2023 River Monitoring Report

2019 – 2023 Data
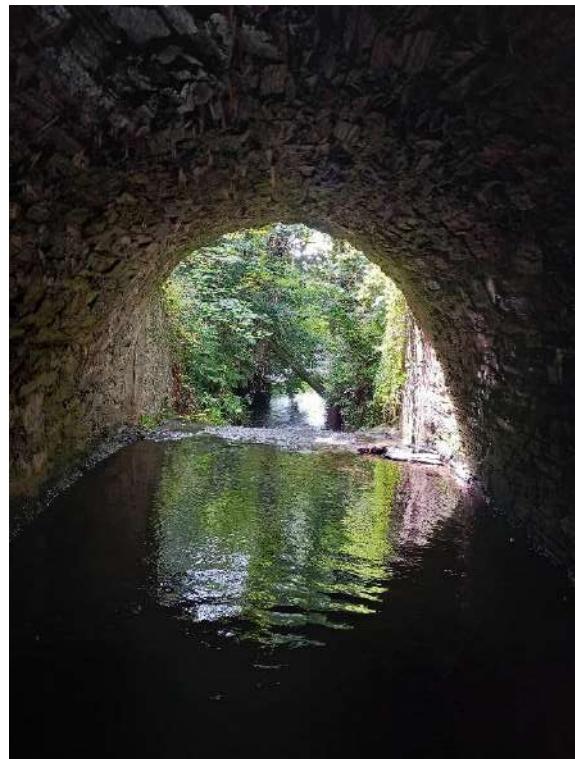
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Abbreviations

BOD – Biochemical Oxygen Demand

DEFA – Department of Environment, Food and Agriculture

DOI – Department of Infrastructure

EPU – Environmental Protection Unit

EQS – Environmental Quality Standards

IOM – Isle of Man

IRIS – Integrated Regional Sewage Treatment

MU – Manx Utilities

RICT – River Invertebrate Classification Tool

WDL – Waste Disposal License

1. Executive Summary

Overall the health of the Isle of Man's watercourses is of good status with 98% of monitored sites achieving **Excellent** or **Good** chemical classification (table 1). For nutrient classifications 97% and 83% of sites achieved **Excellent** or **Good** classification for phosphate and nitrate, respectively. The chemical classification has been calculated different for this report due to information detailed in the Water Pollution (standards and Objectives) Scheme 2020; a comparison in the two calculation is included further in this report.

For dissolved copper, manganese and nickel **100%** of the monitored sites **passed** the Environmental Quality Standards (EQS) detailed in the Water Pollution (Standards and Objectives) Scheme 2020 (Table 2). Whereas, for dissolved iron and cadmium **94%** and **71%**, respectively, of sites **passed**. The exception is the dissolved zinc where **82%** of sites **failed/exceeded** the standard.

TABLE 1. PERCENTAGE OF ISLE OF MAN RIVERS (BY LENGTH) RANKED BY GRADE (FULL REVIEW IN SECTIONS 6, 7 AND 8)

IoM Classifications	Chemical	Phosphate	Nitrate	Biology
Excellent	86	79	55	Data to be assessed in separate report (see Section 6)
Good	12	18	28	
Moderate	2	2	17	
Poor	0	1	0	

TABLE 2. PERCENTAGE OF METAL MONITORING SITES WHICH PASSED THE EQS DETAILED IN THE WATER POLLUTION (STANDARDS AND OBJECTIVES) SCHEME 2020 (FULL REVIEW IN SECTIONS 4 AND 9)

Classification	Dissolved Copper	Dissolved Manganese	Dissolved Nickel	Dissolved Zinc	Dissolved Iron	Dissolved Cadmium
Pass	100%	100%	100%	18%	94%	71%
Fail	0%	0%	0%	82%	6%	29%

2. Introduction

The Environmental Protection Unit undertake the river monitoring programme to assess the health of the Isle of Man's rivers and stream. Water samples are collected from 87 locations with the data being assessed against the standards outlined in the [Water Pollution (Standards and Objectives) Scheme 2020](). The classifications detailed in the scheme are in line with current UK and EU standards.

3. Rivers of the Isle of Man

For the purpose of presenting the classification within this report the Isle of Man is split into four regions;

- North – 20 sites
- East – 29 sites
- South – 21 sites
- West – 16 sites

The Northern region can be split into two geographically distinct areas; the first being the Sulby river catchment which drains the slopes of the island's mountain (Snaefell, 2037 ft), through Sulby reservoir. The second being the flat northern plain dominated by arable farming, which has slow flowing watercourses similar to dykes and ditches.

The Eastern region has significant urban and industrial developments with a relatively large number of private sewage treatment works in the rural areas. The majority of the region is connected to Manx Utilities sewerage infrastructure however the Laxey catchment still discharges untreated sewage into the marine environment. This catchment is also impacted by the disused Snaefell mines.

The Southern region is dominated by livestock and agriculture. In the rural areas there are a number of private sewage treatment works whilst more semi-rural or urban residential areas are connected to the Manx Utilities Integrated Region Sewage Treatment (IRIS) network. All of the sewage waste connected to the IRIS network is transported to Meary Veg sewage treatment works.

The Western region consists of the River Neb, of which a tributary, the Foxdale stream, is significantly impacted by numerous disused mining sites. The main residential area of Peel currently discharges untreated sewage into the marine environment although there are plans to construct a sewage treatment works in the near future. The smaller settlements such as Glen Maye, Kirk Michael and Ballaugh are all connected to small sewage treatment works which are operated by Manx Utilities.

Figures 1 - 4 detail the location of all 86 sampling sites which are monitored throughout the year for either only chemical (pink) or biological and chemical (yellow) data depending on the site. A list of the site names for each site code are detailed in Appendix 1 – List of all sampling sites (codes and names).
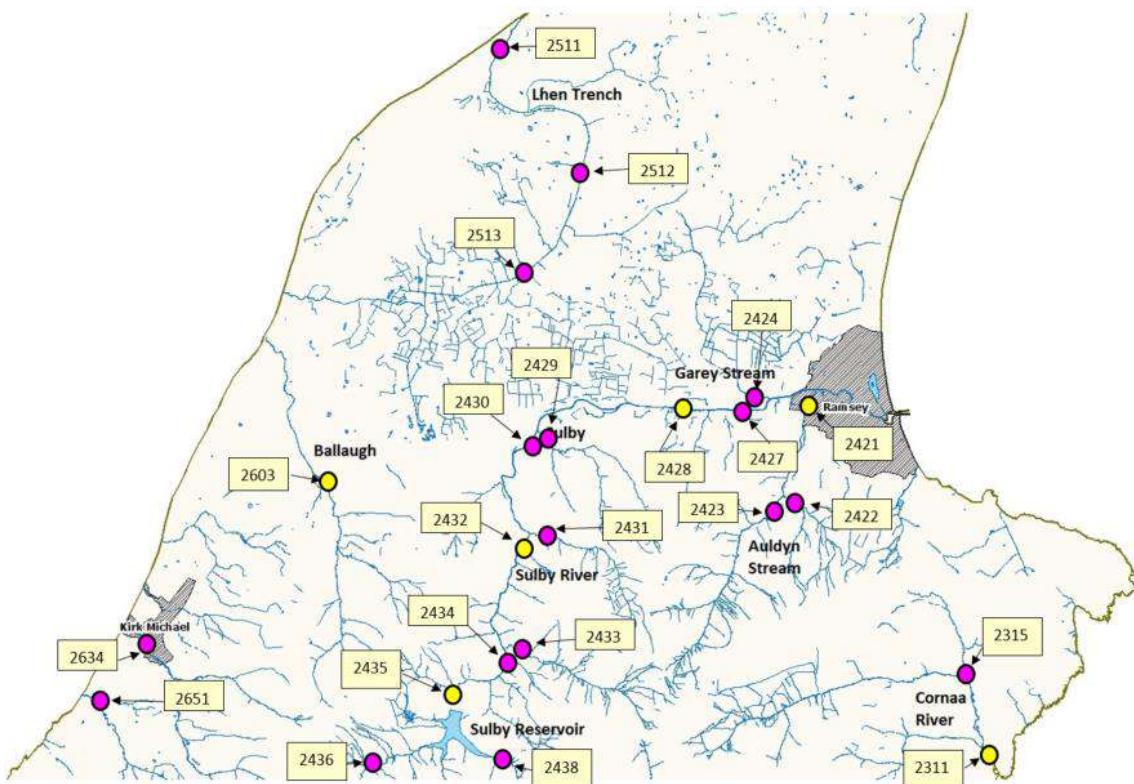
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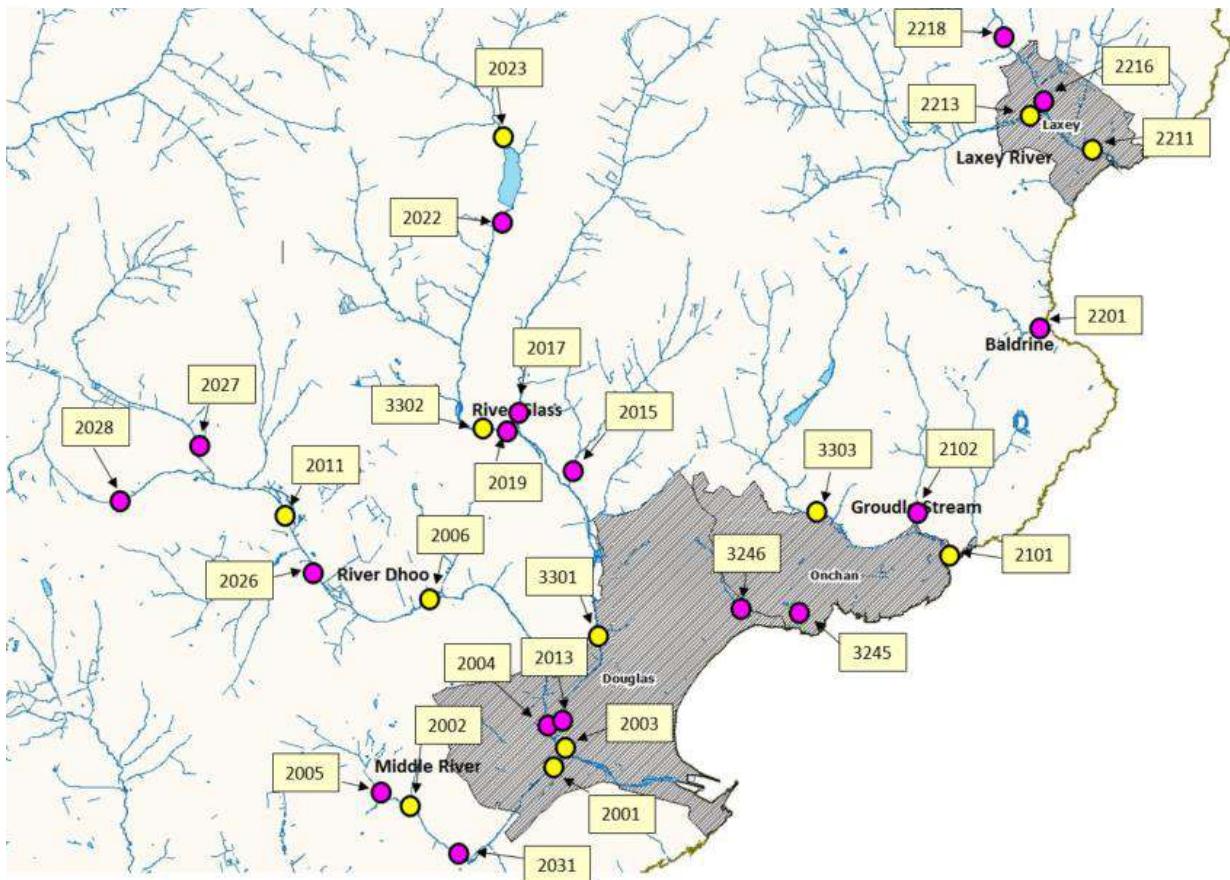
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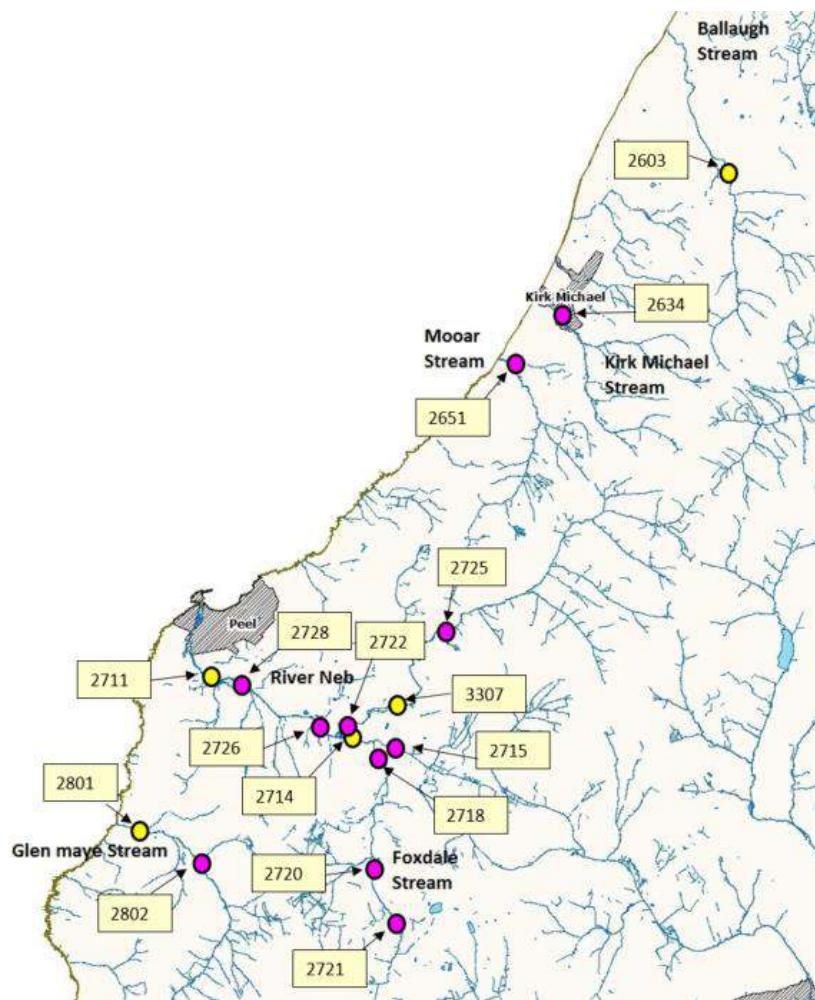
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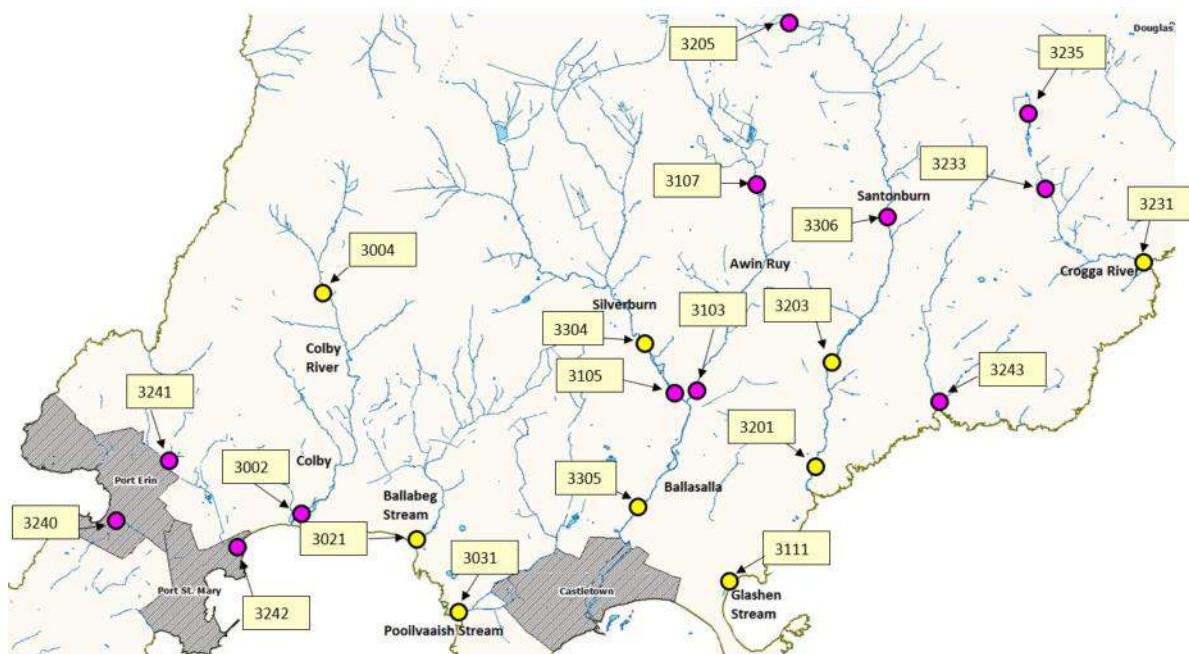
FIGURE 4. SOUTHERN SAMPLING SITES - LOCATIONS AND SITE CODES (CHEMICAL ONLY (PINK); BIOLOGICAL AND CHEMICAL (YELLOW))

4. Water Pollution (Standards and Objectives) Scheme 2020

The Water Pollution (Standards and Objectives) Scheme 2020 was approved by Tynwald in December 2020 and includes Environmental Quality Standards (EQS) for inland and coastal waters.

Tables 1 - 8 details all of the EQS which apply to inland waters as part of the scheme. The standards/classifications are used to review the data presented in this report.

A review of the scheme will be completed and may be presented to Tynwald if further amendments are required prior to the scheme coming into force on the 31st December 2025.

TABLE 3. CHEMICAL CLASSIFICATION STANDARDS AS DETAILED IN THE WATER POLLUTION (STANDARDS AND OBJECTIVES) SCHEME 2020

Parameter	Poor	Moderate	Good	Excellent
Dissolved Oxygen (percent saturation) (10 percentile)	<64	64 - <75	75 - <80	≥80
Biochemical Oxygen Demand (BOD) (mg/L) (90 percentile)	>6	>4 – 6	>3 - 4	≤3
Total Ammonia (mg/L) (90 percentile)	>0.75	>0.3 – 0.75	>0.2 – 0.3	≤0.2

TABLE 4. PHOSPHORUS CLASSIFICATION STANDARDS AS DETAILED IN THE WATER POLLUTION (STANDARDS AND OBJECTIVES) SCHEME 2020

Parameter	Poor	Moderate	Good	Excellent
Phosphorus concentration (mg/L) (annual mean)	>0.128	>0.046 – 0.128	>0.023 – 0.046	≤0.023

TABLE 5. NITRATE CLASSIFICATION STANDARDS AS DETAILED IN THE WATER POLLUTION (STANDARDS AND OBJECTIVES) SCHEME 2020

Parameter	Poor	Moderate	Good	Excellent
Nitrate (as NO_3) (mg/L) (annual mean)	>30	>10 - 30	>5 - 10	≤5

TABLE 6. METAL EQS FOR INLAND WATERS AS DETAILED IN THE WATER POLLUTION (STANDARDS AND OBJECTIVES) SCHEME 2020

Inland water body	Mean dissolved concentration (µg/L) quality element				
	Copper	Lead	Manganese	Nickel	Zinc
Cornaa river	6	4.8	350	9	11
Fern glen stream	6	4.8	350	9	11
Lhen Trench	51.2	14.4	258.7	26.4	20.4
Santonburn	6	4.8	350	9	11
Glen Maye stream	6	4.8	350	9	11
Foxdale stream	6	4.8	350	9	11
Laxey river	6	4.8	350	9	11
General inland waters	6	4.8	350	9	11

TABLE 7. ADDITIONAL EQS FOR INLAND WATERS AS DETAILED IN THE WATER POLLUTION (STANDARDS AND OBJECTIVES) SCHEME 2020

Parameter (assessed in dissolved form)		Mean value	Maximum concentration
Cadmium	Class 1 (µg/L)	≤0.08	≤0.45
	Class 2 (µg/L)	0.08	0.45
	Class 3 (µg/L)	0.09	0.6
	Class 4 (µg/L)	0.15	0.9
	Class 5 (µg/L)	0.24	1.5
Iron (µg/L)		1000	

TABLE 8. WATER HARDNESS CONCENTRATIONS FOR CADMIUM STANDARDS AS DETAILED IN THE WATER POLLUTION (STANDARDS AND OBJECTIVES) SCHEME 2020

Water Hardness for Cadmium Standards	Concentration of $CaCO_3$ (mg/L)
Class 1	<40
Class 2	40 - <50
Class 3	50 - <100
Class 4	100 - <200
Class 5	≥200

5. Meteorological Office

The Isle of Man metrological office at Ronaldsway experienced a year of records with 2023 being the warmest on record. June was recorded as being the warmest on record with a new record maximum temperature on the 13th June with 28.1°c.

The island experienced the wettest July on record with 144.9mm of rainfall which is double the long term average. March, September and December were also very wet, contributing to the annual total rainfall of 1023.1mm which is the 6th wettest year on record.

Fine weather in May and June brought the annual sunshine hours up to slightly above the average, despite all of the rain.

6. Biological Assessment

At the start of the 2023 the Isle of Man River Invertebrate Classification Tool (RICT) was completed by external consultants APEM Ltd. Officers have been working on processing the backlog of invertebrate samples to enable a more thorough assessment of the biological health of the islands rivers and streams.

A separate report will be produced reviewing the backlog of biological data which will cover data from 2017 – 2022. Going forward the biological assessment will be included in the routine river water quality annual report along with the Inland Fisheries salmonid monitoring programme summary. By assessing all of this data together it will provide a more accurate assessment of the health of the Isle of Man's rivers. It will also assist in identifying areas for improvement for the Department and external stakeholders.

7. Chemical Assessment

The chemical assessment has previously been calculated using the annual mean with 5 years' of results however as stated in the [Water Pollution (Standards and Objectives) Scheme 2020](#) and detailed in Section 4 Table 1; depending on the parameter it should either be the 90th or 10th percentile. Due to this change in how the chemical classification is assessed table 7 presents both assessment types to enable a comparison of the data. By reviewing the annual mean the classifications have remained stable whereas using the percentile classification as detailed in the scheme there is a greater number of sites being assessed as **Good** and **Moderate** compared to the annual mean. Going forward the chemical classification will be reported using the percentiles for the specific parameters as detailed in Section 4, Table 3.

TABLE 9. CHEMICAL CLASSIFICATION FOR THE ISLE OF MAN RIVERS

Grade	A		B		C		D	
Quality	Excellent		Good		Moderate		Poor	
Assessment Type	Percentile	Annual Mean	Percentile	Annual Mean	Percentile	Annual Mean	Percentile	Annual Mean
2017 – 2021 River Length %	83	98	13	2	4	0	0	0
2018 – 2022 River Length %	85	98	10	2	4	0	0	0
2019 – 2023 River Length %	**86**	**97**	**12**	**3**	**2**	**0**	**0**	**0**

Overall, the chemical classification has slightly improved over the last 3 assessments; with 86% of sites being classified as **Excellent** up from 83% in the 2017-2021 assessment.

In the Northern region the majority of the sites on the Sulby River, Glen Auldyn stream and are classified as **Excellent**. The Lhen Trench and Garey stream are classified as **Good** due to a reduction in dissolved oxygen. This is likely to be due to agricultural run-off from the surrounding land.

In the Eastern region the majority of the sites are classified as **Excellent**. On the River Dhoo downstream of the Crosby sewage treatment works the classification decreases to **Moderate** due to elevated ammonia. This is likely to be due to the outdated Manx Utilities sewerage infrastructure at Crosby and Glen Vine. An upgrade to the Crosby sewage treatment works and decommissioning of the Glen Vine works has commenced with the new works anticipated to be operational by the end of 2024. Once operational the two smaller sewage treatment works serving the Crosby Meadows and Reayrt ny Crink developments will be decommissioned with the foul water being treated by the mains sewerage infrastructure. The improvement in the infrastructure is expected to have a positive impact

on the River Dhoo with a reduction in ammonia and phosphate specifically. This will be monitored in future data.

The upper reaches of Middle river are classified as **Excellent** which decreases to **Good** at the Oakhill site due to elevated ammonia (0.216 mg/L). The classification for **Excellent** is <0.2 mg/L so it is only just into the next classification. This is likely to be due to the absence of mains sewerage infrastructure in the area and all premises requiring individual sewage treatment works.

The Western region is mainly classified as **Excellent** with the exception of downstream of St Johns sewage treatment works which is classified as **Good** due to elevated ammonia. The St John's sewage treatment works is due for an upgrade in the near future which will improve the quality of the discharge into the river and the classification is likely to improve.

In the Southern region the Colby river, Silverburn, Santonburn, Grenaugh river, Ballabeg stream and Glashen stream are all classified as **Excellent**. The Pooilvaaish, Port Erin and lower reaches of the Cott ny Greiney are all classified as **Good**. The lower classification is due to an increase in Biochemical Oxygen Demand (BOD) which is likely to be due to agricultural run-off. This is further confirmed by the elevated nitrate concentrations at all of these locations with **Moderate** classification.

On the Crogga river at Bushey's Brewery the classification has reduced to **Moderate** with upstream and downstream classifications remaining at **Excellent**. The classification around the Bushey's Brewery site has reduced due to an increase in Biochemical Oxygen Demand (BOD), ammonia and phosphate in the summer samples for the past 2 years. Further testing has not provided any additional information on the source of the contamination and the concentrations reduced in the autumn samples. Due to this repetition the Department will undertake more frequent sampling during the summer of 2024 to determine if the same issue occurs and to try to identify the source of the contamination.
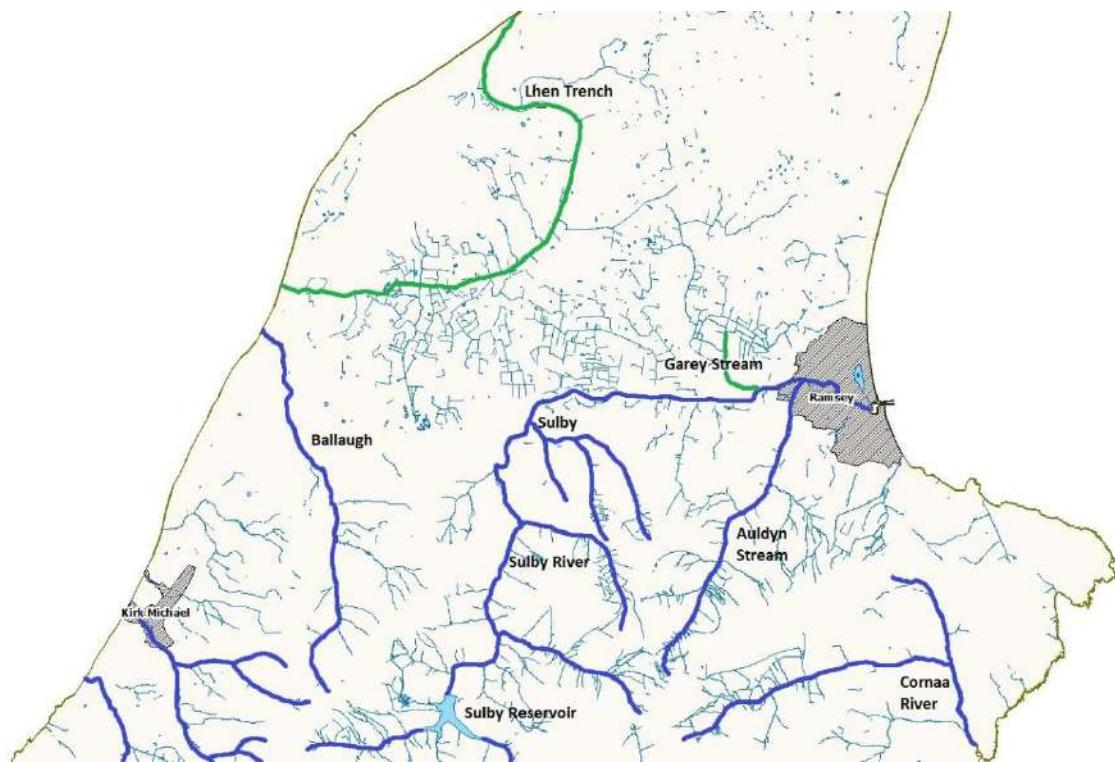
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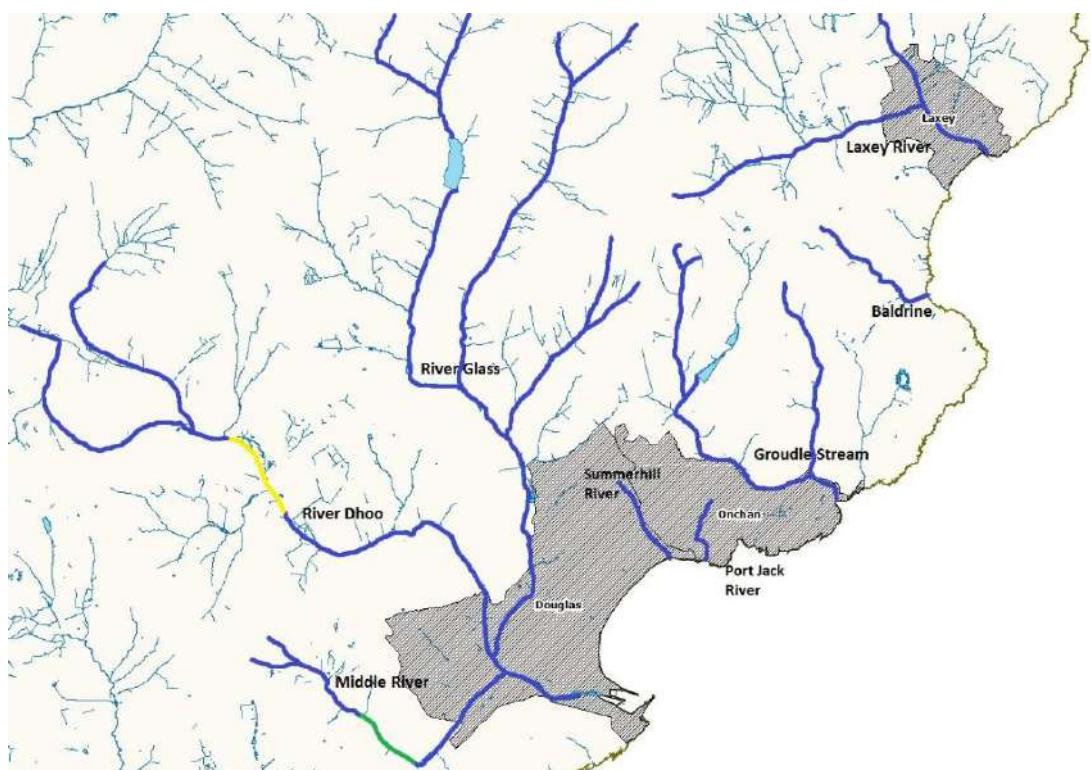
FIGURE 6. CHEMICAL ASSESSMENT FOR THE EASTERN REGION
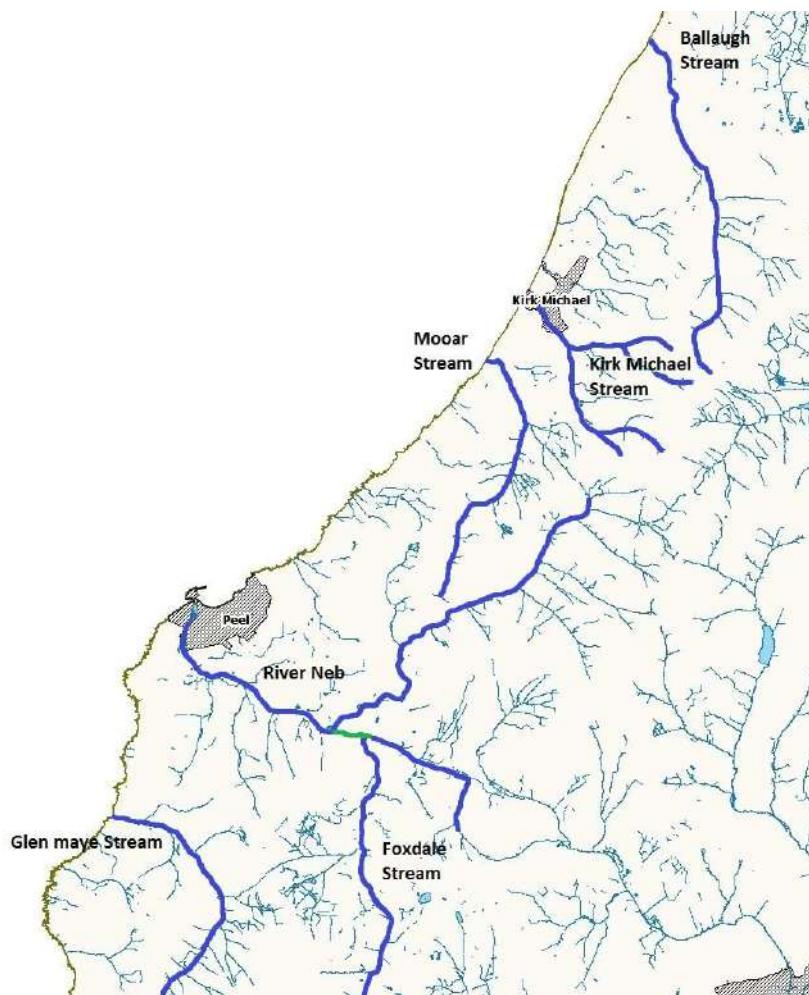
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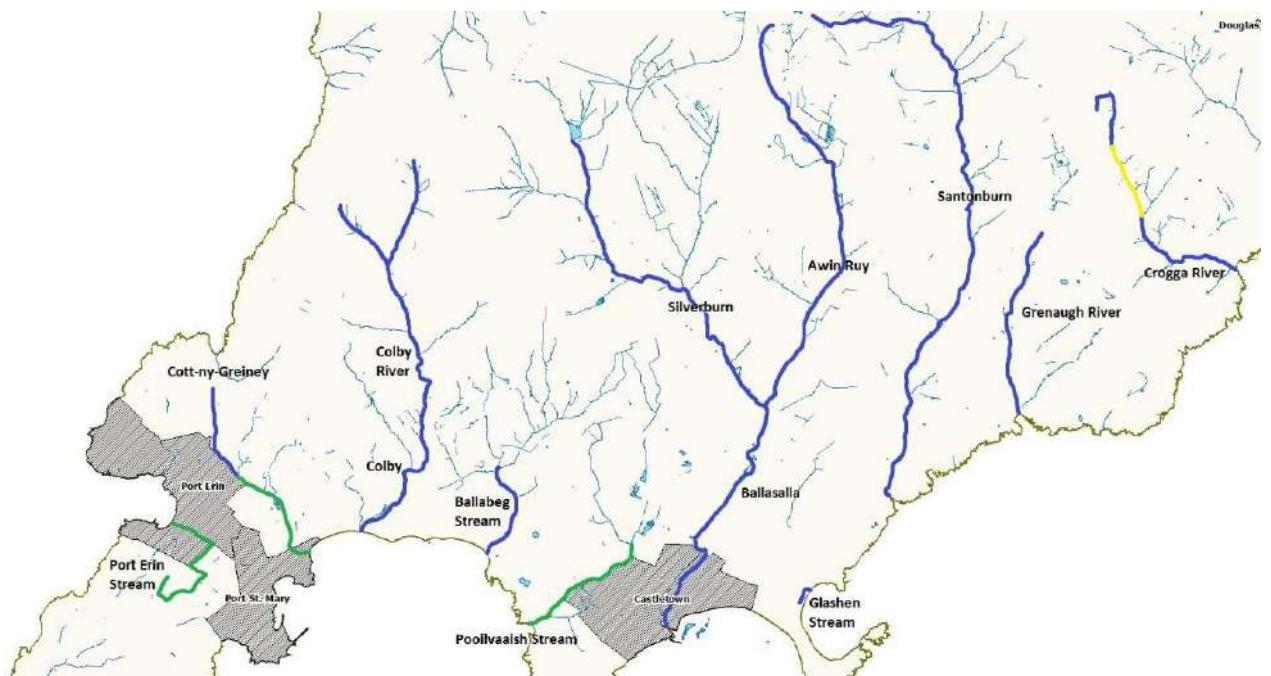
FIGURE 8. CHEMICAL ASSESSMENT FOR THE SOUTHERN REGION

8. Nutrient Assessment

8.1. Phosphate

Over the past 20 years there has been a drop in the number of sites classified as **Excellent** (86% - 2003/05; 79% 2019/23) and an increase in the number of sites classified as **Good** (5% 2003/05; 18% 2019/23). The reduction in the number of sites classified as **Moderate** (4% 2005/06; 2% 2019/23) and **Poor** (5% 2005/06; 1% 2019/23) shows an improvement in the concentrations of phosphate in the islands watercourses. This is likely to be due to the improvement in the sewerage infrastructure including private sewage treatment works serving the rural properties.

The Northern region has remained the same as previous reports with all sites being classified as **Excellent**.

In the Eastern region the phosphate classifications for the River Glass, Groudle River and Laxey River have remained at **Excellent**. Summerhill Glen and the upper reaches of Middle river are both classified as **Good**. The phosphate increase in the upper reaches of Middle river is likely due to the lack of mains sewerage infrastructure in the area with private sewage treatment works being servicing the industrial estate and residential dwellings.

The River Dhoo varies in classification with the upper reaches being classified as **Excellent** but this decreases to **Moderate** and **Good**. The elevated phosphate in the lower reaches of the River Dhoo is likely to be due to the discharge of treated sewage effluent from Manx Utilities infrastructure of which some is currently being upgraded and private dwellings. Section 7 provides more information on the upgrade to Crosby sewage treatment works and nearby infrastructure.

In the Western region the Kirk Michael, Ballaugh and Mooar streams are all classified as **Excellent**. Kirk Michael and Ballaugh are serviced by small sewage treatment works operated and maintained by Manx Utilities. On the Glen Maye stream downstream of the sewage treatment works the classification decreases from **Excellent** to **Good**. Downstream of the St Johns sewage treatment works the classification of phosphate decreases from **Excellent** to **Good** however in previous assessments it has been **Moderate**. The St Johns sewage treatment works is due for an upgrade in the near future which should improve the classification downstream of the works.

In the Southern region the Colby River, Silverburn and Santonburn are all classified as **Excellent**. The Grenaugh stream classification has decreased to **Good** which could be due to the private sewage treatment works serving the residential properties within the Glen. Further review of the data and additional sampling in the future might assist in confirming the source/s. The Polyvaaish, Glashen and Ballabeg streams are all classified as **Good** which is likely to be due to agricultural run-off and/or private sewage treatment works discharges upstream in the catchments.

Crogga River at the site downstream of Bushey's Brewery experienced some elevated concentrations of Biochemical Oxygen Demand (BOD), ammonia and phosphate. The phosphate classification dropped to **Poor** due to the elevated summer 2023 result of 0.963 mg/L. In the summer of 2022 the phosphate concentration was also elevated at 0.398 mg/L. Additional investigations including sampling was undertaken by officers however a source was not located. The upstream and downstream sampling sites on the Crogga River did not

report the same elevated parameters as downstream of Bushey's Brewery. Due to the elevated results for two consequent years the Environmental Protection Unit will undertake frequent sampling during the summer of 2024 to try to identify the source and determine if the issue is on-going.

TABLE 10. PHOSPHATE CLASSIFICATION FOR THE ISLE OF MAN'S RIVERS

Grade	A	B	C	D
Quality	Excellent	Good	Moderate	Poor
2003 – 2005 River Length %	86	5	4	5
2015 – 2016 River Length %	89	9	2	0
2015 – 2018 River Length %	83	12	4	1
2015 – 2019 River Length %	84	13	2	1
2016 – 2020 River Length %	83	11	6	0
2017 – 2021 River Length %	83	10	7	0
2018 – 2022 River Length %	82	11	7	0
2019 – 2023 River Length %	**79**	**18**	**2**	**1**
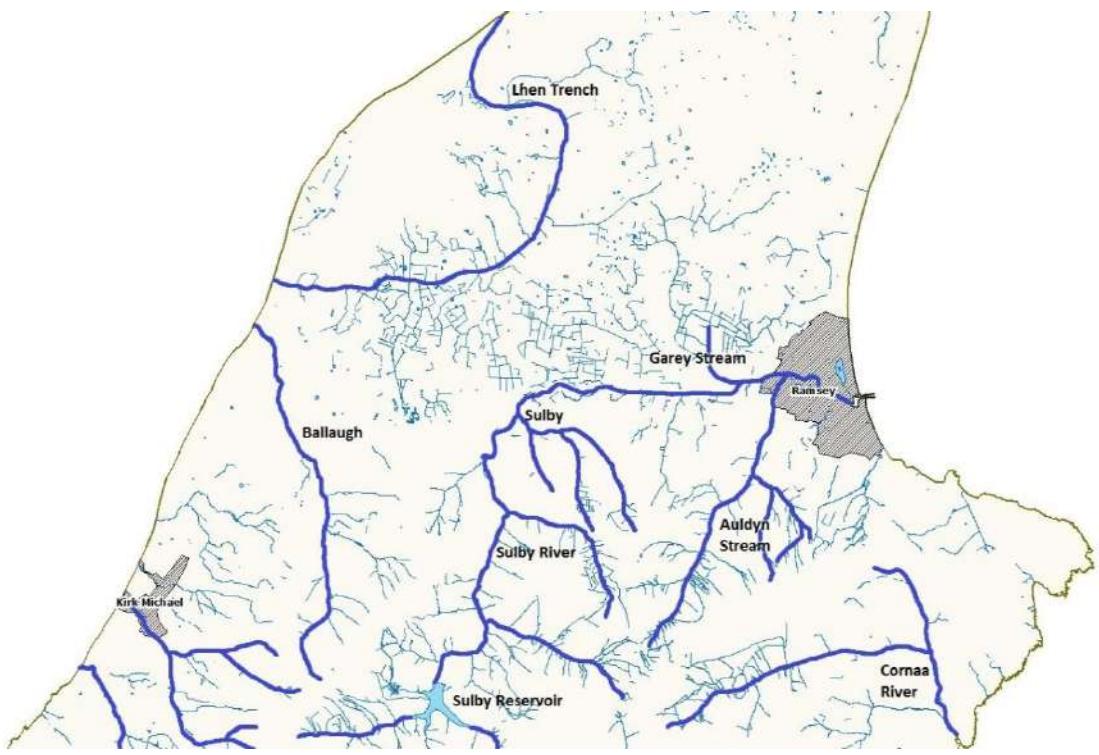
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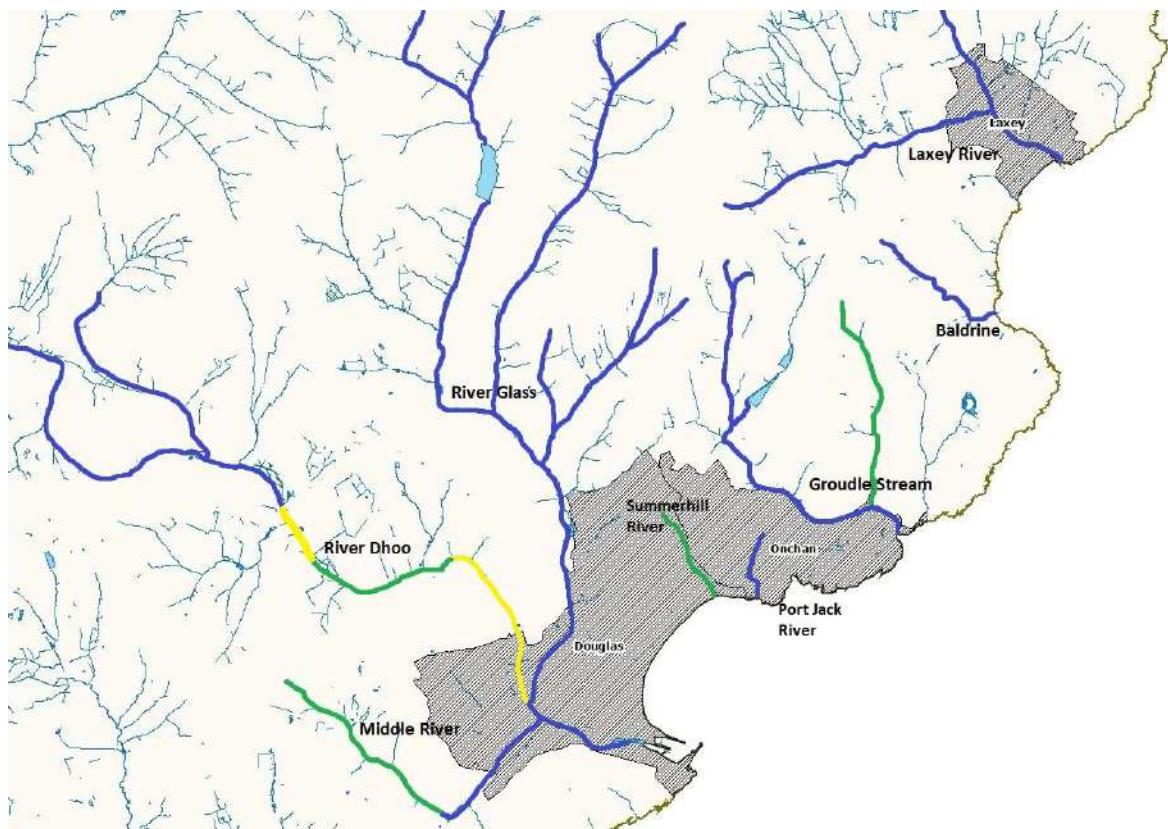
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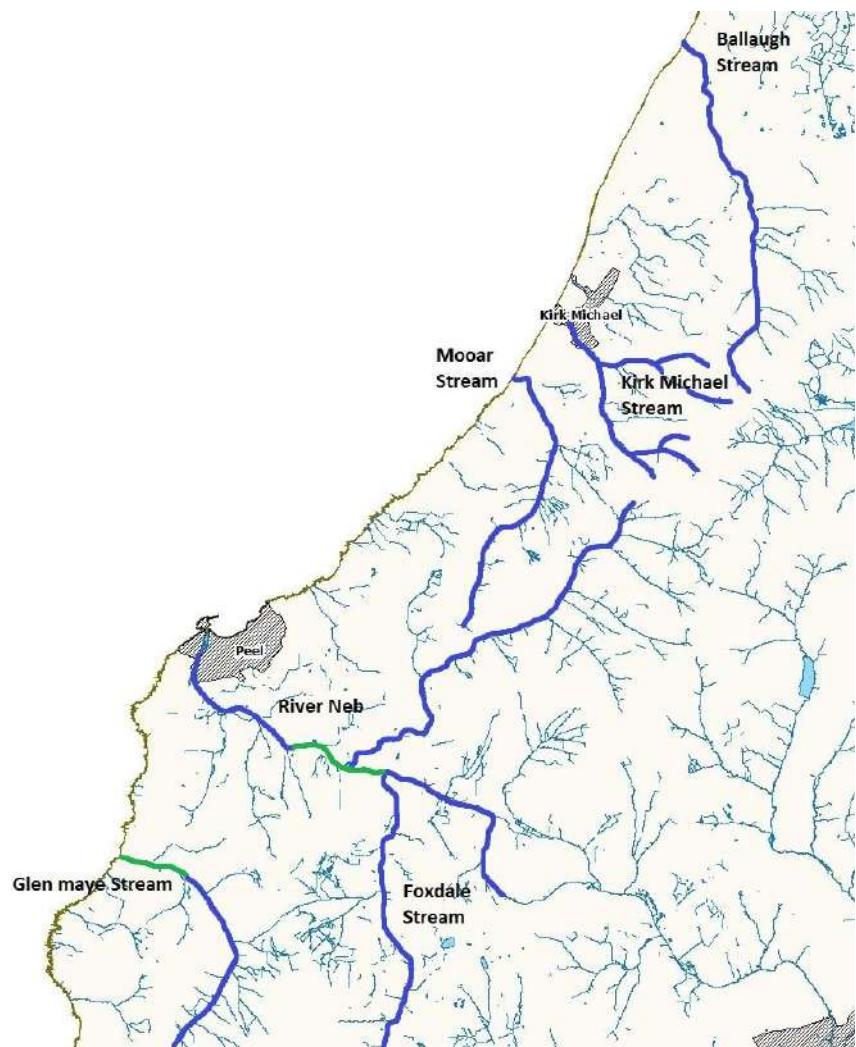
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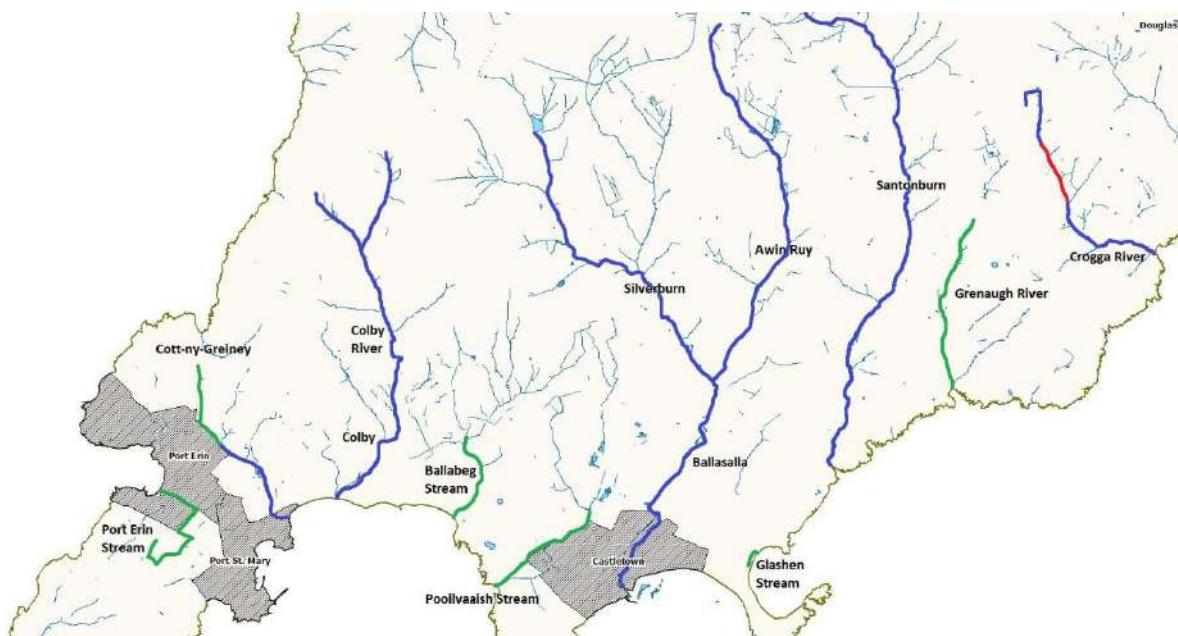
FIGURE 12. PHOSPHATE ASSESSMENT FOR THE SOUTHERN REGION

8.2.   Nitrate

Nitrate concentrations across the Isle of Man have remained stable with 83% of sites being classified as **Excellent** or **Good**.

In the Northern region the majority of the monitored sites were classified as **Excellent**. The Lhen Trench is classified as **Moderate** and **Good** which will be due to agricultural run-off. The Garey stream has elevated nitrate with a classification of **Good** which will be due to agricultural run-off. The Sulby river and Auldyn stream are upland environments and therefore not impacted by agricultural run off to the same extent as the Northern plain.

The Eastern region has varying classifications of nitrate similar to the Southern region. The upper reaches of the River Glass and Dhoo are classified as **Excellent** which is likely to be due to the slope and land type where spreading of slurry or fertiliser is not undertaken. The lower parts of both catchments are classified as **Good** which is likely to be due to agricultural land run off and highway run off from the urban areas. The Laxey river is classified as **Excellent** which will be due to the upland nature of the valley where the land is steep and not suitable for crops so slurry and fertiliser is not spread to increase the yield.

In the Western region the Ballaugh, Kirk Michael, Mooar and Glen Maye streams are all classified as **Excellent**. The upper region of the River Neb and Foxdale stream also classified as **Excellent**. The St Johns stream and the lower reaches of the River Neb are classified as **Good** which is likely to be due to agricultural run-off from the surrounding land.

The Southern region tends to have elevated concentrations of nitrate present in most watercourses due agricultural run-off. The lower part of the Silverburn, Santonburn, Cott ny Greiney and Colby river are all classified as **Good**. The upper reaches of these catchments are classified as **Excellent**; due to the slope and land type this land is not suitable for the application of fertilisers or slurry unlike the lower reaches where the land is flatter. The Pooilvaaish, Ballabeg, Port Erin, Grenaugh and Glashen streams are all classified as **Moderate**. This increase in nitrate is likely to be due to agricultural run-off and insufficient storage of slurry at some sites meaning slurry is spread during periods of rainfall when the land is saturated and run-off is greater. The Crogga River has varying classifications within its length with the upper reaches classified as **Good**; the middle section classified as **Excellent** and the lower reaches classified as **Moderate**. The lower reaches is likely to be impacted by agricultural run-off causing the decrease in classification.

TABLE 11. NITRATE CLASSIFICATION FOR THE ISLE OF MAN'S RIVERS

| Grade	A	B	C	D
Quality	Excellent	Good	Moderate	Poor
2003 – 2005 River Length %	47	28	25	0
2015 – 2016 River Length %	54	35	11	0
2015 – 2018 River Length %	46	37	17	0
2015 – 2019 River Length %	47	33	20	0
2016 – 2020 River Length %	52	31	17	0
2017 – 2021 River Length %	53	30	17	0
2018 – 2022 River Length %	54	29	17	0
2019 – 2023 River Length %	**55**	**28**	**17**	**0**
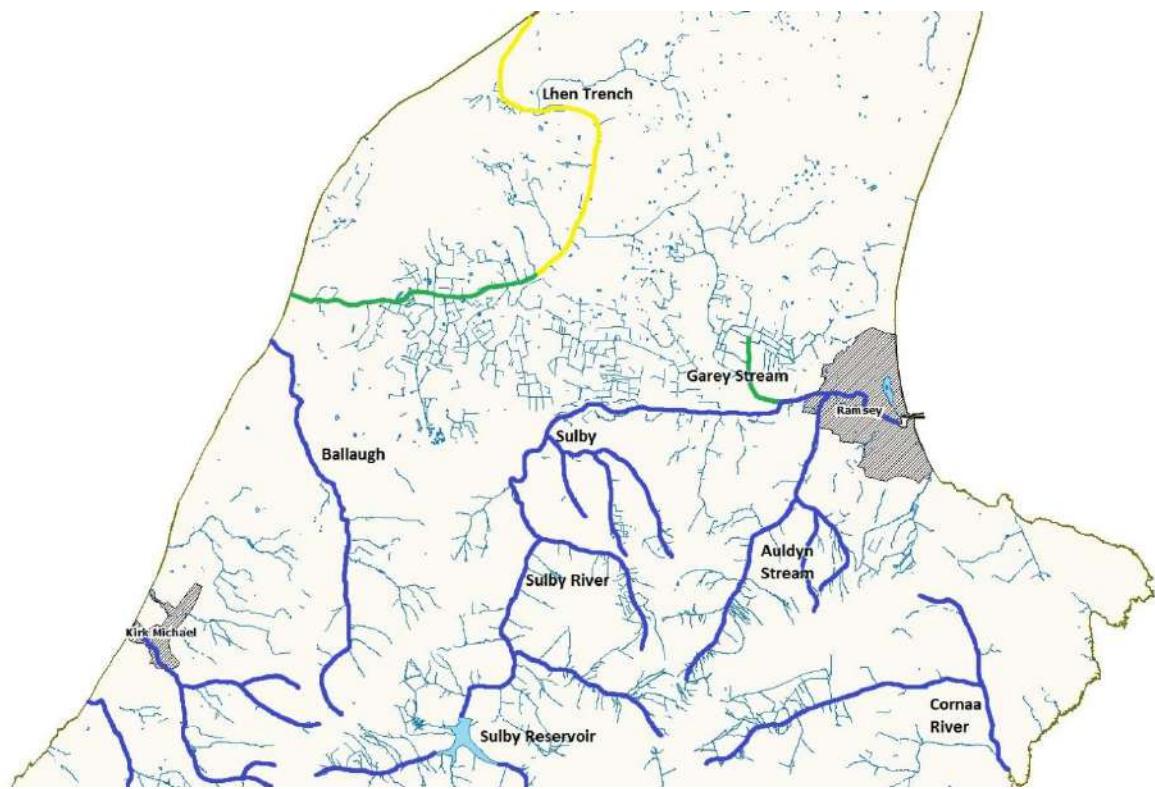
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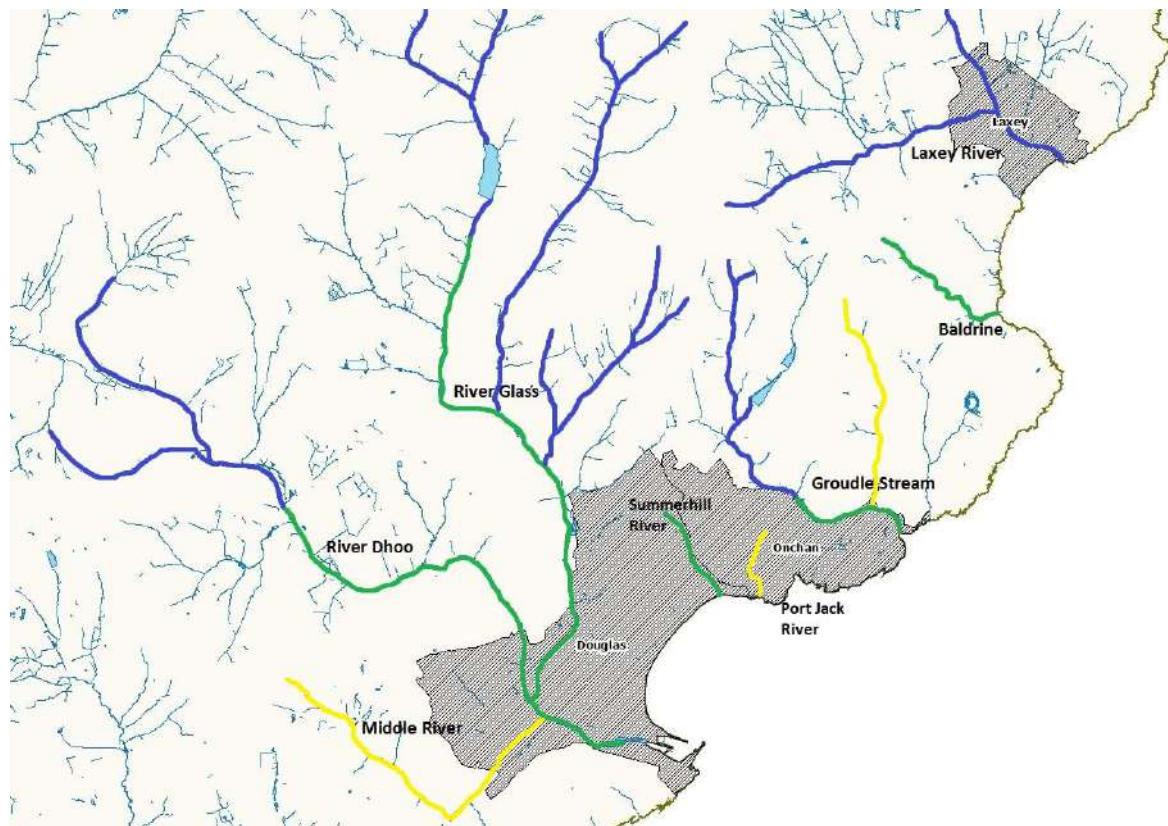
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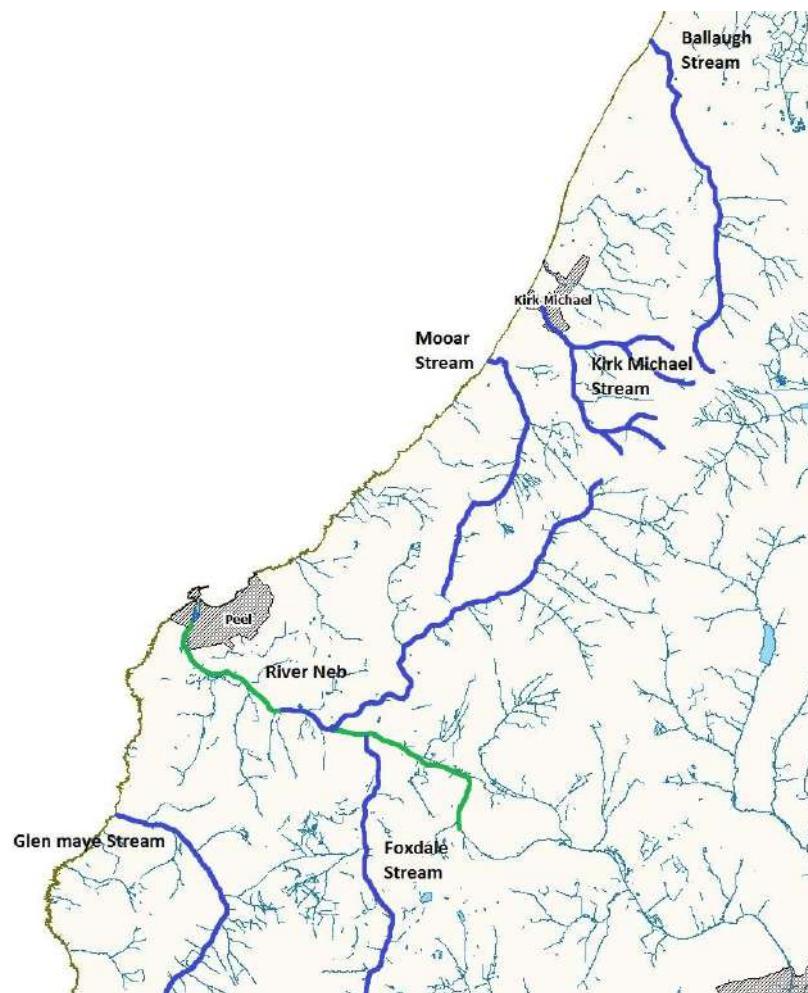
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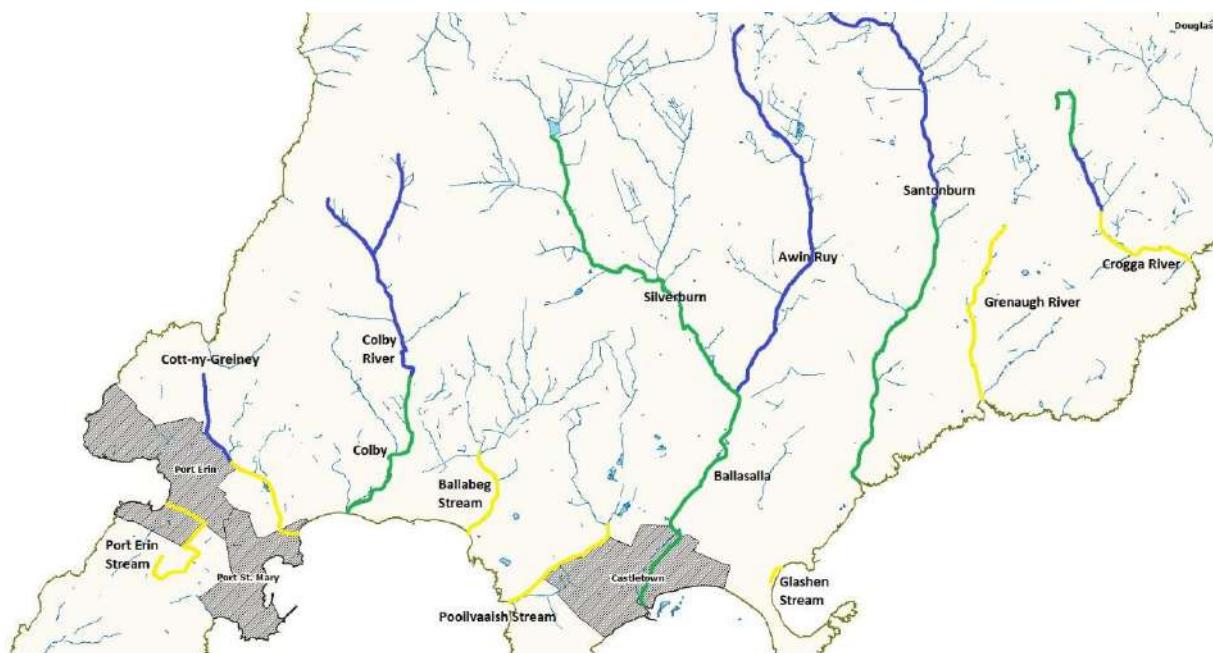
FIGURE 16. NITRATE ASSESSMENT FOR THE SOUTHERN REGION

9. Heavy Metal Assessment

The standards used to assess the heavy metal status of the islands watercourses are detailed in Section 4. The list of sites assessed for heavy metal concentrations are detailed in Appendix 2 including all of the RAW data detailed in Appendix 5.

Heavy metal sampling is only collected at specific sites which were determined by external consultants APEM Ltd who undertook a screening assessment as part of the development of the environmental quality standards detailed in the Water Pollution (Standards and Objectives) Scheme 2020. A **pass** or **fail** assessment is completed and Table 10 shows the percentage of the monitored sites achieving the EQS using data from 2020 – 2023.

TABLE 12. METAL CLASSIFICATION BY PERCENTAGE OF RIVERS PASSING OR FAILING

Classification	Dissolved Copper	Dissolved Manganese	Dissolved Nickel	Dissolved Zinc	Dissolved Iron	Dissolved Cadmium
Pass	100%	100%	100%	18%	94%	71%
Fail	0%	0%	0%	82%	6%	29%

For dissolved copper, manganese and nickel **100%** of the monitored sites **passed** the EQS detailed in scheme. Whereas for dissolved iron and cadmium, **94%** and **71%** of sites respectively passed the EQS.

The only exception is the dissolved zinc whereby **82%** of sites **failed/exceeded** the EQS. Due to the natural geology of the Isle of Man and historic minimum activity, zinc concentrations are expected to be high in specific catchments. All monitored locations exceeded the standard except for the Lhen Trench where agriculture is the main land use and no mining history. The highest concentrations of dissolved zinc were observed in the Laxey river and Foxdale catchments where this is known historic mining activity. Elevated concentrations of zinc can be toxic to aquatic species and has been found to bio-accumulate.

10. Additional Monitoring

The Environmental Protection Unit did not undertake any additional river monitoring projects during 2023 due to limited resources and budget constraints.

11. Pollution Investigations

The Environmental Protection Unit investigate river pollution incidents reported by members of the public or identified by officers. Throughout 2023 officers investigated 70 incidents across the Isle of Man. Some incidents required long term management plans by the land owners/operators and some could not be located or identified. Pollution reports increase during the summer months as more people are enjoying the outdoor environment and issues can sometimes be easier to see due to low river flow and increased air/water temperature.

There are various types of pollution incidents;

- Sediment
- Sewage
- Oil
- Agricultural
- Other

Some of the notable incidents relate to sediment pollution surrounding large developments across the Isle of Man. Sediment management during the construction phase of developments is very important especially where agricultural land has been stripped as the exposed sediment is easily mobilised during rainfall. Hay bales, sedimats and attenuation ponds are used to assist with the settlement of sediment to protect the downstream watercourse. Reducing the amount of sediment discharging downstream from developments is important especially during the winter as sediment can damage the spawning grounds for salmonids and juvenile fish. Year round protection of watercourses from sediment pollution is important to protect the invertebrates and salmonids.

Sewage pollution is also a regular pollution incident investigated by EPU officers. Sewage pollution tends to be observed more in the summer months when the flow rate of the receiving watercourse is lower, odour is greater and grey growth can be observed on the river bed/banks. Sewage pollution tends to be either an overflowing septic tank or an issue with a sewage treatment works. Both causes are easily resolved by the property owners arranging for them to be emptied through Manx Utilities or serviced by a mechanic. Immediate improvement will be observed with reduced/no odour and a reduction of grey growth on the riverbed or banks.

Oil pollution can originate from a variety of sources; vehicles, vessels, residential dwellings or machinery. If oil enters a watercourse EPU officers will investigate the source as stopping it is the priority. By stopping the source it will protect the downstream environment and officers can deploy absorbent booms or other equipment to clean up the pollution. Where heating oil has polluted the ground land owners are advised to contact their insurance companies so a land contamination assessment can be completed. This assessment will determine the spread of the pollutant and protect the surrounding properties/land.

Agricultural pollution tends to be identified through an increase in nutrients and/or Biochemical Oxygen Demand (BOD). Agricultural pollution can be very polluting to the freshwater environment and in certain circumstances can cause fish deaths. Slurry and milk are the two most polluting substances associated with agricultural sites and if discharged into a watercourse it can destroy the ecosystem.

EPU Officers have been working with the Department of Infrastructure (DOI) Harbours to assist with pollution reporting and investigations, which in turn will improve the out of hours pollution response for the Isle of Man. Most harbours have a river/stream discharging into them so by working together we can identify where the pollution originates from. DEFA and DOI are also going to increase the education for harbour users and members of the public on the types of pollution which should reduce the number of incidents.

EPU officers also work with colleagues at Manx Utilities to investigate sources of pollutants within residential areas which are discharged into rivers and streams through the surface water drainage. Cross connections tend to occur when extensions or alterations are made to

residential properties and the drainage is connected up to the wrong sewer. Dye testing can be undertaken to confirm a cross connection and arrangements can be made to fix the issue. Due to the complicated and large size of some of the surface water drainage networks it can be difficult to identify the source of a pollutant and may take multiple visits to fix the issue. Education letters are regularly sent to households to inform the public on the difference between the sewerage networks and how to protect the receiving environment from pollutants.

Water pollution incidents can be reported by calling 01624 685885 or by emailing environmentalprotection@gov.im. Information such as the location (What3Words), visual appearance and photos are useful when reporting an incident as it will assist officers prior to attending.

12. Discharge License Compliance Assessment
12.1 Overview

The licensing of discharges into the watercourses was introduced in 2005 under Section 5 of the Water Pollution Act 1993. Discharges which were occurring before licensing was introduced were issued with 'existing' licenses under the Act and include the discharge of septic tank effluent into watercourses. However, for all new discharges (since 2005) the discharge of septic tank effluent into a watercourse is not permitted and applicants need to install a sewage treatment works as the effluent is of a higher quality which protects the receiving waterbody.

The DEFA Discharge License Policy shown in Figure 17 has been created to minimise the volume of treated sewage effluent discharging into the islands rivers and streams which can dry out during periods of low rainfall. Prior to progressing a license application investigations must be undertaken to determine if a connection to mains sewerage infrastructure is possible or the use of a full soak-away which includes percolation tests. These measures reduce the number of discharges licensed to enter the watercourses which protects the water quality and ecosystem.
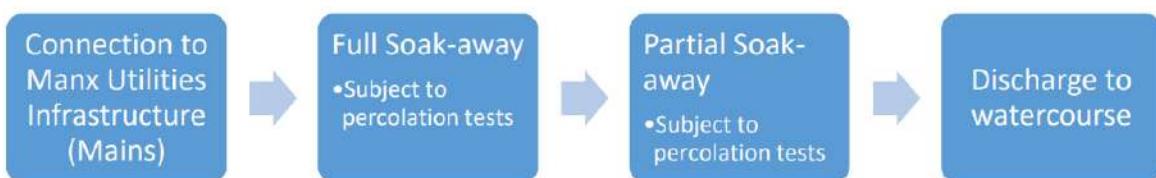
FIGURE 17. DISCHARGE LICENSE POLICY – FLOW DIAGRAM

12.2 2023 Discharge Licenses

In 2023 the Department issued twelve new discharge licenses of which six were for treated sewage effluent and six for site drainage from licensed waste disposal sites.

Five of the treated sewage effluent licenses included the use of a partial soak-away which protects the receiving watercourse during periods of low river flow during the summer months.

Previously conditions set for the discharge of water from waste disposal sites were included in their Waste Disposal License (WDL) however it did not include the additional conditions for fisheries protection and maintenance. As such the Department has removed the conditions within their WDL and have issued a discharge licenses to each site.

12.3 MU Discharge License Compliance

Manx Utilities have discharge licenses for all of their sewage treatment works that discharge into inland and coastal waters. For inland water, the discharge licenses contain maximum concentrations for Biochemical Oxygen Demand (BOD), ammonia, suspended solids and pH whereas for discharges into coastal waters the licenses only include BOD, suspended solids and pH only. This is due to the receiving environment, ammonia is less of a concern.

The number of samples collected of treated sewage effluent depends on the size of the sewage treatment works. In the discharge license a 99th percentile table details the number of failures accepted based off of the number of samples collected (Appendix 3).

For 2023, Manx Utilities complied with 72% of their treated sewage effluent discharge licenses taking into account the number of permitted individual water sample failures as mentioned above. Sewage treatment works with issues of non-compliance are primarily located inland where the ammonia limits are included in the licenses and the discharges enter rivers or streams.

Manx Utilities are working with the Department to review the discharge licenses for the inland sewage treatment works. Modelling has been undertaken and additional sampling upstream and downstream of the works will be required for a period of time to assess the impact on the receiving watercourse. If issues are identified the discharge consents will be reviewed with Manx Utilities to protect the receiving environment.

13. Conclusion

Overall the health of the Isle of Man's watercourses remains stable in comparison to previous assessments. 98% of the watercourses have achieved **Excellent** and **Good** chemical classification. 97% of watercourses achieved **Excellent** and **Good** phosphate classification.

Whereas for nitrate only 83% achieved **Excellent** and **Good** classification. 17% of sites achieved **Moderate** nitrate classification; these are mainly in the Southern, Northern and parts of the Eastern region. Further research into the source of the increased nitrate is required and through working with stakeholder's officer can advise with colleagues in Agriculture on how to reduce the concentration to protect the watercourse. As the percentage of sites achieving **Moderate** classification has remained the same for the past couple of assessments it would suggest the discharges are continual and not one off discharges.

By completing the biological assessment on the historic data using the new Isle of Man specific River Invertebrate Classification Tool (RICT) it will allow the health of the islands watercourses to be fully reviewed. The biological data will be compared alongside the chemical and nutrient data. EPU officers will also use the salmonid data collected by Inland Fisheries to assess the health of the islands watercourses and suggested areas for improvement.

Education for members of the public and land owners is important to improving the health of the islands watercourses. EPU officers are working with Manx Utilities, Agriculture and DOI Harbours to increase the amount of information available to the public about water pollution incidents, how to report them and how to ensure they don't occur.

14. Further Work

- Continue with the routine river water quality monitoring programme throughout 2024 to ensure the continuation of baseline data.
- Continue to investigate and resolve pollution incidents to protect the downstream environment.
- Identify areas of increased nitrate concentrations and work with landowners to reduce run off and protect the watercourse from eutrophication.
- Review the historic biological data using the newly created River Invertebrate Classification Tool (RICT) and create a summary report of the data.
- Increase the sampling of the Crogga River around the downstream Bushey's Brewery site during the summer of 2024 to identify the source of BOD, ammonia and phosphate which was observed in the 2022 and 2023 summer samples. Investigations undertaken in 2023 did not provide the additional information required to identify the source.
- Continue to work with colleagues in Manx Utilities and DOI Harbours to educate the public on pollutions and how to reduce the occurrence.
- Work with the agriculture directorate to reduce the nitrate concentration in areas of the Southern and Northern catchments through educating the landowners and working with stakeholders.
- Review the standards included in the Water Pollution (Standards and Objectives) Scheme 2020 ahead of it being in force on the 31st December 2025.

15. Appendices

15.1 Appendix 1 – List of all sampling sites

Site Code	River	Site Name	Biology	Water Sample Only
2001	Middle River	u/s River Douglas	Y	
2002	Middle River	Richmond Hill	Y	
2003	River Douglas	d/s Pulrose	Y	
2004	River Dhoo	u/s Quaterbridge		Y
2005	Middle River	u/s discharge		Y
2006	River Dhoo	Union Mills	Y	
2011	River Dhoo	d/s Greeba confluence	Y	
2013	River Glass	Quaterbridge		Y
2015	Sulby Stream	u/s River Glass		Y
2017	Baldwin River	u/s Glass Confluence		Y
2022	River Glass	d/s reservoir		Y
2023	River Glass	Injebreck	Y	
2026	River Dhoo	u/s Glen Vine Bridge		Y
2027	Greeba River	Creg-y-Whuallian		Y
2028	River Dhoo	d/s Archallagon		Y
2031	Middle River	Oakhill		Y
2101	Groudle River	Port Groudle	Y	
2102	Baroose Stream	u/s Footbridge		Y
2201	Baldrine Stream	Garwick Bay		Y
2211	Laxey River	Old Laxey	Y	
2213	Glen Roy Stream	u/s River Laxey	Y	
2216	Laxey River	u/s Glen Roy Confluence		Y
2218	Laxey River	u/s Mooar Confluence		Y
2311	Cornaa River	Port Cornaa	Y	
2315	Cornaa River	Ballaglass Glen		Y
2421	Glen Audlyn Stream	u/s Sulby confluence	Y	
2422	Fern Glen Stream	u/s Glen Auldyn Stream		Y
2423	Glen Audlyn Stream	Glen Auldyn Arm		Y
2424	Garey Stream	u/s Sulby Confluence		Y
2427	Sulby River	Garey Weir		Y
2428	Sulby River	Ellenbane	Y	
2429	Ballamenaugh Stream	u/s Sulby River		Y
2430	Sulby River	u/s Ballamenaugh Confluence		Y
2431	Ballakerka Stream	u/s Sulby Confluence		Y
2432	Sulby River	u/s Ballakerka Confluence	Y	
2433	Block Eary Stream	u/s Sulby Confluence		Y
2434	Sulby River	u/s Block Eary Confluence		Y
2435	Sulby River	d/s reservoir	Y	
2436	Sulby River	Druidale		Y
2438	Lhergyhenny Stream	u/s Reservoir		Y

ID	River/Stream	Location		
2511	Lhen Trench	Cronk-ny-bing		Y
2512	Lhen Trench	Kerrowmoar		Y
2513	Lhen Trench	Close-y-kewin		Y
2603	Ballaugh Stream	u/s Ballaugh Bridge	Y	
2634	Kirk Michael Stream	d/s Fish Farm Abstraction		Y
2651	Mooar Stream	u/s Ford		Y
2711	River Neb	d/s weir & Raggatt	Y	
2714	Foxdale Stream	u/s River Neb	Y	
2715	St John's Stream	u/s Foxdale Stream Confluence		Y
2718	Foxdale Stream	u/s St John's Stream Confluence		Y
2720	Foxdale Stream	Lower Foxdale		Y
2721	Foxdale Stream	u/s Foxdale		Y
2722	River Neb	u/s Foxdale Stream Confluence		Y
2725	River Neb	Glen Helen		Y
2726	River Neb	u/s Ballahra		Y
2728	River Neb	u/s Raggatt Landfill Site		Y
2801	Glen Maye Stream	d/s Glen Maye	Y	
2802	Glen Maye Stream	u/s Glen Maye		Y
3002	Colby River	Kentraugh		Y
3004	Colby River	Colby Glen	Y	
3021	Ballabeg Stream	Strandhall	Y	
3031	Polyvaaish Stream	u/s beach	Y	
3103	Awin Ruy	u/s Silverburn Confluence		Y
3105	Silverburn	u/s Awin Ruy Confluence		Y
3107	Awin Ruy	St Marks		Y
3111	Glashen Stream	Derbyhaven	Y	
3201	Santonburn	Ballawoods	Y	
3203	Santonburn	Ballalona	Y	
3205	Santonburn	Tosaby		Y
3231	Crogga River	Port Soderick	Y	
3233	Crogga River	d/s Bushey's Brewery		Y
3235	Crogga River	u/s Mount Murray		Y
3240	Port Erin Stream	Athol Park Glen		Y
3241	Cott-Ny-Greiney	Surby		Y
3242	Cott-Ny-Greiney	Gansey Mill		Y
3243	Grenaugh River	Port Grenaugh		Y
3244	Dhoon River	Dhoon Glen		Y
3245	Port Jack River	Port Jack Glen		Y
3246	Summerhill River	Summerhill Glen		Y
3301	River Glass	Tromode	Y	
3302	River Glass	Papermill	Y	
3303	Groudle River	Whitebridge	Y	
3304	Silverburn	Ballamodha	Y	
3305	Silverburn	Ronaldsway Halt	Y	
3306	Santonburn	Mullinaragher		Y
3307	River Neb	Tynwald Mills	Y	

15.2 Appendix 2 – List of sites for heavy metal assessment

Site Code	River	Site Name
2211	Laxey River	Old Laxey
2216	Laxey River	u/s Glen Roy Confluence
2218	Laxey River	u/s Mooar Confluence
2311	Cornaa River	Port Cornaa
2315	Cornaa River	Ballaglass Glen
2422	Fern Glen Stream	u/s Glen Auldyn Stream
2511	Lhen Trench	Cronk ny Bing
2512	Lhen Trench	Kerrowmoar
2513	Lhen Trench	Close y Kewin
2718	Foxdale Stream	u/s St Johns Confluence
2720	Foxdale Stream	Lower Foxdale
2721	Foxdale Stream	u/s Foxdale
2801	Glen Maye Stream	d/s Glen Maye
2802	Glen Maye Stream	u/s Glen Maye
3203	Santonburn	Ballalona
3205	Santonburn	Tosaby
3244	Dhoon River	Dhoon Glen

15.3 Appendix 3 – 95% Percentile Look up Table for Discharge Licenses

ANNEX 1

95% Percentiles Look Up Table

Series of samples taken in any year		Maximum number of samples for given determinand permitted to exceed limit
4-7		1
8-16		2
17-28		3
29-40		4
41-53		5
54-67		6
68-81		7
82-95		8
96-110		9
111-125		10
126-140		11
141-155		12
156-171		13
172-187		14
188-203		15
204-219		16
220-235		17
236-251		18
252-268		19
269-284		20
285-300		21
301-317		22
318-334		23
335-350		24
351-365		25

15.4 Appendix 4 – RAW River Water Quality Data

Site Code	Gov Lab Ref	Sampling Date	Sample Temperature (°c)	pH	Conductivity (µS/cm)	BOD (mg/L)	Dissolved O$_2$ (%)	Dissolved O$_2$ (mg/L)	Alkalinity HCO$_3$ (mg/L)	NH$_4$ (mg/L)	NO$_3$ (mg/L)	PO$_4$ (mg/L)
2001	2844	04/04/2019	8.8	6.97	285	2	100.00%	11.64	64.2	0.18	13.3	<0.07
2001	6856	07/08/2019	14.9	6.94	287	3	91.00%	9.19	69	0.063	10.2	<0.05
2001	10879	18/12/2019	8	7.17	257	<2	96.00%	11.43	57.2	0.153	11.3	<0.05
2002	2845	04/04/2019	8.5	7.05	253	3	101.00%	11.8	47.4	0.22	14.8	0.1
2002	7381	23/08/2019	14	7.44	238	<2	103.00%	10.57	47.8	0.112	11.9	0.06
2002	9894	14/11/2019	8.5	7.16	221	<2	83.20%	9.74	44.7	0.053	12.5	<0.05
2003	2843	04/04/2019	7.9	7.1	156	<2	103.00%	12.18	28.5	0.024	6.88	<0.07
2003	6855	07/08/2019	16.1	7.03	146	<2	94.00%	9.22	30.7	0.017	3.68	0.05
2003	10878	18/12/2019	6.4	7.22	141	<2	97.00%	11.9	25.1	0.024	7.38	<0.05
2004	5810	04/07/2019	15.8	6.59	228	<2	97.30%	9.65	51.3	0.023	11	0.3
2005	7382	23/08/2019	14.2	7.45	212	2	103.00%	10.59	42.7	0.176	10.5	0.07
2006	5237	19/06/2019	14.6	7.29	193	<2	95.00%	9.66	47.5	0.072	8.37	0.38
2007	3191	11/04/2019	8	7.03	278	<2	93.80%	11.12	55.7	0.463	15.6	<0.07
2007	10925	19/12/2019	8.8	7.6	244	<2	92.00%	10.68	50.2	0.155	11.1	0.05
2011	2524	27/03/2019	9.4	6.87	139	<2	98.00%	11.26	28.1	0.048	4.33	<0.07
2011	7584	30/08/2019	13.9	6.75	142	<2	98.00%	10.08	28.1	0.039	2.89	<0.05
2011	9892	14/11/2019	7.1	6.76	134	<2	77.80%	9.42	26	0.046	4.66	<0.05
2013	5809	04/07/2019	14.5	6.79	153	<2	94.00%	9.58	28.7	0.012	7.01	<0.07
2015	5814	04/07/2019	13.5	6.65	169	<2	94.20%	9.82	39.2	0.018	4.5	<0.07
2017	5812	04/07/2019	13.6	6.77	110	<2	92.00%	9.83	19.2	0.013	3.53	<0.07
2019	5813	04/07/2019	13.7	6.76	124	<2	95.70%	9.93	17.9	<0.010	8.74	<0.07
2022	5811	04/07/2019	12.3	6.97	69.5	<2	92.00%	9.85	5.26	0.073	1.13	<0.07
2023	2603	29/03/2019	7.7	6.49	68.8	<2	97.00%	11.58	3.11	0.037	0.85	<0.07
2023	7586	30/08/2019	12.8	6.58	62.2	<2	102.00%	10.76	4.82	0.01	0.43	<0.05

2023	10926	19/12/2019	7.5	6.45	60	<2	93.00%	11.13	6.4	<0.010	1.19	<0.05
2024	7686	04/09/2019	13.6	7.2	105	<2	96.10%	9.99	16.2	<0.010	5.23	<0.05
2026	2525	27/03/2019	9.7	6.84	148	3	101.00%	11.51	28.9	0.134	5.2	<0.07
2026	7585	30/08/2019	14	6.91	150	<2	98.00%	10.07	30.1	0.145	3.99	0.07
2026	9893	14/11/2019	7.4	6.85	142	<2	80.30%	9.66	26.9	0.067	5.86	<0.05
2027	7055	14/08/2019	13.6	7.34	95.9	<2	90.00%	9.34	13.2	0.038	1.52	<0.05
2028	5236	19/06/2019	11.4	7.57	140	<2	92.00%	10.06	3.47	0.012	0.2	<0.07
2029	2841	04/04/2019	7.3	7.16	127	<2	98.00%	11.82	18.8	0.017	6.37	<0.07
2029	6854	07/08/2019	15.3	7.18	105	<2	92.00%	9.24	17.4	0.01	2.82	<0.05
2029	10877	18/12/2019	6.4	7.23	117	<2	97.00%	11.91	18.5	0.018	6.77	<0.05
2030	2840	04/04/2019	6.7	7.14	125	<2	96.00%	11.79	19.6	0.016	6.29	<0.07
2030	6853	07/08/2019	15.1	7.18	105	<2	91.00%	9.19	18.9	0.012	2.81	<0.05
2030	10876	18/12/2019	6.2	7.21	116	<2	95.00%	11.76	18.2	0.017	6.77	<0.05
2031	7056	14/08/2019	14.3	7.05	232	3	94.00%	9.58	54	0.422	9.06	0.15
2101	2604	29/03/2019	9	7.05	187	<2	99.40%	11.49	31.8	0.065	7.77	<0.07
2101	6043	11/07/2019	14.2	7.24	249	<2	94.40%	9.69	45.6	0.087	7.9	0.07
2101	10880	18/12/2019	6.4	7.52	174	<2	96.00%	11.85	33.3	0.012	6.95	<0.05
2102	6044	11/07/2019	13.8	7.34	226	<2	97.30%	10.07	49.4	0.013	9.58	0.06
2103	2842	04/04/2019	8.1	7.11	155	<2	101.00%	11.89	28.7	0.016	4.33	<0.07
2103	6045	11/07/2019	14	7.4	193	<2	97.10%	10	42.1	0.017	6.55	0.06
2103	10881	18/12/2019	6.5	7.28	158	7	97.00%	11.87	29	0.016	4.86	<0.05
2104	7054	14/08/2019	13.4	7.31	107	<2	92.00%	9.62	26.2	0.026	1.99	<0.05
2201	5054	14/06/2019	10.7	7.58	189	<2	97.00%	10.78	41.3	0.016	7.66	<0.07
2211	5055	14/06/2019	11.4	7.81	77.3	<2	97.00%	10.54	10.9	0.012	1.51	<0.07
2213	5057	14/06/2019	10.4	7.64	79.4	<2	96.00%	10.74	11	<0.010	1.5	<0.07
2216	5056	14/06/2019	11.3	7.77	69.1	<2	96.00%	10.55	7.73	0.017	1.32	<0.07
2218	5058	14/06/2019	11.3	7.72	61.1	<2	96.00%	10.52	4.37	0.012	1.21	<0.07
2311	5059	14/06/2019	10.8	7.62	75.1	<2	95.00%	10.56	8.29	0.031	1.83	<0.07
2315	5060	14/06/2019	10.2	7.69	59.6	<2	95.00%	10.73	4.93	0.024	1.12	<0.07
2421	2575	28/03/2019	8.2	6.35	86.6	<2	98.00%	11.55	6.1	<0.010	1.58	<0.07

2421	7587	30/08/2019	15.3	6.69	79.6	<2	108.00%	10.82	6.94	0.012	0.94	<0.05
2421	10446	04/12/2019	7.7	6.56	79.9	<2	92.80%	11.1	8.19	0.012	1.98	<0.05
2422	5309	20/06/2019	11	7.75	79.4	<2	90.00%	9.98	4.26	<0.010	0.87	<0.07
2423	5308	20/06/2019	11.9	7.85	64	<2	91.00%	9.82	5.6	<0.010	0.46	<0.07
2424	5311	20/06/2019	13.6	7.1	430	<2	79.00%	8.26	154	0.138	6.6	<0.07
2427	5310	20/06/2019	13.3	7.66	75.4	<2	96.00%	9.99	7	0.019	1.44	<0.07
2428	2574	28/03/2019	7.9	6.35	81.8	<2	96.80%	11.5	7.59	<0.010	2.41	<0.07
2428	7582	30/08/2019	14.4	6.74	76.4	<2	102.00%	10.46	9.74	0.019	1.33	<0.05
2428	10447	04/12/2019	7.5	6.57	70.7	<2	91.20%	10.9	7.97	<0.010	2.07	<0.05
2429	5312	20/06/2019	12.9	7.57	105	<2	93.00%	9.86	15	0.013	5.19	<0.07
2430	5313	20/06/2019	13.9	7.74	69	<2	97.00%	10.02	4.93	<0.010	0.95	<0.07
2431	5314	20/06/2019	12.1	7.69	78.2	<2	94.00%	10.06	6.05	<0.010	1.18	<0.07
2432	5315	20/06/2019	13.8	7.72	67.2	<2	96.00%	9.98	4.7	0.014	0.87	<0.07
2433	5317	20/06/2019	12.8	7.68	60.7	<2	93.00%	9.89	4.14	<0.010	1.13	<0.07
2434	5316	20/06/2019	13.3	7.61	81.2	<2	96.00%	10.03	6.05	<0.010	1	<0.07
2435	2573	28/03/2019	7.2	6.36	82.3	<2	93.30%	11.28	5.98	<0.010	1.13	<0.07
2435	7583	30/08/2019	14.1	6.37	76.6	<2	101.00%	10.43	6.05	0.067	0.49	<0.05
2435	10448	04/12/2019	7.1	6.27	74.3	<2	91.90%	11.1	7.41	0.046	0.72	<0.05
2436	5808	04/07/2019	15.7	7.36	69.4	<2	95.70%	9.5	11.2	<0.010	0.13	<0.07
2438	7684	04/09/2019	11.7	5.99	54.1	<2	89.10%	9.67	3.58	0.012	<0.05	<0.05
2511	7049	14/08/2019	13.7	6.98	510	<2	83.00%	8.62	146	0.039	14	<0.05
2512	7050	14/08/2019	14	7.01	447	2	75.00%	7.71	125	0.042	10.7	<0.05
2513	7051	14/08/2019	14	7.03	401	2	78.00%	8.07	110	0.126	3.85	<0.05
2603	5307	20/06/2019	11.7	7.76	104	<2	90.00%	9.74	9.63	0.023	2.76	<0.07
2634	5306	20/06/2019	12.3	7.66	131	<2	89.00%	9.54	29.3	<0.010	2.24	<0.07
2651	5305	20/06/2019	12.1	7.57	178	<2	89.00%	9.58	42.8	0.018	3.88	<0.07
2711	473	17/01/2019	5.5	6.73	200	<2	92.00%	11.67	43	0.045	7.28	<0.07
2711	2521	27/03/2019	8.4	6.75	179	<2	99.00%	11.56	38.9	0.069	6.6	<0.07
2711	6231	17/07/2019	14.7	7.27	270	<2	94.50%	9.59	68.4	0.066	7.86	0.08
2711	10477	05/12/2019	7.9	7.52	176	<2	88.90%	10.56	38.5	0.046	6.72	<0.05

2714	471	17/01/2019	5.6	6.7	189	<2	91.00%	11.44	36.6	0.271	7.39	0.21
2714	2522	27/03/2019	8.7	6.83	167	<2	102.00%	11.83	30	0.02	5.58	<0.07
2714	6232	17/07/2019	14.4	7.37	233	2	92.50%	9.44	51.5	0.444	9.94	0.47
2714	10478	05/12/2019	7.9	7.43	165	<2	89.10%	10.58	32	0.057	6.12	0.06
2715	5231	19/06/2019	11.8	7.59	208	<2	89.00%	9.68	55	0.035	6.81	<0.07
2718	5230	19/06/2019	12.7	7.85	167	<2	93.00%	9.83	30.5	0.016	2.07	<0.07
2720	5232	19/06/2019	12.4	7.63	187	<2	93.00%	9.97	34.4	0.035	1.38	<0.07
2721	5235	19/06/2019	11.7	7.83	112	<2	94.00%	10.22	6.94	0.014	0.87	<0.07
2722	472	17/01/2019	5.4	6.88	120	<2	90.00%	11.44	16.6	0.02	3.64	<0.07
2722	6233	17/07/2019	14.5	7.45	127	<2	92.90%	9.47	24.9	<0.010	2.35	<0.07
2725	2523	27/03/2019	8	7.07	90.8	<2	100.00%	11.81	10.2	0.017	2.76	<0.07
2725	6234	17/07/2019	14.5	7.61	87.3	<2	95.30%	9.71	12.1	0.016	0.98	<0.07
2725	10475	05/12/2019	7.3	6.87	127	<2	85.90%	10.35	9.41	<0.010	3.3	<0.05
2726	5229	19/06/2019	12.2	7.97	150	<2	90.00%	9.63	29.1	0.159	4.39	0.11
2728		19/06/2019	12.4	7.83	212	<2	92.00%	9.8	55.1	0.029	6.04	<0.07
2801	5233	19/06/2019	12.7	7.76	137	<2	94.00%	10	19.3	0.01	2.03	<0.07
2802	5234	19/06/2019	14.4	7.83	116	<2	95.00%	9.75	13	<0.010	0.74	<0.07
3002	5967	10/07/2019	16.6	7.82	268	<2	101.00%	9.83	62	0.031	6.75	<0.07
3004	3091	10/04/2019	10.1	7.7	193	<2	100.00%	11.26	24.9	<0.010	5.96	<0.07
3004	5971	10/07/2019	14.3	7.98	185	<2	95.20%	9.74	26.2	0.013	3.6	<0.07
3004	10479	05/12/2019	7.9	7.49	182	<2	90.60%	10.76	22.1	<0.010	6.51	<0.05
3021	3088	10/04/2019	7.3	7.43	439	<2	87.00%	10.5	140	0.03	18.3	<0.07
3021	5964	10/07/2019	14.8	7.03	499	2	90.10%	9.12	181	0.078	12	0.14
3021	10476	05/12/2019	8.4	7.66	447	2	88.90%	10.43	141	0.085	17.7	0.1
3031	3090	10/04/2019	10.7	7.7	662	4	113.00%	12.58	271	<0.010	15	<0.07
3031	5966	10/07/2019	15.4	7.49	678	4	89.80%	8.97	274	0.104	5.76	0.1
3031	10677	12/12/2019	6.9	7.71	636	3	82.70%	10.07	266	0.316	13.4	0.19
3101	3192	11/04/2019	9.2	7.09	263	<2	101.00%	11.6	68.7	<0.010	9.3	<0.07
3101	6852	07/08/2019	15.2	7	200	<2	91.00%	9.11	50.7	<0.010	3.25	<0.05
3101	10923	19/12/2019	7.9	7.68	248	<2	90.00%	10.74	63.5	0.023	8.34	<0.05

3103	7552	29/08/2019	13.5	7.59	218	<2	98.30%	10.24	47.3	0.011	7.8	<0.05
3105	7553	29/08/2019	12.8	7.54	178	<2	98.20%	10.39	26.5	<0.010	6.21	<0.05
3107	7551	29/08/2019	14.5	7.13	163	<2	101.00%	10.25	24.5	0.018	3.76	<0.05
3108	7554	29/08/2019	14.8	6.21	139	<2	101.00%	10.2	6.38	<0.010	1.83	<0.05
3111	3089	10/04/2019	10.2	7.55	637	2	96.00%	10.76	225	0.028	15.6	<0.07
3111	5965	10/07/2019	13.2	7.41	569	<2	88.20%	9.25	218	0.074	9.65	0.18
3111	10676	12/12/2019	8.6	7.8	553	<2	87.60%	10.2	219	0.099	10.97	0.18
3201	3193	11/04/2019	9.1	7.17	223	<2	102.00%	11.7	53.2	<0.010	8.58	<0.07
3201	7685	04/09/2019	13.4	7.63	218	<2	93.50%	9.76	55.8	0.014	5.93	<0.05
3201	10924	19/12/2019	7.7	7.69	214	<2	90.00%	10.7	48.2	0.023	8.85	<0.05
3203	7554	29/08/2019	13	7.61	235	<2	98.90%	10.41	50	0.147	7.43	<0.05
3205	7556	29/08/2019	14.1	7.44	203	<2	100.00%	10.27	45.8	0.022	1.38	<0.05
3231	2578	28/03/2019	10.2	7.02	253	<2	104.00%	11.66	43.5	<0.010	14.9	<0.07
3231	7378	23/08/2019	14.5	7.6	232	<2	102.00%	10.41	47.6	0.016	9.8	<0.05
3231	9053	16/10/2019	11.5	7.45	239	<2	97.80%	10.66	44.9	0.056	12.9	<0.05
3233	2577	28/03/2019	10.4	6.79	187	2	102.00%	11.43	33.4	<0.010	5.19	<0.07
3233	7379	23/08/2019	15.1	7.58	177	3	103.00%	10.32	38	0.048	4.81	<0.05
3233	9052	16/10/2019	11.2	7.39	174	<2	95.00%	10.43	38.1	0.079	5.04	<0.05
3235	2576	28/03/2019	10.7	6.54	162	<2	102.00%	11.33	24.5	<0.010	7.49	<0.07
3235	7380	23/08/2019	13.3	6.75	167	<2	98.80%	10.33	25.9	<0.010	6.58	<0.05
3235	9051	16/10/2019	11.4	6.82	160	<2	91.10%	9.95	26.7	0.059	6.86	<0.05
3240	5969	10/07/2019	15.5	7.59	465	4	91.60%	9.13	139	0.023	13.1	<0.07
3241	5970	10/07/2019	15.6	7.76	356	<2	95.20%	9.47	81.8	0.027	1.03	0.14
3242	5968	10/07/2019	13.5	7.56	564	<2	92.80%	9.67	180	0.05	13.6	<0.07
3243	5972	10/07/2019	15	7.66	350	<2	95.70%	9.65	106	0.014	14.3	<0.07
3244	7052	14/08/2019	13.2	7.49	60.2	<2	91.00%	9.52	8.96	0.017	0.48	<0.05
3245	6046	11/07/2019	17.4	7.61	322	<2	105.00%	10.05	70.9	0.051	15.2	0.07
3246	7053	14/08/2019	14.4	7.13	191	<2	93.00%	9.52	56.3	0.021	5.11	0.05
2001	5563	29/07/2020	12.7	7.39	254	2	100.00%	10.61	54.7	0.051	9.11	<0.05
2001	9398	26/11/2020	9.7	6.74	270	<2	95.00%	10.85	63.8	0.186	10.2	<0.05

2002	5265	17/07/2020	13.3	7.55	268	<2	95.40%	9.98	55.2	0.022	10.7	0.12
2002	8846	06/11/2020	10.8	7	226	<2	99.00%	10.92	43.5	0.04	11.2	<0.05
2003	5562	29/07/2020	13.1	7.16	116	<2	102.00%	10.72	17.6	0.02	3.12	<0.05
2003	9399	26/11/2020	9	6.97	127	<2	98.00%	11.3	21.4	0.016	6.31	<0.05
2004	4785	02/07/2020	14.1	7.27	232	2	96.10%	9.88	49.9	0.059	7.62	0.13
2005	5266	17/07/2020	13.5	7.55	242	<2	95.30%	9.93	52.8	0.027	9.87	0.15
2006	5561	29/07/2020	12.7	7.06	168	<2	99.00%	10.49	32.6	0.069	5.76	0.09
2006	8323	22/10/2020	10.4	6.89	167	<2	90.00%	10.08	40.1	0.032	6.17	<0.05
2011	5560	29/07/2020	12	6.71	129	<2	94.00%	10.15	18.8	0.12	2.23	<0.05
2011	9395	26/11/2020	9	6.82	139	<2	91.00%	10.51	26.9	0.071	3.83	<0.05
2013	4784	02/07/2020	13.3	7.5	140	<2	97.70%	10.2	25.8	0.029	4.42	<0.05
2015	4790	02/07/2020	13.1	7.47	159	<2	96.90%	10.2	34.5	<0.010	2.98	<0.05
2017	4788	02/07/2020	12.9	7.03	97.6	<2	99.00%	10.5	11.4	<0.010	1.12	<0.05
2019	4789	02/07/2020	13	7.47	159	<2	99.90%	10.5	15.3	<0.010	5.77	<0.05
2022	4787	02/07/2020	13.2	6.51	73.6	<2	94.60%	9.93	6.39	0.099	0.7	<0.05
2023	4786	02/07/2020	13.3	6.65	75.6	<2	99.00%	10.4	3.36	<0.010	0.49	<0.05
2023	8324	22/10/2020	9.5	7.22	57.9	<2	92.00%	10.54	4.19	0.01	0.41	<0.05
2026	5231	16/07/2020	14.2	7.08	162	4	90.60%	9.29	31.4	0.372	6.13	0.32
2027	5232	16/07/2020	13.7	6.88	128	2	86.50%	8.97	25.8	0.071	1.27	<0.05
2027	8322	22/10/2020	10.2	6.55	124	<2	82.00%	9.19	21.3	0.029	1.89	<0.05
2028	5263	17/07/2020	12.4	5.86	149	<2	92.40%	9.87	2.58	0.047	0.15	<0.05
2028	8101	16/10/2020	9.4	5.37	147	<2	97.00%	11.12	2.04	0.011	0.84	<0.05
2030	8325	22/10/2020	10.1	7.01	106	<2	93.00%	10.52	16.2	<0.010	4.54	<0.05
2031	5264	17/07/2020	13.5	7.56	291	2	96.00%	10	63.4	0.196	11.8	0.09
2101	4782	02/07/2020	12.3	7.59	223	<2	94.00%	10.1	45.9	0.079	6.6	0.1
2101	9397	26/11/2020	8.4	6.83	176	<2	95.00%	11.2	33.7	0.015	6.02	<0.05
2102	4781	02/07/2020	12.1	7.78	225	<2	94.60%	10.2	44.9	0.01	7.19	0.07
2103		10/01/2020	6.7	7.24	155	<2	92.00%	11.32	31.3	0.021	4.83	<0.05
2201	5026	10/07/2020	12.1	7.03	180	<2	97.50%	10.48	33.4	<0.010	6.59	<0.05
2211	5022	10/07/2020	12.8	6.99	90.5	<2	95.70%	10.12	12.6	<0.010	1.92	<0.05

2211	8930	10/11/2020	10.5	6.67	96.2	<2	94.90%	10.59	16.4	0.03	3.41	<0.05
2213	5023	10/07/2020	12.1	7.07	88	<2	96.90%	10.42	11.2	<0.010	1.48	<0.05
2213	8931	10/11/2020	10.5	6.69	97.1	<2	94.90%	10.59	16.3	0.03	3.34	<0.05
2216	5024	10/07/2020	12.7	7.03	84.1	<2	97.90%	10.38	11.7	<0.010	2.1	<0.05
2218	5025	10/07/2020	12.4	6.86	74.2	<2	97.90%	10.45	7.29	0.011	2.08	<0.05
2311	5020	10/07/2020	12	6.78	80.5	<2	93.50%	10.07	8.3	0.049	1.66	0.05
2311	8933	10/11/2020	10.8	6.72	100	<2	96.50%	10.69	14.8	0.054	3.33	<0.05
2315	5019	10/07/2020	11.2	6.73	67.9	<2	91.90%	10.09	5.27	<0.010	0.74	<0.05
2421	5775	05/08/2020	14.3	6.74	67.8	<2	98.00%	10.02	6.17	<0.010	0.56	<0.05
2421	8934	10/11/2020	10.7	6.81	81.3	<2	96.00%	10.66	5.67	0.032	1.72	<0.05
2422	5774	05/08/2020	13.7	6.73	77	<2	96.00%	9.99	5.94	<0.010	0.62	<0.05
2423	5773	05/08/2020	14.1	6.78	62.3	<2	97.00%	9.93	6.17	<0.010	0.4	<0.05
2423	8280	21/10/2020	11	7.14	58.7	<2	91.00%	10.08	3.29	0.01	0.53	<0.05
2424	5777	05/08/2020	14.9	7.83	417	2	83.00%	8.34	159	0.091	6.7	<0.05
2427	5776	05/08/2020	15.5	6.73	75.1	<2	100.00%	9.94	7.96	<0.010	1.01	<0.05
2428	6118	14/08/2020	14.8	6.43	68.1	<2	101.00%	10.2	11.4	0.021	0.79	<0.05
2428	8935	10/11/2020	10.3	6.83	68	<2	97.40%	10.92	6.91	0.038	1.39	<0.05
2429	5779	05/08/2020	14.5	7.41	103.1	<2	98.00%	9.94	15.4	<0.010	3.48	<0.05
2430	5780	05/08/2020	15.2	7.44	68.6	<2	99.00%	9.97	7.29	<0.010	0.65	<0.05
2431	6117	14/08/2020	14.3	6.38	69.9	<2	98.80%	10.1	11.8	<0.010	0.37	<0.05
2432	6116	14/08/2020	14.8	6.39	62.2	<2	101.00%	10.2	10.8	0.028	0.47	<0.05
2432	8937	10/11/2020	10	7.08	57.5	<2	106.00%	10.86	4.87	0.057	0.65	<0.05
2433	5782	05/08/2020	14.5	6.01	48.5	<2	98.00%	9.98	5.72	<0.010	0.19	<0.05
2434	5781	05/08/2020	15	7.26	67.8	<2	99.00%	9.93	6.17	0.022	0.59	<0.05
2435	6115	14/08/2020	14.1	6.18	123	<2	98.80%	10.2	11	0.048	0.49	<0.05
2435	8938	10/11/2020	9.8	6.82	73.9	<2	95.60%	10.84	5.55	0.058	0.59	<0.05
2436	5668	31/07/2020	12.6	6.35	53.3	<2	89.00%	9.46	4.48	<0.010	0.09	<0.05
2436	8281	21/10/2020	10.5	7.14	53.3	<2	92.00%	10.25	4.53	0.011	0.16	<0.05
2438	5783	05/08/2020	13.3	5.64	48.5	<2	88.00%	9.19	4.26	<0.010	0.05	<0.05
2511	5669	31/07/2020	13.4	7.7	500	<2	74.00%	7.76	180	0.029	20.8	<0.05

2512	5670	31/07/2020	14.1	7.46	432	<2	76.00%	7.79	151	0.028	15	<0.05
2512	8936	10/11/2020	11.6	6.74	404	<2	77.80%	8.46	13.2	0.254	10	<0.05
2513	5778	05/08/2020	15.5	7.52	359	2	76.00%	7.61	125	0.108	4.91	<0.05
2603	4987	09/07/2020	12.5	7.27	102	<2	99.60%	10.6	9.42	0.026	1.22	<0.05
2603	8279	21/10/2020	10.7	7.1	108	<2	91.00%	10.06	10.2	0.01	3.83	<0.05
2634	4986	09/07/2020	12.8	7.63	165	<2	96.60%	10.22	44.4	0.014	2.09	<0.05
2651	4985	09/07/2020	12.6	7.67	182	<2	99.00%	10.52	39.8	0.025	3.13	<0.05
2651	8278	21/10/2020	11	6.99	154	<2	90.00%	9.94	33.1	0.016	3.12	<0.05
2711	4984	09/07/2020	12.7	7.45	144	2	98.70%	10.46	30.6	0.041	2.62	<0.05
2711	8093	16/10/2020	8.9	6.93	169	<2	96.00%	11.18	37.5	0.012	5.06	<0.05
2714	4980	09/07/2020	12.5	7.28	153	2	96.50%	10.28	26	0.148	3.59	0.1
2714	9392	26/11/2020	8.7	6.77	159	<2	93.00%	10.89	30.6	0.116	4.68	<0.05
2715	4978	09/07/2020	11.9	7.4	206	<2	93.60%	10.11	50	0.029	3.96	<0.05
2718	4979	09/07/2020	12.2	7.34	132	2	98.50%	10.57	18.1	0.031	1.15	<0.05
2718	8092	16/10/2020	8.6	6.82	151	<2	95.00%	11.08	29.4	<0.010	2.63	<0.05
2720	4977	07/09/2020	11.5	7.16	147	<2	97.80%	10.66	19.5	0.017	0.81	<0.05
2721	4976	09/07/2020	11	6.46	110	4	95.60%	10.54	6.28	0.014	0.47	<0.05
2721	8095	16/10/2020	8.4	6.92	115	<2	94.00%	11.08	7.03	<0.010	1.11	<0.05
2722	4981	09/07/2020	12.1	7.07	87.2	<2	95.50%	10.27	9.87	0.019	0.58	<0.05
2725	4988	09/07/2020	11.6	7.04	79.9	<2	97.70%	10.61	5.38	0.02	0.25	<0.05
2725	8094	16/10/2020	8.2	7.14	93.2	<2	94.00%	11.08	11.2	<0.010	2.65	<0.05
2726	4982	09/07/2020	12.7	7.28	115	2	99.30%	10.52	16.8	0.068	1.64	<0.05
2728	4983	09/07/2020	12.9	7.54	144	2	99.80%	10.54	30.3	0.035	2.55	<0.05
2801	5558	29/07/2020	11.7	6.78	128	<2	100.00%	10.89	12.2	<0.010	1.91	<0.05
2801	9393	26/11/2020	8.6	6.9	135	<2	95.00%	11.11	16	<0.010	2.81	<0.05
2802	5559	29/07/2020	11.9	6.83	120	<2	101.00%	10.88	7.85	<0.010	1.58	<0.05
2802	8096	16/10/2020	8.9	6.96	125	<2	95.00%	10.98	9.52	<0.010	1.53	<0.05
3002	5230	16/07/2020	14.4	7.6	2.91	<2	101.00%	10.3	66.6	0.026	7.48	<0.05
3004	6013	12/08/2020	15.3	7.49	175	<2	92.60%	9.27	26.2	<0.010	2.75	<0.05
3004	8097	16/10/2020	10	6.94	189	<2	98.00%	11.09	23	<0.010	5.35	<0.05

3021	6014	12/08/2020	17.6	7.67	467	<2	93.30%	8.9	180	0.041	7.02	0.3
3021	8053	15/10/2020	10.6	7.58	413	<2	92.00%	10.23	136	0.101	10.5	0.13
3031	6015	12/08/2020	19.3	7.7	691	<2	89.80%	8.28	308	0.047	3.6	0.22
3031	8054	15/10/2020	10.6	7.58	670	<2	89.00%	9.92	295	0.065	10.9	0.09
3103	5223	16/07/2020	13.8	7.58	220	<2	98.60%	10.2	54.8	0.023	3.75	<0.05
3105	5224	16/07/2020	13.8	7.61	219	2	98.70%	10.2	48.4	0.032	4.97	<0.05
3107	5221	16/07/2020	14	7.17	167	2	97.90%	10.1	26.1	0.029	1.22	<0.05
3107	8277	21/10/2020	10.7	6.97	151	<2	88.00%	9.79	25.3	0.028	2.87	<0.05
3111	6016	12/08/2020	14.7	7.76	681	<2	91.90%	9.32	249	0.081	9.76	<0.05
3111	8052	15/10/2020	11.4	7.4	610	<2	9.00%	10.01	241	0.059	10.3	0.06
3201	6121	14/08/2020	16.3	7.37	211	<2	103.00%	10.1	54.6	<0.010	5.81	<0.05
3201	8326	22/10/2020	10.2	7.35	213	<2	93.00%	10.5	48.3	0.018	7.09	<0.05
3203	6018	12/08/2020	16.5	7.94	203	<2	97.20%	9.48	51.5	0.021	5.46	<0.05
3203	8055	15/10/2020	10.3	8.05	206	<2	96.00%	10.76	48.3	0.017	7.35	<0.05
3205	5220	16/07/2020	13.1	7.39	203	2	95.10%	9.99	48.9	0.019	0.94	<0.05
3205	8100	16/10/2020	10.6	7.06	201	<2	97.00%	10.85	43.6	0.046	2.01	<0.05
3231	6012	12/08/2020	15.9	7.4	248	<2	92.80%	9.18	53.8	0.013	10.4	<0.05
3233	5229	16/07/2020	15.9	7.61	222	6	92.50%	9.15	62.8	0.02	1.5	0.46
3233	8056	15/10/2020	10.6	7.79	238	<2	97.00%	10.82	47.3	0.02	10.7	<0.05
3235	5230	16/07/2020	13	7.65	180	<2	96.10%	10.1	30.3	0.013	6.24	<0.05
3240	5226	16/07/2020	14.5	7.5	455	<2	97.00%	9.89	137	0.019	14.1	0.1
3241	5225	16/07/2020	14.4	7.83	355	2	99.10%	10.1	83.4	0.025	0.69	0.15
3242	5227	16/07/2020	13.7	8.03	545	2	98.70%	10.2	181	0.053	14.1	<0.05
3243	5027	10/07/2020	13	7.82	330	<2	96.90%	10.2	89.5	<0.010	9.41	0.09
3244	5021	10/07/2020	11.1	6.93	101	<2	93.60%	10.29	13.7	<0.010	0.81	<0.05
3244	8932	10/11/2020	10.3	6.74	93.2	<2	93.80%	10.51	14.6	0.02	1.3	<0.05
3245	4780	02/07/2020	14.6	7.8	335	<2	100.00%	10.2	73.3	0.05	17.8	<0.05
3246	4779	02/07/2020	12.2	7.66	299	2	93.80%	10.1	70	<0.010	8.74	0.06
3301	6119	14/08/2020	15.7	6.51	96.9	<2	101.00%	10	17.3	0.013	3.12	<0.05
3301	8939	10/11/2020	11.1	6.72	124	<2	97.90%	10.77	19.5	0.026	6.78	<0.05

3302	6120	14/08/2020	16.4	6.64	90.7	<2	102.00%	10	14.4	0.014	4.05	<0.05
3302	9396	26/11/2020	8.9	6.88	108	<2	95.00%	10.97	12.4	0.012	8.35	<0.05
3303	4783	02/07/2020	12.2	7.46	195	<2	94.60%	10.2	41.3	0.018	5.76	<0.05
3303	8845	06/11/2020	9.9	7.08	147	<2	98.00%	11.07	26.6	0.024	3.29	<0.05
3304	6019	12/08/2020	17.2	7.98	162	<2	95.40%	9.18	27.13	0.011	4.69	<0.05
3304	8050	15/10/2020	9.5	7.32	179	<2	95.00%	10.81	29.7	0.021	6.48	<0.05
3305	6017	12/08/2020	17.6	8.12	198	<2	98.40%	9.38	43.61	0.013	5.2	<0.05
3305	8051	15/10/2020	9.8	7.38	224	<2	94.00%	10.7	52.4	0.021	7.09	<0.05
3306	5222	16/07/2020	13.8	7.47	213	<2	98.40%	10.2	51.9	0.015	2.79	<0.05
3306	8099	16/10/2020	10	7.04	192	<2	98.00%	11.1	44.3	<0.010	5.77	<0.05
3307	4989	09/07/2020	12.4	6.99	80.4	<2	99.70%	10.64	8.52	0.018	0.34	<0.05
3307	9394	26/11/2020	8.6	6.95	104	<2	95.00%	11.07	11.2	<0.010	3.13	<0.05
2001	2313	09/04/2021	6.7	7.6	280	<2	93.00%	11.37	63	0.106	10.6	<0.05
2001	6389	13/08/2021	13.4	7.93	314	<2	91.00%	9.48	68.6	0.052	11	<0.05
2001	9187	11/11/2021	11.1	7.22	274	<2	95.00%	10.4	58.9	0.162	10.9	<0.05
2002	2197	07/04/2021	6.1	7.55	226	4	97.00%	12.08	44.3	0.145	9.28	0.05
2002	6386	13/08/2021	12.9	7.33	295	2	90.00%	9.48	62.2	0.022	12.3	0.2
2002	9189	11/11/2021	11.3	7.17	307	4	93.00%	10.2	41.8	0.139	10.9	0.1
2003	2314	09/04/2021	6.7	7.5	166	<2	95.00%	11.62	32.8	0.043	7.3	0.05
2003	6388	13/08/2021	14.7	7.41	183	<2	95.00%	9.62	43.1	0.015	5.87	0.05
2003	9186	11/11/2021	10.4	7.11	147	<2	92.00%	10.3	25.9	0.03	6.53	<0.05
2004	4381	09/06/2021	12.8	7.38	192	<2	95.80%	10.14	44.6	0.057	7.15	0.13
2005	6387	13/08/2021	12.9	7.35	286	<2	90.00%	9.5	59.1	0.024	12	0.24
2006	2528	15/04/2021	5.2	6.99	177	<2	95.00%	12.02	40.4	0.103	6.32	0.1
2006	6524	18/08/2021	14.7	7.39	209	2	96.00%	9.78	47.8	0.022	9.96	0.37
2006	9185	11/11/2021	10.4	7.22	166	<2	92.00%	10.3	33.9	0.092	6.66	0.07
2011	2316	09/04/2021	6.7	6.99	150	<2	90.00%	11.04	31.4	0.188	2.36	<0.05
2011	5772	23/07/2021	15.5	7.05	177	<2	81.00%	8.11	49.1	0.235	2.79	<0.05
2011	8586	22/10/2021	10.4	6.76	131	<2	92.00%	10.3	21.9	0.046	3.42	<0.05
2013	4382	09/06/2021	12.5	7.29	141	<2	98.10%	10.44	27.4	<0.010	6.59	<0.05

2015	4449	10/06/2021	11.9	6.55	146	<2	95.00%	10.26	36	<0.010	2.51	<0.05
2017	4448	10/06/2021	11.9	6.56	106	<2	96.20%	10.39	19.3	<0.010	2.51	<0.05
2019	4447	10/06/2021	11.9	6.52	122	<2	96.00%	10.37	19	0.01	8.81	<0.05
2022	4446	10/06/2021	10.6	6.47	74.5	<2	92.00%	10.24	7.8	0.064	1.44	<0.05
2023	2531	15/04/2021	7.1	6.18	62.6	<2	98.00%	11.85	4.01	<0.010	0.39	<0.05
2023	6393	13/08/2021	16.1	7.34	61.5	<2	98.00%	9.62	5.8	0.04	0.43	<0.05
2023	8587	22/10/2021	9.9	6.92	62.9	<2	94.00%	10.7	4.89	<0.010	0.79	<0.05
2026	4383	09/06/2021	13	7.29	177	3	95.30%	10.04	40.1	0.019	6.57	0.17
2027	2529	15/04/2021	5.9	6.98	138	<2	87.00%	10.81	28.4	0.055	1.5	<0.05
2027	6347	12/08/2021	12.7	7.06	151	2	87.00%	9.23	33	0.084	1.41	<0.05
2028	6572	19/08/2021	12.9	6.03	137	<2	91.00%	9.63	4.09	0.031	0.11	<0.05
2030	2527	15/04/2021	5.2	7.04	129	<2	96.00%	12.19	22.7	<0.010	6.66	<0.05
2030	6348	12/08/2021	13.6	7.23	127	<2	96.00%	9.99	21.8	0.014	4.85	<0.05
2031	4380	09/06/2021	11.9	7.2	278	<2	94.20%	10.17	58.4	0.192	11.3	0.06
2101	2244	08/04/2021	6.7	7.74	204	<2	95.00%	11.59	40	0.257	7.59	0.08
2101	4650	17/06/2021	14.1	6.95	207	<2	95.00%	9.79	43.9	0.059	7.44	<0.05
2101	9184	11/11/2021	10.3	7.17	181	<2	85.00%	9.51	29.6	0.028	6.33	<0.05
2102	4651	17/06/2021	11.7	7.19	222	<2	90.00%	9.78	47.3	<0.010	11.1	<0.05
2201	4454	10/06/2021	11.8	7.06	190	<2	98.50%	10.66	42.9	<0.010	6.63	<0.05
2211	3281	05/05/2021	9.7	6.96	98.2	<2	96.50%	10.97	14.2	<0.010	1.69	<0.05
2211	6349	12/08/2021	16.3	7.35	95.5	<2	100.00%	9.8	16.4	0.016	0.97	<0.05
2211	8588	22/10/2021	10.3	6.75	89.5	<2	97.00%	10.9	10.6	<0.010	2.93	<0.05
2213	3282	05/05/2021	8.3	7.03	95.8	<2	96.20%	11.31	14	0.01	1.62	<0.05
2213	6350	12/08/2021	14.1	7.4	94.5	<2	98.00%	10.05	18.2	<0.010	1.13	<0.05
2213	8589	22/10/2021	10.4	6.83	89.8	<2	97.00%	10.8	10.8	<0.010	2.68	<0.05
2216	4452	10/06/2021	13.2	7.1	92.4	<2	100.00%	10.51	14.5	<0.010	2.17	<0.05
2218	4453	10/06/2021	12.6	7.11	75.1	<2	99.60%	10.58	8.6	<0.010	2.17	<0.05
2311	3133	29/04/2021	9.8	7.65	121	<2	98.00%	11.13	16.5	0.067	2.81	0.06
2311	6351	12/08/2021	15.1	7.36	91	<2	99.00%	9.94	12.5	0.027	2.48	0.06
2311	8590	22/10/2021	10.9	6.89	86.8	<2	98.00%	10.9	10.6	0.029	2.66	<0.05

2315	4471	11/06/2021	12.9	7.7	70.8	<2	97.00%	10.22	8.83	0.012	1.45	<0.05
2421	3280	05/05/2021	7.8	7.18	75.9	<2	94.50%	11.26	7.8	<0.010	1.16	<0.05
2421	4647	17/06/2021	12.2	7.29	89.2	<2	91.00%	9.77	12.4	<0.010	0.8	<0.05
2421	8963	04/11/2021	8.7	6.8	75.3	<2	94.90%	11.06	6.04	<0.010	2.32	<0.05
2422	4648	17/06/2021	11.6	6.78	85.6	<2	90.00%	9.78	6.71	<0.010	0.49	<0.05
2423	3279	05/05/2021	7.5	7.24	66.4	<2	93.50%	11.22	5.85	<0.010	0.86	<0.05
2423	6570	19/08/2021	13.8	7.19	68	<2	94.00%	9.73	4.32	<0.010	0.68	<0.05
2424	4469	11/06/2021	13.6	7.2	409	<2	78.00%	8.08	150	0.15	7.11	<0.05
2427	4470	11/06/2021	14.7	7.62	97.4	3	101.00%	10.19	20.2	0.018	1.76	<0.05
2428	3284	05/05/2021	8.5	6.68	121	<2	94.40%	11.04	10.8	0.01	1.94	<0.05
2428	6569	19/08/2021	15	7.4	86.5	<2	97.00%	9.78	10.5	0.013	1.51	<0.05
2428	9183	11/11/2021	9.4	7.4	83.2	<2	83.00%	9.48	8.64	0.025	2.08	<0.05
2429	4464	11/06/2021	13.1	8.05	110	<2	95.00%	9.95	20.4	<0.010	3.26	<0.05
2430	4465	11/06/2021	13.8	7.29	78.1	<2	97.00%	9.99	7	0.01	1.06	<0.05
2431	4468	11/06/2021	13.1	7.49	80.8	<2	97.00%	10.18	6.54	<0.010	0.86	<0.05
2432	3283	05/05/2021	8	7.14	72.4	<2	94.00%	11.14	5.28	0.01	0.86	<0.05
2432	6391	13/08/2021	16.8	7.59	69.9	<2	97.00%	9.38	6.03	<0.010	0.62	<0.05
2432	8962	04/11/2021	10	6.85	59.2	<2	95.60%	10.8	4.32	0.024	0.93	<0.05
2433	4466	11/06/2021	14.2	7.71	50.7	<2	97.00%	9.94	3.33	<0.010	0.26	<0.05
2434	4467	11/06/2021	12.7	7.52	74.1	<2	96.00%	10.2	6.08	<0.010	0.7	<0.05
2435	3520	12/05/2021	9.8	6.5	70.2	<2	92.90%	10.53	66.5	0.019	0.63	<0.05
2435	6571	19/08/2021	16.4	7.02	68.6	<2	97.00%	9.45	6.6	0.047	0.49	<0.05
2435	8961	04/11/2021	10.8	6.61	91.9	<2	94.90%	10.51	7.28	0.026	0.84	<0.05
2436	3521	12/05/2021	9	6.61	68.1	<2	92.60%	10.71	66.5	<0.010	0.13	<0.05
2436	6392	13/08/2021	15	7.34	73.4	<2	97.00%	9.74	9.21	0.019	0.06	<0.05
2438	4652	17/06/2021	17.2	7.62	56	<2	96.00%	9.26	7.05	<0.010	<0.05	<0.05
2511	4463	11/06/2021	13.6	7.6	515	<2	89.00%	9.26	185	<0.010	22.8	<0.05
2512	3522	12/05/2021	10.9	7.18	395	<2	95.40%	10.54	131	0.019	10.7	<0.05
2512	6568	19/08/2021	12.9	7.56	451	2	87.00%	9.2	160	0.03	17.5	<0.05
2513	4462	11/06/2021	15.4	7.24	351	2	75.00%	7.47	128	0.066	4.51	<0.05

2603	3276	05/05/2021	7.1	6.85	107	<2	91.80%	11.13	9.63	0.012	2.45	<0.05
2603	6303	11/08/2021	14.4	6.96	121	<2	94.40%	9.64	15.1	0.017	2.52	<0.05
2603	8556	21/10/2021	9.4	6.98	88.4	<2	95.00%	10.9	7.5	<0.010	2	<0.05
2634	4649	17/06/2021	12	6.78	145	<2	92.00%	9.86	33.9	<0.010	1.89	<0.05
2651	6567	19/08/2021	13.3	7.56	217	<2	93.00%	9.68	51.4	0.012	2.74	<0.05
2711	3523	12/05/2021	9.5	7.4	201	<2	92.90%	10.61	52.4	<0.010	5.02	<0.05
2711	6345	12/08/2021	12.9	7.32	226	<2	93.00%	9.81	61.3	0.144	5.55	<0.05
2711	9182	11/11/2021	9.8	7.25	168	<2	83.00%	9.36	36.2	0.036	5.21	<0.05
2714	2480	14/04/2021	5.9	7.29	199	3	93.00%	11.57	46.7	0.7	5.73	0.24
2714	5119	01/07/2021	13.4	7.46	202	<2	92.50%	9.66	52.1	0.227	5.64	0.15
2714	8554	21/10/2021	9.6	6.79	152	<2	94.00%	10.8	25.9	0.037	3.82	<0.05
2715	4682	18/06/2021	11.7	7.36	200	<2	93.00%	10.04	49.6	0.022	6.94	<0.05
2718	2479	14/04/2021	4.8	7.35	167	<2	93.00%	11.89	35.1	0.012	1.96	<0.05
2718	6344	12/08/2021	12.4	7.29	178	<2	94.00%	10.03	38.3	<0.010	1.3	<0.05
2720	4681	18/06/2021	11.1	7.5	201	<2	94.00%	10.35	47.9	<0.010	1.32	<0.05
2721	2483	14/04/2021	5.3	7.48	114	<2	96.00%	12.13	7.11	0.013	0.91	<0.05
2721	6523	18/08/2021	12.6	7.34	113	<2	95.00%	10.15	5.57	0.014	0.51	<0.05
2722	5118	01/07/2021	13.1	7.29	119	<2	92.10%	9.68	24.8	0.01	1.77	<0.05
2725	3278	05/05/2021	7	7.32	87.9	<2	92.80%	11.27	9.29	0.012	1.09	<0.05
2725	6346	12/08/2021	12.5	7.52	91.8	<2	94.00%	9.98	13	0.764	0.57	0.11
2726	4683	18/06/2021	12.3	7.42	161	<2	97.00%	10.32	33.2	0.05	3.51	0.05
2728	5120	01/07/2021	13.2	7.52	230	<2	92.60%	9.71	68	0.038	6.57	<0.05
2801	2481	14/04/2021	5.4	7.45	152	<2	93.00%	11.81	24.9	0.048	2.84	0.16
2801	5767	23/07/2021	16.9	7.12	176	<2	92.00%	8.94	32.1	0.045	3.83	0.25
2801	8553	21/10/2021	9.3	6.75	117	<2	94.00%	10.8	12.3	<0.010	1.7	<0.05
2802	2482	14/04/2021	5.5	7.5	125	<2	94.00%	11.9	13.5	0.01	0.92	<0.05
2802	6516	18/08/2021	13.2	6.74	130	<2	93.00%	9.72	17.7	<0.010	0.47	<0.05
3002	4678	18/06/2021	12.5	7.41	270	<2	95.00%	10.06	59.9	0.024	7.08	<0.05
3004	3588	13/05/2021	9.8	7.42	163	<2	95.20%	10.8	27.3	<0.010	3.24	<0.05
3004	6517	18/08/2021	13.4	7.14	185	<2	93.00%	9.73	25.1	<0.010	2.55	<0.05

3004	8909	03/11/2021	10.3	7.84	184	<2	96.70%	10.84	20.1	0.022	7.52	<0.05
3021	2193	07/04/2021	5.1	7.77	525	<2	95.00%	12.07	151	0.064	11.6	0.05
3021	5145	02/07/2021	13.4	7.95	490	<2	92.00%	9.58	175	0.055	9.29	0.24
3021	8908	03/11/2021	10.8	7.58	377	<2	93.10%	10.31	103	0.072	13	0.09
3031	2194	07/04/2021	5.1	7.84	178	5	96.00%	12.27	268	0.015	10.6	<0.05
3031	5146	02/07/2021	15	7.91	695	2	91.00%	9.21	298	0.085	4.22	0.18
3031	8907	03/11/2021	10.4	7.38	586	<2	88.50%	9.9	108	0.103	16.6	0.13
3101	3589	13/05/2021	11.8	7.64	243	<2	98.80%	10.7	77.2	0.016	5.52	<0.05
3101	6518	18/08/2021	14.7	8.22	277	<2	103.00%	10.47	78.5	0.013	4.15	<0.05
3103	4679	18/06/2021	12.5	7.55	230	<2	95.00%	10.1	53.2	0.024	6.17	<0.05
3105	4680	18/06/2021	12.4	7.61	191	<2	96.00%	10.27	34.6	0.015	5.85	<0.05
3107	6519	18/08/2021	14.5	7.34	165	<2	96.00%	9.83	34	<0.010	1.04	<0.05
3111	2195	07/04/2021	7.8	7.79	637	<2	96.00%	11.45	236	0.096	11.1	<0.05
3111	5147	02/07/2021	12.7	8.05	625	<2	91.00%	9.66	254	0.045	9.58	<0.05
3111	8906	03/11/2021	11.7	7.33	588	<2	93.40%	10.13	195	0.058	12.6	0.05
3201	3591	13/05/2021	12.3	7.96	228	<2	103.00%	11.05	56.2	0.011	4.72	<0.05
3201	6522	18/08/2021	15.1	7.93	247	2	100.00%	10.07	64.1	0.021	5.02	<0.05
3201	9429	18/11/2021	11.5	7.68	215	<2	96.20%	10.48	44.6	0.03	8.89	<0.05
3203	2248	08/04/2021	7.2	7.73	215	<2	99.00%	11.95	49.8	0.017	6.85	<0.05
3203	5768	23/07/2021	18	7.54	242	<2	97.00%	9.18	66.1	0.024	7.11	<0.05
3203	8910	03/11/2021	10.6	7.58	194	<2	98.30%	10.94	32.2	0.035	9.09	<0.05
3205	6521	18/08/2021	13.7	7.63	240	3	92.00%	9.59	69.2	0.016	1.05	<0.05
3231	2196	07/04/2021	6.1	7.73	258	<2	98.00%	12.18	51.2	0.024	11.3	<0.05
3231	5769	23/07/2021	17.9	7.53	279	<2	95.00%	9.04	70.6	0.01	8.26	<0.05
3231	9188	11/11/2021	10.6	7.23	247	<2	91.00%	10.1	40.5	0.013	12.4	<0.05
3233	4450	10/06/2021	13.6	6.88	197	2	95.90%	9.96	52.5	<0.010	0.53	0.12
3235	4451	10/06/2021	11.8	7.04	160	<2	95.70%	10.35	27.2	<0.010	5.84	<0.05
3240	4674	18/06/2021	13.5	7.28	462	<2	91.00%	9.51	132	0.028	14.7	0.06
3241	4675	18/06/2021	13.6	7.52	373	<2	97.00%	10.06	80.4	0.013	0.86	0.11
3242	4676	18/06/2021	12.2	7.64	553	4	93.00%	9.96	179	0.381	11.5	<0.05

3243	4677	18/06/2021	12.9	7.84	348	<2	98.00%	10.36	93.2	0.017	12.3	0.08
3244	6352	12/08/2021	13.1	7.3	114	<2	96.00%	10.05	19.6	<0.010	0.72	<0.05
3245	4384	09/06/2021	14.2	7.76	326	<2	108.00%	11.07	65.8	0.018	15.2	<0.05
3246	4385	09/06/2021	11.9	7.62	320	<2	97.10%	10.48	69.7	0.236	10.8	0.14
3301	2315	09/04/2021	6.5	7.57	129	<2	97.00%	11.87	21.7	<0.010	6.42	<0.05
3301	5770	23/07/2021	18.4	7.62	137	<2	97.00%	9.1	25.9	0.014	6.47	<0.05
3301	8964	04/11/2021	9.7	6.8	112	<2	96.60%	10.99	14.6	0.018	5.47	<0.05
3302	3525	12/05/2021	12.6	7.53	123	<2	99.70%	10.6	19.6	<0.010	8.52	<0.05
3302	6390	13/08/2021	13.6	7.56	112	<2	93.00%	9.69	15.7	0.011	6.73	<0.05
3302	8965	04/11/2021	9.8	6.87	98.4	<2	97.30%	11.04	11.3	0.033	6.34	<0.05
3303	2245	08/04/2021	6.9	7.71	176	<2	96.00%	11.73	36.6	<0.010	4.84	<0.05
3303	5771	23/07/2021	16.4	7.51	198	<2	95.00%	9.29	49.3	<0.010	6.88	<0.05
3303	8557	21/10/2021	9.6	6.78	179	<2	94.00%	10.7	31.7	<0.010	5.26	<0.05
3304	2246	08/04/2021	7.1	7.73	184	<2	97.00%	11.73	31	<0.010	6.59	<0.05
3304	5149	02/07/2021	12.7	7.61	182	<2	92.00%	9.73	28.9	0.015	6.02	<0.05
3304	8904	03/11/2021	10	7.5	167	<2	96.10%	10.85	20.4	0.022	6.47	<0.05
3305	2247	08/04/2021	7.2	7.68	247	2	99.00%	11.94	61	0.01	7.45	<0.05
3305	5148	02/07/2021	13.8	7.84	248	<2	95.00%	9.79	71	0.024	6.04	<0.05
3305	8905	03/11/2021	10.2	7.41	210	<2	97.20%	10.93	42.2	0.02	8.44	<0.05
3306	3592	13/05/2021	9.5	7.77	205	<2	92.90%	10.61	53.3	0.011	2.91	<0.05
3306	6520	18/08/2021	14.1	7.57	224	3	95.00%	9.78	59	0.011	2.68	<0.05
3306	8911	03/11/2021	10.5	7.46	179	<2	98.10%	10.95	30	0.033	7.07	<0.05
3307	2317	09/04/2021	6.5	7.21	102	<2	96.00%	11.8	12.7	<0.010	1.59	<0.05
3307	5121	01/07/2021	12.9	7.4	99.6	<2	93.50%	9.88	17.2	<0.010	1.19	<0.05
3307	8555	21/10/2021	9	6.94	87.7	<2	94.00%	10.9	7.85	<0.010	1.6	<0.05
2001	777	26/01/2022	7.7	7.43	283	<2	93.00%	11.16	63.7	0.17	10.8	<0.05
2001	2415	23/03/2022	10	7.35	155	<2	98.00%	11.1	61.5	0.302	12.5	<0.05
2001	7008	03/08/2022	15.3	7.47	325	<2	95.00%	9.51	72.1	0.076	10.6	<0.05
2001	10434	17/11/2022	10.5	7.33	272	<2	98.00%	10.95	60.8	0.135	10.5	<0.05
2002	774	26/01/2022	7.8	7.18	248	<2	95.00%	11.31	46.2	0.03	12.5	<0.05

2002	2502	25/03/2022	9.6	7.36	231	<2	97.00%	11.07	42.8	0.03	12.7	<0.05
2002	7703	25/08/2022	13.3	7.63	310	<2	96.00%	9.99	65.9	<0.010	9.53	0.07
2002	10825	01/12/2022	10.6	7.35	221	<2	105.00%	11.73	41.8	0.031	10.9	<0.05
2003	778	26/01/2022	6.5	7.41	167	<2	93.00%	11.59	33.5	0.039	7.98	<0.05
2003	2416	23/03/2022	9.4	7.43	158	<2	101.00%	11.59	29.1	0.025	7.88	<0.05
2003	7007	03/08/2022	16.8	7.66	196	<2	105.00%	10.14	35.7	0.035	4.45	0.06
2003	10433	17/11/2022	9.7	7.29	130	<2	100.00%	11.42	21.1	0.013	6.27	<0.05
2004	425	14/01/2022	7.8	7.25	176	<2	97.00%	11.6	35.9	0.046	8.15	<0.05
2004	6076	15/07/2022	17.8	7.37	243	<2	111.00%	10.5	56.1	0.033	11.6	0.3
2005	775	26/01/2022	7.6	7.22	222	<2	93.00%	11.1	41.7	0.026	10.8	<0.05
2005	7704	25/08/2022	13.4	7.58	301	<2	96.00%	10.04	66	<0.010	8.39	0.07
2006	423	14/01/222	7.7	7.07	165	<2	96.00%	11.5	32.2	0.062	7.95	0.05
2006	2411	23/03/2022	8	7.2	165	<2	96.00%	11.38	35.1	0.047	7.97	0.07
2006	7003	03/08/2022	15.3	7.16	197	2	94.00%	9.42	37.4	0.071	6.48	0.23
2006	10779	30/11/2022	9.4	7.12	163	<2	104.00%	11.95	31.6	0.039	7.46	<0.05
2011	421	14/01/2022	7.5	7.07	139	<2	92.00%	11	30	0.063	4.42	<0.05
2011	2500	25/03/2022	8.1	6.82	143	<2	91.00%	10.74	28.9	0.106	3.55	<0.05
2011	7002	03/08/2022	14.9	6.84	167	2	87.00%	8.79	28.3	0.222	1.86	0.05
2011	10822	01/12/2022	9.8	6.87	139	<2	101.00%	11.4	30.2	0.061	4.11	<0.05
2013	424	14/01/2022	7.4	7.09	128	<2	98.00%	11.7	18.1	0.031	7.26	<0.05
2013	6077	15/07/2022	16.4	7.49	147	<2	102.00%	9.96	26.4	0.023	6.17	<0.05
2015	773	26/01/2022	6.6	7.22	142	<2	95.00%	11.6	27.2	0.01	4.5	<0.05
2015	6045	14/07/2022	14.6	7.22	174	<2	91.00%	9.29	44.8	0.013	4.91	0.06
2017	772	26/01/2022	6.6	7.03	94	<2	94.00%	11.56	11.6	<0.010	3.57	<0.05
2017	6079	15/07/2022	14.7	7.31	115	<2	99.00%	10.05	21.4	0.014	2.24	<0.05
2019	771	26/01/2022	6.8	7	135	<2	95.00%	11.6	16.2	0.01	12.1	<0.05
2019	6078	15/07/2022	14.5	7.4	114	<2	100.00%	10.24	15.5	0.015	7.37	<0.05
2022	770	26/01/2022	6.6	6.43	77.7	<2	92.00%	11.29	6.42	0.01	2.39	<0.05
2022	6044	14/07/2022	12.2	6.46	71.4	<2	89.00%	9.5	4.7	0.157	0.77	<0.05
2023	769	26/01/2022	6.3	6.62	65.1	<2	93.00%	11.53	5.61	0.011	0.79	<0.05

2023	2501	25/03/2022	8.5	6.42	64.5	<2	96.00%	11.18	5.16	<0.010	0.55	<0.05
2023	7277	10/08/2022	18	7.09	68.5	<2	98.40%	9.31	7.62	0.011	0.35	<0.05
2023	10254	10/11/2022	11.2	6.7	69.6	<2	102.00%	11.24	3.25	<0.010	0.97	<0.05
2026	422	14/01/2022	7.6	7.17	147	<2	93.00%	11.1	28	0.185	5.35	0.05
2026	6043	14/07/2022	15.8	6.93	196	4	77.00%	7.68	40.7	0.731	9.99	0.65
2027	779	26/01/2022	6.5	7.03	134	<2	87.00%	10.68	24.5	0.036	2.28	<0.05
2027	6042	14/07/2022	14.3	6.86	161	<2	81.00%	8.32	42.1	0.093	2.15	<0.05
2028	428	14/01/2022	7	4.8	150	<2	97.00%	11.8	4.47	0.03	2.3	<0.05
2028	7699	25/08/2022	12.8	5.8	149	<2	93.00%	9.82	4.82	0.032	0.14	<0.05
2031	776	26/01/2022	6.7	7.45	275	3	98.00%	11.99	56	0.33	12	<0.05
2031	7350	11/08/2022	14.1	7.64	384	4	100.00%	10.2	75.7	0.252	14.4	0.23
2101	652	20/01/2022	5.9	7.58	185	<2	96.00%	12.02	30.7	0.032	7.83	<0.05
2101	2417	23/03/2022	9	7.49	185	<2	100.00%	11.58	32	0.03	7.49	<0.05
2101	7074	04/08/2022	13.8	7.41	234	<2	91.00%	9.47	48.8	0.469	7.95	0.22
2101	10778	30/11/2022	9.3	7.17	182	<3	107.00%	12.34	30.5	<0.010	6.78	<0.05
2102	653	20/01/2022	6.2	7.61	208	<2	97.00%	12.05	36.2	0.015	12.8	<0.05
2102	7075	04/08/2022	13.6	7.56	250	<2	98.00%	10.21	46.3	<0.010	11.4	0.16
2201	654	20/01/2022	6.7	7.6	184	<2	98.00%	11.94	35.5	<0.010	8.71	<0.05
2201	7073	04/08/2022	13.6	7.58	220	<2	97.00%	10.09	47	<0.010	6.62	<0.05
2211	655	20/01/2022	5.5	7.2	98.1	<2	96.00%	12.07	13	<0.010	3.67	<0.05
2211	2507	25/03/2022	9.7	7.19	99	<2	101.00%	11.52	14.9	<0.010	3.35	<0.05
2211	7072	04/08/2022	15.6	7.27	93.6	<2	100.00%	9.95	15.1	<0.010	1.15	<0.05
2211	10777	30/11/2022	9	6.85	98.9	<2	107.00%	12.33	13.6	<0.010	3.66	<0.05
2213	656	20/01/2022	5.3	7.23	97.2	<2	96.00%	12.15	12.3	<0.010	3.85	<0.05
2213	2506	25/03/2022	8.7	7.41	98.7	<2	99.00%	11.57	16	<0.010	3.67	<0.05
2213	7071	04/08/2022	14.7	7.27	94.4	<2	101.00%	10.23	14.6	<0.010	1.18	<0.05
2213	10271	11/11/2022	12.2	6.99	101	<2	105.00%	11.23	13.2	<0.010	4.22	<0.05
2216	657	20/01/2022	5.6	7.25	89.6	<2	97.00%	12.23	9.62	<0.010	3.35	<0.05
2216	7068	04/08/2022	14.5	7.42	84.1	<2	99.00%	10.12	12	0.011	0.99	<0.05
2218	659	20/01/2022	5.1	6.96	79.4	<2	96.00%	12.24	5.96	<0.010	3.63	<0.05

2218	7069	04/08/2022	15.5	7.27	69.1	<2	102.00%	10.2	7.06	<0.010	0.76	<0.05
2311	659	20/01/2022	6	7.03	100	<2	96.00%	12.02	11.6	0.051	3.74	<0.05
2311	3162	14/04/2022	10.9	7.06	97.9	<2	101.00%	11.14	12.5	0.028	2.87	<0.05
2311	7125	05/08/2022	15.3	7.24	84.5	<2	99.00%	9.93	8.51	0.04	2.05	0.07
2311	10776	30/11/2022	9.3	6.58	96.7	<3	107.00%	12.33	13.1	0.019	3.24	<0.05
2315	660	20/01/2022	5.7	7.07	73.7	<2	96.00%	12.04	5.96	<0.010	3.08	<0.05
2315	7124	05/08/2022	13	7.48	65.7	<2	99.00%	10.38	5.82	0.016	0.85	<0.05
2421	841	27/01/2022	7.3	7.01	84.6	<2	95.00%	11.46	7.1	<0.010	1.7	<0.05
2421	3161	14/04/2022	10	6.84	79.7	<2	99.00%	11.15	6.19	0.012	0.96	<0.05
2421	7269	10/08/2022	15	6.88	81.1	<2	93.00%	9.37	9.74	<0.010	0.87	<0.05
2421	10270	11/11/2022	12.2	6.98	82.2	<2	104.00%	11.13	5.15	<0.010	1.96	<0.05
2422	843	27/01/2022	7.4	6.68	84.6	<2	97.00%	11.64	3.89	0.014	1.48	<0.05
2422	5969	13/07/2022	13.8	7.3	87.3	<2	90.00%	9.39	10.9	<0.010	0.97	<0.05
2423	842	27/01/2022	7.2	6.71	71.6	<2	95.00%	11.51	4.35	0.01	1.3	<0.05
2423	5970	13/07/2022	14.5	7.14	71.2	<2	93.00%	9.5	11.2	<0.010	0.81	<0.05
2424	840	27/01/2022	8.1	7.27	397	<2	86.00%	10.12	134	0.178	8.95	<0.05
2424	5971	13/07/2022	13.3	7.4	425	<2	85.00%	8.87	176	0.151	3.93	<0.05
2427	839	27/01/2022	7.4	6.87	86.7	<2	94.00%	11.35	11.8	0.019	2.12	<0.05
2427	5972	13/07/2022	16.7	7.02	99.2	<2	96.00%	9.36	16.2	0.036	1.95	<0.05
2428	882	28/01/2022	6.4	6.77	81.4	<2	97.00%	12	6.76	<0.010	2.07	<0.05
2428	3160	14/04/2022	9.2	6.81	82.1	<2	99.00%	11.44	7.56	0.018	1.89	<0.05
2428	7270	10/08/2022	18.1	7.3	88.3	<2	102.00%	9.61	13.9	<0.010	1.41	<0.05
2428	10775	30/11/2022	8.8	6.51	81.2	<3	106.00%	12.29	6.53	<0.010	2.17	<0.05
2429	881	28/01/2022	6.9	6.69	111	<2	98.00%	12	1.33	<0.010	4.44	<0.05
2429	5973	13/07/2022	14.1	7.17	128	<2	92.00%	9.42	26.7	0.016	2.91	<0.05
2430	880	28/01/2022	6.3	6.54	73	<2	98.00%	12.1	6.3	<0.010	1.28	<0.05
2430	5974	13/07/2022	15.4	7.35	78.8	<2	94.00%	9.42	9.41	0.012	1	<0.05
2431	878	28/01/2022	6.7	6.62	84.6	<2	96.00%	11.8	5.38	<0.010	1.52	<0.05
2431	7272	10/08/2022	14.8	7.01	84.7	<2	91.70%	9.28	14	0.016	0.49	<0.05
2432	879	28/01/2022	6.5	6.61	68	<2	97.00%	12	3.21	<0.010	0.96	<0.05

2432	3159	14/04/2022	8.5	6.75	67	<2	94.00%	11.05	1.92	0.011	0.89	<0.05
2432	7271	10/08/2022	19.2	7.07	73.2	<2	97.30%	8.99	9.07	<0.010	0.85	<0.05
2432	10773	30/11/2022	8.7	6.67	67.6	<2	105.00%	12.25	7.09	<0.010	0.95	<0.05
2433	877	28/01/2022	6	6.61	57.6	<2	96.00%	12	3.32	<0.010	0.69	<0.05
2433	7273	10/08/2022	19.3	6.68	57.4	<2	97.30%	8.97	5.15	<0.010	0.38	<0.05
2434	876	28/01/2022	6.2	6.67	81.2	<2	97.00%	12	6.19	0.01	1.05	<0.05
2434	7274	10/08/2022	16.9	6.81	77	<2	97.00%	9.39	10.2	0.058	0.76	<0.05
2435	875	28/01/2022	6.3	6.49	76.7	<2	95.00%	11.8	4.59	0.019	0.82	<0.05
2435	3322	21/04/2022	8.1	6.59	74.7	<2	99.00%	11.66	5.27	0.029	0.93	<0.05
2435	7275	10/08/2022	17	6.7	75.4	<2	94.20%	9.1	10.2	0.132	0.59	<0.05
2435	10774	30/11/2022	9.1	6.26	92.2	<2	105.00%	12.1	6.19	0.012	0.86	<0.05
2436	873	28/01/2022	5.4	6.82	69	<2	93.00%	11.8	8.02	<0.010	0.47	<0.05
2436	5975	13/07/2022	17.5	7.2	72	<2	98.00%	9.33	14.2	<0.010	<0.05	<0.05
2438	874	28/01/2022	5.5	6.81	58.3	<2	93.00%	11.8	3.32	<0.010	0.44	<0.05
2438	7276	10/08/2022	18.6	6.74	59	<2	94.60%	8.85	7.84	<0.010	<0.05	<0.05
2511	844	27/01/2022	8.2	7.63	457	<2	91.00%	10.72	145	0.11	17.1	<0.05
2511	5966	13/07/2022	12.9	7.78	545	3	86.00%	9.06	207	0.032	26.6	<0.05
2512	845	27/01/2022	8.2	7.49	406	<2	89.00%	10.51	126	0.186	12.8	<0.05
2512	5967	13/07/2022	13.6	7.62	476	<2	86.00%	8.98	180	0.047	21.4	<0.05
2513	846	27/01/2022	7.8	7.24	359	2	85.00%	10.16	109	0.272	6.54	<0.05
2513	5968	13/07/2022	14.3	7.21	327	<2	77.00%	7.88	116	0.207	2.63	<0.05
2603	302	12/01/2022	7.8	7.02	118	<2	95.60%	11.38	8.71	<0.010	5.04	<0.05
2603	3158	14/04/2022	9.5	7.3	123	<2	95.00%	10.84	12.4	0.035	3.73	<0.05
2603	7123	05/08/2022	13.6	7.43	112	<2	98.00%	10.2	12	0.018	2.42	<0.05
2603	10269	11/11/2022	12	7.07	115	<2	102.00%	11.01	10.9	<0.010	4.93	<0.05
2634	303	12/01/2022	7.4	7.19	112	<2	95.80%	11.52	14	<0.010	3.58	<0.05
2634	7122	05/08/2022	13.5	7.56	128	<2	97.00%	10.07	27.3	0.019	1.22	<0.05
2651	304	12/01/2022	7	7.18	152	<2	95.50%	11.6	23.1	<0.010	5.13	<0.05
2651	7121	05/08/2022	13.2	7.53	211	<2	96.00%	10.05	51.3	0.019	3.39	<0.05
2711	355	13/01/2022	7.1	7.37	165	<2	96.00%	11.64	31.5	0.029	6.06	<0.05

2711	2409	23/03/2022	8.4	7.38	175	<2	98.00%	11.46	39.5	0.079	6.66	<0.05
2711	7000	03/08/2022	15.3	7.48	196	<2	98.00%	9.82	48	0.035	4.82	0.05
2711	10772	30/11/2022	8.9	7.16	166	<2	106.00%	12.23	31.6	<0.010	5.58	<0.05
2714	351	13/01/2022	7.2	7.16	160	<2	94.50%	11.43	26.9	0.04	5.66	<0.05
2714	2408	23/03/2022	7.5	7.28	169	<2	93.00%	11.13	32.8	0.053	5.88	<0.05
2714	6999	03/08/2022	14.5	7.43	212	<2	95.00%	9.69	41.8	0.269	7.51	0.24
2714	10771	30/11/2022	8.9	7.09	160	<2	104.00%	12.09	28.7	0.013	5.12	<0.05
2715	350	13/01/2022	7.1	6.88	170	<2	91.80%	11.13	32.8	0.023	7.66	<0.05
2715	5804	07/07/2022	12.7	7.46	243	<2	96.00%	10.17	68.3	0.014	7.66	<0.05
2718	349	13/01/2022	7	7.28	147	<2	82.10%	11.71	24.4	0.016	3.66	<0.05
2718	5805	07/07/2022	13.7	7.59	189	<2	99.00%	10.22	39.5	<0.010	1.59	<0.05
2720	356	13/01/2022	7.1	7.37	156	<2	95.50%	11.58	25.7	0.011	2.82	<0.05
2720	5806	07/07/2022	13	7.47	225	<2	98.00%	10.37	48.9	0.027	1.06	<0.05
2721	307	12/01/2022	6.7	6.84	133	<2	94.10%	11.51	14.5	<0.010	1.85	<0.05
2721	5807	07/07/2022	12.4	6.78	112	<2	97.00%	10.41	6.27	0.01	0.55	<0.05
2722	351	13/01/2022	6.8	7.08	114	<2	97.10%	11.85	15.4	<0.010	3.68	<0.05
2722	7117	05/08/2022	13	7.17	142	<2	92.00%	9.68	30.6	0.011	2.04	<0.05
2725	357	13/01/2022	6.6	7.06	92	<2	97.10%	11.91	7.79	<0.010	2.9	<0.05
2725	7120	05/08/2022	12.7	7.22	87.7	<2	96.00%	10.16	12.3	0.159	0.55	<0.05
2726	353	13/01/2022	7	7.23	138	<2	96.00%	11.67	20.5	0.019	4.69	<0.05
2726	6041	14/07/2022	16.2	7.65	191	<2	99.00%	9.68	43.9	0.054	6.04	0.21
2728	354	13/01/2022	7.2	7.3	172	<2	96.60%	11.68	33.9	0.022	6.73	<0.05
2728	6040	14/07/2022	14.9	7.65	262	<2	97.00%	9.84	78.7	0.011	8.26	0.07
2801	305	12/01/2022	7.3	7.19	135	<2	96.20%	11.59	12.8	<0.010	3.1	<0.05
2801	3265	20/04/2022	7.1	7.48	152	<2	94.20%	11.42	23.1	0.028	2.92	0.12
2801	7119	05/08/2022	13.5	7.34	158	<2	97.00%	10.11	26.1	<0.010	2.15	0.11
2801	10249	10/11/2022	11.3	7.34	135	<2	101.00%	11.04	12.5	<0.010	3.23	<0.05
2802	306	12//01/22	7.2	6.84	121	<2	95.70%	11.57	7.33	<0.010	2.17	<0.05
2802	7118	05/08/2022	13.7	7.27	48.2	<2	96.00%	9.92	17.9	<0.010	0.47	<0.05
3002	574	19/01/2022	7.7	7.57	239	<2	92.60%	11.06	38.5	0.014	16.1	0.05

3002	6270	21/07/2022	14.1	7.55	292	<2	97.00%	9.95	71.3	0.019	6.82	<0.05
3004	577	19/01/2022	7.5	7.6	194	<2	93.00%	11.16	22.2	<0.010	7.05	<0.05
3004	3266	20/04/2022	7.7	7.39	194	<2	94.70%	11.31	24.2	0.015	4.55	<0.05
3004	7347	11/08/2022	13.3	7.52	189	<2	96.00%	10.1	25.1	<0.010	3.13	<0.05
3004	10250	10/11/2022	11.4	7.29	194	<2	101.00%	11.03	20.6	0.014	6.85	<0.05
3021	572	19/01/2022	7.8	7.76	419	<2	90.30%	10.76	129	0.046	15	0.08
3021	3267	20/04/2022	8.3	7.96	452	<2	102.00%	11.98	151	0.022	13.2	0.1
3021	7700	25/08/2022	13.6	7.55	491	2	90.00%	9.35	164	0.048	6.74	0.4
3021	10455	18/11/2022	10.1	7.44	406	5	94.00%	10.61	116	0.553	13.3	<0.05
3031	573	19/01/2022	7.5	7.84	677	<2	87.70%	10.52	280	0.077	21.1	0.08
3031	2477	23/03/2022	10.4	8.16	655	<2	107.00%	11.96	276	0.024	14	<0.05
3031	7348	11/08/2022	17.5	8.09	722	<2	114.00%	10.9	323	0.07	3.65	0.11
3031	10456	18/11/2022	9.8	7.6	657	3	91.00%	10.37	266	0.127	15.8	0.1
3103	988	02/02/2022	8.4	7.65	231	<2	92.00%	10.9	47.4	0.013	7.91	<0.05
3103	6272	21/07/2022	14.1	7.64	261	<2	98.00%	10.05	73.5	0.011	4.86	0.06
3105	987	02/02/2022	8.5	7.61	199	<2	93.00%	10.9	33	<0.010	7.19	<0.05
3105	6271	21/07/2022	14.4	7.66	199	<2	99.00%	10.17	38.5	0.011	5.1	0.06
3107	982	02/02/2022	7.9	7.09	163	<2	91.00%	10.8	21.2	0.02	3.83	<0.05
3107	6266	21/07/2022	14.6	7.16	168	<2	96.00%	9.88	29.6	0.02	1.39	<0.05
3111	571	19/01/2022	8.8	7.74	581	<5	43.30%	5.03	194	0.038	12.8	<0.05
3111	990	02/02/2022	9.7	7.88	628	<2	92.00%	10.5	242	0.04	11.7	<0.05
3111	2476	23/03/2022	9.9	7.87	606	<2	92.30%	10.45	245	0.046	11.8	0.07
3111	7701	25/08/2022	14.4	7.68	596	<2	98.00%	9.98	234	0.036	5.59	<0.05
3111	10457	18/11/2022	11	7.63	525	3	97.00%	10.73	173	0.063	9.06	0.07
3201	985	02/02/2022	8.6	7.75	225	<2	94.00%	11	44.9	0.013	8.05	<0.05
3201	3321	21/04/2022	9.4	7.83	231	<2	98.00%	11.21	52.1	<0.010	7.07	<0.05
3201	7702	25/08/2022	13.9	7.85	241	<2	99.00%	10.21	57.1	0.048	2.92	<0.05
3201	10824	01/12/2022	10.1	7.48	220	<2	108.00%	12.13	42.8	0.04	9.41	<0.05
3203	986	02/02/2022	8.4	7.6	216	<2	93.00%	11	43.5	<0.010	7.29	<0.05
3203	3320	21/04/2022	9.1	7.59	224	<2	97.00%	11.13	54	0.031	6.44	<0.05

3203	7346	11/08/2022	16.2	7.8	239	3	104.00%	10.3	60.5	0.023	5.49	<0.05
3203	10823	01/12/2022	10.1	7.41	210	<2	106.00%	11.91	40.7	0.062	8.51	<0.05
3205	308	12/01/2022	6.8	7.14	191	<2	94.90%	11.58	33.1	0.018	2.91	<0.05
3205	5808	07/07/2022	14.1	7.46	234	<2	98.00%	10.11	63.8	0.038	1.25	<0.05
3231	311	12/01/2022	7.5	7.42	240	<2	86.20%	10.34	38.6	0.011	12.7	<0.05
3231	2503	25/03/2022	9.4	7.47	247	<2	97.00%	11.09	50.5	0.012	12.9	<0.05
3231	7344	11/08/2022	14.8	7.66	294	<2	99.00%	10	73.1	0.034	8.74	0.05
3231	10432	17/11/2022	10	7.38	250	<2	98.00%	11.11	46.2	0.013	13.8	<0.05
3233	310	12/01/2022	6.6	7.3	179	<2	93.60%	11.48	32.6	0.023	5.54	<0.05
3233	6081	15/07/2022	15.3	7.52	238	3	86.00%	8.6	82.3	0.03	0.2	1.22
3235	309	12/01/2022	8.6	6.68	155	<2	96.10%	11.23	21.5	<0.010	6.59	<0.05
3235	6080	15/07/2022	13.2	7.23	165	<2	97.00%	10.18	20.3	0.018	7.29	<0.05
3240	576	19/01/2022	9.1	7.55	458	<2	90.50%	10.43	106	0.08	14.9	0.12
3240	6268	21/07/2022	14.1	7.37	451	<2	96.00%	9.79	128	0.013	15.1	0.13
3241	578	19/01/2022	7.7	7.7	301	<2	93.00%	11.11	44.6	0.022	8.11	0.08
3241	6267	21/07/2022	16.6	7.74	401	3	97.00%	9.46	96	0.076	0.43	0.17
3242	575	19/01/2022	8.3	7.68	443	<2	92.10%	10.84	106	0.127	12.2	<0.05
3242	6269	21/07/2022	13.8	8.03	540	<2	98.00%	10.21	181	0.081	14.7	0.07
3243	984	02/02/2022	9.1	7.71	312	<2	95.00%	10.9	70.7	0.012	11.8	0.05
3243	6082	15/07/2022	15.3	7.62	369	<2	99.00%	9.91	103	0.01	12.4	0.08
3244	661	20/01/2022	5.4	7.13	95.9	<2	94.00%	11.92	13.2	<0.010	1.14	<0.05
3244	7070	04/08/2022	12.5	7.21	104	<2	95.00%	10.14	14	<0.010	0.77	<0.05
3245	2502	25/03/2022	13	7.75	322	3	106.00%	11.17	67.8	0.057	16.5	<0.05
3245	6083	15/07/2022	20.8	9.77	319	<3	142.00%	12.72	66.7	0.011	13	<0.05
3246	429	14/01/2022	8.7	7.31	316	<2	98.00%	11.4	70.1	0.038	10.6	0.05
3246	2504	25/03/2022	10.2	7.7	309	<2	99.00%	11.12	69.4	0.016	10.1	0.11
3246	6274	21/07/2022	13.1	7.74	324	<2	99.00%	10.47	69.9	<0.010	8.5	0.08
3301	427	14/01/2022	7.5	7.3	123	<2	99.00%	11.9	18.1	0.019	7.15	<0.05
3301	2413	23/03/2022	8.5	7.35	125	<2	99.00%	11.62	23.3	0.028	7.14	<0.05
3301	7005	03/08/2022	15.6	7.5	197	<2	102.00%	10.13	19.3	0.029	3.37	<0.05

3301	10435	17/11/2022	9.8	7.25	117	<2	100.00%	11.34	18.2	0.011	5.93	<0.05
3302	426	14/01/2022	7.4	7.2	121	<2	97.00%	11.7	15.6	0.02	10.1	<0.05
3302	2412	23/03/2022	8.5	7.26	127	<2	97.00%	11.34	20	0.019	11.1	<0.05
3302	7004	03/08/2022	14.8	7.32	109	<2	99.00%	9.97	13.4	0.028	5.33	<0.05
3302	10255	10/11/2022	11.7	7	106	<2	104.00%	11.26	10.2	0.032	6.57	<0.05
3303	989	02/02/2022	8.5	7.31	162	<2	95.00%	11.1	27.8	<0.010	4.58	<0.05
3303	2414	23/03/2022	9	7.29	268	<2	97.00%	11.22	30.9	0.013	4.75	<0.05
3303	7006	03/08/2022	14.5	7.52	201	<2	96.00%	9.83	43.2	0.027	5.63	0.05
3303	10253	10/11/2022	11.9	7.45	154	<2	103.00%	11.08	24.4	0.012	4.52	<0.05
3304	569	19/01/2022	7.8	7.52	189	<2	91.70%	10.92	25.4	<0.010	7.62	<0.05
3304	3269	20/04/2022	8.6	7.74	185	<2	100.00%	11.67	30.4	0.021	6.56	<0.05
3304	7349	11/08/2022	13.4	7.74	183	<2	97.00%	10.2	30.9	<0.010	5.46	<0.05
3304	10251	10/11/2022	11.7	7.33	180	<2	103.00%	11.17	24.3	0.02	6.88	<0.05
3305	570	19/01/2022	7.9	7.57	231	<2	92.50%	10.99	48.5	<0.010	9.13	<0.05
3305	3268	20/04/2022	9	7.97	248	<2	102.00%	11.85	65.2	0.022	6.99	<0.05
3305	7345	11/08/2022	15.9	8.26	267	<2	109.00%	10.8	77.4	0.01	4.81	<0.05
3305	10252	10/11/2022	11.9	7.58	230	<2	103.00%	11.09	48.3	0.016	9.04	<0.05
3306	983	02/02/2022	8.2	7.43	199	<2	92.00%	10.9	40.6	0.015	5.26	<0.05
3306	6273	21/07/2022	14.5	7.65	226	<2	101.00%	10.34	62.4	<0.010	2.98	<0.05
3307	358	13/01/2022	6.6	7.01	107	3	97.10%	11.92	10.8	<0.010	3.53	<0.05
3307	2410	23/03/2022	7.8	7.35	108	<2	97.00%	11.53	14.2	0.013	3.45	<0.05
3307	7001	03/08/2022	14.8	7.19	90	<2	97.00%	9.79	9.18	0.024	0.67	<0.05
3307	10268	11/11/2022	12.1	7.19	110	<2	103.00%	11.1	11.3	<0.010	3.68	<0.05
2001	783	27/01/2023	5.9	7.26	283	<3	104.00%	12.98	60.5	0.224	10.7	<0.05
2001	2908	20/04/2023	9.5	7.29	262	<2	104.00%	11.85	58.2	0.115	10	<0.05
2001	5835	20/07/2023	13.6	7.19	324	<2	92.00%	9.61	70.3	0.067	10.1	<0.05
2001	8492	12/10/2023	11.6	7.08	263	<2	98.60%	10.72	60.8	0.098	9.84	<0.05
2002	568	20/01/2023	7.7	7.48	240	<2	102.00%	12.15	39.9	0.033	13.2	<0.05
2002	2910	20/04/2023	10.6	7.38	221	<2	104.00%	11.61	44.6	0.065	11.1	<0.05
2002	5833	20/07/2023	13.1	7.03	281	<2	93.00%	9.73	56.3	0.057	10.7	0.13

2002	8513	13/10/2023	11.6	7.4	232	<2	98.20%	10.7	46	0.027	10.8	0.05
2003	784	27/01/2023	5.2	7.24	155	<3	103.00%	13.09	26.5	0.032	7.41	<0.05
2003	2907	20/04/2023	9.5	7.23	147	<3	107.00%	12.27	31.1	0.018	6.91	<0.05
2003	5836	20/07/2023	15.4	7.29	169	<2	96.00%	9.6	35.4	0.038	5.42	0.05
2003	8493	12/10/2023	11.7	7.26	138	<2	101.00%	10.99	28.4	0.012	5.7	<0.05
2004	385	12/01/2023	8.2	7.45	166	<2	99.00%	11.72	32.9	0.064	7.53	<0.05
2004	4301	14/06/2023	18.4	7.32	224	4	112.00%	10.53	51.7	0.108	9.9	0.26
2005	567	20/01/2023	7.1	7.31	209	<3	102.00%	12.32	35.4	0.038	10.9	<0.05
2005	5834	20/07/2023	13.2	7.14	265	<2	92.00%	9.66	56.7	0.059	9.78	0.16
2006	383	12/01/2023	8.1	6.81	155	<2	98.00%	11.53	27.9	0.062	7.23	0.05
2006	2903	20/04/2023	8.2	7.05	162	<2	101.00%	11.94	42.9	0.029	6.76	<0.05
2006	5830	20/07/2023	13.7	6.86	185	<2	88.00%	9.09	37.8	0.038	5.43	0.15
2006	8485	12/10/2023	10.9	7.05	164	<2	96.20%	10.63	35.6	0.026	6.26	0.05
2011	381	12/01/2023	7.9	6.68	130	<2	94.00%	11.19	20.8	0.053	4.65	<0.05
2011	2902	20/04/2023	8.1	6.85	135	<2	98.60%	11.65	28.5	0.059	3.33	<0.05
2011	5829	20/07/2023	13.1	6.63	154	<2	86.00%	9.09	28.8	0.192	1.69	<0.05
2011	8484	12/10/2023	10.8	6.81	138	<2	93.30%	10.34	29	0.07	3.21	<0.05
2013	386	12/01/2023	8	7.18	115	<2	101.00%	11.99	17.5	0.022	5.94	<0.05
2013	4300	14/06/2023	16.7	7.62	154	2	109.00%	10.62	29.2	0.032	7.62	<0.05
2015	384	12/01/2023	7.9	7.08	127	<2	100.00%	11.85	22.7	0.025	4.75	<0.05
2015	4434	16/06/2023	14.2	6.77	165	<2	103.00%	10.61	40.5	0.017	5.18	0.05
2017	561	20/01/2023	5.7	6.65	97.6	<3	101.00%	12.7	11.3	<0.010	4.73	<0.05
2017	5832	20/07/2023	13.6	7.04	93.1	<2	94.00%	9.77	12.1	<0.010	1.13	<0.05
2022	560	20/01/2023	5.5	6.4	72.3	<3	99.00%	12.54	5.97	<0.010	1.69	<0.05
2022	4435	16/06/2023	10.8	6.27	62.5	<2	101.00%	11.18	7.09	0.095	0.89	<0.05
2023	559	20/01/2023	5.2	6.16	66.4	<2	99.00%	12.73	7.66	<0.010	1.04	<0.05
2023	2911	20/04/2023	11	7.11	59.2	<2	106.00%	11.71	14.6	<0.010	0.52	<0.05
2023	6041	28/07/2023	13.2	6.54	55.3	<2	96.60%	10.13	4.54	0.013	0.21	<0.05
2023	8486	12/10/2023	10.4	7.15	57.3	<2	98.50%	11.01	5.1	<0.010	0.36	<0.05
2026	382	12/01/2023	7.9	6.8	138	<2	95.00%	11.28	22.6	0.065	5.49	<0.05

2026	4305	14/06/2023	16.1	7.05	194	4	78.60%	7.74	43.8	1.1	8.55	0.68
2027	380	12/01/2023	7.9	6.67	120	<2	92.00%	10.95	16.2	0.028	3.53	<0.05
2027	4433	16/06/2023	14.2	6.42	169	<2	88.00%	9.08	22.7	0.133	2.15	<0.05
2028	980	03/02/2023	7.9	5.11	149	<2	102.00%	12.07	2.82	0.018	1.75	<0.05
2028	5827	20/07/2023	12.6	5.93	131	<2	90.00%	9.55	3.32	0.024	0.18	<0.05
2031	566	20/01/2023	7.4	7.33	261	<3	103.00%	12.37	47.4	0.206	11.8	<0.05
2031	4441	16/06/2023	14.3	7.29	349	3	112.00%	11.42	66.4	0.35	12.9	0.1
2101	565	20/01/2023	5.6	7.41	196	<3	100.00%	12.63	28	0.01	8.04	<0.05
2101	3093	26/04/2023	7.9	7.69	189	<3	107.00%	12.7	38.5	0.032	6.97	<0.05
2101	5540	13/07/2023	13.9	7.44	220	<2	94.40%	9.74	44.5	0.037	8.97	0.09
2101	8490	12/10/2023	11.6	7.17	170	<2	99.40%	10.81	31.9	<0.010	5.43	<0.05
2102	564	20/01/2023	5.9	7.39	223	<3	100.00%	12.49	66.6	<0.010	13.8	<0.05
2102	5541	13/07/2023	13.2	7.71	252	<2	93.30%	9.79	48.5	0.032	15.1	0.14
2201	413	13/01/2023	8.4	6.9	183	<2	103.00%	12.1	30.4	0.015	8.89	<0.05
2201	5861	21/07/2023	13.4	6.99	218	<2	100.00%	10.43	46	<0.010	7.14	0.05
2211	412	13/01/2023	7.6	6.97	103	<2	101.00%	12.13	11.5	<0.010	4.85	<0.05
2211	2827	19/04/2023	10.5	7.03	95.7	<3	111.00%	12.35	13.5	<0.010	3.34	<0.05
2211	5537	13/07/2023	17.8	7.10	97.1	<2	98.20%	9.33	13.0	0.022	1.42	<0.05
2211	8671	18/10/2023	10.6	7.14	94.4	<2	99.00%	11.03	16.8	<0.010	2.67	<0.05
2213	411	13/01/2023	7.6	6.97	102	<2	101.00%	12.15	10.5	0.01	4.99	<0.05
2213	2828	19/04/2023	9.8	7.03	95.5	<3	110.00%	12.45	13.7	<0.010	3.47	<0.05
2213	5538	13/07/2023	15.8	7.25	98.2	<2	96.20%	9.54	19.9	0.012	1.58	<0.05
2213	8672	18/10/2023	10.4	7.19	95.6	<2	99.00%	11.11	16.7	<0.010	3.01	<0.05
2216	410	13/01/2023	7.6	6.84	89.2	<2	102.00%	12.17	7.77	<0.010	4.15	<0.05
2216	5765	19/07/2023	15.2	7.11	75.7	<2	97.80%	9.82	8.64	<0.010	0.78	<0.05
2218	409	13/01/2023	7.5	6.84	78.6	<2	101.00%	12.08	6.42	<0.010	3.97	<0.05
2218	5766	19/07/2023	15.5	7.00	64.6	<2	97.30%	9.70	6.65	<0.010	0.59	<0.05
2311	5536	13/07/2023	15.7	7.05	99.9	<2	96.70%	9.61	13.0	0.024	4.07	0.13
2311	8673	18/10/2023	10.7	7.21	90.3	<2	100.00%	11.07	13.7	0.032	2.57	<0.05
2315	407	13/01/2023	7.5	7.11	73.9	<2	101.00%	12.14	7.32	<0.010	3.51	<0.05

2315	5535	13/07/2023	13.7	7.16	72.3	<2	94.30%	9.78	9.75	0.017	1.02	<0.05
2421	960	02/02/2023	7.8	7.21	80.5	<2	100.00%	11.93	5.74	<0.010	1.47	<0.05
2421	2825	19/04/2023	9.8	7.04	78.5	<3	109.00%	12.31	6.31	<0.010	1.61	<0.05
2421	5534	13/07/2023	14.0	7.11	83.5	<2	94.40%	9.73	9.08	0.014	0.93	<0.05
2421	8215	04/10/2023	11.8	6.92	72.3	<2	99.40%	10.76	8.75	<0.010	1.12	<0.05
2422	962	02/02/2023	7.8	6.69	84.2	<3	103.00%	12.28	4.62	<0.010	1.44	<0.05
2422	5762	19/07/2023	13.4	7.39	79.7	<2	84.60%	8.83	18.4	<0.010	0.46	<0.05
2423	961	02/02/2023	7.7	6.78	69.8	<3	103.00%	12.26	3.6	0.01	1.04	<0.05
2423	5763	19/07/2023	14.4	7.15	63.0	<2	95.80%	9.78	11.3	<0.010	0.20	<0.05
2424	959	02/02/2023	8.3	7.16	383	<2	88.60%	10.42	128	0.176	9.53	<0.05
2424	5761	19/07/2023	14.9	7.33	400	<2	80.70%	8.15	151	0.064	6.16	<0.05
2427	958	02/02/2023	7.2	6.99	78.3	<2	99.60%	12.05	7.77	0.025	1.96	<0.05
2427	5760	19/07/2023	16.3	7.12	84.0	<2	89.30%	8.75	22.6	0.025	1.16	<0.05
2428	686	25/01/2023	7.2	6.59	79.5	<2	99.00%	11.99	6.53	0.016	2.13	<0.05
2428	2824	19/04/2023	9.5	6.99	84.9	<3	108.00%	12.35	9.12	<0.010	2.5	<0.05
2428	5533	13/07/2023	15.1	7.08	94.1	<2	97.30%	9.79	14.2	0.028	2.27	<0.05
2428	8216	04/10/2023	12.3	6.82	72	<2	101.00%	10.76	8.42	<0.010	1.34	<0.05
2429	687	25/01/2023	8.4	6.8	110	<2	101.00%	11.81	11	0.012	5.8	<0.05
2429	5853	21/07/2023	13.3	7.14	123	<2	97.00%	10.11	21.7	0.016	2.73	<0.05
2430	688	25/01/2023	7.1	6.51	70.3	<3	102.00%	12.38	5.63	0.019	1.42	<0.05
2430	5854	21/07/2023	14.1	7.12	72	<2	99.00%	10.14	6.42	0.018	0.62	<0.05
2431	689	25/01/2023	8	6.36	79.7	<2	102.00%	12.11	3.49	<0.010	1.76	<0.05
2431	5855	21/07/2023	12.8	7.1	76.9	<2	97.00%	10.29	6.42	<0.010	0.18	<0.05
2432	690	25/01/2023	6.6	6.27	65.7	<3	100.00%	12.29	4.28	0.016	1.08	<0.05
2432	2823	19/04/2023	10.1	7.29	65.2	<2	107.00%	12.07	5.52	0.016	0.93	<0.05
2432	5856	21/07/2023	14.2	7.1	67.6	<2	99.00%	10.17	6.54	<0.010	0.58	<0.05
2432	8217	04/10/2023	13.1	6.8	59.9	<2	102.00%	10.7	4.87	<0.010	0.61	<0.05
2433	691	25/01/2023	7.9	6.27	59	<2	102.00%	12.15	2.93	<0.010	1.21	<0.05
2433	5857	21/07/2023	14.4	6.91	53.5	<2	99.00%	10.11	2.99	<0.010	0.25	<0.05
2434	692	25/01/2023	7.7	6.25	92.4	<2	102.00%	12.16	5.18	0.012	1.64	<0.05

2434	5858	21/07/2023	14.1	6.87	72.5	<2	99.00%	10.15	7.09	0.041	0.62	<0.05
2435	693	25/01/2023	6.6	6.2	90.2	<3	100.00%	12.27	4.84	0.016	1.08	<0.05
2435	3333	04/05/2023	8.3	6.7	68.4	<2	102.00%	12.04	5.40	0.022	0.72	<0.05
2435	5859	21/07/2023	15.2	6.8	67.9	<2	99.00%	9.95	6.65	0.081	0.45	<0.05
2435	8670	18/10/2023	12.2	7.06	72.6	<2	99.00%	10.61	6.98	0.03	0.51	<0.05
2436	695	25/01/2023	7.3	6	51.3	<3	102.00%	12.32	4.28	<0.010	0.25	<0.05
2436	4436	16/06/2023	16.7	6.58	73.3	<2	113.00%	10.98	15.7	0.01	0.08	<0.05
2438	694	25/01/2023	6.8	5.91	57.9	<2	100.00%	12.19	3.49	<0.010	0.59	<0.05
2438	5860	21/07/2023	12.9	6.85	56.4	<2	97.00%	10.21	3.99	<0.010	<0.05	<0.05
2511	955	02/02/2023	8.2	7.36	432	<2	92.70%	10.93	136	0.123	15.2	<0.05
2511	5759	19/07/2023	15.9	7.74	490	<2	88.80%	8.78	179	0.017	20.9	<0.05
2512	956	02/02/2023	8.1	7.28	394	<2	92.20%	10.9	117	0.188	12.1	<0.05
2512	5758	19/07/2023	16.0	7.49	425	<2	81.20%	8.02	150	0.015	14.8	<0.05
2513	957	02/02/2023	8.1	7.13	354	<2	87.00%	10.28	103	0.238	8.58	<0.05
2513	5757	19/07/2023	15.0	7.19	362	<2	81.30%	8.19	126	0.113	4.63	<0.05
2603	778	27/01/2023	6.4	6.98	121	<3	105.00%	12.96	10.1	0.021	4.76	<0.05
2603	2822	19/04/2023	8.8	7.25	121	<2	104.00%	12.05	12.6	0.022	4.42	<0.05
2603	5532	13/07/2023	13.0	7.15	123	<2	91.00%	9.59	15.0	0.033	2.84	<0.05
2603	8214	04/10/2023	11.7	7.06	113	<2	98.20%	10.69	11	<0.010	3.63	<0.05
2634	779	27/01/2023	5.5	7.13	117	<3	105.00%	13.28	15.1	0.014	3.28	<0.05
2634	4437	16/06/2023	15	7.13	167	<2	109.00%	11.03	40.4	0.026	2.72	<0.05
2651	780	27/01/2023	4.9	7.39	161	<3	106.00%	13.57	27.1	0.02	4.47	<0.05
2651	4438	16/06/2023	14.2	7.17	209	<2	109.00%	11.19	51.8	0.032	4.27	<0.05
2711	883	01/02/2023	7.1	7.51	143	<3	105.00%	12.67	40.1	0.079	6.1	<0.05
2711	2821	19/04/2023	8.9	7.08	172	<2	105.00%	12.16	38.2	0.094	5.37	<0.05
2711	6038	28/07/2023	13.8	7.13	71.8	2	96.60%	10	29.2	0.028	2.96	<0.05
2711	8669	18/10/2023	10.1	7.52	169	<2	97.00%	10.87	39.9	0.011	4.53	<0.05
2714	953	02/02/2023	8.8	7.11	176	<2	103.00%	11.97	35.7	0.223	5.06	0.06
2714	2820	19/04/2023	8.3	6.98	160	<2	104.00%	12.19	31.9	0.113	4.34	<0.05
2714	6036	28/07/2023	13.4	6.95	142	2	95.90%	10.01	22.5	0.048	3.03	<0.05

2714	8212	04/10/2023	12	7.22	152	<2	98.60%	10.62	30	0.012	4.11	<0.05
2715	879	01/02/2023	7.4	7.32	156	<2	99.90%	12.02	38.5	0.032	6.56	<0.05
2715	5567	14/07/2023	13.4	7.46	230	<2	93.00%	9.71	62.7	0.035	6.52	<0.05
2718	880	01/02/2023	7.1	7.27	148	<3	105.00%	12.67	26.1	0.012	3.64	<0.05
2718	5568	14/07/2023	14.9	7.55	195	<2	97.10%	9.81	41.4	<0.010	1.5	<0.05
2720	878	01/02/2023	7.3	7.03	182	<3	103.00%	12.43	31.4	0.015	2.93	<0.05
2720	5566	14/07/2023	14.9	7.56	225	<2	96.20%	9.72	51.5	0.021	0.94	<0.05
2721	877	01/02/2023	6.9	7.35	174	<3	103.00%	12.6	7.09	<0.010	1.37	<0.05
2721	6339	09/08/2023	11.2	6.5	113	<2	93.50%	10.27	7.64	<0.010	0.9	<0.05
2722	954	02/02/2023	8.6	7.11	119	<2	104.00%	12.11	16.4	0.012	3.31	<0.05
2722	6035	28/07/2023	13.2	6.82	86.3	2	95.50%	10.02	10.4	0.018	1.16	<0.05
2725	782	27/01/2023	4.7	7.07	90.9	<3	106.00%	13.61	8.56	0.021	2.57	<0.05
2725	4439	16/06/2023	15.8	7.26	90.4	<2	113.00%	11.18	13.7	0.091	1.22	<0.05
2726	881	01/02/2023	7.1	7.22	190	<3	104.00%	12.61	25.7	0.063	4.41	<0.05
2726	4440	16/06/2023	17.3	7.23	193	<2	119.00%	11.42	44.5	0.147	6.19	0.2
2728	882	01/02/2023	7.4	7.42	181	<3	104.00%	12.54	44.8	0.06	6.85	<0.05
2728	6037	28/07/2023	13.6	6.97	146	<2	95.70%	9.94	30.9	0.022	3.23	<0.05
2801	884	01/02/2023	7.2	7.4	144	<3	106.00%	12.81	15.7	0.01	3.06	<0.05
2801	3091	26/04/2023	6.9	7.41	142	<3	104.00%	12.61	18	<0.010	2.73	<0.05
2801	6040	28/07/2023	13.4	7	107	<2	9690.00%	10.12	9.53	0.02	1.53	<0.05
2801	8504	13/10/2023	11	7.43	126	<2	99.60%	10.99	13.4	0.01	1.95	<0.05
2802	885	01/02/2023	7.1	7.23	126	<3	105.00%	12.72	8.9	0.011	1.98	<0.05
2802	6039	28/07/2023	13.5	7.01	104	<2	97.10%	10.12	7.42	0.015	1.31	<0.05
3002	295	11/01/2023	7.8	7.48	233	<2	101.00%	12.03	36.9	0.028	10.1	<0.05
3002	5562	14/07/2023	14.3	7.36	291	<2	92.50%	9.46	69.9	0.031	6.65	<0.05
3004	298	11/01/2023	7.8	7.33	187	<3	103.00%	12.31	22.6	0.014	7.57	<0.05
3004	2953	21/04/2023	8.8	7.42	186	<2	104.00%	12.12	24	<0.010	5.73	<0.05
3004	6342	09/08/2023	12.9	7.07	163	<2	96.20%	10.16	20.3	<0.010	2.86	<0.05
3004	8506	13/10/2023	11.3	7.38	186	<2	99.40%	10.88	22.6	0.014	4.73	<0.05
3021	294	11/01/2023	8	7.51	404	2	98.90%	11.72	117	0.091	16.1	0.08

3021	2954	21/04/2023	9.7	7.66	412	<2	104.00%	11.79	135	0.038	15.5	0.06
3021	6343	09/08/2023	13.1	7.63	424	<2	95.00%	9.99	140	0.026	7.18	0.16
3021	8507	13/10/2023	11.8	7.56	420	<2	96.30%	10.4	132	0.021	12.1	0.09
3031	754	26/01/2023	7.1	7.61	686	<2	100.00%	12.1	269	0.121	17.3	0.06
3031	2955	21/04/2023	10	7.79	676	<2	107.00%	12.05	284	0.047	15.5	<0.05
3031	6344	09/08/2023	12.5	7.62	693	<2	88.20%	9.39	277	0.037	5.75	0.12
3031	8508	13/10/2023	12.2	7.64	692	2	89.30%	9.58	293	0.109	10	0.08
3103	751	26/01/2023	6.5	7.54	230	<3	105.00%	12.9	47.1	0.043	9.65	<0.05
3103	5561	14/07/2023	14.6	7.46	245	<2	94.40%	9.6	63.9	0.032	4.88	0.05
3105	752	26/01/2023	6.8	7.63	195	<3	104.00%	12.7	31.6	0.024	7.35	<0.05
3105	5560	14/07/2023	14.6	7.34	196	<2	95.20%	9.69	39.1	0.021	4.92	<0.05
3107	753	26/01/2023	6.9	7.11	163	<3	103.00%	12.6	21.1	0.037	4.73	<0.05
3107	5828	20/07/2023	13.9	6.61	155	<2	92.00%	9.48	19.7	0.024	1.45	<0.05
3111	293	11/01/2023	8.6	7.61	580	<2	98.20%	11.47	187	0.071	13.7	0.08
3111	3092	26/04/2023	9.6	7.69	609	<2	106.00%	12.08	228	0.038	10.1	<0.05
3111	6345	09/08/2023	14	7.66	604	<2	94.50%	9.74	226	0.039	6.59	<0.05
3111	8509	13/10/2023	12.6	7.72	572	<2	94.50%	10.05	223	0.034	7.57	<0.05
3201	981	03/02/2023	8.7	7.33	226	<3	106.00%	12.33	42.8	0.011	9.41	<0.05
3201	2958	21/04/2023	10.9	7.79	222	<2	107.00%	11.86	50.4	<0.010	9.47	<0.05
3201	6399	10/08/2023	15.1	7.65	198	<2	99.00%	9.96	45.9	0.016	5.62	<0.05
3201	8512	13/10/2023	11.7	7.6	215	<2	99.90%	10.84	49.3	0.016	7.34	<0.05
3203	755	26/01/2023	6.8	7.11	209	<3	105.00%	12.8	42.3	0.028	8.53	<0.05
3203	2956	21/04/2023	10	7.91	209	<2	107.00%	12.03	43.7	0.015	8.31	<0.05
3203	6347	09/08/2023	13.5	7.73	193	<2	98.80%	10.29	41.3	0.02	5.44	<0.05
3203	8511	13/10/2023	11.6	7.6	206	<2	99.80%	10.85	47.1	0.015	6.7	<0.05
3205	886	01/02/2023	7.3	7.23	214	<3	104.00%	12.55	41.7	0.066	2.24	<0.05
3205	4442	16/06/2023	15.7	7.39	240	<2	112.00%	11.13	63.7	0.108	1.74	<0.05
3231	785	27/01/2023	5.8	7.41	262	<3	104.00%	13.01	42.6	0.024	13.1	<0.05
3231	2909	20/04/2023	9.9	7.41	249	<2	107.00%	12.1	48	0.012	12.1	<0.05
3231	6043	28/07/2023	15.4	7.34	239	<2	99.40%	9.93	50.3	0.021	7.64	0.05

3231	8487	12/10/2023	11.3	6.99	243	<2	99.40%	10.88	45.3	<0.010	11.7	<0.05
3233	786	27/01/2023	5.3	7.44	223	<3	102.00%	12.91	37.8	0.036	6.9	<0.05
3233	4302	14/06/2023	17.6	7.44	229	<7	92.90%	8.86	66.1	0.209	1.68	2.95
3233	6348	09/08/2023	16	7.73	180	5	98.60%	9.73	37.7	0.025	4.36	0.56
3235	787	27/01/2023	6.8	7.09	172	<3	102.00%	12.51	25.2	0.01	8.81	<0.05
3235	4304	14/06/2023	13.8	7.47	170	3	109.00%	11.24	25.5	0.031	7.9	<0.05
3240	289	11/01/2023	8.6	7.26	445	3	98.80%	11.54	89.3	0.094	15.2	0.13
3240	5565	14/07/2023	14.5	7.46	466	<2	92.70%	9.44	134	0.021	15.5	0.07
3241	290	11/01/2023	8.1	7.46	334	<2	103.00%	12.14	56.2	0.019	11.6	0.08
3241	5564	14/07/2023	15.7	7.88	357	<2	96.70%	9.61	77.7	0.033	0.77	0.15
3242	291	11/01/2023	8.2	7.39	419	3	101.00%	11.91	91.6	0.275	13.6	0.1
3242	5563	14/07/2023	14.1	7.9	551	<2	94.60%	9.73	182	0.072	12.2	<0.05
3243	292	11/01/2023	8.1	7.47	296	<2	103.00%	12.13	52.4	0.039	11.1	<0.05
3243	4303	14/06/2023	15.6	7.67	352	4	113.00%	11.27	93.5	0.053	11.7	0.11
3244	414	13/01/2023	7.1	7.07	93.9	<2	99.30%	12.03	11.6	<0.010	2.21	<0.05
3244	5764	19/06/2023	13.2	7.07	96.3	<2	94.10%	9.87	14.8	<0.010	0.69	<0.05
3245	405	13/01/2023	10.3	7.54	353	3	101.00%	11.35	72.7	0.089	19.5	<0.05
3245	4298	14/06/2023	18.6	8.79	320	3	139.00%	12.99	44.2	0.017	14	<0.05
3246	406	13/01/2023	9	7.64	325	<2	101.00%	11.65	69.8	0.019	10.8	0.05
3246	4299	14/06/2023	13.7	7.99	323	3	110.00%	11.41	68.6	0.019	9.35	0.1
3301	387	12/01/2023	7.9	7.2	110	<2	101.00%	12.01	14.5	0.024	5.85	<0.05
3301	2905	20/04/2023	8.3	7.17	122	<2	103.00%	12.06	22.5	0.01	6.57	<0.05
3301	6042	28/07/2023	14.8	6.69	84.6	<2	99.30%	10.05	10.6	0.021	1.77	<0.05
3301	8488	12/10/2023	11	7.17	111	<2	101.00%	11.09	18.7	<0.010	4.94	<0.05
3302	561	20/01/2023	5.8	6.87	119	<3	100.00%	12.58	15.3	<0.010	9.45	<0.05
3302	2904	20/04/2023	8.2	7.19	117	<2	102.00%	12.01	25.3	0.011	9.23	<0.05
3302	5831	20/07/2023	13.7	7.06	100	<2	95.00%	9.86	13	0.011	5.31	<0.05
3302	8491	12/10/2023	11.2	7.27	105	<2	98.70%	10.98	13.7	<0.010	6.87	<0.05
3303	563	20/01/2023	5.4	6.88	165	<3	98.00%	12.45	24.9	<0.010	5.06	<0.05
3303	2906	20/04/2023	9	7.21	153	<2	100.00%	11.56	31.9	<0.010	4.47	<0.05

3303	5539	13/07/2023	13.4	7.15	188	<2	94.20%	9.84	39.3	0.016	5.81	<0.05
3303	8489	12/10/2023	11.8	7.14	142	<2	99.20%	10.73	25.8	<0.010	3.22	<0.05
3304	296	11/01/2023	7.9	7.48	181	<2	102.00%	12.13	23.9	0.023	7.58	<0.05
3304	2952	21/04/2023	8.6	7.42	173	<2	101.00%	11.8	29.6	<0.010	6.42	<0.05
3304	6341	09/08/2023	12.2	7.09	158	<2	94.40%	10.13	19.8	0.013	4.57	<0.05
3304	8505	13/10/2023	11.3	7.37	175	<2	98.60%	10.8	26.6	0.011	5.59	<0.05
3305	297	11/01/2023	7.7	7.49	235	<2	102.00%	12.21	52.5	0.029	9.81	<0.05
3305	2957	21/04/2023	9.5	7.81	234	<3	108.00%	12.28	56.2	<0.010	8.4	<0.05
3305	6346	09/08/2023	13	7.79	188	<2	97.70%	10.29	36.1	0.011	5.39	<0.05
3305	8510	13/10/2023	11.4	7.71	215	<2	99.10%	10.82	47.9	0.017	6.54	<0.05
3306	756	26/01/2023	6.9	7.03	191	<3	104.00%	12.6	36	0.018	5.99	<0.05
3306	6340	09/08/2023	12.5	6.98	189	<2	95.10%	10.13	39.1	0.013	4.4	<0.05
3307	781	27/01/2023	4.7	7.06	108	<3	106.00%	13.59	9.46	0.015	3.24	<0.05
3307	2819	19/04/2023	7.8	7.05	109	<2	103.00%	12.23	15.7	0.041	2.91	<0.05
3307	6034	28/07/2023	13.1	6.9	80.7	<2	95.10%	10	7.75	0.018	1	<0.05
3307	8213	04/10/2023	11.6	7.07	103	<2	98.70%	10.73	13.2	<0.010	2.49	<0.05

15.5 Appendix 5 – Heavy metal RAW water quality data

Site Code	Gov Lab Ref	Sampling Date	Dissolved Cadmium (µg/L)	Dissolved Copper (µg/L)	Dissolved Manganese (µg/L)	Dissolved Nickel (µg/L)	Dissolved Zinc (µg/L)	Dissolved Iron (µg/L)
2211	5022	10/07/2020	0.78	<20	13	<5	303	57.1
2211	8930	10/11/2020	0.53	<20	9.7	<5	208	42.8
2216	5024	10/07/2020	1.34	<20	24.8	<5	494	65.5
2218	5025	10/07/2020	0.89	<20	27.5	<5	286	32.7
2311	8933	10/11/2020	<0.5	<20	7.3	<5	24.1	25.9
2315	5019	10/07/2020	<0.5	<20	14	<5	55	26.2
2315	5019	10/07/2020	<0.5	<20	14	<5	55	26.2
2422	5774	05/08/2020	<0.5	<20	10.2	<5	26.8	55.7
2512	8936	10/11/2020	<0.5	<20	531	5.9	<20	1096
2513	5778	05/08/2020	<0.5	<20	166	<5	<20	766
2718	4979	09/07/2020	<0.5	<20	112	<5	172	356
2718	8092	16/10/2020	<0.5	<20	130	<5	190	127
2721	4976	09/07/2020	<0.05	<20	91.7	<5	28.1	308
2721	8095	16/10/2020	<0.5	<20	105	<5	41.1	168
2801	5558	29/07/2020	<0.5	<20	11.2	<5	58.5	110
2802	5559	29/07/2020	<0.5	<20	17.6	<5	70.1	116
2802	8096	16/10/2020	<0.5	<20	36.2	<5	67.6	94
3203	8055	15/10/2020	<0.5	<20	12	<5	21.8	123
3205	5220	16/07/2020	<0.5	<20	74.8	<5	20.9	212
3205	8100	16/10/2020	<0.5	<20	131	<5	49.3	213
3244	5021	10/07/2020	<0.5	<20	5.2	<5	37.8	47
3244	8932	10/11/2020	<0.5	<20	8.7	<5	70.3	90.2
2211	6349	12/08/2021	0.65	<20	13.7	<5	238	73.9
2211	8588	22/10/2021	0.61	<20	11.9	<5	222	46.3

2216	4452	10/06/2021	0.92	<20	9.9	<5	372	32.3
2218	4453	10/06/2021	<0.5	<20	8.6	<5	164	23
2311	3133	29/04/2021	<0.5	<20	<5	<5	<20	<20
2311	6351	12/08/2021	<0.5	<20	<5	<5	23.2	29.7
2311	8590	22/10/2021	<0.5	<20	6.5	<5	23.4	25.8
2315	4471	11/06/2021	<0.5	<20	<5	<5	22.3	<20
2422	4648	17/06/2021	<0.5	<20	6.9	<5	<20	<20
2511	4463	11/06/2021	<0.5	<20	70.9	<5	<20	165
2512	3522	12/05/2021	<0.5	<20	169	<5	<20	484
2512	6568	19/08/2021	<0.5	<20	73.2	<5	<20	297
2513	4462	11/06/2021	<0.5	<20	337	<5	<20	756
2718	2479	14/04/2021	0.5	<20	190	<5	244	66.4
2718	6344	12/08/2021	<0.5	<20	35.6	<5	175	319
2720	4681	18/06/2021	0.66	<20	593	<5	408	208
2721	2483	14/04/2021	<0.5	<20	110	<5	39.3	88.5
2721	6523	18/08/2021	<0.5	<20	109	5.4	23.7	386
2801	2481	14/04/2021	<0.5	<20	7.6	<5	50.6	<20
2801	5767	23/07/2021	<0.5	<20	5.5	<5	35.6	31.6
2801	8553	21/10/2021	<0.5	<20	41.9	<5	60.9	269
2802	2482	14/04/2021	<0.5	<20	10.9	<5	58.6	23.3
2802	6516	18/08/2021	<0.5	<20	7.3	<5	49.5	230
3201	9429	18/11/2021	<0.5	<20	16.3	<5	<20	106
3203	2248	08/04/2021	<0.5	<20	16.8	<5	<20	75
3203	5768	23/07/2021	<0.5	<20	7	<5	<20	42.3
3203	8910	03/11/2021	<0.5	<20	28.9	<5	30.5	89.3
3205	6521	18/08/2021	<0.5	<20	10.3	<5	<20	297
3244	6352	12/08/2021	<0.5	<20	<5	<5	23.7	33.1
2211	2507	25/03/2022	0.64	<20	7.3	<5	218	<20
2211	7072	04/08/2022	1.04	<20	11.2	<5	402	61.6
2211	10777	30/11/2022	0.56	<20	12.7	<5	195	30.9

2216	657	20/01/2022	0.91	<20	19.3	<5	364	27.9
2216	7068	04/08/2022	1.29	<20	26	<5	495	95.3
2218	659	20/01/2022	0.57	<20	23.0	<5	185	<20
2218	7069	04/08/2022	0.89	<20	30.2	<5	319	53.3
2311	659	20/01/2022	<0.5	<20	5.3	<5	24.6	<20
2311	3162	14/04/2022	<0.5	<20	<5	<5	<20	<20
2311	7125	05/08/2022	<0.5	<20	<5	<5	28.4	<20
2311	10776	30/11/2022	<0.5	<20	9.3	<5	24.2	23.2
2315	660	20/01/2022	<0.5	<20	11.1	<5	35.6	<20
2315	7124	05/08/2022	<0.5	<20	6.5	<5	46	27.3
2422	843	27/01/2022	<0.5	<20	14.3	<5	28.6	<20
2422	5969	13/07/2022	<0.5	<20	<5	<5	<20	<20
2511	844	27/01/2022	<0.5	<20	187	<5	<20	1169
2511	5966	13/07/2022	<0.5	<20	50.7	<5	<20	57.7
2512	845	27/01/2022	<0.5	<20	206	<5	<20	700
2512	5967	13/07/2022	<0.5	<20	78.3	<5	<20	173
2513	846	27/01/2022	<0.5	<20	272	<5	<20	1722
2513	5968	13/07/2022	<0.5	<20	232	<5	<20	697
2718	349	13/01/2022	0.51	<20	98.4	<5	188	69.3
2718	5805	07/07/2022	<0.5	<20	20.2	<5	137	82.5
2720	356	13/01/2022	0.78	<20	225	<5	319	149
2720	5806	07/07/2022	0.59	<20	616	<5	469	305
2721	307	12/01/2022	<0.5	<20	61.9	<5	93.0	97.7
2721	5807	07/07/2022	<0.5	<20	46.5	<5	31.7	160
2801	305	12/01/2022	<0.5	<20	16.5	<5	53.2	56.7
2801	3265	20/04/2022	<0.5	<20	5.5	<5	44.9	22
2801	7119	05/08/2022	<0.5	<20	<5	<5	39.4	49.1
2801	10249	10/11/2022	<0.5	<20	24.6	<5	61.8	89.4
2802	306	12//01/22	<0.5	<20	23.8	<5	63.1	60.8
2802	7118	05/08/2022	<0.5	<20	<5	<5	44.7	74

3203	986	02/02/2022	<0.5	<20	20.0	<5	<20	79.1
3203	3320	21/04/2022	<0.5	<20	9.3	<5	<20	85.4
3203	7346	11/08/2022	<0.5	<20	11.0	<5	<20	69.5
3203	10823	01/12/2022	<0.5	<20	31.5	<5	31.2	129
3205	308	12/01/2022	<0.5	<20	136	<5	62.2	114
3205	5808	07/07/2022	<0.5	<20	58.4	<5	22.9	880
3244	661	20/01/2022	<0.5	<20	6.7	<5	74.1	40.1
3244	7070	04/08/2022	<0.5	<20	<5	<5	38.4	40.6
2211	412	13/01/2023	0.54	<20	11.3	<5	200	32.8
2211	5537	13/07/2023	0.98	<20	9.4	<5	359	67.6
2211	8671	18/10/2023	0.63	<20	14.2	<5	228	72.2
2216	410	13/01/2023	0.90	<20	22.4	<5	317	41.7
2216	5765	19/07/2023	1.07	<20	22.3	<5	407	65.4
2311	408	13/01/2023	<0.5	<20	8.7	<5	21.1	23.6
2311	5536	13/07/2023	<0.5	<20	<5	<5	23.5	<20
2311	8673	18/10/2023	<0.5	<20	6.0	<5	25.0	36.4
2315	407	13/01/2023	<0.5	<20	16.0	<5	27.1	24.9
2315	5535	13/07/2023	<0.5	<20	<5	<5	37.7	25.1
2422	962	02/02/2023	<0.5	<20	24.7	<5	31.9	22.7
2422	5762	19/07/2023	<0.5	<20	5.3	<5	<20	33.5
2511	955	02/02/2023	<0.5	<20	158	<5	<20	622
2511	5759	19/07/2023	<0.5	<20	20.1	<5	<20	152
2512	956	02/02/2023	<0.5	<20	197	5.2	<20	760
2512	5758	19/07/2023	<0.5	<20	31.2	<5	<20	281
2513	957	02/02/2023	<0.5	<20	271	6.1	<20	1108
2513	5757	19/07/2023	<0.5	<20	123	<5	<20	645
2718	880	01/02/2023	0.55	<20	118	<5	222	86.7
2718	5568	14/07/2023	<0.5	<20	18.2	<5	154	64.4
2720	878	01/02/2023	0.88	<20	326	<5	376	143
2720	5566	14/07/2023	0.51	<20	549	<5	419	317

2721	877	01/02/2023	<0.5	<20	88.6	<5	43.1	74.5
2721	6339	09/08/2023	<0.5	<20	88.9	<5	42.9	221
2801	884	01/02/2023	<0.5	<20	16.9	<5	61.0	42.9
2801	3091	26/04/2023	<0.5	<20	9.3	<5	45.9	45.3
2801	6040	28/07/2023	<0.5	<20	26.6	<5	58.1	181
2801	8504	13/10/2023	<0.5	<20	48.3	<5	59.0	281
2802	885	01/02/2023	<0.5	<20	28.0	<5	71.9	49.0
2802	6039	28/07/2023	<0.5	<20	40.3	<5	68.3	198
3203	755	26/01/2023	<0.5	<20	33.1	<5	32.2	111
3203	2956	21/04/2023	<0.5	<20	21.7	<5	22.2	89.0
3203	6347	09/08/2023	<0.5	<20	15.9	<5	<20	163
3203	8511	13/10/2023	<0.5	<20	21.1	<5	20.1	250
3205	886	01/02/2023	<0.5	<20	153	<5	60.8	155
3205	4442	16/06/2023	<0.5	<20	26.1	<5	24.1	317
3244	414	13/01/2023	<0.5	<20	9.1	<5	90.4	61.0
3244	5764	19/06/2023	<0.5	<20	<5	<5	39.7	61.4