

Department of Environment, Food and Agriculture
Rheynn Chymmltaght, Bee as Eiriny's



Isle of Man
Government

Reillys Ellan Vannin

Water Pollution (Standards and Objectives) Scheme 2020
Implementing Inland Water EQS Policy

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Policy Owner: Department of Environment, Food and Agriculture

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1. Purpose

The purpose of this policy is to introduce measures to assist regulation of The Water Pollution Act 1993 Part 1 further to enactment of the Water Pollution (Objectives & Standards) Scheme 2020 (the 'Scheme').

Whilst standards are outlined in the Scheme this Policy sets out more detailed requirements for the following aspects:

- Monitoring
- Reporting
- Assessment of Discharge Licences

- Pollution Investigations
- Freshwater Limits

2. Objective

The water quality objective is to achieve 'Good' or 'Pass' classification for all inland waters. For sites where 'Good' cannot be achieved the Department will consider a realistic objective taking into account economic and environmental pressures.

Schedule 1 – Part 1 of the Scheme outlines the Inland Water Quality Standards.

3. Role of the Department

The Environmental Protection Unit (EPU) of DEFA collects all of the routine monitoring samples from the inland sites shown in figures 1-4. The chemical samples are processed by the Government Laboratory whereas the biological samples are preserved by the Government Laboratory with processing being undertaken by EPU staff at the Thie Slieau Whallian laboratory in St Johns.

4. Monitoring

4.1. Biological Monitoring

An invertebrate (biological) sample is undertaken using the kick sampling method. This sampling method is undertaken three times per year to provide long term data on the water quality. The presence or absence of particular invertebrate species is influenced by the water quality over a period of time and is representative of overall site health.

Figures 1-4 detail the location of the current biological monitoring sites with yellow circles. 31 sites are to be collected 3 times a year. A chemical water sample will also be collected at these 31 sites to assess the water quality at the point in time when the biological sample is collected. Long term trends can be made using these two data sets.

The processing and identification of all samples is undertaken by EPU staff who have passed the Freshwater Biological Association invertebrate identification course which is accredited by the Environment Agency. An audit of 10% of these samples will be completed yearly by an external consultant (for example the Freshwater Biological Association) to ensure invertebrate identification remains in line with standard operating procedures.

4.2. Chemical Monitoring

A chemical water sample is a 'spot' sample collected from a monitoring site and provides data on the water quality at that specific time. Results will vary depending on the flow conditions and might miss individual pollution events.

Monitoring for chemical parameters is completed where biological sampling is undertaken to assist with interpreting the biological data, plus additional sites in summer and winter. Eighty seven sites are monitored twice a year (summer and winter) and at the 31 biological monitoring sites in the spring and autumn. Table 2 summarises each seasons sampling schedule.

Figures 1-4 detail the location of all of the monitoring sites with the pink circles identifying sites where chemical samples are collected twice a year.

The water samples will be analysed by the Government laboratory for the following parameters; biochemical oxygen demand, alkalinity, ammonia, nitrate and phosphate. A field probe will be used by officers to take in situ measurements of physico-chemical components such as water temperature, dissolved oxygen, pH and conductivity.

Collecting chemical water samples throughout the year will allow a comparison of concentrations of the monitored parameters against the Ronaldsway Meteorological Office rainfall data to assess correlations. On identification of chemical exceedances, EPU officers will work with stakeholders to reduce pollution sources and protect the environment.

Three separate classifications will be reported using the chemical monitoring data. These are chemical status, nitrate status and phosphate status. The chemical status takes into account the biochemical oxygen demand, dissolved oxygen percentage and ammonia. On review of the results of these three chemical parameters the poorest classification will be assigned as the overall classification for the chemical status.

4.3. Heavy Metal Monitoring

Due to the natural geology and mining history on the Isle of Man heavy metal environmental quality standards have been included in the scheme and will be monitored at specific sites detailed in table 1. A 'Pass/Fail' assessment status will be given for the monitored sites.

These standards will be reviewed every 3 years using the Metal Bioavailability Assessment Tool (MBAT) model and associated dissolved organic carbon data.

Table 1. List of sites to be monitored for heavy metals during routine monitoring.

River name	Site	Site code
Cornaa River	Ballaglass Glen	2315
Dhoon River	Dhoon Glen	3244
Fern Glen Stream	u/s Glen Auldyn Stream	2422
Lhen Trench	Close y Kewin	2513
Santonburn	Ballalona	3203
Santonburn	Tosaby	3205
Glen Maye Stream	u/s Glen Maye	2802
Glen Maye Stream	d/s Glen Maye	2801
Foxdale Stream	u/s Foxdale	2721
Foxdale Stream	u/s St Johns Stream Confluence	2718
River Laxey	Old Laxey	2211
River Laxey	u/s Glen Roy Confluence	2216
River Laxey	u/s Mooar Confluence	2218

4.4. Maps of monitoring sites

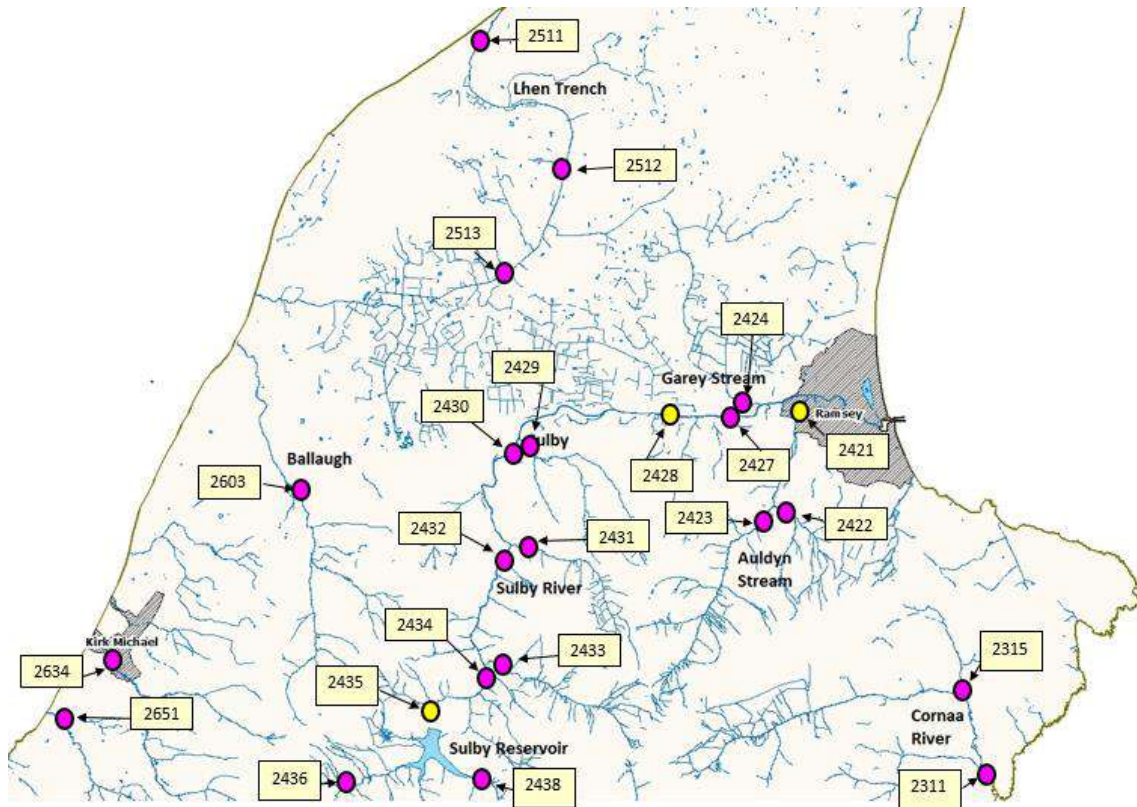


Figure 2. Northern monitoring sites.

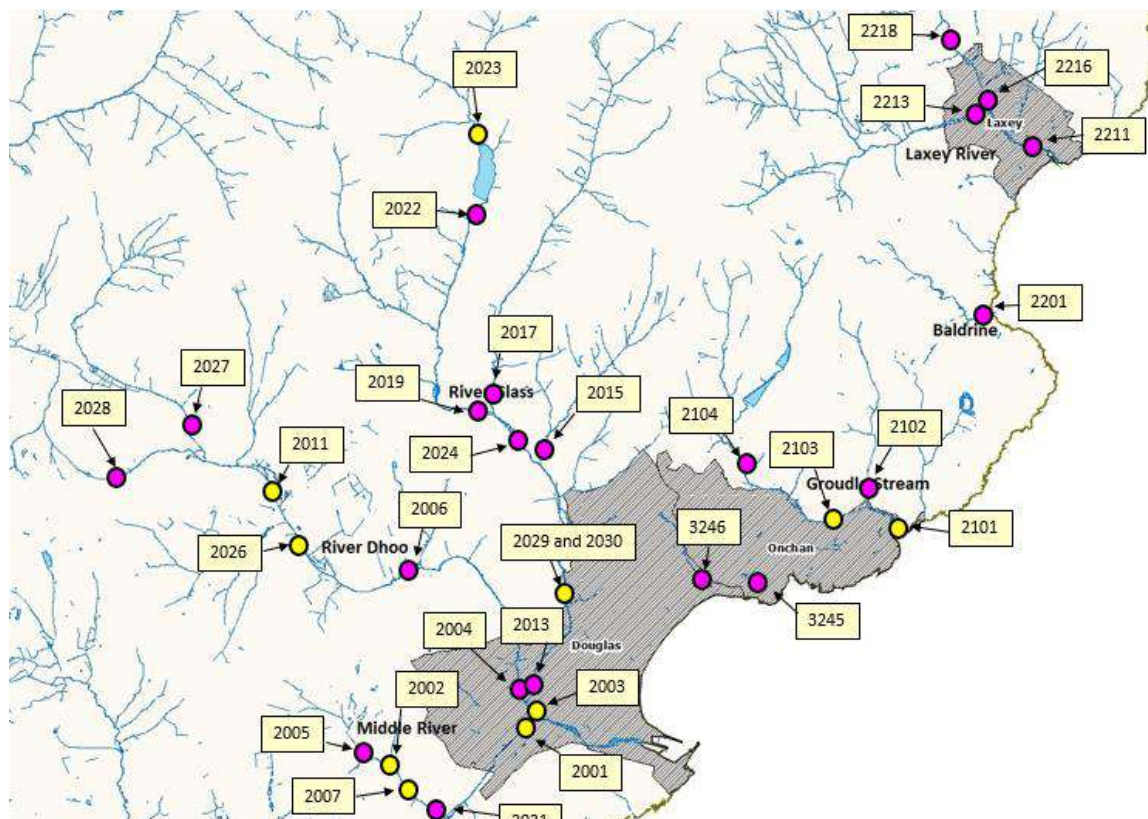


Figure 1. Eastern monitoring sites.

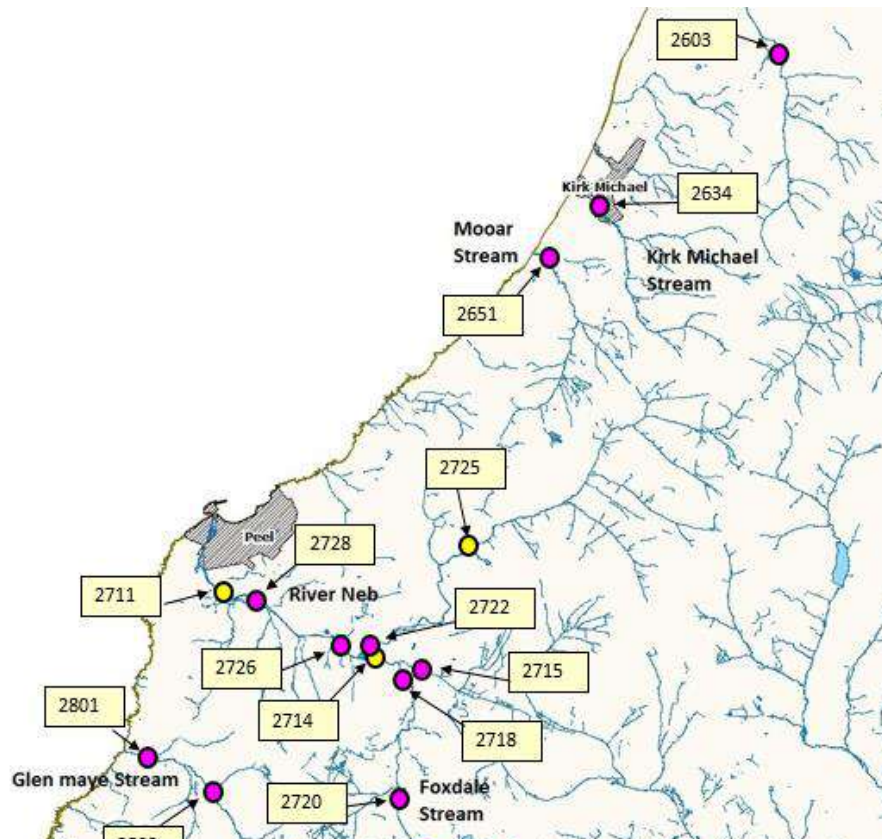


Figure 4. Western monitoring sites.

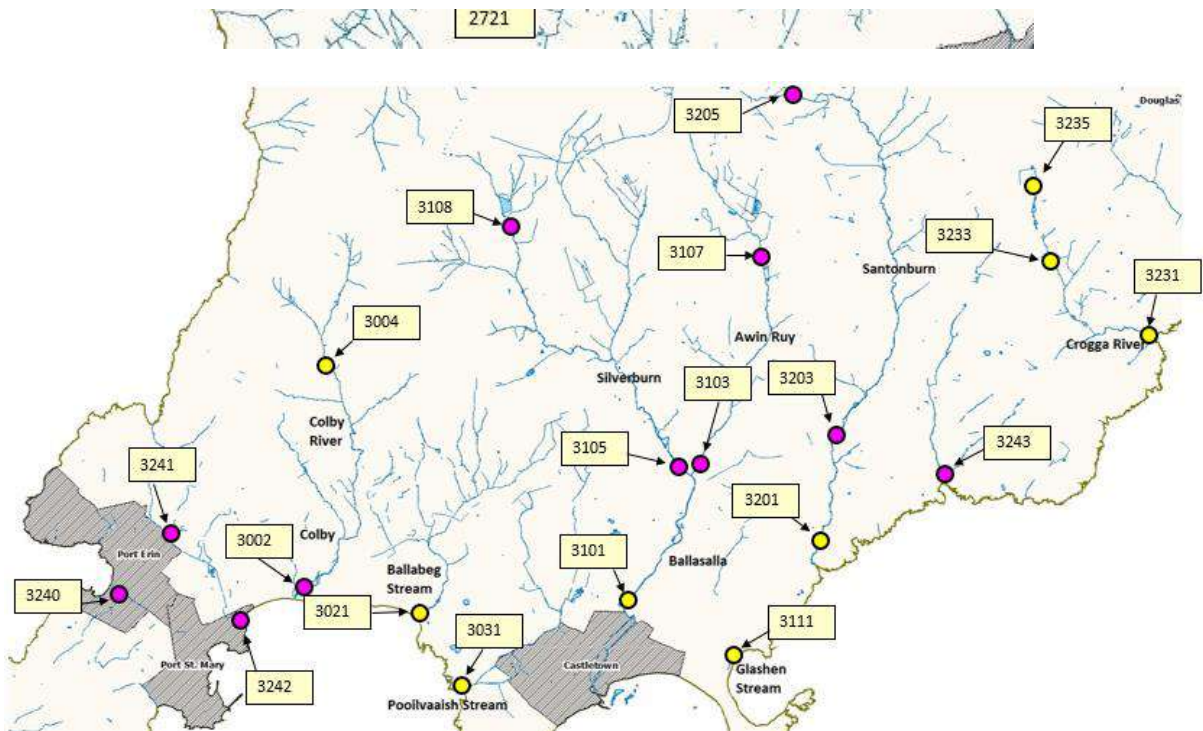


Figure 3. Southern monitoring sites.

4.5. Summary of Monitoring Programme

Table 2. Summary of Routine Monitoring Programme

Season	Sites (#)		
	Biological Monitoring	Chemical Monitoring	Heavy Metal Monitoring
Spring (Mar – May)	31	31	13
Summer (Jun- Aug)	31	87	13
Autumn (Sep – Nov)	31	31	13
Winter (Dec – Feb)	0	87	13
Total Samples	93	235	52

5. Reporting

Every year a monitoring report will be produced which will evaluate data from the previous 5 years' to assess compliance against the water quality objectives and environmental quality standards. This report will be available on the Government's Environmental Protection Unit webpage for the public to view.

The raw data in terms of the classifications for the chemical, nitrate, phosphate, biological and metal status will be collated and made available through the Government webpage.

All documents will be available to view on the following webpage; <https://www.gov.im/about-the-government/departments/environment-food-and-agriculture/environment-safety-and-health-directorate/environmental-protection-unit/water-quality/>

6. Assessment of Discharge Licenses

Discharge licenses will be assessed using a Monte Carlo mass balance calculation integrated into an Environment Agency, UK application. This assessment models a discharge to determine whether it will have a detrimental impact on the receiving water body and if the water quality objective can be achieved in the river with the addition of the effluent. By modelling discharge the environment can be protected and further measures applied after the treatment to improve the discharge quality if necessary to maintain the water quality objectives and environmental quality standards (EQS) of the receiving waters.

The Departments discharge license policy shown in figure 5 requires that all alternative options for disposal of treated sewage effluent are explored prior to progressing a discharge license application. This protects the inland and coastal waters from unnecessary discharges. This policy is in line with the UK's best practice guidance.

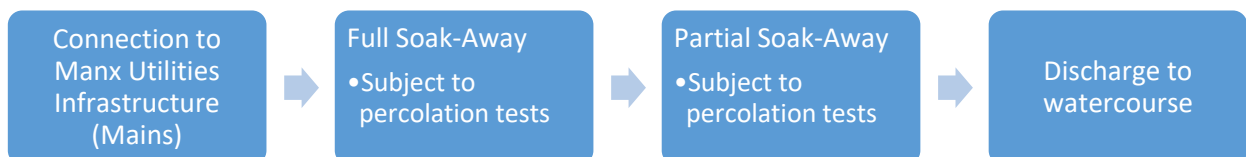


Figure 5. Discharge license determination

An assessment of current discharge licenses including Manx Utilities licenses will be undertaken by the Department to ensure any discharges will be compliant with the proposed standards as outlined in the Scheme. If any discharges are identified as non-compliant with the new standards the Department will work with the license holder to identify a reasonable way to improve the discharge quality to the necessary level.

7. Pollution Investigations

Investigations will be undertaken by EPU into any potential pollution within inland waters through provisions in the Water Pollution Act 1993. EPU officers will work with stakeholders where possible to reduce any polluting potential and where water quality objectives cannot be met a detailed assessment be documented.

8. Freshwater Limits

To establish the location where the various EQS apply specific points within surface waters have been chosen as the freshwater limit. Upstream of these locations the Inland Waters EQS (Schedule 2 – Part 1) will apply. Downstream of this locations the Coastal Water EQS (Schedule 3 – Part 1) apply.

Table 3 details the national grid references of the freshwater limits for the specified watercourse. For unnamed watercourses the limit will be the high water mark. A more comprehensive document along with a map of all inland waters will be included as Schedules to the scheme.

Table 3. Freshwater limits

River	National Grid Reference	
Baldrine Stream	SC 4340 8146	At footbridge next to cottages
Ballabeg Stream	SC 2401 6855	Manhole discharges onto beach
Ballaugh Stream	SC 3361 9599	At beach
Balleira Stream	SC 3140 9135	At beach
Colby River	SC 2222 6888	A5 road bridge
Cornaa River	SC 4720 8814	At footbridge
Cott-ny-Greiney	SC 2147 6858	Manhole discharges onto beach
Crogga River	SC 3465 7259	Sea side of road crossing
Dhoon River	SC 4608 8650	At footbridge
Glashen Stream	SC 2861 6802	End of concrete culvert
Glen Maye Stream	SC 2252 7995	At the footbridge
Grenaugh River	SC 3159 7057	At the footbridge
Groudle River	SC 4201 7838	At footbridge
Kirk Michael Stream	SC 3102 9059	At footbridge
Laxey River	SC 4416 8384	Shore hotel road bridge
Lhen Trench (North)	NX 3838 0196	At the beach (Cronk-ny-Bing)
Mooar Stream	SC 3025 8938	At beach
Poolvaish stream	SC 2462 6754	End of concrete channel
Port Erin Stream	SC 1953 6899	Manhole discharges onto beach
Port Jack Stream	SC 3977 9303	Manhole discharges onto beach
River Douglas	SC 3783 7515	At Bridge road
River Neb	SC 2399 8376	West marine footbridge
Santonburn	SC 2977 6932	Top of the beach before changing to gorse
Silverburn	SC 2658 6772	Apostle's Bridge in Castletown

Sulby River	SC 4478 9473	Bowring road bridge
Summerhill Stream	SC 3977 3318	Manhole discharges onto beach
Ballabooie Stream	SC 2768 8676	At the rock face

9. Version History

Version No.	Date Issued	Description
1	07/10/2020	Original policy document
2	13/01/2023	Reviewed policy; no changes

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