera (OLD (Gastropoda; sellus total number of tail number of	Macroinvertebrate of the following 5 specific gravitis)—note that tails may be note that tails may be dam Oligochaeta and Diptera) ixa and relative abundance of Ecdyonurus Ab Rhithrogena Ab Heptagenia Ab Ephemerella Ab Caenis Ab raleptophiebia Ab otemera danica Ab Other Ephem Ab ative Abundance e Ab I G.OL.D: e Ab I G.OL.D:	Composition outs: damaged during sampling of each macroinverteb Plecoptera: Total no. of Taxa Lymnaea (G) Ab	pling ate group	Oth Total Relative Thironomidae (D) Ab Chironomus (D) Ab Simuliidae (D) Ab	Abunda 1-5 6-20 21-50 51-100 101+ Leuctra Ab Isoperia Ab otonemura Ab otonemura Ab otonemura Ab phinemura Ab Abundance Asellus: Abse Few/Low	1 2 3 4 5 5 l l l l l l l l l l l l l l l l l
The macroinvertebra Group 1 = Ep Group 2 = P Group 3 = Tr Group 4 = G. Group 5 = A: Calculate the Ephemeroptera: Total no. of taxa Trichoptera:	tes are divided into themeroptera (3-ta ecoptera (2-tails) - ichoptera (OLD (Gastropoda; sellus total number of tail Eph Total Reli	Macroinvertebrate of the following 5 specific gravitis)—note that tails may be note that tails may be dam Oligochaeta and Diptera) ixa and relative abundance of Ecdyonurus Ab Rhithrogena Ab Heptagenia Ab Ephemerella Ab Caenis Ab raleptophiebia Ab otemera danica Ab Other Ephem Ab ative Abundance e Ab I G.OL.D: e Ab I G.OL.D:	Composition oups: damaged during sampling of each macroinverteb Plecoptera: Total no. of Taxa Lymnaea (G) Ab tamiopyrgus (G) Ab	pling ate group	Octor (Abundance - Ab Pro Amp Ott Total Relative Thironomidae (D) Ab Chironomus (D) Ab	Abunda 1-5 6-20 21-50 51-100 101+ Leuctra Ab Isoperia	1 2 3 4 5 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
The macroinvertebra Group 1 = Ep Group 2 = Pl Group 3 = Tr Group 4 = G. Group 5 = A: Calculate the Ephemeroptera: Total no. of taxa Trichoptera:	tes are divided into themeroptera (3-ta eccoptera (2-tails) - ichoptera (OLD (Gastropoda; sellus total number of tail number o	Macroinvertebrate of the following 5 specific gravitis)—note that tails may be note that tails may be dam Oligochaeta and Diptera) ixa and relative abundance of Ecdyonurus Ab Rhithrogena Ab Heptagenia Ab Ephemerella Ab Caenis Ab oraleptophiebia Ab oraleptophiebia Ab other Ephem Ab ative Abundance e Ab I G.OL.D: e Ab e Ab e Ab	Composition outs: damaged during sampling aged during sampling of each macroinverteb Plecoptera: Total no. of Taxa Lymnaea (G) Ab tamiopyrgus (G) Ab Planorbis (G) Ab	pling ate group	Oth Total Relative Thironomidae (D) Ab Chironomus (D) Ab Simuliidae (D) Ab	Abunda 1-5 6-20 21-50 51-100 101+ Leuctra Ab Isoperia Ab otonemura Ab otonemura Ab otonemura Ab phinemura Ab Abundance Asellus: Abse Few/Low	1 2 3 4 5 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
The macroinvertebra Group 1 = Ep Group 2 = Pl Group 3 = Tr Group 4 = G. Group 5 = A: Calculate the Ephemeroptera: Total no. of taxa Trichoptera:	tes are divided into themeroptera (3-ta ecoptera (2-tails) - ichoptera (OLD (Gastropoda; sellus total number of tail number of	Macroinvertebrate of the following 5 specific growins)—rote that tails may be note that tails may be dam Oligochaeta and Diptera) ixa and relative abundance of Ecdyonurus Ab Rhithrogena Ab Heptagenia Ab Ephemerella Ab Caenis Ab raleptophiebia Ab otemera danica Ab Other Ephem Ab ative Abundance e Ab I G.OL.D: e Ab I G.OL.D: e Ab I G.OL.D:	Composition outs: damaged during sampling aged during sampling of each macroinverteb Plecoptera: Total no. of Taxa Lymnaea (G) Ab tamiopyrgus (G) Ab Planorbis (G) Ab Ancylus (G) Ab	pting sate group	Otto Total Relative Chironomidae (D) Ab Simuliidae (D) Ab Tipulidae (D) Ab Tipulidae (D) Ab Tipulidae (D) Ab Tatopogonidae (D) Ab Tatop	Abunda 1-5 6-20 21-50 51-100 101+ Leuctra Ab Isoperia Ab Isoperia Ab Peria	1 2 3 4 5 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
The macroinvertebra Group 1 = Ep Group 2 = P Group 3 = Tr Group 4 = G. Group 5 = A: Calculate the Ephemeroptera: Total no. of taxa Trichoptera:	tes are divided into themeroptera (3-ta ecoptera (2-tails) - inchoptera (OLD (Gastropode, sellus total number of tail funder o	Macroinvertebrate of the following 5 specific growins)—rote that tails may be note that tails may be dam Oligochaeta and Diptera) ixa and relative abundance of Ecdyonurus Ab Rhithrogena Ab Heptagenia Ab Ephemerella Ab Caenis Ab raleptophiebia Ab otemera danica Ab Other Ephem Ab ative Abundance e Ab I G.OL.D: e Ab I G.OL.D: e Ab I G.OL.D:	Composition outs: damaged during sam aged during sampling of each macroinverteb Plecoptera: Total no. of Taxa Lymnaea (G) Ab ramopyrgus (G) Ab Planorbis (G) Ab Physa (G) Ab	pting sate group	Otto Total Relative Chironomidae (D) Ab Chironomidae (D) Ab Simuliidae (D) Ab Tipulidae (D) Ab Tipulidae (D) Ab	Abunda 1-5 6-20 21-50 51-100 101+ Leuctra Ab Isoperia Ab Isoperia Ab Peria Ab Peria Ab Dinocras Ab ner Plecop Ab er Plecop Ab Abundance Asellus: Abse Few/Low Common Numerou	1 2 3 4 5 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
The macroinvertebra Group 1 = Ep Group 2 = Pl Group 3 = Tr Group 4 = G. Group 5 = A: Calculate the Ephemeroptera: Total no. of taxa Trichoptera:	tes are divided into themeroptera (3-ta ecoptera (2-tails) - ichoptera (OLD (Gastropoda; sellus total number of tail number of	Macroinvertebrate of the following 5 specific growins)—rote that tails may be note that tails may be dam Oligochaeta and Diptera) ixa and relative abundance of Ecdyonurus Ab Rhithrogena Ab Heptagenia Ab Ephemerella Ab Caenis Ab oraleptophiebia Ab oraleptophiebia Ab otemera danica Ab Other Ephem Ab ative Abundance e Ab I G.OL.D: e Ab	Composition oups: damaged during sam aged during sampling of each macroinverteb Plecoptera: Total no. of Taxa Lymnaea (G) Ab ramopyrgus (G) Ab Planorbis (G) Ab Physa (G) Ab umbriculus (G) Ab	pting sate group	Otto Total Relative Chironomidae (D) Ab Simuliidae (D) Ab Tipulidae (D) Ab Tipulidae (D) Ab Tipulidae (D) Ab Tatopogonidae (D) Ab Tatop	Abunda 1-5 6-20 21-50 51-100 101+ Leuctra Ab Isoperia Ab Isoperia Ab Peria	1 2 3 4 5 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
The macroinvertebra Group 1 = Ep Group 2 = Pl Group 3 = Tr Group 4 = G. Group 5 = A: Calculate the Ephemeroptera: Total no. of taxa Trichoptera:	tes are divided into themeroptera (3-ta ecoptera (2-tails) - ichoptera (OLD (Gastropoda; sellus total number of tail number of	Macroinvertebrate of the following 5 specific growins)—rote that tails may be note that tails may be dam Oligochaeta and Diptera) ixa and relative abundance of Ecdyonurus Ab Rhithrogena Ab Heptagenia Ab Ephemerella Ab Caenis Ab oraleptophiebia Ab oraleptophiebia Ab otemera danica Ab Other Ephem Ab ative Abundance e Ab I G.OL.D: e Ab	Composition oups: damaged during sampling aged during sampling of each macroinverteb Plecoptera: Total no. of Taxa Lymnaea (G) Ab ramopyrgus (G) Ab Planorbis (G) Ab Playsa (G) Ab Eiservella (Ol) Ab	pting sate group	Otto Total Relative Chironomidae (D) Ab Simuliidae (D) Ab Tipulidae (D) Ab Tipulidae (D) Ab Tipulidae (D) Ab Tatopogonidae (D) Ab Tatop	Abunda 1-5 6-20 21-50 51-100 101+ Leuctra Ab Isoperia Ab Isoperia Ab Peria Ab Peria Ab Dinocras Ab ner Plecop Ab er Plecop Ab Abundance Asellus: Abse Few/Low Common Numerou NOTE: A must be	1 2 3 4 5 5

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 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) 18 Average Index Score (AIS) 3.6 SSR Score (AIS × 2) 7.2

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
Stream may be at risk

> 6.5 – 7.25
Indeterminate
Stream at risk

Surveyor (signed): A0 Sea Name (print): Aine O Shoa Date: 30 / Any , 22

Date: 29. And . 21 River: Time: // 00 Code: Station no. Location: Grid (6 figure): Stream flow: ORRASILLAML 1 Stream Order: Riffle Field Chemistry Modifications: Y/O Canalised-widened-bank erosion-R. Marchide DO% arterial drainage 101.2 Slow flow DO mg/l Dominant Types: 10.37 Banks concued with PKASS. Bedrock O Temp (°C) 14.2 heathen, gorse, Boulder (>128mm) lo pudc. Conductivity 33.1 Cobble (32-128mm) 10 numeral Gravel (8-32mm) 2 = Fine Gravel (2-8mm) 2 = 631 hang Bank width (cm) 450 Sand (0.25-2mm)≥ o Wet width (cm) 300 Silt (<0.25mm) 20 Avg Depth (cm) 50 Slope: Low - Medium - High - Very High Staff gauge Shading: High - Moderate - Ow - None Geology: Calcareous-Siliceous-Mixed Colour Velocity Substratum Condition: Calcareous-Compacted-Torrential None Cattle access O upstream - downstream or N Fast Slight Loose - Normal CAHLE present u/s+ d/s Moderate Moderate Substratum: Slow Stoney bottom-Muddy bottom-Mud over stones High Photo: O/ N Very slow Degree of siltation: Clean-Slight-Moderate-Heavy Clarity Discharge Depth of mud: None: <1cm: 1-5cm: 5-10cm: >10cm Very clear Flood Normal Litter: None - Present - Moderate - Abundant Clem Filamentous Algae: Sewage Fungus: Slightly turbid LOW None - Present - Mederate - Abundant None - Present - Moderate - Abundant Highly turbid Very Low Main land use u/s: Sample Sampled in Minutes: Urban retained: Dry Pond net x 2 Tillage Recent Flood Stone wash x 0.5 Other Weed sweep x 0.5 Coille forestry adjacent to sheary: ca. 20 meters from stream **Macroinvertebrate Composition** Relative The macroinvertebrates are divided into the following 5 specific groups: Abundance 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 6-20 Group 3 = Trichoptera 21-50 Group 4 = G.OL.D (Gastropoda, Oligochaeta and Diptera) 51-100 4 Group 5 = Asellus 101+ 5 Calculate the total number of taxa and relative abundance of each macroinvertebrate group below: (Abundance - Ab) Ephemeroptera: Ecdyonurus Ab Plecoptera: Leuctra Ab 1111 Rhithrogena Ab. Isoperla Ab Heptagenia Ab Protonemura Ab Ephemerella Ab Amphinemura Ab Caenis Ab Perla Ah Paraleptophlebia Ab Dinocras Ab Ephemera danica Ab Other Plecop Ab Other Ephem Ab Other Plecop Ab Total no. of taxa 7 Total Relative Abundance **Total Relative Abundance** Total no. of Taxa Trichoptera: W/ HH Hydropsychidae Ab Xº 2 G.OLD Lymnaea (G) Ab Asellus: Chironomidae (D) Ab Polycentropodidae Ab Absent Potamopyrgus (G) Ab Chironomus (D) Ab Rhyacophila Ab Planorbis (G) Ab Simulidae (D) Ab Few/Low Philopotamidae Ab Ancylus (G) Ab Dicranota (D) Ab Common/ Numerous Limnephilidae Ab Physa (G) Ab Tipulidae (D) Ab Sericostomatidae Ab Lumbriculus (OI) Ab Ceratopogonidae (D) Ab NOTE: Asellus Glossosomatidae Ab Eiseniella (OI) Ab Other GOLD must be Lepidostomatidae Ab Tubificidae (OI) Ab recorded as Goendidae Other Trichoptera Ab absent if none Total no. of **Total Relative** are found Total no. of Taxa Abundance X 6 Total Relative Abundance Taxa

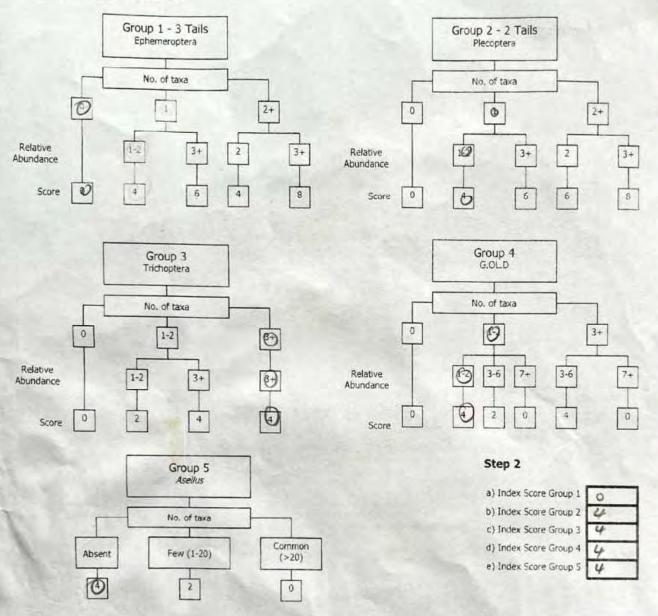
NOTE Baetis is an Ephemeropteran and is the most commonly occurring invertebrate genus in streams in Ireland. It

is vital that Baetis is not counted in SSRS. See Appendix B for more details on how to identify Baetis.

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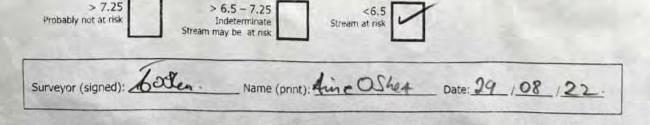
Step 1. Calculate the Index Score by circling the appropriate box representing the total number of taxa and the total abundance calculated from **each macroinvertebrate group** calculated from page 1 of the recording sheet and enter in to the boxes in Step 2.



Step 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) 16 Average Index Score (AIS) 3.2 SSR Score (AIS × 2) 6.4

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



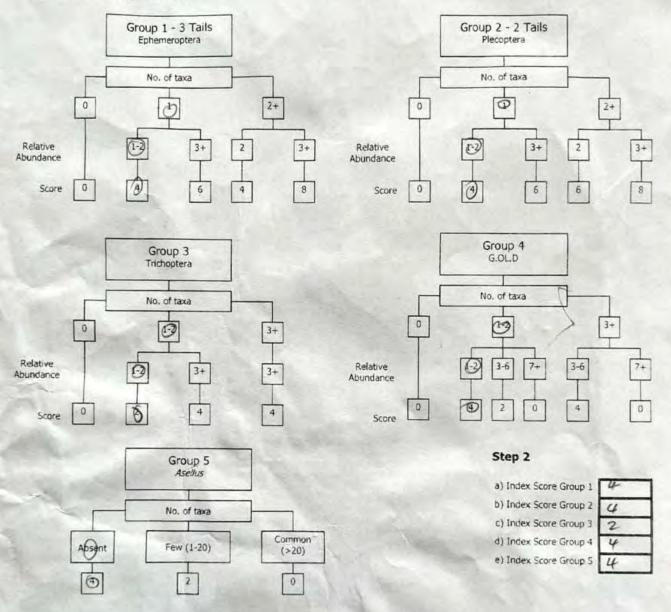
River: Code: Date: 20 Ma. 22 Time: 13 00 Station no. Location: Grid (6 figure): Connasillagh 2 Stream Order: Stream flow: Field Chemistry Riffie Modifications: W O Canalised-widened-bank erosion-DO% Ruffle/Slide 122.9 arterial drainage DO mg/l Slow flow Dominant Types: 12-26 Bedrock @ Temp (°C) 15-4 Boulder (>128mm) 10 Conductivity Cobble (32-128mm) pH Gravel (8-32mm) 20 5.91 Bank width (cm) Fine Gravel (2-8mm) 20 220 Sand (0.25-2mm) 2a Wet width (cm) 190 Silt (<0.25mm) 20 . Avg Depth (cm) Slope: Low - Medium - High - Very High Staff gauge Shading: High - Moderate - Low - None Velocity Geology: Calcareous-Siliceous-Moled Colour Torrential None Substratum Condition: Calcareous-Compacted-Cattle access Oupsteam - downstream or N Fast Short Ldose - Normal Moderate Substratum: Stoney bottom-Muddy bottom-Mud over stones Moderate Slow High Photo: W/ N Very slow Degree of siltation: Clean-Sight-Moderate-Heavy Clarity Discharge Very clear Depth of mud: None: < On: 1-5cm: 5-10cm: >10cm Flood COAT Nemal Litter: Node - Present - Moderate - Abundant Filamentous Algae: None – Present – Moderate - Abundant Slightly turbid Low Sewage Fungus: None - Present - Moderate - Abundant Highly turbid Very Low Main land use u/s: Sample Sampled in Minutes: Dry Pasture Urban retained: Pond net x 2 Recent Flood Bog Tillage YIN Stone wash x o - 5 Forestry Other Weed sweep x 0 5 Coille brushy present uphill of sile. banks essented in grass, leather with minimal overhand **Macroinvertebrate Composition** Relative The macroinvertebrates are divided into the following 5 specific groups: Abundance 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 125 6-20 Group 3 = Trichoptera 21-50 Group 4 = G.OLD (Gastropoda, Oligochaeta and Diptera) 51-100 Group 5 = Aseilus 101+ Calculate the total number of taxa and relative abundance of each macroinvertebrate group below: (Abundance - Ab) Ephemeroptera: Ecdyonurus Ah Plecoptera: Leuctra Ab Rhithrogena Ab Isoperla Ab Heptagenia Ab Protonemura Ab Ephemerella Ab 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 | Total Relative Abundance Total no. of Taxa Total Relative Abundance Trichoptera: Hydropsychidae Ab | 1 Lymnaea (G) Ab Chironomidae (D) Ab Asellus: Polycentropodidae Ab Potamopyrgus (G) Ab Chironomus (D) Ab Absent Rhyacophila Ab Planorbis (G) Ab Simuliidae (D) Ab Few/Low Philopotamidae Ab Ancylus (G) Ab Dicranota (D) Ab 1 Common/ Numerous Limnephilidae Ab Physa (G) Ab Tipulidae (D) Ab 1 Sericostomatidae Ab Lumbriculus (OI) Ab Ceratopogonidae (D) Ab NOTE: Asellus Glossosomatidae Ab Eiseniella (OI) Ab Other GOLD Ab must be Lepidostomatidae Ab Tubificidae (OI) Ab recorded as Other Trichoptera Ab absent if none Total no. of **Total Relative** are found Total no. of Taxa 2 Total Relative Abundance - Abundance Taxa

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.

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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 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) (8 Average Index Score (AIS) TIS/5 (5 for 5 groups) 3-6 SSR Score (AIS x 2) 7-2

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

Stream at risk

Surveyor (signed); La Sen. Name (print): Aine O Shea Date: 29 / 08 / 20

River: Code: Time: 16:00 Date: 24 Station no. Location: Grid (6 figure): ennasillagh 3 Stream flow: Stream Order: Riffle Field Chemistry Modifications: Y/N Canalised-widened-bank erosion-RiffletStide 116-4 arterial drainage Slow flow DO mg/l 11.35 **Dominant Types:** Bedrock 5 Temp (°C) Boulder (>128mm) 10 Conductivity Cobble (32-128mm) 10 Gravel (8-32mm) Lo 6.02 Fine Gravel (2-8mm) 2 Bank width (cm) 200 Sand (0.25-2mm) Wet width (cm) 250 Silt (<0.25mm) 20. Avg Depth (cm) 40 Slope: Low - Molum - High - Very High Staff gauge Shading: High - Moderate - Low - None Geology: Calcareous-Siliceous ADed Velocity Colour Torrential None Substratum Condition: Calcareous-Compacted-Cattle access untream - downstream or N Fast SLIGHT Loose - Normal Moderate Moderate Substratum: Slow Stoney/Boxcom-Muddy bottom-Mud over stones High Photo: Q / N Very slow Degree of siltation: Clean-Sight-Moderate-Heavy Clarity Discharge Depth of mud: None: <1cm: 1-5cm: 5-10cm: >10cm Very dear Flood Litter: Mohe - Present - Moderate - Abundant Clear Nermal Filamentous Algae: Slightly turbid Sewage Fungus: Low None - Present - Moderate - Abundant None - Present - Moderate - Abundant Sampled in Minutes: Highly turbid Very Low Main land use u/s: Sample Dry Pastore Urban retained: Pond net x. Recent Flood Bog Tillage (P) N Stone wash x 🔿 Ś Forestry Other Weed sweep x a-S General Comments: CANRE, Super dock frees or both bombs lange boulders + pochs /He bank, grass, lenns + 90% over hymo Macroinvertebrate Composition Relative The macroinvertebrates are divided into the following 5 specific groups: Abundance 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. 1-5 6-20 Group 3 = Trichoptera 21-50 3 Group 4 = G.OL.D (Gastropoda, Oligochaeta and Diptera) 51-100 4 Group 5 = Asellus 101+ 5 Calculate the total number of taxa and relative abundance of each macroinvertebrate group below: (Abundance—Ab) Ecdyonurus Ab Ephemeroptera: Plecoptera: Leuctra Ab Rhithrogena Ab Isoperla Ab Heptagenia Ab Protonemura Ab Ephemerella Ab 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 Total Relative Abundance Total no. of Taxa **Total Relative Abundance** Trichoptera: Hydropsychidae Ab G.OL.D: Lymnaea (G) Ab Chironomidae (D) Ab Asellus: Polycentropodidae Ab Potamopyrgus (G) Ab Chironomus (D) Ab Absent Rhyacophila Ab Planorbis (G) Ab 111 Simuliidae (D) Ab Few/Low Philopotamidae Ab Ancylus (G) Ab Dicranota (D) Ab Common/ Limnephilidae Ab Numerous Physa (G) Ab Tipulidae (D) Ab Sencostomatidae Ab Lumbriculus (OI) Ab Ceratopogonidae (D) Ab Glossosomatidae Ab NOTE: Asellus Eiseniella (OI) Ab Other GOLD Ab must be M THE W Lepidostomatidae Ab Tubificidae (OI) Ab recorded as HL H Other Trichoptera Ab absent if none

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.

Total no. of Taxa

2 Total Relative Abundance

are found

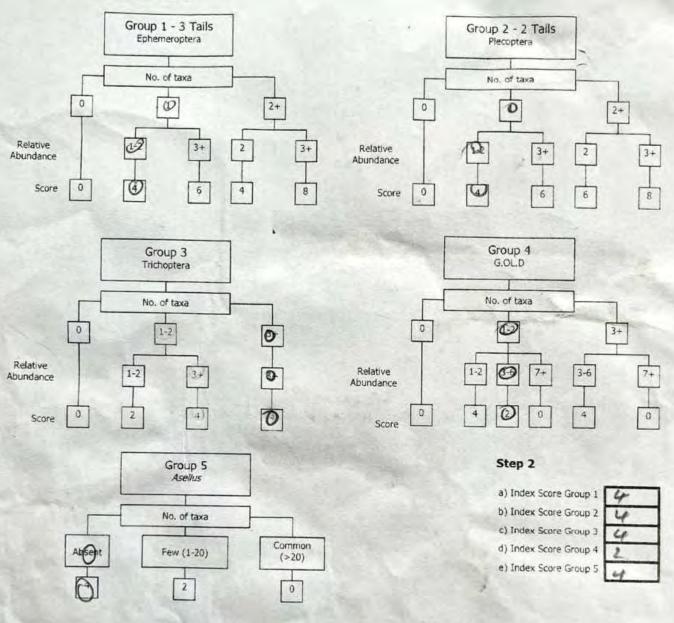
onp:

Total no. of

Total Relative

Abundance

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

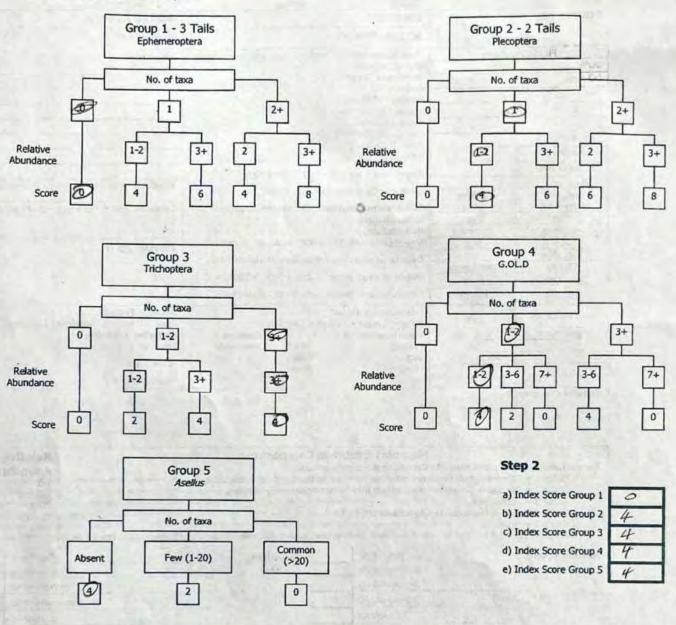
Total Index Score (TIS) Average Index Score (AIS) SSR Score sum (a+b+c+d+e) TIS/5 (5 for 5 groups) Step 4. Assess the stream by comparing the final SSR score with the categories below and tick the appropriate box > 7.25 > 6.5 - 7.25 < 6.5 Probably not at risk Indeterminate Stream at risk Stream may be at risk Surveyor (signed): O Shea Date: 27 / 08 /22. Name (print):

OKP.

River:		Code:	Date:				12:4		
Station no.	,	Location:			Grid	(6 figure	e):		
GLASSA WILLA	un I	Stream Order:				m flow:			
THE PERSON NAMED IN COLUMN TWO IS NOT THE OWNER.			Countined wide	and bank arealm	Riffle				
DO% 93-2		Modifications: Y/N (arterial drainage	Canalised-wide	ned-bank erosioi	n- Riffie				
DO mg/l	9.68	Dominant Types:			SIUW	IIUW	-	_	
Temp (°C)		Bedrock 20				-			
	13.8	Boulder (>128mm) 2			1				
Conductivity	50.3	Cobble (32-128mm) 2 Gravel (8-32mm) 20							
pH	7-39	Fine Gravel (2-8mm)					-4-		
Bank width (cm)	200	Sand (0.25-2mm)	1/11						
Wet width (cm)	400	Silt (<0.25mm)					-1-		_
Avg Depth (cm)	90	Slope: Low - Mediun	n - Jilgh - Ven	y High					
Staff gauge		Geology: Calcareous	-Silineous-MiRe	d	Shad	ling: Ah-	 Moderat 	e - Low - None	8
Velocity Torrential	Colour								
Fast	None Slight	Substratum Condit Loose - Normal	ion: Calcareou	is-Compacted-	Catt	e access Y	upstream	n – downstream	n or N
Moderate	Moderate	Substratum:							
Slow	High	Stone Doottom-Mudd	y bottom-Mud	over stones	Dho	to:0 / N			
Very slow		Degree of siltation			- A. A. S. C.	W / N			
Clarity	Discharge	Carlotte and Carlotte Street, and the Carlotte		The state of the s	- 04				
Very clear	Flood	Depth of mud: Non			cm				
Clear	Noemal	Litter: None - Prese	nt - Moderate	- Abundant	- 11				
Slightly turbid	Law	Filamentous Algae			Sew	age Fungus	5:		-
The second second	Low	None - Pyesent - Mo	derate - Abund	iant				e - Abundant	
Highly turbid	Very Low	Main land use u/s:		Sample	Sam	pled in Min	utes:		
	Dry	Pasture	Urban	retained:	Pond	net x /			
-	Recent Flood	Beg Forestry	Tillage	W/N	Stone	e wash x			
					Wee	sweep x			
General Comment DANIES LOVE VERY Stee		Bracken Bracken Branks. De Macroinvertebr			Auca priese.	at on	ba	_	
The macroinvertebra	ates are divided into	Macroinvertebra the following 5 specifi	ate Compo	sition	Auca priese.	nt on	ba	Relative	ice
The macroinvertebra	ates are divided into	Macroinvertebra the following 5 specifiles)—note that tails me	ate Compo c groups: by be damaged	sition	Auca priese.	nt on	ba	Relative Abundar	nce 1
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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 3. Calculate the Total Index Score, the Average Index Score and the SSR Score using the boxes below

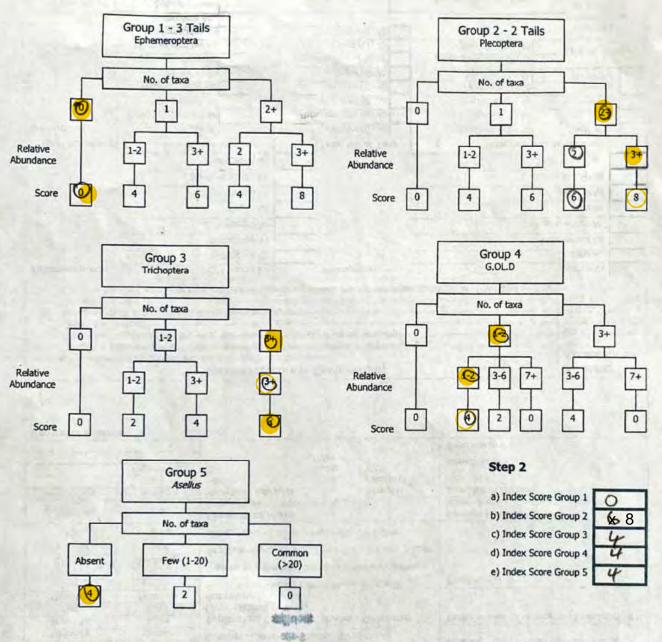
Total Index Scor sum (a+b+c	e (TIS) 16	Average Index Score (AIS) TIS/5 (5 for 5 groups	3.2	SSR Score (AIS x 2)	6.4
Step 4. Assess the stream			-/	ow and tick the appropria	ate box
> 7.25 Probably not at risk	> 6.5 – 7. Indetermina Stream may be at r	25 ate isk Stream at	6.5 risk		
Surveyor (signed):	Shea Nan	ne (print): Aine	0 5h6	ite: 21 , 07,	22.

Time: 10:45 Date: 21 July River: Code: Grid (6 figure): Station no. Location: Stream flow: 5/ASSAVULLANN 2 Stream Order: Riffle Field Chemistry Modifications: Y/M Canalised-widened-bank erosion-RiffletGlide D0% 10.57 arterial drainage Slow flow **Dominant Types:** DO mg/l Bedrock 30 Temp (°C) 12.7 Boulder (>128mm) 20 Conductivity Cobble (32-128mm) 20 52.5 Gravel (8-32mm) 20 pH 6.99 Fine Gravel (2-8mm) Bank width (cm) 550 Sand (0.25-2mm) 5 Wet width (cm) 250 Silt (<0.25mm) Avg Depth (cm) 60 Slope: Low - Man - High - Very High Staff gauge Shading: High - Moderate - Low - None Geology: Calcareous-Siliceous-Miled Velocity Colour Torrential None Substratum Committeen; Calcareous-Compacted-Cattle access Y: upstream - downstream or N STAR Fast Loose - Normal Moderate Moderate Substratum: Slow Stoney bottom-Muddy bottom-Mud over stones High Photo: (1)/ N Very slow Degree of siltation: Clean-Stight-Moderate-Heavy Clarity Discharge Very dear Depth of mud: None: <1cm: 1-5cm: 5-10cm: >10cm Flood Clear Litter: Nope - Present - Moderate - Abundant Normal Filamentous Algae: Sewage Fungus: Slightly turbid Low None - Present - Moderate - Abundant None - Present - Moderate - Abundant Highly turbid Very Low Main land use u/s: Sampled in Minutes: Sample Pasture Urban Pond net x 1 Dry retained: Tillage ON Recent Flood 80 Stone wash x 1 Other Weed sweep x General Comments: Sheep grazing Stream Cous + deer present in fields growing a land surrounding stream **Macroinvertebrate Composition** Relative The macroinvertebrates are divided into the following 5 specific groups: **Abundance** Group 1 = Ephemeroptera (3-tails) — note-that tails may be damaged during Group 2 = Plecoptera (2-tails) — note-that tails may be damaged during same 1-5 6-20 2 Group 3 = Trichoptera 21-50 Group 4 = G.OLD (Gastropoda, Oligochaeta and Diptera) 51-100 4 Group 5 = Asellus 101 +5 Calculate the total number of taxa and relative abundance of each macroinvertebrate group below: (Abundance - Ab) Ephemeroptera: Ecdyonurus Ab Plecoptera: X 2 ## 11 Leuctra Ab Rhithrogena Ab Isoperla Ab Heptagenia Ab Protonemura Ab Ephemerella Ab 111 Amphinemura Ab ¥ 1 Caenis Ab Perla Ab Paraleptophlebia Ab Dinocras Ab Ephemera danica Ab Other Plecop Ab Other Ephem Ab Other Plecop Ab Total no. of taxa O Total Relative Ab Total no. of Taxa Total Relative Abundance Trichoptera: Hydropsychidae Ab G.OL.D: Lymnaea (G) Ab Chironomidae (D) Ab Asellus: Polycentropodidae Ab Potamopyrgus (G) Ab Chironomus (D) Ab Absent Rhyacophila Ab Planorbis (G) Ab Simuliidae (D) Ab Few/Low Philopotamidae Ab Ancylus (G) Ab Dicranota (D) Ab Common/ Umnephilidae Ab Numerous Tipulidae (D) Ab X Physa (G) Ab 1111 Sericostomatidae Ab Lumbriculus (OI) Ab TH- Ceratopogonidae (D) Ab 5 NOTE: Asellus THL THE Glossosomatidae Ab Eiseniella (OI) Ab Other GOLD Ab must be Lepidostomatidae Ab Tubificidae (OI) Ab recorded as Other Trichoptera Ab absent if none Total no. of Total Relative are found Total no. of Taxa 7 **Total Relative Abundance** Taxa

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.

orp:

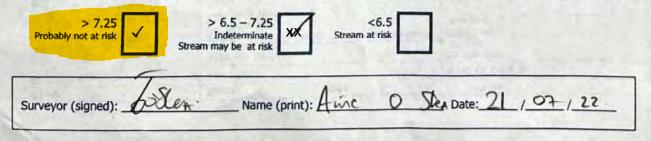
Step 1. Calculate the Index Score by circling the appropriate box representing the total number of taxa and the total abundance calculated from **each macroinvertebrate group** calculated from page 1 of the recording sheet and enter in to the boxes in Step 2.



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

Total Index Score (TIS) SSR Score (AIS) Sum (a+b+c+d+e) 20 Average Index Score (AIS) (AIS × 2) Average Index Score (AIS) (AIS × 2) Average Index Score (AIS) (AIS × 2) (AIS × 2)

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



Time: /5:15 Date: River: Code: Grid (6 figure): Station no. Location: Stream flow: Stream Order: O/ASS AM/AUM Riffle Modifications: Y/N Canalised-widened-bank erosion-**Field Chemistry** Riffaciende arterial drainage Slow flow D0% 76-7 **Dominant Types:** DO mg/l 8,09 Bedrock Temp (°C) 13-1 Boulder (>128mm) 35 Conductivity 44 5 Cobble (32-128mm) 35 Gravel (8-32mm) 10 pH 7.03. Fine Gravel (2-8mm) 10 420 Bank width (cm) Sand (0.25-2mm) to Wet width (cm) 180 Silt (<0.25mm). Avg Depth (cm) Slope: Low - Medium - High - Very High Shading: High - Moderate - Low - None Staff gauge Geology: Calcareous-Siliceous-Mixed Velocity Colour Cattle access Oupstream - downstream or N None Substratum Condition: Calcareous-Compacted-Torrential Loose - Normal Substratum: Fast Shope @ SSRS Moderate Moderate Stoney bottom-Muddy bottom-Mud over stones Photo: N High Slow Very slow Degree of siltation: Clean-Slight-Moderate-Heavy Discharge Clarity Depth of mud: None:
 1-5cm: 5-10cm: >10cm
 Very clear Flood Clear Litter: None - Present - Moderate - Abundant Normal Sewage Fungus: Filamentous Algae: Slight Drbid Low None - Present - Moderate - Abundant None - Present - Moderate - Abundant Main land use u/s: Sampled in Minutes: Sample Highly turbid Very Low Urban retained: Pond net x Dry Pacture (N Boo Tillage Recent Flood Stone wash x / Other Weed sweep x / General Comments: Path leads to Stream Sleep, cows + down likely accessing nossing Leve **Macroinvertebrate Composition** Relative The macroinvertebrates are divided into the following 5 specific groups: Abundance 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 1-5 6-20 Group 3 = Trichoptera 21-50 3 Group 4 = G.OLD (Gastropoda, Oligochaeta and Diptera) 51-100 Group 5 = Asellus 101+ 5 Calculate the total number of taxa and relative abundance of each macroinvertebrate group below: (Abundance - Ab) Ecdyonurus Ab Plecoptera: Leuctra Ab Ephemeroptera: Rhithrogena Ab Isoperta Ab Heptagenia Ab Protonemura Ab Ephemerella Ab Amphinemura Ab Caenis Ab Pería Ab Paraleptophlebia Ab Dinocras Ab Ephemera danica Ab Other Plecop Ab Other Ephem Ab Other Plecop Ab Total no. of taxa Total Relative Abundance Total no. of Taxa **Total Relative Abundance** Trichoptera: Hydropsychidae Ab G.OL.D: Lymnaea (G) Ab Chironomidae (D) Ab Polycentropodidae Ab Potamopyrgus (G) Ab Chironomus (D) Ab Absent Rhyacophita Ab Planorbis (G) Ab Sosimuliidae (D) Ab XX 3 Few/Low Philopotamidae Ab Ancylus (G) Ab Dicranota (D) Ab Common/ Numerous Limnephilidae Ab Physa (G) Ab Tipulidae (D) Ab Sericostomatidae Ab Lumbriculus (OI) Ab Ceratopogonidae (D) Ab NOTE: Asellus Glossosomatidae Ab Eiseniella (OI) Ab Other GOLD must be Lepidostomatidae At Tubificidae (OI) Ab recorded as | Boen did of Vother Trichoptera Ab absent if none

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Total no. of Taxa

are found

Total Relative Abundance

Total no. of

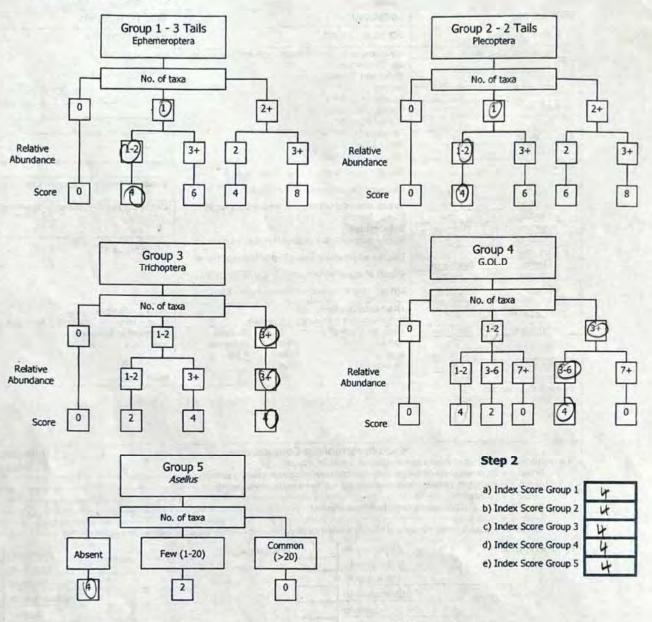
Total Relativ

Abundano

OND:

103.8

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.



Total Index Score (sum (a+b+c+	(TIS) 20	Average Index Score (AIS) TIS/5 (5 for 5 groups)	SSR Sc (AIS	core 2
ep 4. Assess the stream	by comparing the fi	nal SSR score with the cate	egories below and tick the app	ropriate box
> 7.25 Probably not at risk	> 6.5 - 7.2 Indeterminat Stream may be at ris	<6.5 Stream at risk		
1		e (print): 60 You	Date: 1 / 07	11

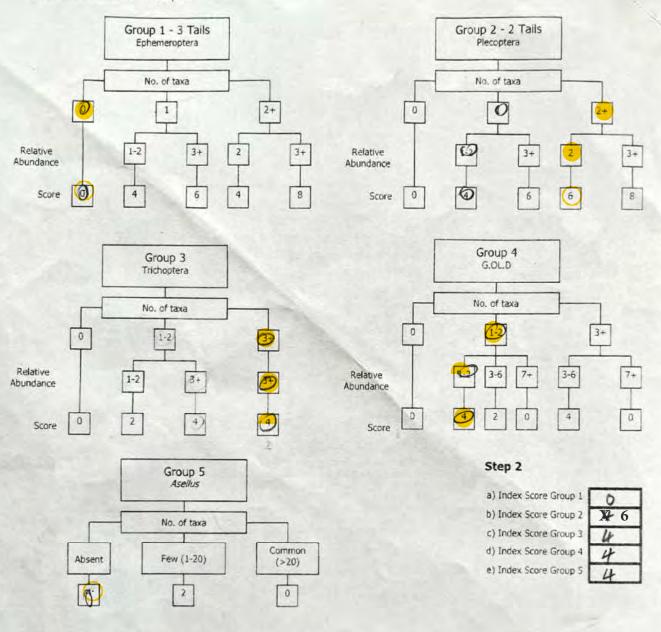
River: Date: 11.08 27 Time: Code: Station no. Grid (6 figure): Location: Stream flow: Assnamullen Stream Order: HIP Field Chemistry Modifications: Y/N Canalised-widened-bank erosion-Riffle/Glide DO% Slow flow arterial drainage 9.0 DO mg/l **Dominant Types:** Boulder (>128mm) 25 Temp (°C) 43.9 Conductivity Cobble (32-128mm) pH Gravel (8-32mm) 5 5.74 Fine Gravel (2-8mm) 5 Bank width (cm) 320 Sand (0.25-2mm) 5 Wet width (cm) 270 Silt (<0.25mm) 5 Avg Depth (cm) 50 Slope: Low - Maditim - High - Very High Staff gauge Shading: High - Moderate - Low- None Geology: Calcareous-Siliceous-Mixed Velocity Colour Torrential Substratum Condition: Calcareous-Compasted-Cattle access Y: upstream - downstream or 6 ESP Slight Loose - Normal Moderate Moderate Substratum: Stoney bottom-Muddy bottom-Mud over stones Photo: N Slow High Very slow Degree of siltation: Clean-Sight-Moderate-Heavy Clarity Discharge Depth of mud: None: <1cm: 1-5cm: 5-10cm: >10cm Very clear Flood Normal 90 Litter: Nete - Present - Moderate - Abundant Filamentous Algae: Sewage Fungus: Slightly turbid LOW None - Present - Moderate - Abundant Acre - Present - Moderate - Abundant Highly turbid Very Low Main land use u/s: Sampled in Minutes: **Sample** Pasture retained: O/N Dry Urban Pond net x2 803 Recent Flood Tillage Stone wash x / Forestry Other Weed sweep x I General Comments: Lany oleen + Sleep ing; gurss, reeds, fenns, hatler + moss Macroinvertebrate Composition Relative The macroinvertebrates are divided into the following 5 specific groups: Abundance 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 6-20 7-Group 3 = Trichoptera 21-50 Group 4 = G.OL.D (Gastropoda, Oligochaeta and Diptera) 51-100 Group 5 = Aseilus 101+ 5 Calculate the total number of taxa and relative abundance of each macroinvertebrate group below: (Abundance - Ab) Ephemeroptera: Ecdyonurus Ab Plecoptera: Leuctra Ab Rhithrogena Ab Isoperia Ab Heptagenia Ab Protonemura Ab Ephemerella Ab II Amphinemura Ab Caenis Ab Perla Ab Paraleptophiebia Ab Dinogras Ab Ephemera danica Ab Other Plecop Ab Other Ephem Ab Other Plecop Ab Total no. of taxa - Total Relative Abundance Total no. of Taxa Total Relative Abundance Trichoptera: Hydropsychidae Ab G.OL.D Lymnaea (G) Ab Chironomidae (D) Ab Asellus: Polycentropodidae Ab Potamopyrgus (G) Ab Chironomus (D) Ab Absen Rhyacophila Ab Planorbis (G) Ab Simulidae (D) Ab Few/Low Philopotamidae At Ancylus (G) Ab Dicranota (D) Ab Common/ Numerous Limnephilidae Ab Physa (G) Ab Tipulidae (D) Ab Sericostomatidae Ab Lumbriculus (OI) Ab Ceratopogonidae (D) Ab NOTE: Asellus TTH Glossosomatidae Ab Eiseniella (OI) Ab Other GOLD Ab must be Lepidostomatidae Ab Tubificidae (OI) Ab recorded as ther Trichoptera Ab absent if none Total no. of **Total Relative** are found Total Relative Abundance Total no. of Taxa Taxa L Abundance X 4

189.5

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.

Shearn couprises of services of pools (CA. Thi); with water then flowing over nochs between pools.

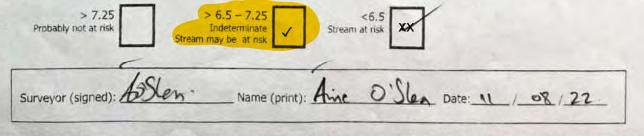
Step 1. Calculate the Index Score by circling the appropriate box representing the total number of taxa and the total abundance calculated from **each macroinvertebrate group** calculated from page 1 of the recording sheet and enter in to the boxes in Step 2.



Step 3. Calculate the Total Index Score, the Average Index Score and the SSR Score using the boxes below 7.2

Total Index Score (TIS) sum (a+b+c+d+e) 18 Average Index Score (AIS) TIS/5 (5 for 5 groups) 3.6 SSR Score (AIS x 2)

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



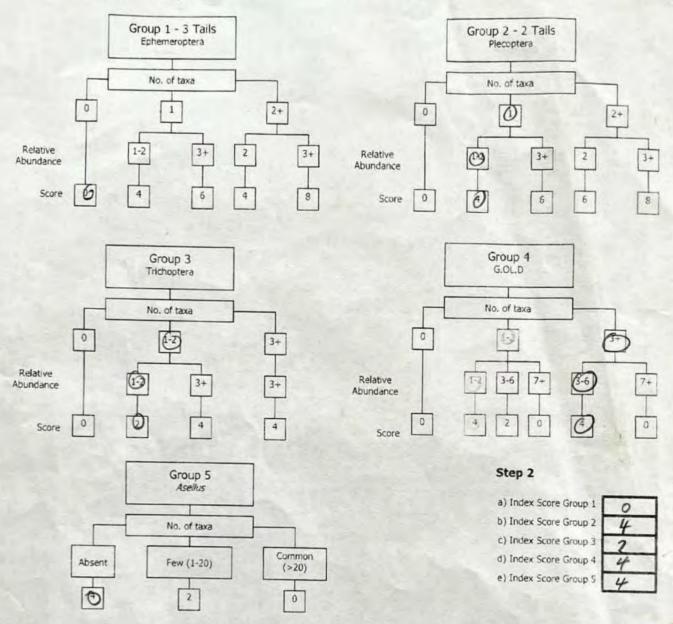
11.00 AM Time: Date: / Code: River: Grid (6 figure): Station no. Location: Stream flow: ASSNAMullen 2 Stream Order: Riffle Modifications: Y/N/Canalised-widened-bank erosion-Riffle/Stide Field Chemistry Slow flow DO% 9.57 arterial drainage DO mg/l **Dominant Types:** Bedrock Temp (°C) Boulder (>128mm) Conductivity Cobble (32-128mm) 5.22 Gravel (8-32mm) Fine Gravel (2-8mm) Bank width (cm) 120 Sand (0.25-2mm) Wet width (cm) Silt (<0.25mm) 100 Avg Depth (cm) Slope: Low - Medium - High - Very High 15 Shading: High - Moderate - Low - None Staff gauge Geology: Calcareous-Siliceous-MDed Colour Velocity Substratum Condition: Calcareous-Companied-Cattle access Y: upstream - downstream or (1) Torrential Loose - Normal Fast Slight Substratum: Moderate Moderate Stoney bottom-Muddy bottom-Mud over stones Photo: N Slow High Very slow Degree of siltation: Clan-Slight-Moderate-Heavy Discharge Clarity Depth of mud: Note: <1cm: 1-5cm: 5-10cm: >10cm Very clear Flood Litter: Nobe - Present - Moderate - Abundant Mozmal 10 Filamentous Algae: Sewage Fungus: Slightly turbid Love Norte - Present - Moderate - Abundant None - Present - Moderate - Abundant Sampled in Minutes: Highly turbid Very Low Main land use u/s: Sample retained: Pond net x 2 Urban Dry Pasture Tillage Recent Flood Stone wash x 1 Forestry Other Weed sweep x General Comments: Many deed + Steep present in this AND 4. Land Swanowading spream, comprises by, Leatler, ruster. stream bambs comprise leather, grass i needs/kustes, + some **Macroinvertebrate Composition** Relative The macroinvertebrates are divided into the following 5 specific groups: Abundance 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 6-20 2 Group 3 = Trichoptera 21-50 Ŧ. Group 4 = G.OL.D (Gastropoda, Oligochaeta and Diptera) 51-100 Group 5 = Asellus T. 101+ Calculate the total number of taxa and relative abundance of each macroinvertebrate group below: (Abundance - Ab) Plecoptera: Ecdyonurus Ab Leuctra Ab Ephemeroptera: Rhitnrogena Ab Isoperla Ab Heptagenia Ab Protonemura Ab Ephemerella Ab # Amphinemura Ab Caenis Ab Perla Ab Paraleptophlebia Ab Dinocras Ab Other Plecop Ab Ephemera danica Ab Other Plecop Ab Other Ephem Ab **Total Relative Abundance** Total no. of taxa Total no. of Taxa **Total Relative Abundance** Trichoptera: Hydropsychidae Ab G.OL.D: Lymnaea (G) Ab Chironomidae (D) Ab Asellus: Polycentropodidae Ab Absent Potamopyrgus (G) Ab Chironomus (D) Ab Rhyacophila Ab Planorbis (G) Ab Simuliidae (D) Ab & Few/Low Philopotamidae Ab Dicranota (D) Ab Common Ancylus (G) Ab Numerous Limnephilidae Ab Tipulidae (D) Ab & Physa (G) Ab Sericostomatidae Ab Lumbriculus (OI) Ab X Ceratopogonidae (D) Ab NOTE: Asellus Glossosomatidae Ab Eiseniella (OI) Ab Other GOLD must be Lepidostomatidae Ab Tubificidae (OI) Ab recorded as Other Trichoptera Ab absent if none Total no. of **Total Relative** are found Total no. of Taxa 2 Total Relative Abundance

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.

Many locatis present.

Abundance

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 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) 14 Average Index Score (AIS) 71S/5 (5 for 5 groups) 2.3 SSR Score (AIS x 2)

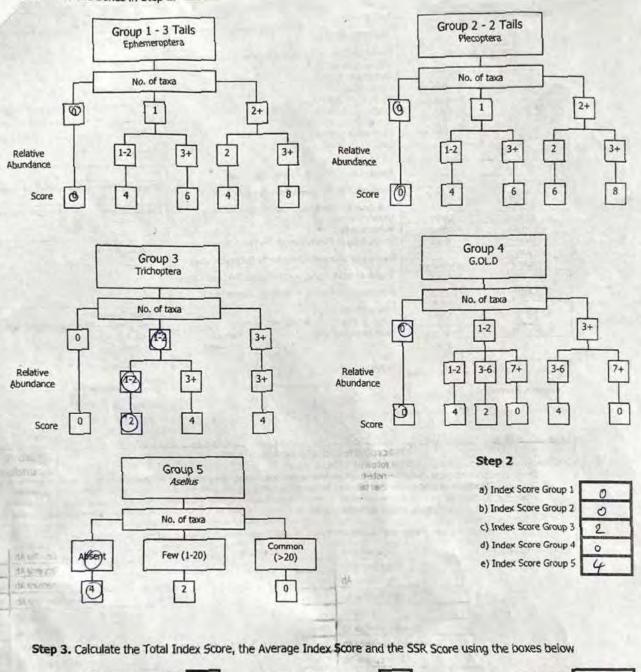
Step 4. Assess the stream by comparing the final SSR score with the categories below and tick the appropriate box

> 7.25 Probably not at risk	> 6.5 - 7.25 Indeterminate Stream may be at risk	<6.5 Stream at risk]	
Surveyor (signed):	Name (print)	: Aine OSHEA	Date: ()	_/ <i>08</i> _/ <u>5</u> 2_

Time: 10:15. Date: M-Jwy. LZ River: (140g(4) Douglas Code: Grid (6 figure): Station no. Location: Granamere Wichler Stream flow: GRANAMORE I Stream Order: Riffle Modifications: Y/OCanalised-widened-bank erosion-Riffle/Glide Field Chemistry DO% arterial drainage **Dominant Types:** DO mg/l 7-74 Bedrock 10 Temp (°C) 4.6 Boulder (>128mm) 10 Conductivity 38.4 Cobble (32-128mm) 20 orp. Gravel (8-32mm) 20 pH 4-71 Fine Gravel (2-8mm) 20 68 9. Bank width (cm) 100 Sand (0.25-2mm) (o Wet width (cm) 75 Silt (<0.25mm) 10 Avg Depth (cm) Slope: Low - Medium - High - Very High Shading: (High - Moderate - Low - None Staff gauge Geology: Calcareous-Siliceous-Mixed Velocity Colour Cattle access Y: upstream - downstream o(N Torrential Substratum Condition: Calcareous-Compacted-None Fast Shight Loose - Normal Moderate Moderate Substratum: Stoney bottom-Muddy bottom-Mud over stones Photo: N/N Slow High Veprelow Degree of siltation: Clean-Slight-Moderate-Heavy Clarity Discharge Depth of mud: None: <1cm: 1-5cm: 5-10cm: >10cm Very clear Flood Huch brown CIRCLE ! Normal Litter: None - Present - Moderate - Abundant Sewage Fungus: None - Present - Moderate - Abundant Filamentous Algae: Slightly furbid Low None - Present - Moderate - Abundant Sampled in Minutes: Sample Highly turbid Very Low Main land use u/s: retained: Urban Pond net x 5 Pasture DO W/N Tillage Recent Flood Stone wash x 2 Other Forestry Weed sweep x 2 forestry (coniferous) ca. 20 me fres from street. beartes by Mich heatles + needs present. Relative **Macroinvertebrate Composition** The macroinvertebrates are divided into the following 5 specific groups: Abundance 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 1-5 6-20 Group 3 = Trichoptera 21-50 Group 4 = G.OL.D (Gastropode, Oligochaeta and Diptera) 51-100 Group 5 = Asellus 101+ Calculate the total number of taxa and relative abundance of each macroinvertebrate group below: (Abundance - Ab) Leuctra Ab Ecdyonurus Ab Plecoptera: Ephemeroptera: Isoperia Ab Rhithrogena Ab Protonemura Ab Heptagenia Ab Amphinemura Ab Ephemerella Ab Peria Ab Caenis Ab Paraleotophlebia Ab Dinocras Ab Other Plecop Ab Ephemera danica Ab Other Plecop Ab Other Ephem Ab **Total Relative Abundance** Total no. of Taxa Total no. of taxa Total Relative Abundance Asellus Hydropsychidae Ab G.OL.D: Lymnaea (G) Ab Chironomidae (D) Ab Trichoptera: | | HI Polycentropodidae Ab Absent Potamopyrgus (G) Ab Chironomus (D) Ab Few/Low Planorbis (G) Ab Simuliidae (D) Ab Rhyacophila Al Common/ Ancylus (G) At Dicranota (D) Ab Philopotamidae Ab Numerous Tipulidae (D) Ab Limnephilidae Ab Physa (G) Ab Ceratopogonidae (D) Ab Sericostomatidae Ab Lumbriculus (OI) Ab NOTE: Asellus Other GOLD Glossosomatidae At Eiseniella (OI) Ab must be Lepidostomatidae Ab Tubificidae (OI) Ab recorded as Other Trichoptera Ab absent if none are found Total no. of **Total Relativ** Total Relative Abundance Total no. of Taxa Taxa

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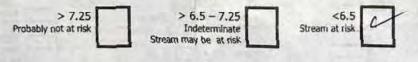
Step 1. Calculate the Index Score by circling the appropriate box representing the total number of taxa and the total abundance calculated from **each macroinvertebrate group** calculated from page 1 of the recording sheet and enter in to the boxes in Step 2.



Total Index Score (TIS)
Sum (a+b+c+d+e)
Average Index Score (AIS)
TIS/S (5 for 5 groups)
(AIS × 2)
(AIS × 2)

(AIS × 2)

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



Surveyor (signed): LSCea	Name (print): AINE	O SHEA	Date: 19 107 1 2021.

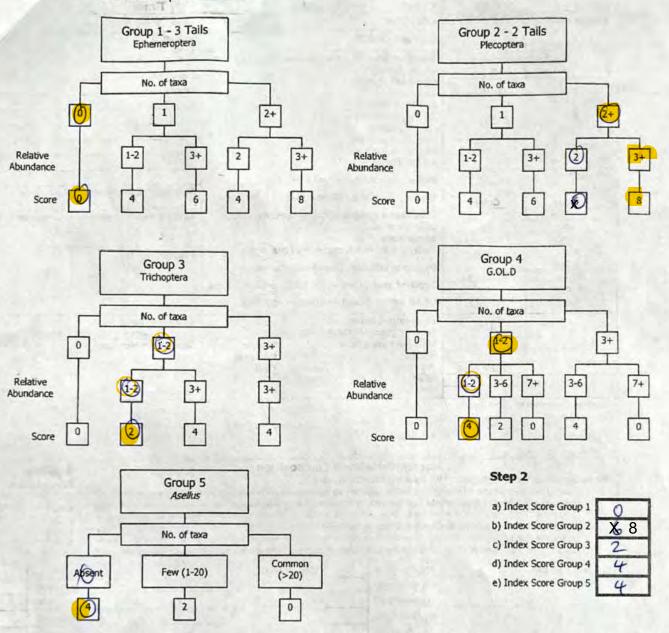
River: Daugla Code: Date: 19 July 2027 Time: 12:00 Station no. Location: Grid (6 figure): GRANAMORE 2 Stream Order: Stream flow: Riffle Field Chemistry Modifications: Y/N Canalised-widened-bank erosion-Riffle/Glide D0% arterial drainage 62.0 Slow-flow Dominant Types: DO mg/l 6.35 Very Slow Bedrock 5 flow Temp (°C) 14.3 Boulder (>128mm) 5 Conductivity Cobble (32-128mm)40 37.5 Gravel (8-32mm) 20 Fine Gravel (2-8mm) /0 pH 5.62 Bank width (cm) 400 Sand (0.25-2mm) = Wet width (cm) 70 Silt (<0.25mm) 5 Avg Depth (cm) 30 Slope: Low - Medium - High - Very High Staff gauge Shading: High - Moderate - Low - None Geology: Calcareous-Siliceous-Mixed Velocity Colour Torrential None Substratum Condition: Calcareous-Compacted-Cattle access Y: upstream - downstream or N Fast Slight pose - Normal Moderate Moderate Substratum: Slow HO Stoney bottom-Muddy bottom-Mud over stones Photo:(Y)/ N Vegeslow Degree of siltation: Clean-Slight-Moderate-Heavy Discharge Clarity Depth of mud: None: <1cm: 1-5cm: 5-10cm: >10cm Very dear Flood Clear Normal Litter: None - Present - Moderate - Abundant Filamentous Algae: Slightly Rurbid Sewage Fungus: Low None - Present - Moderate - Abundant Node - Present - Moderate - Abundant Highly turbid Main land use u/s: Very Low Sampled in Minutes: Sample Pasture retained: Dry Urban Pond net x 5 Forestry Recent Flood Tillage Stone wash x 2 Other Weed sweep x 2 General Comments: Gen America location is alry. Sons totaplace Downstream Many needs growing in Stream channel. Stream banks are manishy niferous basky. Much her felling in rely dear & conferous felling in rely Acent Land. Deen chappings + Sleep **Macroinvertebrate Composition** Relative The macroinvertebrates are divided into the following 5 specific groups: **Abundance** Group 1 = Ephemeroptera (3-tails) - note that tails may be damaged during sampling 1-5 Group 2 = Plecoptera (2-tails) - note that tails may be damaged during sampling 6-20 Group 3 = Trichoptera 21-50 Group 4 = G.OL.D (Gastropoda, Oligochaeta and Diptera) 51-100 4 Group 5 = Asellus 101+ 5 Calculate the total number of taxa and relative abundance of each macroinvertebrate group below: (Abundance - Ab) Ephemeroptera: Ecdyonurus Ab Plecoptera: Leuctra Ab Rhithrogena Ab Isoperla Ab Heptagenia Ab 144 Protonemura Ab Ephemerella Ab Amphinemura Ab Caenis Ab Pería Ab Paraleptophlebia Ab Dinocras Ab Ephemera danica Ab Other Plecop Ab Other Ephem Ab Other Plecop Ab Total no. of taxa O Total Relative Abundance Total no. of Taxa Total Relative Abundance | X 3 Trichoptera: Hydropsychidae Ab G.OLD: Lymnaea (G) Ab Chironomidae (D) Ab Asellus: Polycentropodidae Ab Potamopyrgus (G) Ab Chironomus (D) Ab Absent Rhyacophila At Planorbis (G) Ab Simuliidae (D) Ab Few/Low Ancytus (G) Ab Philopotamidae At Dicranota (D) Ab Common/ Limnephilidae At Numerous Physa (G) Ab Tipulidae (D) Ab Sericostomatidae Ab Lumbriculus (OI) Ab Ceratopogonidae (D) Ab NOTE: Asellus Glossosomatidae Ab Eiseniella (OI) Ab Other GOLD Ab must be Tubificidae (OI) Ab Lepidostomatidae Ab recorded as Other Trichoptera Ab absent if none Total no. of **Total Relative** are found Total no. of Taxa **Total Relative Abunda**

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ORP:

127.6

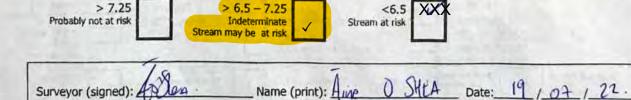
Step 1. Calculate the Index Score by circling the appropriate box representing the total number of taxa and the total abundance calculated from **each macroinvertebrate group** calculated from page 1 of the recording sheet and enter in to the boxes in Step 2.



Step 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) XX 18 Average Index Score (AIS) XXX 3.6 SSR Score (AIS x 2) XXX 7.2

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



River: Time: 15:00 Code: Station no. Grid (6 figure): Location: Stream flow: Stream Order: MAN AMORE 3 Riffle Field Chemistry Modifications: Y/O Canalised-widened-bank erosion-Riffle Wide DO% arterial drainage Slow flow 9.5 DO mg/l Dominant Types: Bedrock Temp (°C) 14.7 Boulder (>128mm) Conductivity Cobble (32-128mm) Gravel (8-32mm) 7-72 Fine Gravel (2-8mm) Bank width (cm) 160 Sand (0.25-2mm) Wet width (cm) 80 Silt (<0.25mm) Avg Depth (cm) 40 Slope: Low - Merthym - High - Very High Staff gauge Shading: High - Moderate - Low - None Geology: Calcareous-Siliceous-Mixed Colour Velocity Substratum Condition: Calcareous-Compacted-Torrential None Cattle access Y: upstream - downstream of Fast stight Loose - Normal Substratum: Moderate Moderate Stoney bottom-Muddy bottom-Mud over stones High Photo: W/ N Slow Very slow Degree of siltation: Clean-Sight-Moderate-Heavy Discharge Clarity Depth of mud: None: <tcm: 1-5cm: 5-10cm: >10cm Flood Very clear Litter: Nope - Present - Moderate - Abundant Normal Clear Sewage Fungus: Filamentous Algae: 1600 Slighty turbid Nene - Present - Moderate - Abundant None - Present - Moderate - Abundant Sampled in Minutes: Highly turbid Very Low Main land use u/s: Sample retained: Pond net x 5 Dry Pasture Recent Flood Tillage NIN Stone wash x 2 Forestry Other Weed sweep x 2. Reds are hanging. Surrounding meat is blanket by, with many needs. Coille foreship south west.

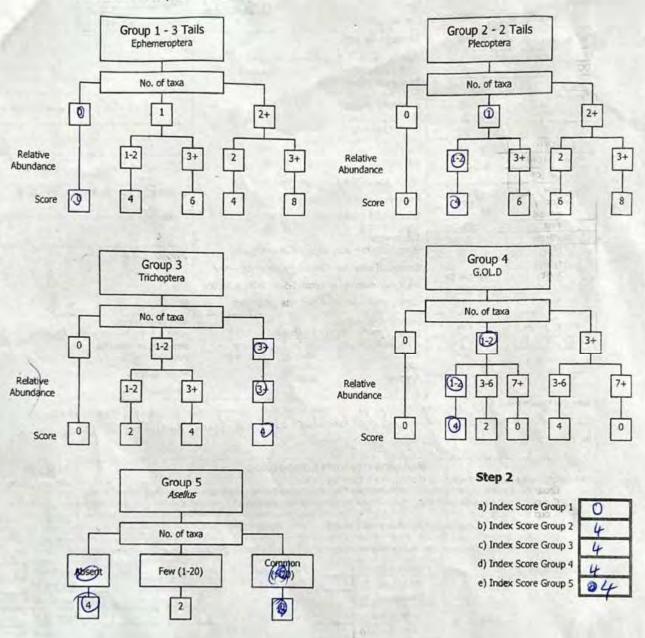
I downstrum. Many thister growing lane. **Macroinvertebrate Composition** Relative The macroinvertebrates are divided into the following 5 specific groups: Abundance Group 1 = Ephemeroptera (3-tails) - note that tails may be damaged during sampling 1-5 Group 2 = Plecoptera (2-tails) - note that tails may be damaged during sampling 6-20 Group 3 = Trichoptera 21-50 Group 4 = G.OL.D (Gastropode, Oligochaeta and Diptera) 51-100 Group 5 = Asellus T01+ Calculate the total number of taxa and relative abundance of each macroinvertebrate group below: (Abundance - Ab) Plecoptera: Leuctra Ab Ecdyonurus Ab Ephemeroptera: Isoperia Ab Rhithrogena Ab Heptagenia Ab Protonemura Ab Ephemerella Ab Amphinemura Ab Perla Ab Caenis Ab Paraleptophlebia Ab Dinocras Ab Other Plecop Ab Ephemera danica Ab Other Plecop Ab Other Ephem Ab **Total Relative Abundance** Total no. of Taxa Total no. of taxa Total Relative Abundance Asellus: Hydropsychidae Ab G.OL.D: Chironomidae (D) Ab Lymnaea (G) Ab Trichoptera: LITHLINU Polycentropodidae Ab Absent Potamopyrgus (G) Ab Chironomus (D) Ab Few/Low Simuliidae (D) Ab Rhyacophila Ab Planorbis (G) Ab Common/ Dicranota (D) Ab Philopotamidae Ab Ancylus (G) Ab Numerous Tipulldae (D) Ab Limnephilidae Ab Physa (G) Ab Sericostomatidae Ab Lumbriculus (OI) Ab Ceratopogonidae (D) Ab NOTE: Asellus Other GOLD Ab Eiseniella (OI) Ab Glossosomatidae Ab must be Lepidostomatidae Ab Tubificidae (OI) Ab recorded as Other Trichoptera Ab absent if none are found Total no. of **Total Relative** Total Relative Abundance 2 X4 Total no. of Taxa 2

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,

many buetis present

emp:

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 3. Calculate the Total Index Score, the Average Index Score and the SSR Score using the boxes below Total Index Score (TIS) Average Index Score (AIS) SSR Score sum (a+b+c+d+e) TIS/5 (5 for 5 groups) (AIS x 2) Step 4. Assess the stream by comparing the final SSR score with the categories below and tick the appropriate box > 7.25 > 6.5 - 7.25 <6.5 Probably not at risk Indeterminate Stream at risk Stream may be at risk Surveyor (signed): 408cm

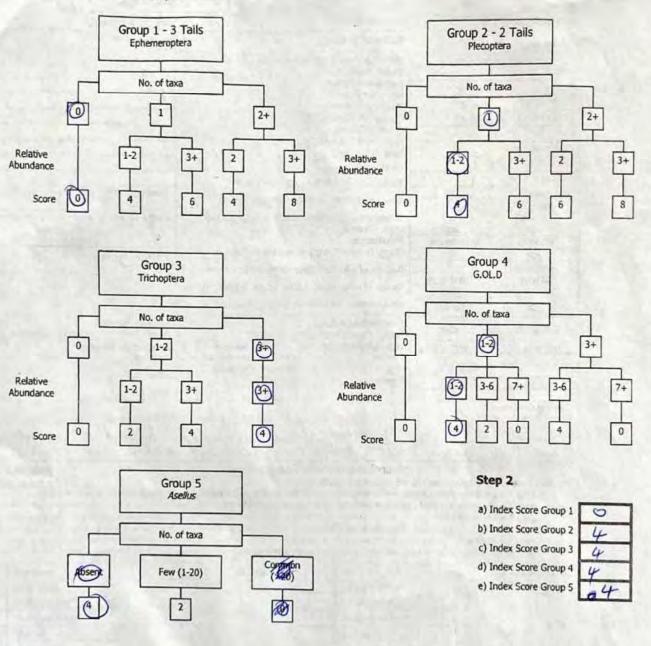
Name (print): Auge O SHEA Date: 19 107 122.

OCP: 105.9.

River: Long	K	Code:	Date:	MJ422	Time: Grid (6 figure):	13:30	_
Station no.		Location:		-	Stream flow:		-
Granamore 4		Stream Order		Riffle			
Field C	hemistry	Modifications: Y/	DCanalised-widene	ed-bank erosion-	Riffle/Glide		
D0%	88.6.	arterial drainage			Sloveflow		
DO mg/l	3.45	Dominant Types:			Glen) Sleep a	beline -	4
Temp (°C)	14.4		h		direction 9	llos	
Conductivity	61.5	Boulder (>128mm) Cobble (32-128mm)	35		1	0	
pH	7-39.	Gravel (8-32mm) Fine Gravel (2-8mm	0				
Bank width (cm)	350	Fine Gravel (2-8mm	135				
		Sand (0.25-2mm)	5)3			-	_
Wet width (cm)	100	Silt (<0.25mm)		24			_
Avg Depth (cm)	60	Slope: Low - Medit	im - Hon - Very H	ligh	Shading: High - Mod	system I may No	
Staff gauge	Palaus	Geology: Calcareon	is-Siliceous-Mixed		Strauting: Night - Mod	Flare - row - IA	one
Velocity	Colour None	Substratum Cond	ition: Calcareous-	Compacted-	Cattle access Y: upst	ream – downstra	eam o
Torrential Fast	Skight	Loose - Normal				200 200 300	
Moderate	Moderate	Substratum:					
SION	High	Storey bottom-Mud	dy bottom-Mud ove	er stones	Photo; Y) / N		
Very slow		Degree of siltation	n: Clean-Si@ht-Mor	derate-Heavy	0,		
Clarity	Discharge	Depth of mud: No	The second secon				
Very dear	Flood	Control Carlotter (Carlot					
Ze er	Normal	Litter: None - Pres	ent – Moderate - A	bundant	No. of the last		
-	1 -	Filamentous Alga	e:		Sewage Fungus:		
Slightly turbid	KOA .	None - Present - M	oderate - Abundani	t	None - Present - Mode	rate - Abundant	
Highly turbid	Very Low	Main land use u/s	:	Sample	Sampled in Minutes:		
	Dry	Pasture	The second second	retained:	Pond net x 5		
	Recent Flood	Bog		3 / N	Stone wash x ?		
		Fagestry	Other		Weed sweep x 2		
-	min was alreaded into	Macroinvertebro the following 5 specific		ion		Relative	
The macroinverted	rates are divided into	ails) - note that tails m	v be damaged du	ring sameling		Abunda 1-5	nce
Group 2 =	Plecoptera (2-tails)	note that tails may be	damaged during s	ampling	NAME OF TAXABLE PARTY.	6-20	
Group 3 =	Trichoptera		-	- The state of the	attended to the same	21-50	-
		, Oligochaeta and Dipte	ra)	-	the second	51-100	coronalis
Group 5 =	Asellus	va and relative abunda	nce of each macro	invertebrate oron	ip below: (Abundance – A	101+	THE REAL PROPERTY.
2 10 410	ie total fibriber of the		100	-	p below (ribandance in	-	
Ephemeroptera:	_	Ecdyonurus Ab	Plecopter	a		Leuctra Ab	
	-	Rhithrogena Ab	_	_	1000	Isoperla Ab	-
		Heptagenia Ab		-		rotonemura Ab	2
		Ephemerella Ab			An	nphinemura Ab	
		Caenis Ab				Perla Ab	
	D:	araleptophlebia Ab				Dinocras Ab	
	-		_	1995			-
	Ep	hemera danica Ab			100	ther Plecop Ab	-
		Other Ephem Ab	_			her Plecop Ab	-
Total no. of tax	ca O Total Re		O Total no. o	of Taxa	Total Relativ	e Abundance	12
richoptera:	Hydropsychid	ae Ab G.OL.D:	Lymnaea (C	5) Ab 11	Chironomidae (D) Ab	Asellus:	
HH	Polycentropodid		Potamopyrgus (C		Chironomus (D) Ab	Abse	ent -
	Rhyacoph		Planorbis (C		Simuliidae (D) Ab	Few/Lov	N
	Philopotamida		Ancylus (C	Control of the last of the las	Dicranota (D) Ab	Common	/
	THI Umnephilida		Physa (C	CONTRACTOR OF THE PARTY OF THE	Tipulidae (D) Ab	Numerou	
	Sericostomatida		Lumbriculus (0		Ceratopogonidae (D) Ab	1	
	Glossosomatida		Eiseniella (O	Contract of the Contract of th	Other GOLD Ab	NOTE: A	sellus
				The second secon		- must be	
	il Lepidostomatida	ae Abi	Tubificidae (O	i) Ab			44
	Other Trichopters		Tubificidae (O	i) Ab		recorded	
Total no. of	Other Trichopters	a Ab				recorded absent if	none
Total no. of Taxa	Other Trichopters	a Ab	Total no. of 1		Total Relative Abundance	recorded	none

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

Total Index Score (TIS)

SSR Score

(AIS x 2)

(AIS x 2)

<6.5

Stream at risk

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

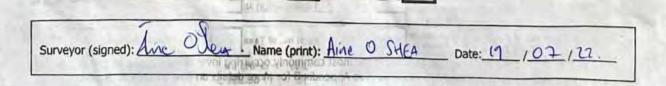
> 6.5 - 7.25

Indeterminate

Stream may be at risk

> 7.25

Probably not at risk



Date: 01.07.22 Time: 14:4 River: Code: Station no. Location: Grid (6 figure): GRANAMORE Stream flow: Stream Order: Riffle Field Chemistry Riffle/Blide Modifications: Y/OCanalised-widened-bank erosion-D0% 77.6 arterial drainage Slow flow Dominant Types: 7,94 DO mg/l Bedrock Temp (°C) 4.3 Boulder (>128mm) lo Conductivity 68-4 Cobble (32-128mm) 20 Gravel (8-32mm) 25 pH 6.43 Fine Gravel (2-8mm) 2 Bank width (cm) 400 Sand (0.25-2mm) 20 Wet width (cm) Silt (<0.25mm) 1 Avg Depth (cm) Slope: Low - Madish - High - Very High Shading: High - Moderate - W - None Staff gauge Geology: Calcareous-Siliceous-Mixed Colour Velocity Torrential None Substratum Condition: Calcareous-Companied-Cattle access Y: upstream - downstream or N Fast Slight Loose - Normal Moderate Substratum: Moderate Stopey bostom-Muddy bottom-Mud over stones Slow High Photo: N Very slow Degree of siltation: Clean-Stoot-Moderate-Heavy Clarity Discharge Depth of mud: None: sees: 1-5cm: 5-10cm: >10cm Flood Very clear Mormal Litter: None - Present - Moderate - Abundant Clean Filamentous Algae: Sewage Fungus: Low Slightly turbid Mone - Present - Moderate - Abundant None - Present - Moderate - Abundant Sampled in Minutes: Highly turbid Very Low Main land use u/s: Sample Urban retained: Pond net x 2 Pasture Dry Tillage Recent Flood Stone wash x D-5 Other Weed sweep x D. 5 General Comments: grass, my ds, + heathers by upstream of location Sleep present in surround **Macroinvertebrate Composition** Relative The macroinvertebrates are divided into the following 5 specific groups: Abundance 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 125 6-20 Group 3 = Trichoptera 21-50 3 Group 4 = G.OL.D (Gastropoda; Oligochaeta and Diptera) 51-100 Group 5 = Asellus TOTT Calculate the total number of taxa and relative abundance of each macroinvertebrate group below: (Abundance - Ab) Ecdyonurus Ab Leuctra Ab Plecoptera: Ephemeroptera: Isoperla Ab Rhithrogena Ab Protonemura Ab Heptagenia Ab Amphinemura Ab Ephemerella Ab Perla Ab Caenis Ab Dinogras Ab Paraleptophlebia Ab Other Plecop Ab Ephemera danica Ab Other Plecop Ab Other Ephem Ab **Total Relative Abundance** Total no, of taxa / Total Relative Abundance Total no. of Taxa 2 Asellus: Trichoptera: [11] Lymnaea (G) Ab Chironomidae (D) Ab Hydropsychidae Ab 1 G.OL.D Absent Chironamus (D) Ab Polycentropodidae Ab Potamopyrgus (G) Ab mu (## 20 Simuliidae (D) Ab Few/Low Rhyacophila Ab Planorbis (G) Ab Dicranota (D) Ab Common/ Ancylus (G) Ab Philopotamidae Ab Numerous Limnephilidae Abi Tipulidae (D) Ab Physa (G) Ab Ceratopogonidae (D) Ab Sericostomatidae Ab Lumbriculus (OI) Ab NOTE: Asellus Other GOLD Ab Glossosomatidae Ab Eisenielia (OI) Ab must be Lepidostomatidae Ab Tubificidae (OI) Ab recorded as Other Trichoptera Ab absent if none

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.

Total no. of Taxa 3

are found

Total Relative Abundance

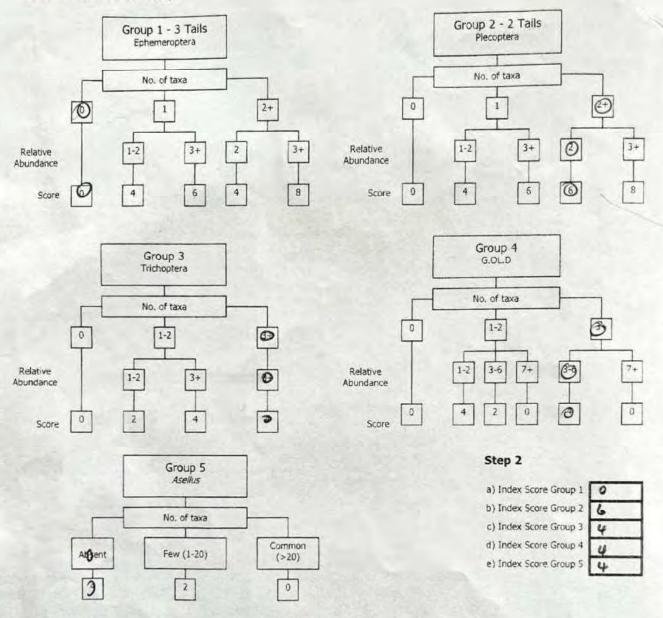
Total no. of

Taxa

Total Relative

Abundance

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

> 6.5 - 7.25

> 7.25

Total Index Score (TIS) sum (a+b+c+d+e) Average Index Score (AIS) 3.6 SSR Score (AIS x 2) 72

< 6.5

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

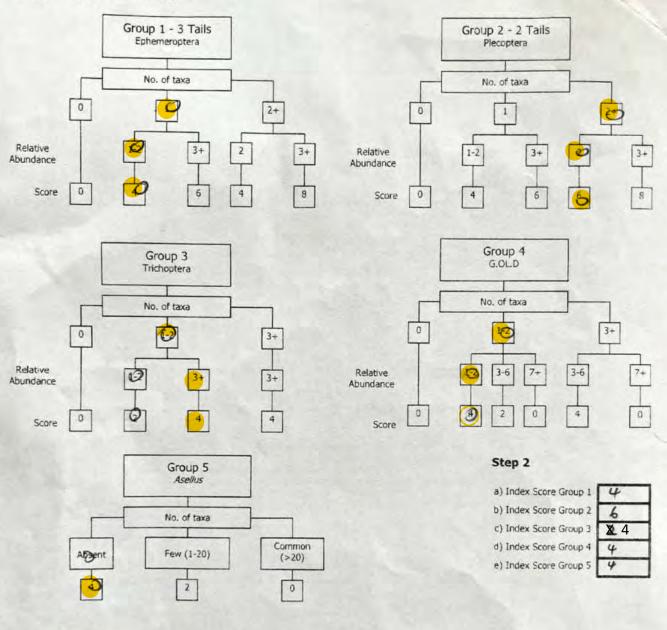
Surveyor (signed): Name (print): Ainc OShea Date: 01 / 05 / 22.

River: Code: Date: 01-07 22 Time: /6:00 . Station no. Location: Grid (6 figure): Stream Order: Stream flow: Oran AMORE 6 Riffle Field Chemistry Modifications: Y/O Canalised-widened-bank erosion-Riffle#Slide arterial drainage Slow flow **Dominant Types:** DO mg/l 9.77 Bedrock o Temp (°C) Boulder (>128mm)) a Conductivity 52.1 Cobble (32-128mm) 20 Gravel (8-32mm) 20 6.55 Fine Gravel (2-8mm) 20 Bank width (cm) 500 Sand (0.25-2mm) 20 Wet width (cm) 450 Silt (<0.25mm) 10 Avg Depth (cm) 20 Slope: Low - Medium - High - Very High Staff gauge Shading: High - Moderate - 100 - None Geology: Calcareous-Siliceous-Mced Velocity Colour CA 5% Torrential None Substratum Condition: Calcareous-Compacted-Cattle access Y: upstream - downstream or N Fast Slight Logse - Normal Moderate Moderate Substratum: Stoney bottom-Muddy bottom-Mud over stones Slow High Photo O/ N Very slow Degree of siltation: Clean-Slight-Moderate-Heavy Clarity Discharge Depth of mud: New: <1cm: 1-5cm: 5-10cm: >10cm Very dear Flood Chart Nemmal Litter: None - Present - Moderate - Abundant Filamentous Algae: Sewage Fungus: Slightly turbid Low None - Present - Moderate - Abundant None - Present - Moderate - Abundant Highly turbid Very Low Main land use u/s: Sample Sampled in Minutes: retained: Dry asture Urban Pond net x 2 Recent Flood 800 Tillage DIN Stone wash x o S Ferestry Other Weed sweep x 0.5 General Comments: Sleep + deen greazing lene. **Macroinvertebrate Composition** Relative The macroinvertebrates are divided into the following 5 specific groups: Abundance 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 6-20 7 Group 3 = Trichoptera 21-50 3 Group 4 = G.OL.D (Gastropoda, Oligochaeta and Diptera) 51-100 * Group 5 = Asellus 101+ 5 Calculate the total number of taxa and relative abundance of each macroinvertebrate group below: (Abundance - Ab) Ecdyonurus Ab Ephemeroptera: Plecoptera: Leuctra Ab Rhithrogena Ab Isoperla Ab Heptagenia Ab Protonemura Ab Ephemerella Ab Amphinemura Ab Caenis Ab Perla Ab Paraleptophlebia Ab Dinocras Ab Ephemera danica Ab Other Plecop Ab Other Ephem Ab Other Plecop Ab Total Relative Abundance Total no. of taxa | Total Relative Abundance Total no. of Taxa Asellus: Trichoptera: HH-Chironomidae (D) Ab Hydropsychidae Ab 1 G.OL.D: Lymnaea (G) Ab Absent Polycentropodidae Ab Chironomus (D) Ab Potamopyrgus (G) At Rhyacophila Ab Simulidae (D) Ab X Few/Low Planorbis (G) Ab 15 Philopotamidae Ab Dicranota (D) Ab Common/ Ancylus (G) Ab Numerous Tipulidae (D) Ab Limnephilidae Ab Pliysa (G) Ab 774 Sericostomatidae Ab X Lumbriculus (Ol) Ab Ceratopogonidae (D) Ab NOTE: Asellus Glossosomatidae Ab Eiseniella (OI) Ab Other GOLD Ab must be Lepidostomatidae Ab Tubificidae (OI) Ab recorded as Other Trichoptera Ab absent if none Total Relative Abundance are found Total no. of Total no. of Taxa \ Total Relative Abundance X 2

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.

-193.

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

Total Index Score (sum (a+b+c+c	TIS) Avera	ge Index Score (AIS) TS/5 (5 for 5 groups)	4.4	SSR Score (AIS x 2) 8.8
Step 4. Assess the stream	by comparing the final s	SSR score with the categ	ories below and tick th	e 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)	Name (pr	int): Aine o Sle	4 Date: 01 /	07/22

Date: 0/2/01/22 Time: 17:15 River: Code: Grid (6 figure): Station no. Location: Stream flow: Stream Order: GRAMAMONE Riffle Modifications: Y/NDCanalised-widened-bank erosion-Field Chemistry Puffe/Gide DO% arterial drainage Slow flow 100.7 **Dominant Types:** DO mg/l 9.97 Bedrock o Boulder (>128mm) 10 Temp (°C) 12-8 Conductivity 52.9 Cobble (32-128mm) Zo Gravel (8-32mm) 20 DH 6.12 Fine Gravel (2-8mm) 20 Bank width (cm) 850 Sand (0.25-2mm) 23 Wet width (cm) 200 Silt (<0.25mm)/a Avg Depth (cm) 40 Slope: Le - Meditim - High - Very High Staff gauge -Shading: High - Moderate - Low - None Geology: Calcareous-Siliceous-Mixed Velocity Colour Torrential None Cattle access Y: upstream - downstream or N Substratum Condition: Calcareous-Compacted-Fast Slight Loose - Normal ? No calle observed. Moderate Moderate Substratum: States bottom-Muddy bottom-Mud over stones High Slow Photo: YY N Very slow Degree of siltation: Clean-Sight-Moderate-Heavy Clarity Discharge Depth of mud: None: (Car: 1-5cm: 5-10cm: >10cm Very clear Flood de l Litter: Nene - Present - Moderate - Abundant Nomal Filamentous Algae: None – Present – Moderate - Abundant Sewage Fungus: Slightly turbid LOW None - Present - Moderate - Abundant Highly turbid Very Low Main land use u/s: Sample Sampled in Minutes: Dry Urban retained: Pasture Recent Flood Bog Tillage Y/N Stone wash x Forestry Other Weed sweep x General Comments: Deer + sleep present les banks would in grass, pare leafler, needs moss corning stones Macroinvertebrate Composition Relative The macroinvertebrates are divided into the following 5 specific groups: Abundance 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 5-20 Group 3 = Trichoptera 21-50 3 Group 4 = G.OL.D (Gastropoda, Oligochaeta and Diptera) 51-100 * Group 5 = Asellus 101+ 2 Calculate the total number of taxa and relative abundance of each macroinvertebrate group below: (Abundance - Ab) Ecdyonurus Ab Plecoptera: Ephemeroptera: Leuctra Ab Rhithrogena Ab Isoperla Ab Heptagenia Ab Protonemura Ab Ephemerella Ab Amphinemura Ab Caenis Ab Perla Ab Paraleptophiebia Ab Dinogras Ab Ephemera danica Ab Other Plecop Ab Other Ephem Ab Other Plecop Ab Total no. of taxa - Total Relative Abundance **Total Relative Abundance** Total no. of Taxa Trichoptera: Chironomidae (D) Ab Asellus: Hydropsychidae Ab G.OL.D: Lymnaea (G) Ab Polycentropodidae Ab Chironomus (D) Ab Potamopyrgus (G) Ab Rhyacophila Ab Planorbis (G) Ab Simulidae (D) Ab Few/Low Philopotamidae Ab Dicranota (D) Ab Commony Ancylus (G) Ab Numerous Limnephilidae Ab Tipulidae (D) Ab Physa (G) Ab Sericostomaticae Ab Lumbriculus (OI) Ab Ceratopogonidae (D) Ab NOTE: Asellus HH-111 Glossosomatidae Ab Eiseniella (OI) Ab Other GOLD must be Lepidostomatidae Ab Tubificidae (OI) Ab ecorded as Other Trichoptera Ab absent if none

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.

Total no. of Taxa 3

are found

Total Relative Abundance

Boetis present.

Total no. of

Taxa

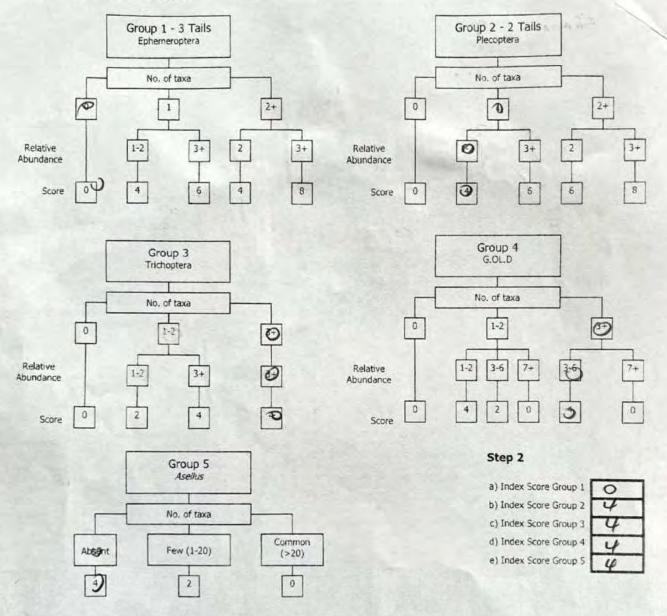
Total Relative

Abundance

X 4

onp.

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

Average Index Score (AIS)

TIS/5 (5 for 5 groups)

Total Index Score (TIS)

sum (a+b+c+d+e)

SSR Score

(A15 x 2)

6.4

River: Code: Date: 18-July Time: Station no. Location: F DWENISCOUN Grid (6 figure): FOWERS COUNCY Stream Order: Stream flow: Field Chemistry Riffle Modifications: Y/O Canalised-widened-bank erosion-Riffle/Glide DO% 22.0 arterial drainage Slowflow DO mg/l **Dominant Types:** 7.78 Bedrock Temp (°C) 17.9 Boulder (>128mm) Conductivity 40.2 Cobble (32-128mm) PH 6-48 Gravel (8-32mm) Fine Gravel (2-8mm) Bank width (cm) 110 Sand (0.25-2mm) Wet width (cm) 100 Silt (<0.25mm) Avg Depth (cm) 50 Slope: Low - Meddem - High - Very High Staff gauge Shading: High - Moderate - Low - None Geology: Calcareous-Siliceous-Mixed Velocity Colour Torrential None Substratum Condition: Calcareous-Compacted-Cattle access Y: upstream - downstream or N Fast Slight Loose - Normal Moderate Moderate Substratum: SHOW Stoney bottom-Muddy bottom-Mult over stones High Photo: Y)/ N Very slow Degree of siltation: Clean-Slight-Moderate-Heavy Clarity Discharge Depth of mud: None: <1cm: (-5cm: 5-10cm: >10cm Very dear Flood Normal Litter: None - Present - Moderate - Abundant Clean Filamentous Algae: Slightly turbid Sewage Fungus: Low None - Present - Moderate - Abundant Neine - Present - Moderate - Abundant Highly turbid Very Low Main land use u/s: Sample Sampled in Minutes: Dry Pasture Urban retained: Pond net x 6 Recent Flood Forestry Tillage PYN Stone wash x 4 Other Weed sweep x -**General Comments:** present. Stream quite narrow. Much Brown Algae on nocho, Deen + Sleep Woles. positive deserved on Macroinvertebrate Composition Relative The macroinvertebrates are divided into the following 5 specific groups: Abundance Group 1 = Ephemeroptera (3-tails) - note that tails may be damaged during sampling 1-5 Group 2 = Plecoptera (2-tails) note that tails may be damaged during sampling 6-20 Group 3 = Trichoptera 21-50 Group 4 = G.OL.D (Gastropoda, Oligochaeta and Diptera) 51-100 Group 5 = Asellus 101+ Calculate the total number of taxo and relative abundance of each macroinvertebrate group below: (Abundance - Ab) Ephemeroptera: Ecdyonurus Ab Plecoptera: Leuctra Ab Rhithrogena Ab Isoperla Ab Heptagenia Ab Protonemura Ab Ephemerella Ab Amphinemura Ab Caenis Ab Perla Ab Paraleptophiebia Ab Dinocras Ab Ephemera danica Ab Taenio Other Plecop Ab 111 Other Ephem Ab Other Plecop Ab Total no. of taxa **Total Relative Abundance** Total no. of Taxa **Total Relative Abundance** Trichoptera: Hydropsychidae Ab G.OL.D: Lymnaea (G) Ab Chironomidae (D) Ab Asellus: Polycentropodidae Ab Potamopyrgus (G) Ab Chironomus (D) Ab Absent Rhyacophila At Planorbis (G) Ab Simuliidae (D) Ab Few/Low Philopotamidae Ab Ancylus (G) Ab Dicranota (D) Ab Common/ Limnephilidae Ab Numerous Physa (G) Ab Tipulidae (D) Ab Lumbriculus (OI) Ab Sericostomatidae Ab Ceratopogonidae (D) Ab NOTE: Asellus Glossosomatidae Ab Eiseniella (OI) Ab Other GOLD must be Lepidostomatidae Ab Tubificidae (OI) Ab

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.

Total no. of Taxa

recorded as

are found

Total Relative Abundance

absent if none

No Backs present: &

Total no. of

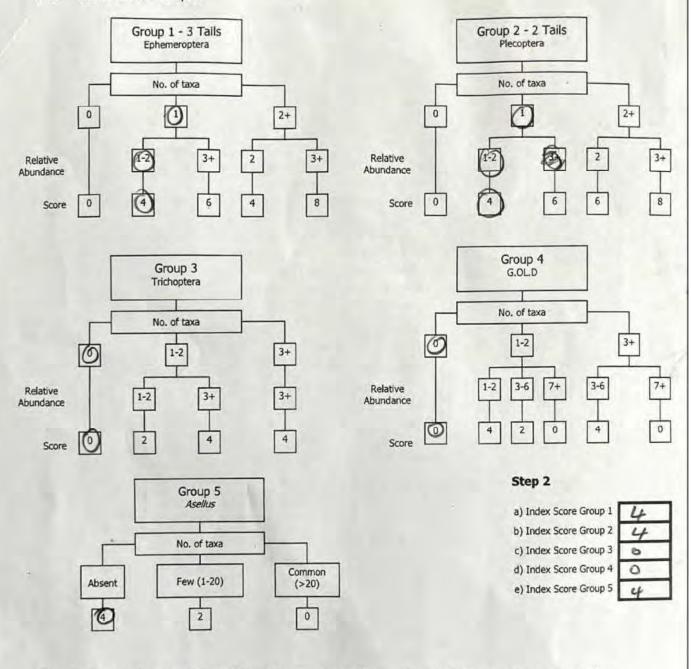
Other Trichoptera Ab

Total Relative

Abundance

orp:

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 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) 7 TIS/5 (5 for 5 groups) 2. 4

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 Stream may be at risk Stream may be at risk Stream may be at risk

Surveyor (signed): Asser Name (print): Aire O SHEA Date: 18 107/22

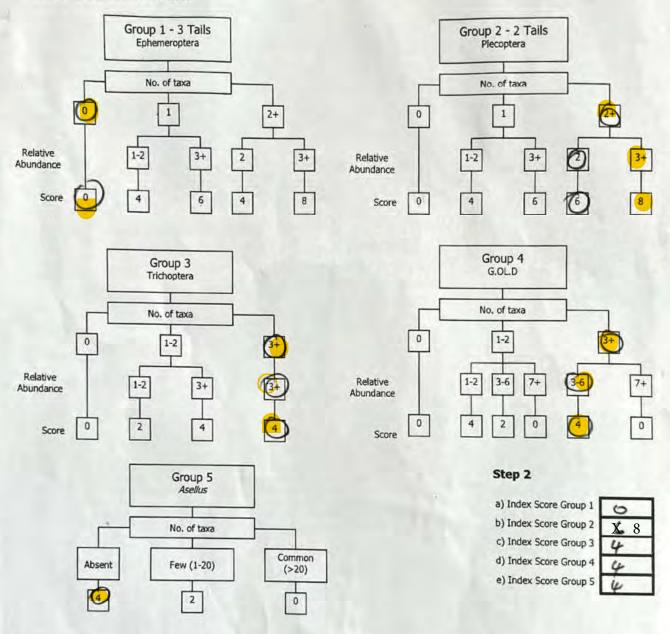
River: Date: 8 Time: /4 '00 Code: Grid (6 figure): Station no. Location: Powers were Stream flow: Powers court 2 Stream Order: Riffie Field Chemistry Modifications: Y/N Canalised-widened-bank erosion-Riffle/Glide D0% 66.5 arterial drainage Slowchow **Dominant Types:** DO mg/l 6.51 Bedrock Temp (°C) 6-2 Boulder (>128mm) Conductivity Cobble (32-128mm) 45.2 Gravel (8-32mm) pH 5.56 Fine Gravel (2-8mm) Bank width (cm) 220 Sand (0.25-2mm) Wet width (cm) Silt (<0.25mm) 170 Avg Depth (cm) Slope: Low - Mestam - High - Very High Staff gauge Shading: High - Moderate - Low - None Geology: Calcareous-Siliceous-Mixed Velocity Colour Cattle access Y: upstream - downstream or ? Substratum Condition: Calcareous-Compacted-Torrential None Fast Loose - Normal Slight Substratum: Moderate Moderate Storey bottom-Muddy bottom-Mud over stones Photo: PIN SIGN High Very slow Degree of siltation: Clean-Slight-Moderate-Heavy Clarity Discharge Depth of mud: Nene: <1cm: 1-5cm: 5-10cm: >10cm Very dear Flood Litter: Note - Moderate - Abundant CO Nomal Sewage Fungus: Filamentous Algae: Slightly turbid Low None - Present - Moderate - Abundant None - Present - Moderate - Abundant Highly turbid Very Low Main land use u/s: Sample Sampled in Minutes: Pond net x 3 Urban Dry Pasture retained: Recent Flood Tillage O/N Stone wash x 2 Other Weed sweep x General Comments: No sleep observed Love Deen present Many weeds + leather along bank Macroinvertebrate Composition Relative The macroinvertebrates are divided into the following 5 specific groups: Abundance 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 T-5 6-20 Group 3 = Trichoptera 21-50 Group 4 = G.OL.D (Gastropoda, Oligochaeta and Diptera) 51-100 Group 5 = Asellus 101+ Calculate the total number of taxa and relative abundance of each macroinvertebrate group below: (Abundance - Ab) Ecdyonurus Ab Ephemeroptera: Plecoptera: 111 Leuctra Ab HH LH Rhithrogena Ab Isoperla Ab Heptagenia Ab Protonemura Ab Ephemerella Ab Amphinemura Ab Caenis Ab Perla Ab Paraleptophlebia Ab Dinocras Ab Taenio Ephemera danica Ab Other Plecop Ab Other Ephem Ab Other Plecop Ab Total no. of taxa Total Relative Abundance Total no. of Taxa Total Relative Abundance Chironomidae (D) Ab G.OL.D: Lymnaea (G) Ab Trichoptera: Hydropsychidae Ab Asellus: Potamopyrgus (G) Ab Polycentropodidae Ab Chironomus (D) Ab Absent Rhyacophila Ab Planorbis (G) Ab Simuliidae (D) Ab Few/Low Philopotamidae Ab Ancylus (G) Ab Dicranota (D) Ab Common/ Limnephilldae Ab Numerous Physa (G) Ab Tipulidae (D) Ab Sericostomatidae Ab Lumbriculus (OI) Ab tH Ceratopogonidae (D) Ab NOTE: Asellus Glossosomatidae Ab Eiseniella (OI) Ab Ab Other GOLD must be Tubificidae (OI) Ab 1 Lepidostomatidae Ab recorded as Other Trichoptera Ab absent if none Total no. of **Total Relative** are found Total no. of Taxa 3 Total Relative Abundance X 3

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.

backer : plus 20.

Abundance

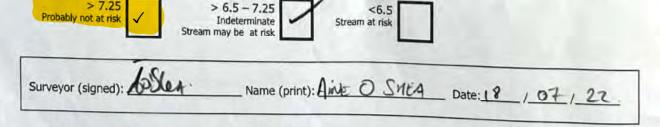
Step 1. Calculate the Index Score by circling the appropriate box representing the total number of taxa and the total abundance calculated from **each macroinvertebrate group** calculated from page 1 of the recording sheet and enter in to the boxes in Step 2.



Step 3. Calculate the Total Index Score, the Average Index Score and the SSR Score using the boxes below 8

Total Index Score (TIS) sum (a+b+c+d+e) 20 Average Index Score (AIS) TIS/5 (5 for 5 groups) 3XXX 4 SSR Score (AIS x 2)

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



River: Code: Time: 11:40 Station no. Location: Wir Lou Grid (6 figure): Stream flow: Powerscours Stream Order: Riffie Field Chemistry Riffled Slide Slow flow Modifications: Y/N Canalised-widened-bank erosion-DO% 84.2 arterial drainage **Dominant Types:** DO ma/l 7.97 Bedrock 100 Temp (°C) 18.0 Boulder (>128mm) 25 Conductivity 38-2 Cobble (32-128mm) 25 Gravel (8-32mm) 10 6.86 Fine Gravel (2-8mm) 10 Bank width (cm) 300 Sand (0.25-2mm) 5 Wet width (cm) 250 Silt (<0.25mm) 5 Avg Depth (cm) 50 Slope: Low - Medium - High - Very High Staff gauge Shading: High - Moderate - Low - None Geology: Calcareous-Siliceous-Mixed Velocity Colour Substratum Condition: Calcareous-Compacted-Cattle access Y: upstream - downstream or **Torrential** None Fast Loose - Normal Shabt Mederate Substratum: Moderate Stoner Bottom-Muddy bottom-Mud over stones Slow High Photo: M/ N Very slow Degree of siltation: Clean-Slight-Moderate-Heavy Clarity Discharge Depth of mud: None: <1cm: 1-5cm: 5-10cm: >10cm Very clear Flood Litter: None - Present - Moderate - Abundant Clear Normal Sewage Fungus: Filamentous Algae: Slightly turbid Low None - Present - Moderate - Abundant None - Present - Moderate - Abundant Main land use u/s: Sample Sampled in Minutes: Highly turbid Very Low Pasture ' Urban retained: Pond net x 5 Dry Y/N BOD Tillage Recent Flood Stone wash x 5 Other Forestry Weed sweep x Suep grazing + door present blanket by surrounding shear, with leather breaker to catchwint on 1145 of sheeping Macroinvertebrate Composition Relative The macroinvertebrates are divided into the following 5 specific groups: Abundance 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 6-20 Group 3 = Trichoptera 21-50 Group 4 = G.OLD (Gastropoda, Oligochaeta and Diptera) 51-100 Group 5 = Asellus 101+ Calculate the total number of taxa and relative abundance of each macroinvertebrate group below: (Abundance - Ab) TH Ecdyonurus Ab 5 Ephemeroptera: Plecoptera: Leuctra Ab Rhithrogena Ab Isoperia Ab Heptagenia Ab Protonemura Ab Ephemerella Ab Amphinemura Ab Caenis Ab Perla Ab Paraleptophlebia Ab Dinocras Ab Ephemera danica Ab Other Plecop Ab Other Ephem Ab Other Plecop Ab **Total Relative Abundance** Total no. of Taxa Total no. of taxa 0 **Total Relative Abundance** Trichoptera: Hydropsychidae Ab G.OL.D: Lymnaea (G) Ab Chironomidae (D) Ab Asellus Polycentropodidae Ab Chironomus (D) Ab 1 1 Potamopyrgus (G) Ab Absent L Rhyacophila Ab Planorbis (G) Ab Simuliidae (D) Ab | 1 | Few/Low Philopotamidae Ab Ancylus (G) Ab Dicranota (D) Ab Common/ Numerous Limnephilidae Ab Physa (G) Ab Tipulldae (D) Ab Sericostomatidae Ab Lumbriculus (OI) Ab Ceratopogonidae (D) Ab NOTE: Asellus Glossosomatidae Ab Eiseniella (Ol) Ab Other GOLD Ab must be

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.

Tubificidae (OI) Ab X 1

Total no. of Taxa 2

recorded as

are found

Total Relative Abundance X 3

absent if none

Total no. of

Taxa

Lepidostomatidae Ab

Total Relative

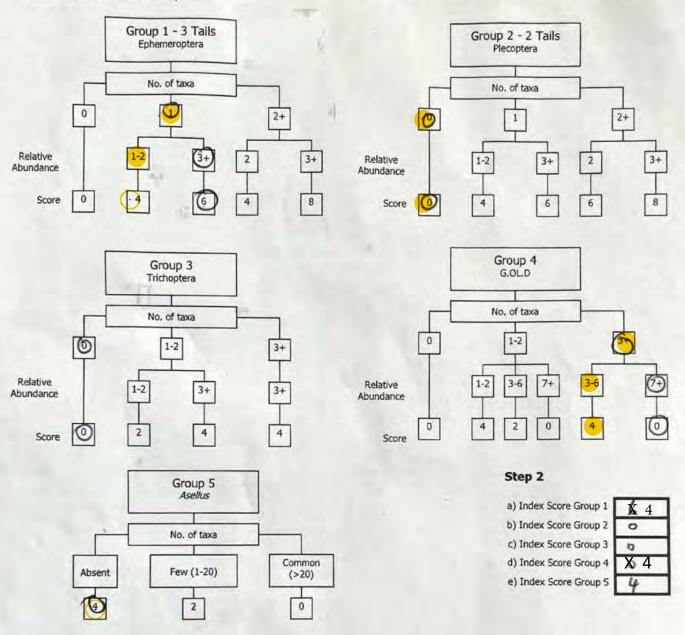
Abundance

Other Trichoptera Ab

ORP:

106.2

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

> 6.5 - 7.25

Indeterminate

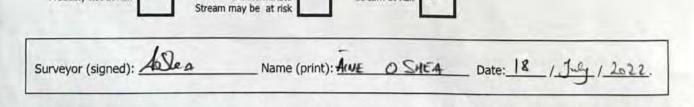
> 7.25

Probably not at risk

Total Index Score (TIS) Average Index Score (AIS) SSR Score sum (a+b+c+d+e) TIS/5 (5 for 5 groups) (AIS x 2) Step 4. Assess the stream by comparing the final SSR score with the categories below and tick the appropriate box

<6.5

Stream at risk



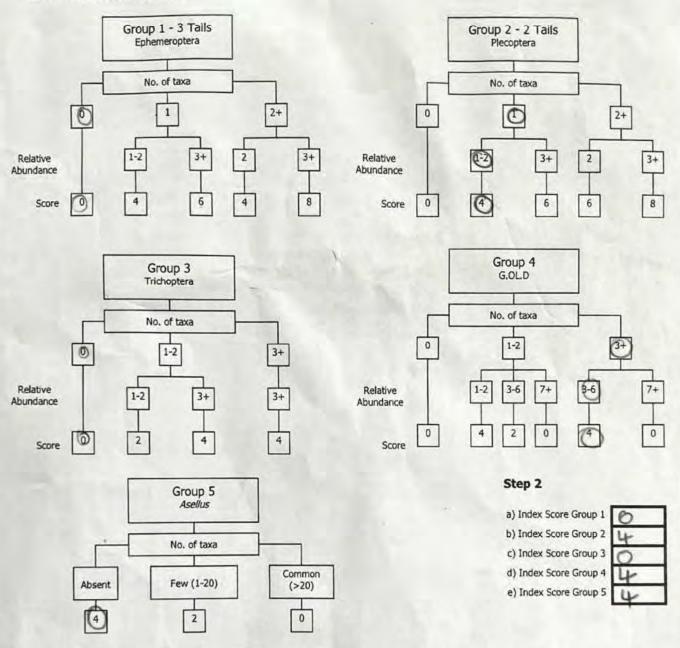
Time: 09:15 River: Date: 18- 14 Code: Location: Wicklow UDIAnd Grid (6 figure): Station no. Stream flow: Stream Order: Povers count Riffle Field Chemistry Modifications: Y/ Canalised-widened-bank erosion-Riffle/Glide D0% arterial drainage Slow flow 93.4 **Dominant Types:** DO mg/l 9-60 15> Bedrock Temp (°C) Boulder (>128mm) 15 der Conductivity Cobble (32-128mm) 15 40.4 Gravel (8-32mm) 6 20 nkp: 33.7 PH 645 6.99 Fine Gravel (2-8mm) Bank width (cm) Sand (0.25-2mm) 5 Wet width (cm) 150 Silt (<0.25mm) 5 Avg Depth (cm) 25 Slope: Low - Medium - High - Very High Shading: High - Moderate - Low - None Staff gauge Geology: Calcareous-Siliceous-Mixed Velocity Colour Cattle access Y: upstream - downstream or de Torrential None Substratum Condition: Calcareous-Compacted-Loose - Normal Sheep quartery East Slight Moderate Moderate Substratum: Storey Bottom-Muddy bottom-Mud over stones Photo: A / N High Slow Very slow Degree of siltation: Gean-Slight-Moderate-Heavy Clarity Discharge Depth of mud: Note: <1cm: 1-5cm: 5-10cm: >10cm Flood Very clear Litter: None - Present - Moderate - Abundant Clear Normal Sewage Fungus: Filamentous Algae: Slightly turbid Low None - Present - Moderate - Abundant None - Present - Moderate - Abandant Main land use u/s: Sample Sampled in Minutes: Highly turbid Very Low Urban retained: Dry Pasture Pond net x Recent Flood 809 Tillage PIN Stone wash x 4 Forestry Other Weed sweep x 2 General Comments: much heather + breachen blanker boy, with Colle Coniferous forcestry is upland MEA. Relative **Macroinvertebrate Composition** The macroinvertebrates are divided into the following 5 specific groups: Abundance 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 1-5 6-20 Group 3 = Trichoptera 21-50 Group 4 = G.OL.D (Gastropoda, Oligochaeta and Diptera) 51-100 4 Group 5 = Asellus 101+ Calculate the total number of taxa and relative abundance of each macroinvertebrate group below: (Abundance - Ab) Leuctra Ab Ecdyonurus Ab Plecoptera: Ephemeroptera: Rhithrogena Ab Isoperla Ab Heptagenia Ab Protonemura Ab Amphinemura Ab Ephemerella Ab Caenis Ab Perla Ab Dinocras Ab Paraleptophlebia Ab haropulidane Other Plecop Ab Ephemera danica Ab Other Plecop Ab Other Ephem Ab **Total Relative Abundance** Total no. of Taxa **Total Relative Abundance** Total no. of taxa 0 Chironomidae (D) Ab Asellus: G.OL.D: Lymnaea (G) Ab Hydropsychidae Ab Trichoptera: Chironomus (D) Ab Absent Polycentropodidae Ab Potamopyrgus (G) Ab Simuliidae (D) Ab Few/Low Rhyacophila Ab Planorbis (G) Ab Dicranota (D) Ab Common/ Philopotamidae Ab Ancylus (G) Ab Numerous Tipulidae (D) Ab Limnephilidae Ab Physa (G) Ab Lumbriculus (OI) Ab Ceratopogonidae (D) Ab Sericostomatidae Ab NOTE: Asellus Other GOLD Glossosomatidae Ab Eiseniella (OI) Ab must be Lepidostomatidae Ab Tubificidae (OI) Ab recorded as Other Trichoptera Ab absent if none are found **Total Relative** Total no. of Total Relative Abundance X 3 Total no. of Taxa

> 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.

Taxa

PH: 6-64

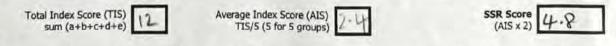
Step 1. Calculate the Index Score by circling the appropriate box representing the total number of taxa and the total abundance calculated from **each macroinvertebrate group** calculated from page 1 of the recording sheet and enter in to the boxes in Step 2.



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

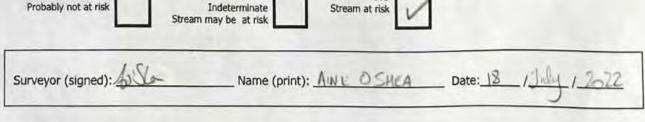
> 6.5 - 7.25

> 7.25



< 6.5

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

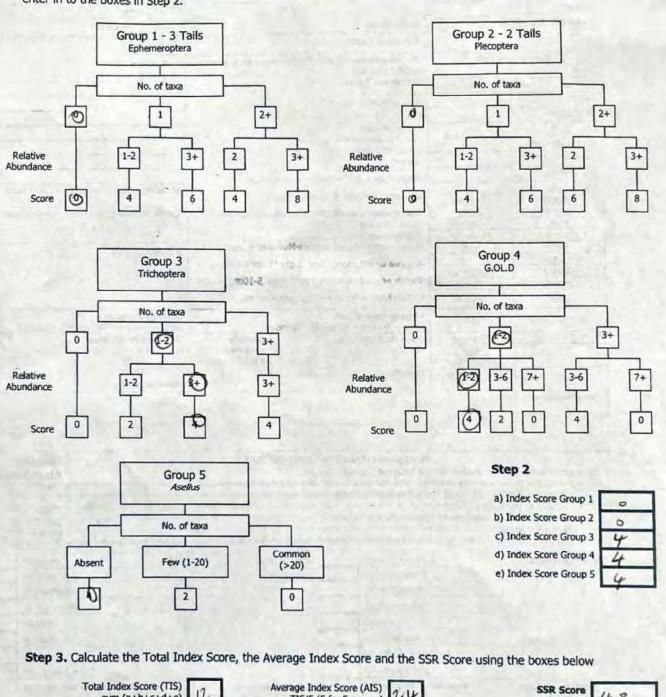


River: Code: Time: Station no. Location: Grid (6 figure): olle vemove e Stream Order: Stream flow: Riffle **Field Chemistry** Modifications: Y/NCanalised-widened-bank erosion-Riffle/Glide D0% 91.2 arterial drainage Slow flow DO mg/l 9.24 **Dominant Types:** Uppy Slow Bedrock · Temp (°C) 14.9 Boulder (>128mm) Conductivity Cobble (32-128mm) acrenowt pH Gravel (8-32mm) 50 covening ORP: Fine Gravel (2-8mm) 15 Bank width (cm) Sand (0.25-2mm) 20 Stream Wet width (cm) 312.7 20 Silt (<0.25mm) 20 Avg Depth (cm) 10 Slope: Low - Medium - High - Very High Staff gauge Shading: High - Moderate - Low - None Geology: Calcareous-Siliceous-Mixed Velocity Colour Torrential None Substratum Condition: Calcareous-Compacted-Cattle access Dupstream - downstream or N Fast Slight Lenge - Normal Moderate Moderate Substratum: Slow Stoney bottom-Muddy bottom-Mud over stones High Photo: @/ N Degree of siltation: Clean-Stight-Moderate-Heavy Clarity Discharge Depth of mud: None: < Con: 1-5cm: 5-10cm: > 10cm Very clear Flood Clear Normal Litter: None - Present - Moderate - Abundant Filamentous Algae: Sewage Fungus: None – Present – Moderate - Abundant Slightly Edroid Low Nepe - Present - Moderate - Abundant Sampled in Minutes: Jug x 2 Min Highly turbid Venctow Main land use u/s: Sample 500 Pastire Urban retained: Recent Flood Bog Tillage OV N Stone wash x / Drug @ Very Forestry Other Weed sweep x width, and extremely dense overgeath used jug to scoop + dispurb Stream bed: Sleep, co-is & deep present in field's surrounding Streams **Macroinvertebrate Composition** Relative The macroinvertebrates are divided into the following 5 specific groups: **Abundance** 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 6-20 Group 3 = Trichoptera 21-50 Group 4 = G.OL.D (Gastropoda, Oligochaeta and Diptera) 51-100 Group 5 = Asellus 101+ Calculate the total number of taxa and relative abundance of each macroinvertebrate group below: (Abundance - Ab) Ephemeroptera: Ecdyonurus Ab Plecoptera: Leuctra Ab Rhithrogena Ab Isoperla Ab Heptagenia Ab Protonemura Ab Ephemerella Ab Amphinemura Ab Caenis Ab Perla Ab Paraleptophlebia Ab Dinocras Ab offile & Ephemera danica Ab Other Plecop Ab Other Ephem Ab Other Plecop Ab Total no. of taxa **Total Relative Abundance** Total no. of Taxa **Total Relative Abundance** @ Street Trichoptera: Hydropsychidae Ab G.OL.D: Lymnaea (G) Ab Chironomidae (D) Ab Asellus: Polycentropodidae Ab Potamopyrgus (G) Ab Chironomus (D) At Absen Rhyacophila Ab Planorbis (G) Ab Simuliidae (D) Ab Few/Low Philopotamidae Ab Ancylus (G) Ab Dicranota (D) Ab Common THL Limnephilidae Ab Numerous Physa (G) Ab Tipulidae (D) Ab ITH-Sericostomatidae Ab Lumbriculus (OI) Ab Ceratopogonidae (D) Ab NOTE: Asellus Glossosomatidae Ab Eiseniella (OI) Ab Other GOLD must be Lepidostomatidae Ab Tubificidae (OI) Ab recorded as Other Trichoptera Ab absent if none **Total Relative** Total no. of are found Total no. of Taxa **Total Relative Abundance** Abundance Taxa 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.

Stream is day U/S + D/S of Actual SSRS location)

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.



Surveyor (signed):	Name (print): Aine	0	SHEA	Date: 10 / 08 / 22
in the state of th				



ALS Environmental Ltd Torrington Avenue Coventry CV4 9GU

T: +44 (0)24 7642 1213 F: +44 (0)24 7685 6575 www.alsenvironmental.co.uk

Ms O Shea CDM Smith 15 Wentworth Eblana Villas Dublin 2

26 July 2022

Test Report: COV/2347278/2022

Dear Ms O Shea

Analysis of your sample(s) submitted on 20 July 2022 is now complete and we have pleasure in enclosing the appropriate test report(s).

An invoice for the analysis carried out will be sent under separate cover.

Should you have any queries regarding this report(s) or any part of our service, please contact Customer Services on +44 (0)24 7642 1213 who will be happy to discuss your requirements.

If you would like to arrange any further analysis, please contact Customer Services. To arrange container delivery or sample collection, please call the Couriers Department directly on 024 7685 6562.

Thank you for using ALS Environmental Ltd and we look forward to receiving your next samples.

Yours Sincerely,

Signed:

Name: P. Patel

Title: Inorganics Chemistry Manager







Report Summary

Ms Aine O Shea CDM Smith 15 Wentworth Eblana Villas Dublin 2 ANALYSED BY





Date of Issue: 26 July 2022

Report Number: COV/2347278/2022 Issue 1

This issue replaces all previous issues

Job Description: Surface Water Aanalysis

Number of Samples included in this report 4

Number of Test Results included in this report 12

Signed:

Job Received: 20 July 2022

Analysis Commenced: 23 July 2022

Name: P. Patel Date: 26 July 2022

Title: Inorganics Chemistry Manager

ALS Environmental Ltd was not responsible for sampling unless otherwise stated.

Information on the methods of analysis and performance characteristics are available on request.

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation. The results relate only to the items tested and where relevant sampled.

Tests marked 'Not UKAS Accredited' in this Report/Certificate are not included in the UKAS Accreditation Schedule for our laboratory. This test report is not a statement of conformity to any specification or standard.

This communication has been sent to you by ALS Environmental Ltd. Registered in England and Wales. Registration No. 02148934. Registered Office: ALS Environmental Limited, Torrington Avenue, Coventry, CV4 9GU.

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ANALYSED BY





Issue

Sample

Date: 26 July 2022

of **4**

Report Number: COV/2347278/2022

Laboratory Number: 21846422

CDM Smith Sample Source:

Sample Point Description:

Powerscourt 1 Sample Description: Sample Matrix: **Surface Water** Sample Date/Time: 18 July 2022 Sample Received: 20 July 2022 Analysis Complete: 26 July 2022

Test Description	Result	Units	Analysis Date	Accre	ditation	Method
Phosphate, Ortho as P LL	<0.02	mg/l	23/07/2022	N	Cov	WAS067
Ammoniacal Nitrogen as N (LL)	<0.06	mg/l	23/07/2022	N	Cov	WAS067
Nitrogen, Total as N	<0.5	mg/l	25/07/2022	Y	Cov	WAS022

Analyst Comments for 21846422: No Analyst Comment

This issue replaces all previous issues Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.

Analysed at: CHE = Chester(CH5 3US), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2RU), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 9TG), F = Data supplied by customer.

F = Data supplied by customer.
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

Name: P. Patel

Title: **Inorganics Chemistry Manager**

ANALYSED BY





Report Number: COV/2347278/2022

Laboratory Number: 21846423

CDM Smith Sample Source:

Sample Point Description:

Powerscourt 2 Sample Description: Sample Matrix: **Surface Water** Sample Date/Time: 18 July 2022 Sample Received: 20 July 2022 Analysis Complete: 26 July 2022

Test Description	Result	Units	Analysis Date	Accre	ditation	Method
Phosphate, Ortho as P LL	<0.02	mg/l	23/07/2022	N	Cov	WAS067
Ammoniacal Nitrogen as N (LL)	<0.06	mg/l	23/07/2022	N	Cov	WAS067
Nitrogen, Total as N	<0.5	mg/l	25/07/2022	Y	Cov	WAS022

Analyst Comments for 21846423: No Analyst Comment

This issue replaces all previous issues Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.

Analysed at: CHE = Chester(CH5 3US), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2RU), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 9TG), F = Data supplied by customer.

F = Data supplied by customer.
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

Name: P. Patel Date: 26 July 2022

Issue

Sample

2

of **4**

Title:

Inorganics Chemistry Manager

ANALYSED BY





Issue

Sample

Date: 26 July 2022

3

of **4**

Report Number: COV/2347278/2022

Laboratory Number: 21846424

CDM Smith Sample Source:

Sample Point Description:

Powerscourt 3 Sample Description: Sample Matrix: **Surface Water** Sample Date/Time: 18 July 2022 Sample Received: 20 July 2022 Analysis Complete: 26 July 2022

Test Description	Result	Units	Analysis Date	Accre	ditation	Method
Phosphate, Ortho as P LL	<0.02	mg/l	23/07/2022	N	Cov	WAS067
Ammoniacal Nitrogen as N (LL)	<0.06	mg/l	23/07/2022	N	Cov	WAS067
Nitrogen, Total as N	<0.5	mg/l	25/07/2022	Y	Cov	WAS022

Analyst Comments for 21846424: No Analyst Comment

This issue replaces all previous issues Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.

Analysed at: CHE = Chester(CH5 3US), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2RU), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 9TG), F = Data supplied by customer.

F = Data supplied by customer.
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

Name: P. Patel

Title: **Inorganics Chemistry Manager**

ANALYSED BY





Issue

Sample

Date: 26 July 2022

of **4**

Report Number: COV/2347278/2022

Laboratory Number: 21846425

CDM Smith Sample Source:

Sample Point Description:

Powerscourt 4 Sample Description: Sample Matrix: **Surface Water** Sample Date/Time: 18 July 2022 20 July 2022 Sample Received: Analysis Complete: 26 July 2022

Test Description	Result	Units	Analysis Date	Accred	itation	Method
Phosphate, Ortho as P LL	<0.02	mg/l	23/07/2022	N	Cov	WAS067
Ammoniacal Nitrogen as N (LL)	<0.06	mg/l	23/07/2022	N	Cov	WAS067
Nitrogen, Total as N	<0.5	mg/l	25/07/2022	Υ	Cov	WAS022

Analyst Comments for 21846425: No Analyst Comment

This issue replaces all previous issues Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.

Analysed at: CHE = Chester(CH5 3US), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2RU), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 9TG), F = Data supplied by customer.

F = Data supplied by customer.
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

Name: P. Patel

Title: **Inorganics Chemistry Manager**



ANALYST COMMENTS FOR REPORT COV/2347278/2022

Issue

This issue replaces all previous issues

Date of Issue: 26 July 2022

Sample No	Analysis Comments	
21846422		
21846423		
21846424		
21846425		
Signed:	Name: P. Patel Date: 26 July 2022	
Signed: Call	Title: Inorganics Chemistry Manager	



DETERMINAND COMMENTS FOR REPORT COV/2347278/2022

Signed: Cally

ISSUE

This issue replaces all previous issues

Date of Issue: 26 July 2022

Sample No	Description	Determinand	Comments

Name: P. Patel Date: 26 July 2022

Title: Inorganics Chemistry Manager

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ALS Environmental Ltd Torrington Avenue Coventry CV4 9GU

T: +44 (0)24 7642 1213 F: +44 (0)24 7685 6575

www.alsenvironmental.co.uk

27 July 2022

Test Report: COV/2348071/2022

Dear Ms O Shea

Ms O Shea **CDM Smith**

15 Wentworth

Eblana Villas

Dublin 2

Analysis of your sample(s) submitted on 21 July 2022 is now complete and we have pleasure in enclosing the appropriate test report(s).

An invoice for the analysis carried out will be sent under separate cover.

Should you have any gueries regarding this report(s) or any part of our service, please contact Customer Services on +44 (0)24 7642 1213 who will be happy to discuss your requirements.

If you would like to arrange any further analysis, please contact Customer Services. To arrange container delivery or sample collection, please call the Couriers Department directly on 024 7685 6562.

Thank you for using ALS Environmental Ltd and we look forward to receiving your next samples.

Yours Sincerely,

Signed:

Name:

D. Lewis

Title:







Report Summary

Ms Aine O Shea CDM Smith 15 Wentworth Eblana Villas Dublin 2 **ANALYSED BY**





Date of Issue: 27 July 2022

Report Number: COV/2348071/2022 Issue 1

This issue replaces all previous issues

Job Description: Surface Water Aanalysis

Job Location: Wicklow Uplands

Number of Samples Job Received: 21 July 2022

included in this report 4

Number of Test Results Analysis Commenced: 23 July 2022

included in this report 12

Name: **D. Lewis** Date: **27 July 2022**

Signed: D. Title: Technical Inorganic Manager

ALS Environmental Ltd was not responsible for sampling unless otherwise stated.

Information on the methods of analysis and performance characteristics are available on request.

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation. The results relate only to the items tested and where relevant sampled.

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ANALYSED BY





Report Number: COV/2348071/2022

Laboratory Number: 21851407

CDM Smith Sample Source:

Sample Point Description:

Sample Description: **Granmore 1** Sample Matrix: Surface Water Sample Date/Time: 19 July 2022 Sample Received: 21 July 2022 Analysis Complete: 27 July 2022

Test Description	Result	Units	Analysis Date	Accred	ditation	Method
Phosphate, Ortho as P LL	<0.02	mg/l	23/07/2022	N	Cov	WAS067
Ammoniacal Nitrogen as N (LL)	<0.06	mg/l	23/07/2022	N	Cov	WAS067
Nitrogen, Total as N	0.6	mg/l	26/07/2022	Υ	Cov	WAS022

Analyst Comments for 21851407: {/*}Sample filtered through 0.45um filter prior to Nitrogen analysis.{*/}

This issue replaces all previous issues Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.

Analysed at: CHE = Chester(CH5 3US), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2RU), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 9TG),

F = Data supplied by customer.

F = Data supplied by Customer.
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered.

I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

Name: D. Lewis Date: 27 July 2022

Issue

Sample

of **4**

Signed: D. Title:

ANALYSED BY





Report Number: COV/2348071/2022

Laboratory Number: 21851408

CDM Smith Sample Source:

Sample Point Description:

Sample Description: **Granmore 2** Sample Matrix: Surface Water Sample Date/Time: 19 July 2022 Sample Received: 21 July 2022 Analysis Complete: 27 July 2022

Test Description	Result	Units	Analysis Date	Accred	ditation	Method
Phosphate, Ortho as P LL	<0.02	mg/l	23/07/2022	N	Cov	WAS067
Ammoniacal Nitrogen as N (LL)	0.24	mg/l	23/07/2022	N	Cov	WAS067
Nitrogen, Total as N	1.1	mg/l	26/07/2022	Υ	Cov	WAS022

Analyst Comments for 21851408: {/*}Sample filtered through 0.45um filter prior to Nitrogen analysis.{*/}

This issue replaces all previous issues Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.

Analysed at: CHE = Chester(CH5 3US), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2RU), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 9TG),

F = Data supplied by customer.

F = Data supplied by Customer.
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered.

I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

Name: D. Lewis Date: 27 July 2022

Issue

Sample

2

of **4**

Signed: D. Title:

ANALYSED BY





Report Number: COV/2348071/2022

Laboratory Number: 21851409

CDM Smith Sample Source:

Sample Point Description:

Sample Description: **Granmore 3** Sample Matrix: Surface Water Sample Date/Time: 19 July 2022 Sample Received: 21 July 2022 Analysis Complete: 27 July 2022

Test Description	Result	Units	Analysis Date	Accre	ditation	Method
Phosphate, Ortho as P LL	<0.02	mg/l	23/07/2022	N	Cov	WAS067
Ammoniacal Nitrogen as N (LL)	<0.06	mg/l	23/07/2022	N	Cov	WAS067
Nitrogen, Total as N	<0.5	mg/l	26/07/2022	Y	Cov	WAS022

Analyst Comments for 21851409: {/*}Sample filtered through 0.45um filter prior to Nitrogen analysis.{*/}

This issue replaces all previous issues Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.

Analysed at: CHE = Chester(CH5 3US), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2RU), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 9TG),

F = Data supplied by customer.

F = Data supplied by Customer.
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered.

I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

Name: D. Lewis Date: 27 July 2022

Issue

Sample

3

of **4**

Signed: D. Title:

ANALYSED BY





Report Number: COV/2348071/2022

Laboratory Number: 21851410

CDM Smith Sample Source:

Sample Point Description:

Sample Description: **Granmore 4** Sample Matrix: Surface Water Sample Date/Time: 19 July 2022 21 July 2022 Sample Received: Analysis Complete: 27 July 2022

Test Description	Result	Units	Analysis Date	Accred	ditation	Method
Phosphate, Ortho as P LL	<0.02	mg/l	23/07/2022	N	Cov	WAS067
Ammoniacal Nitrogen as N (LL)	<0.06	mg/l	23/07/2022	N	Cov	WAS067
Nitrogen, Total as N	0.6	mg/l	26/07/2022	Y	Cov	WAS022

Analyst Comments for 21851410: No Analyst Comment

This issue replaces all previous issues Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.

Analysed at: CHE = Chester(CH5 3US), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2RU), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 9TG), F = Data supplied by customer.

F = Data supplied by Customer.
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered.

I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

Name: D. Lewis Date: 27 July 2022

Issue

Sample

of **4**

Signed: D. Title:



ANALYST COMMENTS FOR REPORT COV/2348071/2022

Issue

This issue replaces all previous issues

Date of Issue: 27 July 2022

Sample No	Analysis Comments						
21851407	{/*}Sample filtered through 0.45um filter prior to Nitrogen analysis.{*/}						
21851408	{/*}Sample filtered through 0.45um filter prior to Nitrogen analysis.{*/}						
21851409	{/*}Sample filtered through 0.45um filter prior to Nitrogen analysis.{*/}						
21851410							
Signed:	Name: D. Lewis Date: 27 July 2022						
Signed: 9.	Title: Technical Inorganic Manager						



DETERMINAND COMMENTS FOR REPORT COV/2348071/2022

Signed: D. C.

ISSUE '

Date of Issue: 27 July 2022

This issue replaces all previous issues

Sample No	Description	Determinand	Comments

Name: D. Lewis Date: 27 July 2022

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ALS Environmental Ltd Torrington Avenue Coventry CV4 9GU

T: +44 (0)24 7642 1213 F: +44 (0)24 7685 6575 www.alsenvironmental.co.uk

Ms O Shea CDM Smith 15 Wentworth Eblana Villas Dublin 2

28 July 2022

Test Report: COV/2348823/2022

Dear Ms O Shea

Analysis of your sample(s) submitted on 22 July 2022 is now complete and we have pleasure in enclosing the appropriate test report(s).

An invoice for the analysis carried out will be sent under separate cover.

Should you have any queries regarding this report(s) or any part of our service, please contact Customer Services on +44 (0)24 7642 1213 who will be happy to discuss your requirements.

If you would like to arrange any further analysis, please contact Customer Services. To arrange container delivery or sample collection, please call the Couriers Department directly on 024 7685 6562.

Thank you for using ALS Environmental Ltd and we look forward to receiving your next samples.

Yours Sincerely,

Signed:

D.C.

Name:

D. Lewis

Title:







Report Summary

Ms Aine O Shea CDM Smith 15 Wentworth Eblana Villas Dublin 2 ANALYSED BY





Date of Issue: 28 July 2022

Report Number: COV/2348823/2022 Issue 1

This issue replaces all previous issues

Job Description: Surface Water Aanalysis

Job Location: Wicklow Uplands

Number of Samples Job Received: 22 July 2022

included in this report 4

Number of Test Results Analysis Commenced: **25 July 2022** included in this report **12**

Name: **D. Lewis** Date: **28 July 2022**

Signed: D. Title: Technical Inorganic Manager

ALS Environmental Ltd was not responsible for sampling unless otherwise stated.

Information on the methods of analysis and performance characteristics are available on request.

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation. The results relate only to the items tested and where relevant sampled.

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ANALYSED BY





COV/2348823/2022 Report Number:

Laboratory Number: 21856117

CDM Smith Sample Source:

Sample Point Description:

Sample Description: Duff 1

Sample Matrix: **Surface Water** Sample Date/Time: 20 July 2022 22 July 2022 Sample Received: Analysis Complete: 28 July 2022

Test Description	Result	Units	Analysis Date	Accredita	ation	Method
Phosphate, Ortho as P LL	<0.02	mg/l	25/07/2022	N C	ov	WAS067
Ammoniacal Nitrogen as N (LL)	<0.06	mg/l	25/07/2022	N C	ov	WAS067
Nitrogen, Total as N	<0.5	mg/l	27/07/2022	Y C	ov	WAS022

Analyst Comments for 21856117: No Analyst Comment

This issue replaces all previous issues Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.

Analysed at: CHE = Chester(CH5 3US), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2RU), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 9TG), F = Data supplied by customer.

F = Data supplied by Customer.
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered.

I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

Name: D. Lewis Date: 28 July 2022

Issue

Sample

of **4**

Signed: D.

ANALYSED BY





COV/2348823/2022 Report Number:

Laboratory Number: 21856118

CDM Smith Sample Source:

Sample Point Description:

Sample Description: Duff 2

Sample Matrix: **Surface Water** Sample Date/Time: 20 July 2022 22 July 2022 Sample Received: Analysis Complete: 28 July 2022

Test Description	Result	Units	Analysis Date	Accreditatio	n Method
Phosphate, Ortho as P LL	<0.02	mg/l	25/07/2022	N Cov	WAS067
Ammoniacal Nitrogen as N (LL)	<0.06	mg/l	25/07/2022	N Cov	WAS067
Nitrogen, Total as N	<0.5	mg/l	26/07/2022	Y Cov	WAS022

Analyst Comments for 21856118: No Analyst Comment

This issue replaces all previous issues Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.

Analysed at: CHE = Chester(CH5 3US), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2RU), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 9TG), F = Data supplied by customer.

F = Data supplied by Customer.
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered.

I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

Name: D. Lewis Date: 28 July 2022

Issue

Sample

2

of **4**

Signed: D.

ANALYSED BY





COV/2348823/2022 Report Number:

Laboratory Number: 21856119

CDM Smith Sample Source:

Sample Point Description:

Sample Description: Duff 3

Sample Matrix: **Surface Water** Sample Date/Time: 20 July 2022 22 July 2022 Sample Received: Analysis Complete: 28 July 2022

Test Description	Result	Units	Analysis Date	Accredita	ation	Method
Phosphate, Ortho as P LL	<0.02	mg/l	25/07/2022	N C	ov	WAS067
Ammoniacal Nitrogen as N (LL)	<0.06	mg/l	25/07/2022	N C	ov	WAS067
Nitrogen, Total as N	<0.5	mg/l	27/07/2022	Y C	ov	WAS022

Analyst Comments for 21856119: No Analyst Comment

This issue replaces all previous issues Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.

Analysed at: CHE = Chester(CH5 3US), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2RU), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 9TG), F = Data supplied by customer.

F = Data supplied by Customer.
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered.

I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

Name: D. Lewis Date: 28 July 2022

Issue

Sample

3

of **4**

Signed: D.

ANALYSED BY





COV/2348823/2022 Report Number:

Laboratory Number: 21856120

CDM Smith Sample Source:

Sample Point Description:

Sample Description: Duff 4

Sample Matrix: **Surface Water** Sample Date/Time: 20 July 2022 22 July 2022 Sample Received: Analysis Complete: 28 July 2022

Test Description	Result	Units	Analysis Date	Accred	ditation	Method
Phosphate, Ortho as P LL	<0.02	mg/l	25/07/2022	N	Cov	WAS067
Ammoniacal Nitrogen as N (LL)	<0.06	mg/l	25/07/2022	N	Cov	WAS067
Nitrogen, Total as N	4.1	mg/l	26/07/2022	Υ	Cov	WAS022

Analyst Comments for 21856120: No Analyst Comment

This issue replaces all previous issues Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.

Analysed at: CHE = Chester(CH5 3US), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2RU), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 9TG), F = Data supplied by customer.

F = Data supplied by Customer.
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered.

I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

Name: D. Lewis Date: 28 July 2022

Issue

Sample

of **4**

Signed: D.



ANALYST COMMENTS FOR REPORT COV/2348823/2022

Issue 1

This issue replaces all previous issues

Date of Issue: 28 July 2022

Sample No	Analysis Comments	
21856117		
21856118		
21856119		
21856120		
Signed:	Name: D. Lewis Date:	28 July 2022
9.	Title: Technical Inorganic Manager	



DETERMINAND COMMENTS FOR REPORT COV/2348823/2022

Signed: D. L

ISSUE

This issue replaces all previous issues

Date of Issue: 28 July 2022

Sample No	Description	Determinand	Comments

Name: D. Lewis Date: 28 July 2022

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ALS Environmental Ltd Torrington Avenue Coventry CV4 9GU

T: +44 (0)24 7642 1213 F: +44 (0)24 7685 6575 www.alsenvironmental.co.uk

Ms O Shea CDM Smith 15 Wentworth Eblana Villas Dublin 2

02 August 2022

Test Report: COV/2349520/2022

Dear Ms O Shea

Analysis of your sample(s) submitted on 25 July 2022 is now complete and we have pleasure in enclosing the appropriate test report(s).

An invoice for the analysis carried out will be sent under separate cover.

Should you have any queries regarding this report(s) or any part of our service, please contact Customer Services on +44 (0)24 7642 1213 who will be happy to discuss your requirements.

If you would like to arrange any further analysis, please contact Customer Services. To arrange container delivery or sample collection, please call the Couriers Department directly on 024 7685 6562.

Thank you for using ALS Environmental Ltd and we look forward to receiving your next samples.

Yours Sincerely,

Signed:

D.L

Name:

D. Lewis

Title:







Report Summary

Ms Aine O Shea CDM Smith 15 Wentworth Eblana Villas Dublin 2







Date of Issue: 02 August 2022

Report Number: COV/2349520/2022 Issue 1

This issue replaces all previous issues

Job Description: Surface Water Aanalysis

Job Location: Wicklow Uplands

Number of Samples Job Received: 25 July 2022

included in this report 3

Number of Test Results Analysis Commenced: 26 July 2022

included in this report 9

Signed: D.

Name: **D. Lewis** Date: **02 August 2022**

Title: Technical Inorganic Manager

ALS Environmental Ltd was not responsible for sampling unless otherwise stated.

Information on the methods of analysis and performance characteristics are available on request.

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation. The results relate only to the items tested and where relevant sampled.

Tests marked 'Not UKAS Accredited' in this Report/Certificate are not included in the UKAS Accreditation Schedule for our laboratory. This test report is not a statement of conformity to any specification or standard.

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ANALYSED BY





Report Number: COV/2349520/2022

Laboratory Number: 21861605

CDM Smith Sample Source:

Sample Point Description:

GV1 Sample Description:

Sample Matrix: **Surface Water** Sample Date/Time: 21 July 2022 25 July 2022 Sample Received: Analysis Complete: 02 August 2022

Test Description	Result	Units	Analysis Date	Accredita	ation	Method
Phosphate, Ortho as P LL	<0.02	mg/l	27/07/2022	N C	ov	WAS067
Ammoniacal Nitrogen as N (LL)	<0.06	mg/l	27/07/2022	N C	ov	WAS067
Nitrogen, Total as N	1.0	mg/l	27/07/2022	Y C	ov	WAS022

Analyst Comments for 21861605: No Analyst Comment

Signed: D.

This issue replaces all previous issues Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.

Analysed at: CHE = Chester(CH5 3US), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2RU), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 9TG), F = Data supplied by customer.

F = Data supplied by Customer.
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered.

I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

Name: D. Lewis Date: 02 August 2022

Issue

Sample

of 3

Title:

ANALYSED BY





Issue

Sample

2

of **3**

Report Number: COV/2349520/2022

Laboratory Number: 21861606

Sample Source: **CDM Smith**

Sample Point Description:

GV 2 Sample Description:

Sample Matrix: **Surface Water** Sample Date/Time: 21 July 2022 Sample Received: 25 July 2022 Analysis Complete: 02 August 2022

Test Description Result Units Analysi		Analysis Date	Accreditation	n Method	
Phosphate, Ortho as P LL	<0.02	mg/l	26/07/2022	N Cov	WAS067
Ammoniacal Nitrogen as N (LL)	<0.06	mg/l	26/07/2022	N Cov	WAS067
Nitrogen, Total as N	<0.5	mg/l	01/08/2022	Y Cov	WAS022

Analyst Comments for 21861606:

This sample has been analysed for Nitrogen, Total as N outside recommended stability times. It is therefore possible that the results provided may be compromised.

This issue replaces all previous issues Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.

Analysed at: CHE = Chester(CH5 3US), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2RU), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 9TG), F = Data supplied by customer.

For Microbiological determinants 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

Name: D. Lewis Date: 02 August 2022

Signed: D. C. Title: **Technical Inorganic Manager**

ANALYSED BY





Report Number: COV/2349520/2022

Laboratory Number: 21861607

CDM Smith Sample Source:

Sample Point Description:

GV₃ Sample Description:

Sample Matrix: **Surface Water** Sample Date/Time: 21 July 2022 25 July 2022 Sample Received: Analysis Complete: 02 August 2022

Test Description	Result	Units	Analysis Date	Accreditati	on Method
Phosphate, Ortho as P LL	<0.02	mg/l	27/07/2022	N Cov	WAS067
Ammoniacal Nitrogen as N (LL)	<0.06	mg/l	27/07/2022	N Cov	WAS067
Nitrogen, Total as N	2.8	mg/l	27/07/2022	Y Cov	WAS022

Analyst Comments for 21861607: No Analyst Comment

Signed: D.

This issue replaces all previous issues Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.

Analysed at: CHE = Chester(CH5 3US), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2RU), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 9TG), F = Data supplied by customer.

F = Data supplied by Customer.
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered.

I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

Name: D. Lewis Date: 02 August 2022

Issue

Sample

3

of 3

Title:

Technical Inorganic Manager



ANALYST COMMENTS FOR REPORT COV/2349520/2022

Issue

This issue replaces all previous issues

Date of Issue: 02 August 2022

Sample No	Analysis Comments
21861605	
21861606	This sample has been analysed for Nitrogen, Total as N outside recommended stability times. It is therefore possible that the results provided may be compromised.
21861607	

Signed: D. C.

Name: **D. Lewis** Date: **02 August 2022**

Title: Technical Inorganic Manager



DETERMINAND COMMENTS FOR REPORT COV/2349520/2022

Signed: D. C.

ISSUE '

This issue replaces all previous issues

Date of Issue: 02 August 2022

Sample No	Description	Determinand	Comments

Name: **D. Lewis** Date: **02 August 2022**

Title: Technical Inorganic Manager

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ALS Environmental Ltd Torrington Avenue Coventry CV4 9GU

T: +44 (0)24 7642 1213 F: +44 (0)24 7685 6575 www.alsenvironmental.co.uk

Ms O Shea CDM Smith 15 Wentworth Eblana Villas Dublin 2

16 August 2022

Test Report: COV/2358399/2022

Dear Ms O Shea

Analysis of your sample(s) submitted on 12 August 2022 is now complete and we have pleasure in enclosing the appropriate test report(s).

An invoice for the analysis carried out will be sent under separate cover.

Should you have any queries regarding this report(s) or any part of our service, please contact Customer Services on +44 (0)24 7642 1213 who will be happy to discuss your requirements.

If you would like to arrange any further analysis, please contact Customer Services. To arrange container delivery or sample collection, please call the Couriers Department directly on 024 7685 6562.

Thank you for using ALS Environmental Ltd and we look forward to receiving your next samples.

Yours Sincerely,

Signed:

D.C

Name:

D. Lewis

Title:

Technical Inorganic Manager







Report Summary

Ms Aine O Shea CDM Smith 15 Wentworth Eblana Villas Dublin 2







Date of Issue: 16 August 2022

Report Number: COV/2358399/2022 Issue 1

This issue replaces all previous issues

Job Description: Surface Water Aanalysis

Job Location: Wicklow Uplands

Number of Samples Job Received: 12 August 2022

included in this report 2

Number of Test Results Analysis Commenced: 15 August 2022

included in this report 6

, Name: **D. Lewis** Date: **16 August 2022**

Signed: D. Title: Technical Inorganic Manager

ALS Environmental Ltd was not responsible for sampling unless otherwise stated.

Information on the methods of analysis and performance characteristics are available on request.

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation. The results relate only to the items tested and where relevant sampled.

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ANALYSED BY





Report Number: COV/2358399/2022

Laboratory Number: 21926436

CDM Smith Sample Source:

Sample Point Description:

Slieve 1 Sample Description:

Sample Matrix: **Surface Water** Sample Date/Time: 10 August 2022 Sample Received: 12 August 2022 Analysis Complete: 16 August 2022

Test Description	Result	Units	Analysis Date	Accred	litation	Method
Phosphate, Ortho as P LL	<0.02	mg/l	15/08/2022	N	Cov	WAS067
Ammoniacal Nitrogen as N (LL)	<0.06	mg/l	15/08/2022	N	Cov	WAS067
Nitrogen, Total as N	0.6	mg/l	15/08/2022	Y	Cov	WAS022

Analyst Comments for 21926436: No Analyst Comment

Signed: D.

This issue replaces all previous issues Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.

Analysed at: CHE = Chester(CH5 3US), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2RU), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 9TG), F = Data supplied by customer.

F = Data supplied by Customer.
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered.

I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

Name: D. Lewis Date: 16 August 2022

Issue

Sample

of **2**

Title:

Technical Inorganic Manager

ANALYSED BY





COV/2358399/2022 Report Number:

Laboratory Number: 21926437

CDM Smith Sample Source:

Sample Point Description:

Sample Description: **Ballybeg** Sample Matrix: **Surface Water** Sample Date/Time: 10 August 2022 Sample Received: 12 August 2022 Analysis Complete: 16 August 2022

Test Description	Result	Units	Analysis Date	Accredi	tation	Method
Phosphate, Ortho as P LL	<0.02	mg/l	15/08/2022	N	Cov	WAS067
Ammoniacal Nitrogen as N (LL)	<0.06	mg/l	15/08/2022	N	Cov	WAS067
Nitrogen, Total as N	0.8	mg/l	15/08/2022	Y	Cov	WAS022

Analyst Comments for 21926437: No Analyst Comment

Signed: D.

This issue replaces all previous issues Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.

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F = Data supplied by Customer.
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered.

I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

Name: D. Lewis Date: 16 August 2022

Issue

Sample

2

of **2**

Title:

Technical Inorganic Manager



ANALYST COMMENTS FOR REPORT COV/2358399/2022

Issue

This issue replaces all previous issues

Date of Issue: 16 August 2022

Analysis Comments Sample No

21926436 21926437

Name: **D. Lewis** Date: 16 August 2022 Signed: 9. Company

Title: **Technical Inorganic Manager**



DETERMINAND COMMENTS FOR REPORT COV/2358399/2022

Signed: D. C.

ISSUE

This issue replaces all previous issues

Date of Issue: 16 August 2022

Sample No	Description	Determinand	Comments

Name: **D. Lewis**

Date: 16 August 2022

Title: **Technical Inorganic Manager** Page Intentionally Left Blank



ALS Environmental Ltd Torrington Avenue Coventry CV4 9GU

T: +44 (0)24 7642 1213 F: +44 (0)24 7685 6575 www.alsenvironmental.co.uk

Ms O Shea CDM Smith 15 Wentworth Eblana Villas Dublin 2

31 August 2022

Test Report: COV/2359188/2022

Dear Ms O Shea

Analysis of your sample(s) submitted on 15 August 2022 is now complete and we have pleasure in enclosing the appropriate test report(s).

An invoice for the analysis carried out will be sent under separate cover.

Should you have any queries regarding this report(s) or any part of our service, please contact Customer Services on +44 (0)24 7642 1213 who will be happy to discuss your requirements.

If you would like to arrange any further analysis, please contact Customer Services. To arrange container delivery or sample collection, please call the Couriers Department directly on 024 7685 6562.

Thank you for using ALS Environmental Ltd and we look forward to receiving your next samples.

Yours Sincerely,

Signed:

Name: P. Patel







Report Summary

Ms Aine O Shea CDM Smith 15 Wentworth Eblana Villas Dublin 2

ANALYSED BY





Date of Issue: 31 August 2022

Report Number: COV/2359188/2022 Issue 1

This issue replaces all previous issues

Job Description: Surface Water Aanalysis

Number of Samples included in this report **2**

Number of Test Results included in this report **6**

Signed:

Job Received: 15 August 2022

Analysis Commenced: 16 August 2022

Name: P. Patel Date: 31 August 2022

Title: Inorganics Chemistry Manager

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Information on the methods of analysis and performance characteristics are available on request.

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ANALYSED BY





Issue

Sample

of **2**

Report Number: COV/2359188/2022

Laboratory Number: 21932598

CDM Smith Sample Source:

Sample Point Description:

Sample Description: Glass 1

Sample Matrix: **Surface Water** Sample Date/Time: 11 August 2022 Sample Received: 15 August 2022 Analysis Complete: 31 August 2022

Test Description	Result	Units	Analysis Date	Accredi	tation	Method
Phosphate, Ortho as P LL	<0.02	mg/l	16/08/2022	N	Cov	WAS067
Ammoniacal Nitrogen as N (LL)	<0.06	mg/l	16/08/2022	N	Cov	WAS067
Nitrogen, Total as N	1.2	mg/l	25/08/2022	Y	Cov	WAS022

Analyst Comments for 21932598:

This sample has been analysed for Nitrogen, Total as N outside recommended stability times. It is therefore possible that the results provided may be compromised.

This issue replaces all previous issues Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.

Analysed at: CHE = Chester(CH5 3US), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2RU), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 9TG), F = Data supplied by customer.

F = Data supplied by customer.
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

Name: P. Patel Date: 31 August 2022

ANALYSED BY





Issue

Sample

2

of 2

Report Number: COV/2359188/2022

Laboratory Number: 21932599

CDM Smith Sample Source:

Sample Point Description:

Sample Description: Glass 2

Sample Matrix: **Surface Water** Sample Date/Time: 11 August 2022 Sample Received: 15 August 2022 Analysis Complete: 31 August 2022

Test Description	Result	Units	Analysis Date	Accreditation	n Method
Phosphate, Ortho as P LL	<0.02	mg/l	16/08/2022	N Cov	WAS067
Ammoniacal Nitrogen as N (LL)	<0.06	mg/l	16/08/2022	N Cov	WAS067
Nitrogen, Total as N	0.9	mg/l	17/08/2022	Y Cov	WAS022

Analyst Comments for 21932599: No Analyst Comment

This issue replaces all previous issues Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.

Analysed at: CHE = Chester(CH5 3US), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2RU), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 9TG), F = Data supplied by customer.

F = Data supplied by customer.
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

Name: P. Patel Date: 31 August 2022



ANALYST COMMENTS FOR REPORT COV/2359188/2022

Issue

This issue replaces all previous issues

Date of Issue: 31 August 2022

Sample No **Analysis Comments**

21932598

This sample has been analysed for Nitrogen, Total as N outside recommended stability times. It is therefore possible that the results provided may be compromised.

21932599

Name: P. Patel Date: 31 August 2022 Signed:



DETERMINAND COMMENTS FOR REPORT COV/2359188/2022

Signed: Calm

ISSUE

Date of Issue: 31 August 2022 This issue replaces all previous issues

Sample No	Description	Determinand	Comments

Name: P. Patel Date: 31 August 2022

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ALS Environmental Ltd Torrington Avenue Coventry CV4 9GU

F: +44 (0)24 7685 6575 www.alsenvironmental.co.uk

T: +44 (0)24 7642 1213

Ms O Shea **CDM Smith** 15 Wentworth Eblana Villas **Dublin 2**

09 September 2022

Test Report: COV/2366130/2022

Dear Ms O Shea

Analysis of your sample(s) submitted on 31 August 2022 is now complete and we have pleasure in enclosing the appropriate test report(s).

An invoice for the analysis carried out will be sent under separate cover.

Should you have any gueries regarding this report(s) or any part of our service, please contact Customer Services on +44 (0)24 7642 1213 who will be happy to discuss your requirements.

If you would like to arrange any further analysis, please contact Customer Services. To arrange container delivery or sample collection, please call the Couriers Department directly on 024 7685 6562.

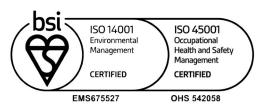
Thank you for using ALS Environmental Ltd and we look forward to receiving your next samples.

Yours Sincerely,

Signed:

Name: A. Zunzunegui







Report Summary

Ms Aine O Shea CDM Smith 15 Wentworth Eblana Villas Dublin 2







Date of Issue: 09 September 2022

Report Number: COV/2366130/2022 Issue 1

This issue replaces all previous issues

Date: 09 September 2022

Job Description: Surface Water Aanalysis

Job Location: Wicklow Uplands

Number of Samples Job Received: 31 August 2022

included in this report 3

Number of Test Results Analysis Commenced: **05 September 2022**

Name: A. Zunzunegui

included in this report 9

Signed:

Title: Organics Chemistry Manager

ALS Environmental Ltd was not responsible for sampling unless otherwise stated.

Information on the methods of analysis and performance characteristics are available on request.

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation. The results relate only to the items tested and where relevant sampled.

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ANALYSED BY





Report Number: COV/2366130/2022

Laboratory Number: 21983966

CDM Smith Sample Source:

Sample Point Description:

Cor 1 Sample Description:

Sample Matrix: **Surface Water** Sample Date/Time: 29 August 2022 Sample Received: 31 August 2022 Analysis Complete: 09 September 2022

Test Description	Result	Units	Analysis Date	Accredita	tion	Method
Phosphate, Ortho as P LL	<0.02	mg/l	05/09/2022	N C	OV	WAS067
Ammoniacal Nitrogen as N (LL)	<0.06	mg/l	05/09/2022	N C	OV	WAS067
Nitrogen, Total as N	<0.5	mg/l	07/09/2022	Y C	OV	WAS022

Analyst Comments for 21983966:

This sample has been analysed for Ammoniacal Nitrogen as N (LL) outside recommended stability times. It is therefore possible that the results provided may be compromised.

Issue

Sample

of **3**

Signed:

This issue replaces all previous issues Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.

Analysed at: CHE = Chester(CH5 3US), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2RU), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 9TG), F = Data supplied by customer.

F = Data supplied by customer.
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

Date: 09 September 2022 Name: A. Zunzunegui

ANALYSED BY





COV/2366130/2022 Report Number:

Laboratory Number: 21983967

CDM Smith Sample Source:

Sample Point Description:

Cor 2 Sample Description:

Sample Matrix: **Surface Water** Sample Date/Time: 29 August 2022 Sample Received: 31 August 2022 Analysis Complete: 09 September 2022

Test Description	Result	Units	Analysis Date	Accredita	tion	Method
Phosphate, Ortho as P LL	<0.02	mg/l	05/09/2022	N C	OV	WAS067
Ammoniacal Nitrogen as N (LL)	<0.06	mg/l	05/09/2022	N C	OV	WAS067
Nitrogen, Total as N	<0.5	mg/l	07/09/2022	Y C	OV	WAS022

Analyst Comments for 21983967:

This sample has been analysed for Ammoniacal Nitrogen as N (LL) outside recommended stability times. It is therefore possible that the results provided may be compromised.

Issue

Sample

2

of 3

Signed:

This issue replaces all previous issues Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.

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F = Data supplied by customer.
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

Date: 09 September 2022 Name: A. Zunzunegui

ANALYSED BY





Report Number: COV/2366130/2022

Laboratory Number: 21983968

CDM Smith Sample Source:

Sample Point Description:

Cor 3 Sample Description:

Sample Matrix: **Surface Water** Sample Date/Time: 29 August 2022 Sample Received: 31 August 2022 Analysis Complete: 09 September 2022

Test Description	Result	Units	Analysis Date	Accredita	tion	Method
Phosphate, Ortho as P LL	<0.02	mg/l	05/09/2022	N C	OV	WAS067
Ammoniacal Nitrogen as N (LL)	<0.06	mg/l	05/09/2022	N C	OV	WAS067
Nitrogen, Total as N	<0.5	mg/l	07/09/2022	Y C	OV	WAS022

Analyst Comments for 21983968:

This sample has been analysed for Ammoniacal Nitrogen as N (LL) outside recommended stability times. It is therefore possible that the results provided may be compromised.

Issue

Sample

3

of 3

Signed:

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Analysed at: CHE = Chester(CH5 3US), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2RU), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 9TG), F = Data supplied by customer.

F = Data supplied by customer.
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

Date: 09 September 2022 Name: A. Zunzunegui



ANALYST COMMENTS FOR REPORT COV/2366130/2022

Issue

This issue replaces all previous issues

Date of Issue: 09 September 2022

Sample No	Analysis Comments
21983966	This sample has been analysed for Ammoniacal Nitrogen as N (LL) outside recommended stability times. It is therefore possible that the results provided may be compromised.
21983967	This sample has been analysed for Ammoniacal Nitrogen as N (LL) outside recommended stability times. It is therefore possible that the results provided may be compromised.
21983968	This sample has been analysed for Ammoniacal Nitrogen as N (LL) outside recommended stability times. It is therefore possible that the results provided may be compromised.

Signed:

Name: A. Zunzunegui

Date: 09 September 2022



DETERMINAND COMMENTS FOR REPORT COV/2366130/2022

ISSUE

Date of Issue: 09 September 2022

This issue replaces all previous issues

Sample No	Description	Determinand	Comments

Signed:

Name: A. Zunzunegui

Date: 09 September 2022

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ALS Environmental Ltd Torrington Avenue Coventry

F: +44 (0)24 7685 6575 www.alsenvironmental.co.uk

CV4 9GU T: +44 (0)24 7642 1213

09 September 2022

Test Report: COV/2366822/2022

Dear Ms O Shea

Ms O Shea **CDM Smith**

15 Wentworth

Eblana Villas

Dublin 2

Analysis of your sample(s) submitted on 01 September 2022 is now complete and we have pleasure in enclosing the appropriate test report(s).

An invoice for the analysis carried out will be sent under separate cover.

Should you have any gueries regarding this report(s) or any part of our service, please contact Customer Services on +44 (0)24 7642 1213 who will be happy to discuss your requirements.

If you would like to arrange any further analysis, please contact Customer Services. To arrange container delivery or sample collection, please call the Couriers Department directly on 024 7685 6562.

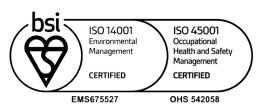
Thank you for using ALS Environmental Ltd and we look forward to receiving your next samples.

Yours Sincerely,

Signed:

Name: A. Zunzunegui







Report Summary

Ms Aine O Shea CDM Smith 15 Wentworth Eblana Villas Dublin 2

ANALYSED BY





Date of Issue: 09 September 2022

Report Number: COV/2366822/2022 Issue 1

This issue replaces all previous issues

Job Description: Surface Water Aanalysis

Number of Samples included in this report **3**

Number of Test Results included in this report 9

Job Received: 01 September 2022

Analysis Commenced: **05 September 2022**

Signed:

Aintog

Name: A. Zunzunegui Date: 09 September 2022

Title: Organics Chemistry Manager

ALS Environmental Ltd was not responsible for sampling unless otherwise stated.

Information on the methods of analysis and performance characteristics are available on request.

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation. The results relate only to the items tested and where relevant sampled.

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ANALYSED BY





COV/2366822/2022 Report Number:

21988941 Laboratory Number:

CDM Smith Sample Source:

Sample Point Description:

Sample Description: Mulla1

Sample Matrix: **Surface Water** Sample Date/Time: 30 August 2022 Sample Received: 01 September 2022 Analysis Complete: 09 September 2022

Test Description	Result	Units	Analysis Date	Accredita	tion	Method
Phosphate, Ortho as P LL	<0.02	mg/l	05/09/2022	N C	OV	WAS067
Ammoniacal Nitrogen as N (LL)	<0.06	mg/l	05/09/2022	N C	OV	WAS067
Nitrogen, Total as N	<0.5	mg/l	07/09/2022	Y C	OV	WAS022

Analyst Comments for 21988941: No Analyst Comment

This issue replaces all previous issues Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.

Analysed at: CHE = Chester(CH5 3US), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2RU), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 9TG),

F = Data supplied by customer.

To Black Supplied by Customer.

For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

Name:

A. Zunzunegui

Issue

Sample

of 3

Date: 09 September 2022

Signed:

Title:

Organics Chemistry Manager

ANALYSED BY





COV/2366822/2022 Report Number:

21988942 Laboratory Number:

CDM Smith Sample Source:

Sample Point Description:

Sample Description: Carrig 5

Sample Matrix: **Surface Water** Sample Date/Time: 30 August 2022 Sample Received: 01 September 2022 Analysis Complete: 09 September 2022

Test Description	Result	Units	Analysis Date	Accreditat	ion Method
Phosphate, Ortho as P LL	<0.02	mg/l	05/09/2022	N Co	v WAS067
Ammoniacal Nitrogen as N (LL)	<0.06	mg/l	05/09/2022	N Co	w WAS067
Nitrogen, Total as N	<0.5	mg/l	07/09/2022	Y Co	v WAS022

Analyst Comments for 21988942: No Analyst Comment

This issue replaces all previous issues Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.

Analysed at: CHE = Chester(CH5 3US), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2RU), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 9TG), F = Data supplied by customer.

To Black Supplied by Customer.

For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

Name: A. Zunzunegui

Issue

Sample

2

of 3

Date: 09 September 2022

Signed:

Title:

Organics Chemistry Manager

ANALYSED BY





COV/2366822/2022 Report Number:

21988943 Laboratory Number:

CDM Smith Sample Source:

Sample Point Description:

Sample Description: Carrig 6

Sample Matrix: **Surface Water** Sample Date/Time: 30 August 2022 Sample Received: 01 September 2022 Analysis Complete: 09 September 2022

Test Description	Result	Units	Analysis Date	Accreditat	ion Method
Phosphate, Ortho as P LL	<0.02	mg/l	05/09/2022	N Co	v WAS067
Ammoniacal Nitrogen as N (LL)	<0.06	mg/l	05/09/2022	N Co	w WAS067
Nitrogen, Total as N	<0.5	mg/l	07/09/2022	Y Co	v WAS022

Analyst Comments for 21988943: No Analyst Comment

This issue replaces all previous issues Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.

Analysed at: CHE = Chester(CH5 3US), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2RU), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 9TG),

F = Data supplied by customer.

To Black Supplied by Customer.

For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

Name: A. Zunzunegui

Issue

Sample

3

of 3

Date: 09 September 2022

Signed:



ANALYST COMMENTS FOR REPORT COV/2366822/2022

Issue

This issue replaces all previous issues

Date of Issue: 09 September 2022

Sample No Analysis Comments

21988941 21988942

21988943

Signed: Name: A. Zunzunegui Date: 09 September 2022



DETERMINAND COMMENTS FOR REPORT COV/2366822/2022

ISSUE '

Date of Issue: 09 September 2022

This issue replaces all previous issues

Sample No	Description	Determinand	Comments

Signed:

Name: A. Zunzunegui

Date: 09 September 2022

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Ms O Shea CDM Smith 15 Wentworth Eblana Villas Dublin 2

12 September 2022

Test Report: COV/2368316/2022

Dear Ms O Shea

Analysis of your sample(s) submitted on 05 September 2022 is now complete and we have pleasure in enclosing the appropriate test report(s).

An invoice for the analysis carried out will be sent under separate cover.

Should you have any queries regarding this report(s) or any part of our service, please contact Customer Services on +44 (0)24 7642 1213 who will be happy to discuss your requirements.

If you would like to arrange any further analysis, please contact Customer Services. To arrange container delivery or sample collection, please call the Couriers Department directly on 024 7685 6562.

Thank you for using ALS Environmental Ltd and we look forward to receiving your next samples.

Yours Sincerely,

Signed:

Name: A. Zunzunegui







Report Summary

Ms Aine O Shea CDM Smith 15 Wentworth Eblana Villas Dublin 2







Date of Issue: 12 September 2022

Report Number: COV/2368316/2022 Issue 1

This issue replaces all previous issues

Job Description: Surface Water Aanalysis

Job Location: Wicklow Uplands

Number of Samples Job Received: **05 September 2022**

included in this report 3

Number of Test Results Analysis Commenced: **07 September 2022**

included in this report 9

Signed:

Name: A. Zunzunegui Date: 12 September 2022

Title: Organics Chemistry Manager

ALS Environmental Ltd was not responsible for sampling unless otherwise stated.

Information on the methods of analysis and performance characteristics are available on request.

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation. The results relate only to the items tested and where relevant sampled.

Tests marked 'Not UKAS Accredited' in this Report/Certificate are not included in the UKAS Accreditation Schedule for our laboratory. This test report is not a statement of conformity to any specification or standard.

This communication has been sent to you by ALS Environmental Ltd. Registered in England and Wales. Registration No. 02148934. Registered Office: ALS Environmental Limited, Torrington Avenue, Coventry, CV4 9GU.

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ANALYSED BY





COV/2368316/2022 Report Number:

Laboratory Number: 21999046

CDM Smith Sample Source:

Sample Point Description:

Gran 5 Sample Description:

Sample Matrix: **Surface Water** Sample Date/Time: 01 September 2022 Sample Received: 05 September 2022 Analysis Complete: 12 September 2022

Test Description	Result	Units	Analysis Date	Accreditation	n Method
Phosphate, Ortho as P LL	<0.02	mg/l	07/09/2022	N Cov	WAS067
Ammoniacal Nitrogen as N (LL)	<0.06	mg/l	07/09/2022	N Cov	WAS067
Nitrogen, Total as N	<0.5	mg/l	08/09/2022	Y Cov	WAS022

Analyst Comments for 21999046: No Analyst Comment

This issue replaces all previous issues Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.

Analysed at: CHE = Chester(CH5 3US), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2RU), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 9TG), F = Data supplied by customer.

To Black Supplied by Customer.

For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

Name: A. Zunzunegui

Issue

Sample

of 3

Date: 12 September 2022

Signed:

Title:

Organics Chemistry Manager

ANALYSED BY





COV/2368316/2022 Report Number:

Laboratory Number: 21999047

CDM Smith Sample Source:

Sample Point Description:

Sample Description: Gran 6

Sample Matrix: **Surface Water** Sample Date/Time: 01 September 2022 Sample Received: 05 September 2022 Analysis Complete: 12 September 2022

Test Description	Result	Units	Analysis Date	Accre	ditation	Method
Phosphate, Ortho as P LL	<0.02	mg/l	07/09/2022	N	Cov	WAS067
Ammoniacal Nitrogen as N (LL)	<0.06	mg/l	07/09/2022	N	Cov	WAS067
Nitrogen, Total as N	<0.5	mg/l	08/09/2022	Υ	Cov	WAS022

Analyst Comments for 21999047: No Analyst Comment

This issue replaces all previous issues Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.

Analysed at: CHE = Chester(CH5 3US), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2RU), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 9TG), F = Data supplied by customer.

To Black Supplied by Customer.

For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

Name: A. Zunzunegui

Issue

Sample

2

of 3

Date: 12 September 2022

Signed:

Title:

Organics Chemistry Manager

ANALYSED BY





COV/2368316/2022 Report Number:

Laboratory Number: 21999048

CDM Smith Sample Source:

Sample Point Description:

Gran 7 Sample Description:

Sample Matrix: **Surface Water** Sample Date/Time: 01 September 2022 Sample Received: 05 September 2022 Analysis Complete: 12 September 2022

Test Description	Result	Units	Analysis Date	Accreditation	n Method
Phosphate, Ortho as P LL	<0.02	mg/l	07/09/2022	N Cov	WAS067
Ammoniacal Nitrogen as N (LL)	<0.06	mg/l	07/09/2022	N Cov	WAS067
Nitrogen, Total as N	<0.5	mg/l	08/09/2022	Y Cov	WAS022

Analyst Comments for 21999048: No Analyst Comment

This issue replaces all previous issues Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.

Analysed at: CHE = Chester(CH5 3US), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2RU), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 9TG),

F = Data supplied by customer.

To Black Supplied by Customer.

For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

Name: A. Zunzunegui

Issue

Sample

3

of 3

Date: 12 September 2022

Signed:



ANALYST COMMENTS FOR REPORT COV/2368316/2022

Issue

This issue replaces all previous issues

Date of Issue: 12 September 2022

Sample No Analysis Comments

21999046 21999047

21999048

Signed: Name: A. Zunzunegui Date: 12 September 2022



DETERMINAND COMMENTS FOR REPORT COV/2368316/2022

ISSUE 1

Date of Issue: 12 September 2022

This issue replaces all previous issues

Sample No	Description	Determinand	Comments

Signed:

Name: A. Zunzunegui

Date: 12 September 2022

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