



# **AGNICO EAGLE**

**Meadowbank Division**

**WHALE TAIL MINE -**

**Water Management Plan**

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**JUNE 2023**

**VERSION 11\_NWB**



## EXECUTIVE SUMMARY

Agnico Eagle Mines Limited – Meadowbank Division (Agnico Eagle) is developing the Whale Tail Mine (Project), a satellite deposit located on the Amaruq property, to extend mine operations and milling at Meadowbank Mine. In 2020 the Whale Tail Expansion Project (Expansion Project) was approved, permitting Agnico Eagle to expand and extend the Whale Tail Mine operations to include a larger Whale Tail open pit, development of the IVR open pit, and underground operations while continuing to operate and process ore at the Meadowbank Mine.

The Amaruq property is a 408 square kilometre (km<sup>2</sup>) site located on Inuit Owned Land (IOL) approximately 150 kilometres (km) north of the hamlet of Baker Lake and approximately 50 km northwest of Meadowbank Mine in the Kivalliq Region of Nunavut. The deposit is currently being mined as two open pits (i.e., Whale Tail Pit and IVR Pit) and underground operations, and ore is hauled to the approved infrastructure at Meadowbank Mine for milling.

In 2021, approvals were provided for pushbacks on the IVR and Whale Tail pits (Pushback Project). The Water Management Plan v11\_NWB was updated to reflect the continuation of the Whale Tail Pushback, continuation of the IVR Pushback, and temporary storage of groundwater in IVR Pit (referred to as the 2023 Modification).

The open pit mine, mined by drill and blast operations, includes four development phases: 1 year of construction (complete), 7 years of mine operations, 17 years of closure, and the post closure period. On September 30th, 2019, commercial production began at the Whale Tail Pit. The mine will produce in total 24.5 million tonnes (Mt) of ore, 186.2 Mt of waste rock, and 5.4 Mt of overburden waste. The 2023 Modification is within the approved mine production and includes the generation of 0.8 Mt of ore and produces 3.0 Mt of additional waste material (rock and overburden) which will be stored in the existing Waste Rock Storage Facilities (WRSF). Non-leachable material will also be stored in the pits. The 2023 modification does not affect the life of mine, which will remain in operation until 2025.

The water management objectives for the Project are to minimize potential impacts to the quantity and quality of surface water at the mine site. Water management structures (water retention dikes/berms and diversion channels) have been and will be constructed, dependent on the potential presence and volume of water, to contain and manage the contact water from the areas affected by the mine or mining activities. The major water management infrastructure includes contact water collection ponds, diversion channels, water retention dikes, culverts, seepage collection systems, water treatment plants for effluent, a potable water treatment plant, a sewage treatment plant, and discharge diffusers.

This Water Management Plan for the Project describes the main objectives pertaining to water management, which are to limit the flow of surface water runoff in the pit and to limit the impact on



the local environment. In developing the water management plan, the following principles were followed:

- keep the different water types separated as much as possible.
- control and minimize contact water through diversion and containment.
- minimize freshwater consumption by recycling and reusing the contact and process water wherever feasible; and
- meet discharge criteria before any site contact water is released to the downstream environment.

During mine construction and operations, contact water originating from affected areas on surface is intercepted, diverted, and collected within the various collection ponds. The collected water on the mine site is pumped and stored in the Whale Tail Attenuation Pond and IVR Attenuation Pond, where the contact water is treated by the Water Treatment Plant (WTP) (as required according to water quality) prior to discharge to the receiving environment or reused in the operations. The 2023 modification includes the temporary storage of groundwater in IVR Pit, per approved Adaptive Management Plan (Agnico Eagle 2021).

During operations, site contact water quality is predicted to exceed established effluent criteria (i.e., under the Whale Tail Water Licence [2AM-WTP1830]) in the Whale Tail WRSF Pond and in the Whale Tail Pit sump. Therefore, this water is controlled by the Whale Tail WRSF Dike and the Whale Tail WRSF Pond. The Whale Tail WRSF Pond water will report with all other contact water and will be mixed in the Whale Tail and IVR Attenuation Ponds and treated during operations.

During operations when the mine is at its maximum footprint, the conservative predictions of future water quality indicate that most parameter concentrations in the downstream environment are below CEQG-AL. A site wide water balance will be updated yearly, and end pit water quality modelling will be updated yearly to update predictions.

Water management during closure and reclamation will involve actively filling the underground facilities, Whale Tail Pit and IVR Pit, and passively allowing the Whale Tail Attenuation Pond to flood. The Groundwater Storage Ponds and IVR Attenuation Pond will be emptied at the start of closure and backfilled with NPAG/non-ML waste rock. The groundwater temporarily stored in IVR Pit will be pumped to the underground void space prior to actively filling IVR Pit. The Whale Tail and IVR WRSFs will be progressively covered with NPAG/non-ML waste rock throughout operations and are expected to be completely covered at the beginning of closure. The pushback in IVR pit will be backfilled with NPAG-non-ML rock material and filled by natural flow. Contact water management systems will remain on site until monitoring results demonstrate that water quality is acceptable for discharge of all contact water to the environment without further treatment. Once water quality meets the discharge criteria, the water management systems will be decommissioned to allow the water to naturally flow to the receiving environment. Through best management practices and mitigation, the predicted water quality of Whale Tail Lake (North Basin) meets aquatic life guidelines post-closure.



The projected water quality in Mammoth Lake is predicted to meet guidelines in post-closure for all constituents of potential concern (including chloride, fluoride, nitrate, and total selenium, as identified in the 2018 FEIS), with the exception of chromium, iron, and phosphorus.

The updated water quality data shows a stable trend in the water quality indicators. At closure and post-closure, flooded pit water quality is predicted to meet receiving water quality criteria when flooding is complete, allowing reconnection with the downstream receiving environment.

Dikes will not be breached until the water quality in the flooded area meets the approved water quality objectives. During mine closure, no mine discharges will occur to the downstream receiving environment since all contact waters are diverted to the open pit, underground and Whale Tail Lake (North Basin) for re-flooding.



## DOCUMENT CONTROL

Version	Date	Section	Page	Revision	Author
1	January 2017			Water Management Plan for the Whale Tail Pit	Agnico Eagle Meadowbank Division and Golder Associates Ltd.
2	September 2018	All	All	Water Management Plan for the Whale Tail Pit	Agnico Eagle Meadowbank Division and SNC-Lavalin Inc.
3	October 2018	3.1.4.11 3.3.1	23 32	Updated to align with recommendations issued by CIRNAC, ECCC and KIA in October 2018	Agnico Eagle Meadowbank Division
4	March 2020	All	All	Updated to reflect current operations/water mgmt and to comply with commitments and requests	Agnico Eagle Meadowbank Division
5	July 2020	All	All	Water Management Plan for the Whale Tail Pit – including Expansion Project	Agnico Eagle Meadowbank Division
6	April 2021	All	All	Updated to reflect current operations/water mgmt and to comply with commitments and requests	Agnico Eagle Meadowbank Division
7_NWB	June 2021	Summary  3.7.12 3.10 5.0 Appendices	i-ii  33 42 49 N.A.	Updated to include Pushback Project Added new section Figure on pushback in IVR Adaptive Mgmt Updated WQ models	AEM – Permitting & Regulatory Affairs (all changes)
8	December 2021	3.4 3.8	17 37	Clarification on wording for source of water use for emulsion plant	Agnico Eagle Meadowbank Division
9	March 2022	All	All	Updated to reflect current operations/water mgmt and to comply with commitments and requests	Agnico Eagle Meadowbank Division
10	March 2023	3.1, 4	All	Section 3.1 water management targets, Section 4 water quality forecast update	Agnico Eagle Meadowbank Division
11_NWB	June 2023			Updated to include the 2023 Modification (Pushbacks and IVR Pit temporary storage) Updates are flagged in the right-hand margin using the following:	Agnico Eagle Permitting & Regulatory Affairs





**TABLE OF CONTENTS**

<b>EXECUTIVE SUMMARY .....</b>	<b>i</b>
<b>DOCUMENT CONTROL.....</b>	<b>iv</b>
<b>TABLE OF CONTENTS .....</b>	<b>v</b>
<b>Acronyms .....</b>	<b>viii</b>
<b>Units .....</b>	<b>ix</b>
<b>Section 1 • INTRODUCTION.....</b>	<b>1</b>
<b>Section 2 • BACKGROUND INFORMATION .....</b>	<b>3</b>
2.1 Site Conditions.....	3
2.1.1 Climate .....	3
2.1.2 Permafrost and Hydrogeology.....	6
2.1.3 Hydrology and Watershed.....	11
2.1.4 Surface Water Quality .....	11
2.1.5 Climate Change .....	12
2.1.6 Seismic Zone .....	12
2.2 Mine Operations Description.....	12
2.2.1 Mine Development Plan.....	12
2.2.2 Summary of Mine Waste Management.....	13
<b>Section 3 • WATER MANAGEMENT AND WATER BALANCE .....</b>	<b>14</b>
3.1 Water Management Objectives and Targets .....	14
3.2 Water Management Strategy.....	14
3.3 Water Balance.....	16
3.4 Waterbody Inventory .....	16
3.5 Water Management System .....	18
3.5.1 Infrastructure Summary .....	20
Whale Tail Dike.....	20
South Whale Tail Diversion Channel.....	21
Mammoth Dike.....	21



Whale Tail WRSF Dike .....	21
Northeast Dike (dismantled).....	22
IVR Dike D-1 .....	23
IVR Diversion Channel .....	23
3.6 Dewatering.....	23
3.7 Water Management Activity During Construction and Operations .....	24
3.7.1 Erosion and Sediment Control Plan .....	27
3.7.2 Whale Tail Attenuation Pond .....	28
3.7.3 IVR Attenuation Pond.....	28
3.7.4 Water Management in Whale Tail Waste Rock Storage Facility .....	28
3.7.5 Water Management in IVR Waste Rock Storage Facility .....	29
3.7.6 Water Management for Overburden Storage .....	29
3.7.7 Water Management for Ore Stockpile Areas .....	29
3.7.8 Water Management for Quarry 1 .....	29
3.7.9 Water Management for the Whale Tail Open Pit Sector .....	30
3.7.10 Water Management for the IVR Open Pit Sector .....	30
3.7.11 Water Management for the IVR and WT Pit Pushbacks .....	31
3.7.12 Water Management for Haul Roads.....	31
3.7.13 Water Management for Landfill .....	31
3.7.14 Sludge and Brine Management from Water Treatment Plants .....	31
3.7.15 Underground Water Management .....	32
3.7.16 Non-Contact Water Management .....	33
3.8 Freshwater Management .....	35
3.9 Sewage Water Management.....	37
3.10 Water Management During Closure .....	39
3.10.1 Flooding Sequence .....	42
3.10.2 Contact Water Collection System.....	43
3.10.3 Post-Closure Modeling Results Summary .....	43
<b>Section 4 • WATER QUALITY FORECAST .....</b>	<b>45</b>
<b>Section 5 • ADAPTIVE MANAGEMENT .....</b>	<b>46</b>
<b>Section 6 • REFERENCES.....</b>	<b>47</b>



## List of Tables

Table 1.1	Overview of Timeline and General Activities .....	2
Table 2.1	Estimated Mine Site Monthly Mean Climate Characteristics.....	5
Table 2.2	Estimated Mine Site Extreme 24-Hour Rainfall Events .....	5
Table 2.3	Summary of Mine Waste Destination .....	13
Table 3.1	2023 Targeted Water Hourly Consumption Per Month – for Mill and Camp Usage .....	14
Table 3.2	Inventory of Waterbodies Directly Impacted by Mining Activities .....	17
Table 3.3	Water Management Facilities .....	19
Table 3.4	Water Management Activities During Construction and Operations .....	25
Table 3.5	Overall Site Surface Contact Water Management Plan .....	27
Table 3.6	Water Use Authorized for Domestic and Industrial Purposes During Construction and Operation .....	36
Table 3.7	Effluent Quality and Wastewater Characteristics .....	38
Table 3.8	Key Water Management Activities During Mine Closure.....	41

## List of Figures

Figure 2.1	Location of the Project .....	4
Figure 2.2	Permafrost Map of Canada .....	9
Figure 2.3	Hydrogeology Baseline Study Area.....	10
Figure 3.4	Conceptual Representation of Water Flow in IVR Pushback During Closure.....	39

## List of Appendices

Appendix A	Site Layout Plans
Appendix B	Whale Tail Water Balance and Water Quality Model
Appendix C	2023 Freshet Action Plan



**ACRONYMS**


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Agnico Eagle	Agnico Eagle Mines Limited – Meadowbank Complex
ARD	Acid Rock Deposition
CCME	Canadian Council of Ministers of the Environment
DFO	Department of Fisheries and Oceans Canada
Expansion Project	Whale Tail Pit – Expansion Project
FEIS	Final Environmental Impact Statement
IOL	Inuit Owned Land
LOM	Life of Mine
2023 Modification	Continuation of Whale Tail Pit Pushback and IVR Pit Pushback and temporary storage of groundwater in IVR Pit
NIRB	Nunavut Impact Review Board
NWB	Nunavut Water Board
NE	North-East
OMS	Operation, Maintenance, and Surveillance
PGA	Peak Ground Acceleration
Plan	Water Management Plan
Project	Whale Tail Mine
Pushback Project	Whale Tail and IVR Pit – Pushback Expansion Project
STP	Sewage Treatment Plant
TSF	Tailings Storage Facility
TSS	Total Suspended Solids
WRSF	Waste Rock Storage Facility
WSER	Wastewater System Effluent Regulations
WTP	Water Treatment Plant
WT	Whale Tail
WTSC	Whale Tail South Channel



## UNITS

±	plus or minus
<	less than
%	percent
°C	degrees Celsius
°C/m	degrees Celsius per metre
km	kilometre(s)
km <sup>2</sup>	square kilometre(s)
L/day/person	litres per person per day
masl	metre(s) above sea level
mbgs	metre(s) below ground surface
mg/L	milligrams per litre
m	metre
mm	millimetre
m <sup>3</sup>	cubic metre(s)
m <sup>3</sup> /day	cubic metres per day
m <sup>3</sup> /hour	cubic metres per hour
m <sup>3</sup> /year	cubic metres per year
Mm <sup>3</sup> /year	million cubic metre(s) per year
Mm <sup>3</sup>	million cubic metre(s)
t	tonne
Mt	million tonne(s)



## SECTION 1 • INTRODUCTION

Agnico Eagle Mines Limited – Meadowbank Division (Agnico Eagle) is currently operating the Whale Tail Mine (Project), a satellite deposit located on the Amaruq property, and continues to feed the mill at Meadowbank Mine. In 2020 the Whale Tail Expansion Project (Expansion Project) was approved, allowing Agnico Eagle to expand and extend the Whale Tail Pit operations to include a larger Whale Tail open pit, development of the IVR open pit, and underground operations while continuing to operate and process ore at the Meadowbank Mine.

In 2021, approvals were provided for pushbacks on the IVR and Whale Tail pits (Pushback Project). The Water Management Plan V11\_NWB was updated to reflect the continuation of the Whale Tail Pushback, continuation of the IVR Pushback, and temporary storage of groundwater in IVR Pit (referred to as the 2023 Modification). The Amaruq property is a 408 square kilometre (km<sup>2</sup>) site located on Inuit Owned Land approximately 150 kilometres (km) north of the hamlet of Baker Lake and approximately 50 km northwest of Meadowbank Mine in the Kivalliq Region of Nunavut. The deposit will be mined as two open pits (i.e., Whale Tail Pit and IVR Pit) and underground operations, and ore will be hauled to the approved infrastructure at Meadowbank Mine for milling.

The open pits and underground mine, mined by truck-and-shovel operation, includes four development phases: 1 year of construction (complete), 7 years of mine operations, 17 years of closure, and the post closure period. The ore milling period for the Whale Tail project is planned over an eight-year period, from 2019 to 2026 will not change as part of the 2023 Modification.

The construction and preparation of material started in summer 2018 after all permits and authorizations were received, and construction of the dikes started in the third quarter of Year -1 (2018). Focus on site preparation and construction of infrastructure, with the development of the open pit to produce construction material continued in 2018 and 2019. On September 30<sup>th</sup>, 2019, commercial production began.

Waste rock and overburden will be stored in the Waste Rock Storage Facility (Whale Tail WRSF and IVR WRSF) and ore will be stockpiled on the ore pads. Some NPAG-NML material will also be stored in the IVR pit pushback. The waste rock storage footprint, water management infrastructure, and camp have been designed and consider up to eight years of production to allow for expected resource growth. The underground WRSF (AP-5 location) that was permitted under the Type B will be expanded and became a facility regulated under the Type A Water Licence (2AM-WTP1830). Agnico Eagle will increase the footprint of the underground area to the north to accommodate additional waste storage. The existing tailings facility at Meadowbank Mine will continue to be used for tailings disposal. All tailings treatment and disposal will remain consistent with the current Project Certificate (No. 004).



As per the Interim Closure and Reclamation Plan (ICRP), closure will occur from Year 8 (2026) to Year 24 (2042) after the completion of milling and will include removal of the non-essential site infrastructure and filling of the mined-out open pits and underground mine as well as reestablishment of the natural Lake A17 (Whale Tail Lake) level. Only essential infrastructure related to water treatment will remain on site during the closure and post-closure phases. Accordingly, in addition to the Water Treatment Plant (WTP), a part of the camp, including all infrastructure allowing camp autonomy and security, as well as site roads, will be maintained following the operational phase (see more information in the Whale Tail Pit Interim Closure and Reclamation Plan). Post-closure is expected from Year 24 (2042) onwards. The closure schedule for the overall Project is based on the preliminary closure methods and strategies discussed in the Whale Tail ICRP. It is anticipated that the schedule will be refined throughout the Project life as the designs are advanced, and the closure methods and strategies are further developed. Site and surrounding environment monitoring started from the beginning of the construction and will be completed during the post-closure phase when it is shown that the site and water quality meets the regulatory closure objectives. Table 1.1 summarizes the overview of the timeline and general activities.

**Table 1.1 Overview of Timeline and General Activities**

Phase	Year	General Activities
Construction	Year -1	<ul style="list-style-type: none"> <li>Construct site infrastructure</li> <li>Develop open pit mine</li> <li>Stockpile ore</li> </ul>
Operations	Year 1 to 7	<ul style="list-style-type: none"> <li>Open pits operations</li> <li>Underground operations</li> <li>Transport ore to Meadowbank Mine</li> <li>Stockpile ore</li> <li>Discharge Tailings in Meadowbank TSF</li> </ul>
	Year 8	<ul style="list-style-type: none"> <li>Complete transportation of ore to Meadowbank Mine</li> <li>Complete discharge of tailings in Meadowbank TSF</li> </ul>
Closure	Year 9 to 24	<ul style="list-style-type: none"> <li>Remove non-essential site infrastructure</li> <li>Flood mined-out open pits and underground operations</li> <li>Re-establish natural Whale Tail Lake level</li> </ul>
Post-Closure	Year 25 onwards	<ul style="list-style-type: none"> <li>Site and surrounding environment monitoring</li> </ul>

TSF = Tailings Storage Facility

This document presents the Water Management Plan (Plan) for the Project in accordance with Part E Item 5 of the Nunavut Water Board (NWB) Water License 2AM – WTP1830 including modifications stemming from the Pushback Project and to include the 2023 Modification. It is a requirement of the License that an updated Water Management Plan be submitted on an annual basis following the commencement of Operation. The Plan must include an updated Water Balance and actions to be implemented if predicted re-flooded pits water quality indicate that water treatment is necessary.



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**SECTION 2 • BACKGROUND INFORMATION**

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**2.1 Site Conditions**

The general mine site location for the Project is presented in Figure 2.1.

**2.1.1 Climate**

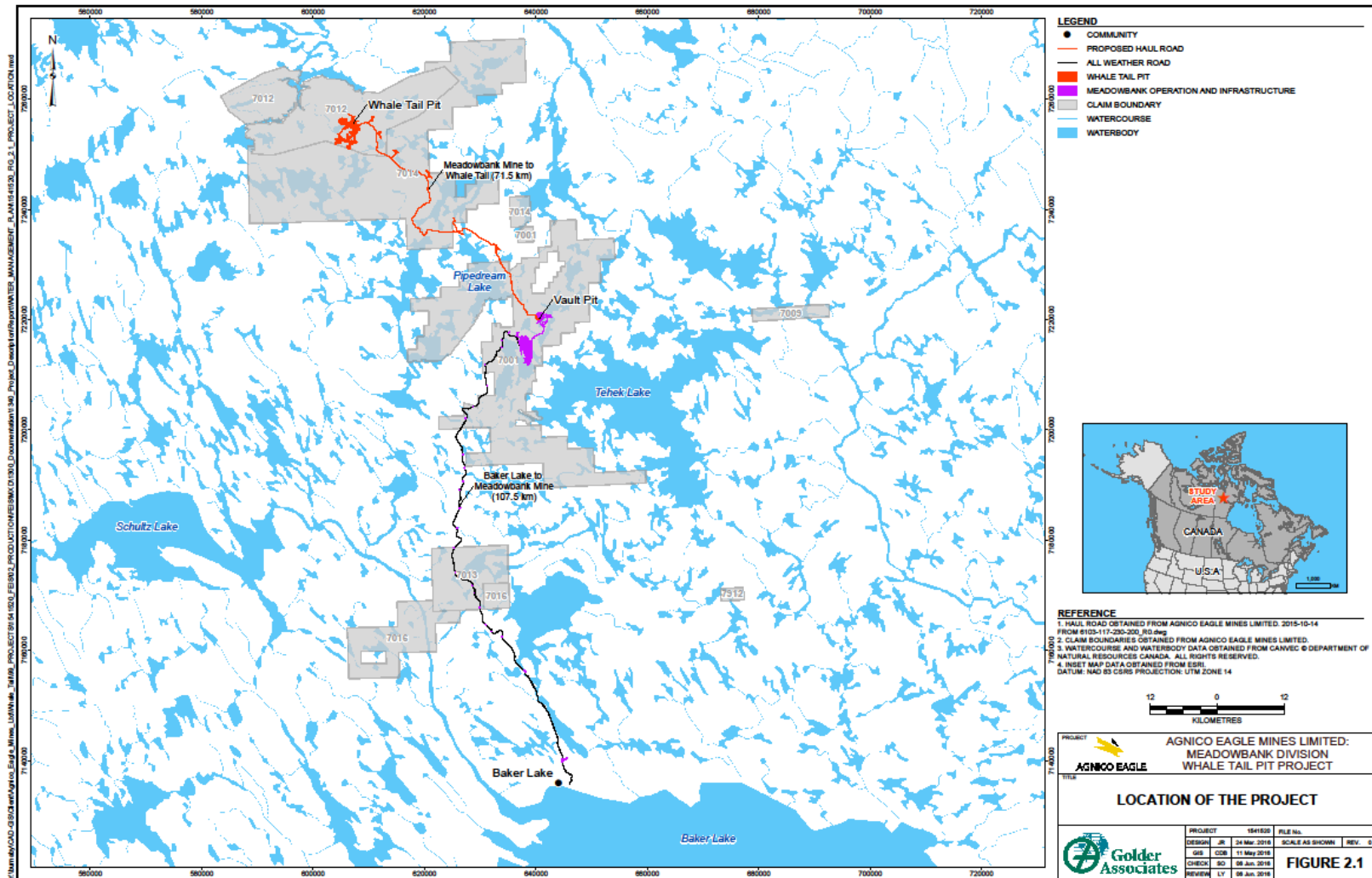
Climate characteristics presented herein were extracted from the permitting level engineering report (SNC 2015).

The Project is in an arid arctic environment that experiences extreme winter conditions, with an annual mean temperature of -11.3 degrees Celsius (°C). The monthly mean temperature ranges from -31.3°C in January to 11.6°C in June, with above-freezing mean temperatures from June to September. The annual mean total precipitation at the Project is 249 millimetres (mm), with 59 percent (%) of precipitation falling as rain, and 41% falling as snow. Mean annual losses were estimated to be 248 mm for lake evaporation, 80 mm for evapotranspiration, and 72 mm for sublimation. Mean annual temperature, precipitation, and losses characteristics are presented in Table 2.1.

Short-duration rainfall, representative of the Project are presented in Table 2.2, based on intensity-duration-frequency curves available from the Baker Lake A meteorological station (Station ID 300500) operated by the Government of Canada (2015).



Figure 2.1 Location of the Project





**Table 2.1 Estimated Mine Site Monthly Mean Climate Characteristics**

Month <sup>a</sup>	Mean Air Temp. (°C) <sup>a</sup>	Monthly Precipitation (mm) <sup>a</sup>			Losses <sup>a</sup>		
		Rainfall (mm)	Snowfall Water Equivalent (mm)	Total Precip. (mm)	Lake Evap. (mm)	Evapo-transpiration (mm)	Snow Sublimation (mm)
January	-31.3	0	7	7	0	0	9
February	-31.1	0	6	6	0	0	9
March	-26.3	0	9	9	0	0	9
April	-17.0	0	13	13	0	0	9
May	-6.4	5	8	13	0	0	9
June	4.9	18	3	21	9	3	0
July	11.6	39	0	39	99	32	0
August	9.8	42	1	43	100	32	0
September	3.1	35	7	42	40	13	0
October	-6.5	6	22	28	0	0	9
November	-19.3	0	17	17	0	0	9
December	-26.8	0	10	10	0	0	9
Annual	-11.3	146	103	249	248	80	72

<sup>a</sup> SNC (2015).

°C = degrees Celsius; mm = millimetre.

**Table 2.2 Estimated Mine Site Extreme 24-Hour Rainfall Events**

Return Period (Years) <sup>a</sup>	24-hour Precipitation (mm) <sup>a</sup>
2	27
5	40
10	48
25	57
50	67
100	75
1000	101

<sup>a</sup> SNC (2015).

mm = millimetre.



## 2.1.2 Permafrost and Hydrogeology

### 2.1.2.1 Permafrost Conditions and Assessment

Thermal assessments have been completed that contribute to the understanding of the permafrost conditions near the Whale Tail Pit, IVR Pit, and Underground Mine. An update of the Whale Tail Thermal Assessment was conducted in April 2019 (Golder 2019b). The thermal assessment evaluated existing permafrost characteristics in the Whale Tail Lake and Project area and existing talik conditions under the Whale Tail Lake adjacent to the Project. The thermal assessment was completed based on available thermistor data to date, as well as the results of a thermal 2D modelling exercise and 3D block model prepared to assess permafrost conditions and the extent of talik formations beneath the Whale Tail Lake.

The updated thermal assessment of the project also took into consideration the groundwater monitoring program (Westbay well sampling) that took place in November 2018 (Golder 2019b). The 2018 groundwater monitoring program indicates that water samples were collected from fixed ports along the Westbay system between 276 m and 499 m below the ground surface, which suggests that the Westbay system is installed in open talik, or water sampling would not have been possible at depth.

The mine site is located in an area of continuous permafrost, as shown on Figure 2.2. Based on measurements of ground temperatures (Knight Piésold 2015), the depth of permafrost at the mine site is estimated to be in the order of 425 metres (m) outside of the influence of waterbodies. The depth of the permafrost and active layer will vary based on proximity to the lakes, overburden thickness, vegetation, climate conditions, and slope direction. The typical depth of the active layer is 2 m in this region of Canada. The estimated depth of zero amplitude from the temperature profiles ranges from 18 m to 35 m. The temperatures at the depths of zero amplitude are in the range of -3.1 °C to -8.6 °C for on land thermistors and 2.7 °C for AMQ17-1265A. The geothermal gradient estimated based on the lowest 70 to 100 m of the thermistor strings is in the range of 0.004 °C/m (AMQ15-294) to 0.052 °C/m. Late-winter ice thickness on freshwater lakes is approximately 2.0 m. Ice covers usually appear by the end of October and are completely formed in early November. The spring ice melt typically begins in mid-June and is complete by early July.

The information presented in the following section is based on the updated report *Hydrogeological Assessment and Modelling Whale Tail Pit - Expansion Project* (Golder 2019e). The following summarizes the updated understanding of permafrost conditions in the Expansion Project Area:

- The depth of permafrost outside of the influence of lakes is estimated to be between 452 m and 522 m based on thermal gradients and ground temperatures at the lowest portions of the thermistor strings. The depth of permafrost increases with increasing distance from lakes with talik.
- Considering the 2D thermal modelling and 3D block model, the assessment indicated that:



- Under the northern portion of the lake below Whale Tail Pit, there is likely a closed talik formation (Section C of the thermal modelling report).
- Open talik conditions are probable in the southern portion of the lake where the Whale Tail Lake becomes wider (Section G of the thermal modelling report).
- Permafrost depth is between 480 m and 550 m for ground away from the Whale Tail Lake, and between 350 m and 450 m below surface in portions beneath the Whale Tail Lake where a closed talik is present.
- The cryopeg thickness is likely between 20 m to 30 m.

### **2.1.2.2 Groundwater Flow Regime**

Groundwater characteristics at the mine site are detailed in the Expansion Project Final Environmental Impact Statement (FEIS), Addendum Volume 6, Section 6.3. The hydrogeological model was updated in May 2019 with hydrogeological modelling completed for the Expansion Project since submission of the FEIS addendum in December 2018 (Golder 2019e). The model was updated based on results of monitoring at the Westbay system in November 2018, supplemental packer testing in December 2018, and additional 2D and 3D thermal analysis in 2019. The updated hydrogeological model was then used to provide revised predictions of groundwater inflow and total dissolved solids (TDS) concentrations during dewatering, mining, pit and underground flooding, and long-term post-closure (reflooded) conditions.

Two groundwater flow regimes occur at the Expansion Project: a deep groundwater flow regime beneath permafrost and a shallow groundwater flow system located in the active (seasonally thawed) layer near the ground surface. Except for areas of taliks beneath lakes, the two groundwater regimes are isolated from one another by thick permafrost.

Groundwater flow within the deep groundwater flow regime is limited to the sub-permafrost zone. This deep groundwater flow regime is connected to ground surface by open taliks underlying larger lakes. The elevations of these lakes are the primary control of groundwater flow directions in the deep groundwater flow regime, with density gradients providing a potential secondary control. The elevations of these lakes in the baseline study area indicate that Whale Tail Lake is likely a groundwater discharge zone at the south end of the Lake, with flow from Lake A60 to Whale Tail Lake, and a groundwater recharge zone at the north end of the Lake, with flow from Whale Tail Lake to Lake DS1 (Figure 2.3).

While portions of Whale Tail Pit are located within unfrozen rock, the IVR Pit and the Underground Project are fully contained within permafrost as per current planning. Groundwater inflow is therefore only expected during operations in the Whale Tail Pit.

Mining of the Whale Tail Pit occurs within the talik underlying Whale Tail Lake, whereas the latest version of the Underground Project is located in permafrost. The Underground is not directly connected to either Whale Tail Pit or IVR Pit.



During mining, the Whale Tail Pit will act as a sink for groundwater flow, with seepage faces developing along portions of the pit walls. In response to the deepening of the mine workings, groundwater will be induced to flow through bedrock to the Whale Tail Pit. Mine inflow will originate primarily from Whale Tail Lake (South Basin), the Whale Tail Attenuation Pond, and deep bedrock underlying the permafrost.

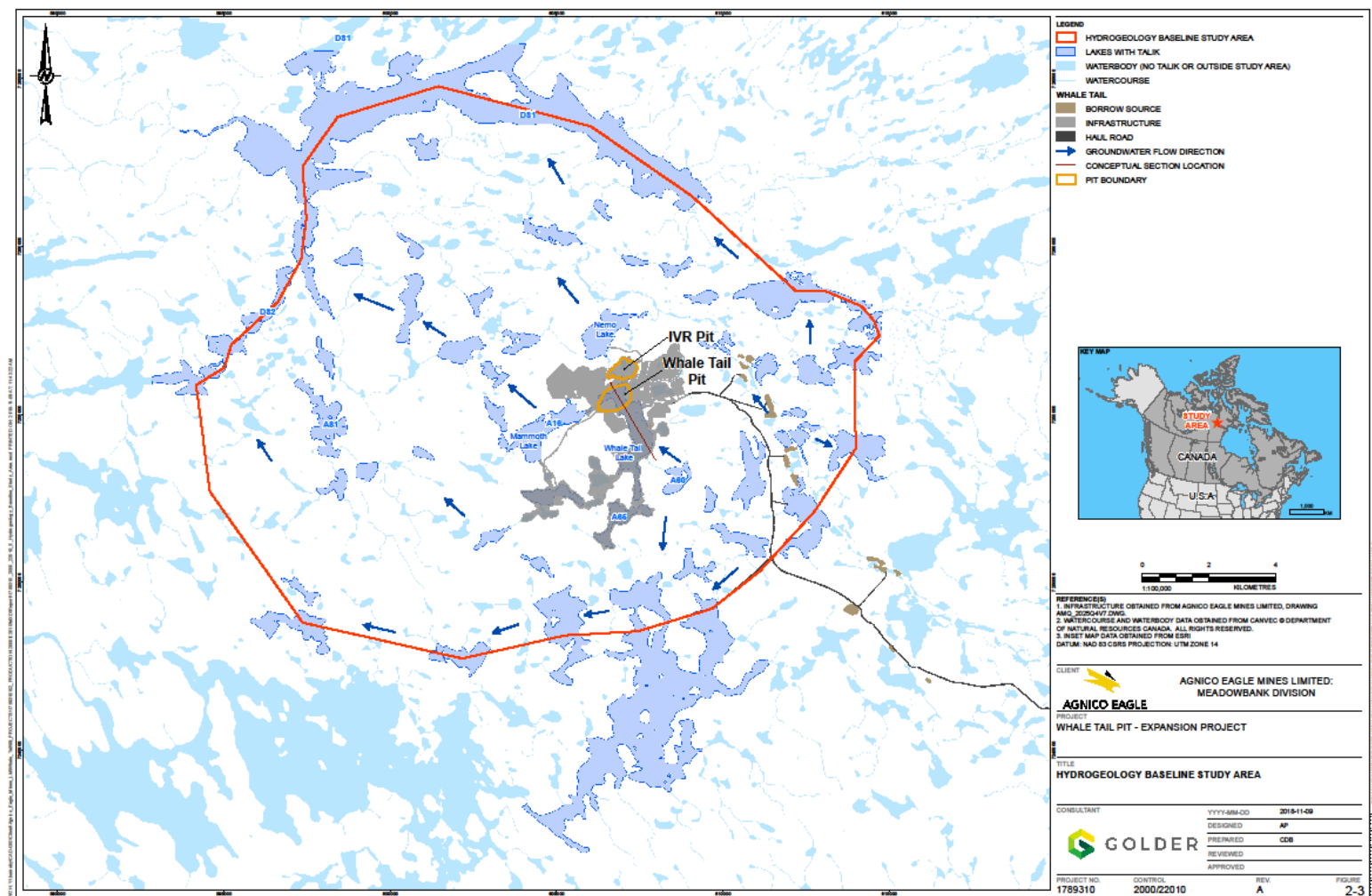


June 2023





Figure 2.3 Hydrogeology Baseline Study Area





### 2.1.3 Hydrology and Watershed

Hydrology characteristics were extracted from the surface water quantity impact assessment section (FEIS, Addendum Volume 6, Section 6.3; Volume 6, Appendix 6-C).

The mine site is located in the A watershed (i.e., where Lake A17 [Whale Tail Lake] and Lake A16 [Mammoth Lake] are located), and water management activities are planned in the A watershed and the C watershed (i.e., where Lake C38 [Nemo Lake] is located); these two watersheds drain into Lake DS1, which drains north to the Meadowbank River. These watersheds comprise an extensive network of lakes, ponds, and interconnecting streams, and have lake water surface fractions (i.e., the ratio of lake area to watershed area) of 16% (A watershed) and 23% (C watershed).

Shorelines in the mine site area exhibit a consistent terrain type related to shorelines that have developed in morainal material. These morainal shorelines were observed at all lakes visited during the 2015 field survey. Limited areas of bedrock and shallowly sloped sandy shorelines were also observed. As a general characteristic for the surveyed shorelines, the predominant materials are boulder gardens mixed with cobble with very limited soils or organic materials on top. The outlet channels are relatively short with a low sinuosity (i.e., close to 1.0) and exhibit the same characteristics for streambed materials, which results in interstitial flow through large boulders or below the surface likely close to the bedrock, making flow difficult to observe and measure.

Discharges of watercourses in the mine site area typically peak in late-May to mid-June from snowmelt, rapidly decline in July, and low discharges prevail until frozen conditions in October to November, with a secondary peak in September from rainfall events. Watercourses in the Project area are frozen over the winter.

Derived long-term mean annual water yield for selected lakes in the mine site area vary between 86 mm at Lake C38 (Nemo Lake) to 230 mm at Lake A69. These water yields are similar to regional water yields reported at the Meadowbank Mine.

### 2.1.4 Surface Water Quality

Water quality characteristics were extracted from the water quality baseline report (FEIS, Volume 6, Appendix 6-G, Agnico Eagle, 2016) and the water quality impact assessment section (FEIS, Volume 6, Section 6.4, Agnico Eagle, 2016). Baseline water quality sampling was conducted at lakes and tributaries in various watersheds in the study area during open-water conditions in 2014 and 2015.

Surface water collected from lakes during the open water season was characteristic of low productivity headwater lakes in the Arctic; soft water, with low alkalinity, low turbidity (and corresponding high Secchi depth) and low total suspended solids (TSS). There was minor thermal stratification evident at some deeper lake stations. The water columns of lakes are well oxygenated, and pH was neutral to slightly acidic. The majority of water chemistry parameter concentrations were below the analytical detection limit and below the Canadian Council of Ministers of the Environment



water quality guidelines for the protection of aquatic life (CCME, 1999) and the Canadian drinking water guidelines (Health Canada, 2014).

Samples collected from the tributaries showed them to be well oxygenated, with low conductivity, and neutral to slightly alkaline pH. As with the lakes, most of the water chemistry parameter concentrations were below the aquatic life and drinking water quality guidelines.

#### **2.1.5 Climate Change**

Climate change information presented herein was extracted from the air quality impact assessment section (FEIS, Addendum Volume 4, Section 4.2).

The climate in the Arctic is changing faster than at mid-latitudes (IPCC, 2014). The most recent set of climate model projections (CMIP5) predict an Arctic-wide year 2100 multi-model mean temperature increase of +13°C in late fall and +5°C in late spring under the IPCC's "business as usual scenario" (RCP8.5). IPCC climate change mitigation scenario RCP4.5 results in a year 2100 multi-model Arctic wide prediction of +7°C in late fall and +3°C in late spring (Overland et al., 2013). The effects of changes of this magnitude to terrestrial, aquatic and marine ecosystems, and social and economic systems of the Arctic are an active area of research. However, the short duration of the proposed Project means that climate change related effects to the Project are likely negligible.

#### **2.1.6 Seismic Zone**

The mine site is in an area of relatively low seismic risk. The peak ground acceleration (PGA) for the area was estimated using the seismic hazard calculator from the 2010 National Building Code of Canada website ([http://www.earthquakescanada.nrcan.gc.ca/hazard-alea/interpolat/index\\_2010-eng.php](http://www.earthquakescanada.nrcan.gc.ca/hazard-alea/interpolat/index_2010-eng.php)). The estimated PGA is 0.019 g for a 5% in 50-year probability of exceedance (0.001 per annum or 1 in 1,000-year return) and 0.036 g for a 2% in 50-year probability of exceedance (0.000404 per annum or 1 in 2,475-year return) for the area.

### **2.2 Mine Operations Description**

#### **2.2.1 Mine Development Plan**

Whale Tail Open Pit, IVR Open Pit, and Underground mining will be mined using the traditional open pit method and long hole mining (95%) with some mechanized cut and fill in flat areas. The mining is planned from 2019 to 2025, while milling will continue through 2026.

Two mine waste streams will be produced at Whale Tail Pit: waste rock and overburden. Ore will be stockpiled in a series of stockpiles located adjacent to the pits. As ore is transported to the Meadowbank Mine for processing, a third mine waste stream, tailings, will be produced at Meadowbank Mine (refer to the Whale Tail Mine – Waste Rock Management Plan, Agnico Eagle, 2023a). The operation, management, and monitoring of the Meadowbank TSF is regulated under the Agnico Eagle Type A Water Licence 2AM-MEA1530.



The mine development includes the following infrastructure:

- industrial area (camp, power plant, heli-pad, landfarm and garage)
- crusher
- ore stockpiles
- rock and overburden storage facilities
- landfill
- haul and access roads
- underground mine
- two open pits

In addition, the mine development will include construction of water management facilities, listed in Section 3.1.2.

## 2.2.2 Summary of Mine Waste Management

This section is a summary of the mine waste management plan. More detailed information on mine waste management is presented in the Whale Tail Mine – Waste Rock Management Plan, Agnico Eagle, 2023a. Water management associated with mine waste management is described in Section 3 of this document. Two areas of the site were identified as the Whale Tail WRSF and the IVR WRSF to store waste rock and overburden material, as shown in Appendix A. Table 2.3 presents a summary of the proposed usage or destination for the waste material. Some material will also be stored in the IVR pit pushback.

**Table 2.3 Summary of Mine Waste Destination**

Mine Waste Stream	Waste Destination
Overburden	<ul style="list-style-type: none"> <li>• Temporary storage West of Whale Tail Lake</li> <li>• Co-disposed with waste rock in Whale Tail WRSF</li> </ul>
Waste Rock	<ul style="list-style-type: none"> <li>• Construction material</li> <li>• Whale Tail WRSF and IVR WRSF</li> <li>• Underground backfill material</li> <li>• IVR Pit Pushback backfill material</li> <li>• Closure and site reclamation, fish habitat compensation</li> </ul>
Tailings	<ul style="list-style-type: none"> <li>• As slurry tailings placed in the approved Meadowbank Mine tailings storage facility</li> </ul>

WRSF = Waste Rock Storage Facility



## SECTION 3 • WATER MANAGEMENT AND WATER BALANCE

### 3.1 Water Management Objectives and Targets

The main objectives pertaining to water management for the Project are to limit and/or stop the flow of surface water runoff in the pit and to limit the impact on the local environment. The key objectives for water management are:

- Keep the different water types (i.e., contact, non-contact, and freshwater) separated to the extent practical
- Control and minimize contact water through diversion and containment
- Minimize freshwater usage by recycling and reusing the contact water to the extent practical
- Meet discharge criteria before any site contact water is released to the downstream environment
- No events of non-compliance with regards to:
  - Regulatory/Water License water quality criteria (effluent loading limits)
  - Regulatory/Water License freshwater withdrawal criteria

The water management targets are summarized in Table 3.1. These targets are aligned with the water objectives of the Whale Tail Project and go beyond the License limit. These targets strive to minimize risk, conserve freshwater, and minimize water usage. The 2023 targets assume continued improvements in the amount of contact water withdrawn from the Pit. Higher production rates in 2023 will require slightly more fresh water withdrawn from Nemo Lake, more contact water withdrawn from Underground as the works expand, and more water discharged from site.

**Table 3.1 2023 Targeted Water Hourly Consumption Per Month – for Mill and Camp Usage**

WATER OBJECTIVE	TARGET 2021	TARGET 2022	TARGET 2023
Fresh Water Withdrawn from Nemo Lake (Mining and Camp)	85,284 m <sup>3</sup>	75,000 m <sup>3</sup>	80,000 m <sup>3</sup>
Contact Water Withdrawn from Pit (pit inflow)	761,820 m <sup>3</sup>	910,827 m <sup>3</sup>	915,000 m <sup>3</sup>
Contact Water Withdrawn from Underground (inflow)	0	3,000 m <sup>3</sup>	16,000 m <sup>3</sup>
Water discharge from site (WTS / Mammoth Lake)	2,244,538 m <sup>3</sup>	2,488,068 m <sup>3</sup>	2,500,000 m <sup>3</sup>
Water in recirculation (water recycled / total water use)	0%	0%	0%

### 3.2 Water Management Strategy

To achieve the above water management objectives and targets, the following key strategies were implemented to develop the Water Management Plan:



- Two levels of catchment disturbance have been defined for the area, namely undisturbed and disturbed. Areas that have been disturbed as part of the mine development are considered disturbed catchments, while the areas left unaffected are considered undisturbed catchments.
- For the purpose of mine water management, runoff from undisturbed areas is considered non-contact water, while runoff from disturbed catchment areas is considered contact water. Surface water that is diverted around the mine facilities, or groundwater that does not emerge into a mine facility, is considered non-contact water. Any non-contact water that mixes with contact water becomes contact water.
- Conveyance and storage of contact water will be controlled by channels and containment structures (i.e., sumps and ponds). Sumps will be installed in the open pits and in low points surrounding the open pits. Contact water will be diverted and collected in various sumps and water collection ponds and conveyed to an Attenuation Pond. Two attenuation ponds are planned for surface water and include the Whale Tail Pit Attenuation Pond and the IVR Attenuation Pond.
- The IVR Attenuation Pond will contribute to reducing the operational water head in the Whale Tail Attenuation Pond.
- The collected water will be treated if the water quality does not meet the discharge criteria established in the Water Licence 2AM-WTP1830.
- The treated water will be reused as much as possible for mining and site operations to minimize the freshwater requirements. The excess treated water will be discharged into Lake A16 (Mammoth Lake) through a submerged diffuser or through a diffuser in Whale Tail Lake (South Basin) or other alternatives.
- Non-contact water will be intercepted and directed away from disturbed areas by means of natural catchment boundaries and/or man-made diversion structures or pumping systems and will be allowed to flow or to be discharged to the neighbouring waterbodies.

Underground (UG) development groundwater and contact water will be pumped to distinct surface infrastructure for water management. The underground water management infrastructure was defined based on the following underground water management guideline principles:

- It is not currently planned to mine below the permafrost. It is an opportunity that will be further studied
- Heating is required when mining below top of cryopeg
- Brine needed until cryopeg elevation is reached
- Contact and non-contact UG water not segregated – segregation is an opportunity
- Grouting is a mitigation measure during development (not included in hydrogeological model)
- UG storage stope (used to recycle UG water) – will delay treatment, needed early
- Recirculation of brine during mining operations



- Limit addition of freshwater (used only for CRF [cemented rockfill], promote use of natural groundwater for operation)
- Treatment of underground groundwater is not required if mining stays in the permafrost

The key strategies detailed below are implemented to support underground water management:

- A Groundwater Storage Pond system (GSP) to store captured TDS (salt) affected waters. Up to three GSPs are planned to provide operational flexibility and adaptive management opportunity
- Excess water volumes in the underground mine will be managed through the Underground Mine Stope and GSP-1 or GSP-2.
- Excess water volumes may also be managed with GSP-3 (planned for contingency, operational flexibility, and adaptive management opportunity) or managed as temporary storage in IVR Pit.
- There is opportunity for water stored in the GSP to be reused for dust suppression on surface roads or to be re-circulated underground (i.e., for drilling or mixing in the cemented rockfill)
- The Project has been planned with contingency water management storage to manage contact water during upset conditions. For example, GSP-3 could be used for temporary storage when not used for saline water management. This storage has sufficient capacity to manage the potential water quantity exceedances occurring during the freshet and can be used to hold excess contact water temporarily until it can be treated by the water treatment plant during the remaining open water season (July to September), as presented in Appendix C. During this time, at maximum capacity, the excess water can be treated and discharged within two weeks.
- At the end of underground mining, any remaining water in GSP ponds and IVR Pit will be pumped underground for flooding of the underground workings.

### 3.3 Water Balance

As per the Type A Water Licence 2AM-WTP1830, Part E, Item 5, a Project water balance will be updated and presented on an annual basis, integrated into the water management plan update. The developed water balance will assist in evaluating future water management infrastructure, including under closure conditions (as per the Whale Tail Interim Closure and Reclamation Plan).

The water balance was computed on a monthly time step based on mean annual climate conditions (Section 2.1.1). The water management flow sheets and the water balance results are presented in Appendix B of this plan.

### 3.4 Waterbody Inventory

The A and C watersheds will be impacted by mining activities, primarily by dewatering of Whale Tail Lake (North Basin) to Lake A16 (Mammoth Lake), the Northeast Diversion to the C watershed, and the



Whale Tail Lake (South Basin) Diversion to Lake A16 (Mammoth Lake). Waterbodies directly impacted by mining activities are presented in Table 3.2 and shown in Appendix A. Discharge of treated effluent began in the second dewatering phase of the project in June 2019 and will continue throughout mine operations and into closure if required, based on water quality monitoring and results.

**Table 3.2 Inventory of Waterbodies Directly Impacted by Mining Activities**

Watershed	Primary Disturbance	Waterbody	Note
A	Dewatering	Lake A17	Dewatering of Lake A17 (Whale Tail Lake) to Whale Tail Lake (South Basin)
	IVR Pit	Lake A46	Part of the IVR Pit footprint
		Lake A47	Part of the IVR Pit footprint
		Lake A49	Part of the IVR Pit footprint
		Pond AP-67	Part of the IVR Pit footprint
		Pond AP-68	Part of the IVR Pit footprint
	IVR WRSF Placement	Lake A50	Covered by IVR WRSF
		Lake A51	Covered by IVR WRSF
		Lake A52	Covered by IVR WRSF
		Pond A-P21	Covered by IVR WRSF
	Whale Tail Lake (South Basin) Diversion	Lake A18	Flooded
		Lake A19	Flooded
		Lake A20	Flooded
		Lake A21	Flooded
		Lake A22	Flooded
		Lake A45	Part of diversion channel
		Lake A55	Flooded
		Lake A62	Flooded
		Lake A63	Flooded
		Lake A65	Flooded
		Pond A-P1	Flooded
		Pond A-P53	Flooded
	Various Water Management Activities	Lake A17 (Whale Tail Lake)	Whale Tail Lake (North Basin) used as the Whale Tail Attenuation Pond Whale Tail Lake (South Basin) receives dewatering flows during dewatering activities, and discharge of treated effluent
		Lake A16 (Mammoth Lake)	Receives discharge of treated effluent
		Lake A53	Used as the IVR Attenuation Pond
		Lake A50	Covered by a Groundwater Storage Pond
C	Water Intake	Lake A16 (Mammoth Lake)	Sourced during operations for emulsion plant, if needed
		Lake C38 (Nemo Lake)	Sourced during operations, including emulsion plant
		Lake A17 (Whale Tail Lake)	Whale Tail Lake (South Basin) sourced during closure



### 3.5 Water Management System

The water management system includes the following components (identified in Appendix A):

- Water collection ponds (Whale Tail Attenuation, IVR Attenuation, Whale Tail WRSF, plus the GSP Ponds and IVR Pit for temporary storage of groundwater)
- Staging sump for Pit contact water management
- Sump for WRSF contact water management
- Discharge diffusers located in Mammoth Lake and Whale Tail South
- Two water diversion channels (South Whale Tail Channel and IVR diversion channel)
- Four water retention dikes (Whale Tail, Mammoth, Whale Tail WRSF, and the IVR dikes)
- Culverts
- Freshwater intake causeway and pump system
- WTP and associated intake causeway
- Sewage Treatment Plant (STP)
- Pipelines and associated pump systems
- Potable WTP
- Pumping system from Whale Tail South to Mammoth Lake
- Whale Tail Dike seepage collection system.

Additional water management system components can be put in place if required to adapt effectively to the site conditions, to manage non-contact water adequately, and to meet the water management objectives and target.

During the mine construction, operational, and closure phases, a network of collection and interceptor channels and sumps will be constructed and maintained to facilitate mine site water management. A list of the water management control structures and facilities is presented in Table 3.3 together with the construction schedule. These structures were designed according to design criteria presented in the Appendix K: Project Design Considerations of the Water Licence 2AM-WTP1826 amendment, submitted to the NWB in May 2019. Final design details of these structures will be provided to the regulators for approval at least 60 days prior to construction.

Water management strategy updates were also communicated in August and September 2019 to the Nunavut Water Board regarding changes to the management of non-contact water for specific areas of the project. Those changes are reflected in Table 3.3.

Appendix A shows the location of the main structures at the different development stages of the mine life.



**Table 3.3 Water Management Facilities**

Mine Year	Water Management Facilities Constructed or Installed
Year -1 (2018) Construction	<ul style="list-style-type: none"> <li>• Turbidity Curtains installation for dike construction</li> <li>• Start Whale Tail Dike</li> <li>• Construction of the low-permeability access road built of overburden and collection sump for Stage 1 WRSF</li> <li>• Freshwater intake causeway in Nemo Lake</li> <li>• Water Treatment Plant and Construction Water Treatment Plant</li> <li>• Pipelines and associated pump systems for water management and dewatering</li> <li>• Sewage Treatment Plant</li> <li>• Potable Water Treatment Plant</li> <li>• Discharge diffuser in Mammoth Lake</li> <li>• Culverts 184, 186, and Mammoth Channel</li> </ul>
Year 1 to 2 (2019-2020) Operations – Phase 1	<ul style="list-style-type: none"> <li>• Completion of Whale Tail Dike</li> <li>• Construction of Mammoth Dike</li> <li>• Construction of the Whale Tail WRSF Dike</li> <li>• Construction of the Northeast Dike</li> <li>• Construction of the South Whale Tail Diversion Channel</li> <li>• Construction of the dewatering system (ramp, pipe, diffuser) for the Whale Tail North Basin to the Whale Tail South Basin, the dewatering system from North Basin to Mammoth Lake (and Water Treatment Plant).</li> <li>• Construction of the Whale Tail contact water intake causeway and construction of the WT attenuation pond infrastructure (diffuser, pipeline)</li> <li>• Installation of pumping system from the North-East Pond to C Watershed</li> <li>• Installation of pumping system from Whale Tail South to Mammoth Lake</li> <li>• Construction of the Whale Tail Dike seepage collection system</li> <li>• Installation of pumping system from A53 Lake to Whale Tail South</li> <li>• Installation of pumping system from Lake A49 to North-East Sector to maintain the water level</li> <li>• Installation of pumping system for contact water from the open pit to the Whale Tail Attenuation Pond (to Quarry 1 until freshet 2020)</li> <li>• Installation of pumping system for contact water from the Whale Tail WRSF Pond to the Whale Tail Attenuation Pond (to Quarry 1 until freshet 2020)</li> <li>• Underground WRSF saline ditch system</li> </ul>
Year 2 to 7 (2020-2025) Operations – Expansion Project	<ul style="list-style-type: none"> <li>• Construction of the dewatering system (ramps, pipes) for Lake A46, A47, A49, A50, A51, A52, A53, AP-21. Used to dewater the footprint of IVR Pit, IVR WRSF, and IVR Attenuation Pond</li> <li>• Dismantling of North-East Dike for IVR Pit mining activity</li> <li>• Construction of the contact water intake causeway and construction of the IVR attenuation pond infrastructure (diffuser, pipeline)</li> <li>• Installation of the IVR Attenuation Pond Pump Station</li> <li>• Installation of pumping system for contact water from the open pit to the IVR Attenuation Pond</li> <li>• IVR WRSF Contact Water Collection System; Ore stockpile 3 Contact Water Collection System</li> <li>• IVR Diversion</li> <li>• IVR D-1 Dike</li> <li>• Underground Water Management System</li> <li>• Groundwater Storage Ponds</li> </ul>

WRSF = Waste Rock Storage Facility.



### 3.5.1 Infrastructure Summary

The following sections briefly describe the various dikes and channels constructed for the Project. Information regarding the operation, surveillance, and maintenance of these structures is contained in the OMS Manual – Whale Tail Water Management Infrastructures (Agnico Eagle, 2022a). Additional information regarding construction of these infrastructures including design drawings and figures, can be found in the as-built reports submitted for each structure.

Agnico Eagle will continue to identify and assess the water infrastructure performance issues to ensure efficient water management. A lesson learned exercise on the 2019 freshet was performed in 2020 and was used to improve water management practices and plans for 2020 and beyond. In 2022 a lesson learned exercise on the winter water management was performed to improve winter water management practices for future winters.

#### Whale Tail Dike

Whale Tail Dike (WTD) isolates the Whale Tail Pit and Whale Tail Attenuation Pond from Whale Tail Lake South. The WTD construction raised the Whale Tail Lake (South Basin), Lake A18, Lake A19, Lake A20, Lake A21, Lake A22, Lake A55, Lake A62, Lake A63, Lake A65, Pond A-P1, and Pond A-P53, to an elevation of 156.0 metres above sea level (masl). The South Whale Tail Channel is a diversion structure associated with this dike and diverts runoff downstream to the Lake A16 (Mammoth Lake).

WTD is approximately 835 m in length and was constructed within Whale Tail Lake on a shallow plateau of the lake floor. It consists of a wide rockfill shell, with downstream filters and a cement-bentonite cutoff wall built with secant piles that extend into the bedrock. The cutoff wall extends up to 12 m below lake level and is socketed an average 1.37 m in the bedrock. The dike has a 5 m grout blanket on the upstream side and a 10 m grout curtain on the downstream side from 0+180 to 0+516. The top of the secant piles are at El. 157 which is 1 m higher than the design IDF water level. A rockfill thermal cover 2.0 m thick was placed between the secant pile top elevation and the final crest elevation of the dike at 159 masl.

Whale Tail Dike was constructed in the fall of 2018 and its initial grout curtain was installed in the first quarter of 2019. During dewatering in 2019 it was observed that a high amount of seepage was coming from the structure. The amount was judged unsustainable to be managed by pumping (approximately 300 m<sup>3</sup>/h). A detailed investigation including additional instrumentation and geophysics was conducted for a better understanding of the seepage phenomenon at the Whale Tail Dike. In 2020, a pumping system was installed to collect and manage the seepage water prior to reaching the Whale Tail Attenuation Pond with the objective of returning water to the environment if water quality allows.

As a result, a remedial grouting campaign was performed between November 2019 and March 2020. The campaign was successful and met the objective of decreasing the seepage so it could be manageable by pumping. Following the dike grouting campaign, the seepage flow, measured using a v-notch weir, has significantly decreased to approximately 80 m<sup>3</sup>/h and it was concluded that the



seepage reduction objective of the grouting campaign was successfully reached. Agnico Eagle continues to closely monitor the situation.

### **South Whale Tail Diversion Channel**

The South Whale Tail Diversion Channel (SWTDC) is a blasted channel in the south-western part of the Whale Tail Lake watershed. It allows non-contact water to be discharged by gravity from Whale Tail Lake to Mammoth Lake.

The construction of SWTDC occurred from January to April 2020 and it was commissioned during the 2020 freshet.

The inlet of the SWTDC is at El. 155.3 m. The channel has a trapezoidal shape with lateral slopes of 3H:1V, a base width of 5.0 m, and a bed-slope of 0.3%. The SWTDC was constructed using a protective riprap layer consisting of rockfill on the bottom and the sides of the channel to avoid erosion and limit TSS in the water. The riprap has a thickness of 0.5 m and consists of blasted rock with a diameter of 100 – 300 mm. Two transition materials consisting of fine and coarse filter with a 0.3 m thickness each were installed between the overburden and the riprap for particle retention between the foundation soil and the riprap. A layer of geotextile was placed between the coarse filter and the riprap to avoid migration of fine particles from the filters that could increase turbidity. The part of the access road crossing Lake A45 was modified to add a filtering element to prevent the A45 lakebed sediment to flow in the channel and create turbidity while ensuring that water from Lake A45 could reach the channel.

### **Mammoth Dike**

Mammoth Dike is a water retaining infrastructure built to isolate the Whale Tail Pit from Mammoth Lake. Mammoth Lake receives water from Whale Tail Lake through the SWTDC and treated water from site discharge through the Mammoth Lake diffuser. Water flows out of Mammoth Lake through its natural outlet.

The construction of Mammoth Dike occurred from February 2019 to March 2019 to maintain the frozen condition of the foundation. Mammoth Dike has a length of about 330 m and a height of 2 m. This structure is a zoned rockfill dike with a filter system. The low permeability element of the dike consists of a bituminous geomembrane (BGM) installed on the upstream face anchored in a key trench with fine filter amended with bentonite (FFAB). The key trench is approximately 3 m deep and is founded on bedrock. Blasting was required during the construction of this infrastructure.

### **Whale Tail WRSF Dike**

WRSF Dike is a water retention infrastructure designed to prevent contact water from the Whale Tail waste rock storage facility (WRSF) accumulating in the WRSF pond from reporting to Mammoth Lake. The water collected in the WRSF pond located upstream of the dike is pumped to the Attenuation Pond and treated prior to being discharged. An area of approximately 109 ha drains towards the WRSF pond. The WRSF Dike is located south of the Whale Tail WRSF.



The WRSF Dike is about 360 m long and 5 m high. This structure is a zoned rockfill dike with a filter system. Foundation excavation in the key trench area was done in the fall of 2018 to avoid blasting and aggrade frost penetration. The construction of WRSF Dike mainly occurred from January to February 2019 to maintain the frozen condition of the foundation. The low permeability element of the dike consists of a bituminous geomembrane (BGM) installed on the upstream face anchored in a key trench with fine filter amended with bentonite (FFAB). The key trench is approximately 3 m deep and founded on frozen glacial till or bedrock.

On August 2019, the key trench of the structure thawed inducing tension cracks on the crest of the structure and seepage from WRSF Pond reported through the structure to Mammoth Lake. Immediate actions taken were to build an access road to the downstream portion of the dike, in order to excavate a small sump and pump the seepage water back into the WRSF Pond. Furthermore, WRSF Pond was emptied and maintained dry. Downstream pumping stopped on September 30<sup>th</sup>, when the reporting flow and surrounding area had frozen. In October 2019, the KIA conducted a sample analysis of the lakebed sediments in Mammoth Lake. The report concluded the seepage did not have a measurable impact on metal quantities of the Mammoth Lake sediments (McDougall et al. 2019).

A series of measures were implemented by Agnico to minimize the risk of future similar events occurring in this location:

- Operational water levels were reviewed to keep water as low as possible in the WRSF pond as recommended by the Meadowbank Dike Review Board (MDRB)
- Aggradation of permafrost into the dikes foundation by construction of a thermal berm in 2020 on the upstream portion of the dike
- Access road to the downstream area was constructed to facilitate inspection
- A downstream water collection system was designed and constructed

Additional details on this event can be found in the letter submitted on December 20, 2019, to Environment and Climate Change Canada. Agnico Eagle continues to closely monitor the situation. No seepage was observed since the 2019 event which confirmed the adequacy of the mitigation measures implemented to ensure adequate performance of the structure.

#### **Northeast Dike (dismantled)**

The North East (NE) Dike was a temporary structure designed to prevent runoff from the Northeast watershed reporting to the Whale Tail Pit and to divert them to Nemo Lake. The upstream slope of the NE Dike was lined with bituminous geomembrane encapsulated at the toe in a layer of FFAB liner in turn constructed in a key trench to an ice-poor till foundation.

Following the fish out and dewatering of surrounding lakes (A46 & A47) in 2020, this structure was dismantled as part of the IVR pit development.



### **IVR Dike D-1**

IVR Dike D-1 is a contact water retaining infrastructure built to contain the IVR Attenuation Pond. It is located East of the Whale Tail Pit. The structure includes an emergency spillway to release the water to the Whale Tail Attenuation Pond.

The construction of IVR Dike D-1 was part of the expansion project. It started in Q1 2021 and was completed in Q2 2021. The structure was constructed as a zoned rockfill dike with a filter system. The low permeability element of the dike consists of a bituminous geomembrane (BGM) installed on the upstream face anchored in a key trench located below the centerline of the structure with fine filter amended with bentonite (FFAB). The key trench is excavated in frozen glacial till or bedrock. To improve the thermal condition of the key trench a rockfill and esker thermal berm was placed on the upstream side.

### **IVR Diversion Channel**

The IVR Diversion Channel (IVR DC) is an excavated channel in the north-east part of the Whale Tail Project site. It allows non-contact water to flow from the North-East watershed to Nemo Lake. Its objective is to reduce the amount of contact water reporting to IVR Pit.

The construction of IVR DC was part of the expansion project. It occurred from September to October 2020 and the channel was commissioned during freshet 2021. The channel has a trapezoidal shape with lateral slopes of 2H:1V to 3H:1V, a base width of 3.0 m, and a bed-slope of 0.3%, in combination with a pervious rockfill perimeter berm that is delimiting the west boundary of the channel and also acts as an access road. The IVR DC was constructed with a layer of fine filter material placed on top of the excavated foundation followed by geotextile and overlain by riprap.

## **3.6 Dewatering**

As per the Type A Water Licence 2AM-WTP1830, Agnico Eagle initiated the dewatering of Whale Tail Lake (North Basin) in 2019 following the construction of the Whale Tail and Mammoth dikes and the fish out.

The estimated total volume of Whale Tail Lake (Lake A17) is 8.5 million m<sup>3</sup> (Mm<sup>3</sup>). The dewatering started early March 2019. A total of 2,148,542 m<sup>3</sup> of water was discharged directly to Whale Tail Lake South Basin without requiring treatment. The second phase of dewatering started in mid June 2019 discharging to Lake A16 (Mammoth Lake). For this phase of dewatering, water from the North Basin was treated via the TSS removal unit of the WTP and discharged in Mammoth Lake through the diffuser.

Once the dewatering phase was completed in Q2 2020, part of the North Basin located outside the Whale Tail Pit footprint became the Whale Tail Attenuation Pond. The Whale Tail Attenuation Pond is since used to receive contact water from different sumps and ponds around site.



Waterbodies and ponds within the footprint of the IVR Pit, IVR WRSF, and IVR Attenuation Pond required dewatering in 2020. To allow the mining of the IVR Pit, lakes A46, A47 and A49 were dewatered in 2020. Following fish out completion, lakes inside the IVR pit mining footprint were dewatered and transferred into the Whale Tail Attenuation Pond representing a total approximate volume of 215,000 m<sup>3</sup>.

A similar process to the one mentioned above was also used to dewater the waterbodies inside the IVR WRSF footprint (AP-21, A50, A51 and A52). The water was discharged into lake A53 once its fish out was completed for a total approximate volume of 38,000 m<sup>3</sup>.

Similar to the Whale Tail (North Basin) dewatering process, approximately 2/3 of the dewatered water from Lake A53 was pumped and directly discharged to Whale Tail Lake (South Basin). The remaining 1/3 of the water was processed through the WTP during open water conditions. The complete dewatering of A53 represents a total approximate volume of 213,000 m<sup>3</sup>. Once Lake A53 dewatering and fishout was completed it became the IVR Attenuation Pond. The IVR Attenuation Pond is intended to receive site contact water from different sumps and ponds around site.

### **3.7 Water Management Activity During Construction and Operations**

An inventory of waterbodies impacted by mining activities is provided in Table 3.2 (Section 3.4) and the water management facilities required for the Plan are provided in Table 3.3 (Section 3.5). These tables should be read in conjunction with Table 3.4, which presents the yearly major water management activities during the construction and operational phases. Water management activities during the closure phase are described in Section 3.10.

Any water requiring treatment will be pumped to the water treatment plant(s) prior to discharge through the diffuser in Mammoth Lake or through the diffuser in Whale Tail Lake (South Basin) or other alternatives. The latter are outlined in the Whale Tail Pit Expansion Project Adaptive Management Plan. The other alternatives for discharge are Lakes D1 and D5 in the case that Level 3 is reached (high risk situation in the receiver water quality). Discharging in Lakes D1 or D5 would require a complete assessment of potential discharge, with approval from the NWB as per NIRB Project Certificate Conditions.

Water collected in the Whale Tail Attenuation Pond and/or IVR Attenuation Pond will be reused to the extent practical in the open pit and dust control operations, and the excess water will be treated by the WTP prior to discharge to the receiving environment.

Non-contact water will be diverted away from the mine site infrastructure by reversing natural flows or by using diversion channels and culverts.

Freshwater usage on site will be supplied from Lake C38 (Nemo Lake) and Lake A16 (Mammoth Lake) during operations, and from Whale Tail Lake (South Basin) during closure.



In the amended Water Licence the permitted freshwater sources are Nemo Lake (all purpose), Mammoth Lake (explosive mixing and associated use), Lake D1 (Re-flooding of Whale Tail Pit, IVR Pit, Underground mine, and Whale Tail (North Basin) and associated use, or as otherwise approved by the Board in writing), and Whale Tail South (Re-flooding of Whale Tail Pit, IVR Pit, Underground mine, and Whale Tail (North Basin) and associated use, or as otherwise approved by the Board in writing).

**Table 3.4 Water Management Activities During Construction and Operations**

Mine Year	Water Management Activities and Sequence
Year -1 (2018)	<ul style="list-style-type: none"> <li>Temporarily pump contact water from the Stage 1 WRSF sump to Quarry 1</li> <li>Temporarily pump contact water from the starter pit, construction, ore stockpiles, industrial sector, and main camp sector to Quarry 1</li> <li>Treat turbid water from construction using the construction WTP and discharge in Whale Tail North</li> <li>Pump STP effluent to Whale Tail Lake (North Basin)</li> <li>Freshwater intake initially located in Whale Tail Lake (South Basin); moved to Lake C38 (Nemo Lake)</li> </ul>
Year 1 (2019)	<ul style="list-style-type: none"> <li>Dewatering of Whale Tail Lake (North Basin) to Whale Tail South Basin and Mammoth Lake (through the WTP)</li> <li>Pump contact water from the open pit to Quarry 1</li> <li>Pump contact water from the Whale Tail WRSF Pond to Quarry 1</li> <li>Treat through the WTP the Whale Tail North Water above discharge limit and discharge in Lake A16 (Mammoth Lake)</li> <li>Pump contact water from Quarry 1 to Mammoth Lake (when water quality meets discharge criteria, treat as needed at WTP) (following authorization)</li> <li>Pumping of non-contact water from: <ul style="list-style-type: none"> <li>North-East Pond to the C-watershed</li> <li>North-East Pond to Whale Tail North</li> <li>North-East Pond to AP5 (Licence B)</li> <li>A53 Lake to Whale Tail North</li> <li>Whale Tail South Basin to Mammoth Lake</li> <li>AP5 to the C-watershed (Licence B)</li> <li>Whale Tail North to Whale Tail South in the summer months</li> <li>Whale Tail North to Mammoth</li> <li>Whale Tail North to AP5 (Licence B)</li> </ul> </li> <li>Operation of the Whale Tail Dike seepage collection system by pumping seepage water to Whale Tail South Basin</li> <li>Pump STP effluent to Whale Tail North</li> </ul>
Year 2-3 (2020-2021)	<ul style="list-style-type: none"> <li>Completion of dewatering activity. WTN becomes an attenuation pond</li> <li>Pump contact water from the open pit to the Whale Tail Attenuation Pond (to Quarry 1 until May 2020)</li> <li>Pump contact water from the Whale Tail WRSF Pond to the Whale Tail or IVR Attenuation Pond (to Quarry 1 until freshet 2020)</li> <li>Treat through the WTP the Whale Tail and IVR Attenuation Ponds contact water and discharge in Lake A16 (Mammoth Lake) or Whale Tail Lake (South Basin)</li> <li>Pump contact water from Quarry 1 to Mammoth Lake (if water quality meets discharge criteria) until May 2020</li> </ul>



Mine Year	Water Management Activities and Sequence
	<ul style="list-style-type: none"> <li>Whale Tail Lake (South Basin) flows to Lake A16 (Mammoth Lake) through the Whale Tail Lake (South Basin) Diversion Channel</li> <li>Operation of the Whale Tail Dike seepage collection system by pumping seepage water to Whale Tail South when water quality meets discharge criteria</li> <li>Pump STP effluent to the Whale Tail or IVR Attenuation Ponds</li> <li>Maintain North-East Pond sector water level by pumping to Whale Tail North Basin (only for 2020)</li> <li>Construct IVR Diversion and divert non-contact water from the Northeast Sector to Nemo Lake</li> <li>Dewater waterbodies and ponds inside IVR pit footprint to Whale Tail Attenuation Pond</li> <li>Dewater waterbodies and ponds inside IVR WRSF footprint to A53</li> <li>Dewater Lake A53 to Whale Tail Lake (South Basin) and remaining to Whale Tail Attenuation Pond</li> <li>Pump GSP-1 contact water to Whale Tail or IVR Attenuation Ponds</li> <li>Pump contact water from the IVR Pit to the IVR Attenuation Pond</li> <li>Pump contact water from the IVR WRSF Contact Water Collection System to the IVR Attenuation Pond</li> <li>Pump excess water from underground sump to GSP 1 when Underground Storage Stope is full</li> <li>Pump contact water from the Whale Tail Pit to the IVR Attenuation Pond</li> <li>Pump contact water from the Whale Tail Attenuation Pond to the IVR Attenuation Pond</li> <li>Pumping of non-contact water from Whale Tail South Basin to Mammoth Lake</li> <li>Capture runoff from Whale Tail WRSF and NPAG WRSF; pump to the IVR Attenuation Pond</li> <li>Treat the IVR Attenuation Pond contact water through the WTP and discharge in Whale Tail Lake (South Basin) and/or Lake A16 (Mammoth Lake)</li> </ul>
Year 4 to 7 (2022 to 2025)	<ul style="list-style-type: none"> <li>Pump contact water from the Whale Tail WRSF Pond to the Whale Tail and IVR Attenuation Ponds</li> <li>Pump contact water from the Pits to the IVR Attenuation Pond or Whale Tail Attenuation Pond</li> <li>Pump contact water from the IVR WRSF Contact Water Collection System to the IVR Attenuation Pond</li> <li>Pump STP effluent to the Whale Tail Attenuation Pond or IVR Attenuation Pond</li> <li>Pump GSP-1 contact water to Whale Tail or IVR Attenuation Ponds.</li> <li>Capture runoff from Whale Tail WRSF and NPAG WRSF; pump to WRSF Pond, Whale Tail Attenuation Pond or to the IVR Attenuation Pond</li> <li>Pump contact water from the WRSF Pond to Whale Tail Attenuation Pond or IVR Attenuation Pond</li> <li>Pump contact water from the Whale Tail Attenuation Pond to the IVR Attenuation Pond</li> <li>Pump contact water from the IVR Attenuation Pond to the Whale Tail Attenuation Pond</li> <li>Treat through the WTP the Whale Tail and IVR Attenuation Ponds contact water and discharge in Lake A16 (Mammoth Lake) or Whale Tail Lake (South Basin)</li> <li>Pump excess water from underground sump to GSP 1 when Underground Storage Stope is full</li> <li>Store excess groundwater in IVR Pit temporarily</li> <li>Construct GSP-2 and GSP-3 if required and if additional capacity for contact water storage is required at surface.</li> <li>Whale Tail Lake (South Basin) flows to Lake A16 (Mammoth Lake) through the Whale Tail Lake (South Basin) Diversion Channel</li> <li>Operation of the Whale Tail Dike seepage collection system by pumping seepage water to Whale Tail South when water quality meets discharge criteria</li> <li>Divert non-contact water from the Northeast Sector to Nemo Lake using IVR Diversion</li> <li>Pumping of non-contact water from Whale Tail South Basin to Mammoth Lake</li> </ul>

WRSF = Waste Rock Storage Facility; WTP = Water Treatment Plant.

Table 3.5 presented below summarizes the overall contact water management plan for the major mine infrastructure with the initial water collection location and final water destination. Detailed



water management information for major mine infrastructure areas is described in the following sub-sections. Water management of the non-contact water on site is also presented in Section 3.7.16. Water management flowsheets for the operations and closure phase are provided in Appendix B of this plan.

**Table 3.5 Overall Site Surface Contact Water Management Plan**

Contact Water Source	Initial Contact Water Collection Location	Final Contact Water Collection Location
Industrial Sector	Whale Tail Attenuation Pond	IVR Attenuation Pond (primary) Whale Tail Attenuation Pond (secondary)
Whale Tail and IVR WRSFs Sector	Whale Tail WRSF Ponds IVR WRSF collection system	
Ore Stockpiles	Whale Tail Attenuation Pond	
Landfill	Whale Tail WRSF Pond	
Open Pits (Whale Tail and IVR)	Open pit sumps	

WRSFs = Waste Rock Storage Facilities.

### 3.7.1 Erosion and Sediment Control Plan

As described in the previous sections, Project site infrastructure, channels, sumps, and associated water management activities are designed with consideration of site wide erosion and sediment control. In addition to design controls, best management practices (BMPs) will furthermore ensure that activities, practices, devices, or a combination thereof will prevent or reduce the release of sediments and will control erosion. The selection of permanent or temporary BMPs will be specific to the site and timing and may require regulatory approval prior to installation or construction.

Temporary BMPs for Whale Tail and IVR Pits may include:

- Silt fences and fabric installation
- Turbidity curtains
- Sediment control basins to detain sediment-laden water
- Diversion of flows away from the construction area

Permanent BMPs at the Whale Tail and IVR Pits may include:

- Infiltration basins and trenches
- Sedimentation basins or ponds
- Construction of swales in ditches

Monitoring of erosion and sedimentation associated with construction and operations are detailed in the Water Quality and Flow Monitoring Plan (Agnico Eagle, 2019b), and dike construction sediment control and monitoring is presented in the Dike Construction and Dewatering Management Plan (Agnico Eagle, 2020).



For specific details on sediment control guidelines and license requirements, on erosion monitoring and mitigation during freshet, and the rise of the water level in the South Basin of Whale Tail Lake, refer to the Whale Tail Project - Erosion Management Plan (Agnico Eagle, 2018a).

### **3.7.2 Whale Tail Attenuation Pond**

The Whale Tail Attenuation Pond is located in a deep part of Whale Tail Lake (North Basin), following the dewatering of the North Basin.

Starting at freshet 2020, the Whale Tail Attenuation Pond is one of the main contact water ponds for the project. Contact water from the Whale Tail WRSF Pond and runoff water in the open pits collected by sumps can be pumped to the Whale Tail Attenuation Pond.

Excess water is transferred to the IVR Attenuation Pond or is treated by the WTP for TSS and arsenic if required prior to discharge to the receiving environment via the diffuser into Lake A16 (Mammoth Lake) or Whale Tail South.

Monitoring of the effluent discharge to Mammoth Lake or Whale Tail South is done as per the Water License requirement and MDMER regulation and is detailed in the Whale Tail Pit Water Quality and Flow Monitoring Plan (Agnico Eagle, 2019b).

### **3.7.3 IVR Attenuation Pond**

The other main contact water pond of the Project (i.e., IVR Attenuation Pond) is located in the former Lake A53, following the A53 dewatering and IVR Dike construction. Contact water from the IVR WRSF collection system, the Whale Tail WRSF Pond, and runoff water in the open pits collected by sump can be pumped to the IVR Attenuation Pond.

Excess water will either be transferred to the Whale Tail Attenuation Pond or be treated by the WTP for TSS and arsenic if required prior to discharge to the receiving environment via the diffuser into Lake A16 (Mammoth Lake) or Whale Tail South.

### **3.7.4 Water Management in Whale Tail Waste Rock Storage Facility**

The Whale Tail WRSF will be used to permanently store all waste rock and overburden from mining activities.

Seepage and runoff from the Whale Tail WRSF during the construction and operational phases is managed via the Whale Tail WRSF Pond, isolated by the Whale Tail WRSF Dike, where the contact water is pumped to the Whale Tail Attenuation Pond or to the IVR Attenuation Pond.

Runoff from the ultimate footprint of the Whale Tail WRSF will report to the Whale Tail WRSF Contact Water Collection System and the IVR Pit.



All overburden soils will be stabilized with waste rock berms to limit spreading and soil water separation. More details about management of the Whale Tail WRSF are presented in the Whale Tail Mine – Waste Rock Management Plan (Agnico Eagle, 2023a).

In April 2019, O’Kane Consultants developed a landform water balance model for the Whale Tail and IVR WRSFs (OKC, 2019). Information on the landform water balance model can be found in the report referenced in the waste management plan (OKC, 2019). The objective of the landform water balance was to estimate the runoff, interflow, and basal seepage rates for different slopes and aspects of the Whale Tail and IVR WRSFs.

### **3.7.5 Water Management in IVR Waste Rock Storage Facility**

The IVR WRSF is in operation since the IVR Pit was initiated. Runoff from the IVR WRSF is sent to the IVR Attenuation Pond. The total catchment of the IVR WRSF increases proportionally with the increase in waste rock footprint.

### **3.7.6 Water Management for Overburden Storage**

The overburden storage is located within the catchment of the Whale Tail Attenuation Pond as shown in Appendix A. Based on the topographic information, contact water will naturally flow to the Whale Tail Attenuation Pond for further treatment. Channels will be constructed if deemed required.

### **3.7.7 Water Management for Ore Stockpile Areas**

The ore stockpiles are located within the catchment of the Whale Tail Attenuation Pond or the IVR Attenuation Pond as shown in Appendix A. Based on the topographic information, contact water will naturally flow to the Whale Tail or IVR Attenuation Ponds for further treatment. If deemed required channels will be constructed and water management systems (i.e., pump, piping, etc.) will be installed to direct runoff to the pond.

The Ore Stockpiles are designed based on the following considerations. A cover of overburden and/or waste rock was placed over original ground to reduce any thaw-induced differential settlements. Waste rock was then placed to follow the natural topography, thereby reducing the likelihood of water ponding on the surface of the pad requiring additional maintenance. Any surface run off from the ore stockpile or the pad will be directed to the Attenuation Pond containment area.

### **3.7.8 Water Management for Quarry 1**

Until freshet 2020, Quarry 1 was used as the main contact water pond for the Whale Tail site. Prior to commissioning of the Whale Tail Attenuation Pond, contact water collected from the Stage 1 WRSF sump, from the starter pit, construction, and industrial sectors was pumped to Quarry 1. The contact water from Quarry 1 was pumped to Mammoth Lake without treatment when the water quality met discharge criteria. The discharge was done via the permanent diffuser in Mammoth Lake. If needed, water was treated via the Water Treatment Plant to meet discharge criteria.



As of 2021 Quarry 1 is part of Whale Tail Pit and is no longer available to be used as a storage area for water management.

### **3.7.9 Water Management for the Whale Tail Open Pit Sector**

The Whale Tail open pit is planned to extend to approximately 300 m below the ground surface. The open pit will be mined mostly within permafrost except for the north-central portion of the pit which will be within the closed talik at the northern end of Lake A17 (Whale Tail Lake). The pit does not extend through the bottom of the closed talik; however, the open pit acts as a sink for groundwater flow during operations, with water induced to flow up through the open talik beneath the central portion of Lake A17 (Whale Tail Lake) and into the open pit. Accordingly, groundwater inflows into the open pit are expected; this water will be mixed with the open pit contact water and pumped to the IVR Attenuation Pond and/or the Whale Tail Attenuation Pond for further treatment.

The overall inflow to the pit is not expected to decrease significantly as the pit deepens because the flow of water is primarily through the permeable weathered bedrock and because the lower portion of the pit is in permafrost. It is important to note that most of the volume is expected to be due to seepage from Whale Tail South and the Whale Tail Attenuation Pond.

Groundwater inflow predictions during operations conservatively assume that no freeze back will occur in the pit walls during mining. This assumption was adopted for Whale Tail Pit to be conservative and because during the first few years of mining, the pit will be both widened and deepened, resulting in the continual exposure of unfrozen bedrock. During the later years of mining, however, the pit development will be entirely within the permafrost and significant freeze back in the pit walls is considered possible and has been observed at Meadowbank. Although not simulated, if freeze back does occur as is the case at Meadowbank, actual groundwater inflow to the pit could be significantly lower.

TDS concentration in the groundwater inflow to the pit was predicted to decrease during mining. The relatively low TDS concentration and decrease in TDS over time reflects the minimal upwelling of higher salinity waters at depth due to the presence of the permafrost at the base of the pit and the high contribution of lake water and Whale Tail Attenuation Pond water.

### **3.7.10 Water Management for the IVR Open Pit Sector**

The IVR Pit is located north of Whale Tail Lake, within the Northeast Sector in the permafrost environment, thus no groundwater inflows are predicted. Water management infrastructures are designed to only manage runoff water reporting to the pit during freshet. The IVR Pit runoff is conveyed to the active attenuation pond (i.e., IVR Attenuation Pond).



### **3.7.11 Water Management for the IVR and WT Pit Pushbacks**

During operations, the water is managed within the pits as detailed in Sections 3.7.9 and 3.7.10. No additional water management infrastructure is required for this activity. The IVR Pushback may be used as a staging sump prior to being backfilled.

### **3.7.12 Water Management for Haul Roads**

A network of access and haul roads will connect the ore body to the Whale Tail and IVR WRSF Sector and the Industrial Sector. Most of the roadways servicing the mining area will drain directed towards the proposed contact water management infrastructures. Detailed information on roads is described in the Whale Tail Pit Haul Road Management Plan.

The approach to water management for these roads will involve the implementation of local best management practices during the construction, operational, and closure phases. The roads are constructed of non-potential for acid generating and non-leaching waste rock from mining operations. Other best management practices will strive to minimize the amount of runoff originating from the roadways and to prevent the migration of surfacing material from the roadways and crossings. Any areas identified as point sources of runoff originating from the roadways or crossings can be managed locally with silt fences, straw booms, turbidity curtains, interceptor channels, rock check dams, and/or small sedimentation ponds.

### **3.7.13 Water Management for Landfill**

The landfill is located southeast of the Whale Tail WRSF, within the catchment of the Whale Tail WRSF Pond, as shown in Appendix A. Based on the topographical information, runoff and any seepage from the landfill will naturally flow to the Whale Tail WRSF Pond and then be pumped to the Whale Tail Attenuation Pond for further treatment before discharge.

Further information on the management of this facility is described in the Whale Tail Pit Landfill and Waste Management Plan.

### **3.7.14 Sludge and Brine Management from Water Treatment Plants**

This section summarizes water treatment requirements and is extracted from the Mean Annual Water Balance and the Mine Site and Downstream Receiving Water Quality Predictions, from Golder Associates, both dated May 2019. Any water requiring treatment will be pumped to the water treatment plant(s) prior to discharge through the diffuser in Mammoth Lake or through a diffuser in Whale Tail Lake (South Basin) or other alternative discharges.

Sludge disposal will be done in the Whale Tail WRSF.



### OPERATION WATER TREATMENT PLANT (WTP)

The arsenic and TSS water treatment plant (WTP) was commissioned at the beginning of May 2019, to treat the final dewatering volumes from Whale Tail Lake (North Basin). This plant is used to treat surface water for TSS and arsenic before discharging to an approved diffuser. The arsenic water treatment unit has not been required so far.

Sludge water from the Operation Water Treatment Plant (OWTP) is dewatered with a centrifuge to produce a cake having a density with 20% of solid content. This cake will be stored in the Whale Tail WRSF. The maximum predicted annual volume of cake from the OWTP is approximately 5,760 cubic metres (m<sup>3</sup>).

### TDS WATER TREATMENT PLANT (S-WTP)

The S-WTP is not needed according to the latest water balance as the current underground mining plan is designed to minimize the inflows requiring TDS treatment by staying in the permafrost. The S-WTP would include a TDS Treatment plant if required.

The concept for the TDS Treatment plant would be to treat low salinity water that is stored in the GSP-2 until closure. The TDS Treatment plant would be active only from June through September. The permeate would be combined with the WTP effluent for discharge from site. The brine produced from the TDS Treatment plant would be stored in GSP-1. The S-WTP could also include two Desalination units, which would treat water stored in GSP-1. The salt solid produced from treatment would either be used at site and/or shipped off site, and the permeate would be combined with WTP effluent for discharge from site.

Agnico Eagle is currently developing an Underground Project limited into the permafrost only. This change results in no more treatment and discharge of groundwater to Whale Tail Lake. The water management strategy for underground water would only be based on storing water in GSP-1 and GSP-2. High and low salinity water would not be segregated anymore.

### 3.7.15 Underground Water Management

Underground development groundwater and contact water will be managed in dedicated surface infrastructures for contact water. For underground water management, the following key strategies were implemented to develop the underground water Management Plan:

- A Groundwater Storage Pond system (GSP) is designed to capture TDS (salt) affected waters. Up to three GSPs are planned to provide operational flexibility and adaptive management opportunity.
- Excess water volumes in the underground mine will be managed through the Underground Mine Stope and GSP-1 and GSP-2.



- Excess water volumes may also be managed with GSP-3 (planned for contingency, operational flexibility, and adaptive management opportunity) or managed as temporary storage in IVR Pit.
- Water stored in GSP-1 and GSP-2 could be used as a source for dust suppression on surface roads, as input into the cemented rockfill, or used for drilling activity underground.
- At the end of underground mining, any remaining water in the GSP ponds and IVR Pit will be pumped underground for flooding of the underground workings.

### 3.7.16 Non-Contact Water Management

The non-contact water management systems are described below. These systems are required to meet the objective of avoiding mixing contact and non-contact water.

#### Whale Tail Dike Seepage Discharge to Whale Tail South Basin

The non-contact water seeping from Whale Tail Dike (WTD) is collected into the seepage collection system before reaching the Whale Tail Attenuation Pond and then discharged to Whale Tail South Basin. The seepage collection system consists of 4 pumping wells that surface seepage is diverted into and that are deep enough to potentially collect most below surface seepage as well. This system allows to minimize the volume of water reporting to Whale Tail Attenuation Pond. Details of the installation and the system will be compiled in the as-built report, which is in progress and will be completed once the system is fully commissioned.

Seepage water, collected from this system, can be discharged into the Whale Tail South Basin via a diffuser without treatment if the water quality meets the discharge criteria of the Water License 2AM-WTP1830. If discharge criteria are not met, water will overflow from the pump stations to the Whale Tail Attenuation Pond, and then will be pumped through the WTP for discharge.

Routine monitoring of the seepage water quality from each pump station will be as per the Water Licence 2AM-WTP1830 and the Metal and Diamond Mining Effluent Regulation (MDMER). This monitoring will allow Agnico Eagle to put mitigation measures (for example, treating the water via the WTP) in place if needed. Turbidity and pH will also be monitored.

Since 2020, following the Whale Tail Dike grouting campaign, the seepage pH results indicated an increase above the acceptable limit indicated in the Water License 2AM-WTP1830. The seepage collected from the system was therefore pumped to the Whale Tail Attenuation Pond. Agnico Eagle will continue to closely monitor the situation.

#### IVR Diversion Channel

The IVR Diversion channel is intended to collect non-contact runoff water from the east side of the Nemo watershed and divert it by gravity to Nemo Lake. This infrastructure is 260 m long and allows



minimizing the volume of non-contact runoff water reporting to the IVR Pit area. The IVR Diversion Channel construction has been completed in 2020.

#### South Whale Tail Channel (SWTC)

Construction of the South Whale Tail Channel (SWTC) has been completed in 2020 prior to the freshet. The SWTC connects Whale Tail South basin to Mammoth Lake. The 900 m long channel is approximately 5m wide at the base with lateral slopes of 3H:1V. Once excavated, the channel was covered with multiple layers of coarse and fine materials, rip rap, and a layer of geotextiles to ensure minimal TSS in the flow reporting to Mammoth Lake and also preventing erosion. At the outlet of the channel, a turbidity barrier was installed and will remain in place as a supplementary protection to avoid TSS flowing into Mammoth Lake. The channel allows Agnico Eagle to naturally control the Whale Tail South water level without any mechanical transfer intervention. Details of the channel construction can be found in the as-built report (SNC, 2020).

#### **3.7.16.1 Adaptive Management for Non-Contact Water**

In order to adequately manage non-contact water on site, some passive flows have been in the past substituted with a pumping alternative that complies with the original intent of the approved water balance and Water License 2AM-WTP1830 (same origin and destination of water). Those systems were proposed as adaptive management methods, in response to the encountered site conditions during open water season and the high volume of precipitation received, resulting in additional volume of water to manage.

#### North-East Pond to C-watershed

The non-contact water from the North-East (NE) Pond watershed was initially planned to overflow by gravity toward Nemo Lake once the North-East Dike was operational. During a routine inspection in July 2019, it was observed that the topography toward Nemo Lake would not allow water to overflow naturally before overtopping the dike liner. Following this observation, water was pumped from NE Pond toward the project site as per approval from NWB, adding pressure on dewatering activity. The water from the NE Pond was then pumped to the tundra within the Nemo watershed (Watershed C). This system for water level management was operational in 2019 and 2020 prior to the dewatering of the IVR footprint and was used to manage the water level in the NE Pond when required, until NE Dike was dismantled in late 2020.

#### North-East Sector Pond Management

During the summer of 2019 and 2020, significant water inflows from Lake A49 towards the Whale Tail Pit area were noticed. Maintaining the water elevation in Lake A49 throughout freshet was required to avoid the transformation of non-contact water (Lake A49 overflow) to contact water (pit water). The objective of this water transfer was to minimize contact water creation. Water was sent into the North-East Pond. Lakes A47 and A49 were dewatered in 2020 as part of the IVR Pit development.



### A53 Lake to Whale Tail South

The non-contact water from the A53 watershed was planned to be redirected to Whale Tail South through the East Channel.

Prior to the dewatering phase, the water level in Lake A53 was maintained to the natural level by pumping the exceeded volume to Whale Tail South as per previous approval from NWB. Regular water level monitoring was conducted at this time. The monitoring aligns with the Water License 2AM-WTP1830 requirements, Schedule I Table 2 for ST-WT-7 and as per Part F Item 7 for TSS limits.

Once the dewatering phase completed, as explained in Section 3.6 of this report, A53 became the IVR Attenuation Pond.

### Whale Tail South Discharge to Mammoth Lake

The non-contact water from Whale Tail South Basin was pumped to Mammoth Lake in 2019 as per approval from NWB. This pumping activity was required to manage and then maintain the water level in Whale Tail South Basin, in order to allow for the construction of the Whale Tail South Channel (SWTC) and preserve the integrity of Whale Tail Dike. This system temporarily substituted passive flow via the SWTC with a pumping alternative that complies with the original intent of the approved water balance and Water License 2AM-WTP1830 (same origin and destination of water). This pumping activity also provided flexibility and added robustness to the water management strategy. Discharge was completed via a diffuser to avoid erosion into Mammoth Lake. Since 2020, no mechanical transfer from Whale Tail South to Mammoth Lake occurred but Agnico might re-use this system in the future to appropriately manage water on site.

## **3.8 Freshwater Management**

The permitted freshwater sources as per the Water License 2AM-WTP1830 are Nemo Lake (all purpose), Mammoth Lake (explosive mixing and associated use), Lake D1 (Re-flooding of Whale Tail Pit, IVR Pit, Underground mine, and Whale Tail (North Basin) and associated use, or as otherwise approved by the Board in writing), and Whale Tail South (Re-flooding of Whale Tail Pit, IVR Pit, Underground mine, and Whale Tail (North Basin) and associated use, or as otherwise approved by the Board in writing).

Freshwater usage includes potable use, fire suppression, dust suppression, drilling water (if contact water is not available), water for the emulsion plant (trucked from the Nemo Lake pumping station), and water for the truck shop. The freshwater source is Lake C38 (Nemo Lake), and Lake A17 (Whale Tail Lake) during closure. For explosives mixing and associated use, the water could also be pumped from Lake A16 (Mammoth Lake), as per Part E, condition 1 of the Water License 2AM-WTP1830. Agnico Eagle will endeavour to minimize the amount of freshwater required for the Project, where possible. Table 3.6 summarizes the authorized water use for domestic and industrial purposes during construction and operation.



**Table 3.6 Water Use Authorized for Domestic and Industrial Purposes During Construction and Operation**

Source	Volume (m <sup>3</sup> /year)	Purpose
Nemo Lake	209,544	Domestic camp use, drilling dust suppression, Construction, and Operations and associated use or as otherwise approved by Board in writing
Mammoth Lake	2,500	Explosive mixing and associated use
Whale Tail Lake (North Basin), Lakes A-P38, A-46, A47, A49, A50, A51, A52, A53, A-P21, A-P10, A-P67 and A-P68	153,735	Dewatering
Source Proximal to drilling sites	109,135	Drillings
Source proximal to the Whale Tail Haul Road	109,135	Dust Suppression
<b>Annual Subtotal</b>	<b>584,049</b>	Above-described sources
<b>Annual Contingency (20 %)</b>	<b>116,810</b>	Above-described sources
<b>Annual Total</b>	<b>700,859</b>	

Freshwater is primarily sourced through a freshwater intake and pump system. The intake consists of vertical filtration wells fitted with vertical turbine pumps that supply water on demand. The intake is connected to the pump house with piping buried under a rockfill causeway. The intake pipe exits at the bottom of the causeway and is fitted with a stainless-steel screen, as per Part E, condition 4 of the Water License 2AM-WTP1830. The rockfill causeway acts as a secondary screen to prevent fish from becoming entrained.

The stainless-steel screens design for the water intake is consistent with the Fisheries and Oceans Canada (DFO) “Freshwater Intake End-Of-Pipe Fish Screen Guideline” (DFO 1995). As per the DFO policy intake screens will be cleaned every 2 years. The freshwater intake will be moved to Whale Tail Lake (South Basin) at closure.

Freshwater is pumped to an insulated main storage tank located at the Whale Tail Camp. The freshwater pipeline is made of a high-density polyethylene pipe and insulated and heat traced. The Whale Tail Camp has a Freshwater Treatment Plant (potable). In the Potable WTP, the freshwater first goes through sand filters and then is pumped through ultraviolet units, and finally treated with chlorine. The treated water is stored within a potable water tank. Potable water is monitored according to the Nunavut health regulations for total and residual chlorine and microbiological parameters. Treated potable water is piped to other facilities requiring potable water. Detailed plant operation specifications were provided in FEIS Volume 1, Section 1. 2.4.1.

Freshwater and potable water use is required during operations and additional freshwater will be required from Whale Tail Lake at closure. The current Type A Water Licence Part E Item 1 and 2 provides for a maximum quantity of water use not to be exceeded at 700,859 m<sup>3</sup> annually during



construction and operation as well as 14,855,606 m<sup>3</sup> annually during closure. The freshwater usage from Nemo Lake needs to respect the license limit of 209,544 m<sup>3</sup> per year.

It is important to note that total annual withdrawals of water from Nemo Lake (209,554 m<sup>3</sup>/year) will remain well below the lake's annual inflow volume of approximately 476,000 m<sup>3</sup> (based on the mean annual water balance of the lake under baseline conditions), and DFO's guideline of 10% of the under ice volume for the duration of operations (i.e., under-ice volume of 6,170,000 m<sup>3</sup> derived from FEIS Addendum Appendix 6-M submitted with the Whale Tail Pit - Expansion Project). Residual effects to fish and fish habitat are therefore expected to be negligible.

Following the end of operations, site contact water including contact water in the underground mine watershed (GSP ponds) will be pumped into the underground mine; the remaining voids will be filled with Whale Tail Lake (South Basin) water. The dewatered Whale Tail Pit and IVR Pit area will be filled with a combination of natural runoff and contact water from the entire site (i.e., the Whale Tail and IVR WRSF Contact Water Collection Systems and the Whale Tail and IVR Attenuation ponds), and water pumped from Whale Tail Lake (South Basin). Contact water in the underground mine watershed (GSP ponds) will not be used for this purpose because of their anticipated higher salinity. This water will be used only to flood underground workings. It is anticipated that approximately 75,000,000 m<sup>3</sup> over 18 years from Whale Tail Lake is required to fill the mined-out Whale Tail Pit (i.e., approximately 57,000,000 m<sup>3</sup>), IVR Pit (i.e., approximately 11,000,000 m<sup>3</sup>), underground mine (i.e., approximately 1,000,000 m<sup>3</sup>) and Whale Tail Lake (North Basin) (i.e., approximately 6,000,000 m<sup>3</sup>), including approximately 2,900,000 m<sup>3</sup>/year from Whale Tail Lake (South Basin).

As per part E, condition 2 of the Water License 2AM-WTP1830, the use of water from Whale Tail Lake shall not exceed a total of 10,655,000 m<sup>3</sup>/year commencing when notification of closure is received by the NWB through to the expiry of the Licence. The limit for Nemo Lake is 14,672 m<sup>3</sup>/year and the limit for Lake D1 is 1,710,000 m<sup>3</sup>/year, both commencing when notification of closure is received by the NWB through to the expiry of the Licence.

### 3.9 Sewage Water Management

Sewage is collected from the camp and change-room facilities and pumped to a sewage treatment plant (STP). The objective of the STP is to treat sewage to an acceptable level for discharge to the Whale Tail or IVR Attenuation Ponds via a sewage water discharge pipeline. The STP is housed in a prefabricated (modular) structure located in the Whale Tail Camp. The sewage treatment system is designed based on the occupation maximum of the camp for 400 persons (240L per day and per person). The design average daily flow is 96 m<sup>3</sup>/day (4 cubic metres per hour [m<sup>3</sup>/hour]).

Previously, the sewage treatment plant at the Amaruq camp could accommodate 400 workers. With the addition of four wings to the Operations Camp for the project expansion, the total camp capacity was increased to 546 workers. An expansion of the sewage treatment systems was thus required. These systems are built with typical 40-foot containers.



No major change in operation or water quality happened as a result of this expansion. The upgraded sewage treatment system is designed based on a flow rate of 240 L per day per room for 546 people, for an average daily flow rate of 131 m<sup>3</sup>/day (5.42 cubic metres per hour [m<sup>3</sup>/hour]).

The sewage treatment plant receives two streams of sewage. The first source is domestic sewage, which is fed directly to the fine screening process to remove any fibers or debris that might damage the membranes. The second source is kitchen sewage which is pre-treated in the oil and grease tanks to remove oil and grease prior to being fed into the fine screen.

The STP for the camp facilities is designed to meet appropriate guidelines for wastewater discharge (for example, NWT Water Board 1992). Wastewater System Effluent Regulations (WSER) criteria are not currently applicable to systems located in Nunavut and is unlikely to apply to the Project effluent quality.

Table 3.7 provides the anticipated performance of the system compared to the WSER criteria. Further information on the management of this facility is described in the Whale Tail Sewage Treatment Plant Operation and Maintenance Manual (Agnico Eagle, 2019a). As stipulated in Part B, Item 17, Agnico Eagle will review the Plans as required by changes in operation and/or technology and modify the Plans accordingly in the form of an addendum to be included in the Annual Report.

**Table 3.7 Effluent Quality and Wastewater Characteristics**

Parameter	Units	Regulatory Limit	Design Value
Wastewater			
• Biochemical Oxygen Demand	mg/L	-	952
• Total Suspended Solids	mg/L	-	300
• Total Kjeldahl Nitrogen	mg/L	-	130
• Ammonia Nitrogen	mg/L	-	130
• Fat, Oil, and Grease	mg/L	-	30
• pH	-	-	6 to 9.5
• Water Temperature	°C	-	10 to 25
• Alkalinity	mg/L as CaCO <sub>3</sub>	-	471.1
• Prohibited Chemicals/Compounds	Not present		
• Grinder Pumps	Not present upstream of MBR		
Effluent			
• pH	-	6-9.5	6.5 to 8.5
• Carbonaceous Biochemical Oxygen Demand	mg/L	<25	<5
• Total Suspended Solids	mg/L	<25	<1
• Un-ionized Ammonia	mg/L	<1.25	<0.08
• NO <sub>3</sub> -N	mg/L	<5	4
• TP	mg/L	<0.5	0.5
• Fat, Oil, and Grease	mg/L	<5	<1
• Fecal Coliform	CFU/100mL	<200	Non-Detect
• Total Residual Chlorine	mg/L	<0.02	0

1. Noted values are assumed blended between kitchen and dormitory wastewater after the grease trap.
2. A complete list of prohibited chemicals is included in the membrane maintenance manual.



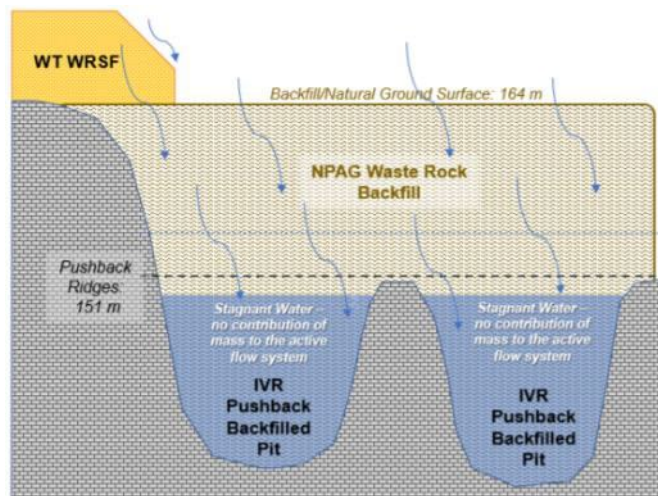
### 3.10 Water Management During Closure

Mine closure is integral to the mine design and will be modified during operations. Planning for permanent closure is an active and iterative process. The intent of the process is to develop a final closure plan including specific water management components using adaptive management. This begins during the mine design phase and continues through to closure implementation. Adaptive management enables the plan to evolve as new information becomes available through analysis, testing, monitoring, and progressive reclamation. The mine closure and reclamation activities are provided in the Whale Tail Pit Interim Closure and Reclamation Plan and will be detailed in the Final Closure and Reclamation Plan.

Water management during closure and reclamation will involve actively filling the underground facilities, Whale Tail Pit, and IVR Pit, and passively allowing the Whale Tail Attenuation Pond and the Whale Tail Pit to flood. The Groundwater Storage Ponds and IVR Attenuation Pond will be emptied at the start of closure and backfilled with NPAG/NML waste rock. The Whale Tail and IVR WRSFs will be progressively covered with NPAG/NML waste rock throughout operations and are expected to be completely covered at the beginning of closure.

The pushback in the IVR pit will be filled with NPAG-NML waste rock and be naturally refilled by water inflows as described above. Figure 3.4 shows the conceptual approach to water flow in the upper portion of the pit which would eventually flow into Whale Tail Pit.

**Figure 3.4 Conceptual Representation of Water Flow in IVR Pushback During Closure**



Water management during closure and reclamation will involve maintaining contact water management systems on site until monitoring results demonstrate that water quality is acceptable for discharge of all contact water to the environment without further treatment. Once pit lake water quality meets the discharge criteria, the water management systems will be decommissioned to allow the water to naturally flow to the receiving environment. In 2018, a Whale Tail WRSF seepage analysis



and hydrodynamic modelling of Mammoth Lake were conducted to address NIRB project certificate Term and Condition no. 6a. The objectives were to assess Mammoth Lake near-field water quality at the WRSF seepage outlet post-closure and to evaluate seasonal water circulation patterns in Mammoth Lake resulting from effluent discharge. This analysis also aimed to predict and evaluate the water quality within Mammoth Lake during operations and post-closure (Golder, 2019c). Results show that no modification to the water management strategy is needed concerning closure activities and sequence.

Runoff from the Whale Tail WRSF and discharge from Whale Tail Lake (North Basin) (IVR runoff flows to Whale Tail Lake (North Basin)) will enter and mix in Mammoth Lake. Concentrations outside the mixing zone of the Whale Tail WRSF contact water plume are predicted to meet receiving water quality criteria. Results of the studies showed that baseline drainage patterns of the East Sector needs to be re-established to direct runoff towards the Whale Tail Attenuation Pond, including runoff over the backfilled IVR Attenuation Pond. Runoff from the IVR WRSF and the backfilled Groundwater Storage Ponds need to be passively directed to the Whale Tail Pit. The IVR Pit walls are composed primarily of south komatiite and basalt with some north greywacke rock. Based on these predictions, a control mechanism will be required for IVR Pit Walls including re-sloping and cover placement.

The dewatered Whale Tail Pit and IVR Pit area will be filled with a combination of natural runoff and contact water from the entire site (i.e., the Whale Tail and IVR WRSFs Contact Water Collection Systems and the Whale Tail and IVR Attenuation Ponds), and water pumped from Whale Tail Lake (South Basin). The runoff and seepage from the Whale Tail WRSF and IVR WRSF will continue to be collected in the designated collection ponds and pumped to Whale Tail Lake (North Basin) during active closure (re-filling). Water quality will be monitored during flooding and until results demonstrate that water quality conditions from the WRSFs are acceptable for direct discharge. Based on the cover thermal model results, the Whale Tail WRSF and IVR WRSF will be covered with a cover of 4.7 m thick to be constructed with NPAG/NML waste rock. The objective of the cover is the control of acid generating reactions and of migration of contaminants by freezing. Consistent with the Approved Project, the segregation of the PAG/NPAG and ML/NML waste rock will occur during the operation of the mine.

The key water management activities during mine closure are summarized in Table 3.8. Appendix B shows the water management flowsheets during mine closure phases.



**Table 3.8 Key Water Management Activities During Mine Closure**

Mine Year	Key Water Management Activities and Sequence
Year 8 (2026)	<ul style="list-style-type: none"> <li>• Dewater the Groundwater Storage Ponds, IVR Pit, and the IVR Attenuation Pond to the underground mine</li> <li>• Backfill the Groundwater Storage Ponds and the IVR Attenuation Pond with NPAG/NML waste rock</li> <li>• Draw-down of the raised Whale Tail Lake (South Basin) to 153.5 masl, pumping to the underground until refilled and then to the IVR Pit. Lake A55, Lake A65, Lake A62, Lake A63, Lake A18, Pond A-P23, Lake A20, Lake A21, Lake A22, and Lake A45 return to baseline elevations.</li> <li>• Water from Whale Tail Lake (South Basin) ceases flow through Whale Tail Lake Diversion Channel and to Lake A16 (Mammoth Lake)</li> <li>• Decommission of IVR Diversion to re-establish baseline drainage patterns of the Northeast Sector catchment towards the IVR Pit</li> <li>• Pump WRSF Pond water to the IVR Pit</li> <li>• Pump Whale Tail Lake (South Basin) to the IVR Pit during summer months to maintain its elevation at 153.5 masl</li> <li>• Re-establish baseline drainage patterns of East Sector runoff towards the Whale Tail Attenuation Pond, including runoff over the backfilled IVR Attenuation Pond</li> <li>• The Whale Tail Attenuation Pond overflows (once full) into the Whale Tail Pit</li> <li>• Passively direct runoff from the IVR WRSF and the backfilled Groundwater Storage Ponds to the Whale Tail Pit</li> <li>• Start of site water quality monitoring of flooding open pit reservoirs</li> </ul>
Year 9 to Year 23 (2026 to 2041)	<ul style="list-style-type: none"> <li>• Refilling of the IVR Pit to 149.3 masl (i.e., the spill elevation of the IVR Pit onto the bed of Whale Tail Lake [North Basin]) expected in 2027</li> <li>• The IVR Pit reaches the spill elevation to the Whale Tail Pit and begins overflowing to the Whale Tail Pit</li> <li>• A sill will be constructed at closure on the upstream of Mammoth Lake to increase the water level by 1 m to 153.5 m.</li> </ul>
Year 24 (2042)	<ul style="list-style-type: none"> <li>• The Whale Tail Pit reaches the spill elevation that connects it with the Whale Tail Attenuation Pond and both water bodies fill simultaneously</li> <li>• The Whale Tail Pit and the Whale Tail Attenuation Pond reach the spill elevation that connects the Whale Tail Pit with the IVR Pit, and all three reservoirs, including the pushbacks, fill simultaneously to 153.5 masl, forming Whale Tail Lake (North Basin)</li> <li>• Once Whale Tail Lake (North Basin) is flooded to 153.5 masl, pumping of the Whale Tail Lake (South Basin) to Whale Tail Lake (North Basin) during summer months will be ongoing to maintain the elevation of Whale Tail Lake (South Basin) to 153.5 masl until water quality allows to decommission the dikes and reconnect the North and South Basins of Whale Tail Lake</li> <li>• Once Whale Tail Lake (North Basin) is flooded to 153.5 masl, remove STP</li> <li>• Once Whale Tail Lake (North Basin) is flooded to 153.5 masl, decommission the Whale Tail WRSF Dike and re-establish natural drainage patterns of the Whale Tail WRSF Sector Lake A16 (Mammoth Lake)</li> <li>• Once Whale Tail Lake (North Basin) is flooded to 153.5 masl, create spillway in Mammoth Dike to re-establish baseline flow patterns to Lake A16 (Mammoth Lake)</li> <li>• Decommission the Whale Tail Dike, water quality permitting</li> <li>• Remove site infrastructure</li> </ul>
Post-Closure (2045+) (triggered when water quality in all three waterbodies meets the appropriate water quality criteria)	<ul style="list-style-type: none"> <li>• Monitoring</li> </ul>



### 3.10.1 Flooding Sequence

The flooding sequence will be adapted to meet water quality closure objectives to allow for the reconnection of the lakes. The water balance and water quality forecast will be updated to optimize the flooding sequence.

Following completion of operations, site contact water including contact water in the underground mine watershed (GSP ponds) and temporarily stored in IVR Pit will be pumped into the underground mine; the remaining voids will be filled with Whale Tail Lake (South Basin) water. The dewatered Whale Tail Pit and IVR Pit area will be filled with a combination of natural runoff and contact water from the entire site (i.e., the Whale Tail and IVR WRSF Contact Water Collection Systems and the Whale Tail and IVR Attenuation ponds), and water pumped from Whale Tail Lake (South Basin).

Beginning in 2026, the water accumulated in Whale Tail Lake (South Basin) over the years of operations will be pumped into the underground mine until it is filled and into the IVR Pit thereafter. Active closure will be consistent with the Approved Project and current Type A Water Licence 2AM-WTP1830. Whale Tail Pit active closure will be followed by passive closure measures until the pits and underground have flooded, Whale Tail Lake and IVR Pit water levels are restored, and runoff from the WRSFs are shown to be suitable for uncontrolled release.

The Whale Tail Pit operations will be closed and reclaimed in a manner consistent with the Approved Project and as required under Project Certificate No. 008 and Type A Water Licence 2AM-WTP1830, following the Whale Tail Interim Closure and Reclamation Plan.

It is anticipated that approximately 75,000,000 m<sup>3</sup> over 17 years from Whale Tail Lake is required to fill the mined-out Whale Tail Pit (i.e., approximately 57,000,000 m<sup>3</sup>), IVR Pit (i.e., approximately 11,000,000 m<sup>3</sup>), underground mine (i.e., approximately 1,000,000 m<sup>3</sup>) and Whale Tail Lake (North Basin) (i.e., approximately 6,000,000 m<sup>3</sup>), including approximately 2,900,000 m<sup>3</sup>/year from Whale Tail Lake (South Basin). Pumping will be required during non winter months to fill the Whale Tail Lake (North Basin) by 2042. By pumping an additional 161,000 m<sup>3</sup>/year (approximately 55 m<sup>3</sup>/h during the non-winter months), the Whale Tail Lake (North Basin) can be filled by September 2042.

Following the first pumping summer, the water elevation in Whale Tail Lake (South Basin) will be back to the baseline value (153.5 masl) and water will then be diverted to the Whale Tail North Basin for filling. The elevation of the Mammoth sill will be 153.5 masl. The Diversion Channel inlet is at the elevation 155.3 masl and the Whale Tail Dike is maintained in place. Refilling of the IVR Pit to 149.3 masl (i.e., the spill elevation of the IVR Pit onto Whale Tail Lake (North Basin) is expected in 2027. Refilling of Whale Tail Pit to 146.3 masl (i.e., the spill elevation of the Whale Tail Pit onto the bed of Whale Tail Lake (North Basin) is expected in 2041. Flooding of the IVR West Pushback is expected in 2042 (151.0 masl).



### 3.10.2 Contact Water Collection System

The contact water collection system will remain in place to collect surface runoff water and seepage from the mine site until the open pits are flooded. During this period, the Industrial Sector and the Whale Tail Camp will be reclaimed, and the non-essential site infrastructure will be removed. Thereafter, water in these sectors will no longer be collected and will contribute to the reestablishment of the natural elevation of Whale Tail Lake (North Basin). The Mammoth Dike and Whale Tail Dike will remain in place until pit lake water quality meets receiving environment water quality objectives. If this occurs after full flooding as is predicted at this time, the pit lake water elevation will be maintained at 153.5 masl by pumping from Whale Tail (South Basin) to the North Basin, and through controlled discharge from Whale Tail (North Basin) to Mammoth Lake over the Mammoth sill.

In the Whale Tail WRSF Sector, the contact water collection system will remain in place. Dikes will not be reconnected until the water quality in the flooded area meets Closure water quality objectives.

In closure, water from the Whale Tail WRSF contact water collection system is used to actively flood IVR Pit, and the IVR WRSF water is directed to Whale Tail Pit. In post-closure, water from the Whale Tail WRSF contact water collection system is allowed to flow passively to Mammoth Lake as baseline drainage patterns are re-established. Lower volumes and chemical loading of water originating from either of the WRSFs would improve water quality throughout closure in the Whale Tail and IVR Pits, and in Mammoth Lake in post-closure.

Dike decommissioning will involve the removal (breach) of a portion of the dikes to original ground levels whenever possible. Consideration will be given to breach staging, with the above water portions of the dike/berm in the breach area removed during winter periods, when there will be little surface water flow, thereby minimizing the potential release of sediments to the neighbouring waterbodies. The remainder of the breach would be completed during the open water season following freshet to allow for the deployment of turbidity curtains to control potential releases of sediment.

For water collection and management systems closure the infrastructure will be re-contoured and/or surface treated according to site-specific conditions to minimize wind-blown dust and erosion from surface runoff, if required. This closure activity is intended to enhance site area development for re-colonization by native plants and wildlife habitat.

### 3.10.3 Post-Closure Modeling Results Summary

Following refilling of Whale Tail Lake (North Basin) to 153.5 masl (i.e., to overtop the Mammoth Lake sill), and once the pit lake water quality is acceptable, the Whale Tail Dike, Mammoth Dike, and the Whale Tail WRSF Dike will be decommissioned. Whale Tail Lake (North Basin) and Whale Tail Lake (South Basin) form Whale Tail Lake with a water surface area of 2.34 km<sup>2</sup>, or a 41% increase from baseline, which flows to Lake A16 (Mammoth Lake) over the Mammoth Lake Dike via spillway. Runoff from the Whale Tail WRSF contact water collection system area flows to Lake A16 (Mammoth Lake).



The reflooding strategy will be adapted during closure based on future water quality predictions validated with site monitoring data. The objective will be for pit lake water to meet quality objectives concurrently with completed reflooding such that lake reconnection can happen as soon as possible after.

Steady-state untreated WRSF contact water released is predicted to meet SSWQO for arsenic at the edge of the mixing zone in the long-term, under the anticipated cover performance scenario (from the 4.7 meters cover of low arsenic leaching waste rock).

The mixing zone in the Lake is predicted to range from 5 meters (under calm conditions in July when 6% of the seasonal seepage flow occurs), to 60 meters (under medium current conditions in June when 65% of the seasonal flow is predicted to occur at a more dilute arsenic concentration) from the entry point of this seepage into the Lake and along the plume centre line.

Other inflows to Mammoth Lake include natural runoff and overflow from Whale Tail Lake; both are predicted to meet SSWQO as described in FEIS Appendix 6H (Agnico Eagle, 2016).

Mammoth Lake is sensitive to cover material seepage quality, which is in turn sensitive to cover composition and WRSF pile contact water volume. Observational data at the Meadowbank WRSF suggests that pile contact water volumes are substantially lower than originally predicted (Portage is 20 to 40% lower, Vault WRSF contact water is minimal compared to 178,000m<sup>3</sup> predicted at maximum footprint year) using similar modelling assumptions. Recent modelling results of the WRSF landform reflect a significant reduction in the volume of seepage from the WRSF and conservative chemical load estimate to Mammoth Lake which will be verified with monitoring. As per Type A Water Licence 2AM-WTP1830 Part E, conditions 5 and 6, Agnico Eagle completes a site wide water balance and pit water quality model update for the Whale Tail Pit Site as part of the annual water management plan.



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**SECTION 4 • WATER QUALITY FORECAST**

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Water quality forecast reports are revisited on an annual basis until mine closure, as per the Water License part E item 6. The purposes of the water quality forecast are to identify the contaminants of concern (COC) during the pit flooding process and WRSF contact water mixing into Mammoth Lake post-closure and determine if water treatment will be required on site for closure activities when comparing the final contaminant levels to the water quality guidelines and/or site-specific criteria for parameters that are not included in the water quality guidelines.

A water quality model was completed for the 2023 Modification for the operations, closure, and post-closure phases. The water quality model is included in Appendix B of this plan.

The water quality model results show that all parameters are predicted to remain below their respective water quality guidelines, with the exception of Phosphorus in receiving lakes during Operations. Once effluent discharge ceases in Active Closure, Phosphorus concentrations are expected to decrease and remain below the water quality guidelines in the receiving environment and downstream lakes. All other parameters are expected to be below the respective guidelines throughout closure.

All forecasted concentrations are below the Water Licence criteria and water quality guidelines for the COCs during operation in WT and IVR Attenuation Ponds, except for Phosphorus. The water from these ponds are treated at the Water Treatment Plant (WTP) prior to discharge to Mammoth or WTS Lakes. At closure, all of the concentrations of COCs in Mammoth Lake are forecasted to decrease over time since there is no longer any discharge of treated water to the lake. At post-closure, many COCs are forecasted to increase in Mammoth Lake since WTN Basin shall be reconnected to Mammoth Lake once the WT and Mammoth Dikes are breached. However, all COCs are expected to remain below the water quality guidelines.



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**SECTION 5 • ADAPTIVE MANAGEMENT**

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Adaptive management will be achieved through performance monitoring and management actions that will be implemented, should they be triggered. Action level responses taken during the year will be documented in Agnico Eagle's annual report submitted to the NWB. The Whale Tail Pit Expansion Project – Adaptive Management Plan (Agnico Eagle, 2021c) includes the specific adaptive management strategies related to water management. Three indicators relative to water management are tracked as part of the Adaptive Management Plan: water quality for Whale Tail Project waterbodies, water quantity for surface water management, and water quantity for underground water management.



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**SECTION 6 • REFERENCES**

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**APPENDIX A • SITE LAYOUT PLANS**

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**Figure A.1      Site Layout Plan (Year 2025)**

**Figure A.2      Site Layout Plan (Post-Closure Year 2042+)**











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**APPENDIX B • 2023 WHALE TAIL WATER BALANCE AND WATER QUALITY MODEL**

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**AGNICO EAGLE**

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***Whale Tail Modification:  
Water Balance and Water Quality Model  
– Technical Report***

***Prepared for:  
Agnico Eagle Mines Limited  
11600, rue Louis-Bisson  
Mirabel, Québec  
J7N 1G9***

***Prepared by:  
Lorax Environmental Services  
2289 Burrard St.  
Vancouver, B.C., V6J 3H9***

**Project No. A634-5**

**8 June 2023**





# ***Table of Contents***

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**AGNICO EAGLE**



# Table of Contents

<b>TABLE OF CONTENTS.....</b>	<b>I</b>
<b>1. INTRODUCTION.....</b>	<b>1-1</b>
1.1 REPORT STRUCTURE .....	1-4
<b>2. MODEL INPUT UPDATES.....</b>	<b>2-1</b>
2.1 WHALE TAIL MODIFICATION MINE PLAN .....	2-1
2.2 WATER MANAGEMENT ASSUMPTIONS AND INPUTS.....	2-4
2.3 BASELINE WATER QUALITY INPUTS .....	2-7
2.4 GEOCHEMICAL SOURCE TERMS .....	2-7
2.5 DIKE SEEPAGE .....	2-9
2.6 WHALE TAIL PIT GROUNDWATER SEEPAGE .....	2-10
<b>3. WATER BALANCE MODEL RESULTS .....</b>	<b>3-1</b>
3.1 OPERATIONS PHASE .....	3-1
3.1.1 COLLECTION PONDS .....	3-1
3.1.1.1 IVR ATTENUATION POND.....	3-1
3.1.2 GROUNDWATER MANAGEMENT.....	3-1
3.1.2.1 GSP-1 .....	3-1
3.1.2.2 TEMPORARY STORAGE OF GROUNDWATER IN IVR PIT.....	3-2
3.1.3 OPEN PIT WATER BALANCES.....	3-2
3.1.3.1 WHALE TAIL PIT .....	3-2
3.1.3.2 IVR PIT.....	3-2
3.2 ACTIVE CLOSURE.....	3-3
<b>4. WATER QUALITY MODEL RESULTS .....</b>	<b>4-1</b>
4.1 OPERATIONS .....	4-1
4.1.1 TREATED EFFLUENT QUALITY .....	4-1
4.1.2 RECEIVING ENVIRONMENT AND DOWNSTREAM LAKES.....	4-3
4.2 ACTIVE CLOSURE AND POST-CLOSURE.....	4-5
4.2.1 PIT LAKES.....	4-5
4.2.2 RECEIVING ENVIRONMENT AND DOWNSTREAM LAKES .....	4-7
<b>5. SUMMARY .....</b>	<b>5-1</b>
<b>6. CLOSURE.....</b>	<b>6-1</b>
<b>REFERENCES .....</b>	<b>R-1</b>

## APPENDICES:

APPENDIX A	WHALE TAIL MINE MODIFICATION ANNUAL LAYOUTS
APPENDIX B	WHALE TAIL MINE MODIFICATION FLOW DIAGRAMS
APPENDIX C	WATER QUALITY MODEL RESULTS



## LIST OF FIGURES

FIGURE 1-1	WHALE TAIL MINE LOCATION.....	1-2
FIGURE 2-1	ANNUAL MINE LAYOUT AND DELINEATED SUB-CATCHMENTS FOR EOM (2025) .....	2-2
FIGURE 2-2	ANNUAL MINE LAYOUT AND DELINEATED SUB-CATCHMENTS FOR POST-CLOSURE .....	2-3
FIGURE 2-3	CONCEPTUAL END-OF-MINE SITE WATER MANAGEMENT FLOW DIAGRAM .....	2-6
FIGURE 2-4	WHALE TAIL SUBSURFACE TOTAL DISSOLVED SOLIDS (TDS) DEPTH PROFILE MODIFIED FROM GOLDER (2022).....	2-8
FIGURE 3-1	CLOSURE LAKE WATER LEVELS FOR THE FULL RANGE DURING THE FILLING PERIOD (TOP PANEL) AND FOCUSED ON THE FINAL LAKE ELEVATIONS (BOTTOM PANEL). ....	3-4
FIGURE 4-1	PREDICTED PHOSPHORUS AND ARSENIC CONCENTRATIONS FOR THE TREATED O-WTP EFFLUENT DURING OPERATIONS IN THE 2023 MODIFICATION MODEL. PREDICTIONS FROM THE 2022 ANNUAL REPORT MODEL AND 2021 IVR/WT PUSHBACK MODEL ARE SHOWN FOR COMPARISON PURPOSES. ....	4-2
FIGURE 4-2	PROJECTED PHOSPHORUS (P) AND ARSENIC (AS) CONCENTRATIONS FOR THE RECEIVING ENVIRONMENT AND DOWNSTREAM LAKES DURING OPERATIONS IN THE 2023 MODIFICATION MODEL (A, C) AS COMPARED TO THE 2021 IVR/WT PUSHBACK MODEL (B, D). ....	4-4
FIGURE 4-3	PROJECTED PHOSPHORUS (P) AND ARSENIC (AS) CONCENTRATIONS FOR PIT LAKES AND THE WHALE TAIL ATTENUATION POND DURING ACTIVE CLOSURE AND POST-CLOSURE IN THE 2023 MODIFICATION MODEL (A, C) AS COMPARED TO THE 2021 IVR/WT PUSHBACK MODEL (B, D). THE WHALE TAIL NORTH BASIN IS COMPRISED OF THE WT PIT, IVR PIT, AND WT ATTENUATION POND FROM JUNE 2038 ONWARDS (A, C). ....	4-6
FIGURE 4-4	PROJECTED PHOSPHORUS (P) AND ARSENIC (AS) CONCENTRATIONS FOR THE RECEIVING ENVIRONMENT DURING ACTIVE CLOSURE AND POST-CLOSURE IN THE 2023 MODIFICATION MODEL (A, C) AS COMPARED TO THE 2021 IVR/WT PUSHBACK MODEL (B, D). ....	4-8

## LIST OF TABLES

TABLE 2-1	COMPARISON OF FACILITY WATERSHED AREAS ALTERED BY 2023 MODIFICATION.....	2-4
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# ***1. Introduction***

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**AGNICO EAGLE**



# **1. Introduction**

---

Agnico Eagle Mines Ltd. (Agnico Eagle) operates the Whale Tail Mine (the Mine) on the 408 km<sup>2</sup> Amaruq property, situated on Inuit-owned surface lands. The Amaruq property is located in the Kivalliq region of Nunavut approximately 150 km North of the Hamlet of Baker Lake (Figure 1-1), and 50 km north of the Meadowbank Mine. The Mine is subject to the terms and conditions of both the Project Certificate No. 008 issued in accordance with the Nunavut Land Claims Agreement Article 12.5.12 on December 30, 2006, and the Nunavut Water Board Water Licence 2AM-WTP1830 issued in May 2020.

The Whale Tail Mine began commercial ore production in September 2019, and is a satellite operation of the Meadowbank Mine, which began operations in 2010. All ore mined at the Whale Tail Mine is transported by truck to the Meadowbank mill for processing, with tailings deposited in the existing Meadowbank Mine tailings storage facility.

In 2018, Agnico Eagle submitted a proposal to increase gold production from the original Whale Tail Pit Mine through expansion of the Whale Tail pit, development of a new open pit (IVR) and development of an underground beneath Whale Tail and IVR pits (2018 FEIS). This proposal constituted the Whale Tail Mine Expansion and received approval from the Nunavut Impact Review Board (NIRB) in October 2019. The mine received an amendment to Water Licence No. 2AM-WTP1830 in May 2020 from the Nunavut Water Board (NWB). In 2021, Agnico Eagle submitted a request for a modification to Water Licence No. 2AM-WTP1830 for pushback of the Whale Tail and IVR Pits. Approval for this activity was received in August 2021.

Agnico Eagle is currently seeking a modification to undertake the following activities (2023 Modification):

- Continuation of Whale Tail Pit Pushback in the southwest portion of the Whale Tail Pit;
- Continuation of IVR Pushback in the south portion of the IVR Pit; and,
- Temporary storage of groundwater in the east lobe of IVR Pit.

All the above activities are located within the approved Whale Tail Mine footprint (Project Certificate No. 008, Amendment 001). There are no other changes to the Operations phase as currently authorized under Water License 2AM-WTP1830. The additional waste rock generated by the proposed WT Pit and IVR Pit Pushback continuation will not exceed the currently licensed tonnages, and therefore no material change to the WT WRSF footprint or licensed tonnage is planned.





# LEGEND

- ★ Project Location
- Municipality

DATE SAVED: Jul 08, 2022  
 DRAWN BY: DM  
 REVIEWED: SJ  
 VERSION: 1

Coordinate System: NAD 1983 UTM Zone 14N  
 Projection: Transverse Mercator  
 Datum: North American 1983  
 Units: Meter

1:100,000

0 1 2 Km

CLIENT:



AGNICO EAGLE



LORAX  
 ENVIRONMENTAL

PROJECT:

Whale Tail Extension

TITLE:

Project Location Map

PROJECT #:

A543-4

FIGURE:

1-1



Lorax Environmental Services Ltd. (Lorax) was retained by Agnico Eagle to update the site-wide water balance and water quality model (WBWQM) to represent the proposed Whale Tail Mine Modification mine layout.

The site-wide water balance and water quality model (WBWQM) is built in the GoldSim v14 software platform and is configured to run on a daily time-step. The primary modelling objective is the prediction of water and solute load transfers within the mine site, and to the receiving environment during all phases of the currently permitted Whale Tail Mine and proposed Whale Tail Mine Modification. The GoldSim WBWQM is configured to predict the transfer of water and solute mass (loadings) from mined and non-contact areas into the relevant water management facilities. Water volumes and loads are tracked on a daily time-step throughout the model, with all ponds, sumps, and open pits (and pit lakes) represented by ‘pool’ elements in GoldSim. The pool element allows the model to track multiple inflows and outflows simultaneously. All mixing is assumed to occur instantly, and all mass is conserved throughout the model (*i.e.*, no attenuation is applied to any of the parameters that are tracked). Key model inputs are as follows:

- Whale Tail Mine Modification mine plan and associated sub-catchment areas;
- Daily climate data prepared by Okane Consulting (Okane) for the RCP6.0 climate change scenario (Okane, 2022);
- Watershed model sub-module generated runoff;
- Estimates of runoff and net percolation based on Okane’s landform modelling for the WRSFs (Okane, 2019);
- Modelled base case groundwater inflows to underground mine workings and Whale Tail Pit (Lorax 2023);
- Pump rates and treatment rates for water management infrastructure currently in place as of June 2022;
- Water treatment plant effluent water quality targets (described in Section 2.3).
- Non-contact water quality (described in Section 2.4);
- Geochemical source terms (described in Section 2.5); and,
- Whale Tail Dike and Whale Tail Pit groundwater seepage monitoring data (described in Section 2.6).



## **1.1 Report Structure**

Following this introduction, the report is structured as follows:

- Section 2 describes the model input sources, including the mine plan, mine water management system, climate series, and water quality inputs;
- Section 3 summarizes the forward model projections for the water balance model;
- Section 4 summarizes the forward model projections for the water quality model; and,
- Section 5 provides a summary of key findings.



## ***2. Model Input Updates***

---



**AGNICO EAGLE**



## **2.     *Model Input Updates***

---

### **2.1    *Whale Tail Modification Mine Plan***

Activities for the 2023 Modification are located within the approved Whale Tail Mine footprint (Project Certificate No. 008, Amendment 001), and include the following:

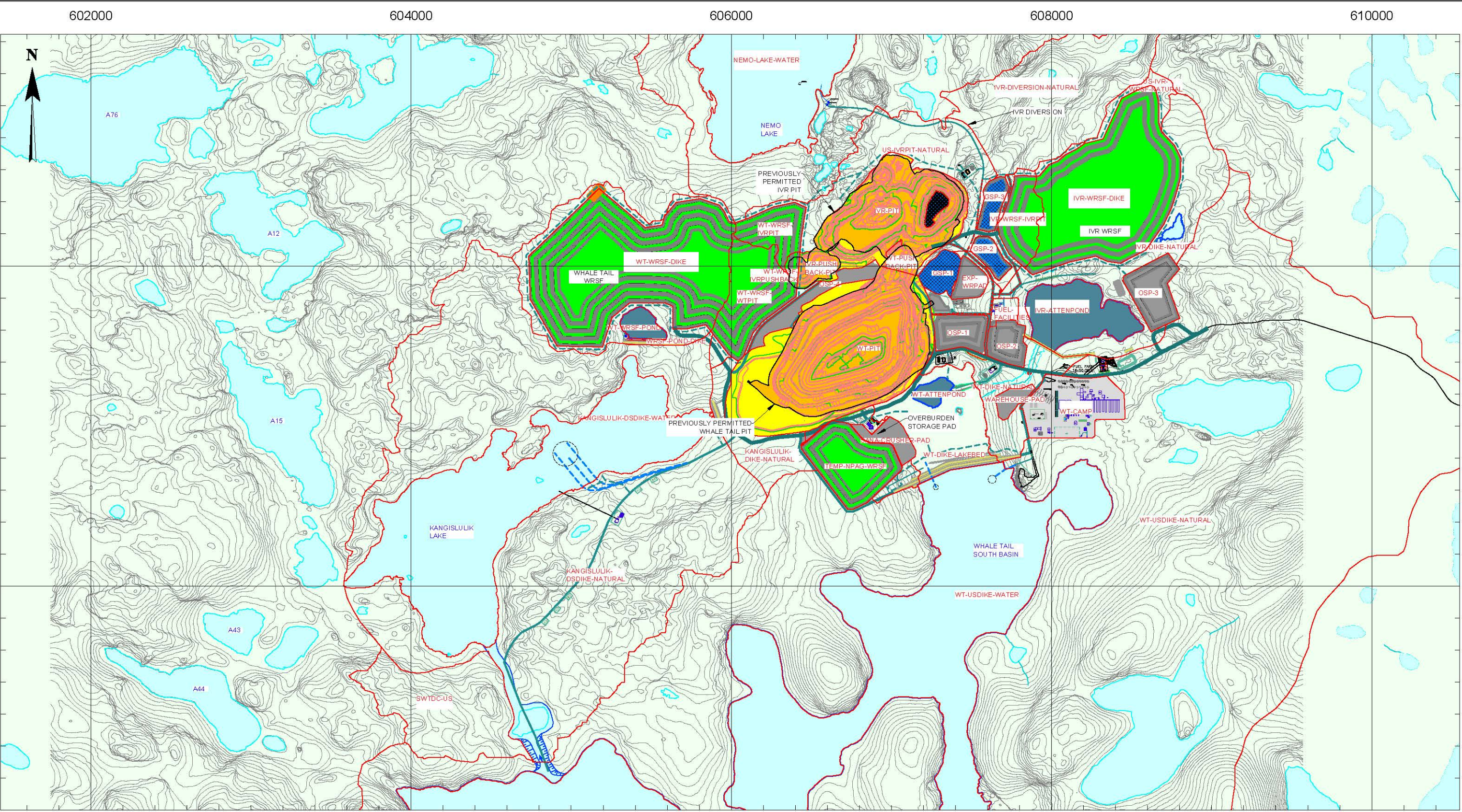
- Continuation of Whale Tail Pushback in the southwest portion of the Whale Tail Pit
- Continuation of IVR Pushback in the South portion of the IVR Pit
- Temporary storage of groundwater in the east lobe of IVR Pit



















The EOM mine layout (2025), including all delineated sub-catchments is presented in Figure 2-1. Figure 2-2 presents the mine layout and all delineated sub-catchments for Post-closure used in the model.

The 2023 Modification also includes the temporary storage of groundwater generated from the underground mining operations in the east lobe of IVR Pit. The storage of groundwater in IVR Pit was listed as an alternative action in the approved Adaptive Management Plan (Agnico Eagle, 2021).

No new water management infrastructure will be required as a result of the 2023 Modification. All other existing water management infrastructure will be used as part of this modification. The conceptual site water management flow diagram is shown in Figure 2-3.





LEGEND					
	WATER BALANCE CATCHMENT		CONTACT WATER POND		DIKE
	MAJOR AND MINOR CONTOURS FOR PITS		SALINE POND		OPEN PIT (PREVIOUSLY PERMITTED)
	EXISTING GROUND		WATERBODY (NATURAL)		OPEN PIT (MODIFICATION)
	HAUL ROAD		BACKFILL		WASTE ROCK STORAGE FACILITY
	ROAD, SALT PROTECTION		STOCKPILE		
	SERVICE ROAD				
	WATERCOURSE				
	PIPE LINE				
	DIVERSION CHANNEL				

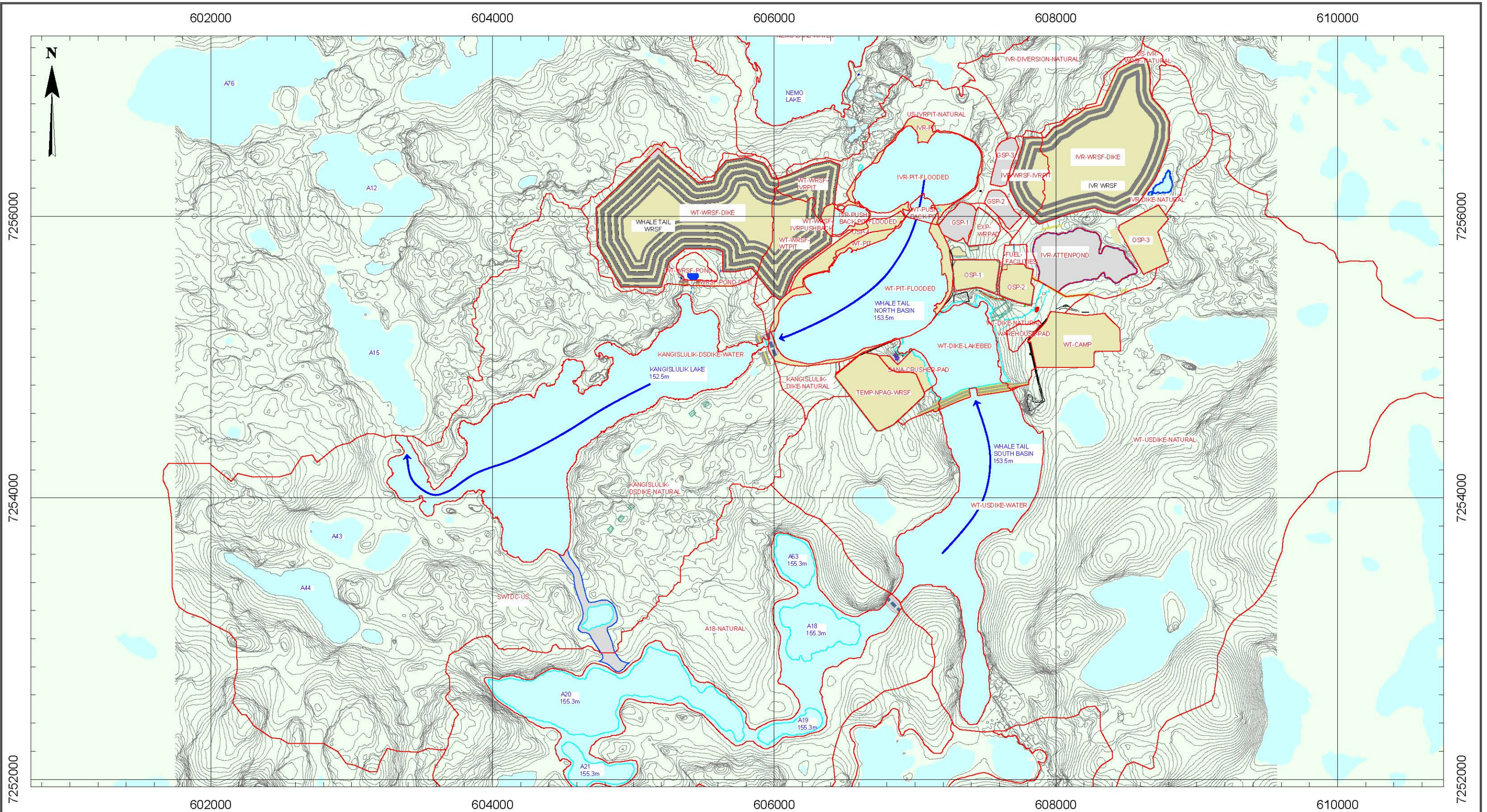
DATE SAVED:	May 08, 2023
DRAWN BY:	GM
REVIEWED:	SJ
VERSION:	1

Original Drawing:  
Drawing Number 2024Q4. Amaruq Mine  
Site General Arrangement.  
Produced May 2, 2019 by Agnico Eagle.



PROJECT:	WT Mine Modification WBWQM Report	
TITLE:	Whale Tail Modification Annual Layout - 2023-2025	
PROJECT #	A634-5	FIGURE 2-1





LEGEND

- |  |                                   |  |                               |
|--|-----------------------------------|--|-------------------------------|
|  | WATER BALANCE CATCHMENT           |  | BACKFILLED POND (NPAG)        |
|  | MAJOR AND MINOR CONTOURS FOR PITS |  | DIKE                          |
|  | EXISTING GROUND                   |  | RECLAIMED MINE INFRASTRUCTURE |
|  | WATERCOURSE                       |  | WATERBODY (NATURAL)           |
|  | PIPE LINE                         |  |                               |
|  | DIVERSION CHANNEL                 |  |                               |

DATE SAVED: Apr 28, 2023  
DRAWN BY: DM  
REVIEWED: SJ  
VERSION: 1

Notes:  
1. Original Drawing:  
Drawing Number 2042 POST CLOSURE. *Amaruq Mine Site General Arrangement.*  
Produced May 2, 2019 by Agnico Eagle.  
2. Whale Tail WRSF extension design provided by Okane Consultants

CLIENT:



PROJECT:

WT Mine Modification  
WBWQM Report

TITLE:

Whale Tail Modification  
Annual Layout - Post-Closure

PROJECT #

A634-5

FIGURE

2-2



**Table 2-1:  
 Comparison of Facility Watershed Areas Altered by 2023 Modification**

Time Period	2021 IVR/WT Pushback <sup>1</sup> (km <sup>2</sup> )	2023 Modification <sup>2</sup> (km <sup>2</sup> )	Percent Difference (%)
IVR Pit	1.14	1.25	10%
IVR Pushback	0.190	0.064	-66%
Whale Tail Pit	1.14	1.21	6%
<i>Total</i>	<i>2.47</i>	<i>2.52</i>	<i>2%</i>

**Notes:**

<sup>1</sup> Values are taken from Table 1 (Golder 2021)

Mine rock excavations proposed as part of the 2023 Modification are presented in the Waste Rock Management Plan (Agnico Eagle, 2023). This modification is not expected to result in changes to the WRSF or ore stockpile dimensions or lithologic composition. Therefore, mine plan inputs related to lithological composition of waste rock, ore stockpiles and pit walls are unchanged from the 2021 IVR/WT Pushback model (Golder, 2021).

The 2023 Modification mine plan timeline follows the licensed approved mine plan:

- Whale Tail Mine Operations: 2019 to 2025;
- Active Closure: 2026 to September 2042; and,
- Post-closure: October 2042 onwards (modelled out to 2070).

The mine phases are unchanged from the currently approved mine plan, which includes four development phases: 1 year of construction (complete), 7 years of mine operations, 17 years of closure, and the post closure period.

## **2.2 Water Management Assumptions and Inputs**

The mine water management plan is based upon two guiding principles; diverting clean (non-contact) water away from mine infrastructure where possible and separating the two mine affected water types (*i.e.*, surface contact water and groundwater; Agnico Eagle, 2020). The 2023 Modification includes the temporary storage of groundwater generated from the underground mining operations in the east lobe of IVR Pit.

All surface contact water generated from mine facilities is collected and routed through a series of sumps and attenuation ponds (Table 2-3) and treated by the O-WTP prior to discharge to the receiving lakes. No changes to the existing mine water management plan or existing water management infrastructure are planned.

The eastern lobe of the IVR Pit is mined out by end-2022 and is assumed to be available for temporary groundwater storage in January 2023, with an available storage volume of approximately 1.9 Mm<sup>3</sup>, assuming that the water level is maintained below the elevation



of 95 m. Once this pit lobe becomes available for water storage, all underground dewatering flows that are in excess of the GSP-1 storage capacity will be routed to the eastern lobe of IVR Pit until the end of operations.

All mine site effluent is treated by the operations water treatment plant (O-WTP) at a rate of 1,450 m<sup>3</sup>/hour prior to discharge to either Whale Tail South Basin or Kangislulik Lake via diffusers.

The O-WTP is designed to treat Total Arsenic to a concentration of 0.1 mg/L and total suspended solids (TSS) to a concentration of 15 mg/L. An Arsenic removal rate of 85% was applied within the water quality model, based on operational performance of the plant.

Treated sewage is discharged from the sewage treatment plant (STP) at 144 m<sup>3</sup>/day and routed to the IVR Attenuation Pond. The effluent water quality from the STP was modelled using median concentrations observed in STP effluent (ST-WT-11) between January 2021 to December 2021, with Total Phosphorus and Nitrate concentrations capped at the treatment targets noted above.







### **2.3 Baseline Water Quality Inputs**

The lakes which directly receive mine effluent (Kangislulik and Whale Tail South) were initialized within the model using observed monitoring data. That is, the average concentrations observed in January to February 2020 were applied to the lakes at the beginning of the modelling period (*i.e.*, January 2020).

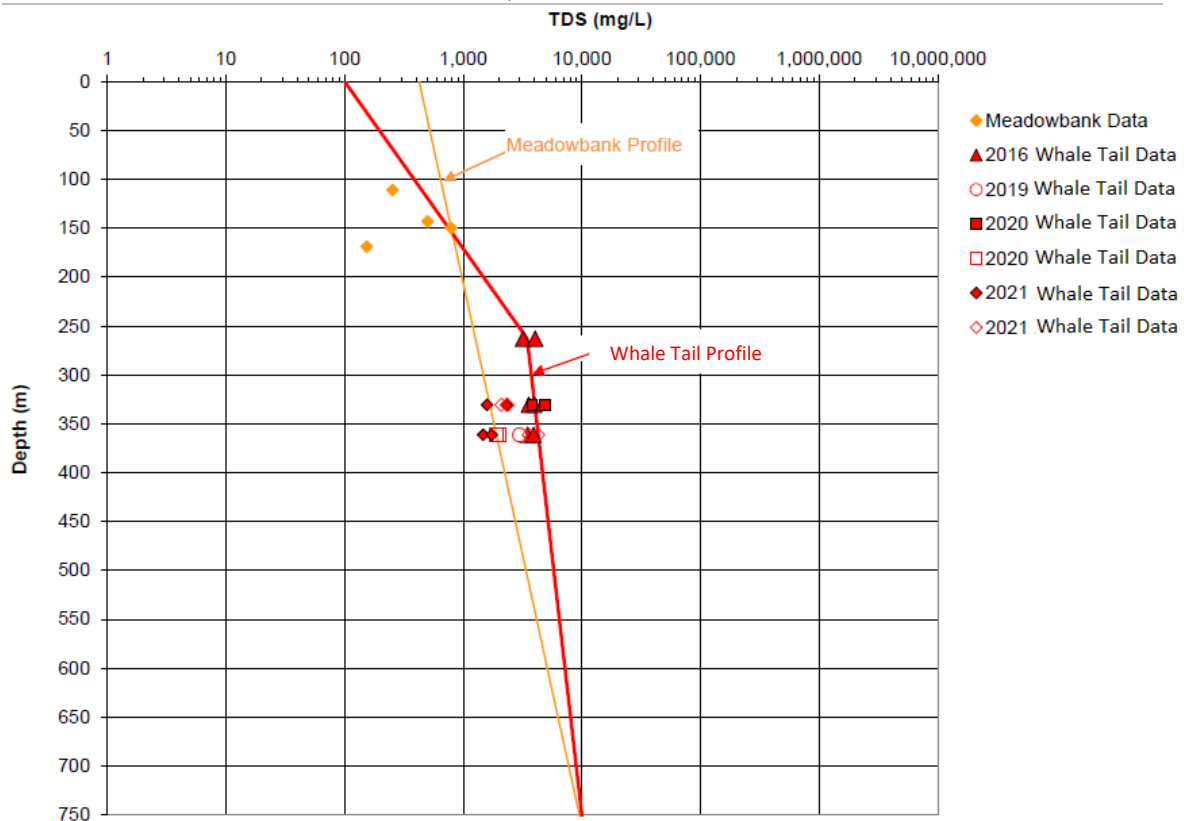
### **2.4 Geochemical Source Terms**

This section provides a summary of source term assumptions used in the 2023 Modification WBWQM. The geochemical source terms follow a similar approach as that employed in previous model versions (Golder 2019, 2021), but were updated with monitoring data, kinetic testing data, solubility constraints or changes to the mine plan.

#### *Underground Mine Water*

- Annual loads from underground wall rock and waste backfill were calculated using an upscaled loading approach. Loading rates were scaled considering waste and ore production volumes, backfill schedule and composition of the underground waste rock and ore.
- Salinity of groundwater infiltrating into the underground mine workings was predicted based on the TDS profile and the maximum depths that mine workings will penetrate below ground surface (Figure 2-4). The TDS predicted at the maximum mine workings depth of ~450 meters (5,400 mg/L) was applied to underground mine water for the duration of mine life.
- Nitrogen source terms for the underground mine are based on 2020-2021 monitoring data from the Tiriganiaq Underground at the Meliadine mine.





**Figure 2-4: Whale Tail subsurface total dissolved solids (TDS) depth profile modified from Golder (2022)**

#### *Waste Rock Storage Facilities*

- Geochemical loading rates for WRSFs are based on upscaled kinetic tests following the same approach as those described in Golder (2019a). An additional scaling factor was introduced based on water quality monitoring data and pumping records (2020-2022).
- Nitrogen source terms for waste rock runoff are based 2020-2022 monitoring data from the WT WRSF collection pond, corrected for runoff from the surrounding catchment area.

#### *Open Mine Pits*

- Geochemical loading rates for exposed pit walls were calculated by upscaling kinetic test loading rates and followed the same approach as described in Golder (2019). Similar to the WRSFs, calibration scaling factors were utilized to ensure model results were validated to monitoring data from 2020-2022.
- Nitrogen source terms for pit wall runoff were calculated using average  $\text{NH}_3$ ,  $\text{NO}_3$  and  $\text{NO}_2$  concentrations from the IVR Pit sump monitoring data, corrected for runoff from the surrounding catchment area.



- Progressive reclamation will occur on the IVR pit wall above the final water table elevation (153.5 masl) to minimize metal loadings from the final pit high wall as per the Interim Reclamation and Closure Plan (Agnico Eagle, 2020). The NPAG/NML WRSF cover source term developed for WRSFs was applied to the reclaimed pit wall areas.
- Diffusive flux source terms for submerged pit walls were updated using saturated column test data.

#### *Exposed Lake Beds*

- Loadings associated with runoff over exposed dewatered Whale Tail Lake sediments were updated to incorporate lake sediment kinetic test results.

#### *Solubility Controls*

- Concentration limits for aluminum (Al), iron (Fe) and phosphorous (P) were developed using the United States Geological Survey numerical modelling program PHREEQC (Parkhurst and Appelo, 1999). The mineral solubility limits were developed by calculating the solubility of hydroxyapatite [ $\text{Ca}_5(\text{PO}_4)_3(\text{OH})$ ], aluminum hydroxide [ $\text{Al}(\text{OH})_3$ ], and ferric hydroxide [ $\text{Fe}(\text{OH})_3$ ].
  - Constant solubility caps were applied for Al (0.22 mg/L and Fe (0.072 mg/L) by assuming aluminum hydroxide, and ferric hydroxide equilibrium a pH 7.0 and major ion chemistry typical of Whale Tail Mine drainage.
  - A variable solubility cap was developed for Phosphorus (0.04 to 0.1 mg/L). This was completed by calculating Phosphorus solubility in equilibrium with hydroxylapatite at a constant pH of 7.0 and a range of Ca concentrations (25-200 mg/L). The Phosphorus solubility was predicted to range from 0.04 to 0.34 mg/L, and solubility caps were applied based on the source terms Ca concentration.

## **2.5 Dike Seepage**

Seepage of lake waters through the Whale Tail Dike to the Whale Tail Attenuation Pond was observed and monitored since 2019. Currently, the model assumes a seepage rate of 125 m<sup>3</sup>/hour, based on the average of monitored seepage over the October 2021 to August 2022 period. The median observed concentrations for the January 2022 to March 2023 monitoring period are applied as the source term for the dike seepage to the Whale Tail attenuation pond through operations.



## **2.6 Whale Tail Pit Groundwater Seepage**

Groundwater seepage into the WT Pit was observed and monitored since 2019 (monitoring station ST-GW-WT-1). The average observed concentration for the September 2019 to January 2023 monitoring period is applied as the source term for groundwater seepage into the WT Pit through operations. Groundwater seepage into the pit is expected to cease following flooding of the pit, therefore this source term is applied exclusively through operations. Note that IVR pit is hosted entirely within permafrost, so no groundwater seepage is anticipated.



### ***3. Water Balance Model Results***

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**AGNICO EAGLE**



### **3. Water Balance Model Results**

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Predictions for the water balance component of the model for key nodes and all mine phases are presented in this section. Specifically, results are provided for Collection Ponds, open mine pits, water treatment plant discharge volumes, and Active Closure pit lake flooding and water management. Mine site contact water will continue to be managed per the approved Water Management Plan (Agnico 2022).

#### **3.1 Operations Phase**

##### **3.1.1 Collection Ponds**

This section summarizes the water balance model results for the surface contact water collection ponds (WT Attenuation Pond, IVR Attenuation Pond), and the underground mine contact water ponds (GSP-1 and IVR Pit).

The Whale Tail WRSF Collection Pond (WT WRCP) is predicted to remain below the maximum operating level (154 m) for the duration of the Operations and Active Closure.

###### *3.1.1.1 IVR Attenuation Pond*

For the remaining years of Operations, the WT Pit and the WT Attenuation Pond are the predominant inputs to the IVR Attenuation Pond and comprise 42% and 34% of the total inflows, respectively. Once the IVR Attenuation Pond is drawn down at the beginning of Active Closure, it is backfilled with NPAG/NML waste rock.

The IVR Attenuation Pond is the source of roughly 98% of total influent to the O-WTP for the remainder of operations. Limited discharge from the WT Attenuation Pond is expected as the IVR Attenuation Pond will be the primary repository for pumped contact water flows for the remainder of Operations. Treated water will continue to be discharged to either Kangislulik Lake or Whale Tail South Basin.

##### **3.1.2 Groundwater Management**

###### *3.1.2.1 GSP-1*

GSP-1 is the primary groundwater storage pond. The pond currently operates as a closed loop system with all collected water (including incident precipitation and snowmelt) directed back underground for use as drilling brine. In addition to the underground water, meteoric inputs increase the total volume stored in GSP-1 to 139,900 m<sup>3</sup> and GSP-1 is predicted to reach maximum capacity in August 2025. After this time, groundwater will be pumped to the eastern lobe of the IVR Pit (see Figure 2-1) for temporary storage.



Groundwater stored in GSP-1 at end of mine will be pumped into the underground voids in January 2026 at the onset of Active Closure. Once this has been completed, GSP-1 will be backfilled with NPAG/NML waste rock, and the remainder of the underground mine will be filled with water pumped from Whale Tail South Basin and the WT WRCP.

#### *3.1.2.2 Temporary Storage of Groundwater in IVR Pit*

A total of 36,000 m<sup>3</sup> is predicted to be pumped from the underground mine to IVR Pit over the last 5 months of 2025. In addition to the underground water, meteoric inputs increase the total volume stored in IVR Pit to 60,600 m<sup>3</sup> as of December 31, 2025, resulting in approximately 60% of the IVR Pit water being of underground provenance, and 40% generated by runoff from the pit walls and surrounding catchments. At end of mine, the groundwater temporarily stored in IVR Pit will be pumped into the underground voids in January 2026 at the onset of Active Closure. Once the groundwater stored in IVR Pit has been pumped underground, this pit will be filled with fresh water pumped from the Whale Tail South Basin.

### **3.1.3 Open Pit Water Balances**

#### *3.1.3.1 Whale Tail Pit*

During Operations, groundwater seepage inflows through the south wall from the Whale Tail South Basin (and the WT Attenuation Pond, to a lesser degree; Lorax 2023) range from approximately 60% to 95%, depending on the year, of total flows. Passive surface runoff from the surrounding catchments and incident precipitation/snowmelt on the pit walls and floor contribute the remainder of the inflows.

The WT Pit will be passively flooded for the first three years of Active Closure. During this time, the pit will receive overflows (primarily driven by seepage through the Whale Tail Dike) from the WT Attenuation Pond and meteoric water inputs. Groundwater inflows are reduced in 2026 due to predicted glaciation of the seepage face, and increase as the pit lake fills, peaking in 2036, before dropping back to zero by 2039. Beginning in August 2029 the WT Pit will begin to be actively filled with water from the Whale Tail South Basin, until the WT Pit and IVR Pit lakes join above the 136.5 masl sill elevation in June 2038, forming the Whale Tail North Basin. Active flooding of the WT North Basin will continue until the final pit lake elevation is reached in September 2042.

#### *3.1.3.2 IVR Pit*

The IVR Pit is located entirely within permafrost and has a limited upgradient catchment beginning in June 2026. Surface runoff from the surrounding catchment areas dominates



the pit water balance early in Operations, switching to pit wall runoff dominating as open pit comprises more of the total pit catchment. After the stored groundwater is removed from IVR Pit, and the underground mine flooding is complete, active filling of IVR Pit will begin in June 2026. During the Active Closure period, pumping of water from the Whale Tail South Basin and the WT WRCP dominates the overall water balance from 2026 to 2029.

### 3.2 Active Closure

The underground mine voids are actively filled in January 2026 by pumping water from IVR Pit and GSP-1. The open pits are filled from June 2026 to September 2042 first by passive runoff and then by pumping from the Whale Tail South Basin and WT WRCP. Water from the Whale Tail South Basin is pumped into the remaining mine voids, at a maximum rate of 8.28 Mm<sup>3</sup> (2,800 m<sup>3</sup>/hour) in 2026, and 2.89 Mm<sup>3</sup> (1,000 m<sup>3</sup>/hour) over the remaining 15 years. This pit flooding program will be active during the open water season only, assumed to span June 1 to September 30 of each year. Per the 2021 Water Management Plan (Agnico, 2022), an additional 161,000 m<sup>3</sup> (55 m<sup>3</sup>/hour) is pumped from Whale Tail South Basin during the same annual pumping window to the mine voids to meet the target of restoring the Whale Tail North Basin water level to 153.5 m by September 2042.

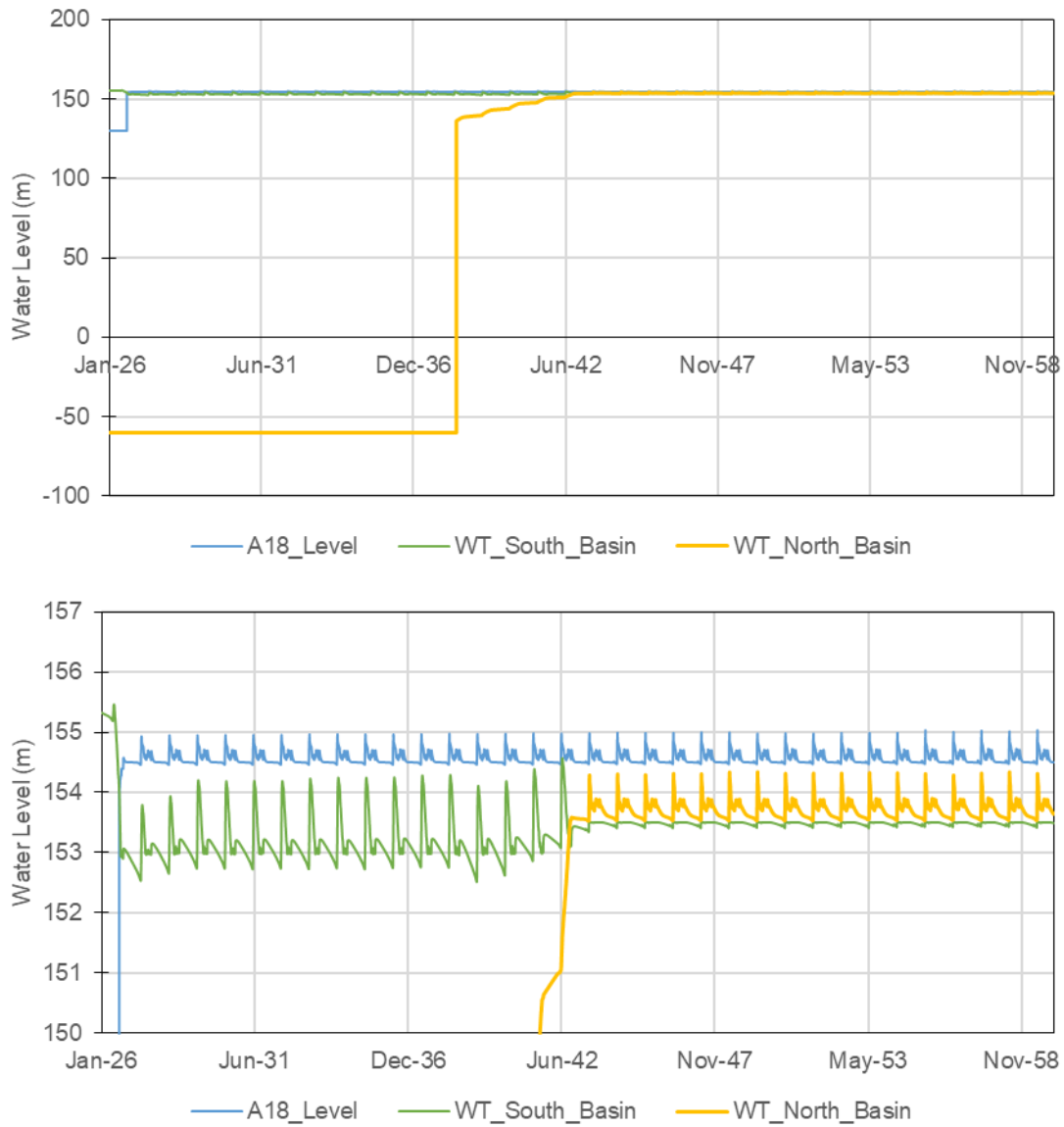
This results in a total pumping volume of 8.44 Mm<sup>3</sup> in 2026 and 3.05 Mm<sup>3</sup> in 2027 to September 2042.

The sequence of active filling is the same as in previous models and is as follows:

- Underground mine active filling occurs until June 2026;
- IVR Pit active filling begins in July 2026, and is filled to the spill point elevation of 136.5 masl by July 2029;
- WT Pit active filling begins in August 2029, and is filled to the spill point elevation of 136.5 masl by June 2038; and,
- Whale Tail North Basin forms after June 2038 when the IVR Pit and WT Pit lakes combine. Active filling of the Whale Tail North Basin continues until September 2042 when the final water level of 153.5 masl is reached.

The water level will drop in Whale Tail South Basin as a result of pumping during Active Closure (Figure 3-1). This will result in the Lake A18 complex becoming disconnected from Whale Tail South basin in August 2026 when water levels are predicted to drop below 154 masl. This will allow Lake A18 Sill to be built in early 2027 and commissioned for freshet 2027. The fully flooded post-closure mine pits are depicted in Figure 2-2.





**Figure 3-1: Closure lake water levels for the full range during the filling period (top panel) and focused on the final lake elevations (bottom panel).**



## ***4. Water Quality Model Results***

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## **4. Water Quality Model Results**

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Water quality predictions for end of pipe and receiving lakes in Operations, Active Closure and Post Closure are presented in this section.

End of pipe concentrations are presented as dissolved concentrations similar to the IVR/WT Pushback model (Golder 2021). Receiving environment model results are developed assuming that total concentrations are equal to dissolved concentrations because the TSS is expected to remain near baseline values of <1 mg/L.

Water quality predictions in the receiving environment and downstream lakes are compared to the following criteria during Operations, Active Closure and Post Closure:

- Treated effluent from the O-WTP is screened against NWB Water License/MDMER (End-of-Pipe) water quality criteria.
- Long-term water quality guidelines for the protection of aquatic life established by the Canadian Council of Ministers of the Environment (CCME)
- Site-specific water quality objective (SSWQO) for Arsenic (0.025 mg/L).

Overall, the results show that all parameters are predicted to remain below their respective guidelines, with the exception of P, in receiving lakes during Operations; this is consistent to previous model iterations. Predictions for Phosphorus and Arsenic are compared to applicable water quality guidelines and outputs from previous models (Golder 2021; SNC 2023) in the following sections. The full water quality model results screened against relevant guidelines and summary statistics are provided in Appendix C.

### **4.1 Operations**

During operations, all surface contact water generated from mine facilities is collected and routed through a series of sumps and attenuation ponds and treated by the O-WTP prior to discharge to the receiving environment. Phosphorus and Arsenic predictions were identified as parameters of potential concern in the 2018 FEIS (Golder, 2018). Water quality results for these parameters in the treated effluent, receiving environment and downstream lakes are presented in the following subsections.

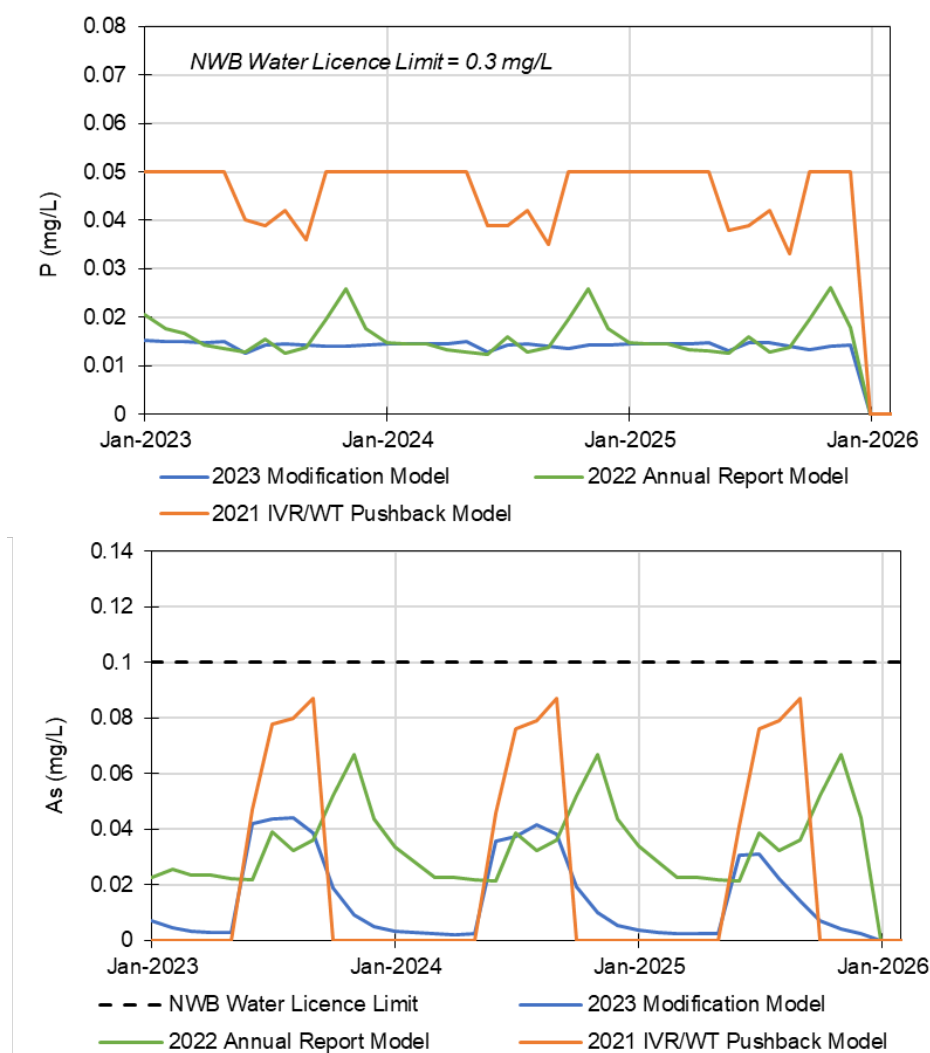
#### **4.1.1 Treated Effluent Quality**

From 2023 through 2025, Phosphorus and Arsenic concentrations in the O-WTP effluent discharge are predicted to remain below their respective NWB water license limits in the 2023 Modification (Figure 4-1).



The 2023 Modification results show reduction in Phosphorus and Arsenic concentrations compared to the 2021 IVR/WT Pushback model. Lower Arsenic concentrations are related to O-WTP treatment efficiency assumption. The 2021 IVR/WT Pushback model assumed a treatment cap of 0.1 mg/L, while the 2023 Modification applies observed Arsenic removal efficiency of 85%.

Lower Phosphorus concentrations are predicted in the 2023 Modification Model relative to the 2021 IVR/WT due to updates in source term predictions. Reduced Phosphorus loadings were a result of solubility constraints introduced in Section 2.5. Lower Phosphorus predictions are consistent with 2020 to 2022 monitoring data, which show a median Total Phosphorus concentration of 0.01 mg/L in O-WTP effluent.



**Figure 4-1: Predicted phosphorus and arsenic concentrations for the treated O-WTP effluent during Operations in the 2023 Modification model. Predictions from the 2022 Annual Report model and 2021 IVR/WT Pushback model are shown for comparison purposes.**



#### 4.1.2 Receiving Environment and Downstream Lakes

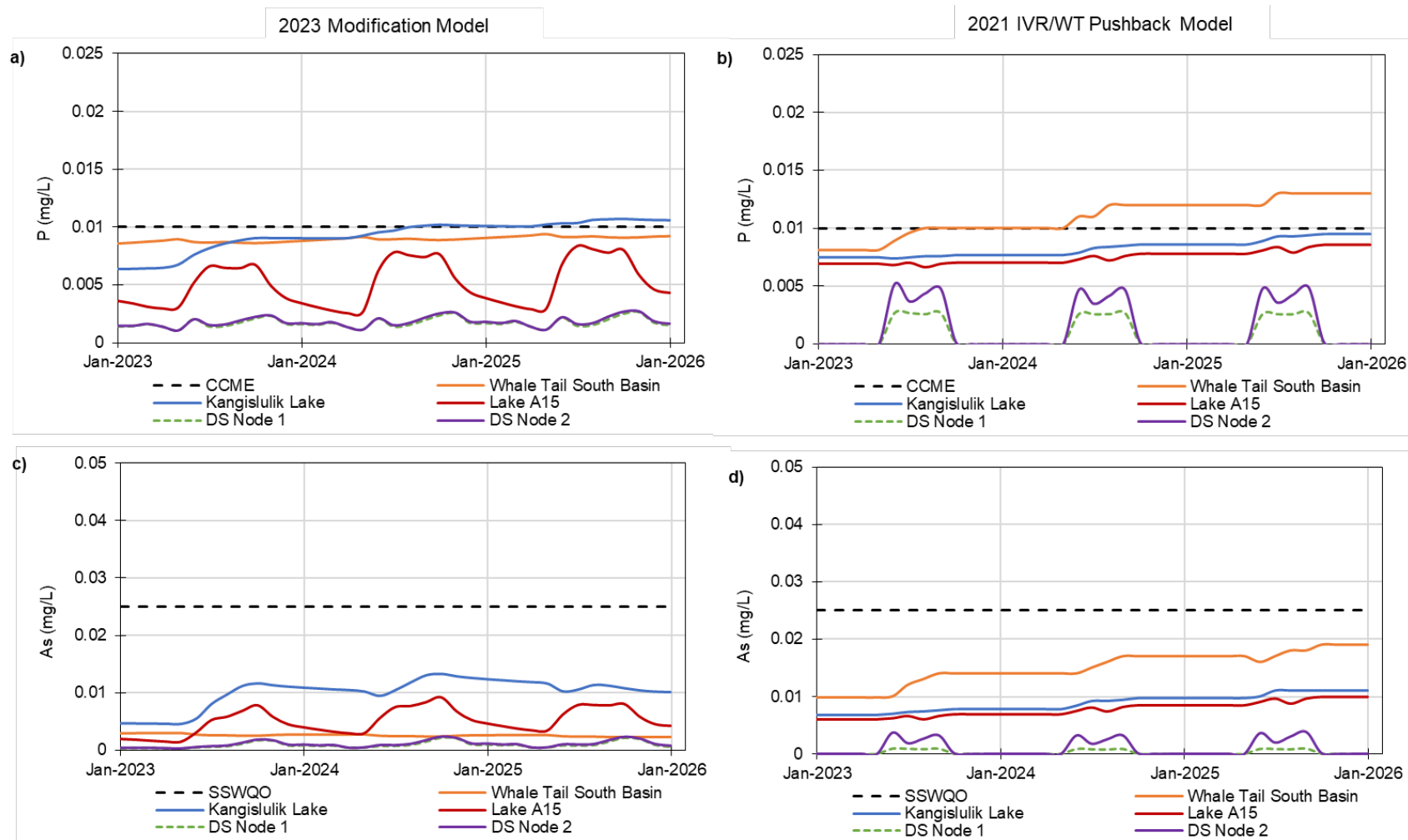
Treated effluent is pumped from the O-WTP to the Whale Tail South Basin during winter months (typically October to June), and to Kangislulik Lake during summer months (typically May to September), with some overlap during the seasonal transition. Downstream predictions for Phosphorus and Arsenic during Operations are presented in Figure 4-2, with comparisons between the 2023 Modification model and 2021 IVR/WT Pushback model (Golder, 2021).

Phosphorus (Figure 4-2a) and Arsenic (Figure 4-2c) predictions in the 2023 Modification model are highest in Kangislulik Lake since it receives 63% of the total annual effluent discharge from the O-WTP. The 2021 IVR/WT Pushback model assumed that effluent was discharged to the Whale Tail South Basin from June 2021 to the end of Operations, resulting in elevated concentrations in Whale Tail South Basin compared to Kangislulik Lake.

This difference in effluent discharge strategy results in lower Phosphorus and Arsenic predictions in the Whale Tail South Basin in the 2023 Modification model relative to the 2021 IVR/WT Pushback model. Regardless, both models show an overall decline in Phosphorus and Arsenic concentrations with increasing distance from the point of effluent discharge to lakes further downstream (*e.g.*, Lake A15, DS1 and DS2).

During the operational years of 2023-2025, Phosphorus concentrations are predicted to increase in Kangislulik Lake and Whale Tail South Basin due to effluent discharge from the O-WTP. At the end of Operations, the Kangislulik lake is predicted to reach maximum Phosphorus concentrations of 0.011 mg/L (2023 Modification model; Figure 4-2a), which are reflective of the upper limit for oligotrophic lakes (0.01 mg/L). Once effluent discharge ceases, Phosphorus concentrations are expected to decrease and remain below the guideline throughout closure (see Section 4.2.2).





**Figure 4-2: Projected phosphorus (P) and arsenic (As) concentrations for the receiving environment and downstream lakes during operations in the 2023 Modification model (a, c) as compared to the 2021 IVR/WT Pushback model (b, d).**



## **4.2 Active Closure and Post-Closure**

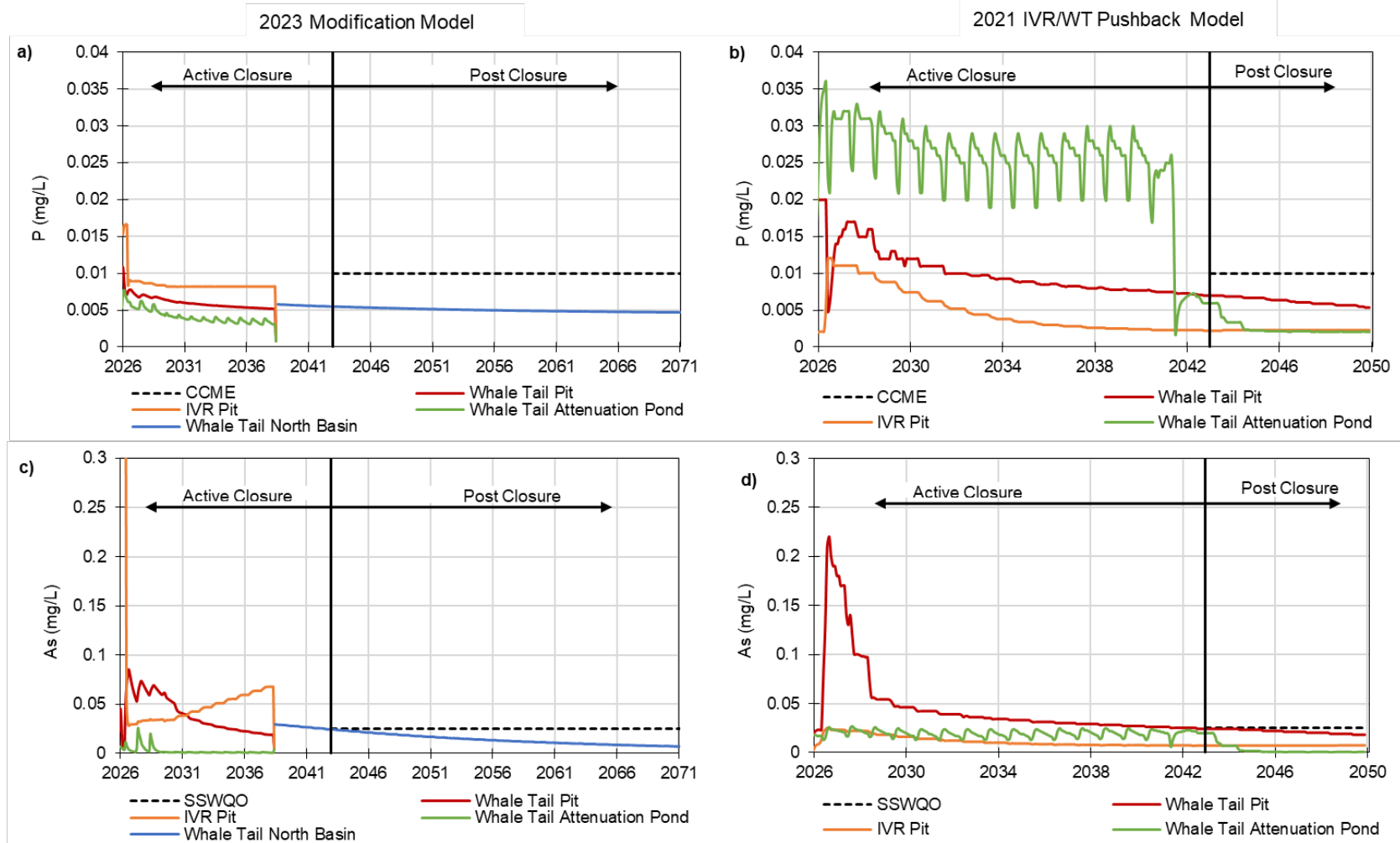
### **4.2.1 Pit Lakes**

IVR Pit water quality shows a rapid decline in Phosphorus (Figure 4-3a) and Arsenic (Figure 4-3c) concentrations at the beginning of Active Closure. This is a result of the removal of groundwater temporarily stored in the IVR pit and initiation of active filling in June 2026. Arsenic concentrations begin to rebound after IVR Pit flooding is complete in 2029. Arsenic loading during this time period is primarily sourced from the IVR Pit wall exposure. This trend persists until the IVR Pit and WT Pit are conjoined into the Whale Tail North Basin in June 2038 at elevation 136 masl, and the remaining IVR Pit walls are flooded.

In early Active Closure (2026-2028), water quality in the WT Pit is governed by overflow from the Whale Tail Attenuation Pond (which in turn receives outflows from the backfilled IVR Attenuation Pond), groundwater seepage, and pit wall runoff. Arsenic concentrations are predicted to decline after active filling of the WT Pit starts in 2029 (Figure 4-3c). An overall declining trend is also predicted for Phosphorus concentrations in the WT Pit during Active Closure (Figure 4-3a).

In June 2038, the WT Pit is filled to its spill elevation (136 m) and starts contributing to the Whale Tail North Basin, a closure lake comprised of the flooded IVR Pit, WT Pit, and WT Attenuation Pond. Phosphorus concentrations predicted in the Whale Tail North Basin remain below the upper limit of the oligotrophic range throughout closure (Figure 4-3a). Arsenic concentrations (Figure 4-3c) are expected to be less than the SSWQO by the end of Active Closure, with values continuing to decline during Post-Closure (modelled out to 2070).





**Figure 4-3: Projected phosphorus (P) and arsenic (As) concentrations for pit lakes and the Whale Tail Attenuation Pond during active closure and post-closure in the 2023 Modification model (a, c) as compared to the 2021 IVR/WT Pushback model (b, d). The Whale Tail North Basin is comprised of the WT Pit, IVR Pit, and WT Attenuation Pond from June 2038 onwards (a, c).**



The WT Attenuation Pond shows seasonal peaks in Phosphorus and Arsenic concentrations in early Active Closure due to pumping from IVR Attenuation Pond during this period. After 2028 when IVR Attenuation Pond is backfilled, concentrations in Whale Tail Attenuation Pond remain relatively low and constant, with inflows being dominated by Whale Tail Dike Seepage.

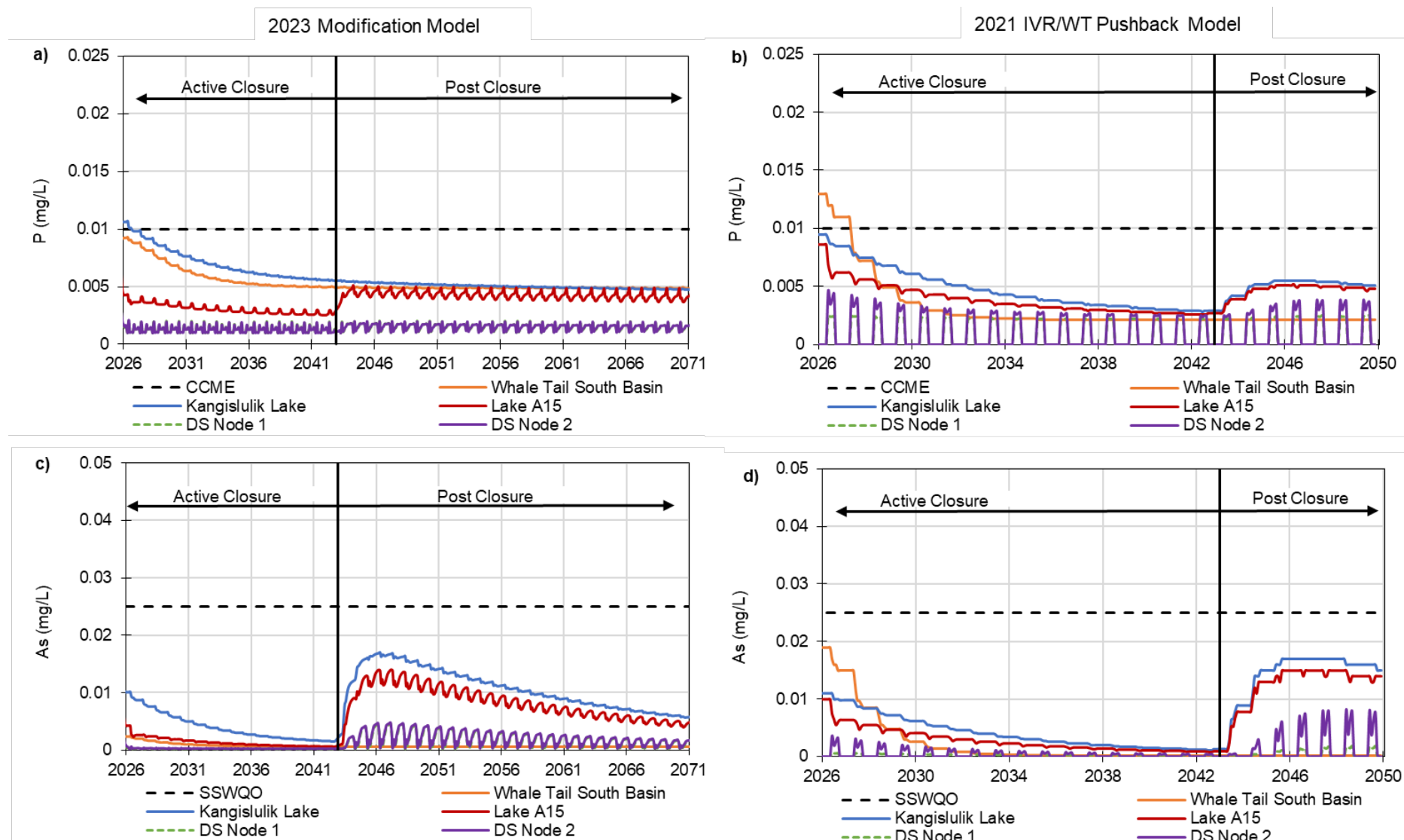
The 2023 Modification model shows relatively low Arsenic concentrations in WT Pit and elevated Arsenic concentrations in IVR Pit in early Active Closure. Lower WT Pit Arsenic concentrations are due to larger volumes of Whale Tail Dike seepage flows entering the pit via spillover from the WT Attenuation Pond, effectively diluting Arsenic loadings from pit wall runoff. The influence of Whale Tail Dike Seepage is less pronounced once active filling of the WT Pit starts in 2029, at which point model results converge. Elevated IVR Pit Arsenic concentrations are due to the updated IVR pit- WT Pit wall elevation used in this model iteration (136.5m vs. 149.3 m in previous model).

The 2023 Modification model shows lower Phosphorus concentrations compared to the 2021 IVR/WT Pushback. This is due to introduction of Phosphorus solubility caps, as described in Section 2.4.

#### **4.2.2 Receiving Environment and Downstream Lakes**

The 2023 Modification model results show an improvement in water quality in the Whale Tail South Basin, Kangislulik Lake, and downstream lakes as mine discharges cease at the end of Operations (Figure 4-4). An increase in Arsenic concentrations is predicted at the beginning of Post Closure in Kangislulik Lake and its immediate downstream lake (Lake A15) (Figure 4-4c) due to overflows from the flooded Whale Tail North Basin starting in September 2042. However, the impact of Arsenic loadings from flooded pit lakes on the receiving environment is expected to be short-lived. For the remainder of the model horizon (up to 2070 in the 2023 Modification model), Arsenic concentrations are expected to decrease as non-contact flows from surrounding catchments report to the lakes. Overall, Phosphorus and Arsenic predictions for the receiving environment and downstream lakes are below their respective guidelines during Post-Closure (Figure 4-4).





**Figure 4-4: Projected phosphorus (P) and arsenic (As) concentrations for the receiving environment during active closure and post-closure in the 2023 Modification model (a, c) as compared to the 2021 IVR/WT Pushback model (b, d).**



## ***5. Summary***

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**AGNICO EAGLE**



## **5. Summary**

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A water balance and water quality model was constructed to predict the movement of water and water quality for the 2023 Modification during Operations, Active Closure and Post Closure. The model operates on a daily time-step for a 51-year period from 2020 to 2070. The mine plan is replicated on an annual basis, with subcatchment areas and mine facility footprints reflective of the 2023 Modification mine schedule and mine site layout.

Similar to the 2021 model, the Modification results show that all parameters are below their respective guidelines in the receiving lakes during Operations, with the minor exception of P. Once effluent discharge ceases in Active Closure, Phosphorus concentrations are expected to decrease and remain below the CCME guideline in the receiving environment and downstream lakes. All other parameters are expected to meet their respective guidelines throughout closure.



## ***6. Closure***

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**AGNICO EAGLE**



## 6. Closure

We trust that this report meets your requirements at this time. Please contact us should you have any questions or concerns or require additional information in support of this work.


Yours sincerely,

**LORAX ENVIRONMENTAL SERVICES LTD.**


**Prepared by:**

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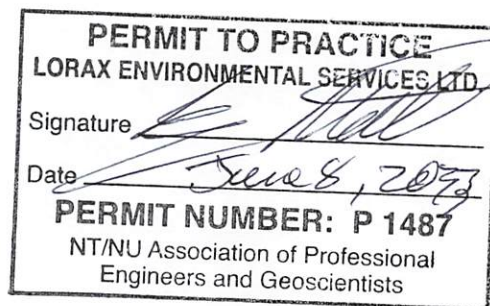
  
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## ***References***

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**AGNICO EAGLE**



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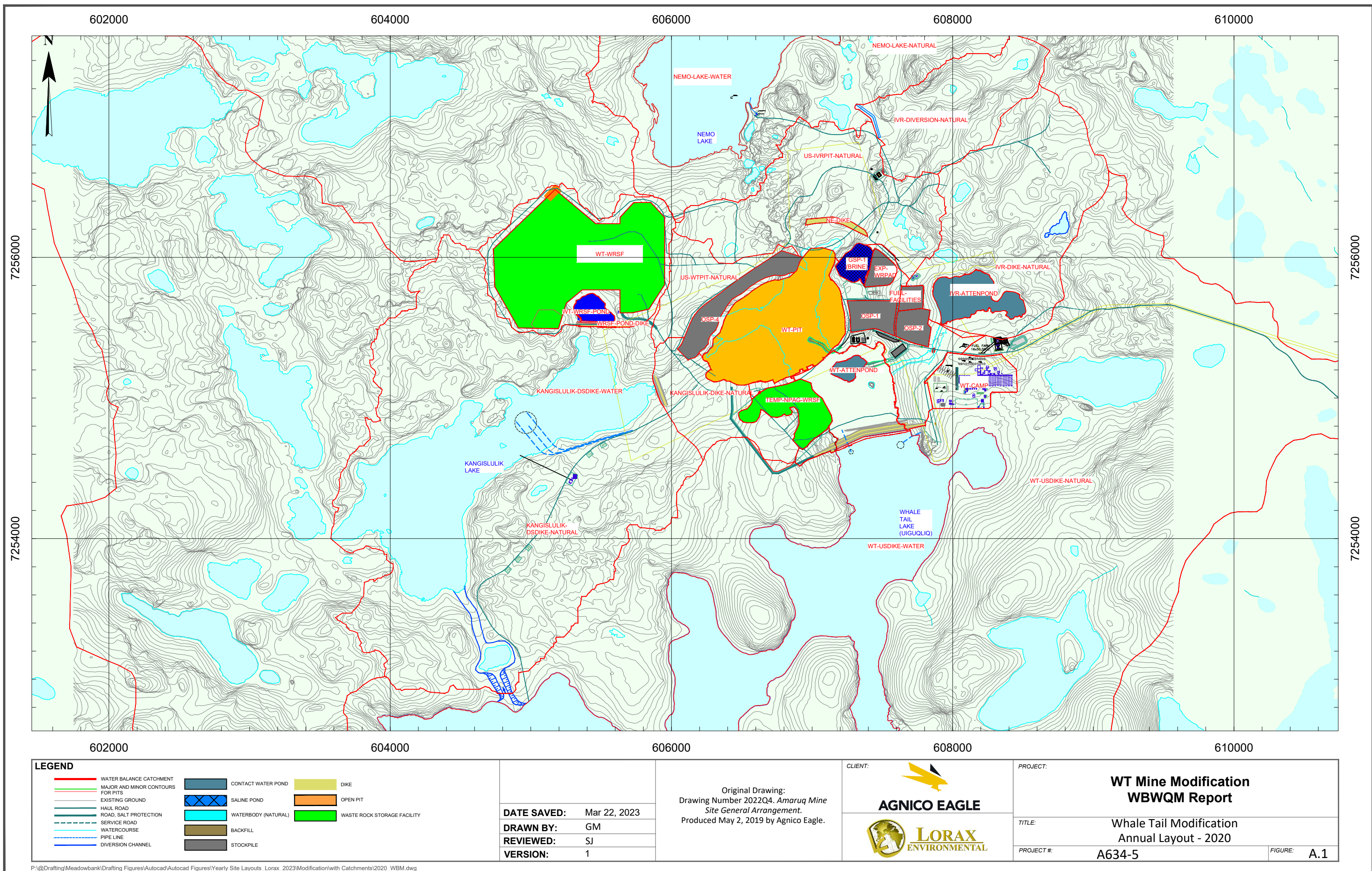
***Appendix A:  
Whale Tail Mine Modification  
Annual Layouts***

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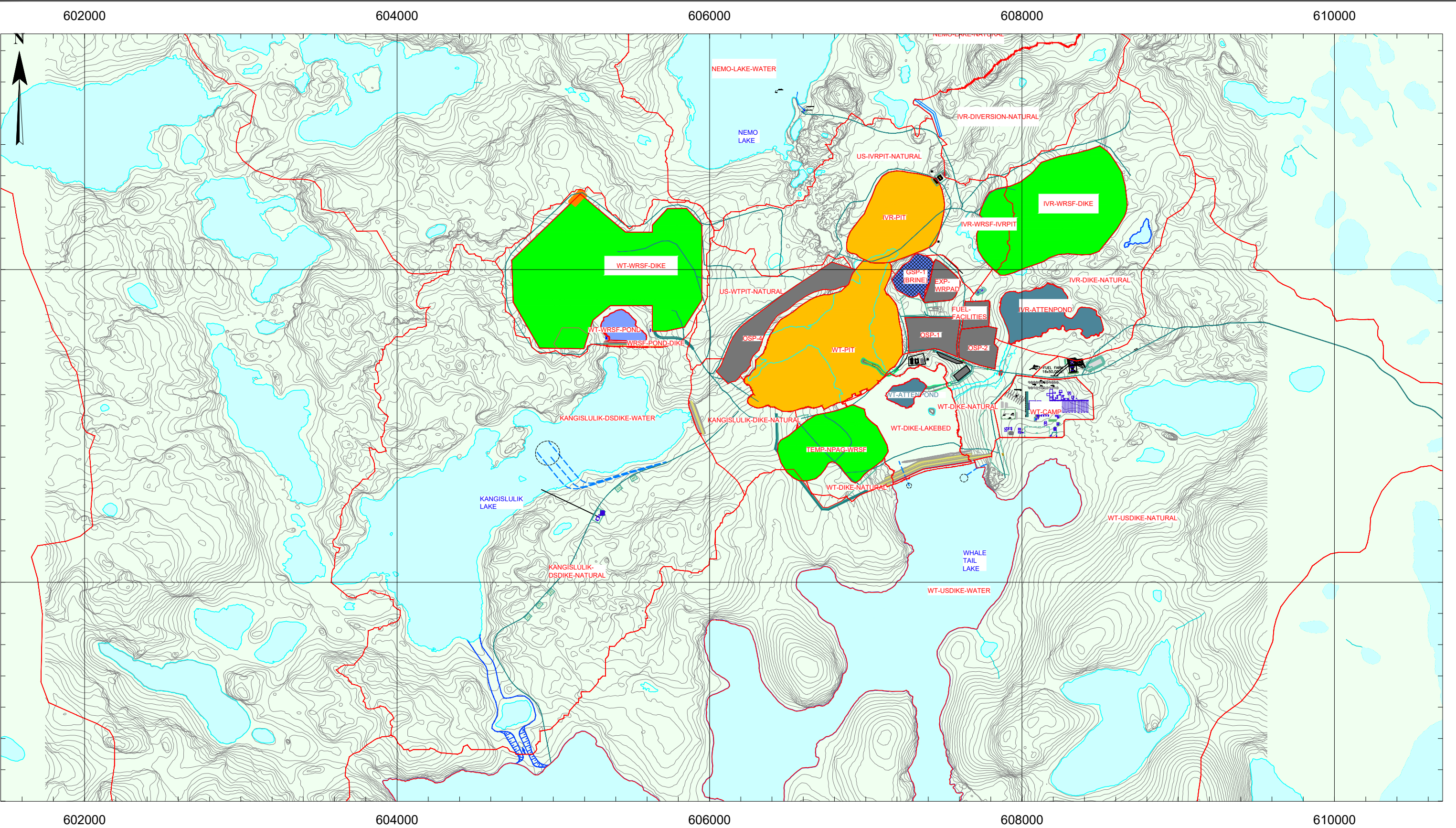


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# LEGEND

	WATER BALANCE CATCHMENT		CONTACT WATER POND		DIKE
	MAJOR AND MINOR CONTOURS FOR PITS		SALINE POND		OPEN PIT
	EXISTING GROUND		WATERBODY (NATURAL)		WASTE ROCK STORAGE FACILITY
	HAUL ROAD		BACKFILL		
	ROAD, SALT PROTECTION		STOCKPILE		
	SERVICE ROAD				
	WATERCOURSE				
	PIPE LINE				
	DIVERSION CHANNEL				

DATE SAVED:	Mar 22, 2023
DRAWN BY:	GM
REVIEWED:	SJ
VERSION:	1

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Site General Arrangement.  
Produced May 2, 2019 by Agnico Eagle.

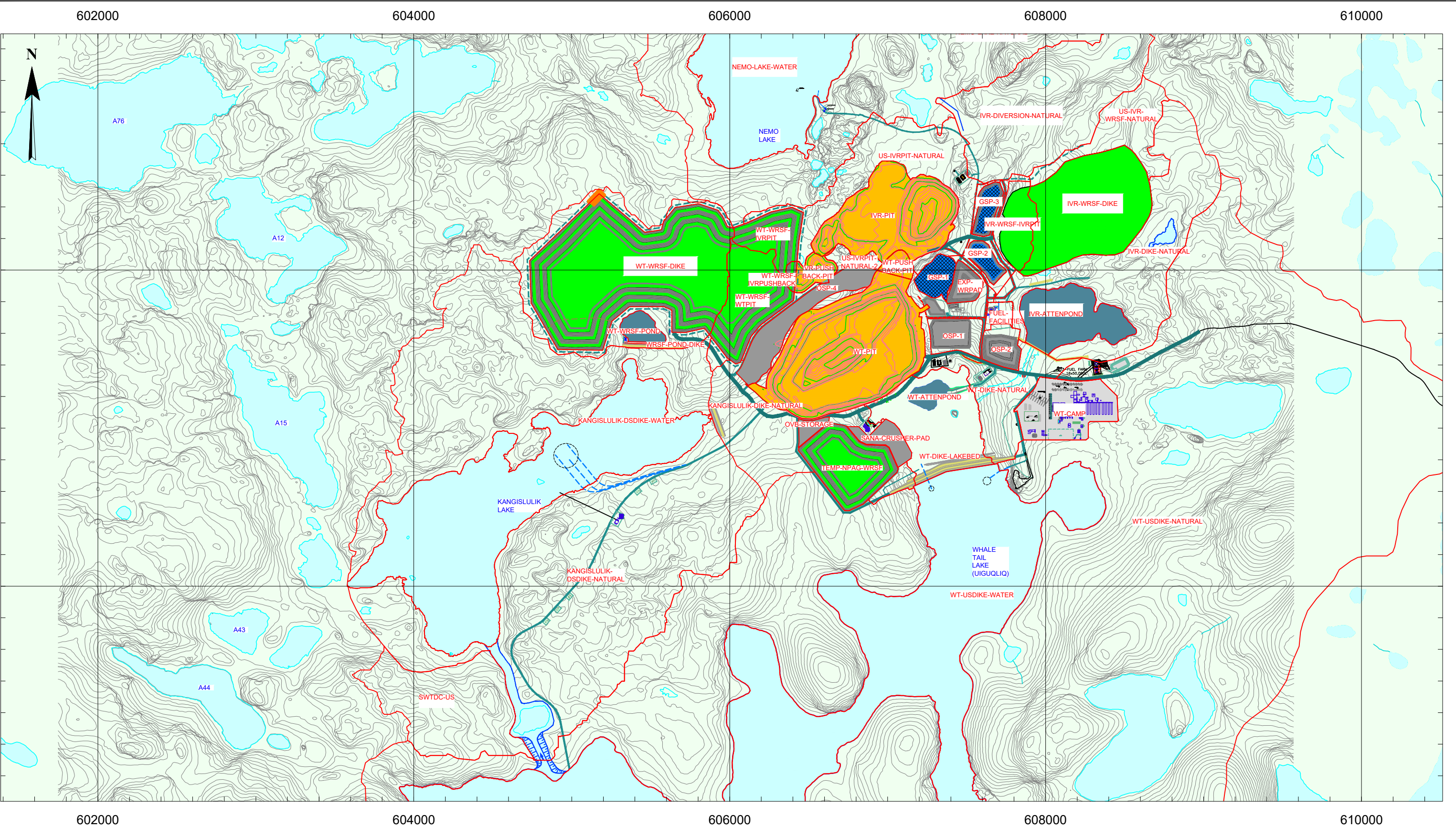
CLIENT:

  
**AGNICO EAGLE**

  
**LORAX**  
ENVIRONMENTAL

PROJECT:		<b>WT Mine Modification WBWQM Report</b>	
TITLE:		Whale Tail Modification Annual Layout - 2021	
PROJECT #:		A634-5	FIGURE: A.2





# LEGEND

	WATER BALANCE CATCHMENT		CONTACT WATER POND		DIKE
	MAJOR AND MINOR CONTOURS FOR PITS		SALINE POND		OPEN PIT
	EXISTING GROUND		WATERBODY (NATURAL)		WASTE ROCK STORAGE FACILITY
	HAUL ROAD		BACKFILL		
	ROAD, SALT PROTECTION		STOCKPILE		
	SERVICE ROAD				
	WATERCOURSE				
	PIPE LINE				
	DIVERSION CHANNEL				

DATE SAVED:	Mar 24, 2023
DRAWN BY:	GM
REVIEWED:	SJ
VERSION:	1

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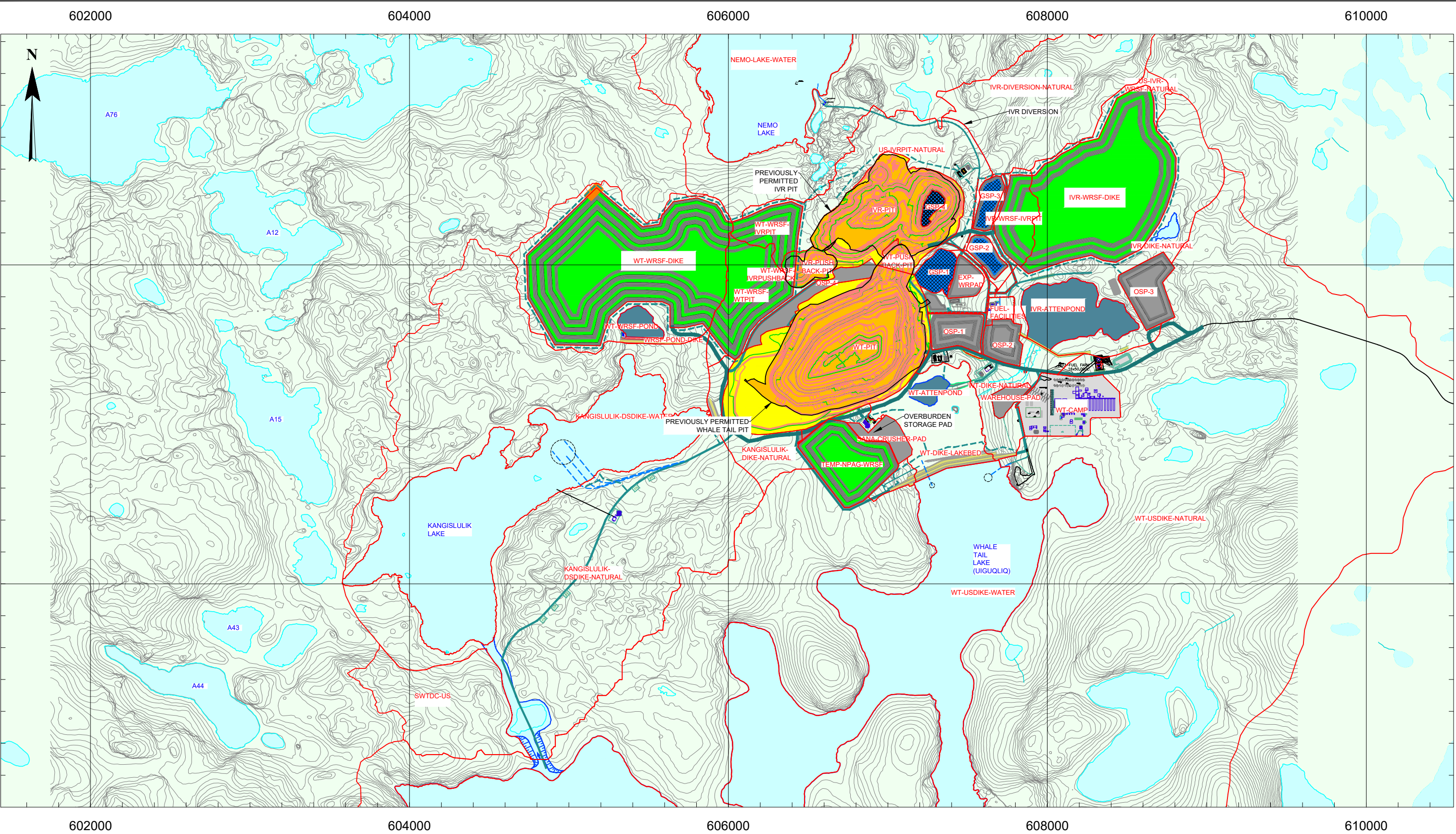
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**AGNICO EAGLE**

  
**LORAX**  
ENVIRONMENTAL

PROJECT:		<b>WT Mine Modification WBWQM Report</b>	
TITLE:		Whale Tail Modification Annual Layout - 2022	
PROJECT #:		A634-5	FIGURE: A.3





**LEGEND**

WATER BALANCE CATCHMENT

MAJOR AND MINOR CONTOURS FOR PITS

EXISTING GROUND

HAUL ROAD

ROAD, SALT PROTECTION

SERVICE ROAD

WATERCOURSE

PIPE LINE

DIVERSION CHANNEL

CONTACT WATER POND

SALINE POND

WATERBODY (NATURAL)

BACKFILL

STOCKPILE

DIKE

OPEN PIT (PREVIOUSLY PERMITTED)

OPEN PIT (MODIFICATION)

WASTE ROCK STORAGE FACILITY

**DATE SAVED:**

Mar 22, 2023

**DRAWN BY:**

GM

**REVIEWED:**

SJ

**VERSION:**

1

Original Drawing:  
Drawing Number 2024Q4. Amaruaq Mine  
Site General Arrangement.  
Produced May 2, 2019 by Agnico Eagle.

CLIENT:

AGNICO EAGLE

LORAX ENVIRONMENTAL

PROJECT:

**WT Mine Modification  
WBWQM Report**

TITLE:

Whale Tail Modification  
Annual Layout - 2023-2025

PROJECT #:

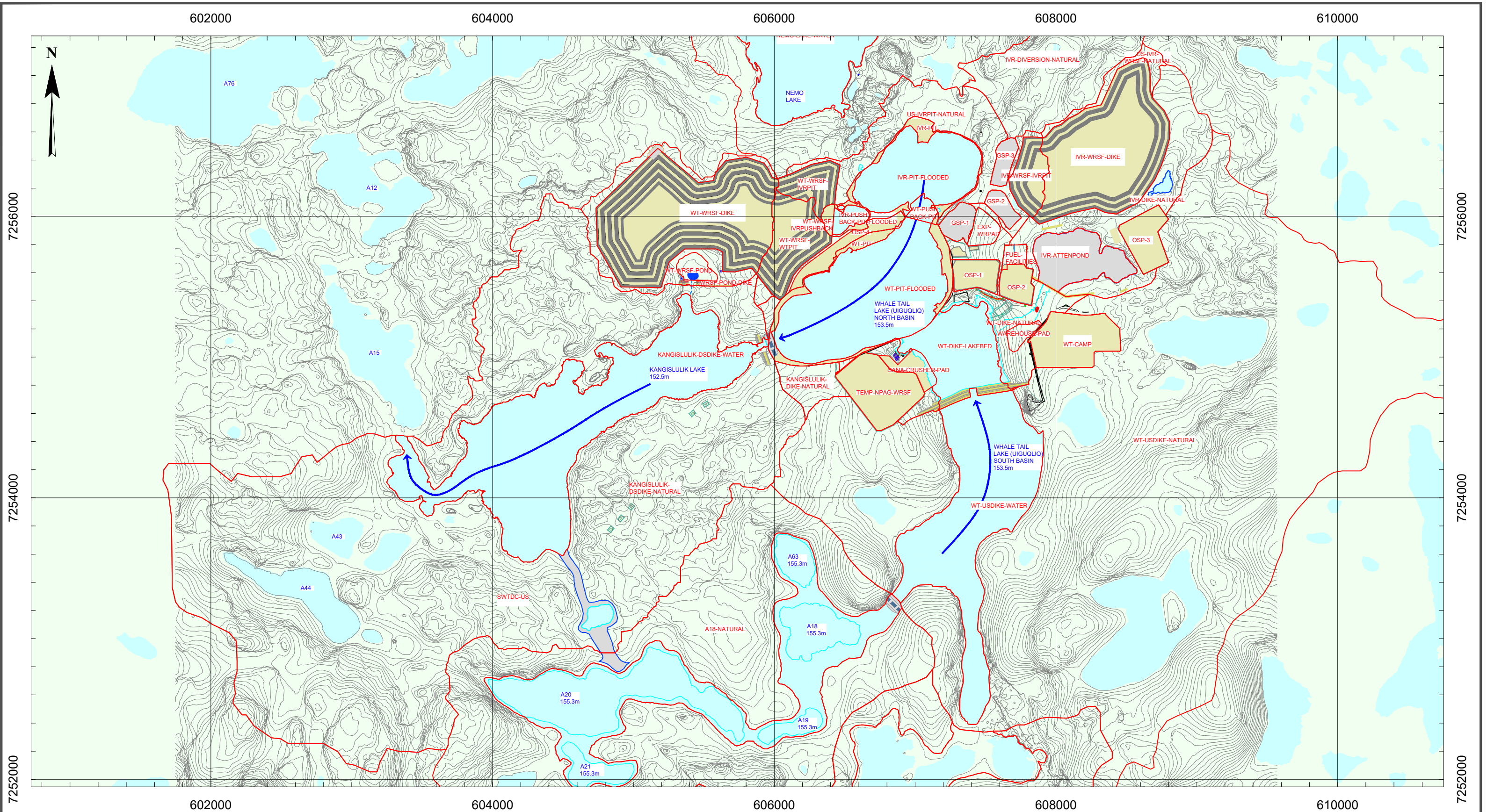
A634-5

FIGURE:

A.4

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LEGEND

- |  |                                   |  |                               |
|--|-----------------------------------|--|-------------------------------|
|  | WATER BALANCE CATCHMENT           |  | BACKFILLED POND (NPAG)        |
|  | MAJOR AND MINOR CONTOURS FOR PITS |  | DIKE                          |
|  | EXISTING GROUND                   |  | RECLAIMED MINE INFRASTRUCTURE |
|  | WATERCOURSE                       |  | WATERBODY (NATURAL)           |
|  | PIPE LINE                         |  |                               |
|  | DIVERSION CHANNEL                 |  |                               |

DATE SAVED:	Mar 22, 2023
DRAWN BY:	DM
REVIEWED:	SJ
VERSION:	1

Notes:  
1. Original Drawing:  
Drawing Number 2042 POST CLOSURE. *Amaruq MineSite General Arrangement.*  
Produced May 2, 2019 by Agnico Eagle.  
2. Whale Tail WRSF extension design provided by Okane Consultants

CLIENT:



PROJECT:

**WT Mine Modification  
WBWQM Report**

TITLE:

Whale Tail Modification  
Annual Layout - Post-Closure

PROJECT #:

A634-5

FIGURE:

A.5



***Appendix B:  
Whale Tail Mine Modification Flow  
Diagrams***

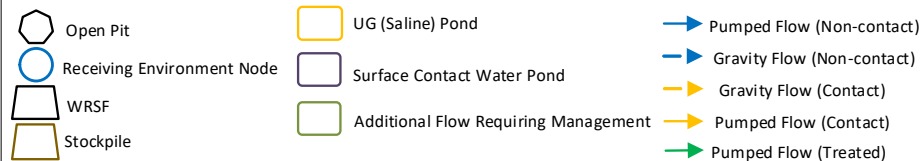
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**AGNICO EAGLE**



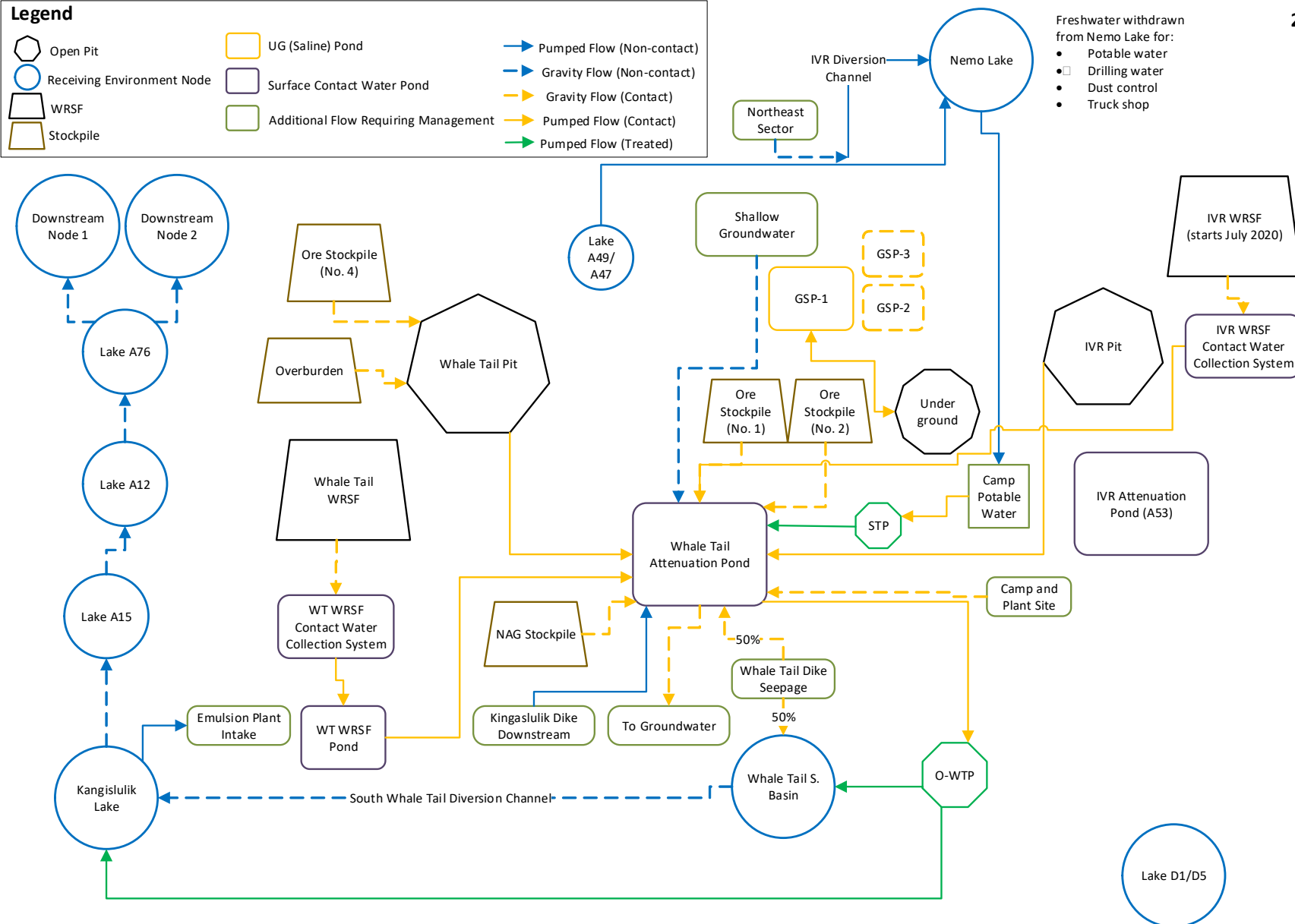
# Legend



Freshwater withdrawn from Nemo Lake for:

- Potable water
- Drilling water
- Dust control
- Truck shop

2020



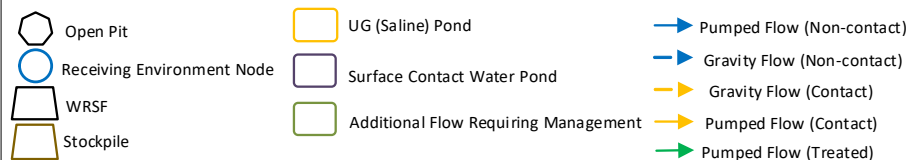
DATE SAVED: Mar 22, 2023  
 DRAWN BY: GM  
 REVIEWED: SJ  
 VERSION: 1



PROJECT:  
**WT Mine Modification  
WBWQM Report**  
 TITLE:  
 Whale Tail Mine Modification  
Flow Diagram - 2020  
 PROJECT #: A634-5  
 FIGURE: B.1

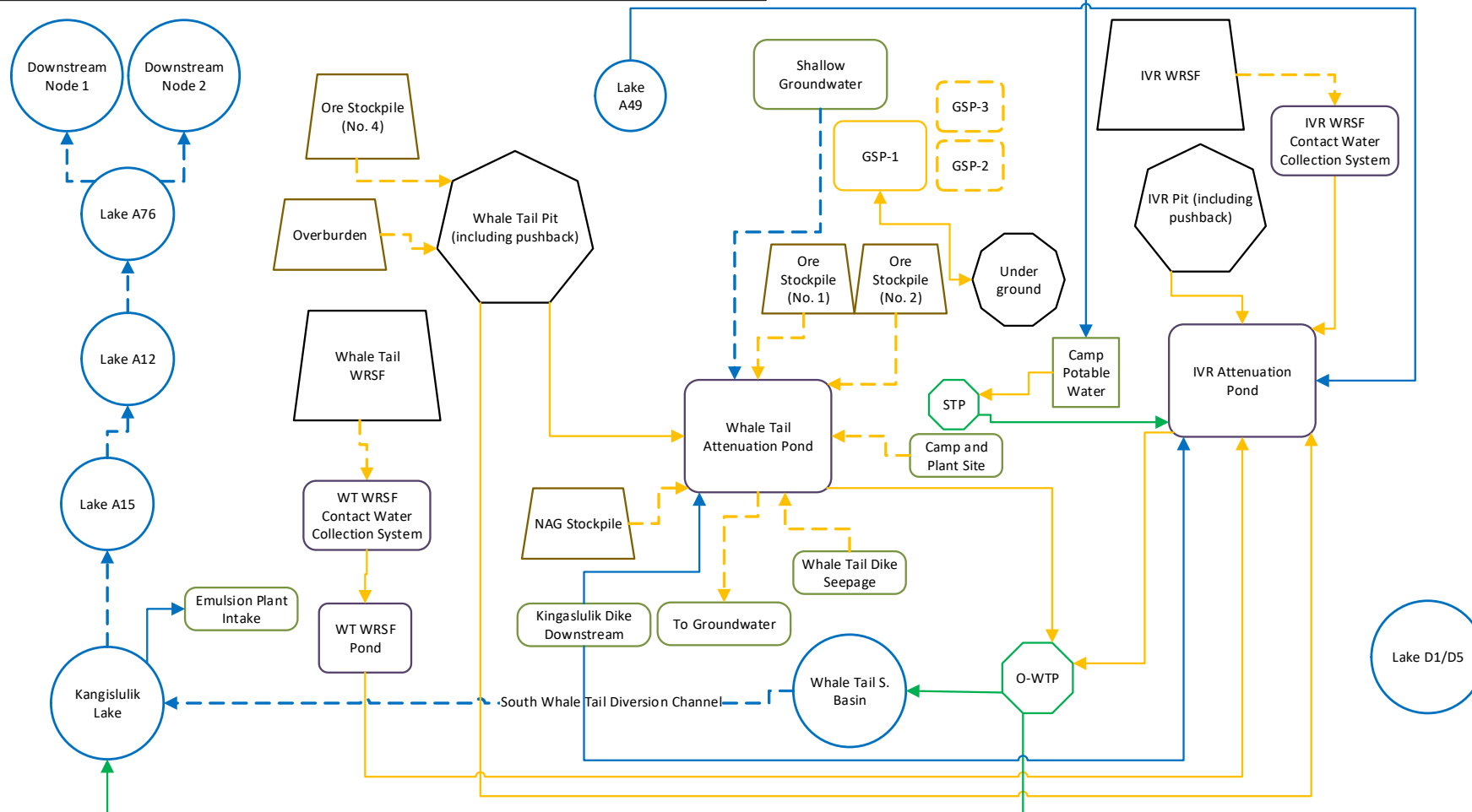


2021

**Legend**

Freshwater withdrawn from Nemo Lake for:

- Potable water
- Drilling water
- Dust control
- Truck shop



DATE SAVED: Mar 22, 2023  
 DRAWN BY: GM  
 REVIEWED: SJ  
 VERSION: 1

CLIENT:  
**AGNICO EAGLE**



PROJECT:

## WT Mine Modification WBWQM Report

TITLE:

Whale Tail Mine Modification  
Flow Diagram - 2021

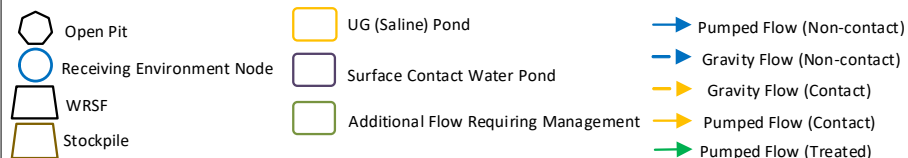
PROJECT #: A634-5

FIGURE: B.2



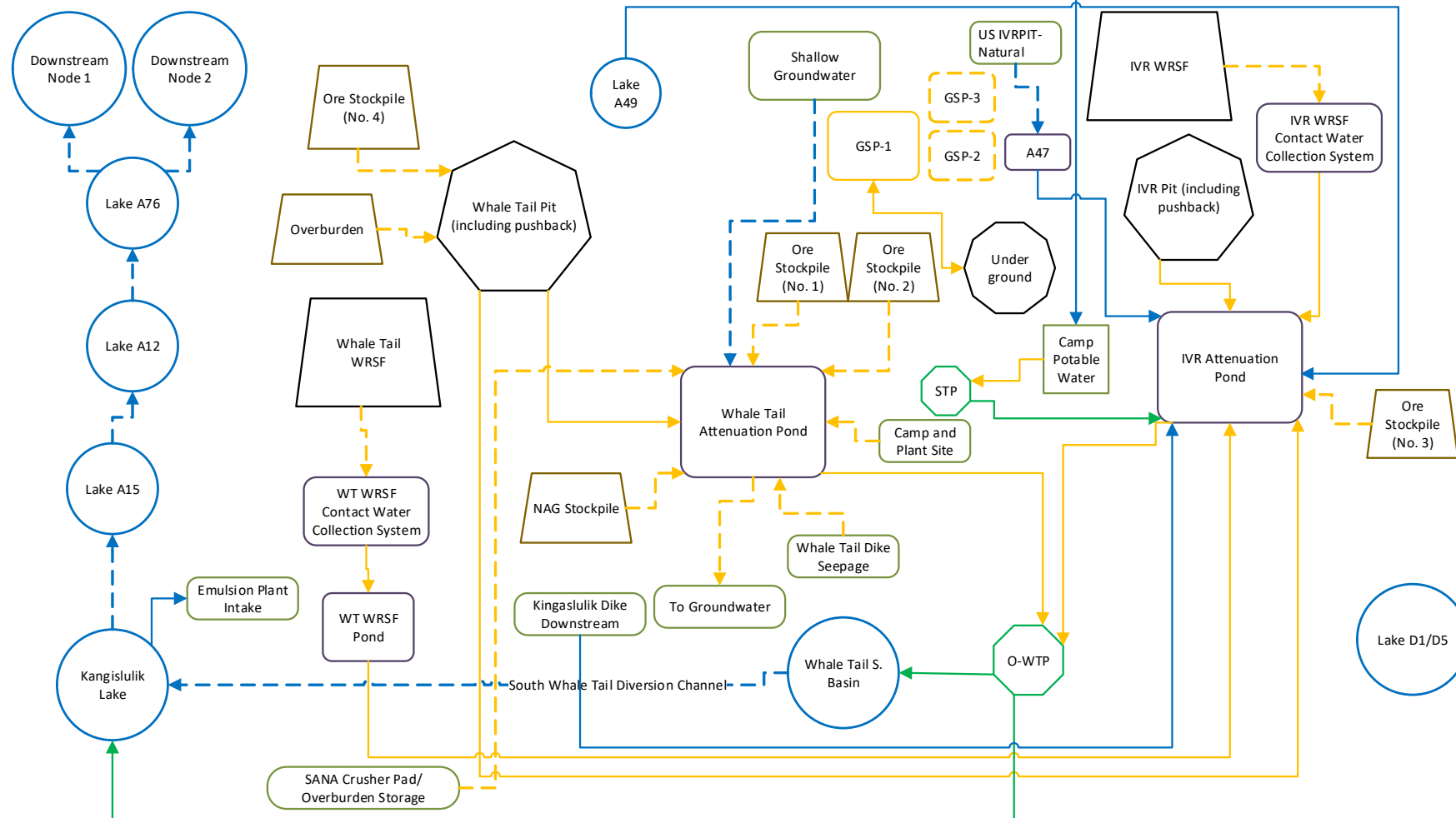
2022

# Legend



Freshwater withdrawn from Nemo Lake for:

- Potable water
- Drilling water
- Dust control
- Truck shop



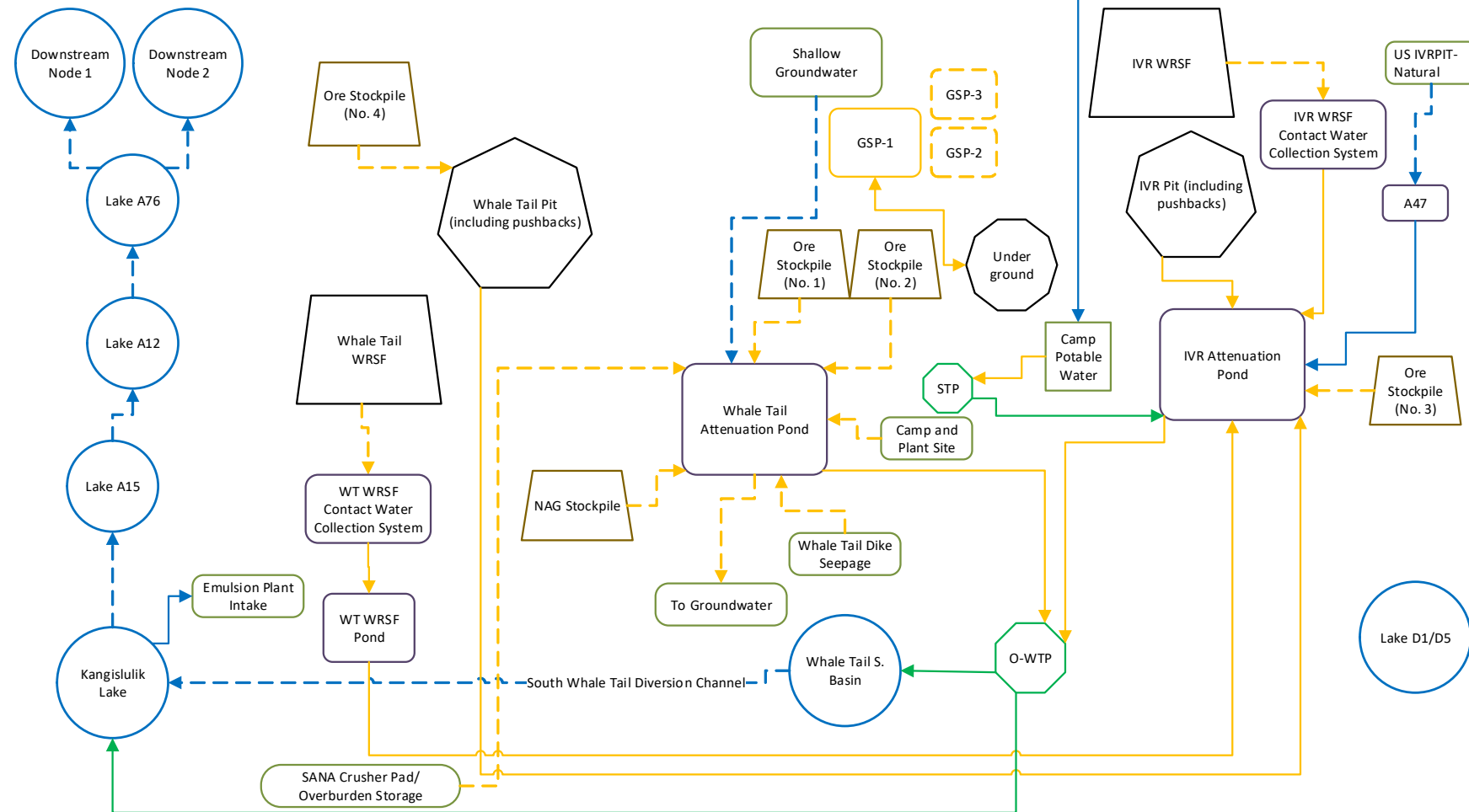
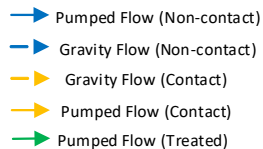
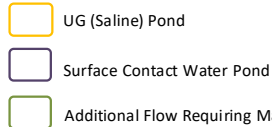
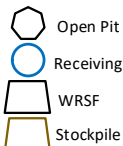
DATE SAVED: Mar 22, 2023  
 DRAWN BY: GM  
 REVIEWED: SJ  
 VERSION: 1



PROJECT: WT Mine Modification WBWQM Report  
 TITLE: Whale Tail Mine Modification Flow Diagram - 2022  
 PROJECT #: A634-5  
 FIGURE: B.3



## Legend



Freshwater withdrawn from Nemo Lake for:

- ☐ Potable water
- ☐ Drilling water
- ☐ Dust control
- ☐ Truck shop

2023-2025

DATE SAVED: Mar 22, 2023  
DRAWN BY: GM  
REVIEWED: SJ  
VERSION: 1

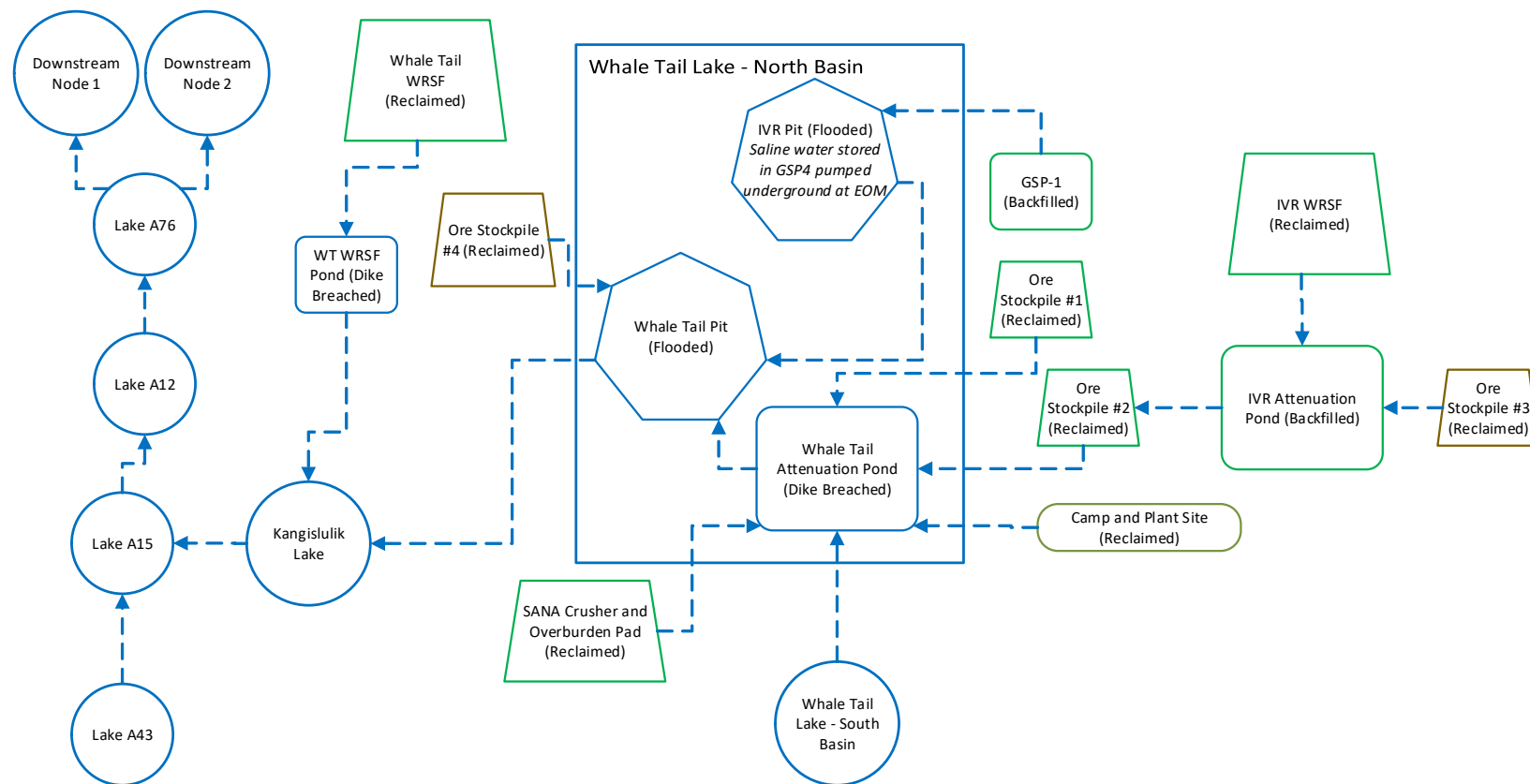
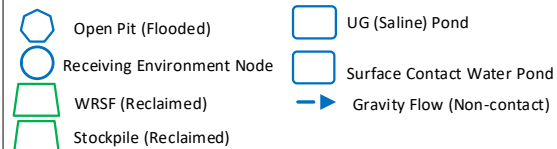


CLIENT: PROJECT: WT Mine Modification  
WBWQM Report  
TITLE: Whale Tail Mine Modification  
Flow Diagram - 2023-25  
PROJECT #: A634-5 FIGURE: B.4



# Post-closure

## Legend



DATE SAVED: Mar 22, 2023  
 DRAWN BY: GM  
 REVIEWED: SJ  
 VERSION: 1

CLIENT: **AGNICO EAGLE**



PROJECT: **WT Mine Modification  
WBWQM Report**  
 TITLE: **Whale Tail Mine Modification  
Flow Diagram - Post-Closure**  
 PROJECT #: **A634-5** FIGURE: **B.5**



# ***Appendix C: Water Quality Model Results***

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**AGNICO EAGLE**



Appendix C1: End of Pipe Discharge to WTS Lake																																				
Constituents	Total Dissolved Solids	Ammonia	Nitrate	Nitrite	Chloride	Fluoride	Sulphate	Silver	Aluminum	Arsenic	Boron	Barium	Beryllium	Calcium	Cadmium	Cobalt	Chromium	Copper	Iron	Mercury	Potassium	Lithium	Magnesium	Manganese	Molybdenum	Sodium	Nickel	Phosphorus	Lead	Antimony	Selenium	Strontium	Thallium	Uranium	Vanadium	Zinc
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Operation (2023 to 2025): Min	115	0.326	0.436	0.0132	28.1	0.125	37	0.0000133	0.00699	0.00225	0.0194	0.0488	0.000135	27.9	0.000011	0.000493	0.000541	0.000887	0.154	0.00000889	3.45	0.00413	5.33	0.182	0.00579	4.1	0.00569	0.0131	0.000188	0.000482	0.000292	0.18	0.00000767	0.000722	0.0039	0.0037
Operation (2023 to 2025): Average	122	0.426	0.657	0.024	30.6	0.13	40.8	0.0000149	0.0111	0.00525	0.0212	0.0514	0.000158	29.4	0.0000114	0.000532	0.000599	0.00107	0.189	0.0000101	3.82	0.00445	6.13	0.195	0.00624	4.55	0.01	0.0144	0.000194	0.000755	0.000334	0.192	0.0000092	0.000804	0.00406	0.00416
Operation (2023 to 2025): Max	150	0.732	1.5	0.0667	31.7	0.141	55.6	0.0000209	0.0251	0.0183	0.0235	0.0538	0.00017	35.9	0.000013	0.000653	0.000622	0.00175	0.208	0.0000144	5.35	0.00459	9.31	0.219	0.00769	4.77	0.026	0.0153	0.000198	0.00209	0.000519	0.199	0.0000153	0.00111	0.00425	0.00597
NWB Water License/MDMER (End-of-Pipe)	1400	16	-	-	-	-	-	-	0.5	0.1	-	-	-	-	0.002	-	0.02	0.1	1	0.004	-	-	-	-	-	-	0.25	0.3	0.05	-	-	-	-	-	-	0.1
Model Predictions (2023-2025)																																				
2023 Jan	124	0.37	0.576	0.0213	31.3	0.125	41.9	0.0000142	0.00867	0.00691	0.0205	0.0502	0.00017	29.3	0.0000115	0.000509	0.000609	0.00097	0.191	0.00000945	3.6	0.0045	6.02	0.183	0.00636	4.55	0.0131	0.0153	0.000198	0.000671	0.000329	0.192	0.00000826	0.000766	0.00397	0.00413
2023 Feb	122	0.36	0.491	0.0168	31.7	0.129	40.2	0.0000135	0.00742	0.00444	0.0194	0.0526	0.000166	29	0.0000111	0.000531	0.00062	0.000906	0.208	0.00000903	3.49	0.00459	5.76	0.187	0.00641	4.76	0.00916	0.015	0.000195	0.000558	0.000307	0.193	0.00000785	0.000733	0.00403	0.00384
2023 Mar	120	0.346	0.455	0.0148	31.5	0.129	39.1	0.0000133	0.00699	0.00334	0.0196	0.0526	0.000165	28.7	0.000011	0.000526	0.000621	0.000887	0.208	0.00000889	3.45	0.00458	5.59	0.186	0.00628	4.77	0.00746	0.0149	0.000195	0.000508	0.000299	0.194	0.00000767	0.000722	0.00405	0.00373
2023 Apr	119	0.339	0.449	0.0145	31.3	0.129	38.5	0.0000134	0.007	0.00298	0.0202	0.0522	0.000164	28.5	0.000011	0.000516	0.000621	0.000893	0.205	0.00000891	3.46	0.00454	5.53	0.184	0.00616	4.74	0.00677	0.0148	0.000195	0.000499	0.000297	0.196	0.00000767	0.000724	0.00407	0.00373
2023 May	119	0.34	0.456	0.0148	31.2	0.129	38.5	0.0000135	0.00718	0.00295	0.0207	0.0522	0.000165	28.6	0.0000111	0.000513	0.000622	0.000907	0.203	0.000009	3.49	0.00454	5.55	0.184	0.00612	4.74	0.00662	0.0148	0.000196	0.000508	0.000298	0.197	0.00000774	0.000732	0.0041	0.00376
2023 Jun																																				
2023 Jul																																				
2023 Aug																																				
2023 Sep																																				
2023 Oct	150	0.732	1.5	0.0667	31.7	0.141	55.6	0.0000203	0.0241	0.0183	0.0222	0.0538	0.000138	35.9	0.000013	0.000653	0.000547	0.00174	0.163	0.0000141	5.32	0.00449	9.31	0.219	0.00769	4.27	0.026	0.0138	0.000188	0.00209	0.000519	0.18	0.000015	0.0011	0.00423	0.0059
2023 Nov	130	0.548	0.938	0.0365	30.8	0.133	45	0.0000175	0.0163	0.00934	0.0214	0.0521	0.00015	31.4	0.000012	0.000589	0.000578	0.00129	0.179	0.0000117	4.41	0.00446	7.04	0.213	0.00658	4.44	0.015	0.0141	0.000193	0.00128	0.000401	0.186	0.0000117	0.000907	0.00409	0.00472
2023 Dec	121	0.436	0.647	0.0223	30.6	0.13	40.2	0.0000155	0.0114	0.00505	0.021	0.0514	0.000157	29.3	0.0000114	0.000545	0.000598	0.00106	0.189	0.0000102	3.88	0.00446	6	0.201	0.00612	4.55	0.00957	0.0144	0.000194	0.000818	0.000339	0.19	0.00000958	0.000803	0.00404	0.00411
2024 Jan	118	0.381	0.53	0.017	30.5	0.128	38.4	0.0000146	0.00927	0.00344	0.0211	0.0511	0.000161	28.5	0.0000112	0.000521	0.000606	0.000973	0.193	0.00000957	3.65	0.00445	5.61	0.193	0.00595	4.59	0.0074	0.0144	0.000195	0.000633	0.000314	0.193	0.00000864	0.00076	0.00404	0.00388
2024 Feb	116	0.352	0.477	0.0148	30.4	0.127	37.6	0.0000141	0.00822	0.00274	0.0213	0.0508	0.000162	28.1	0.0000111	0.000507	0.000609	0.000935	0.193	0.00000926	3.55	0.00444	5.44	0.188	0.00586	4.6	0.00642	0.0144	0.000196	0.000551	0.000301	0.195	0.00000819	0.000741	0.00406	0.00378
2024 Mar	116	0.337	0.45	0.0137	30.4	0.126	37.3	0.0000139	0.00764	0.0024	0.0213	0.0508	0.000163	28	0.000011	0.000501	0.000612	0.000914	0.194	0.00000909	3.5	0.00444	5.36	0.185	0.00584	4.62	0.00595	0.0145	0.000196	0.00051	0.000296	0.196	0.00000793	0.000731	0.00406	0.00373
2024 Apr	115	0.326	0.438	0.0132	30.3	0.126	37	0.0000138	0.00736	0.00225	0.0217	0.0506	0.000163	27.9	0.000011	0.000493	0.000613	0.00091	0.193	0.00000902	3.48	0.00442	5.33	0.182	0.00579	4.61	0.00569	0.0144	0.000196	0.000489	0.000292	0.198	0.00000783	0.000728	0.00409	0.00372
2024 May	117	0.331	0.436	0.0133	30.9	0.127	37.7	0.0000136	0.00715	0.00225	0.021	0.0515	0.000165	28.2	0.0000111	0.000504	0.00062	0.000902	0.199	0.00000899	3.47	0.0045	5.4	0.184	0.00593	4.68	0.00578	0.0147	0.000196	0.000482	0.000297	0.198	0.00000774	0.000728	0.00408	0.0037
2024 Jun																																				
2024 Jul																																				
2024 Aug																																				
2024 Sep																																				
2024 Oct	146	0.725	1.49	0.0655	30.9	0.14	53.9	0.0000209	0.0251	0.0181	0.0235	0.0529	0.000135	35.3	0.0000127	0.000638	0.000541	0.00175	0.154	0.0000144	5.35	0.0044	9.1	0.219	0.00746	4.21	0.0255	0.0133	0.000189	0.00187	0.000507	0.182	0.0000153	0.00111	0.00425	0.00597
2024 Nov	132	0.556	0.971	0.0384	31	0.134	45.8	0.0000176	0.0169	0.00993	0.0212	0.0526	0.00015	31.7	0.0000119	0.000596	0.000579	0.00132	0.18	0.0000119	4.46	0.0045	7.18	0.212	0.00671	4.46	0.0157	0.0142	0.000192	0.00122	0.00041	0.185	0.0000119	0.000923	0.0041	0.00479
2024 Dec	122	0.441	0.664	0.0232	30.7	0.13	40.6	0.0000156	0.0118	0.00534	0.021	0.0516	0.000157	29.4	0.0000114	0.000548	0.000597	0.00108	0.189	0.0000103	3.91	0.00447	6.06	0.201	0.00617	4.55	0.00992	0.0144	0.000194	0.000798	0.000343	0.19	0.00000973	0.000811	0.00405	0.00415
2025 Jan	118	0.384	0.54	0.0175	30.5	0.128	38.6	0.0000146	0.00949	0.0036	0.0211	0.0512	0.00016	28.6	0.0000112	0.000523	0.000605	0.000982	0.192	0.00000964	3.67	0.00445	5													



Appendix C2: End of Pipe Discharge to Kangishulik Lake																																				
Constituents	Total Dissolved Solids	Ammonia	Nitrate	Nitrite	Chloride	Fluoride	Sulphate	Silver	Aluminum	Arsenic	Boron	Barium	Beryllium	Calcium	Cadmium	Cobalt	Chromium	Copper	Iron	Mercury	Potassium	Lithium	Magnesium	Manganese	Molybdenum	Sodium	Nickel	Phosphorus	Lead	Antimony	Selenium	Strontium	Thallium	Uranium	Vanadium	Zinc
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Operation (2023 to 2025): Min	119	0.342	0.459	0.0145	30	0.129	38.7	0.0000134	0.00733	0.00257	0.0198	0.0518	0.00011	28.7	0.0000112	0.000516	0.000467	0.000913	0.125	0.00000911	3.51	0.00427	5.53	0.186	0.00609	3.72	0.00618	0.0126	0.000165	0.000501	0.000305	0.161	0.00000776	0.00074	0.00386	0.00374
Operation (2023 to 2025): Average	173	0.953	2.03	0.104	34	0.15	67.5	0.0000191	0.027	0.0268	0.0213	0.0567	0.000135	41.3	0.0000133	0.000662	0.000536	0.00208	0.162	0.0000149	5.6	0.00452	12	0.22	0.00931	4.25	0.0362	0.0142	0.000178	0.00212	0.000583	0.175	0.0000152	0.00119	0.00422	0.00683
Operation (2023 to 2025): Max	211	1.33	2.85	0.151	37.7	0.163	87.2	0.0000249	0.0453	0.0442	0.0237	0.0615	0.000168	50.1	0.0000149	0.000791	0.000629	0.00277	0.21	0.0000219	7.21	0.00471	16.1	0.264	0.0114	4.82	0.0557	0.0152	0.000198	0.00373	0.000808	0.198	0.0000219	0.00166	0.00456	0.00885
NWB Water License/MDMER (End-of-Pipe)	1400	16	-	-	-	-	-	-	0.5	0.1	-	-	-	-	0.002	-	0.02	0.1	1	0.004	-	-	-	-	-	-	-	0.25	0.3	0.05	-	-	-	-	-	0.1
Model Predictions (2023-2025)																																				
2023 Jan																																				
2023 Feb																																				
2023 Mar																																				
2023 Apr																																				
2023 May	122	0.354	0.475	0.0157	32	0.131	39.7	0.0000134	0.00733	0.00319	0.0198	0.0534	0.000168	29.1	0.0000112	0.00053	0.000629	0.000913	0.21	0.00000911	3.51	0.00464	5.69	0.188	0.00632	4.82	0.00694	0.0152	0.000197	0.000522	0.00031	0.196	0.00000776	0.000742	0.00409	0.00376
2023 Jun	198	1.23	2.82	0.149	34.7	0.163	80.5	0.000019	0.0386	0.042	0.0224	0.0571	0.00011	47.2	0.0000143	0.000668	0.000467	0.00277	0.125	0.0000188	6.64	0.00428	15.3	0.219	0.0107	3.72	0.0504	0.0126	0.000165	0.00283	0.000701	0.161	0.000018	0.00151	0.00423	0.00885
2023 Jul	211	1.33	2.85	0.151	36.6	0.162	87.2	0.0000237	0.0346	0.0436	0.0211	0.0615	0.000119	50.1	0.0000148	0.000791	0.000497	0.00271	0.145	0.0000169	6.98	0.00462	16.1	0.264	0.0114	4.14	0.0557	0.0142	0.000166	0.00373	0.000808	0.164	0.00002	0.00137	0.00443	0.00834
2023 Aug	210	1.23	2.73	0.151	37.7	0.159	86.2	0.0000214	0.0296	0.0442	0.0215	0.0609	0.000127	50.1	0.0000142	0.000722	0.000518	0.00258	0.154	0.0000152	6.4	0.00457	15.9	0.233	0.0114	4.23	0.0535	0.0144	0.000171	0.00307	0.00073	0.172	0.0000173	0.00126	0.00439	0.0081
2023 Sep	197	1.1	2.55	0.133	35.8	0.155	80.5	0.0000235	0.0315	0.0386	0.0221	0.0597	0.000127	47	0.0000145	0.00075	0.000517	0.00248	0.151	0.000016	6.53	0.00464	14.5	0.226	0.0106	4.21	0.0491	0.0142	0.000173	0.00338	0.000748	0.173	0.0000189	0.0013	0.00452	0.00778
2023 Oct	160	0.775	1.65	0.0751	33.1	0.143	60.7	0.0000223	0.0249	0.0212	0.0214	0.0566	0.000141	38	0.0000135	0.000716	0.000556	0.00183	0.171	0.0000143	5.61	0.00471	10.1	0.224	0.00832	4.42	0.0303	0.0145	0.000182	0.00257	0.000602	0.179	0.0000165	0.00112	0.0044	0.00604
2023 Nov																																				
2023 Dec																																				
2024 Jan																																				
2024 Feb																																				
2024 Mar																																				
2024 Apr																																				
2024 May	119	0.342	0.459	0.0145	31.5	0.129	38.7	0.0000136	0.00739	0.00264	0.0207	0.0524	0.000167	28.7	0.0000112	0.000516	0.000625	0.000917	0.204	0.00000912	3.51	0.00457	5.54	0.186	0.00609	4.74	0.0062	0.015	0.000197	0.000501	0.000305	0.198	0.00000781	0.00074	0.0041	0.00374
2024 Jun	184	1.09	2.44	0.127	34.1	0.157	73	0.0000176	0.0339	0.0357	0.0221	0.0557	0.000118	44	0.0000136	0.000627	0.000487	0.00247	0.135	0.0000173	6.06	0.00427	13.7	0.212	0.00988	3.84	0.0428	0.0128	0.000171	0.00222	0.000619	0.166	0.000016	0.00139	0.00413	0.00806
2024 Jul	196	1.2	2.46	0.131	35.9	0.158	78.9	0.00002	0.0303	0.0373	0.0207	0.0598	0.000127	46.7	0.0000137	0.000707	0.000517	0.00242	0.155	0.0000156	6.21	0.00453	14.5	0.253	0.0106	4.21	0.047	0.0143	0.000171	0.00257	0.000687	0.168	0.0000168	0.00127	0.00425	0.00767
2024 Aug	203	1.17	2.59	0.142	37.4	0.158	82.5	0.0000208	0.0291	0.0418	0.0215	0.0609	0.000129	48.6	0.0000137	0.000705	0.000526	0.00247	0.158	0.000015	6.24	0.00459	15.1	0.229	0.011	4.29	0.0499	0.0144	0.000174	0.00268	0.000714	0.175	0.0000169	0.00125	0.00442	0.00785
2024 Sep	196	1.08	2.55	0.132	35.7	0.155	79.7	0.0000239	0.033	0.0384	0.0225	0.0598	0.000126	46.6	0.0000142	0.00075	0.000516	0.00249	0.15	0.0000164	6.59	0.00465	14.3	0.222	0.0105	4.23	0.0488	0.0141	0.000174	0.00313	0.000752	0.174	0.0000194	0.00133	0.00456	0.00783
2024 Oct	163	0.811	1.8	0.0834	33	0.146	62.5	0.0000228	0.0278	0.0238	0.0223	0.0565	0.000136	38.9	0.0000134	0.000712	0.000544	0.00196	0.162	0.0000152	5.82	0.00465	10.6	0.22	0.00851	4.35	0.0327	0.0141	0.000182	0.00245	0.000613	0.179	0.0000173	0.00119	0.00442	0.00645
2024 Nov																																				
2024 Dec																																				
2025 Jan																																				
2025 Feb																																				
2025 Mar																																				
2025 Apr																																				
2025 May	120	0.345	0.461	0.0146	31.5	0.129	38.7	0.0000136	0.00749	0.00257	0.0205	0.0525	0.000168	28.7	0.0000112	0.00052	0.000626	0.000915	0.205	0.00000916	3.51	0.00459	5.53	0.187	0.0061	4.75	0.00618	0.015	0.000198	0.000501	0.000307	0.197	0.00000786	0.000742	0.00409	0.00374
2025 Jun	175	1.09	2.65	0.129	33.4	0.159	67.6	0.0000249	0.0453	0.0307	0.0237	0.0562	0.000115	41.8	0.0000149	0.000769	0.000483	0.00251	0.13	0.0000219	7.21	0.00459	11.9	0.216	0.00875	3.93	0.0396	0.0131	0.000176	0.00277	0.000663	0.166	0.0000219	0.00166	0.0043	0.00838
2025 Jul	182	1.22	2.42	0.134	36.2	0.157	70.2	0.0000181	0.0294	0.0312	0.02	0.0578	0.000133	43.7	0.000																					



Appendix C: Water Quality Model Results  
Whale Tail Modification Water Balance and Water Quality Model - Technical Report

Constituents		Total Dissolved Solids	Ammonia	Nitrate	Nitrite	Chloride	Fluoride	Sulphate	Silver	Aluminum	Arsenic	Boron	Barium	Beryllium	Calcium	Cadmium	Cobalt	Chromium	Copper	Iron	Mercury	Potassium	Lithium	Magnesium	Manganese	Molybdenum	Sodium	Nickel	Phosphorus	Lead	Antimony	Selenium	Strontium	Thallium	Uranium	Vanadium	Zinc		
Units		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Operation (2023 to 2025): Min		137	0.634	0.433	0.0166	40.4	0.2	42.4	0.00001	0.00413	0.0226	0.005	0.0862	0.000075	34.5	0.000008	0.001	0.000725	0.000668	0.416	0.0000075	3.72	0.00586	7.13	0.264	0.0112	7.55	0.00384	0.0109	0.00015	0.000559	0.000131	0.198	0.0000869	0.000576	0.005	0.00375		
Operation (2023 to 2025): Average		186	0.966	1.34	0.0832	41.5	0.209	71.2	0.000018	0.00741	0.107	0.00596	0.0872	0.0000716	44.8	0.00000918	0.00101	0.006091	0.00148	0.392	0.00000837	4.34	0.00575	13.5	0.254	0.0148	7.3	0.00302	0.0114	0.00045	0.00108	0.000262	0.000485	0.0000875	0.00489	0.00545			
Operation (2023 to 2025): Max		411	2.33	5.11	0.358	46.8	0.244	202	0.0000195	0.0225	0.515	0.00979	0.0911	0.000075	91.9	0.0000133	0.00109	0.000725	0.00509	0.416	0.0000133	6.92	0.00586	42.4	0.264	0.0313	7.55	0.015	0.014	0.000337	0.000841	0.198	0.0000166	0.0103	0.005	0.00128			
Active Closure (2026 to May 2038): Min		92	0.152	0.19	0.0035	18.9	0.0596	22.2	0.00000855	0.00414	0.00389	0.005	0.0197	0.0000748	16.5	0.00000775	0.000182	0.000306	0.000668	0.0497	0.00000748	2.69	0.00349	3.82	0.0917	0.0017	1.55	0.00384	0.00519	0.0000998	0.000398	0.000131	0.0896	0.0000763	0.000575	0.00072	0.00289		
Active Closure (2026 to May 2038): Average		118	0.281	0.306	0.00582	22.1	0.0728	35.7	0.0000138	0.0045	0.0391	0.0107	0.0245	0.00322	22.5	0.0000101	0.000279	0.00037	0.0014	0.0583	0.000115	3.41	0.00318	6.08	0.13	0.00318	1.83	0.0192	0.00606	0.000443	0.000752	0.000395	0.103	0.000105	0.000821	0.00113	0.00386		
Active Closure (2026 to May 2038): Max		167	0.632	0.746	0.0166	40.3	0.2	60.8	0.0000184	0.0357	0.0854	0.024	0.086	0.0907	34.4	0.0000139	0.000997	0.000723	0.00214	0.415	0.0000168	4.64	0.00669	10.9	0.263	0.0112	7.53	0.0371	0.0108	0.000167	0.0013	0.000594	0.198	0.0000153	0.00121	0.00498	0.00584		
Model Predictions (2023-May 2038)																																							
2023 Jan	137	0.634	0.433	0.0166	40.4	0.2	42.4	0.00001	0.00413	0.0226	0.005	0.0862	0.000075	34.5	0.000008	0.001	0.000725	0.000668	0.416	0.0000075	3.72	0.00586	7.13	0.264	0.0112	7.55	0.00384	0.0109	0.00015	0.000559	0.000131	0.198	0.0000869	0.000576	0.005	0.00375			
2023 Feb	137	0.634	0.433	0.0166	40.4	0.2	42.4	0.00001	0.00413	0.0226	0.005	0.0862	0.000075	34.5	0.000008	0.001	0.000725	0.000668	0.416	0.0000075	3.72	0.00586	7.13	0.264	0.0112	7.55	0.00384	0.0109	0.00015	0.000559	0.000131	0.198	0.0000869	0.000576	0.005	0.00375			
2023 Mar	137	0.634	0.433	0.0166	40.4	0.2	42.4	0.00001	0.00413	0.0226	0.005	0.0862	0.000075	34.5	0.000008	0.001	0.000725	0.000668	0.416	0.0000075	3.72	0.00586	7.13	0.264	0.0112	7.55	0.00384	0.0109	0.00015	0.000559	0.000131	0.198	0.0000869	0.000576	0.005	0.00375			
2023 Apr	141	0.661	0.508	0.0221	40.5	0.201	44.9	0.0000101	0.00434	0.0304	0.00506	0.0863	0.0000746	35.4	0.0000089	0.000999	0.000722	0.000737	0.414	0.00000753	3.76	0.00585	7.69	0.263	0.0115	7.52	0.00613	0.0109	0.00049	0.000602	0.00042	0.178	0.0000875	0.000582	0.00499	0.00389			
2023 May	153	0.731	0.702	0.0364	40.7	0.202	51.4	0.0000101	0.00487	0.0506	0.00521	0.0863	0.0000736	37.7	0.0000083	0.000994	0.000712	0.000918	0.407	0.00000759	3.88	0.00581	9.16	0.26	0.0124	7.45	0.00121	0.011	0.000148	0.000709	0.000171	0.197	0.0000887	0.000597	0.00495	0.00426			
2023 Jun	411	2.33	5.11	0.358	46.8	0.244	202	0.0000186	0.0183	0.515	0.00979	0.091	0.000094	91.9	0.000014	0.00103	0.000532	0.00509	0.283	0.000016	6.92	0.00518	42.4	0.26	0.0313	7.55	0.015	0.014	0.000337	0.000841	0.171	0.000155	0.000958	0.0043	0.00128				
2023 Jul	251	1.35	2.37	0.159	43.4	0.222	110	0.0000142	0.0101	0.228	0.00709	0.0895	0.0000682	58.7	0.0000106	0.00104	0.000659	0.00251	0.369	0.00000898	5.09	0.00565	21.8	0.246	0.0198	7.1	0.0648	0.012	0.00041	0.00175	0.00427	0.189	0.0000119	0.00744	0.00482	0.00759			
2023 Aug	304	1.69	3.29	0.226	44.7	0.232	141	0.000015	0.0126	0.324	0.00786	0.0911	0.0000649	70.1	0.0000118	0.00104	0.000627	0.00337	0.348	0.0000131	5.66	0.00553	28.8	0.235	0.0239	6.88	0.0931	0.0125	0.00353	0.00228	0.000564	0.184	0.0000128	0.000824	0.00473	0.00938			
2023 Sep	218	1.13	1.8	0.115	42.7	0.215	90.1	0.0000168	0.00914	0.17	0.00716	0.0884	0.0000705	51.7	0.0000102	0.00108	0.000678	0.00202	0.38	0.00000923	4.94	0.00579	17.4	0.256	0.0172	7.26	0.0485	0.0118	0.00045	0.00151	0.000349	0.192	0.000013	0.000693	0.00485	0.00654			
2023 Oct	169	0.825	0.968	0.0556	41.1	0.205	60.7	0.0000115	0.00588	0.0794	0.00565	0.0867	0.0000727	41	0.00000872	0.00101	0.000702	0.00118	0.4	0.00000794	4.12	0.00579	11.2	0.258	0.0135	7.39	0.0208	0.0111	0.00047	0.000898	0.000214	0.195	0.0000976	0.000619	0.00491	0.0048			
2023 Nov	137	0.634	0.434	0.0166	40.4	0.2	42.4																																



Appendix C3: Whale Tail P8																																				
Constituents	Total Dissolved Solids	Ammonia	Nitrate	Nitrite	Chloride	Fluoride	Sulphate	Silver	Aluminum	Arsenic	Boron	Barium	Beryllium	Calcium	Cadmium	Cobalt	Chromium	Copper	Iron	Mercury	Potassium	Lithium	Magnesium	Manganese	Molybdenum	Sodium	Nickel	Phosphorus	Lead	Antimony	Selenium	Strontium	Thallium	Uranium	Vanadium	Zinc
2032 Nov	105	0.224	0.196	0.00373	19.8	0.0645	29.2	0.00000984	0.0212	0.0304	0.00886	0.0216	0.0021	19.3	0.00000855	0.00022	0.000334	0.00122	0.0536	0.00000969	3	0.0038	5.15	0.109	0.00248	1.56	0.0155	0.00571	0.000107	0.000592	0.000326	0.0904	0.0000091	0.000678	0.000845	0.00333
2032 Dec	104	0.224	0.195	0.00371	19.8	0.0645	29.2	0.00000983	0.0212	0.0302	0.00886	0.0216	0.00209	19.3	0.00000856	0.00022	0.000334	0.00122	0.0535	0.0000097	2.99	0.0038	5.14	0.109	0.00247	1.56	0.0154	0.0057	0.000108	0.000591	0.000327	0.0903	0.00000909	0.000678	0.000845	0.00333
2033 Jan	104	0.224	0.195	0.0037	19.8	0.0644	29.1	0.00000982	0.0212	0.0301	0.00886	0.0216	0.00208	19.2	0.00000857	0.00022	0.000335	0.00122	0.0534	0.0000097	2.99	0.0038	5.13	0.109	0.00246	1.56	0.0154	0.00569	0.000108	0.000589	0.000328	0.0903	0.00000908	0.000679	0.000844	0.00332
2033 Feb	104	0.223	0.194	0.00368	19.8	0.0642	29.1	0.00000982	0.0211	0.0299	0.00885	0.0216	0.00207	19.2	0.00000858	0.000219	0.000335	0.00121	0.0534	0.00000969	2.99	0.0038	5.11	0.109	0.00245	1.56	0.0153	0.00568	0.000108	0.000588	0.000328	0.0903	0.00000906	0.000679	0.000842	0.00332
2033 Mar	104	0.222	0.193	0.00367	19.8	0.0641	29.1	0.00000981	0.0211	0.0298	0.00885	0.0215	0.00206	19.2	0.00000859	0.000219	0.000335	0.00121	0.0533	0.00000968	2.98	0.00379	5.1	0.109	0.00244	1.55	0.0153	0.00566	0.000109	0.000586	0.000329	0.0902	0.00000904	0.000678	0.000841	0.00331
2033 Apr	104	0.222	0.192	0.00365	19.8	0.0639	29.1	0.0000098	0.021	0.0296	0.00884	0.0215	0.00205	19.2	0.00000859	0.000218	0.000335	0.00121	0.0532	0.00000967	2.98	0.00379	5.09	0.109	0.00243	1.55	0.0152	0.00565	0.000109	0.000583	0.000329	0.0902	0.00000902	0.000678	0.000839	0.0033
2033 May	104	0.221	0.191	0.00363	19.8	0.064	29.1	0.00000981	0.0212	0.0294	0.00885	0.0215	0.00204	19.2	0.00000863	0.000218	0.000336	0.00121	0.0532	0.00000973	2.98	0.0038	5.08	0.109	0.00242	1.55	0.0152	0.00564	0.000109	0.000584	0.000331	0.0902	0.00000903	0.000682	0.000841	0.00331
2033 Jun	104	0.229	0.204	0.00403	20.1	0.0642	28.9	0.00000978	0.0214	0.0292	0.00887	0.0215	0.00237	19.2	0.00000868	0.000218	0.000335	0.00121	0.053	0.00000968	2.99	0.00414	5.05	0.108	0.0024	1.59	0.015	0.00563	0.000109	0.000585	0.00033	0.0902	0.00000908	0.000688	0.000844	0.00332
2033 Jul	103	0.232	0.21	0.00425	20.1	0.064	28.2	0.00000965	0.0212	0.0285	0.0088	0.0214	0.00405	19	0.00000857	0.000215	0.000332	0.0012	0.053	0.00000968	2.96	0.00434	4.97	0.106	0.00235	1.61	0.0147	0.00562	0.000107	0.000574	0.000321	0.0928	0.00000903	0.000675	0.000832	0.00329
2033 Aug	102	0.228	0.206	0.00414	19.9	0.0638	27.7	0.00000955	0.021	0.0279	0.00873	0.0213	0.0039	18.8	0.00000844	0.000213	0.000329	0.00118	0.0531	0.00000956	2.94	0.00427	4.91	0.105	0.00231	1.6	0.0144	0.00563	0.000106	0.000565	0.000314	0.0921	0.00000898	0.000664	0.000823	0.00327
2033 Sep	102	0.225	0.202	0.00406	19.8	0.0637	27.4	0.00000949	0.0209	0.0277	0.00869	0.0213	0.0038	18.6	0.00000837	0.000211	0.000328	0.00118	0.0531	0.00000951	2.93	0.00423	4.88	0.104	0.0023	1.6	0.0143	0.00562	0.000105	0.00056	0.000311	0.0917	0.00000895	0.00066	0.000818	0.00326
2033 Oct	101	0.225	0.2	0.00402	19.7	0.0636	27.2	0.00000946	0.0209	0.0274	0.00866	0.0212	0.00375	18.5	0.00000834	0.000211	0.000326	0.00117	0.0529	0.0000095	2.92	0.0042	4.85	0.103	0.00228	1.59	0.0142	0.00561	0.000105	0.000558	0.000309	0.0913	0.00000893	0.000658	0.000815	0.00325
2033 Nov	101	0.225	0.199	0.00401	19.7	0.0636	27.2	0.00000946	0.0209	0.0273	0.00866	0.0212	0.00373	18.5	0.00000835	0.000211	0.000326	0.00117	0.0528	0.00000952	2.92	0.0042	4.84	0.104	0.00227	1.59	0.0141	0.0056	0.000105	0.000558	0.00031	0.0912	0.00000893	0.00066	0.000816	0.00325
2033 Dec	101	0.225	0.199	0.00399	19.7	0.0635	27.2	0.00000945	0.0209	0.0272	0.00866	0.0212	0.00371	18.5	0.00000836	0.000211	0.000327	0.00117	0.0527	0.00000953	2.92	0.00419	4.83	0.104	0.00227	1.59	0.0141	0.00559	0.000105	0.000557	0.00031	0.0911	0.00000893	0.000661	0.000815	0.00325
2034 Jan	101	0.225	0.198	0.00398	19.7	0.0634	27.2	0.00000945	0.0209	0.0271	0.00866	0.0211	0.00369	18.5	0.00000837	0.00021	0.000327	0.00117	0.0527	0.00000954	2.92	0.00419	4.82	0.104	0.00226	1.58	0.0141	0.00558	0.000106	0.000556	0.000311	0.091	0.00000892	0.000662	0.000815	0.00325
2034 Feb	101	0.224	0.197	0.00396	19.7	0.0633	27.2	0.00000945	0.0209	0.027	0.00866	0.0211	0.00368	18.5	0.00000838	0.00021	0.000327	0.00117	0.0526	0.00000954	2.92	0.00419	4.82	0.104	0.00225	1.58	0.014	0.00557	0.000106	0.000555	0.000311	0.091	0.00000891	0.000662	0.000814	0.00324
2034 Mar	101	0.224	0.197	0.00395	19.7	0.0632	27.2	0.00000944	0.0209	0.0269	0.00866	0.0211	0.00366	18.5	0.00000839	0.00021	0.000327	0.00117	0.0526	0.00000953	2.91	0.00418	4.81	0.104	0.00224	1.58	0.014	0.00556	0.000106	0.000553	0.000312	0.091	0.00000889	0.000662	0.000813	0.00324
2034 Apr	101	0.223	0.196	0.00394	19.7	0.0631	27.2	0.00000943	0.0208	0.0268	0.00865	0.0211	0.00365	18.5	0.0000084	0.000209	0.000327	0.00117	0.0525	0.00000952	2.91	0.00418	4.8	0.104	0.00224	1.58	0.014	0.00555	0.000106	0.000552	0.000312	0.0909	0.00000887	0.000662	0.000812	0.00323
2034 May	101	0.222	0.195	0.00392	19.7	0.063	27.2	0.00000943	0.0208	0.0267	0.00865	0.0211	0.00363	18.5	0.00000841	0.000209	0.000328	0.00117	0.0525	0.00000952	2.91	0.00418	4.79	0.104	0.00223	1.58	0.0139	0.00554	0.000106	0.00055	0.000313	0.0909	0.00000886	0.000662	0.000811	0.00323
2034 Jun	101	0.228	0.204	0.00421	19.8	0.063	27	0.00000939	0.0208	0.0265	0.00865	0.021	0.00451	18.5	0.00000843	0.000208	0.000327	0.00116	0.0523	0.00000951	2.9	0.00442	4.77	0.103	0.00221	1.61	0.0138	0.00553	0.000106	0.000547	0.000312	0.0922	0.00000885	0.000661	0.000808	0.00322
2034 Jul	100	0.231	0.209	0.00436	19.8	0.0628	26.5	0.00000929	0.0206	0.0259	0.00859	0.0209	0.00505	18.3	0.00000833	0.000205	0.000324	0.00115	0.0522	0.00000938	2.88	0.00455	4.71	0.102	0.00218	1.62	0.0136	0.00552	0.000105	0.000538	0.000305	0.0927	0.0000088	0.000649	0.000798	0.0032
2034 Aug	99.5	0.227	0.205	0.00425	19.7	0.0625	26	0.0000092	0.0204	0.0255	0.00853	0.0208	0.00489	18.1	0.00000821	0.000202	0.000322	0.00114	0.0522	0.00000927	2.86	0.00449	4.65	0.1	0.00214	1.61	0.0133	0.00552	0.000104	0.000529	0.000299	0.092	0.00000874	0.000639	0.000789	0.00317
2034 Sep	98.9	0.224	0																																	



Appendix C4: IVR Pit

Constituents	Total Dissolved Solids	Ammonia	Nitrate	Nitrite	Chloride	Fluoride	Sulphate	Silver	Aluminum	Arsenic	Boron	Barium	Beryllium	Calcium	Cadmium	Cobalt	Chromium	Copper	Iron	Mercury	Potassium	Lithium	Magnesium	Manganese	Molybdenum	Sodium	Nickel	Phosphorus	Lead	Antimony	Selenium	Strontium	Thallium	Uranium	Vanadium	Zinc	Radium 226
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Operation (2023 to 2025): Min	588	6.59	16.5	1.2	184	0.157	114	0.0000156	0.0193	1.77	0.0104	0.115	0.00000528	167	0.00000953	0.000464	0.000135	0.00186	0.00621	0.00000587	12.3	0.00334	29.6	0.0408	0.000853	1.59	0.113	0.0153	0.000473	0.00317	0.00164	0.0856	0.0000266	0.00175	0.00521	0.02	0
Operation (2023 to 2025): Average	962	12.9	26.2	1.49	364	0.254	213	0.0000187	0.0237	3.83	0.0319	0.152	0.014	258	0.0000315	0.000487	0.000311	0.00543	0.0122	0.00000749	14.1	0.126	39.4	0.21	0.0143	31.4	0.197	0.0224	0.000151	0.0036	0.00266	1.53	0.0000321	0.00186	0.00557	0.0298	0.0634
Operation (2023 to 2025): Max	3480	74.7	117	3.76	1970	0.766	258	0.0000444	0.052	4.47	0.251	0.219	4.47	800	0.000239	0.000552	0.002	0.00686	0.0634	0.0000217	26.4	1.32	49.5	0.579	0.0166	339	0.233	0.0269	0.000291	0.00414	0.00318	16.4	0.0000738	0.00214	0.00638	0.0355	0.0999
Active Closure (2026 to May 2038): Min	90.2	0.121	0.217	0.00539	20.8	0.0658	12.4	0.00000743	0.0112	0.0282	0.00864	0.0246	0.000415	15.6	0.00000465	0.000191	0.000267	0.00084	0.0433	0.00000442	2.71	0.00336	2.97	0.0589	0.000142	1.94	0.00512	0.0082	0.0000558	0.000364	0.000105	0.109	0.00000874	0.000306	0.00094	0.00246	0.0000248
Active Closure (2026 to May 2038): Average	218	2.88	4.51	0.143	93.8	0.093	17.1	0.00000896	0.0148	0.109	0.0178	0.0323	0.163	45.5	0.0000133	0.000209	0.000419	0.000971	0.0876	0.00000579	3.66	0.0516	4.09	0.0866	0.000176	14.5	0.00974	0.00861	0.0000699	0.000489	0.000171	0.719	0.0000114	0.000401	0.0114	0.00362	0.00374
Active Closure (2026 to May 2038): Max	4000	86.4	134	4.3	2280	0.878	119	0.0000503	0.0586	1.84	0.291	0.244	5.11	916	0.000272	0.00053	0.00228	0.00437	0.0989	0.0000246	29.9	1.51	32.1	0.653	0.00907	394	0.119	0.0167	0.000331	0.00346	0.00175	19.1	0.0000832	0.00192	0.0057	0.0326	0.116
Model Predictions (2023-May 2038)																																					
2023 Jan	589	6.77	16.9	1.24	184	0.157	163	0.0000158	0.0205	4.04	0.0105	0.115	0.00000585	167	0.0000105	0.000475	0.00014	0.00186	0.00693	0.00000595	12.6	0.00341	33	0.0408	0.0142	1.61	0.176	0.0269	0.000188	0.00355	0.00217	0.0873	0.0000272	0.00182	0.00546	0.02	0
2023 Feb	588	6.76	16.9	1.24	184	0.157	163	0.0000158	0.0205	4.04	0.0105	0.115	0.00000586	167	0.0000105	0.000475	0.00014	0.00186	0.00693	0.00000595	12.6	0.00341	33	0.0408	0.0142	1.61	0.175	0.0268	0.000188	0.00355	0.00216	0.0872	0.0000272	0.00181	0.00545	0.02	0
2023 Mar	588	6.76	16.9	1.23	184	0.157	163	0.0000158	0.0205	4.04	0.0105	0.115	0.00000586	167	0.0000105	0.000475	0.00014	0.00186	0.00692	0.00000594	12.6	0.00341	33	0.0408	0.0142	1.61	0.175	0.0268	0.000188	0.00354	0.00216	0.0872	0.0000271	0.00181	0.00545	0.02	0
2023 Apr	599	6.74	16.9	1.23	185	0.162	169	0.0000158	0.0203	4.01	0.0105	0.118	0.00000587	171	0.0000104	0.000474	0.000139	0.00227	0.00685	0.00000594	12.5	0.0034	33.6	0.0555	0.0142	1.61	0.178	0.0266	0.000173	0.00354	0.00222	0.0868	0.0000271	0.00181	0.00544	0.021	0
2023 May	616	6.7	16.8	1.22	187	0.169	178	0.0000157	0.0201	3.96	0.0105	0.122	0.0000059	175	0.0000102	0.000471	0.000137	0.00293	0.00672	0.00000592	12.5	0.00338	34.6	0.079	0.0142	1.61	0.181	0.0261	0.000149	0.00351	0.0023	0.0861	0.0000269	0.0018	0.0054	0.0226	0
2023 Jun	711	6.73	16.8	1.23	204	0.206	223	0.0000158	0.0195	3.88	0.0105	0.145	0.00000598	203	0.00000963	0.000473	0.000135	0.00588	0.00623	0.00000594	12.5	0.00339	40.1	0.184	0.0144	1.65	0.202	0.0219	0.000476	0.00352	0.00274	0.0875	0.0000271	0.00181	0.00543	0.0301	0
2023 Jul	802	7.61	19	1.39	229	0.228	253	0.0000172	0.0222	4.39	0.0113	0.163	0.00000537	229	0.0000105	0.000528	0.000144	0.00668	0.00716	0.00000639	14	0.00377	45.2	0.21	0.0163	1.72	0.229	0.0243	0.0000483	0.00398	0.00311	0.0952	0.0000299	0.00204	0.0061	0.034	0
2023 Aug	809	7.68	19.2	1.4	232	0.23	255	0.0000173	0.0224	4.43	0.0113	0.164	0.00000533	232	0.0000106	0.000533	0.000142	0.00675	0.00724	0.00000642	14.1	0.0038	45.6	0.212	0.0162	1.72	0.231	0.0245	0.0000485	0.00401	0.00314	0.0958	0.0000302	0.00206	0.00616	0.0343	0
2023 Sep	768	7.28	18.2	1.33	220	0.22	242	0.0000167	0.0214	4.2	0.011	0.156	0.00000561	220	0.0000102	0.000508	0.000136	0.00641	0.00744	0.00000623	13.4	0.00363	43.3	0.201	0.0156	1.67	0.219	0.0233	0.0000474	0.00381	0.00298	0.0918	0.0000289	0.00195	0.00585	0.0326	0
2023 Oct	731	6.91	17.3	1.26	209	0.211	230	0.0000161	0.0207	3.98	0.0107	0.149	0.00000584	209	0.0000104	0.000485	0.000139	0.00611	0.00719	0.00000604	12.8	0.00347	41.2	0.191	0.0148	1.63	0.208	0.0222	0.000142	0.00362	0.00283	0.0886	0.0000277	0.00185	0.00557	0.0312	0
2023 Nov	704	6.65	16.6	1.22	201	0.204	221	0.0000157	0.0203	3.83	0.0105	0.143	0.00000596	201	0.0000104	0.000468	0.00014	0.0059	0.00703	0.0000059	12.4	0.00336	39.7	0.184	0.0142	1.6	0.2	0.0214	0.000202	0.00349	0.00272	0.0862	0.0000268	0.00178	0.00537	0.0301	0
2023 Dec	701	6.62	16.6	1.21	200	0.204	220	0.0000156	0.0202	3.82	0.0104	0.143	0.00000598	200	0.0000104	0.000466	0.00014	0.00588	0.00702	0.00000588	12.3	0.00335	39.5	0.183	0.0142	1.6	0.199	0.0213	0.000201	0.00347	0.00271	0.0859	0.0000267	0.00178	0.00534	0.03	0
2024 Jan	700	6.61	16.5	1.21	200	0.203	220	0.0000156	0.0202	3.81	0.0104	0.142	0.00000599	200	0.0000104	0.000465	0.00014	0.00587	0.00701	0.00000588	12.3	0.00334	39.4	0.183	0.0141	1.59	0.199	0.0212	0.0002	0.00347	0.0027	0.0857	0.0000267	0.00177	0.00533	0.0299	0
2024 Feb	699	6.6	16.5	1.21	200	0.203	220	0.0000156	0.0201	3.8	0.0104	0.142	0.00000599	200	0.0000104	0.000465	0.000139	0.00586	0.00701	0.00000587	12.3	0.00334	39.4	0.182	0.0141	1.59	0.199	0.0212	0.0002	0.00346	0.0027	0.0856	0.0000266	0.00177	0.00533	0.0299	0
2024 Mar	698	6.59	16.5	1.2	200	0.203	219	0.0000156	0.0201	3.8	0.0104	0.142	0.000006	199	0.0000104	0.000464	0.000139	0.00586	0.00701	0.00000587	12.3	0.00334	39.3	0.182	0.0141	1.59	0.198	0.0212	0.0002	0.00346	0.0027	0.0856	0.0000266	0.00177	0.00532	0.0299	0
2024 Apr	700	6.61	16.5	1.21	200	0.203	220	0.0000156	0.0202	3.81	0.0104	0.142	0.00000599	200	0.0000104	0.000465	0.000139	0.00587	0.007	0.00000588	12.3	0.00334	39.4	0.183	0.0141	1.59	0.199	0.0213	0.000198	0.00347	0.0027	0.0857	0.0000267	0.00177	0.00533	0.0299	0
2024 May	701	6.62	16.6	1.21	200	0.204	220	0.0000156	0.0201	3.82	0.0104	0.143	0.00000598	200	0.0000103	0.000466	0.000139	0.00588	0.00695	0.00000588	12.3	0.00335	39.5	0.183	0.0142	1.6	0.199	0.0213	0.000189	0.00347	0.00271	0.0858	0.0000267	0.00178	0.00534	0.03	0
2024 Jun	704	6.64	16.6	1.21	201	0.204	221	0.0000156	0.0193	3.82	0.0105	0.143	0.00000596	201	0.00000953	0.000467	0.000135	0.00586	0.00691	0.00000589	12.4	0.00335	39.6	0.183	0.0142	1.64	0.2	0.0215	0.0000477	0.00347	0.00271	0.0865	0.0000267	0.00178	0.00535	0.0298	0
2024 Jul	817	7.76	19.4	1.42	234	0.232	258	0.0000174	0.0225	4.47	0.0114	0.166	0.00000538	234	0.0000107	0.000537	0.000145	0.00681	0.00621	0.00000646	14.3	0.00384	46	0.214	0.0162	1.74	0.233	0.0248	0.0000487	0.00405	0.00317	0.0968	0.0000304	0.00208	0.00622	0.0346	0
2024 Aug	813	7.72	19.3	1.41	233	0.231	256	0.0000174	0.0225	4.45	0.0113	0.165	0.00000533	233	0.0000107	0.000535	0.000142	0.00678	0.00721	0.00000644	14.2	0.00382	45.8	0.213	0.0165	1.73	0.232	0.0246	0.0000486	0.00403	0.00315	0.0962	0.0000303	0.00207	0.00619	0.0345	0
2024 Sep	765	7.25	18.1	1.32	219	0.219	241	0.0000167	0.0213	4.18	0.011	0.155	0.00000565	219	0.0000102	0.000506	0.000136	0.00638	0.00748	0.00000622	13.4	0.00362	43.1	0.2	0.0155	1.66	0.218	0.0232	0.0000478	0.00379	0.00296	0.0915	0.0000288	0.00194	0.00583	0.0325	0
2024 Oct	731	6.92	17.3	1.26	209	0.211	230	0.0000161	0.0207	3.99	0.0107	0.149	0.00000585	209	0.0000104	0.000485	0.000139	0.00612	0.00722	0.00000604	12.8	0.00348	41.2	0.191</													



Appendix C4: IVR Pit

Constituents	Total Dissolved Solids	Ammonia	Nitrate	Nitrite	Chloride	Fluoride	Sulphate	Silver	Aluminum	Arsenic	Boron	Barium	Beryllium	Calcium	Cadmium	Cobalt	Chromium	Copper	Iron	Mercury	Potassium	Lithium	Magnesium	Manganese	Molybdenum	Sodium	Nickel	Phosphorus	Lead	Antimony	Selenium	Strontium	Thallium	Uranium	Vanadium	Zinc	Radium 226
2031 Apr	90.8	0.125	0.224	0.00555	21	0.066	12.7	0.00000746	0.0134	0.0385	0.00866	0.0247	0.000428	15.9	0.00000468	0.000192	0.000356	0.00085	0.0876	0.00000511	2.73	0.00339	3.01	0.0667	0.00144	1.95	0.00536	0.00821	0.0000602	0.000369	0.000109	0.111	0.00000879	0.00034	0.000946	0.00257	0.0000256
2031 May	90.8	0.125	0.224	0.00555	21	0.0661	12.7	0.00000746	0.0134	0.0386	0.00866	0.0247	0.000428	15.9	0.00000468	0.000192	0.000356	0.000851	0.0876	0.00000511	2.73	0.00339	3.01	0.0667	0.00144	1.95	0.00537	0.00822	0.0000602	0.000369	0.000109	0.111	0.0000088	0.000341	0.000947	0.00257	0.0000256
2031 Jun	90.8	0.124	0.224	0.00553	21	0.066	12.7	0.00000746	0.0134	0.0395	0.00865	0.0247	0.000427	15.9	0.00000468	0.000192	0.000355	0.00085	0.0874	0.00000512	2.73	0.00339	3.02	0.0666	0.00144	1.95	0.00541	0.00821	0.0000602	0.00037	0.000109	0.111	0.0000088	0.000342	0.000949	0.00257	0.0000256
2031 Jul	91	0.124	0.224	0.00553	21.1	0.0661	12.8	0.00000747	0.0134	0.0406	0.00866	0.0247	0.000426	16	0.00000469	0.000192	0.000355	0.000851	0.0874	0.00000513	2.74	0.00339	3.03	0.0666	0.00144	1.95	0.00546	0.00821	0.0000602	0.000371	0.00011	0.111	0.00000881	0.000342	0.000949	0.00258	0.0000256
2031 Aug	91.2	0.124	0.224	0.00554	21.1	0.0662	12.8	0.00000748	0.0135	0.0414	0.00867	0.0248	0.000427	16	0.0000047	0.000193	0.000355	0.000853	0.0875	0.00000515	2.74	0.00339	3.04	0.0667	0.00145	1.95	0.0055	0.00822	0.0000603	0.000373	0.000111	0.111	0.00000883	0.000343	0.000951	0.00259	0.0000256
2031 Sep	91.3	0.124	0.224	0.00553	21.2	0.0663	12.9	0.00000749	0.0135	0.0423	0.00867	0.0248	0.000426	16	0.0000047	0.000193	0.000355	0.000853	0.0874	0.00000515	2.75	0.00339	3.04	0.0665	0.00145	1.95	0.00555	0.00822	0.0000603	0.000373	0.000111	0.111	0.00000884	0.000344	0.000952	0.0026	0.0000255
2031 Oct	91.3	0.124	0.223	0.00553	21.2	0.0663	12.9	0.00000749	0.0135	0.0426	0.00867	0.0248	0.000426	16.1	0.0000047	0.000193	0.000355	0.000853	0.0873	0.00000516	2.75	0.00339	3.04	0.0665	0.00145	1.95	0.00556	0.00822	0.0000604	0.000374	0.000112	0.111	0.00000884	0.000344	0.000953	0.0026	0.0000255
2031 Nov	91.3	0.124	0.223	0.00552	21.2	0.0662	12.9	0.00000749	0.0135	0.0427	0.00867	0.0248	0.000426	16.1	0.0000047	0.000193	0.000355	0.000853	0.0873	0.00000516	2.75	0.00339	3.04	0.0665	0.00145	1.95	0.00556	0.00822	0.0000605	0.000374	0.000112	0.11	0.00000884	0.000344	0.000953	0.0026	0.0000255
2031 Dec	91.3	0.124	0.223	0.00552	21.2	0.0662	12.9	0.00000749	0.0135	0.0427	0.00867	0.0248	0.000426	16.1	0.0000047	0.000193	0.000355	0.000853	0.0873	0.00000516	2.75	0.00339	3.04	0.0665	0.00145	1.95	0.00556	0.00822	0.0000605	0.000374	0.000112	0.11	0.00000884	0.000344	0.000953	0.0026	0.0000255
2032 Jan	91.3	0.124	0.223	0.00552	21.2	0.0662	12.9	0.00000749	0.0135	0.0427	0.00867	0.0248	0.000426	16.1	0.0000047	0.000193	0.000355	0.000853	0.0873	0.00000516	2.75	0.00339	3.04	0.0665	0.00145	1.95	0.00556	0.00822	0.0000605	0.000374	0.000112	0.11	0.00000884	0.000344	0.000953	0.0026	0.0000255
2032 Feb	91.3	0.124	0.223	0.00552	21.2	0.0662	12.9	0.00000749	0.0135	0.0427	0.00867	0.0248	0.000426	16.1	0.0000047	0.000193	0.000355	0.000853	0.0873	0.00000516	2.75	0.00339	3.04	0.0665	0.00145	1.95	0.00556	0.00822	0.0000605	0.000374	0.000112	0.11	0.00000884	0.000344	0.000953	0.0026	0.0000255
2032 Mar	91.3	0.124	0.223	0.00552	21.2	0.0662	12.9	0.00000749	0.0135	0.0428	0.00867	0.0248	0.000426	16.1	0.0000047	0.000193	0.000355	0.000853	0.0873	0.00000516	2.75	0.00339	3.04	0.0665	0.00145	1.95	0.00556	0.00822	0.0000605	0.000374	0.000112	0.11	0.00000884	0.000344	0.000953	0.0026	0.0000255
2032 Apr	91.3	0.124	0.223	0.00553	21.2	0.0663	12.9	0.00000749	0.0135	0.0428	0.00867	0.0248	0.000426	16.1	0.0000047	0.000193	0.000355	0.000853	0.0873	0.00000516	2.75	0.00339	3.04	0.0665	0.00145	1.95	0.00556	0.00822	0.0000606	0.000374	0.000112	0.111	0.00000884	0.000344	0.000953	0.0026	0.0000255
2032 May	91.4	0.124	0.223	0.00553	21.2	0.0663	12.9	0.00000749	0.0135	0.0428	0.00867	0.0248	0.000426	16.1	0.00000471	0.000193	0.000355	0.000854	0.0874	0.00000516	2.75	0.00339	3.05	0.0665	0.00145	1.95	0.00557	0.00822	0.0000606	0.000374	0.000112	0.111	0.00000884	0.000345	0.000953	0.0026	0.0000255
2032 Jun	91.4	0.124	0.223	0.00551	21.2	0.0663	12.9	0.00000749	0.0135	0.0438	0.00867	0.0248	0.000425	16.1	0.00000471	0.000193	0.000354	0.000853	0.0871	0.00000517	2.75	0.00338	3.05	0.0664	0.00145	1.95	0.00561	0.00821	0.0000605	0.000375	0.000112	0.11	0.00000885	0.000345	0.000953	0.00261	0.0000254
2032 Jul	91.6	0.124	0.223	0.00551	21.2	0.0664	13	0.0000075	0.0135	0.0448	0.00868	0.0248	0.000425	16.2	0.00000472	0.000193	0.000354	0.000854	0.0871	0.00000518	2.75	0.00338	3.06	0.0664	0.00145	1.95	0.00566	0.00822	0.0000606	0.000376	0.000113	0.11	0.00000886	0.000346	0.000956	0.00262	0.0000254
2032 Aug	91.8	0.124	0.223	0.00551	21.3	0.0665	13	0.00000751	0.0136	0.0457	0.00869	0.0249	0.000425	16.2	0.00000472	0.000193	0.000354	0.000856	0.0872	0.00000519	2.76	0.00339	3.07	0.0664	0.00146	1.95	0.0057	0.00822	0.0000606	0.000377	0.000114	0.11	0.00000888	0.000347	0.000958	0.00262	0.0000254
2032 Sep	91.8	0.124	0.223	0.00551	21.3	0.0665	13.1	0.00000752	0.0136	0.0466	0.00868	0.0249	0.000424	16.3	0.00000473	0.000193	0.000354	0.000856	0.0871	0.0000052	2.76	0.00338	3.08	0.0663	0.00146	1.95	0.00575	0.00822	0.0000606	0.000378	0.000114	0.11	0.00000889	0.000348	0.000959	0.00263	0.0000254
2032 Oct	91.9	0.124	0.222	0.0055	21.3	0.0665	13.1	0.00000752	0.0136	0.0469	0.00868	0.0249	0.000424	16.3	0.00000473	0.000193	0.000354	0.000856	0.087	0.0000052	2.76	0.00338	3.08	0.0663	0.00146	1.95	0.00576	0.00822	0.0000608	0.000378	0.000114	0.11	0.00000889	0.000348	0.000959	0.00263	0.0000254
2032 Nov	91.9	0.124	0.222	0.0055	21.3	0.0665	13.1	0.00000752	0.0136	0.047	0.00868	0.0249	0.000424	16.3	0.00000473	0.000193	0.000354	0.000856	0.087	0.0000052	2.76	0.00338	3.08	0.0663	0.00146	1.95	0.00576	0.00822	0.0000609	0.000378	0.000114	0.11	0.00000889	0.000349	0.000959	0.00263	0.0000254
2032 Dec	91.9	0.124	0.222	0.0055	21.3	0.0665	13.1	0.00000752	0.0136	0.047	0.00868	0.0249	0.000424	16.3	0.00000473	0.000193	0.000354	0.000856	0.087	0.0000052	2.76	0.00338	3.08	0.0663	0.00146	1.95	0.00576	0.00822	0.0000609	0.000378	0.000114	0.11	0.00000889	0.000349	0.000959	0.00263	0.0000254
2033 Jan	91.9	0.124	0.222	0.0055	21.3	0.0665	13.1	0.00000752	0.0136	0.047	0.00868	0.0249	0.000424	16.3	0.00000473	0.000193	0.000354	0.000856	0.087	0.0000052	2.76	0.00338	3.08	0.0663	0.00146	1.95	0.00576	0.00822	0.0000609	0.000378	0.000114	0.11	0.00000889	0.000349	0.000959	0.00263	0.0000254
2033 Feb	91.9	0.124	0.222	0.0055	21.3	0.0665	13.1	0.00000752	0.0136	0.047	0.00868	0.0249	0.000424	16.3	0.00000473	0.000193	0.000354	0.000856	0.087	0.0000052	2.76	0.00338	3.08	0.0663	0.00146	1.95	0.00576	0.00822	0.0000609	0.000378	0.000114	0.11	0.00000889	0.000349	0.000959	0.00263	0.0000254
2033 Mar	91.9	0.124	0.222	0.0055	21.3	0.0665	13.1	0.00000752	0.0136	0.047	0.00868	0.0249	0.000424	16.3	0.00000473	0.000193	0.000354	0.000856	0.087	0.0000052	2.76	0.00338	3.08	0.0663	0.00146	1.95	0.00576	0.00822	0.0000609	0.000378	0.000114	0.11	0.00000889	0.000349	0.000959	0.00263	0.0000254
2033 Apr	91.9	0.124	0.222	0.0055	21.3	0.0665	13.1	0.00000752	0.0136	0.047	0.00868	0.0249	0.000424	16.3	0.00000473	0.000194	0.000354	0.000856	0.087	0.0000052	2.76	0.00338	3.08	0.0663	0.00146	1.95	0.00576	0.00822	0.0000609	0.000379	0.000114	0.11	0.00000889	0.000349	0.000959	0.00263	0.0000254
2033 May	91.9	0.124	0.222	0.00551	21.3	0.0665	13.1	0.00000752	0.0136	0.0471	0.00869	0.0249	0.000424	16.3	0.00000473	0.000194	0.000354	0.000857	0.0871	0.00000521	2.76	0.00339	3.08	0.0663	0.00146	1.95	0.00577	0.00822	0.0000609	0.000379	0.000115	0.11	0.00000889	0.000349	0.00096	0.00263	0.0000254
2033 Jun	91.9	0.123	0.222	0.00549	21.3	0.0665	13.2	0.00000752	0.0136	0.0481	0.00868	0.0249	0.000423	16.3	0.00000473	0.000194	0.000353	0.000856	0.0868	0.00000521	2.76	0.00338	3.09	0.0662	0.00146	1.95	0.00581	0.00821	0.0000609	0.000379	0.000115						



Appendix CS: Whale Tail Attenuation Pond

Constituents	Total Dissolved Solids	Ammonia	Nitrate	Nitrite	Chloride	Fluoride	Sulphate	Silver	Aluminum	Arsenic	Boron	Barium	Beryllium	Calcium	Cadmium	Cobalt	Chromium	Copper	Iron	Mercury	Potassium	Lithium	Magnesium	Manganese	Molybdenum	Sodium	Nickel	Phosphorus	Lead	Antimony	Selenium	Strontium	Thallium	Uranium	Vanadium	Zinc
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Operation (2023 to 2025): Min	60.5	0.6666	0.395	0.0101	13.9	0.101	13.6	0.0000166	0.00838	0.00654	0.034	0.0279	0.0000704	19.3	0.00000906	0.000103	0.000402	0.00104	0.0158	0.00000918	3.94	0.00223	3.44	0.107	0.00155	2.62	0.00104	0.00523	0.000148	0.000505	0.000106	0.176	0.0000966	0.000704	0.00357	0.00462
Operation (2023 to 2025): Average	65.2	0.377	0.6	0.0121	15.3	0.109	16.5	0.0000217	0.0183	0.0105	0.0451	0.0302	0.0000906	20.4	0.0000101	0.000236	0.000473	0.00129	0.0246	0.0000118	4.45	0.0025	3.62	0.197	0.00197	2.95	0.00315	0.00557	0.000187	0.000652	0.000137	0.231	0.0000124	0.00084	0.00458	0.00512
Operation (2023 to 2025): Max	89.8	1.13	0.959	0.0152	24.2	0.136	25.9	0.0000287	0.0323	0.0194	0.0503	0.0488	0.000101	25.2	0.0000109	0.000467	0.000581	0.00152	0.159	0.0000157	5.38	0.00365	4.84	0.419	0.00525	4.62	0.00807	0.00732	0.000201	0.001	0.000201	0.259	0.0000179	0.000998	0.00503	0.00567
Active Closure (2026 to May 2038): Min	73	0.0509	0.025	0.000488	16.7	0.0298	19.4	0.00000766	0.00918	0.000623	0.00762	0.0139	0.000108	15.5	0.00000948	0.0000608	0.000307	0.000702	0.0304	0.00000665	1.85	0.00299	2.77	0.0773	0.000454	1.11	0.00291	0.00305	0.000125	0.000126	0.000157	0.0644	0.00000383	0.000533	0.000446	0.00158
Active Closure (2026 to May 2038): Average	95.4	0.278	0.139	0.00263	20.3	0.0553	26	0.0000102	0.0228	0.00243	0.0097	0.0194	0.000185	17.6	0.000011	0.000211	0.000384	0.000982	0.0433	0.0000118	2.85	0.00356	3.08	0.148	0.000873	1.37	0.00766	0.000154	0.000439	0.000442	0.0865	0.0000084	0.000865	0.000886	0.0028	
Active Closure (2026 to May 2038): Max	123	0.708	1.04	0.0133	25.5	0.0988	34	0.0000305	0.0557	0.0255	0.0371	0.0304	0.000237	22.9	0.0000152	0.000688	0.0005	0.00173	0.0773	0.0000248	5.45	0.00459	3.93	0.295	0.00232	2.98	0.019	0.0077	0.000177	0.00144	0.000591	0.218	0.0000234	0.0016	0.00395	0.00542
Model Predictions (2023-May 2038)																																				
2023 Jan	89.8	0.273	0.419	0.0131	24.2	0.136	25.9	0.0000166	0.00838	0.0151	0.034	0.0488	0.0000912	25.2	0.00000934	0.000426	0.000581	0.00104	0.159	0.00000918	3.94	0.00365	4.84	0.163	0.00525	4.62	0.00283	0.00732	0.000183	0.000534	0.000116	0.237	0.00000966	0.000704	0.00501	0.00462
2023 Feb	74.7	0.157	0.404	0.0114	19.2	0.117	20.5	0.0000185	0.00956	0.0104	0.0428	0.0373	0.0000962	22.2	0.00000972	0.000247	0.000538	0.00114	0.0804	0.00000965	4	0.00297	4.07	0.131	0.00336	3.72	0.00183	0.00622	0.000192	0.000516	0.00011	0.249	0.00000986	0.000742	0.00501	0.00483
2023 Mar	67.8	0.105	0.397	0.0107	16.9	0.108	18.1	0.0000193	0.0101	0.00826	0.0468	0.0321	0.0000984	20.9	0.00000988	0.000167	0.000518	0.00119	0.0452	0.00000985	4.02	0.00266	3.72	0.117	0.00251	3.32	0.00138	0.00573	0.000197	0.000508	0.000107	0.254	0.00000995	0.000758	0.00501	0.00493
2023 Apr	64.7	0.0941	0.397	0.0104	15.9	0.104	16.9	0.0000197	0.0105	0.00728	0.0486	0.0288	0.0000992	20.3	0.00000996	0.000132	0.000508	0.00121	0.0288	0.00000998	4.04	0.00252	3.57	0.114	0.00211	3.13	0.00118	0.00553	0.000199	0.000505	0.000107	0.256	0.00001	0.000767	0.005	0.00498
2023 May	63.6	0.0962	0.401	0.0103	15.5	0.103	16.5	0.00002	0.0107	0.00691	0.0495	0.0289	0.0000998	20.1	0.00001	0.000119	0.000505	0.00123	0.0217	0.0000101	4.07	0.00246	3.52	0.115	0.00195	3.06	0.00112	0.00547	0.00002	0.000507	0.000107	0.257	0.0000101	0.000774	0.00501	0.00502
2023 Jun	63.9	1.13	0.762	0.0138	14	0.119	13.8	0.0000196	0.0247	0.011	0.0361	0.0318	0.0000704	20.9	0.00000906	0.000369	0.000402	0.00122	0.0208	0.0000124	4.75	0.00225	3.88	0.419	0.00159	2.62	0.00396	0.00568	0.000148	0.000673	0.000163	0.476	0.0000131	0.000828	0.00357	0.00472
2023 Jul	68.8	0.894	0.959	0.0152	15	0.12	17	0.0000276	0.0323	0.0194	0.039	0.0319	0.0000757	21.3	0.0000105	0.000467	0.000418	0.00147	0.0209	0.0000156	5.38	0.00258	3.81	0.351	0.00186	2.75	0.00807	0.00592	0.000061	0.000092	0.000201	0.187	0.0000179	0.000974	0.00385	0.00548
2023 Aug	64.3	0.623	0.944	0.0148	14.9	0.115	16.8	0.0000257	0.0312	0.0158	0.0416	0.0305	0.0000116	20.5	0.0000106	0.000377	0.000434	0.00146	0.0199	0.0000151	5.09	0.00258	3.6	0.265	0.00187	2.76	0.00621	0.00567	0.000172	0.000908	0.000185	0.204	0.0000164	0.00099	0.00417	0.00554
2023 Sep	67.5	0.59	0.936	0.0147	15.1	0.115	17.6	0.000028	0.0313	0.0186	0.0421	0.0305	0.0000823	20.7	0.0000108	0.000408	0.000436	0.0015	0.02	0.0000155	5.22	0.00264	3.6	0.259	0.00193	2.79	0.00753	0.00573	0.000174	0.000982	0.000192	0.205	0.0000175	0.000994	0.00419	0.00563
2023 Oct	67	0.473	0.74	0.0131	15.2	0.111	17.5	0.0000267	0.0242	0.0165	0.0445	0.0303	0.0000874	20.7	0.0000107	0.000338	0.000457	0.00143	0.0188	0.0000139	4.94	0.00258	3.61	0.229	0.00191	2.87	0.00628	0.00569	0.000194	0.000866	0.000168	0.22	0.0000158	0.000911	0.0044	0.00545
2023 Nov	64.5	0.298	0.56	0.0115	15.1	0.106	16.6	0.0000232	0.0172	0.0114	0.047	0.029	0.0000932	20.3	0.0000103	0.000222	0.000477	0.00132	0.0173	0.0000119	4.49	0.00248	3.54	0.176	0.00184	2.92	0.00361	0.0055	0.00002	0.000678	0.000137	0.238	0.0000128	0.000835	0.00467	0.00521
2023 Dec	63.2	0.168	0.466	0.0107	15.1	0.103	16.3	0.0000215	0.0135	0.0087	0.0488	0.0284	0.0000971	20	0.0000102	0.000155	0.000491	0.00127	0.0165	0.0000109	4.24	0.00244	3.48	0.137	0.00182	2.96	0.00218	0.0054	0.00002	0.00058	0.000119	0.249	0.0000113	0.0008	0.00486	0.0051
2024 Jan	62.7	0.108	0.424	0.0103	15.1	0.101	16.2	0.0000207	0.0118	0.00745	0.0495	0.0281	0.0000989	19.9	0.0000101	0.000124	0.000497	0.00125	0.0161	0.0000104	4.13	0.00242	3.46	0.119	0.00181	2.97	0.00151	0.00535	0.000201	0.000536	0.000111	0.255	0.0000106	0.000784	0.00495	0.00505
2024 Feb	62.4	0.0828	0.406	0.0102	15	0.101	16.1	0.0000203	0.0111	0.00692	0.0499	0.0279	0.0000997	19.8	0.0000101	0.000111	0.000499	0.00124	0.0159	0.0000102	4.08	0.00241	3.45	0.111	0.00181	2.98	0.00123	0.00533	0.000201	0.000517	0.000108	0.257	0.0000103	0.000778	0.00499	0.00503
2024 Mar	62.3	0.0711	0.398	0.0101	15	0.101	16.1	0.0000202	0.0108	0.00668	0.05	0.0279	0.0001	19.8	0.00001	0.000105	0.000501	0.00123	0.0159	0.0000101	4.06	0.00241	3.44	0.108	0.00181	2.98	0.00111	0.00533	0.000201	0.000508	0.000107	0.258	0.0000101	0.000775	0.005	0.00502
2024 Apr	62.3	0.0666	0.395	0.0101	15.1	0.101	16.1	0.0000201	0.0107	0.00658	0.0501	0.0279	0.0001	19.8	0.00001	0.000103	0.000502	0.00123	0.0158	0.0000101	4.05	0.00241	3.44	0.107	0.00181	2.99	0.00105	0.00533	0.000201	0.000505	0.000106	0.259	0.0000101	0.000774	0.00501	0.00502
2024 May	62.5	0.0737	0.398	0.0101	15.1	0.101	16.1	0.0000202	0.0108	0.00656	0.0503	0.028	0.000101	19.9	0.0000101	0.000104	0.000503	0.00124	0.0159	0.0000101	4.07	0.00242	3.46	0.109	0.00181	3	0.00104	0.00535	0.000201	0.000506	0.000107	0.259	0.0000101	0.000777	0.00503	0.00504
2024 Jun	63.1	1.04	0.709	0.0133	13.9	0.117	13.6	0.0000188	0.0227	0.00951	0.0376	0.0312	0.0000734	20.7	0.00000906	0.000326	0.000411	0.0012	0.0189	0.0000119	4.62	0.00223	3.83	0.391	0.00155	2.63	0.00317	0.00559	0.000153	0.000623	0.000154	0.185	0.0000123	0.000813	0.00371	0.0047
2024 Jul	65.9	0.799	0.854	0.0143	14.7	0.117	15.8	0.0000236	0.028	0.014	0.0403	0.0311	0.0000787	20.8	0.0000101	0.000368	0.000428	0.00137	0.0195	0.000014	4.97	0.00246	3.73	0.32	0.00176	2.73	0.00534	0.0057	0.000165	0.000815	0.000175	0.197	0.0000151	0.000925	0.004	0.00525
2024 Aug	65.8	0.579	0.913	0.0146	14.9	0.114	16.6	0.000025	0.0299	0.0147	0.0422	0.0303	0.0000831	20.4	0.0000106	0.000352	0.000439	0.00144	0.0195	0.0000147	5	0.00256	3.58	0.252	0.00186	2.76	0.00563	0.00562	0.000174	0.000887	0.000179	0.208	0.0000157	0.000978	0.00423	0.00551
2024 Sep	68	0.576	0.938	0.0147	15.2	0.115	17.9	0.0000287	0.0314	0.0193	0.0434	0.0305	0.0000828	20.7	0.0000109	0.000415	0.000437	0.00152	0.02	0.0000157	5.26	0.00266	3.6	0.256	0.00195	2.8	0.00787	0.00576	0.000175	0.001	0.000194	0.206	0.0000179	0.000998	0.00421	0.00567
2024 Oct	67.3	0.473	0.745	0.0131	15.3	0.111	1																													



Appendix CS: Whale Tail Attenuation Pond

Constituents	Total Dissolved Solids	Ammonia	Nitrate	Nitrite	Chloride	Fluoride	Sulphate	Silver	Aluminum	Arsenic	Boron	Barium	Beryllium	Calcium	Cadmium	Cobalt	Chromium	Copper	Iron	Mercury	Potassium	Lithium	Magnesium	Manganese	Molybdenum	Sodium	Nickel	Phosphorus	Lead	Antimony	Selenium	Strontium	Thallium	Uranium	Vanadium	Zinc
2031 Feb	103	0.104	0.0665	0.00129	21.3	0.0381	27.7	0.00000899	0.0129	0.000849	0.00818	0.0163	0.000206	17.5	0.0000105	0.001002	0.000401	0.000812	0.043	0.00000795	2.2	0.00358	2.98	0.0947	0.000659	1.25	0.00766	0.00379	0.000159	0.000215	0.00044	0.0891	0.00000504	0.000627	0.000585	0.00194
2031 Mar	105	0.081	0.0676	0.00125	21.5	0.0351	28.2	0.00000793	0.0112	0.000825	0.00807	0.0158	0.0000212	17.6	0.0000104	0.0000866	0.000401	0.000731	0.043	0.00000731	2.1	0.0036	2.99	0.0886	0.000634	1.25	0.00793	0.00374	0.000157	0.000182	0.000443	0.0903	0.0000454	0.000587	0.000547	0.00178
2031 Apr	106	0.0673	0.0684	0.00123	21.7	0.0331	28.6	0.00000783	0.0101	0.000813	0.00801	0.0156	0.000216	17.7	0.0000104	0.0000764	0.00041	0.000755	0.0431	0.00000687	2.02	0.00361	3	0.0851	0.000616	1.25	0.00793	0.00374	0.000157	0.00016	0.000445	0.0913	0.0000042	0.00056	0.000521	0.00167
2031 May	108	0.0648	0.0689	0.00123	22	0.0327	29.1	0.00000793	0.0101	0.000824	0.00811	0.0156	0.00022	17.9	0.0000106	0.0000762	0.000416	0.00075	0.0434	0.00000696	2.01	0.00367	3.04	0.0858	0.000615	1.26	0.00808	0.00377	0.000159	0.000161	0.000454	0.0925	0.00000421	0.000569	0.000526	0.00165
2031 Jun	84.4	0.549	0.0419	0.00206	18.2	0.0635	22.9	0.00000888	0.0226	0.000134	0.00878	0.0202	0.000163	17	0.0000103	0.0000239	0.000438	0.000938	0.0345	0.0000082	2.96	0.00313	3.12	0.228	0.000724	1.3	0.00636	0.000132	0.000132	0.000414	0.000413	0.0704	0.00000828	0.000858	0.00079	0.00284
2031 Jul	78.1	0.53	0.0436	0.00202	17.8	0.0727	20.8	0.00000937	0.0284	0.0013	0.00912	0.0215	0.000141	16.4	0.0000102	0.000276	0.000324	0.00108	0.0373	0.0000014	3.34	0.00313	3.03	0.217	0.000835	1.32	0.00578	0.00412	0.000125	0.000522	0.000393	0.0694	0.00000998	0.000982	0.000921	0.00343
2031 Aug	83.5	0.442	0.0482	0.00185	18.8	0.0683	22.5	0.00000944	0.0271	0.00121	0.0092	0.0209	0.000156	16.8	0.0000106	0.000252	0.000345	0.00109	0.0398	0.0000135	3.24	0.00331	3.04	0.192	0.000836	1.32	0.00622	0.00412	0.000133	0.00049	0.000412	0.0745	0.00000949	0.000959	0.000895	0.00332
2031 Sep	84.7	0.432	0.0464	0.00179	18.8	0.0641	23.2	0.0000092	0.0251	0.00118	0.00902	0.02	0.000164	16.9	0.0000106	0.000235	0.000346	0.00104	0.0388	0.0000127	3.09	0.00329	3.02	0.19	0.000796	1.28	0.00639	0.00391	0.000135	0.000448	0.000418	0.0741	0.00000888	0.000912	0.000842	0.00313
2031 Oct	85.8	0.372	0.0476	0.00164	18.9	0.0598	23.4	0.00000894	0.0233	0.0011	0.00877	0.0192	0.000167	16.7	0.0000105	0.000212	0.000349	0.00101	0.0387	0.0000119	2.94	0.00328	2.96	0.171	0.000765	1.25	0.00646	0.0038	0.000157	0.000412	0.000416	0.075	0.00000819	0.000863	0.000795	0.00297
2031 Nov	89.1	0.278	0.0511	0.00144	19.4	0.0544	24.3	0.00000876	0.0213	0.000984	0.0086	0.0183	0.000175	16.7	0.0000106	0.000183	0.00036	0.000973	0.0396	0.0000111	2.76	0.00335	2.93	0.143	0.000739	1.24	0.00669	0.00377	0.000166	0.000371	0.000419	0.0782	0.00000751	0.000815	0.000749	0.00277
2031 Dec	93.9	0.191	0.0547	0.00126	20	0.0474	25.6	0.00000849	0.018	0.000889	0.00839	0.0173	0.000187	16.8	0.0000105	0.000148	0.000373	0.00091	0.0403	0.00000989	2.53	0.00343	2.92	0.118	0.000694	1.23	0.00704	0.00372	0.000162	0.000308	0.000427	0.082	0.00000652	0.000741	0.000678	0.00245
2032 Jan	98	0.135	0.057	0.00115	20.5	0.0413	26.7	0.00000821	0.0149	0.000827	0.00818	0.0164	0.000198	17	0.0000105	0.000117	0.000384	0.000845	0.0405	0.00000871	2.31	0.00347	2.93	0.102	0.000646	1.22	0.00735	0.00365	0.00016	0.000247	0.000433	0.0846	0.00000558	0.000669	0.000608	0.00214
2032 Feb	101	0.0991	0.0585	0.00107	20.9	0.037	27.4	0.00000799	0.0126	0.000789	0.00803	0.0158	0.000206	17.2	0.0000104	0.0000955	0.000392	0.000797	0.0405	0.00000783	2.15	0.0035	2.94	0.0924	0.000609	1.21	0.00757	0.00359	0.000159	0.000201	0.000438	0.0864	0.00000488	0.000614	0.000555	0.00191
2032 Mar	103	0.0761	0.0595	0.00103	21.1	0.034	28	0.00000784	0.0109	0.000765	0.00792	0.0153	0.000211	17.3	0.0000104	0.0000804	0.000398	0.000762	0.0405	0.0000072	2.04	0.00352	2.94	0.0862	0.000583	1.21	0.00772	0.00355	0.000158	0.000169	0.000441	0.0876	0.00000438	0.000575	0.000517	0.00175
2032 Apr	104	0.0624	0.0603	0.001	21.3	0.032	28.3	0.00000774	0.00974	0.000753	0.00786	0.0151	0.000215	17.4	0.0000103	0.0000705	0.000401	0.000738	0.0405	0.00000677	1.97	0.00353	2.95	0.0825	0.000565	1.21	0.00782	0.00354	0.000158	0.000147	0.000443	0.0884	0.00000406	0.000548	0.000491	0.00164
2032 May	106	0.0601	0.061	0.001	21.5	0.0314	28.8	0.00000779	0.00943	0.000761	0.00792	0.0151	0.000219	17.6	0.0000105	0.0000679	0.000407	0.000732	0.0408	0.0000067	1.95	0.00357	2.99	0.083	0.000561	1.22	0.00796	0.00357	0.000158	0.000141	0.000449	0.0896	0.00000397	0.000546	0.000487	0.0016
2032 Jun	83	0.544	0.0365	0.00191	17.9	0.0641	22.7	0.000009	0.0243	0.00132	0.00887	0.0201	0.000162	16.8	0.0000105	0.000247	0.000333	0.000941	0.0333	0.0000127	2.97	0.00312	3.09	0.226	0.000711	1.28	0.0063	0.00373	0.000133	0.000443	0.000419	0.0688	0.00000868	0.000906	0.000819	0.00293
2032 Jul	76.4	0.525	0.0385	0.00188	17.4	0.0731	20.5	0.00000953	0.03	0.00128	0.00918	0.0214	0.000139	16	0.0000104	0.000284	0.000338	0.00108	0.0361	0.0000146	3.37	0.00311	2.98	0.215	0.000819	1.3	0.00567	0.00404	0.000126	0.000548	0.000396	0.0677	0.0000104	0.00102	0.000946	0.0035
2032 Aug	81.4	0.439	0.0425	0.0017	18.3	0.0681	22.1	0.0000095	0.0281	0.00118	0.00917	0.0206	0.000153	16.4	0.0000106	0.000256	0.000337	0.00108	0.0382	0.0000139	3.21	0.00326	2.99	0.191	0.00081	1.29	0.00609	0.004	0.000133	0.000505	0.000411	0.0722	0.00000971	0.000983	0.000905	0.00336
2032 Sep	82.8	0.43	0.0411	0.00165	18.4	0.0639	22.8	0.00000922	0.0257	0.00115	0.00897	0.0198	0.000161	16.6	0.0000106	0.000237	0.000339	0.00104	0.0373	0.0000133	3.07	0.00324	2.97	0.189	0.000771	1.29	0.00627	0.00379	0.000135	0.000457	0.000417	0.0719	0.00000893	0.000926	0.000843	0.00315
2032 Oct	84.4	0.372	0.0425	0.00151	18.6	0.0598	23.2	0.00000898	0.0239	0.00107	0.00875	0.019	0.000166	16.5	0.0000106	0.000214	0.000343	0.001	0.0373	0.0000122	2.93	0.00324	2.93	0.171	0.000742	1.23	0.00638	0.00369	0.000159	0.000419	0.000416	0.0732	0.00000831	0.000876	0.000796	0.003
2032 Nov	88	0.276	0.0456	0.0013	19.1	0.0543	24.2	0.00000884	0.022	0.000954	0.0086	0.0181	0.000175	16.5	0.0000107	0.000186	0.000355	0.000971	0.0381	0.0000114	2.75	0.00332	2.9	0.142	0.000716	1.22	0.00665	0.00365	0.000168	0.000381	0.000423	0.0766	0.00000766	0.000835	0.000754	0.00281
2032 Dec	92.4	0.187	0.0486	0.00111	19.7	0.0476	25.4	0.00000864	0.0194	0.00086	0.00844	0.0171	0.000186	16.6	0.0000107	0.000154	0.000367	0.000908	0.0387	0.0000105	2.52	0.0034	2.88	0.117	0.000673	1.21	0.00697	0.0036	0.000164	0.00033	0.000431	0.08	0.00000684	0.000779	0.000698	0.00252
2033 Jan	96.2	0.131	0.0509	0.000985	20.1	0.0416	26.3	0.00000835	0.0163	0.000798	0.00822	0.0162	0.000196	16.7	0.0000106	0.000124	0.000377	0.000842	0.0389	0.0000093	2.3	0.00344	2.88	0.101	0.000623	1.2	0.00725	0.00353	0.000161	0.000269	0.000436	0.0825	0.00000591	0.000705	0.000627	0.00221
2033 Feb	99.1	0.0958	0.0523	0.00091	20.4	0.0371	27.1	0.0000081	0.0138	0.000758	0.00805	0.0155	0.000204	16.9	0.0000105	0.000101	0.000385	0.000792	0.0388	0.00000834	2.14	0.00346	2.89	0.0911	0.000584	1.19	0.00746	0.00347	0.00016	0.000222	0.000439	0.0842	0.00000516	0.000645	0.000569	0.00197
2033 Mar	101	0.0731	0.0532	0.000862	20.7	0.034	27.6	0.00000792	0.0118	0.000731	0.00791	0.0151	0.000209	17	0.0000104	0.0000843	0.00039	0.000756	0.0387	0.00000761	2.02	0.00347	2.9	0.0848	0.000555	1.18	0.00761	0.00342	0.000159	0.000183	0.000442	0.0853	0.0000046	0.000599	0.000525	0.00179
2033 Apr	103	0.0599	0.054	0.000837	20.9	0.0319	28	0.00000777	0.0104	0.000716	0.00782	0.0148	0.000213	17.1	0.0000104	0.0000723	0.000394	0.00073	0.0387	0.00000675	1.95	0.00348	2.91	0.0812	0.000534	1.18	0.00771	0.00341	0.000158	0.000155	0.000442	0.0861	0.00000419	0.000563	0.000491	0.00167
2033 May	106	0.056	0.0522	0.000804	21.3	0.0319	29.4	0.00000823	0.0125	0.000738	0.00819	0.015	0.000225	17.6	0.0000111	0.0000844	0.000406	0.000742	0.0385	0.00000811	1.97	0.00362	2.98</													



Appendix C6: IVR Attenuation Pond																																					
Constituents	Total Dissolved Solids	Ammonia	Nitrate	Nitrite	Chloride	Fluoride	Sulphate	Silver	Aluminum	Arsenic	Boron	Barium	Beryllium	Calcium	Cadmium	Cobalt	Chromium	Copper	Iron	Mercury	Potassium	Lithium	Magnesium	Manganese	Molybdenum	Sodium	Nickel	Phosphorus	Lead	Antimony	Selenium	Strontium	Thallium	Uranium	Vanadium	Zinc	
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Operation (2023 to 2025): Min	118	0.34	0.44	0.0134	30	0.125	38.1	0.000013	0.00686	0.0154	0.0184	0.0502	0.000108	28.3	0.0000111	0.000512	0.000462	0.000874	0.125	0.00000885	3.43	0.00428	5.43	0.184	0.006	3.72	0.00594	0.0127	0.000163	0.000488	0.000302	0.000488	0.016	0.00000757	0.000721	0.00385	0.00366
Operation (2023 to 2025): Average	148	0.683	1.31	0.0626	32.7	0.14	54.2	0.0000166	0.0183	0.105	0.0204	0.0546	0.000149	35.3	0.0000123	0.000602	0.000573	0.00154	0.182	0.0000123	4.64	0.00454	8.98	0.208	0.00782	4.46	0.0227	0.0146	0.000186	0.0014	0.000457	0.00171	0.0013	0.00441	0.00538		
Operation (2023 to 2025): Max	210	1.32	2.99	0.161	37.5	0.165	86.6	0.0000243	0.0457	0.305	0.0232	0.0615	0.000174	49.8	0.0000149	0.0008	0.000628	0.00288	0.215	0.0000219	7.28	0.00469	16.4	0.265	0.0113	4.83	0.0552	0.0156	0.000198	0.00381	0.000816	0.197	0.0000218	0.00167	0.00457	0.00911	
Active Closure (2026 to 2028): Min	91.2	0.000006	0.0000694	0.000000642	25.5	0.00049	44.6	0.0000101	0.00635	0.000505	0.01	0.0107	0.000256	22.7	0.0000146	0.00000237	0.000452	0.000812	0.0101	0.00000992	1.74	0.00491	3.43	0.106	0.00051	0.952	0.0102	0.0000115	0.000239	0.000108	0.000562	0.0924	9.61E-08	0.000866	0.000512	0.00104	
Active Closure (2026 to 2028): Average	147	0.031	0.225	0.00246	30.2	0.0421	56.6	0.0000164	0.0351	0.000444	0.0131	0.0182	0.000441	27.1	0.0000219	0.000258	0.000577	0.00144	0.0246	0.0000214	3.55	0.00543	4.18	0.125	0.00024	1.24	0.0164	0.00159	0.000295	0.000747	0.00101	0.105	0.0000097	0.00171	0.0013	0.00368	
Active Closure (2026 to 2028): Max	168	0.281	2.1	0.0195	32.5	0.14	63	0.0000419	0.119	0.0261	0.0213	0.0403	0.000523	29.6	0.0000269	0.00107	0.000636	0.00308	0.148	0.0000546	8.42	0.00642	5.41	0.181	0.00451	3.61	0.0217	0.0106	0.000316	0.00283	0.00111	0.167	0.0000412	0.00368	0.00314	0.0107	
Model Predictions (2023-2028)																																					
2023 Jan	125	0.373	0.583	0.0217	31.6	0.125	42.6	0.0000141	0.00869	0.0474	0.02	0.0502	0.000174	29.5	0.0000116	0.000512	0.00061	0.000967	0.192	0.00000947	3.59	0.00454	6.07	0.184	0.0064	4.54	0.0135	0.0156	0.000198	0.000677	0.000338	0.19	0.00000821	0.000769	0.00393	0.00411	
2023 Feb	124	0.369	0.495	0.0171	32.3	0.13	41.1	0.0000132	0.00733	0.0305	0.0184	0.0532	0.000169	29.3	0.0000112	0.000544	0.000624	0.000895	0.214	0.00000901	3.47	0.00466	5.83	0.189	0.00655	4.8	0.0095	0.0154	0.000195	0.00056	0.000316	0.191	0.00000776	0.000733	0.00399	0.0038	
2023 Mar	122	0.356	0.457	0.015	32.1	0.13	39.9	0.000013	0.00686	0.0229	0.0185	0.0534	0.000167	29	0.0000111	0.00054	0.000626	0.000874	0.215	0.00000885	3.43	0.00465	5.66	0.188	0.00643	4.83	0.00771	0.0153	0.000195	0.000508	0.000307	0.192	0.00000758	0.000721	0.00401	0.00368	
2023 Apr	121	0.349	0.451	0.0146	31.9	0.13	39.4	0.0000131	0.00686	0.0204	0.019	0.0532	0.000167	28.8	0.0000111	0.000533	0.000625	0.00088	0.213	0.00000887	3.43	0.00463	5.61	0.187	0.00633	4.81	0.007	0.0152	0.000195	0.000499	0.000305	0.193	0.00000757	0.000723	0.00403	0.00367	
2023 May	121	0.353	0.471	0.0156	32	0.13	39.6	0.0000133	0.00724	0.0213	0.0197	0.0533	0.000168	29.1	0.0000112	0.00053	0.000628	0.000907	0.21	0.00000905	3.5	0.00463	5.68	0.187	0.00631	4.81	0.00696	0.0152	0.000196	0.00052	0.000309	0.196	0.00000773	0.000738	0.00408	0.00374	
2023 Jun	207	1.3	2.99	0.161	35.5	0.165	85.4	0.0000193	0.0388	0.305	0.0221	0.0581	0.000108	49.3	0.0000145	0.000681	0.000462	0.00288	0.125	0.0000187	6.77	0.0043	16.4	0.221	0.0113	3.72	0.0549	0.0127	0.000163	0.003	0.000737	0.16	0.0000183	0.00152	0.00424	0.00911	
2023 Jul	210	1.32	2.82	0.148	36.3	0.162	86.6	0.000024	0.0352	0.283	0.021	0.0615	0.00012	49.8	0.0000149	0.0008	0.000497	0.0027	0.145	0.0000172	7.04	0.00465	16	0.265	0.0113	4.14	0.0552	0.0143	0.000166	0.00381	0.000816	0.163	0.0000203	0.00139	0.00445	0.00831	
2023 Aug	207	1.21	2.65	0.145	37.5	0.159	84.8	0.0000213	0.0293	0.281	0.0212	0.061	0.000129	49.4	0.0000142	0.000729	0.000523	0.00252	0.158	0.0000152	6.35	0.00461	15.5	0.236	0.0113	4.28	0.0518	0.0146	0.000172	0.00304	0.000724	0.172	0.0000172	0.00125	0.00438	0.00793	
2023 Sep	197	1.09	2.53	0.132	35.9	0.155	80.4	0.0000235	0.0314	0.255	0.0219	0.0599	0.000128	46.9	0.0000145	0.000754	0.000519	0.00247	0.153	0.000016	6.53	0.00467	14.5	0.225	0.0106	4.23	0.0489	0.0143	0.000174	0.0034	0.000751	0.173	0.0000189	0.0013	0.00453	0.00775	
2023 Oct	158	0.77	1.63	0.074	32.8	0.143	59.6	0.0000212	0.0248	0.138	0.0214	0.0557	0.00014	37.6	0.0000134	0.000692	0.000552	0.00182	0.168	0.0000143	5.51	0.00463	9.99	0.221	0.0082	4.36	0.0293	0.0143	0.000185	0.00239	0.000573	0.178	0.0000158	0.00112	0.00431	0.00605	
2023 Nov	134	0.562	0.959	0.0379	31.6	0.135	46.5	0.0000172	0.0162	0.0651	0.0201	0.0534	0.000153	32	0.0000121	0.000609	0.000584	0.00129	0.187	0.0000117	4.41	0.00457	7.23	0.215	0.00683	4.52	0.0157	0.0146	0.000192	0.00131	0.000416	0.183	0.0000116	0.000911	0.00406	0.00469	
2023 Dec	124	0.447	0.655	0.0228	31.2	0.131	41.2	0.0000152	0.0114	0.0347	0.0199	0.0524	0.00016	29.7	0.0000115	0.000561	0.000602	0.00105	0.196	0.0000102	3.86	0.00454	6.1	0.204	0.0063	4.61	0.00987	0.0147	0.000194	0.000828	0.000348	0.188	0.00000951	0.000803	0.00401	0.00407	
2024 Jan	120	0.393	0.535	0.0173	31.1	0.129	39.4	0.0000143	0.00917	0.0236	0.0199	0.052	0.000163	28.8	0.0000112	0.000538	0.00061	0.000962	0.2	0.00000954	3.63	0.00454	5.7	0.196	0.00612	4.65	0.00765	0.0148	0.000195	0.000637	0.000322	0.					



Whale Tail Modification Water Balance and Water Quality Model - Technical Report

Appendix C7: Whale Tail WRSFP Pond																																					
Constituents	Total Dissolved Solids	Ammonia	Nitrate	Nitrite	Chloride	Fluoride	Sulphate	Silver	Aluminum	Arsenic	Boron	Barium	Beryllium	Calcium	Cadmium	Cobalt	Chromium	Copper	Iron	Mercury	Potassium	Lithium	Magnesium	Manganese	Molybdenum	Sodium	Nickel	Phosphorus	Lead	Antimony	Selenium	Strontium	Thallium	Uranium	Vanadium	Zinc	
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Operation (2023 to 2025): Min	40.2	0.0745	0.812	0.0079	7.43	0.0713	10.3	0.0000102	0.0386	0.000727	0.00937	0.0182	0.0000175	7.69	0.0000081	0.00302	0.000113	0.00117	0.0166	0.0000152	4.25	0.000171	1.73	0.000299	0.000613	0.00201	1.14	0.0021	0.00233	0.0000613	0.00201	0.000299	0.0366	0.0000146	0.00105	0.00154	0.00446
Operation (2023 to 2025): Average	138	0.244	2.8	0.026	12.9	0.139	56	0.0000264	0.0946	0.00653	0.0268	0.0622	0.0000235	31.8	0.0000237	0.0011	0.000235	0.00282	0.0274	0.0000289	20.4	0.00509	5.95	0.107	0.00174	4.15	0.0141	0.0066	0.000225	0.0201	0.00159	0.14	0.0000396	0.00311	0.00732	0.00741	
Operation (2023 to 2025): Max	191	0.333	3.84	0.0356	15.6	0.172	80.4	0.0000361	0.13	0.0104	0.0368	0.088	0.000028	44.6	0.0000346	0.00152	0.000298	0.00363	0.034	0.0000347	29.6	0.00694	8.31	0.187	0.00235	4.5	0.0222	0.00957	0.000334	0.0334	0.00241	0.2	0.0000318	0.00413	0.01708	0.00889	
Active Closure (2026 to Sept. 2042): Min	19.1	0.000472	0.000347	0.0000497	6.76	0.0625	5.78	0.00000805	0.0233	0.000215	0.00728	0.0131	0.0000157	5.24	0.00000546	0.00019	0.0000925	0.000806	0.0129	0.0000112	2.38	0.00117	1.31	0.00484	0.00046	0.799	0.00103	0.00191	0.0000471	0.00045	0.000122	0.025	0.0000105	0.000627	0.00076	0.03049	
Active Closure (2026 to Sept. 2042): Average	49.6	0.00084	0.0707	0.00089	14.2	0.167	14.1	0.0000191	0.112	0.000253	0.0152	0.032	0.0000176	10.7	0.0000166	0.000748	0.000196	0.00303	0.0388	0.0000461	7.87	0.00377	2	0.0215	0.00424	1.18	0.0282	0.00418	0.0000318	0.00313	0.000585	0.0482	0.0000318	0.00313	0.00287	0.0114	
Active Closure (2026 to Sept. 2042): Max	77.1	0.127	1.39	0.0132	21.5	0.275	22.3	0.0000303	0.199	0.000988	0.0233	0.0513	0.0000571	16	0.0000286	0.0013	0.000289	0.00521	0.0622	0.0000809	13.4	0.00636	2.58	0.0374	0.004	1.51	0.0457	0.00653	0.000432	0.00369	0.000897	0.0703	0.0000531	0.00561	0.00493	0.019	
Post Closure (Oct. 2042 to 2070): Min	67.4	0.00112	0.00071	0.000112	17.9	0.216	17.9	0.0000243	0.164	0.000221	0.0191	0.0412	0.000046	13.3	0.0000221	0.000988	0.00024	0.00397	0.0491	0.0000611	10.3	0.00491	2.36	0.0282	0.00299	1.38	0.03062	0.00543	0.00019	0.00277	0.000677	0.0596	0.0000413	0.00419	0.00376	0.0147	
Post Closure (Oct. 2042 to 2070): Average	71.8	0.00245	0.00122	0.00016	19.3	0.238	19.6	0.0000266	0.185	0.000246	0.0207	0.0451	0.0000503	14.4	0.0000259	0.00116	0.000259	0.00493	0.054	0.0000684	11.5	0.00545	2.48	0.0316	0.00336	1.46	0.0398	0.00585	0.000209	0.00311	0.000758	0.0639	0.0000457	0.00471	0.00462	0.0163	
Post Closure (Oct. 2042 to 2070): Max	79.1	0.00342	0.00161	0.000212	21.4	0.268	21.9	0.0000298	0.218	0.00026	0.0231	0.0506	0.0000562	15.9	0.0000276	0.00126	0.000287	0.00504	0.0607	0.000078	13	0.00618	2.67	0.036	0.00384	1.57	0.0448	0.00648	0.000288	0.00355	0.000864	0.0705	0.0000517	0.00539	0.00477	0.0184	
Model Predictions (2023-2070)																																					
2023 Jan	191	0.333	3.84	0.0356	15.6	0.169	80.4	0.0000361	0.114	0.0104	0.0368	0.088	0.0000253	44.6	0.0000308	0.00152	0.000298	0.00363	0.0311	0.0000341	29.6	0.00694	8.31	0.155	0.0022	5.9	0.0222	0.00912	0.000205	0.0334	0.00241	0.2	0.0000518	0.00403	0.0108	0.00843	
2023 Feb	190	0.332	3.83	0.0355	15.5	0.168	80.3	0.000036	0.114	0.0104	0.0367	0.0879	0.0000253	44.5	0.0000308	0.00152	0.000298	0.00362	0.0311	0.0000341	29.6	0.00693	8.3	0.155	0.0022	5.9	0.0222	0.00911	0.000204	0.0334	0.0024	0.2	0.0000518	0.00402	0.0108	0.00842	
2023 Mar	190	0.332	3.83	0.0355	15.5	0.168	80.2	0.000036	0.114	0.0104	0.0367	0.0879	0.0000253	44.5	0.0000308	0.00152	0.000298	0.00362	0.0311	0.0000341	29.6	0.00693	8.29	0.155	0.0022	5.89	0.0222	0.00911	0.000204	0.0333	0.0024	0.2	0.0000517	0.00402	0.0108	0.00842	
2023 Apr	187	0.326	3.76	0.0348	15.3	0.166	78.5	0.0000354	0.112	0.0101	0.0361	0.0861	0.0000252	43.6	0.0000303	0.00149	0.000293	0.00356	0.0307	0.0000336	28.9	0.0068	8.13	0.152	0.00216	5.77	0.0217	0.00929	0.0002	0.0326	0.00235	0.195	0.0000508	0.00395	0.0106	0.00832	
2023 May	182	0.319	3.67	0.0341	15	0.164	76.6	0.0000347	0.11	0.00985	0.0353	0.0838	0.0000251	42.6	0.0000299	0.00146	0.000287	0.0035	0.0303	0.0000333	28.2	0.00665	7.96	0.149	0.00212	5.62	0.0211	0.00957	0.000194	0.0317	0.00227	0.19	0.0000498	0.00386	0.0103	0.00826	
2023 Jun	116	0.199	2.24	0.021	12.1	0.12	45.3	0.0000225	0.0726	0.00548	0.0223	0.0476	0.0000215	26	0.0000216	0.000932	0.000197	0.00233	0.0224	0.0000248	15.7	0.00405	5.14	0.101	0.00139	3.23	0.0118	0.00557	0.000097	0.0172	0.00114	0.11	0.0000321	0.00243	0.00551	0.00641	
2023 Jul	165	0.271	3.11	0.0289	13.8	0.141	70.6	0.0000307	0.0922	0.00903	0.0313	0.0642	0.0000229	38.8	0.0000319	0.00136	0.000251	0.003	0.0277	0.0000284	23.4	0.00552	7.41	0.172	0.0017	4.54	0.0186	0.00684	0.000104	0.0282	0.00169	0.159	0.0000434	0.00321	0.00817	0.00726	
2023 Aug	176	0.296	3.41	0.0317	14.4	0.151	76.1	0.000033	0.102	0.00973	0.0336	0.0687	0.0000243	41.6	0.0000345	0.00148	0.00026	0.00327	0.0303	0.0000314	25.3	0.00599	7.84	0.187	0.00188	4.8	0.02	0.00712	0.000112	0.0306	0.00183						



Appendix C7: Whale Tail WRSFP Pond

Constituents	Total Dissolved Solids	Ammonia	Nitrate	Nitrite	Chloride	Fluoride	Sulphate	Silver	Aluminum	Arsenic	Boron	Barium	Beryllium	Calcium	Cadmium	Cobalt	Chromium	Copper	Iron	Mercury	Potassium	Lithium	Magnesium	Manganese	Molybdenum	Sodium	Nickel	Phosphorus	Lead	Antimony	Selenium	Strontium	Thallium	Uranium	Vanadium	Zinc
2032 Dec	63.2	0.00138	0.000968	0.000142	18	0.223	18.3	0.000025	0.156	0.000224	0.0194	0.0419	0.0000472	13.4	0.000235	0.00104	0.000244	0.00419	0.0514	0.0000645	10.8	0.00513	2.27	0.0298	0.00317	1.34	0.00371	0.0053	0.000274	0.00293	0.000715	0.0594	0.000043	0.00444	0.00395	0.0154
2033 Jan	64.8	0.00129	0.000898	0.000132	18.4	0.229	18.7	0.000024	0.16	0.000223	0.0199	0.043	0.0000483	13.7	0.00024	0.00107	0.000249	0.0043	0.0526	0.0000663	11.1	0.00527	2.31	0.0306	0.00326	1.35	0.00381	0.00543	0.00027	0.00301	0.000735	0.0606	0.0000441	0.00457	0.00406	0.0158
2033 Feb	66.2	0.0012	0.000833	0.000122	18.7	0.234	19.1	0.0000261	0.165	0.000223	0.0203	0.0439	0.0000493	13.9	0.000245	0.0011	0.000254	0.00441	0.0537	0.000068	11.3	0.0054	2.34	0.0314	0.00334	1.37	0.00389	0.00554	0.000267	0.00309	0.000754	0.0617	0.0000452	0.00469	0.00416	0.0162
2033 Mar	66.6	0.00118	0.000814	0.000119	18.8	0.236	19.3	0.0000263	0.166	0.000223	0.0204	0.0442	0.0000497	14	0.000247	0.0011	0.000255	0.00444	0.054	0.0000685	11.4	0.00544	2.35	0.0317	0.00337	1.38	0.00392	0.00558	0.000266	0.00312	0.000759	0.0621	0.0000455	0.00473	0.00419	0.0163
2033 Apr	66.3	0.00122	0.000828	0.000122	18.7	0.235	19.2	0.0000262	0.165	0.000223	0.0203	0.044	0.0000494	13.9	0.000246	0.0011	0.000254	0.00441	0.0537	0.0000681	11.3	0.00541	2.34	0.0315	0.00335	1.37	0.0039	0.00566	0.000264	0.0031	0.000755	0.0618	0.0000452	0.0047	0.00417	0.0162
2033 May	74.9	0.00147	0.000938	0.000137	20.9	0.265	20.8	0.0000281	0.17	0.000224	0.0213	0.045	0.0000508	15.2	0.000247	0.0011	0.000254	0.00441	0.054	0.0000682	11.4	0.00547	2.35	0.0317	0.00337	1.38	0.00392	0.00558	0.000266	0.00312	0.000759	0.0621	0.0000455	0.00473	0.00419	0.0163
2033 Jun	45.5	0.00587	0.000263	0.000285	13.3	0.148	12.6	0.0000168	0.0924	0.000052	0.0135	0.0294	0.000032	9.92	0.000146	0.000636	0.000176	0.00257	0.0136	0.0000392	6.82	0.00324	2.04	0.0177	0.00188	1.21	0.00252	0.00411	0.000113	0.000735	0.00454	0.0000475	0.00263	0.00244	0.00965	
2033 Jul	63	0.00294	0.00149	0.000182	17.6	0.214	17.6	0.0000239	0.146	0.000241	0.0187	0.0408	0.0000453	13.1	0.0000217	0.000981	0.000238	0.00393	0.0483	0.0000607	10.2	0.00486	2.34	0.0281	0.00297	1.38	0.0036	0.00533	0.000165	0.00275	0.000672	0.0585	0.0000408	0.00417	0.00373	0.0145
2033 Aug	63.9	0.001	0.000805	0.000145	18.2	0.227	18.6	0.0000256	0.16	0.000224	0.0199	0.0428	0.0000473	13.6	0.000234	0.00106	0.000246	0.00427	0.0533	0.000066	11	0.00525	2.29	0.0307	0.00324	1.35	0.0038	0.00544	0.000178	0.00299	0.000731	0.0601	0.000044	0.00455	0.00405	0.0156
2033 Sep	48.8	0.00265	0.00114	0.000227	14.4	0.174	14.5	0.0000201	0.119	0.000216	0.016	0.0331	0.0000382	10.8	0.000018	0.000802	0.000192	0.00322	0.0425	0.0000496	8.29	0.00402	1.92	0.0229	0.00241	1.14	0.00286	0.00425	0.000138	0.00223	0.00055	0.0483	0.0000338	0.00338	0.00306	0.012
2033 Oct	49.8	0.00234	0.0015	0.000229	14.6	0.175	14.6	0.00002	0.119	0.000226	0.0159	0.0331	0.000038	10.75	0.0000188	0.000795	0.00202	0.00323	0.0413	0.0000492	8.28	0.00399	1.98	0.0227	0.00239	1.17	0.00289	0.00422	0.000302	0.00222	0.000545	0.0492	0.0000336	0.00335	0.00304	0.0121
2033 Nov	57.4	0.00149	0.0013	0.000181	16.5	0.202	16.6	0.0000227	0.139	0.000228	0.0178	0.038	0.000043	12.3	0.0000217	0.000929	0.000229	0.00376	0.0465	0.0000575	9.64	0.00461	2.16	0.0265	0.00281	1.26	0.00336	0.00479	0.000342	0.00261	0.000637	0.0551	0.0000387	0.00394	0.00354	0.014
2033 Dec	64.4	0.00112	0.000959	0.000134	18.3	0.228	18.6	0.0000254	0.159	0.000225	0.0197	0.0426	0.000048	13.6	0.000241	0.00106	0.000247	0.00427	0.0521	0.0000658	11	0.00523	2.3	0.0304	0.00323	1.35	0.00379	0.00537	0.000311	0.00299	0.000729	0.0604	0.0000438	0.00453	0.00403	0.0157
2034 Jan	67.8	0.00094	0.000794	0.000111	19.1	0.24	19.6	0.0000267	0.169	0.000223	0.0207	0.0449	0.0000504	14.2	0.000253	0.00113	0.00026	0.00453	0.0548	0.0000698	11.6	0.00553	2.37	0.0323	0.00329	1.39	0.00399	0.00565	0.000297	0.00318	0.000774	0.063	0.0000463	0.00482	0.00427	0.0166
2034 Feb	69.1	0.00087	0.00073	0.000101	19.5	0.245	20	0.0000272	0.173	0.000223	0.0211	0.0458	0.0000514	14.5	0.0000258	0.00115	0.000264	0.00462	0.0559	0.0000714	11.9	0.00565	2.4	0.033	0.00352	1.41	0.00407	0.00576	0.000291	0.00325	0.000791	0.0641	0.0000473	0.00494	0.00437	0.017
2034 Mar	69.8	0.000837	0.000698	0.0000971	19.7	0.248	20.2	0.0000275	0.175	0.000222	0.0212	0.0463	0.0000519	14.6	0.00026	0.00116	0.000266	0.00467	0.0564	0.0000722	12	0.00571	2.42	0.0334	0.00356	1.42	0.00412	0.00581	0.000288	0.00329	0.0008	0.0046	0.0000477	0.00499	0.00441	0.0171
2034 Apr	69.4	0.000879	0.000712	0.0001	19.5	0.246	20.1	0.0000273	0.174	0.000223	0.0212	0.0461	0.0000516	14.5	0.0000259	0.00116	0.000265	0.00465	0.0561	0.0000718	11.9	0.00568	2.41	0.0332	0.00354	1.41	0.0041	0.0059	0.000286	0.00327	0.000796	0.0643	0.0000475	0.00496	0.00439	0.017
2034 May	71.9	0.000811	0.000578	0.0000844	20.2	0.256	20.8	0.0000283	0.181	0.000222	0.0219	0.0478	0.0000534	15	0.0000267	0.0012	0.000272	0.00463	0.058	0.0000748	12.4	0.0059	2.46	0.0346	0.00369	1.45	0.00425	0.00619	0.000268	0.00341	0.000829	0.0662	0.0000493	0.00518	0.00457	0.0177
2034 Jun	42.1	0.00632	0.00282	0.000309	12.5	0.135	11.7	0.0000155	0.0823	0.000254	0.0126	0.0272	0.0000295	9.31	0.0000132	0.000571	0.00165	0.00231	0.0286	0.0000351	6.17	0.00293	1.98	0.0158	0.00168	1.18	0.00232	0.00387	0.000103	0.00156	0.000387	0.0429	0.000025	0.00234	0.0022	0.00874
2034 Jul	57.5	0.00384	0.00197	0.000231	16.1	0.19	15.8	0.0000215	0.127	0.000249	0.017	0.0367	0.0000407	12	0.0000192	0.000857	0.000219	0.00345	0.0429	0.000053	8.99	0.00429	2.24	0.0244	0.00258	1.32	0.00323	0.00489	0.000145	0.00239	0.000586	0.0539	0.0000361	0.00361	0.00327	0.0128
2034 Aug	54.4	0.00183	0.00131	0.000222	15.8	0.191	15.8	0.0000219	0.131	0.000232	0.0173	0.0365	0.0000415	11.8	0.0000196	0.000879	0.000216	0.00353	0.0457	0.0000543	9.11	0.00439	2.1	0.0253	0.00265	1.25	0.00322	0.00471	0.00015	0.00245	0.000601	0.0527	0.0000369	0.00371	0.00335	0.0131
2034 Sep	44.7	0.00287	0.00132	0.000257	13.4	0.16	13.3	0.0000186	0.108	0.000218	0.0149	0.0304	0.0000354	10.1	0.0000164	0.000726	0.000179	0.00292	0.0394	0.0000448	7.53	0.00366	1.83	0.0208	0.00217	1.09	0.00262	0.00394	0.000126	0.00201	0.000497	0.0452	0.000031	0.00304	0.00278	0.0109
2034 Oct	50.5	0.00228	0.00146	0.000224	13.8	0.178	14.8	0.0000203	0.121	0.000226	0.0161	0.0336	0.0000385	11.1	0.000019	0.000809	0.000204	0.00328	0.0419	0.00005	8.41	0.00405	2.23	0.0231	0.00423	1.18	0.00295	0.00428	0.000295	0.00226	0.000554	0.0498	0.0000341	0.00341	0.00309	0.0123
2034 Nov	55.5	0.00159	0.00139	0.000194	16.1	0.195	16.1	0.000022	0.134	0.000228	0.0173	0.0367	0.0000417	11.9	0.000021	0.000893	0.000223	0.00362	0.045	0.0000553	9.28	0.00444	2.12	0.0255	0.00227	1.24	0.00325	0.00464	0.000347	0.00251	0.000612	0.0536	0.0000373	0.00378	0.0034	0.0135
2034 Dec	56.1	0.00158	0.00136	0.00019	16.2	0.197	16.3	0.0000222	0.135	0.000228	0.0174	0.0371	0.0000421	12.1	0.0000212	0.000904	0.000224	0.00366	0.0455	0.000056	9.39	0.00449	2.13	0.0258	0.00273	1.25	0.00328	0.00469	0.000343	0.00254	0.00062	0.054	0.0000378	0.00383	0.00344	0.0136
2035 Jan	56	0.0016	0.00137	0.000191	16.2	0.197	16.2	0.0000222	0.135	0.000228	0.0174	0.037	0.000042	12	0.0000211	0.000902	0.000224	0.00366	0.0454	0.0000558	9.37	0.00449	2.13	0.0258	0.00273	1.25	0.00328	0.00469	0.000342	0.00253	0.000619	0.054	0.0000377	0.00382	0.00344	0.0136
2035 Feb	60.1	0.00161	0.00137	0.000191	16.2	0.197	16.2	0.0000222	0.135	0.000228	0.0174	0.037	0.000042	12	0.0000211	0.000902	0.000224	0.00366	0.0454	0.0000558	9.37	0.00449	2.13	0.0258	0.00273	1.25	0.00328	0.00469	0.000342	0.00253	0.000619	0.054	0.0000377	0.00382	0.00344	0.0136
2035 Mar	55.9	0.00162	0.00137	0.000191	16.2	0.197	16.2	0.0000222	0.135	0.000228	0.0174	0.037	0.000042	12	0.0000211	0.000901	0.000224	0.00365	0.0453	0.0000558	9.36	0.00448	2.13	0.0257	0.00272	1.25	0.00327	0.00468	0.000341	0.00253	0.000618	0.0539	0.0000377	0.00382	0.00343	0.



Appendix C7: Whale Tail WRSFP Pond

Constituents	Total Dissolved Solids	Ammonia	Nitrate	Nitrite	Chloride	Fluoride	Sulphate	Silver	Aluminum	Arsenic	Boron	Barium	Beryllium	Calcium	Cadmium	Cobalt	Chromium	Copper	Iron	Mercury	Potassium	Lithium	Magnesium	Manganese	Molybdenum	Sodium	Nickel	Phosphorus	Lead	Antimony	Selenium	Strontium	Thallium	Uranium	Vanadium	Zinc
2043 Nov	70	0.00206	0.00105	0.000138	19	0.235	19.3	0.0000262	0.172	0.000234	0.0204	0.0444	0.0000495	14.1	0.0000242	0.0011	0.000254	0.00439	0.0533	0.0000679	11.3	0.0054	2.41	0.0313	0.00334	1.42	0.00393	0.00572	0.000213	0.03038	0.000752	0.0627	0.0000453	0.00468	0.00416	0.0161
2043 Dec	70.1	0.00205	0.00105	0.000137	19	0.236	19.3	0.0000263	0.173	0.000234	0.0204	0.0445	0.0000496	14.1	0.0000242	0.0011	0.000255	0.0044	0.0534	0.0000681	11.4	0.00541	2.42	0.0314	0.00334	1.42	0.00393	0.00572	0.000213	0.03039	0.000756	0.0629	0.0000455	0.00469	0.00417	0.0161
2044 Jan	70.2	0.00203	0.00104	0.000136	19	0.236	19.4	0.0000263	0.173	0.000234	0.0205	0.0446	0.0000498	14.2	0.0000243	0.0011	0.000255	0.00442	0.0536	0.0000683	11.4	0.00543	2.42	0.0315	0.00336	1.42	0.00395	0.00574	0.000213	0.03031	0.000756	0.0629	0.0000455	0.00471	0.00418	0.0162
2044 Feb	70.2	0.00203	0.00104	0.000136	19	0.236	19.4	0.0000263	0.173	0.000234	0.0205	0.0446	0.0000498	14.2	0.0000243	0.0011	0.000255	0.00442	0.0536	0.0000683	11.4	0.00543	2.42	0.0315	0.00336	1.42	0.00395	0.00574	0.000213	0.03031	0.000756	0.0629	0.0000455	0.00471	0.00418	0.0162
2044 Mar	70.1	0.00203	0.00103	0.000136	19.1	0.236	19.4	0.0000264	0.173	0.000234	0.0205	0.0447	0.0000498	14.2	0.0000242	0.0011	0.000255	0.00442	0.0536	0.0000683	11.4	0.00543	2.42	0.0315	0.00336	1.42	0.00395	0.00574	0.000213	0.03031	0.000757	0.0629	0.0000455	0.00471	0.00418	0.0162
2044 Apr	70.1	0.00203	0.00104	0.000136	19.1	0.237	19.3	0.0000264	0.173	0.000234	0.0205	0.0447	0.0000498	14.2	0.0000242	0.0011	0.000255	0.00442	0.0536	0.0000683	11.4	0.00543	2.42	0.0315	0.00336	1.42	0.00395	0.00574	0.000213	0.03031	0.000757	0.0629	0.0000455	0.00471	0.00418	0.0162
2044 May	71.9	0.002	0.00102	0.000134	19.5	0.242	19.9	0.000027	0.178	0.000237	0.0201	0.0457	0.000051	14.5	0.000025	0.0013	0.000261	0.00453	0.0549	0.0000701	11.7	0.00557	2.47	0.0323	0.00349	1.47	0.00397	0.00577	0.000217	0.03048	0.000761	0.0643	0.0000465	0.00483	0.00429	0.0166
2044 Jun	69.6	0.00239	0.00115	0.000146	18.8	0.232	19.1	0.0000259	0.17	0.000237	0.0201	0.0439	0.0000489	14	0.0000238	0.00108	0.000251	0.00432	0.0523	0.0000668	11.2	0.00531	2.41	0.0308	0.00328	1.42	0.00388	0.0057	0.000203	0.03003	0.00074	0.0621	0.0000445	0.0046	0.00409	0.0158
2044 Jul	70.3	0.00268	0.00129	0.000158	18.9	0.232	19.1	0.0000259	0.169	0.000234	0.0202	0.0441	0.0000489	14.1	0.0000238	0.00108	0.000253	0.00431	0.0523	0.0000667	11.2	0.00531	2.45	0.0307	0.00327	1.44	0.00389	0.00574	0.0002	0.03002	0.000738	0.0626	0.0000446	0.00459	0.00409	0.0158
2044 Aug	71.5	0.00264	0.00129	0.000163	19.2	0.236	19.5	0.0000264	0.172	0.000248	0.0206	0.0449	0.0000499	14.3	0.0000242	0.00109	0.000258	0.00439	0.0533	0.0000678	11.4	0.00541	2.49	0.0312	0.00333	1.47	0.00396	0.00583	0.000203	0.03038	0.000751	0.0637	0.0000453	0.00467	0.00416	0.0161
2044 Sep	69.9	0.00261	0.00128	0.000166	18.8	0.231	19	0.0000258	0.168	0.000244	0.0201	0.0438	0.0000488	14	0.0000237	0.00107	0.000252	0.00429	0.0523	0.0000662	11.1	0.00528	2.44	0.0305	0.00325	1.44	0.00386	0.00569	0.000197	0.03003	0.000733	0.0623	0.0000443	0.00455	0.00406	0.0157
2044 Oct	69	0.0026	0.00129	0.000169	18.5	0.227	18.7	0.0000255	0.166	0.000243	0.0199	0.0432	0.0000481	13.8	0.0000234	0.00105	0.000249	0.00422	0.0516	0.0000652	10.9	0.0052	2.41	0.03	0.0032	1.42	0.0038	0.0056	0.000203	0.00295	0.000722	0.0615	0.0000437	0.00448	0.004	0.0155
2044 Nov	68.6	0.00259	0.00131	0.000171	18.4	0.226	18.6	0.0000253	0.164	0.000243	0.0197	0.0429	0.0000478	13.7	0.0000232	0.00104	0.000247	0.00419	0.0512	0.0000647	10.8	0.00517	2.4	0.0298	0.00317	1.41	0.00378	0.00556	0.000207	0.00293	0.000716	0.061	0.0000433	0.00444	0.00397	0.0154
2044 Dec	68.6	0.00259	0.00131	0.000171	18.4	0.226	18.6	0.0000253	0.164	0.000243	0.0197	0.0429	0.0000478	13.7	0.0000232	0.00104	0.000247	0.00419	0.0512	0.0000647	10.8	0.00516	2.4	0.0298	0.00317	1.41	0.00378	0.00556	0.000207	0.00293	0.000716	0.061	0.0000433	0.00444	0.00397	0.0154
2045 Jan	68.6	0.00259	0.00131	0.000171	18.4	0.226	18.6	0.0000253	0.164	0.000243	0.0197	0.0429	0.0000478	13.7	0.0000232	0.00104	0.000247	0.00419	0.0512	0.0000647	10.8	0.00516	2.4	0.0298	0.00317	1.41	0.00378	0.00556	0.000207	0.00293	0.000716	0.061	0.0000433	0.00444	0.00397	0.0154
2045 Feb	68.6	0.00259	0.00131	0.000171	18.4	0.226	18.6	0.0000253	0.164	0.000243	0.0197	0.0429	0.0000478	13.7	0.0000232	0.00104	0.000247	0.00419	0.0512	0.0000647	10.8	0.00516	2.4	0.0298	0.00317	1.41	0.00378	0.00556	0.000207	0.00293	0.000716	0.061	0.0000433	0.00444	0.00397	0.0154
2045 Mar	68.6	0.00259	0.00131	0.000171	18.4	0.226	18.6	0.0000253	0.164	0.000243	0.0197	0.0429	0.0000478	13.7	0.0000232	0.00104	0.000247	0.00419	0.0512	0.0000647	10.8	0.00517	2.4	0.0298	0.00317	1.41	0.00378	0.00556	0.000207	0.00293	0.000716	0.061	0.0000433	0.00444	0.00397	0.0154
2045 Apr	68.9	0.0026	0.00131	0.000172	18.5	0.227	18.7	0.0000254	0.165	0.000244	0.0198	0.043	0.000048	13.8	0.0000233	0.00105	0.000248	0.0042	0.0514	0.0000649	10.9	0.00518	2.41	0.0299	0.00318	1.42	0.00379	0.0056	0.000208	0.00294	0.000718	0.0613	0.0000435	0.00446	0.00398	0.0155
2045 May	69.7	0.00265	0.00133	0.000175	18.7	0.229	18.9	0.0000257	0.167	0.000247	0.0201	0.0435	0.0000486	13.9	0.0000236	0.00106	0.000251	0.00425	0.052	0.0000657	11	0.00524	2.44	0.0303	0.00322	1.44	0.00384	0.00568	0.00021	0.00298	0.000727	0.0621	0.000044	0.00451	0.00403	0.0157
2045 Jun	70.5	0.0026	0.00135	0.000176	19	0.23	19.3	0.000026	0.172	0.000241	0.0204	0.0445	0.0000495	14.2	0.0000241	0.00109	0.000255	0.00437	0.053	0.0000676	11.3	0.00538	2.45	0.0311	0.00332	1.44	0.00393	0.00577	0.000204	0.00307	0.000749	0.063	0.0000451	0.00465	0.00414	0.016
2045 Jul	73.6	0.00237	0.00114	0.00014	19.9	0.246	20.2	0.0000274	0.181	0.000245	0.0212	0.0465	0.0000517	14.8	0.0000252	0.00114	0.000265	0.00459	0.0554	0.0000709	11.9	0.00564	2.53	0.0327	0.00349	1.49	0.00411	0.00601	0.000206	0.00322	0.000786	0.0655	0.0000472	0.00489	0.00435	0.0168
2045 Aug	74.6	0.00234	0.00115	0.000145	20.1	0.249	20.4	0.0000278	0.184	0.000249	0.0216	0.0471	0.0000524	15	0.0000256	0.00116	0.000269	0.00465	0.0563	0.0000719	12	0.00571	2.57	0.0331	0.00353	1.51	0.00417	0.00609	0.000208	0.00326	0.000796	0.0664	0.0000479	0.00495	0.0044	0.017
2045 Sep	72.6	0.00237	0.00116	0.000153	19.5	0.242	19.8	0.0000267	0.178	0.000246	0.021	0.0457	0.0000509	14.5	0.0000248	0.00112	0.000262	0.0045	0.0548	0.0000696	11.6	0.00554	2.5	0.0321	0.00342	1.48	0.00404	0.00591	0.000201	0.00316	0.000771	0.0646	0.0000464	0.00479	0.00427	0.0165
2045 Oct	71.5	0.0024	0.0012	0.000158	19.2	0.237	19.5	0.0000265	0.174	0.000245	0.0206	0.0449	0.00005	14.3	0.0000244	0.0011	0.000258	0.00441	0.0538	0.0000682	11.4	0.00543	2.47	0.0315	0.00335	1.46	0.00396	0.0058	0.000207	0.00309	0.000756	0.0636	0.0000456	0.00469	0.00418	0.0162
2045 Nov	71	0.0024	0.00122	0.000161	19.1	0.235	19.3	0.0000263	0.173	0.000245	0.0205	0.0446	0.0000497	14.2	0.0000242	0.00109	0.000256	0.00438	0.0534	0.0000676	11.3	0.00539	2.46	0.0312	0.00332	1.45	0.00393	0.00576	0.000211	0.00307	0.000749	0.0632	0.0000452	0.00465	0.00415	0.0161
2045 Dec	71	0.0024	0.00122	0.000161	19.1	0.235	19.3	0.0000263	0.173	0.000245	0.0205	0.0446	0.0000497	14.2	0.0000242	0.00109	0.000256	0.00438	0.0534	0.0000676	11.3	0.00539	2.46	0.0312	0.00332	1.45	0.00393	0.00576	0.000211	0.00307	0.000749	0.0632	0.0000452	0.00465	0.00415	0.0161
2046 Jan	71	0.0024	0.00122	0.000161	19.1	0.235	19.3	0.0000263	0.173	0.000245	0.0205	0.0446	0.0000497	14.2	0.0000242	0.00109	0.000256	0.00438	0.0534	0.0000676	11.3	0.00539	2.46	0.0312	0.00332	1.45	0.00393	0.00576	0.000211	0.00307	0.000749	0.0632	0.0000452	0.00465	0.00415	0.0161
2046 Feb	71	0.0024	0.00122	0.000161	19.1	0.235	19.3	0.0000263	0.173	0.000245	0.0205	0.0446	0.0000497	14.2	0.0000242	0.00109	0.000256	0.00438	0.0534	0.0000676	11.3	0.00539	2.46	0.0312	0.00332	1.45	0.00393	0.00576	0.000211	0.00307	0.000749	0.0632	0.0000452	0.00465	0.00415	0.0161
2046 Mar	71.1																																			



Constituents	Total Dissolved Solids	Ammonia	Nitrate	Nitrite	Chloride	Fluoride	Sulphate	Silver	Aluminum	Arsenic	Boron	Barium	Beryllium	Calcium	Cadmium	Cobalt	Chromium	Copper	Iron	Mercury	Potassium	Lithium	Magnesium	Manganese	Molybdenum	Sodium	Nickel	Phosphorus	Lead	Antimony	Selenium	Strontium	Thallium	Uranium	Vanadium	Zinc
2054 Nov	70.5	0.00265	0.00133	0.000175	18.9	0.231	19.1	0.0000259	0.177	0.000248	0.0202	0.0439	0.000049	14	0.0000238	0.00107	0.000253	0.00429	0.0525	0.0000662	11.1	0.00529	2.45	0.0305	0.00325	1.45	0.00387	0.0057	0.000208	0.003	0.000734	0.0626	0.0000444	0.00455	0.00407	0.0158
2054 Dec	70.5	0.00265	0.00133	0.000175	18.9	0.231	19.1	0.0000259	0.177	0.000248	0.0202	0.0439	0.000049	14	0.0000238	0.00107	0.000253	0.00429	0.0525	0.0000662	11.1	0.00529	2.45	0.0305	0.00325	1.45	0.00387	0.0057	0.000208	0.003	0.000734	0.0626	0.0000444	0.00455	0.00407	0.0158
2055 Jan	70.5	0.00265	0.00133	0.000175	18.9	0.231	19.1	0.0000259	0.177	0.000248	0.0202	0.0439	0.000049	14	0.0000238	0.00107	0.000253	0.00429	0.0525	0.0000662	11.1	0.00529	2.45	0.0305	0.00325	1.45	0.00387	0.0057	0.000208	0.003	0.000734	0.0626	0.0000444	0.00455	0.00407	0.0158
2055 Feb	70.5	0.00265	0.00133	0.000175	18.9	0.231	19.1	0.0000259	0.177	0.000248	0.0202	0.0439	0.000049	14	0.0000238	0.00107	0.000253	0.00429	0.0525	0.0000662	11.1	0.00529	2.45	0.0305	0.00325	1.45	0.00387	0.0057	0.000208	0.003	0.000734	0.0626	0.0000444	0.00455	0.00407	0.0158
2055 Mar	70.9	0.00266	0.00134	0.000176	18.9	0.232	19.1	0.0000263	0.178	0.000249	0.0203	0.044	0.0000491	14.1	0.0000238	0.00107	0.000254	0.0043	0.0526	0.0000664	11.1	0.0053	2.46	0.0306	0.00325	1.45	0.00388	0.00574	0.000209	0.00301	0.000735	0.0627	0.0000445	0.00456	0.00407	0.0158
2055 Apr	71.5	0.00271	0.00136	0.00018	19.1	0.234	19.3	0.0000263	0.18	0.000253	0.0205	0.0445	0.0000496	14.2	0.0000241	0.00108	0.000257	0.00435	0.0532	0.0000671	11.2	0.00536	2.49	0.0309	0.00329	1.47	0.00392	0.00584	0.000211	0.00304	0.000743	0.0634	0.000045	0.00461	0.00412	0.016
2055 Jun	70.9	0.00268	0.00129	0.000166	19	0.233	19.2	0.000026	0.179	0.000246	0.0203	0.0442	0.0000492	14.1	0.0000239	0.00108	0.000254	0.00432	0.0526	0.0000668	11.2	0.00533	2.46	0.0308	0.00328	1.45	0.0039	0.00577	0.000202	0.00303	0.00074	0.0628	0.0000447	0.00459	0.0041	0.0159
2055 Jul	72.3	0.00281	0.00135	0.000168	19.3	0.237	19.5	0.0000265	0.183	0.000252	0.0207	0.0451	0.0000501	14.4	0.0000243	0.0011	0.000259	0.0044	0.0535	0.000068	11.4	0.00542	2.51	0.0313	0.00334	1.48	0.00397	0.00588	0.000201	0.00308	0.000753	0.0641	0.000455	0.00468	0.00417	0.0162
2055 Aug	73.5	0.00273	0.00133	0.00017	19.7	0.242	19.9	0.000027	0.187	0.000255	0.0211	0.0459	0.0000511	14.7	0.0000248	0.00112	0.000264	0.00449	0.0547	0.0000694	11.6	0.00554	2.55	0.032	0.00341	1.51	0.00405	0.00598	0.000204	0.00315	0.000769	0.0652	0.000464	0.00477	0.00426	0.0165



Appendix C7: Whale Tail WRSPP Pond

Constituents	Total Dissolved Solids	Ammonia	Nitrate	Nitrite	Chloride	Fluoride	Sulphate	Silver	Aluminum	Arsenic	Boron	Barium	Beryllium	Calcium	Cadmium	Cobalt	Chromium	Copper	Iron	Mercury	Potassium	Lithium	Magnesium	Manganese	Molybdenum	Sodium	Nickel	Phosphorus	Lead	Antimony	Selenium	Strontium	Thallium	Uranium	Vanadium	Zinc
2065 Nov	71.9	0.00242	0.0012	0.00016	19.3	0.238	19.6	0.0000266	0.194	0.000246	0.0207	0.0451	0.0000503	14.4	0.0000245	0.0011	0.000259	0.00443	0.054	0.0000685	11.5	0.00546	2.48	0.0316	0.00336	1.46	0.00398	0.00583	0.000212	0.00311	0.000759	0.0639	0.0000457	0.00471	0.0042	0.0163
2065 Dec	72.5	0.00233	0.00116	0.000154	19.5	0.241	19.8	0.0000269	0.197	0.000245	0.0209	0.0456	0.0000508	14.5	0.0000248	0.00112	0.000261	0.00449	0.0547	0.0000694	11.6	0.00552	2.49	0.032	0.00341	1.47	0.00402	0.00589	0.000213	0.00315	0.000769	0.0644	0.0000463	0.00478	0.00425	0.0165
2066 Jan	72.9	0.00226	0.00112	0.000149	19.6	0.243	19.9	0.0000271	0.199	0.000244	0.0211	0.0459	0.0000512	14.6	0.000025	0.00113	0.000263	0.00453	0.0551	0.0000701	11.7	0.00557	2.5	0.0323	0.00344	1.48	0.00406	0.00593	0.000214	0.00318	0.000776	0.0648	0.0000467	0.00483	0.00429	0.0166
2066 Feb	73.2	0.00221	0.0011	0.000146	19.7	0.245	20.1	0.0000273	0.2	0.000244	0.0212	0.0462	0.0000515	14.7	0.0000252	0.00114	0.000264	0.00456	0.0555	0.0000706	11.8	0.00561	2.51	0.0326	0.00347	1.48	0.00408	0.00596	0.000214	0.0032	0.000782	0.0651	0.000047	0.00486	0.00432	0.0167
2066 Mar	73.6	0.00215	0.00107	0.000142	19.8	0.246	20.2	0.0000274	0.202	0.000244	0.0213	0.0465	0.0000518	14.8	0.0000253	0.00115	0.000266	0.0046	0.0558	0.0000711	11.9	0.00565	2.52	0.0328	0.0035	1.48	0.00411	0.00599	0.000215	0.00323	0.000788	0.0655	0.0000473	0.0049	0.00436	0.0169
2066 Apr	74.1	0.00213	0.00106	0.000141	20	0.248	20.3	0.0000276	0.204	0.000244	0.0215	0.0468	0.0000522	14.9	0.0000255	0.00116	0.000268	0.00464	0.0563	0.0000717	12	0.0057	2.53	0.0331	0.00352	1.49	0.00414	0.00606	0.000216	0.00326	0.000794	0.0659	0.0000477	0.00494	0.00439	0.017
2066 May	75.5	0.00207	0.00102	0.000137	20.4	0.254	20.8	0.0000283	0.209	0.000246	0.0219	0.0479	0.0000534	15.2	0.0000261	0.00118	0.000273	0.00475	0.0575	0.0000734	12.3	0.00583	2.58	0.0339	0.00361	1.52	0.00424	0.00622	0.000219	0.00334	0.000814	0.0672	0.0000488	0.00507	0.0045	0.0174
2066 Jun	73.3	0.00227	0.00107	0.000137	19.7	0.245	20.1	0.0000273	0.201	0.000242	0.0212	0.0463	0.0000515	14.7	0.0000252	0.00114	0.000264	0.00457	0.0553	0.0000708	11.8	0.00562	2.51	0.0326	0.00348	1.48	0.0041	0.00601	0.000206	0.00321	0.000784	0.0651	0.0000471	0.00488	0.00433	0.0168
2066 Jul	73.2	0.00268	0.00126	0.000156	19.6	0.242	19.9	0.000027	0.198	0.000245	0.021	0.0459	0.000051	14.6	0.0000248	0.00112	0.000263	0.0045	0.0545	0.0000696	11.7	0.00554	2.53	0.0321	0.00342	1.49	0.00405	0.00599	0.000202	0.00316	0.000771	0.065	0.0000464	0.00479	0.00427	0.0165
2066 Aug	74.4	0.0026	0.00125	0.000159	20	0.247	20.3	0.0000275	0.202	0.000253	0.0214	0.0467	0.0000519	14.9	0.0000253	0.00114	0.000267	0.00459	0.0556	0.0000709	11.9	0.00564	2.57	0.0327	0.00348	1.52	0.00413	0.00608	0.000205	0.00322	0.000785	0.0661	0.0000473	0.00488	0.00435	0.0168
2066 Sep	73.1	0.00245	0.00118	0.000156	19.6	0.243	19.9	0.0000271	0.199	0.000244	0.0211	0.0459	0.0000512	14.6	0.0000249	0.00113	0.000263	0.00452	0.055	0.0000698	11.7	0.00556	2.52	0.0322	0.00343	1.48	0.00405	0.00596	0.0002	0.00317	0.000774	0.0649	0.0000466	0.00481	0.00428	0.0166
2066 Oct	72	0.00238	0.00116	0.000155	19.3	0.239	19.6	0.0000267	0.196	0.000244	0.0208	0.0452	0.0000504	14.4	0.0000246	0.00111	0.000259	0.00445	0.0543	0.0000688	11.5	0.00548	2.48	0.0317	0.00338	1.46	0.00399	0.00585	0.000207	0.00312	0.000762	0.064	0.0000459	0.00474	0.00422	0.0163
2066 Nov	71.9	0.00233	0.00116	0.000154	19.3	0.239	19.6	0.0000266	0.196	0.000244	0.0207	0.0451	0.0000503	14.4	0.0000246	0.00111	0.000259	0.00445	0.0542	0.0000687	11.5	0.00547	2.47	0.0317	0.00337	1.46	0.00398	0.00584	0.000213	0.00312	0.000761	0.0639	0.0000458	0.00473	0.00421	0.0163
2066 Dec	72.1	0.00229	0.00114	0.000152	19.4	0.24	19.7	0.0000267	0.197	0.000243	0.0208	0.0453	0.0000505	14.4	0.0000247	0.00111	0.00026	0.00447	0.0544	0.000069	11.5	0.0055	2.48	0.0318	0.00339	1.46	0.004	0.00586	0.000213	0.00313	0.000765	0.0641	0.000046	0.00475	0.00423	0.0164
2067 Jan	72.4	0.00225	0.00112	0.000149	19.5	0.241	19.8	0.0000269	0.198	0.000243	0.0209	0.0456	0.0000508	14.5	0.0000248	0.00112	0.000261	0.0045	0.0547	0.0000695	11.6	0.00553	2.49	0.0321	0.00341	1.46	0.00402	0.00588	0.000214	0.00315	0.00077	0.0643	0.0000463	0.00479	0.00426	0.0165
2067 Feb	72.7	0.0022	0.00109	0.000146	19.6	0.243	19.9	0.0000271	0.2	0.000243	0.021	0.0459	0.0000511	14.6	0.000025	0.00113	0.000262	0.00453	0.0551	0.00007	11.7	0.00557	2.49	0.0323	0.00344	1.47	0.00405	0.00592	0.000215	0.00318	0.000776	0.0647	0.0000467	0.00483	0.00429	0.0166
2067 Mar	73.1	0.00215	0.00107	0.000142	19.7	0.244	20	0.0000272	0.201	0.000242	0.0212	0.0462	0.0000515	14.7	0.0000252	0.00114	0.000264	0.00457	0.0555	0.0000706	11.8	0.00561	2.5	0.0326	0.00347	1.47	0.00408	0.00595	0.000215	0.00321	0.000782	0.065	0.000047	0.00487	0.00433	0.0167
2067 Apr	73.6	0.00211	0.00105	0.00014	19.8	0.247	20.2	0.0000275	0.203	0.000243	0.0213	0.0465	0.0000519	14.8	0.0000254	0.00115	0.000266	0.00461	0.0559	0.0000713	11.9	0.00566	2.52	0.0329	0.0035	1.48	0.00411	0.00603	0.000216	0.00324	0.00079	0.0655	0.0000474	0.00491	0.00437	0.0169
2067 May	76.3	0.00186	0.000921	0.000124	20.6	0.258	21.1	0.0000287	0.214	0.000244	0.0222	0.0486	0.0000542	15.4	0.0000266	0.00121	0.000277	0.00484	0.0585	0.0000749	12.5	0.00594	2.59	0.0346	0.00369	1.52	0.00431	0.0063	0.000222	0.00341	0.00083	0.068	0.0000497	0.00517	0.00459	0.0177
2067 Jun	72.6	0.00235	0.00111	0.000143	19.5	0.242	19.9	0.000027	0.199	0.000242	0.021	0.0458	0.0000509	14.5	0.0000249	0.00113	0.000261	0.00451	0.0546	0.0000698	11.7	0.00555	2.49	0.0322	0.00343	1.47	0.00405	0.00595	0.000205	0.00317	0.000773	0.0645	0.0000465	0.00481	0.00428	0.0165
2067 Jul	72.5	0.0028	0.00132	0.0000266	19.4	0.238	19.6	0.0000266	0.195	0.00025	0.0207	0.0453	0.0000503	14.4	0.0000244	0.0011	0.000259	0.00443	0.0537	0.0000684	11.5	0.00545	2.52	0.0315	0.00335	1.48	0.00399	0.00592	0.000201	0.0031	0.000757	0.0643	0.0000457	0.0047	0.00419	0.0162
2067 Aug	74.6	0.00251	0.00121	0.000154	20	0.248	20.3	0.0000276	0.204	0.000252	0.0215	0.0469	0.0000521	14.9	0.0000254	0.00115	0.000268	0.00461	0.0559	0.0000713	11.9	0.00567	2.57	0.0329	0.0035	1.52	0.00414	0.0061	0.000206	0.00324	0.00079	0.0662	0.0000475	0.00491	0.00437	0.0169
2067 Sep	72.9	0.00242	0.00116	0.000155	19.6	0.242	19.9	0.000027	0.199	0.000247	0.021	0.0458	0.0000511	14.6	0.0000249	0.00112	0.000262	0.00451	0.0549	0.0000697	11.7	0.00555	2.51	0.0322	0.00342	1.48	0.00405	0.00591	0.000201	0.00316	0.000773	0.0648	0.0000465	0.0048	0.00428	0.0165
2067 Oct	71.5	0.00242	0.00118	0.000158	19.2	0.237	19.5	0.0000265	0.195	0.000244	0.0206	0.0448	0.00005	14.3	0.0000244	0.0011	0.000257	0.00441	0.0538	0.0000681	11.4	0.00543	2.46	0.0314	0.00334	1.45	0.00395	0.00581	0.000207	0.00309	0.000755	0.0635	0.0000455	0.00469	0.00418	0.0162
2067 Nov	71.6	0.00234	0.00116	0.000156	19.2	0.237	19.5	0.0000265	0.196	0.000243	0.0207	0.0449	0.0000501	14.3	0.0000245	0.0011	0.000258	0.00442	0.0539	0.0000683	11.4	0.00544	2.47	0.0315	0.00336	1.45	0.00396	0.00581	0.000213	0.0031	0.000757	0.0636	0.0000456	0.00471	0.00419	0.0162
2067 Dec	71.9	0.00229	0.00113	0.000152	19.3	0.239	19.6	0.0000267	0.197	0.000243	0.0208	0.0452	0.0000505	14.4	0.0000246	0.00111	0.000259	0.00446	0.0543	0.0000689	11.5	0.00549	2.47	0.0318	0.00338	1.46	0.00399	0.00585	0.000213	0.00313	0.000764	0.0639	0.000046	0.00475	0.00422	0.0164
2068 Jan	72.2	0.00224	0.00111	0.000149	19.4	0.241	19.8	0.0000269	0.199	0.000243	0.0209	0.0455	0.0000507	14.5	0.0000248	0.00112	0.000261	0.00449	0.0546	0.0000694	11.6	0.00552	2.48	0.032	0.00341	1.46	0.00402	0.00588	0.000214	0.00315	0.000769	0.0642	0.0000463	0.00478	0.00425	0.0165
2068 Feb	72.5	0.00222	0.00109	0.000146	19.5	0.242	19.9	0.000027	0.2	0.000242	0.021	0.0457	0.000051	14.5	0.0000249	0.00113	0.000262	0.00446	0.0549	0.0000698	11.7	0.00556	2.49	0.0322	0.00343	1.47	0.00404	0.0059	0.000214	0.00317	0.000774	0.0645	0.0000465	0.00481	0.00428	0.0166
2068																																				



Appendix C8: GSP1																																							
Constituents	Total Dissolved Solids	Ammonia	Nitrate	Nitrite	Chloride	Fluoride	Sulphate	Silver	Aluminum	Arsenic	Boron	Barium	Beryllium	Calcium	Cadmium	Cobalt	Chromium	Copper	Iron	Mercury	Potassium	Lithium	Magnesium	Manganese	Molybdenum	Sodium	Nickel	Phosphorus	Lead	Antimony	Selenium	Strontium	Thallium	Uranium	Vanadium	Zinc	Radium 226		
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L		
Operation (2023 to 2025): Min	3050	39.7	81.3	1.78	1940	0.46	22.9	0.0000567	0.0627	0.106	0.122	0.232	6.34	719	0.0000336	0.00041	0.00281	0.00213	0.0892	0.0000285	32.9	1.89	18.7	0.708	0.00327	137	0.0343	0.00645	0.000381	0.0025	0.00065	5.91	0.0000896	0.00138	0.00407	0.0255	0.0357		
Operation (2023 to 2025): Average	4050	76.9	128	3.45	2470	0.775	44.7	0.000095	0.143	0.133	0.257	0.391	14	924	0.000713	0.000775	0.00578	0.00458	0.198	0.0000525	39.4	4.01	24.9	1.55	0.00606	337	0.0743	0.00808	0.000831	0.00336	0.00113	16	0.00019	0.00307	0.00874	0.0338	0.0973		
Operation (2023 to 2025): Max	5170	119	180	5.34	3070	1.12	62.2	0.000131	0.222	0.16	0.409	0.535	20.9	1160	0.00105	0.00104	0.00873	0.0067	0.343	0.0000714	44.3	5.92	30.6	2.32	0.00842	563	0.11	0.00955	0.00125	0.00366	0.00152	17.4	0.000285	0.00432	0.0126	0.0407	0.167		
Active Closure (2026 to Sept. 2042): Min	3890	80.1	127	3.59	2340	0.764	22.4	0.0000559	0.0502	0.081	0.273	0.228	6.14	878	0.000326	0.000343	0.00274	0.00207	0.0874	0.0000243	30.4	1.84	18.6	0.687	0.0032	365	0.0333	0.00808	0.00037	0.0017	0.00063	17.5	0.0000872	0.000968	0.00395	0.0248	0.106		
Active Closure (2026 to Sept. 2042): Average	5580	117	184	5.25	3360	1.08	38.9	0.0000893	0.0689	0.116	0.394	0.391	13.5	1260	0.000683	0.000438	0.00527	0.00304	0.121	0.000032	42.1	3.89	27.6	1.47	0.00489	535	0.0701	0.00987	0.000759	0.00242	0.000862	25.7	0.000164	0.00139	0.00713	0.0334	0.156		
Active Closure (2026 to Sept. 2042): Max	7530	156	247	7.01	4550	1.41	51.6	0.000121	0.0913	0.157	0.521	0.543	19.2	1710	0.00097	0.000549	0.0074	0.004	0.161	0.0000413	57.2	5.54	37.2	2.09	0.0068	712	0.0992	0.0119	0.00101	0.00319	0.00117	34.1	0.000228	0.00185	0.00984	0.0446	0.208		
Post Closure (Oct. 2042 to 2070): Min	824	16.1	25.4	0.722	478	0.209	12.5	0.0000225	0.0152	0.0167	0.0636	0.0725	1.98	183	0.000105	0.000156	0.000902	0.000936	0.0317	0.00000927	7.6	0.571	6.47	0.217	0.000752	74.7	0.0114	0.00462	0.00028	0.000435	0.000172	3.55	0.0000335	0.000221	0.00151	0.0078	0.0214		
Post Closure (Oct. 2042 to 2070): Average	2090	42.5	67.1	1.91	1250	0.443	20.7	0.0000419	0.03	0.0432	0.151	0.163	5.22	470	0.000269	0.000241	0.00214	0.00157	0.0576	0.0000158	17.1	1.51	12.5	0.57	0.0019	195	0.0281	0.00626	0.000435	0.000963	0.000364	9.31	0.0000711	0.000532	0.00313	0.015	0.0565		
Post Closure (Oct. 2042 to 2070): Max	3990	82.1	130	3.68	2400	0.785	32	0.00007	0.0517	0.083	0.28	0.296	10.1	900	0.000513	0.000355	0.00398	0.00245	0.0946	0.0000251	31.2	2.91	21.3	1.1	0.00361	375	0.0529	0.00839	0.000645	0.00174	0.000647	17.9	0.000126	0.000994	0.0055	0.0256	0.109		
Model Predictions (2023-2070)																																							
2023 Jan	3050	39.7	81.3	1.78	1940	0.46	62.2	0.000131	0.222	0.109	0.122	0.535	20.9	719	0.00105	0.00104	0.00873	0.0067	0.343	0.0000714	44.3	5.92	30.6	2.32	0.00842	137	0.11	0.00645	0.00125	0.00352	0.00152	5.91	0.000285	0.00432	0.0126	0.0407	0.0357		
2023 Feb	3150	43.4	85.9	1.95	1990	0.491	60.4	0.000127	0.214	0.114	0.135	0.519	20.2	738	0.00101	0.00101	0.00844	0.00647	0.332	0.0000692	43.7	5.71	29.9	2.24	0.00817	157	0.106	0.0066	0.00121	0.00352	0.00148	6.92	0.000275	0.00418	0.0122	0.0399	0.0418		
2023 Mar	3240	46.8	90.1	2.1	2030	0.52	58.7	0.000124	0.207	0.119	0.148	0.505	19.5	757	0.00098	0.000982	0.00817	0.00626	0.322	0.0000672	43.2	5.52	29.4	2.16	0.00793	176	0.103	0.00675	0.00117	0.00352	0.00144	7.86	0.000266	0.00405	0.0118	0.0392	0.0476		
2023 Apr	3330	50.2	94.2	2.25	2080	0.548	57.2	0.000121	0.201	0.124	0.16	0.491	18.8	775	0.000948	0.000958	0.00791	0.00607	0.312	0.0000654	42.7	5.34	28.8	2.09	0.00771	194	0.0994	0.0069	0.00113	0.00353	0.00141	8.78	0.000258	0.00393	0.0114	0.0385	0.0532		
2023 May	3420	53.5	98.4	2.4	2130	0.577	56	0.000118	0.196	0.129	0.172	0.481	18.3	794	0.000922	0.000939	0.0077	0.00591	0.304	0.0000641	42.4	5.19	28.5	2.03	0.00754	211	0.0966	0.00707	0.0011	0.00356	0.00139	9.66	0.000251	0.00384	0.0111	0.038	0.0586		
2023 Jun	3140	49.9	91.2	2.24	1950	0.561	52.2	0.000108	0.192	0.119	0.163	0.435	16.3	728	0.000825	0.000972	0.00685	0.00578	0.269	0.0000654	39.6	4.63	25.8	1.81	0.00714	199	0.0866	0.0071	0.000999	0.00359	0.00133	9.14	0.000228	0.004	0.0104	0.036	0.0554		
2023 Jul	3230	50.7	93.4	2.28	2010	0.565	54.2	0.000112	0.191	0.12	0.165	0.455	17.3	750	0.000871	0.000982	0.0071	0.0059	0.26	0.0000663	41	4.9	26.9	1.91	0.00737	200	0.0912	0.00713	0.00104	0.00362	0.00135	9.17	0.000236	0.00404	0.0109	0.0372	0.0555		
2023 Aug	3340	52.9	96.8	2.38	2080	0.584	54.6	0.000113	0.189	0.124	0.172	0.461	17.5	774	0.000881	0.000979	0.00714	0.00589	0.256	0.0000661	41.7	4.96	27.3	1.93	0.00742	211	0.0922	0.00725	0.00104	0.00365	0.00136	9.67	0.000237	0.00402	0.0109	0.0376	0.0586		
2023 Sep	3430	54.3	99.3	2.44	2130	0.59	55.5	0.000115	0.185	0.12																													



Appendix C8: GSP1

Constituents	Total Dissolved Solids	Ammonia	Nitrate	Nitrite	Chloride	Fluoride	Sulphate	Silver	Aluminum	Arsenic	Boron	Barium	Beryllium	Calcium	Cadmium	Cobalt	Chromium	Copper	Iron	Mercury	Potassium	Lithium	Magnesium	Manganese	Molybdenum	Sodium	Nickel	Phosphorus	Lead	Antimony	Selenium	Strontium	Thallium	Uranium	Vanadium	Zinc	Radium 226
2030 Oct	6630	137	217	6.17	4000	1.25	46.3	0.000107	0.0809	0.139	0.459	0.48	16.9	1500	0.000854	0.000495	0.00652	0.00358	0.143	0.000037	50.5	4.87	33	1.84	0.00599	626	0.0874	0.0108	0.000904	0.00282	0.00103	30	0.000202	0.00163	0.00871	0.0396	0.183
2030 Nov	6590	137	216	6.14	3980	1.24	46.1	0.000107	0.0806	0.138	0.457	0.477	16.8	1490	0.000849	0.000493	0.00649	0.00356	0.143	0.0000368	50.2	4.85	32.9	1.83	0.00596	623	0.087	0.0108	0.000902	0.0028	0.00103	29.9	0.000201	0.00163	0.00867	0.0395	0.182
2030 Dec	6590	137	216	6.14	3980	1.24	46.1	0.000107	0.0806	0.138	0.457	0.477	16.8	1490	0.000849	0.000493	0.00649	0.00356	0.143	0.0000368	50.2	4.85	32.9	1.83	0.00596	623	0.087	0.0108	0.000902	0.0028	0.00103	29.9	0.000201	0.00163	0.00867	0.0395	0.182
2031 Jan	6590	137	216	6.14	3980	1.24	46	0.000107	0.0806	0.138	0.457	0.477	16.8	1490	0.000849	0.000493	0.00649	0.00356	0.143	0.0000368	50.2	4.85	32.9	1.83	0.00596	623	0.0869	0.0108	0.000902	0.0028	0.00103	29.9	0.000201	0.00163	0.00867	0.0395	0.182
2031 Feb	6590	137	216	6.14	3980	1.24	46.1	0.000107	0.0806	0.138	0.457	0.477	16.8	1490	0.000849	0.000493	0.00649	0.00356	0.143	0.0000368	50.2	4.85	32.9	1.83	0.00596	623	0.087	0.0108	0.000902	0.0028	0.00103	29.9	0.000201	0.00163	0.00867	0.0395	0.182
2031 Mar	6590	137	216	6.14	3980	1.25	46.1	0.000107	0.0806	0.138	0.457	0.477	16.8	1490	0.00085	0.000493	0.00649	0.00356	0.143	0.0000368	50.2	4.85	32.9	1.83	0.00596	623	0.087	0.0108	0.000902	0.0028	0.00103	29.9	0.000201	0.00163	0.00867	0.0395	0.182
2031 Apr	6630	137	217	6.17	4000	1.25	46.3	0.000107	0.081	0.139	0.459	0.48	16.9	1500	0.000854	0.000495	0.00652	0.00358	0.143	0.000037	50.5	4.87	33	1.84	0.00599	626	0.0874	0.0108	0.000907	0.00282	0.00103	30	0.000202	0.00163	0.00872	0.0397	0.183
2031 May	6760	140	222	6.29	4080	1.28	47.2	0.000109	0.0826	0.141	0.468	0.489	17.2	1530	0.000871	0.000505	0.00666	0.00365	0.146	0.0000377	51.5	4.97	33.7	1.88	0.00611	638	0.0891	0.0111	0.000925	0.00287	0.00105	30.6	0.000206	0.00167	0.00889	0.0405	0.187
2031 Jun	6330	131	208	5.89	3820	1.2	44.4	0.000103	0.0774	0.132	0.439	0.459	16.1	1430	0.000815	0.000476	0.00623	0.00343	0.137	0.0000355	48.3	4.65	31.6	1.76	0.00572	598	0.0835	0.0105	0.000867	0.00269	0.000988	28.7	0.000193	0.00156	0.00834	0.038	0.175
2031 Jul	6410	133	210	5.97	3870	1.21	45.1	0.000104	0.0785	0.134	0.445	0.465	16.4	1450	0.000826	0.000483	0.00632	0.00349	0.139	0.000036	48.9	4.72	32.1	1.78	0.0058	606	0.0846	0.0107	0.000879	0.00273	0.001	29.1	0.000196	0.00158	0.00845	0.0385	0.177
2031 Aug	6590	137	216	6.13	3980	1.25	46.4	0.000107	0.0806	0.138	0.457	0.477	16.8	1490	0.000848	0.000497	0.00649	0.00358	0.143	0.000037	50.3	4.84	33	1.83	0.00595	622	0.0869	0.0109	0.000903	0.0028	0.00103	29.8	0.000201	0.00162	0.00868	0.0395	0.182
2031 Sep	6420	133	210	5.97	3880	1.22	45.2	0.000104	0.0787	0.134	0.445	0.466	16.4	1450	0.000827	0.000485	0.00633	0.0035	0.14	0.0000361	49	4.72	32.1	1.78	0.0058	606	0.0847	0.0107	0.000881	0.00273	0.001	29.1	0.000196	0.00158	0.00847	0.0386	0.177
2031 Oct	6340	131	208	5.89	3830	1.2	44.7	0.000103	0.0777	0.132	0.439	0.46	16.2	1430	0.000816	0.000479	0.00624	0.00345	0.138	0.0000357	48.4	4.66	31.7	1.76	0.00573	598	0.0836	0.0106	0.000874	0.0027	0.000991	28.7	0.000193	0.00156	0.00836	0.0381	0.175
2031 Nov	6310	131	207	5.87	3810	1.19	44.5	0.000103	0.0774	0.132	0.437	0.457	16.1	1430	0.000812	0.000477	0.00622	0.00344	0.137	0.0000355	48.1	4.64	31.6	1.75	0.0057	595	0.0832	0.0105	0.000873	0.00269	0.000986	28.6	0.000192	0.00156	0.00832	0.0379	0.174
2031 Dec	6310	131	207	5.87	3810	1.19	44.5	0.000103	0.0774	0.132	0.437	0.457	16.1	1430	0.000812	0.000477	0.00621	0.00344	0.137	0.0000355	48.1	4.64	31.6	1.75	0.0057	595	0.0832	0.0105	0.000873	0.00269	0.000986	28.6	0.000192	0.00156	0.00832	0.0379	0.174
2032 Jan	6310	131	207	5.87	3810	1.19	44.5	0.000103	0.0774	0.132	0.437	0.457	16.1	1430	0.000812	0.000477	0.00622	0.00344	0.137	0.0000355	48.1	4.64	31.6	1.75	0.0057	595	0.0832	0.0105	0.000873	0.00269	0.000986	28.6	0.000192	0.00156	0.00832	0.0379	0.174
2032 Feb	6310	131	207	5.87	3810	1.19	44.5	0.000103	0.0774	0.132	0.437	0.457	16.1	1430	0.000812	0.000477	0.00622	0.00344	0.137	0.0000355	48.1	4.64	31.6	1.75	0.0057	595	0.0832	0.0105	0.000873	0.00269	0.000986	28.6	0.000192	0.00156	0.00832	0.0379	0.174
2032 Mar	6310	131	207	5.87	3810	1.19	44.5	0.000103	0.0774	0.132	0.437	0.457	16.1	1430	0.000812	0.000477	0.00622	0.00344	0.137	0.0000355	48.1	4.64	31.6	1.75	0.0057	596	0.0832	0.0105	0.000873	0.00269	0.000986	28.6	0.000192	0.00156	0.00832	0.0379	0.174
2032 Apr	6340	131	208	5.9	3830	1.2	44.7	0.000103	0.0778	0.132	0.439	0.46	16.2	1440	0.000817	0.00048	0.00625	0.00346	0.138	0.0000357	48.4	4.66	31.7	1.76	0.00573	598	0.0836	0.0106	0.000877	0.0027	0.000991	28.7	0.000193	0.00156	0.00836	0.0381	0.175
2032 May	6470	134	212	6.02	3910	1.22	45.6	0.000105	0.0793	0.135	0.448	0.469	16.5	1460	0.000833	0.00049	0.00637	0.00353	0.141	0.0000364	49.4	4.76	32.4	1.8	0.00585	611	0.0835	0.0108	0.000895	0.00275	0.00101	29.3	0.000197	0.0016	0.00854	0.0389	0.178
2032 Jun	6070	126	199	5.64	3660	1.15	43	0.0000991	0.0745	0.127	0.421	0.441	15.5	1370	0.000782	0.000462	0.00598	0.00332	0.132	0.0000343	46.4	4.46	30.5	1.68	0.00549	573	0.0801	0.0102	0.000841	0.00259	0.00095	27.5	0.000185	0.0015	0.00802	0.0366	0.167
2032 Jul	6150	127	202	5.72	3710	1.17	43.7	0.000101	0.0756	0.129	0.427	0.447	15.7	1390	0.000792	0.00047	0.00607	0.00337	0.134	0.0000348	47	4.52	30.9	1.71	0.00556	581	0.0812	0.0104	0.000853	0.00262	0.000964	27.9	0.000188	0.00152	0.00814	0.0371	0.17
2032 Aug	6300	131	207	5.86	3810	1.2	44.8	0.000103	0.0775	0.132	0.437	0.458	16.1	1430	0.000812	0.000482	0.00622	0.00346	0.138	0.0000357	48.2	4.63	31.7	1.75	0.0057	595	0.0832	0.0107	0.000874	0.00269	0.000988	28.5	0.000193	0.00156	0.00834	0.038	0.174
2032 Sep	6140	127	201	5.71	3710	1.17	43.7	0.000101	0.0756	0.128	0.426	0.446	15.7	1390	0.000791	0.00047	0.00606	0.00338	0.135	0.0000348	47	4.51	30.9	1.7	0.00555	580	0.0811	0.0104	0.000852	0.00262	0.000963	27.8	0.000188	0.00152	0.00813	0.0371	0.169
2032 Oct	6060	126	199	5.64	3660	1.15	43.2	0.0000992	0.0746	0.127	0.421	0.44	15.4	1370	0.000781	0.000464	0.00598	0.00333	0.133	0.0000344	46.3	4.45	30.5	1.68	0.00548	572	0.08	0.0103	0.000846	0.00259	0.00095	27.4	0.000185	0.0015	0.00802	0.0366	0.167
2032 Nov	6030	125	198	5.61	3640	1.15	43	0.0000988	0.0743	0.126	0.419	0.438	15.4	1370	0.000777	0.000462	0.00595	0.00332	0.132	0.0000342	46.1	4.43	30.4	1.67	0.00545	569	0.0796	0.0102	0.000844	0.00257	0.000946	27.3	0.000185	0.00149	0.00799	0.0364	0.166
2032 Dec	6030	125	198	5.61	3640	1.15	43	0.0000988	0.0743	0.126	0.419	0.438	15.4	1370	0.000777	0.000462	0.00595	0.00332	0.132	0.0000342	46.1	4.43	30.4	1.67	0.00545	569	0.0796	0.0102	0.000844	0.00257	0.000946	27.3	0.000185	0.00149	0.00799	0.0364	0.166
2033 Jan	6030	125	198	5.61	3640	1.15	43	0.0000988	0.0743	0.126	0.419	0.438	15.4	1370	0.000777	0.000462	0.00595	0.00332	0.132	0.0000342	46.1	4.43	30.4	1.67	0.00545	569	0.0796	0.0102	0.000844	0.00257	0.000946	27.3	0.000185	0.00149	0.00799	0.0364	0.166
2033 Feb	6030	125	198	5.61	3640	1.15	43	0.0000988	0.0743	0.126	0.419	0.438	15.4	1370	0.000777	0.000462	0.00595	0.00332	0.132	0.0000342	46.1	4.43	30.4	1.67	0.00545	569	0.0796	0.0102	0.000844	0.00257	0.000946	27.3	0.000185	0.00149	0.00799	0.0364	0.166
2033 Mar	6030	125	198	5.61	3640	1.15	43	0.0000988	0.0743	0.126	0.419	0.438	15.4	1370	0.000777	0.000462	0.00595	0.00332	0.132	0.0000342	46.1	4.43	30.4	1.67	0.00545	569	0.0796	0.0102	0.000845	0.00257	0.00						



Appendix C8: GSP1																																					
Constituents	Total Dissolved Solids	Ammonia	Nitrate	Nitrite	Chloride	Fluoride	Sulphate	Silver	Aluminum	Arsenic	Boron	Barium	Beryllium	Calcium	Cadmium	Cobalt	Chromium	Copper	Iron	Mercury	Potassium	Lithium	Magnesium	Manganese	Molybdenum	Sodium	Nickel	Phosphorus	Lead	Antimony	Selenium	Strontium	Thallium	Uranium	Vanadium	Zinc	Radium 226
2039 Sep	4520	93.3	148	4.19	2720	0.879	34.8	0.0000775	0.0575	0.0943	0.316	0.334	11.5	1020	0.000582	0.000383	0.0045	0.00267	0.104	0.0000274	35.1	3.31	23.7	1.25	0.00409	426	0.0599	0.00885	0.000688	0.00196	0.000725	20.4	0.000142	0.00112	0.00615	0.0284	0.124
2039 Oct	4460	92	145	4.13	2680	0.867	34.3	0.0000764	0.0567	0.0929	0.312	0.329	11.3	1010	0.000574	0.000378	0.00443	0.00264	0.103	0.0000271	34.6	3.26	23.3	1.23	0.00403	419	0.059	0.00873	0.000684	0.00193	0.000715	20.1	0.00014	0.00111	0.00606	0.028	0.122
2039 Nov	4430	91.5	145	4.1	2670	0.862	34.2	0.000076	0.0565	0.0924	0.31	0.327	11.3	1000	0.000571	0.000376	0.00441	0.00262	0.102	0.0000269	34.4	3.24	23.2	1.23	0.00401	417	0.0587	0.00869	0.000683	0.00192	0.000711	20	0.000139	0.0011	0.00603	0.0279	0.122
2039 Dec	4430	91.5	145	4.1	2670	0.862	34.2	0.000076	0.0565	0.0924	0.31	0.327	11.2	1000	0.000571	0.000376	0.00441	0.00262	0.102	0.0000269	34.4	3.24	23.2	1.23	0.00401	417	0.0587	0.00869	0.000683	0.00192	0.000711	20	0.000139	0.0011	0.00603	0.0279	0.122
2040 Jan	4430	91.5	145	4.1	2670	0.862	34.2	0.000076	0.0565	0.0924	0.31	0.327	11.2	1000	0.000571	0.000376	0.00441	0.00262	0.102	0.0000269	34.4	3.24	23.2	1.23	0.00401	417	0.0587	0.00869	0.000683	0.00192	0.000711	20	0.000139	0.0011	0.00603	0.0279	0.122
2040 Feb	4430	91.5	145	4.1	2670	0.862	34.2	0.000076	0.0565	0.0924	0.31	0.327	11.3	1000	0.000571	0.000376	0.00441	0.00262	0.102	0.0000269	34.4	3.24	23.2	1.23	0.00401	417	0.0587	0.00869	0.000683	0.00192	0.000711	20	0.000139	0.0011	0.00603	0.0279	0.122
2040 Mar	4430	91.5	145	4.11	2670	0.863	34.2	0.000076	0.0565	0.0924	0.31	0.327	11.3	1000	0.000571	0.000376	0.00441	0.00263	0.102	0.0000269	34.4	3.25	23.2	1.23	0.00401	417	0.0587	0.0087	0.000683	0.00192	0.000712	20	0.000139	0.0011	0.00603	0.0279	0.122
2040 Apr	4460	92	145	4.13	2680	0.867	34.4	0.0000764	0.0568	0.0929	0.312	0.329	11.3	1010	0.000574	0.000378	0.00443	0.00264	0.103	0.0000271	34.6	3.26	23.3	1.23	0.00403	419	0.0591	0.00874	0.000687	0.00193	0.000715	20.1	0.00014	0.00111	0.00606	0.028	0.122
2040 May	4550	93.9	148	4.21	2740	0.885	35.1	0.000078	0.0579	0.0948	0.318	0.336	11.5	1030	0.000586	0.000386	0.00452	0.00269	0.105	0.0000276	35.3	3.33	23.8	1.26	0.00412	428	0.0603	0.00893	0.000701	0.00197	0.00073	20.5	0.000142	0.00113	0.00619	0.0286	0.125
2040 Jun	4240	87.5	138	3.93	2550	0.827	32.9	0.000073	0.0541	0.0884	0.297	0.313	10.8	959	0.000546	0.000362	0.00422	0.00253	0.0982	0.0000259	33	3.1	22.3	1.17	0.00384	399	0.0562	0.00843	0.000655	0.00184	0.000682	19.1	0.000133	0.00105	0.00578	0.0267	0.116
2040 Jul	4330	89.4	141	4.01	2610	0.846	33.7	0.0000747	0.0553	0.0904	0.303	0.32	11	980	0.000558	0.000371	0.00432	0.00259	0.101	0.0000265	33.7	3.17	22.8	1.2	0.00392	408	0.0575	0.00865	0.00067	0.00188	0.000697	19.6	0.000136	0.00108	0.00591	0.0273	0.119
2040 Aug	4460	91.9	145	4.12	2680	0.87	34.7	0.0000768	0.0569	0.0929	0.312	0.329	11.3	1010	0.000574	0.000382	0.00444	0.00266	0.103	0.0000273	34.7	3.26	23.5	1.23	0.00403	419	0.0591	0.0089	0.000689	0.00194	0.000717	20.1	0.00014	0.00111	0.00608	0.0281	0.122
2040 Sep	4330	89.3	141	4.01	2610	0.846	33.8	0.0000748	0.0554	0.0903	0.303	0.32	11	979	0.000558	0.000372	0.00431	0.00259	0.101	0.0000266	33.7	3.17	22.8	1.2	0.00392	408	0.0574	0.00867	0.00067	0.00188	0.000698	19.5	0.000136	0.00108	0.00592	0.0274	0.119
2040 Oct	4270	88	139	3.95	2570	0.834	33.3	0.0000737	0.0546	0.089	0.299	0.316	10.8	965	0.000549	0.000367	0.00425	0.00256	0.0994	0.0000262	33.2	3.12	22.5	1.18	0.00386	402	0.0566	0.00856	0.000665	0.00186	0.000687	19.2	0.000134	0.00106	0.00583	0.027	0.117
2040 Nov	4250	87.6	138	3.93	2550	0.829	33.2	0.0000734	0.0544	0.0885	0.297	0.314	10.8	960	0.000547	0.000366	0.00423	0.00254	0.0989	0.0000261	33	3.11	22.4	1.17	0.00384	399	0.0563	0.00852	0.000665	0.00185	0.000684	19.1	0.000133	0.00106	0.0058	0.0269	0.116
2040 Dec	4250	87.6	138	3.93	2550	0.829	33.2	0.0000734	0.0544	0.0885	0.297	0.314	10.8	960	0.000547	0.000366	0.00423	0.00254	0.0989	0.0000261	33	3.11	22.4	1.17	0.00384	399	0.0563	0.00852	0.000665	0.00185	0.000684	19.1	0.000133	0.00106	0.0058	0.0269	0.116
2041 Jan	4250	87.6	138	3.93	2550	0.829	33.2	0.0000734	0.0544	0.0885	0.297	0.314	10.8	960	0.000547	0.000366	0.00423	0.00254	0.0989	0.0000261	33	3.11	22.4	1.17	0.00384	399	0.0563	0.00851	0.000665	0.00185	0.000684	19.1	0.000133	0.00106	0.0058	0.0269	0.116
2041 Feb	4250	87.6	138	3.93	2550	0.829	33.2	0.0000734	0.0544	0.0885	0.297	0.314	10.8	960	0.000547	0.																					



Appendix C8: GSP1																																					
Constituents	Total Dissolved Solids	Ammonia	Nitrate	Nitrite	Chloride	Fluoride	Sulphate	Silver	Aluminum	Arsenic	Boron	Barium	Beryllium	Calcium	Cadmium	Cobalt	Chromium	Copper	Iron	Mercury	Potassium	Lithium	Magnesium	Manganese	Molybdenum	Sodium	Nickel	Phosphorus	Lead	Antimony	Selenium	Strontium	Thallium	Uranium	Vanadium	Zinc	Radium 226
2048 Aug	3030	62	98	2.78	1810	0.614	26.6	0.0000562	0.0408	0.0629	0.215	0.229	7.62	683	0.000389	0.000301	0.00305	0.00202	0.0763	0.0000206	24.1	2.2	17	0.831	0.00274	283	0.0404	0.00744	0.00054	0.00135	0.000506	13.6	0.0000987	0.000761	0.00432	0.0203	0.0824
2048 Sep	2940	60.1	95.1	2.7	1760	0.596	25.8	0.0000546	0.0397	0.061	0.208	0.223	7.39	662	0.000378	0.000293	0.00296	0.00197	0.0743	0.00002	23.4	2.13	16.5	0.806	0.00266	275	0.0392	0.00723	0.000525	0.00131	0.000491	13.2	0.0000958	0.000761	0.00419	0.0198	0.08
2048 Oct	2890	59.1	93.4	2.65	1730	0.587	25.4	0.0000537	0.0391	0.06	0.205	0.219	7.27	651	0.000371	0.000289	0.00291	0.00194	0.0731	0.0000197	23	2.1	16.2	0.792	0.00262	270	0.0385	0.00712	0.000521	0.00129	0.000483	12.9	0.0000943	0.000726	0.00413	0.0195	0.0786
2048 Nov	2870	58.8	92.9	2.64	1720	0.583	25.3	0.0000534	0.0389	0.0596	0.204	0.218	7.23	648	0.000369	0.000287	0.0029	0.00193	0.0727	0.0000196	22.9	2.08	16.1	0.788	0.0026	269	0.0383	0.00708	0.000521	0.00128	0.00048	12.9	0.0000938	0.000722	0.0041	0.0194	0.782
2048 Dec	2870	58.8	92.9	2.64	1720	0.583	25.3	0.0000534	0.0389	0.0596	0.204	0.218	7.23	648	0.000369	0.000287	0.0029	0.00193	0.0727	0.0000196	22.9	2.08	16.1	0.788	0.0026	269	0.0383	0.00708	0.000521	0.00128	0.00048	12.9	0.0000938	0.000722	0.0041	0.0194	0.782
2049 Jan	2870	58.8	92.9	2.64	1720	0.583	25.3	0.0000534	0.0389	0.0596	0.204	0.218	7.23	648	0.000369	0.000287	0.0029	0.00193	0.0727	0.0000196	22.9	2.08	16.1	0.788	0.0026	269	0.0383	0.00709	0.000521	0.00128	0.000481	12.9	0.0000938	0.000722	0.0041	0.0194	0.782
2049 Feb	2870	58.8	92.9	2.64	1720	0.584	25.3	0.0000534	0.0389	0.0596	0.204	0.218	7.23	648	0.000369	0.000287	0.0029	0.00193	0.0728	0.0000196	22.9	2.09	16.1	0.788	0.0026	269	0.0383	0.00709	0.000521	0.00128	0.000481	12.9	0.0000938	0.000722	0.0041	0.0194	0.782
2049 Mar	2870	58.8	92.9	2.64	1720	0.584	25.3	0.0000534	0.0389	0.0596	0.204	0.218	7.23	648	0.000369	0.000287	0.0029	0.00193	0.0728	0.0000196	22.9	2.09	16.1	0.788	0.0026	269	0.0383	0.00709	0.000521	0.00128	0.000481	12.9	0.0000938	0.000722	0.0041	0.0194	0.782
2049 Apr	2890	59.1	93.4	2.65	1730	0.586	25.4	0.0000537	0.0391	0.0599	0.205	0.219	7.26	651	0.000371	0.000289	0.00291	0.00194	0.0731	0.0000197	23	2.1	16.2	0.792	0.00261	270	0.0385	0.00713	0.000524	0.00129	0.000493	12.9	0.0000942	0.000725	0.00412	0.0194	0.786
2049 May	2940	60.2	95.2	2.7	1760	0.598	25.9	0.0000548	0.0399	0.0611	0.209	0.223	7.41	664	0.000379	0.000295	0.00297	0.00198	0.0746	0.0000201	23.5	2.14	16.5	0.808	0.00267	276	0.0393	0.00729	0.000534	0.00132	0.000493	13.2	0.0000961	0.00074	0.00421	0.0198	0.0801
2049 Jun	2730	55.9	88.4	2.51	1640	0.557	24.3	0.0000511	0.0371	0.0567	0.194	0.208	6.87	616	0.000351	0.000276	0.00276	0.00185	0.0695	0.0000188	21.8	1.98	15.4	0.749	0.00247	256	0.0365	0.00687	0.000497	0.00122	0.000459	12.2	0.0000895	0.000687	0.00392	0.0185	0.0743
2049 Jul	2800	57.3	90.6	2.57	1680	0.572	25	0.0000525	0.0381	0.0582	0.199	0.213	7.05	632	0.00036	0.000284	0.00283	0.0019	0.0714	0.0000193	22.4	2.03	15.9	0.769	0.00254	262	0.0374	0.00708	0.00051	0.00126	0.000471	12.6	0.0000919	0.000705	0.00402	0.019	0.0763
2049 Aug	2860	58.5	92.5	2.62	1710	0.584	25.5	0.0000536	0.0389	0.0593	0.203	0.218	7.19	645	0.000368	0.000291	0.00289	0.00194	0.0713	0.0000197	22.9	2.07	16.2	0.784	0.00259	268	0.0382	0.00723	0.000521	0.00128	0.000481	12.8	0.0000938	0.00072	0.00411	0.0194	0.0778
2049 Sep	2780	56.9	89.9	2.55	1660	0.568	24.9	0.0000523	0.0379	0.0577	0.198	0.212	6.99	627	0.000358	0.000284	0.00281	0.00189	0.0712	0.0000192	22.3	2.02	15.8	0.763	0.00252	260	0.0371	0.00705	0.000507	0.00125	0.000468	12.5	0.0000913	0.0007	0.004	0.0189	0.0757
2049 Oct	2740	56	88.5	2.51	1640	0.559	24.5	0.0000515	0.0374	0.0568	0.195	0.208	6.88	617	0.000352	0.00028	0.00277	0.00187	0.0702	0.000019	21.9	1.98	15.5	0.75	0.00248	256	0.0365	0.00695	0.000504	0.00123	0.000461	12.3	0.0000899	0.000689	0.00394	0.0186	0.0744
2049 Nov	2720	55.6	87.9	2.5	1630	0.556	24.4	0.0000512	0.0372	0.0564	0.194	0.207	6.84	613	0.00035	0.000278	0.00275	0.00186	0.0698	0.0000189	21.8	1.97	15.4	0.746	0.00246	255	0.0363	0.00691	0.000505	0.00122	0.000458	12.2	0.0000894	0.000685	0.00392	0.0185	0.074
2049 Dec	2720	55.6	87.9	2.5	1630	0.556	24.4	0.0000512	0.0372	0.0564	0.194	0.207	6.84	613	0.00035	0.000278	0.00275	0.00186	0.0698	0.0000189	21.8	1.97	15.4	0.746	0.00246	255	0.0363	0.00691	0.000505	0.00122	0.000458	12.2	0.0000894	0.000685	0.00392	0.0185	0.074
2050 Jan	2720	55.6	87.9	2.5	1630	0.5																															



Appendix C8: GSP1																																					
Constituents	Total Dissolved Solids	Ammonia	Nitrate	Nitrite	Chloride	Fluoride	Sulphate	Silver	Aluminum	Arsenic	Boron	Barium	Beryllium	Calcium	Cadmium	Cobalt	Chromium	Copper	Iron	Mercury	Potassium	Lithium	Magnesium	Manganese	Molybdenum	Sodium	Nickel	Phosphorus	Lead	Antimony	Selenium	Strontium	Thallium	Uranium	Vanadium	Zinc	Radium 226
2057 Jul	1870	37.7	59.7	1.69	1110	0.404	19.5	0.0000388	0.0275	0.0385	0.135	0.147	4.64	419	0.00024	0.00023	0.00192	0.00147	0.0534	0.0000148	15.5	1.34	11.6	0.507	0.00169	173	0.0252	0.00611	0.000411	0.000872	0.000332	8.28	0.0000647	0.000477	0.00286	0.0139	0.0502
2057 Aug	1910	38.7	61.2	1.74	1140	0.414	20.1	0.0000399	0.0282	0.0395	0.139	0.151	4.76	430	0.000246	0.000236	0.00197	0.00151	0.0549	0.0000152	15.9	1.37	11.9	0.519	0.00174	178	0.0258	0.00628	0.000422	0.000895	0.000334	8.49	0.0000664	0.00049	0.00294	0.0142	0.0515
2057 Sep	1860	37.6	59.4	1.69	1100	0.403	19.5	0.0000388	0.0275	0.0384	0.135	0.147	4.62	418	0.000239	0.00023	0.00192	0.00148	0.0536	0.0000149	15.5	1.33	11.6	0.505	0.00169	173	0.0251	0.00612	0.000411	0.000871	0.000331	8.25	0.0000646	0.000476	0.00286	0.0139	0.05
2057 Oct	1830	37	58.4	1.66	1090	0.397	19.3	0.0000382	0.0271	0.0377	0.133	0.145	4.55	411	0.000235	0.000227	0.00189	0.00145	0.0528	0.0000146	15.2	1.31	11.4	0.496	0.00166	170	0.0247	0.00603	0.000409	0.000857	0.000326	8.11	0.0000636	0.000468	0.00281	0.0136	0.0492
2057 Nov	1820	36.8	58.1	1.65	1080	0.394	19.2	0.000038	0.027	0.0375	0.132	0.144	4.52	409	0.000234	0.000226	0.00188	0.00145	0.0526	0.0000146	15.1	1.3	11.3	0.493	0.00165	169	0.0245	0.006	0.00041	0.000852	0.000324	8.07	0.0000633	0.000466	0.0028	0.0136	0.0489
2057 Dec	1820	36.8	58.1	1.65	1080	0.394	19.2	0.000038	0.027	0.0375	0.132	0.144	4.52	409	0.000234	0.000226	0.00188	0.00145	0.0526	0.0000146	15.1	1.3	11.3	0.493	0.00165	169	0.0245	0.006	0.00041	0.000852	0.000324	8.07	0.0000633	0.000466	0.0028	0.0136	0.0489
2058 Jan	1820	36.8	58.1	1.65	1080	0.394	19.2	0.000038	0.027	0.0375	0.132	0.144	4.52	409	0.000234	0.000226	0.00188	0.00145	0.0526	0.0000146	15.1	1.3	11.3	0.493	0.00165	169	0.0245	0.006	0.00041	0.000852	0.000324	8.07	0.0000633	0.000466	0.0028	0.0136	0.0489
2058 Feb	1820	36.8	58.1	1.65	1080	0.394	19.2	0.000038	0.027	0.0375	0.132	0.144	4.52	409	0.000234	0.000226	0.00188	0.00145	0.0526	0.0000146	15.1	1.3	11.3	0.493	0.00165	169	0.0245	0.006	0.00041	0.000852	0.000324	8.07	0.0000633	0.000466	0.0028	0.0136	0.0489
2058 Mar	1820	36.8	58.1	1.65	1080	0.395	19.2	0.0000381	0.027	0.0375	0.132	0.144	4.52	409	0.000234	0.000226	0.00188	0.00145	0.0526	0.0000146	15.1	1.3	11.3	0.494	0.00165	169	0.0245	0.006	0.00041	0.000853	0.000324	8.07	0.0000633	0.000466	0.0028	0.0136	0.0489
2058 Apr	1830	36.9	58.4	1.66	1080	0.396	19.3	0.0000382	0.0271	0.0377	0.133	0.145	4.54	411	0.000235	0.000227	0.00189	0.00146	0.0528	0.0000146	15.2	1.31	11.4	0.496	0.00166	170	0.0247	0.00604	0.000412	0.000857	0.000326	8.11	0.0000636	0.000468	0.00281	0.0136	0.0491
2058 May	1860	37.7	59.6	1.69	1110	0.404	19.7	0.000039	0.0277	0.0384	0.135	0.148	4.63	419	0.000239	0.000232	0.00193	0.00149	0.0539	0.0000149	15.5	1.34	11.6	0.506	0.00169	173	0.0251	0.00618	0.00042	0.000874	0.000332	8.27	0.0000649	0.000477	0.00287	0.0139	0.0501
2058 Jun	1730	34.9	55.1	1.56	1020	0.376	18.4	0.0000364	0.0257	0.0356	0.126	0.137	4.29	388	0.000222	0.000218	0.00179	0.00139	0.0502	0.000014	14.4	1.24	10.8	0.468	0.00157	160	0.0233	0.00583	0.00039	0.000812	0.000309	7.65	0.0000603	0.000443	0.00267	0.013	0.0464
2058 Jul	1780	35.8	56.6	1.61	1050	0.387	19	0.0000375	0.0265	0.0366	0.129	0.141	4.41	399	0.000228	0.000225	0.00184	0.00143	0.0517	0.0000144	14.8	1.27	11.2	0.481	0.00161	165	0.023	0.00602	0.000402	0.000835	0.000318	7.86	0.0000621	0.000455	0.00275	0.0134	0.0477
2058 Aug	1810	36.6	57.9	1.64	1080	0.396	19.5	0.0000384	0.0271	0.0374	0.132	0.144	4.5	407	0.000233	0.00023	0.00188	0.00147	0.053	0.0000148	15.2	1.3	11.4	0.492	0.00165	168	0.0245	0.00617	0.000411	0.000854	0.000325	8.04	0.0000635	0.000465	0.00281	0.0137	0.0487
2058 Sep	1770	35.7	56.3	1.6	1050	0.386	19	0.0000375	0.0265	0.0364	0.129	0.141	4.38	397	0.000227	0.000225	0.00183	0.00143	0.0518	0.0000144	14.8	1.26	11.1	0.479	0.0016	164	0.0239	0.00602	0.0004	0.000832	0.000317	7.82	0.0000619	0.000453	0.00274	0.0133	0.0474
2058 Oct	1740	35	55.4	1.57	1030	0.38	18.7	0.0000369	0.0261	0.0358	0.126	0.138	4.31	390	0.000223	0.000222	0.0018	0.00141	0.051	0.0000142	14.5	1.24	10.9	0.47	0.00158	161	0.0235	0.00593	0.000399	0.000819	0.000312	7.69	0.0000609	0.000446	0.0027	0.0131	0.0466
2058 Nov	1730	34.8	55.1	1.56	1020	0.378	18.6	0.0000367	0.0259	0.0356	0.126	0.137	4.28	388	0.000222	0.000221	0.00179	0.00141	0.0508	0.0000141	14.4	1.24	10.9	0.468	0.00157	160	0.0233	0.0059	0.0004	0.000814	0.00031	7.64	0.0000606	0.000443	0.00268	0.0131	0.0463
2058 Dec	1730	34.8	55.1	1.56	1020	0																															



Appendix C8: GSP1																																					
Constituents	Total Dissolved Solids	Ammonia	Nitrate	Nitrite	Chloride	Fluoride	Sulphate	Silver	Aluminum	Arsenic	Boron	Barium	Beryllium	Calcium	Cadmium	Cobalt	Chromium	Copper	Iron	Mercury	Potassium	Lithium	Magnesium	Manganese	Molybdenum	Sodium	Nickel	Phosphorus	Lead	Antimony	Selenium	Strontium	Thallium	Uranium	Vanadium	Zinc	Radium 226
2066 Jun	1090	21.6	34.2	0.971	640	0.259	14.4	0.0000267	0.0183	0.0223	0.082	0.0918	2.66	244	0.00014	0.000176	0.00117	0.00108	0.0373	0.0000107	9.64	0.768	7.79	0.291	0.000994	100	0.015	0.00503	0.000314	0.000547	0.000213	4.76	0.0000415	0.000287	0.00186	0.00935	0.0288
2066 Jul	1120	22.2	35.1	0.996	656	0.267	14.8	0.0000275	0.0188	0.0229	0.0842	0.0943	2.73	250	0.000144	0.000181	0.0012	0.00111	0.0384	0.000011	9.9	0.788	8.01	0.299	0.00102	103	0.0154	0.00519	0.000233	0.000562	0.000219	4.89	0.0000427	0.000295	0.00191	0.00962	0.0295
2066 Aug	1150	22.7	35.9	1.02	672	0.273	15.2	0.0000282	0.0193	0.0234	0.0863	0.0967	2.79	256	0.000147	0.000186	0.00123	0.00114	0.0395	0.0000113	10.1	0.806	8.22	0.306	0.00104	105	0.0157	0.00533	0.000331	0.000576	0.000224	5	0.0000438	0.000302	0.00196	0.00987	0.0302
2066 Sep	1110	22	34.7	0.986	650	0.265	14.8	0.0000273	0.0188	0.0226	0.0835	0.0936	2.7	248	0.000142	0.000181	0.00119	0.00111	0.0384	0.000011	9.83	0.78	7.97	0.296	0.00101	102	0.0152	0.00517	0.000321	0.000558	0.000217	4.84	0.0000424	0.000292	0.0019	0.00957	0.0292
2066 Oct	1080	21.4	33.8	0.96	632	0.258	14.4	0.0000267	0.0183	0.022	0.0814	0.0912	2.63	241	0.000138	0.000177	0.00116	0.00108	0.0376	0.0000108	9.57	0.759	7.77	0.288	0.000984	98.9	0.0148	0.00505	0.000318	0.000544	0.000212	4.71	0.0000414	0.000285	0.00186	0.00934	0.0284
2066 Nov	1070	21.2	33.6	0.954	628	0.257	14.3	0.0000265	0.0182	0.0219	0.0809	0.0906	2.61	240	0.000138	0.000176	0.00115	0.00108	0.0374	0.0000107	9.51	0.754	7.73	0.286	0.000977	98.3	0.0147	0.00502	0.00032	0.000541	0.000211	4.68	0.0000411	0.000283	0.00184	0.0093	0.0282
2066 Dec	1070	21.2	33.6	0.954	628	0.257	14.3	0.0000265	0.0182	0.0219	0.0809	0.0906	2.61	240	0.000138	0.000176	0.00115	0.00108	0.0374	0.0000107	9.51	0.754	7.73	0.286	0.000977	98.3	0.0147	0.00502	0.00032	0.000541	0.000211	4.68	0.0000411	0.000283	0.00184	0.0093	0.0282
2067 Jan	1070	21.2	33.6	0.954	628	0.257	14.3	0.0000265	0.0182	0.0219	0.0809	0.0906	2.61	240	0.000138	0.000176	0.00115	0.00108	0.0374	0.0000107	9.51	0.754	7.73	0.286	0.000977	98.3	0.0147	0.00502	0.00032	0.000541	0.000211	4.68	0.0000411	0.000283	0.00184	0.0093	0.0282
2067 Feb	1070	21.2	33.6	0.954	628	0.257	14.3	0.0000265	0.0182	0.0219	0.0809	0.0906	2.61	240	0.000138	0.000176	0.00115	0.00108	0.0374	0.0000107	9.51	0.754	7.73	0.286	0.000977	98.3	0.0147	0.00502	0.00032	0.000541	0.000211	4.68	0.0000411	0.000283	0.00184	0.0093	0.0282
2067 Mar	1070	21.3	33.6	0.954	628	0.257	14.4	0.0000265	0.0182	0.0219	0.0809	0.0907	2.61	240	0.000138	0.000176	0.00115	0.00108	0.0374	0.0000107	9.52	0.754	7.73	0.286	0.000978	98.3	0.0147	0.00502	0.00032	0.000541	0.000211	4.68	0.0000411	0.000283	0.00185	0.0093	0.0283
2067 Apr	1080	21.4	33.7	0.958	631	0.258	14.4	0.0000267	0.0183	0.022	0.0813	0.0911	2.62	241	0.000138	0.000177	0.00115	0.00108	0.0376	0.0000108	9.56	0.758	7.77	0.287	0.000982	98.8	0.0148	0.00506	0.000322	0.000544	0.000212	4.7	0.0000413	0.000284	0.00185	0.00934	0.0284
2067 May	1100	21.8	34.4	0.978	644	0.263	14.7	0.0000272	0.0187	0.0224	0.0829	0.0929	2.68	246	0.000141	0.000181	0.00118	0.0011	0.0383	0.000011	9.76	0.773	7.92	0.293	0.001	101	0.0151	0.00519	0.000328	0.000555	0.000216	4.8	0.0000422	0.00029	0.00189	0.00954	0.029
2067 Jun	1020	20.1	31.7	0.901	594	0.245	13.8	0.0000254	0.0174	0.0207	0.0767	0.0862	2.47	227	0.00013	0.00017	0.00109	0.00103	0.0356	0.0000103	9.05	0.712	7.39	0.27	0.000925	92.9	0.014	0.00489	0.000304	0.000514	0.000201	4.42	0.0000392	0.000268	0.00176	0.00888	0.0267
2067 Jul	1040	20.6	32.6	0.926	610	0.252	14.3	0.0000262	0.0179	0.0213	0.0789	0.0888	2.53	233	0.000134	0.000175	0.00112	0.00107	0.0367	0.0000106	9.32	0.732	7.62	0.278	0.000951	95.5	0.0144	0.00506	0.000313	0.000529	0.000207	4.54	0.0000403	0.000276	0.00181	0.00915	0.0274
2067 Aug	1070	21.1	33.3	0.946	624	0.258	14.6	0.0000268	0.0183	0.0217	0.0807	0.0908	2.59	238	0.000137	0.00018	0.00115	0.00109	0.0377	0.0000109	9.53	0.748	7.8	0.284	0.000972	97.6	0.0147	0.00518	0.00032	0.000541	0.000212	4.64	0.0000413	0.000282	0.00185	0.00937	0.028
2067 Sep	1030	20.4	32.2	0.915	603	0.25	14.2	0.000026	0.0178	0.021	0.0782	0.0879	2.51	230	0.000132	0.000175	0.00111	0.00106	0.0367	0.0000106	9.23	0.723	7.57	0.274	0.000941	94.4	0.0142	0.00503	0.00031	0.000525	0.000205	4.49	0.00004	0.000273	0.0018	0.0091	0.0271
2067 Oct	1010	19.8	31.4	0.891	587	0.244	13.9	0.0000254	0.0174	0.0205	0.0762	0.0857	2.44	224	0.000129	0.000171	0.00108	0.00104	0.0359	0.0000103	8.99	0.704	7.38	0.267	0.000916	91.9	0.0138	0.00491	0.000308	0.000512	0.0002	4.37	0.000039	0.000266	0.00175	0.00888	0.0264
2067 Nov	1000	19.7	31.2	0.885	584	0.243	13.8	0.0000253	0.0173	0.0204	0.0757	0.0852	2.42	223	0.000128	0.00017	0.00108	0.00103	0.0357	0.0000103	8.95	0.7	7.35	0.266	0.000911	91.3	0.0138	0.00489	0.00031	0.000509	0.000199	4.35	0.0000388	0.000265	0.00175	0.00884	0.0262
2067 Dec	1000	19.7	31.2	0.885	584	0.243	13.8	0.0000253	0.0173	0.0204	0.0757	0.0852	2.42	223	0.000128	0.00017	0.00108	0.00103	0.0357	0.0000103	8.95	0.7	7.35	0.266	0.000911	91.3	0.0138	0.00489	0.00031	0.000509	0.000199	4.35	0.0000388	0.000265	0.00175	0.00884	0.0262
2068 Jan	1000	19.7	31.2	0.885	584	0.243	13.8	0.0000253	0.0173	0.0204	0.0757	0.0852	2.42	223	0.000128	0.00017	0.00108	0.00103	0.0357	0.0000103	8.95	0.7	7.35	0.266	0.000911	91.3	0.0138	0.00489	0.00031	0.000509	0.000199	4.35	0.0000388	0.000265	0.00175	0.00884	0.0262
2068 Feb	1000	19.7	31.2	0.885	584	0.243	13.8	0.0000253	0.0173	0.0204	0.0758	0.0852	2.42	223	0.000128	0.00017	0.00108	0.00103	0.0357	0.0000103	8.95	0.7	7.35	0.266	0.000911	91.4	0.0138	0.00489	0.00031	0.000509	0.000199	4.35	0.0000388	0.000265	0.00175	0.00884	0.0262
2068 Mar	1000	19.7	31.2	0.886	584	0.243	13.8	0.0000253	0.0173	0.0204	0.0758	0.0853	2.43	223	0.000128	0.00017	0.00108	0.00103	0.0357	0.0000103	8.95	0.7	7.35	0.266	0.000911	91.4	0.0138	0.00489	0.00031	0.000509	0.000199	4.35	0.0000389	0.000265	0.00175	0.00885	0.0262
2068 Apr	1000	19.8	31.3	0.89	587	0.244	13.9	0.0000254	0.0174	0.0205	0.0761	0.0857	2.44	224	0.000129	0.000171	0.00108	0.00104	0.0359	0.0000103	8.99	0.704															



Whale Tail Modification Water Balance and Water Quality Model - Technical Report

Appendix C9: WTS Lake																																				
Constituents	Total Dissolved Solids	Ammonia	Nitrate	Nitrite	Chloride	Fluoride	Sulphate	Silver	Aluminum	Arsenic	Boron	Barium	Beryllium	Calcium	Cadmium	Cobalt	Chromium	Copper	Iron	Mercury	Potassium	Lithium	Magnesium	Manganese	Molybdenum	Sodium	Nickel	Phosphorus	Lead	Antimony	Selenium	Strontium	Thallium	Uranium	Vanadium	Zinc
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Operation (2023 to 2025): Min	91.5	0.152	0.284	0.000772	20.8	0.0628	11.4	0.0000075	0.0103	0.00234	0.00972	0.0247	0.0000442	14.9	0.00000458	0.000226	0.000397	0.000847	0.0855	0.00000396	2.76	0.00349	2.93	0.0757	0.0012	2.15	0.00449	0.00856	0.0000568	0.000423	0.0000795	0.123	0.00000952	0.000279	0.000855	0.00237
Operation (2023 to 2025): Average	93.3	0.165	0.311	0.000887	21.3	0.0671	12.9	0.00000793	0.0107	0.00264	0.0103	0.0262	0.0000478	15.7	0.00000492	0.000251	0.000407	0.00086	0.0959	0.00000431	2.82	0.00355	3.1	0.082	0.00155	2.27	0.00484	0.00894	0.0000641	0.00054	0.0000935	0.126	0.0000114	0.000305	0.00105	0.00245
Operation (2023 to 2025): Max	95.7	0.178	0.347	0.0104	22.1	0.0723	14.9	0.00000845	0.0109	0.003	0.011	0.0282	0.0000553	16.8	0.00000537	0.000289	0.000422	0.000885	0.105	0.00000475	2.94	0.00363	3.3	0.09	0.00191	2.43	0.00531	0.00941	0.0000739	0.000695	0.000111	0.131	0.0000014	0.000338	0.00128	0.00257
CCME/SSWQO (Receiving Environment)	-	0.58	2.93	0.06	120	0.12	variable	0.00025	0.1	0.025	1.5	-	-	-	variable	-	0.001	variable	0.3	0.00026	-	-	-	variable	0.073	-	variable	0.01	0.001	-	0.001	-	0.0008	0.015	-	variable
Active Closure (2026 to Sept. 2042): Min	58.2	0.0366	0.0665	0.000588	12.5	0.0436	4.63	0.0000053	0.00745	0.000599	0.00532	0.0147	0.0000109	8.35	0.00000281	0.0000633	0.000219	0.000528	0.0494	0.00000265	1.64	0.00204	1.78	0.0267	0.000308	1.19	0.0015	0.00497	0.0000491	0.000057	0.0000273	0.0652	0.00000531	0.000082	0.000271	0.00163
Active Closure (2026 to Sept. 2042): Average	68.2	0.0635	0.116	0.00202	15	0.0496	6.45	0.00000583	0.00857	0.000959	0.00625	0.0177	0.0000182	10.2	0.00000322	0.0000959	0.00027	0.000615	0.0637	0.00000302	1.93	0.00249	2.08	0.0403	0.000613	1.43	0.00216	0.0061	0.000053	0.000125	0.0000413	0.0814	0.0000061	0.000132	0.000442	0.00178
Active Closure (2026 to Sept. 2042): Max	94.9	0.168	0.299	0.00835	21.8	0.071	14.1	0.00000814	0.0111	0.00239	0.0104	0.0276	0.0000508	16.4	0.00000512	0.000235	0.000414	0.00086	0.104	0.00000461	2.8	0.00361	3.2	0.0865	0.00182	2.33	0.00466	0.00929	0.0000699	0.000429	0.000103	0.128	0.00000958	0.000319	0.0012	0.00245
CCME/SSWQO (Receiving Environment)	-	0.58	2.93	0.06	120	0.12	variable	0.00025	0.1	0.025	1.5	-	-	-	variable	-	0.001	variable	0.3	0.00026	-	-	-	variable	0.073	-	variable	0.01	0.001	-	0.001	-	0.0008	0.015	-	variable
Post Closure (Oct. 2042 to 2070): Min	56.1	0.0343	0.0622	0.000521	12	0.0423	4.45	0.00000521	0.00727	0.000566	0.00521	0.0142	0.0000104	8.03	0.00000278	0.0000609	0.00021	0.000514	0.0474	0.0000026	1.58	0.00197	1.72	0.0253	0.000285	1.15	0.00143	0.00485	0.0000543	0.0000535	0.0000264	0.0626	0.00000521	0.0000775	0.00026	0.0016
Post Closure (Oct. 2042 to 2070): Average	57.2	0.0351	0.0637	0.000537	12.3	0.0431	4.54	0.00000529	0.00737	0.000578	0.00529	0.0145	0.0000106	8.19	0.00000281	0.000062	0.000214	0.000521	0.0483	0.00000302	1.61	0.002	1.75	0.0258	0.000292	1.17	0.00146	0.00492	0.0000557	0.0000546	0.0000268	0.0639	0.00000529	0.0000792	0.000265	0.00163
Post Closure (Oct. 2042 to 2070): Max	58.8	0.0367	0.0668	0.000587	12.7	0.044	4.66	0.00000535	0.00753	0.006	0.00537	0.0149	0.0000109	8.42	0.00000284	0.0000636	0.000221	0.000533	0.0499	0.00000268	1.65	0.00206	1.79	0.0269	0.000308	1.2	0.00151	0.00502	0.0000569	0.0000572	0.0000274	0.0659	0.00000536	0.0000824	0.000273	0.00165
CCME/SSWQO (Receiving Environment)	-	0.58	2.93	0.06	120	0.12	variable	0.00025	0.1	0.025	1.5	-	-	-	variable	-	0.001	variable	0.3	0.00026	-	-	-	variable	0.073	-	variable	0.01	0.001	-	0.001	-	0.0008	0.015	-	variable
Model Predictions (2023-2070)																																				
2023 Jan	92.4	0.167	0.338	0.01	20.9	0.0628	11.4	0.00000773	0.0105	0.00294	0.0103	0.0247	0.000044	15.1	0.00000473	0.000275	0.000404	0.000878	0.0855	0.00000401	2.89	0.00351	3.01	0.0777	0.0012	2.2	0.00513	0.00856	0.0000571	0.000695	0.0000808	0.125	0.000014	0.000293	0.000855	0.00249
2023 Feb	92.8	0.17	0.341	0.0101	21.1	0.0637	11.8	0.00000782	0.0105	0.00297	0.0104	0.025	0.0000456	15.3	0.00000481	0.000279	0.000407	0.000879	0.0871	0.00000408	2.89	0.00353	3.05	0.0791	0.00127	2.23	0.0052	0.00865	0.000059	0.000694	0.0000839	0.126	0.0000139	0.000299	0.000898	0.00251
2023 Mar	93.1	0.172	0.342	0.0102	21.2	0.0645	12.2	0.00000789	0.0104	0.00299	0.0106	0.0254	0.0000472	15.5	0.0000049	0.000282	0.000409	0.000879	0.0887	0.00000415	2.9	0.00354	3.09	0.0806	0.00134	2.27	0.00524	0.00873	0.000608	0.000692	0.0000868	0.127	0.0000139	0.000305	0.00094	0.00253
2023 Apr	93.6	0.174	0.344	0.0103	21.4	0.0655	12.6	0.00000798	0.0104	0.00299	0.0107	0.0258	0.0000488	15.7	0.00000499	0.000285	0.000413	0.00088	0.0904	0.00000422	2.91	0.00356	3.12	0.0821	0.0014	2.3	0.00527	0.00883	0.0000627	0.00069	0.0000898	0.128	0.0000138	0.000311	0.000984	0.00255
2023 May	94.4	0.177	0.347	0.0104	21.6	0.0666	12.9	0.00000808	0.0104	0.003	0.0109	0.0263	0.0000505	15.9	0.00000508	0.000289	0.000418	0.000885	0.0922	0.0000043	2.94	0.00359	3.17	0.0837	0.00147	2.34	0.00531	0.00895	0.0000646	0.00069	0.0000927	0.13	0.0000138	0.000318	0.00103	0.00257
2023 Jun	92.1	0.163	0.31																																	



Whale Tail Modification Water Balance and Water Quality Model - Technical Report

Appendix C9: WTS Lake																																				
Constituents	Total Dissolved Solids	Ammonia	Nitrate	Nitrite	Chloride	Fluoride	Sulphate	Silver	Aluminum	Arsenic	Boron	Barium	Beryllium	Calcium	Cadmium	Cobalt	Chromium	Copper	Iron	Mercury	Potassium	Lithium	Magnesium	Manganese	Molybdenum	Sodium	Nickel	Phosphorus	Lead	Antimony	Selenium	Strontium	Thallium	Uranium	Vanadium	Zinc
2030 Jul	72.5	0.0698	0.128	0.00221	16	0.0513	6.76	0.00000589	0.00914	0.00104	0.00637	0.0186	0.0000192	10.9	0.00000325	0.000101	0.00029	0.000651	0.0696	0.00000306	2.03	0.00269	2.15	0.0446	0.00068	1.49	0.00233	0.00656	0.00005	0.000134	0.0000431	0.0877	0.0000662	0.000145	0.000465	0.00179
2030 Aug	72.8	0.0695	0.128	0.00218	16.1	0.0515	6.75	0.00000591	0.00919	0.00104	0.00638	0.0187	0.0000191	10.9	0.00000326	0.000101	0.000291	0.000653	0.0698	0.00000307	2.04	0.0027	2.16	0.0446	0.000676	1.5	0.00233	0.00659	0.00005	0.000133	0.0000429	0.0879	0.0000662	0.000145	0.000462	0.0018
2030 Sep	72	0.0677	0.124	0.00209	15.9	0.0509	6.62	0.00000586	0.00909	0.00101	0.0063	0.0184	0.0000186	10.8	0.00000322	0.0000985	0.000287	0.000646	0.0687	0.00000304	2.02	0.00267	2.13	0.0437	0.000657	1.48	0.00228	0.0065	0.0000496	0.000129	0.000042	0.0867	0.00006615	0.000141	0.000451	0.00178
2030 Oct	71.3	0.0666	0.122	0.00205	15.7	0.0505	6.55	0.00000583	0.00901	0.000996	0.00627	0.0183	0.0000184	10.7	0.0000032	0.0000973	0.000284	0.00064	0.0678	0.00000302	2	0.00263	2.12	0.043	0.000644	1.46	0.00225	0.00643	0.0000497	0.000127	0.0000415	0.0857	0.00006611	0.000139	0.000445	0.00177
2030 Nov	70.9	0.0661	0.121	0.00203	15.6	0.0504	6.52	0.00000582	0.00896	0.00099	0.00625	0.0182	0.0000183	10.6	0.0000032	0.0000969	0.000282	0.000637	0.0674	0.00000302	1.99	0.00262	2.11	0.0427	0.000639	1.46	0.00224	0.00639	0.00005	0.000126	0.0000413	0.0852	0.00006601	0.000138	0.000443	0.00177
2030 Dec	70.8	0.066	0.121	0.00203	15.6	0.0504	6.52	0.00000582	0.00895	0.000989	0.00625	0.0182	0.0000183	10.6	0.0000032	0.0000969	0.000282	0.000636	0.0673	0.00000302	1.99	0.00262	2.11	0.0426	0.000638	1.46	0.00224	0.00638	0.0000501	0.000126	0.0000413	0.0851	0.00006601	0.000138	0.000443	0.00177
2031 Jan	70.8	0.066	0.121	0.00203	15.6	0.0504	6.52	0.00000582	0.00895	0.000989	0.00625	0.0182	0.0000183	10.6	0.0000032	0.0000968	0.000282	0.000636	0.0673	0.00000302	1.99	0.00262	2.11	0.0426	0.000638	1.46	0.00224	0.00638	0.0000501	0.000126	0.0000413	0.0851	0.00006601	0.000138	0.000443	0.00177
2031 Feb	70.8	0.066	0.121	0.00203	15.6	0.0504	6.52	0.00000582	0.00895	0.000989	0.00625	0.0182	0.0000183	10.6	0.0000032	0.0000968	0.000282	0.000636	0.0673	0.00000302	1.99	0.00262	2.11	0.0426	0.000638	1.46	0.00224	0.00638	0.0000501	0.000126	0.0000413	0.0851	0.00006601	0.000138	0.000443	0.00177
2031 Mar	70.8	0.066	0.121	0.00203	15.6	0.0504	6.52	0.00000582	0.00895	0.000989	0.00625	0.0182	0.0000183	10.6	0.0000032	0.0000968	0.000282	0.000636	0.0673	0.00000302	1.99	0.00262	2.11	0.0426	0.000638	1.46	0.00224	0.00638	0.0000501	0.000126	0.0000413	0.0851	0.00006601	0.000138	0.000443	0.00177
2031 Apr	70.9	0.0661	0.121	0.00203	15.6	0.0504	6.52	0.00000583	0.00896	0.00099	0.00626	0.0182	0.0000183	10.6	0.0000032	0.0000969	0.000282	0.000637	0.0674	0.00000302	1.99	0.00262	2.11	0.0427	0.000639	1.46	0.00224	0.00639	0.0000501	0.000126	0.0000414	0.0852	0.00006611	0.000138	0.000443	0.00177
2031 May	71.3	0.0664	0.122	0.00204	15.7	0.0507	6.55	0.00000585	0.00901	0.000994	0.00628	0.0183	0.0000184	10.7	0.00000322	0.0000973	0.000284	0.00064	0.0677	0.00000303	2	0.00263	2.12	0.0429	0.000642	1.47	0.00225	0.00642	0.0000503	0.000126	0.0000415	0.0856	0.00006613	0.000139	0.000445	0.00178
2031 Jun	69.5	0.0623	0.114	0.00182	15.3	0.0495	6.25	0.00000573	0.00881	0.000938	0.0061	0.0178	0.0000172	10.3	0.00000313	0.000092	0.000275	0.000625	0.0655	0.00000296	1.95	0.00256	2.06	0.0408	0.000596	1.42	0.00214	0.00624	0.0000498	0.000116	0.0000392	0.083	0.00000597	0.000131	0.000417	0.00174
2031 Jul	69	0.0609	0.112	0.00176	15.1	0.0493	6.18	0.00000574	0.00874	0.000921	0.00609	0.0176	0.0000169	10.2	0.00000313	0.0000908	0.000272	0.00062	0.0646	0.00000295	1.94	0.00253	2.05	0.04	0.00058	1.41	0.00211	0.00617	0.0000505	0.000113	0.0000387	0.0821	0.00000596	0.000129	0.000411	0.00175
2031 Aug	69.4	0.0608	0.112	0.00173	15.2	0.0495	6.18	0.00000576	0.00879	0.000919	0.0061	0.0177	0.0000168	10.3	0.00000314	0.0000906	0.000274	0.000624	0.0649	0.00000296	1.94	0.00255	2.06	0.0401	0.000578	1.42	0.00211	0.0062	0.0000505	0.000112	0.0000386	0.0825	0.00000598	0.000128	0.000409	0.00175
2031 Sep	68.7	0.0595	0.109	0.00167	15.1	0.0491	6.08	0.00000571	0.00871	0.000902	0.00604	0.0175	0.0000165	10.2	0.00000311	0.000089	0.000271	0.000617	0.064	0.00000294	1.92	0.00252	2.04	0.0394	0.000564	1.4	0.00208	0.00613	0.0000501	0.000109	0.0000379	0.0815	0.00000592	0.000126	0.000401	0.00174
2031 Oct	68.1	0.0586	0.108	0.00164	14.9	0.0488	6.03	0.00000569	0.00863	0.00089	0.00601	0.0174	0.0000163	10.1	0.0000031	0.000088	0.000268	0.000612	0.0633	0.00000292	1.91	0.00249	2.03	0.0388	0.000554	1.39	0.00205	0.00607	0.0000502	0.000107	0.0000376	0.0806	0.0000059	0.000124	0.000397	0.00173
2031 Nov	67.7	0.0582	0.107	0.00163	14.8	0.0486	<																													



Constituents	Total Dissolved Solids	Ammonia	Nitrate	Nitrite	Chloride	Fluoride	Sulphate	Silver	Aluminum	Arsenic	Boron	Barium	Beryllium	Calcium	Cadmium	Cobalt	Chromium	Copper	Iron	Mercury	Potassium	Lithium	Magnesium	Manganese	Molybdenum	Sodium	Nickel	Phosphorus	Lead	Antimony	Selenium	Strontium	Thallium	Uranium	Vanadium	Zinc
2039 Jun	59.1	0.0383	0.0699	0.00066	12.8	0.0439	4.73	0.00000532	0.00757	0.00062	0.00536	0.015	0.0000112	8.5	0.00000283	0.000065	0.000224	0.000536	0.0508	0.00000267	1.66	0.00209	1.8	0.0278	0.000327	1.2	0.00154	0.00507	0.000053	0.0000603	0.0000279	0.0667	0.0000535	0.0000855	0.000279	0.00163
2039 Jul	59.1	0.0381	0.0694	0.000657	12.8	0.0441	4.74	0.00000535	0.00755	0.000618	0.00539	0.015	0.0000113	8.5	0.00000284	0.0000651	0.000223	0.000536	0.0505	0.00000268	1.66	0.00208	1.8	0.0276	0.000325	1.21	0.00154	0.00506	0.0000537	0.0000604	0.000028	0.0666	0.0000537	0.000085	0.00028	0.00164
2039 Aug	59.7	0.0385	0.0702	0.000657	12.9	0.0444	4.77	0.00000538	0.00763	0.000624	0.00542	0.0151	0.0000113	8.58	0.00000286	0.0000655	0.000226	0.000541	0.0511	0.0000027	1.68	0.0021	1.81	0.028	0.000328	1.22	0.00155	0.00512	0.0000536	0.0000605	0.0000282	0.0673	0.0000534	0.0000859	0.000282	0.00165
2039 Sep	59.4	0.0383	0.0698	0.00065	12.8	0.0442	4.74	0.00000535	0.0076	0.000621	0.00539	0.015	0.0000112	8.54	0.00000284	0.0000651	0.000225	0.000538	0.0509	0.00000269	1.67	0.0021	1.81	0.0278	0.000326	1.21	0.00155	0.00505	0.0000531	0.00006	0.000028	0.067	0.0000538	0.0000855	0.00028	0.00164
2039 Oct	59	0.0379	0.0691	0.000646	12.7	0.044	4.72	0.00000534	0.00755	0.000616	0.00537	0.0149	0.0000112	8.48	0.00000283	0.0000648	0.000223	0.000535	0.0505	0.00000268	1.66	0.00208	1.8	0.0275	0.000323	1.2	0.00153	0.00506	0.0000532	0.0000598	0.0000279	0.0665	0.0000536	0.0000847	0.000279	0.00164
2039 Nov	58.7	0.0376	0.0685	0.000644	12.7	0.0439	4.71	0.00000534	0.00751	0.000612	0.00537	0.0149	0.0000112	8.44	0.00000283	0.0000646	0.000221	0.000532	0.0501	0.00000268	1.65	0.00206	1.79	0.0273	0.00032	1.2	0.00153	0.00502	0.0000536	0.0000597	0.0000279	0.066	0.0000536	0.000084	0.000278	0.00164
2039 Dec	58.6	0.0376	0.0684	0.000644	12.7	0.0439	4.71	0.00000534	0.0075	0.000612	0.00537	0.0149	0.0000112	8.43	0.00000283	0.0000646	0.000221	0.000532	0.05	0.00000268	1.65	0.00206	1.79	0.0273	0.000319	1.2	0.00152	0.00502	0.0000537	0.0000597	0.0000279	0.066	0.0000536	0.0000839	0.000278	0.00164
2040 Jan	58.6	0.0376	0.0684	0.000644	12.7	0.0439	4.71	0.00000534	0.0075	0.000612	0.00537	0.0149	0.0000112	8.43	0.00000283	0.0000646	0.000221	0.000532	0.05	0.00000268	1.65	0.00206	1.79	0.0273	0.000319	1.2	0.00152	0.00502	0.0000537	0.0000597	0.0000279	0.066	0.0000536	0.0000839	0.000278	0.00164
2040 Feb	58.6	0.0376	0.0684	0.000644	12.7	0.0439	4.71	0.00000534	0.0075	0.000612	0.00537	0.0149	0.0000112	8.43	0.00000283	0.0000646	0.000221	0.000532	0.05	0.00000268	1.65	0.00206	1.79	0.0273	0.000319	1.2	0.00152	0.00502	0.0000537	0.0000597	0.0000279	0.066	0.0000536	0.0000839	0.000278	0.00164
2040 Mar	58.6	0.0376	0.0684	0.000644	12.7	0.0439	4.71	0.00000534	0.0075	0.000612	0.00537	0.0149	0.0000112	8.43	0.00000283	0.0000646	0.000221	0.000532	0.05	0.00000268	1.65	0.00206	1.79	0.0273	0.000319	1.2	0.00152	0.00502	0.0000537	0.0000597	0.0000279	0.066	0.0000536	0.0000839	0.000278	0.00164
2040 Apr	58.7	0.0376	0.0685	0.000644	12.7	0.0439	4.71	0.00000534	0.00751	0.000613	0.00537	0.0149	0.0000112	8.44	0.00000284	0.0000647	0.000222	0.000533	0.0501	0.00000268	1.65	0.00206	1.8	0.0273	0.00032	1.2	0.00153	0.00503	0.0000537	0.0000597	0.0000279	0.0661	0.0000536	0.000084	0.000279	0.00164
2040 May	59.1	0.0379	0.0689	0.000647	12.8	0.0441	4.74	0.00000537	0.00756	0.000616	0.0054	0.015	0.0000112	8.49	0.00000285	0.000065	0.000223	0.000536	0.0504	0.00000269	1.66	0.00208	1.8	0.0275	0.000322	1.21	0.00154	0.00506	0.0000539	0.00006	0.000028	0.0665	0.0000539	0.0000846	0.00028	0.00165
2040 Jun	58.8	0.0376	0.0686	0.000629	12.7	0.0438	4.69	0.00000531	0.00753	0.000611	0.00534	0.0149	0.0000111	8.44	0.00000282	0.0000642	0.000222	0.000533	0.0503	0.00000266	1.65	0.00207	1.79	0.0274	0.00032	1.2	0.00152	0.00504	0.0000533	0.0000589	0.0000276	0.0662	0.0000533	0.0000841	0.000276	0.00163
2040 Jul	58.8	0.0375	0.0682	0.000628	12.7	0.0439	4.7	0.00000534	0.00752	0.00061	0.00537	0.0149	0.0000111	8.45	0.00000284	0.0000644	0.000222	0.000533	0.0501	0.00000268	1.66	0.00207	1.8	0.0273	0.000318	1.2	0.00152	0.00503	0.0000541	0.000059	0.0000278	0.0661	0.0000536	0.0000838	0.000277	0.00164
2040 Aug	59.4	0.0379	0.0691	0.000629	12.8	0.0443	4.74	0.00000537	0.00761	0.000616	0.0054	0.015	0.0000112	8.53	0.00000285	0.0000648	0.000224	0.000539	0.0508	0.00000269	1.67	0.00209	1.81	0.0276	0.000321	1.21	0.00154	0.00509	0.000054	0.0000592	0.0000279	0.0669	0.0000539	0.0000848	0.000278	0.00165
2040 Sep	59.2	0.0377	0.0688	0.000623	12.8	0.0441	4.71	0.00000535	0.00758	0.000613	0.00537	0.015	0.0000111	8.49	0.00000284	0.0000644	0.000223	0.000536	0.0506	0.00000268	1.67	0.00208	1.8	0.0275	0.00032	1.2	0.00153	0.00507	0.0000534	0.0000587	0.0000277	0.0669	0.0000536	0.0000844	0.000277	0.00164
2040 Oct	58.8	0.0374	0.068	0.000619	12.																															



Appendix C9: WTS Lake																																				
Constituents	Total Dissolved Solids	Ammonia	Nitrate	Nitrite	Chloride	Fluoride	Sulphate	Silver	Aluminum	Arsenic	Boron	Barium	Beryllium	Calcium	Cadmium	Cobalt	Chromium	Copper	Iron	Mercury	Potassium	Lithium	Magnesium	Manganese	Molybdenum	Sodium	Nickel	Phosphorus	Lead	Antimony	Selenium	Strontium	Thallium	Uranium	Vanadium	Zinc
2048 May	57.8	0.0355	0.0645	0.000549	12.4	0.0435	4.6	0.00000533	0.00742	0.000585	0.00534	0.0146	0.0000107	8.28	0.00000284	0.0000626	0.000217	0.000526	0.0488	0.00000267	1.63	0.00202	1.77	0.0261	0.000296	1.18	0.00148	0.00495	0.000056	0.0000554	0.0000271	0.0646	0.0000534	0.0000801	0.000268	0.00164
2048 Jun	57.5	0.0354	0.0643	0.000542	12.4	0.0432	4.55	0.00000528	0.00738	0.000582	0.00528	0.0145	0.0000106	8.23	0.00000281	0.0000621	0.000216	0.000523	0.0486	0.00000264	1.62	0.00201	1.76	0.0261	0.000295	1.17	0.00147	0.00492	0.000054	0.0000548	0.0000268	0.0642	0.0000528	0.0000798	0.000265	0.00162
2048 Jul	57.5	0.0353	0.0641	0.000544	12.4	0.0433	4.57	0.00000531	0.00738	0.000582	0.00531	0.0146	0.0000107	8.23	0.00000282	0.0000623	0.000215	0.000523	0.0485	0.00000266	1.62	0.00201	1.77	0.026	0.000294	1.18	0.00147	0.00492	0.000056	0.0000551	0.0000269	0.0642	0.0000531	0.0000796	0.000267	0.00163
2048 Aug	58.1	0.0357	0.065	0.000547	12.5	0.0436	4.6	0.00000534	0.00746	0.000588	0.00534	0.0147	0.0000107	8.31	0.00000282	0.0000627	0.000218	0.000528	0.0491	0.00000267	1.64	0.00203	1.78	0.0263	0.000298	1.19	0.00148	0.00497	0.0000558	0.0000553	0.0000271	0.0649	0.0000534	0.0000806	0.000268	0.00164
2048 Sep	57.8	0.0356	0.0647	0.000544	12.4	0.0434	4.58	0.00000531	0.00743	0.000585	0.00531	0.0146	0.0000107	8.28	0.00000282	0.0000624	0.000217	0.000526	0.0489	0.00000266	1.63	0.00203	1.77	0.0262	0.000297	1.18	0.00148	0.00495	0.0000553	0.0000555	0.0000269	0.0646	0.0000531	0.0000802	0.000267	0.00163
2048 Oct	57.5	0.0353	0.0641	0.000542	12.4	0.0432	4.56	0.00000533	0.00738	0.000581	0.0053	0.0145	0.0000107	8.23	0.00000281	0.0000622	0.000215	0.000523	0.0485	0.00000265	1.62	0.00201	1.76	0.026	0.000294	1.17	0.00147	0.00492	0.0000553	0.0000549	0.0000269	0.0642	0.0000533	0.0000796	0.000266	0.00163
2048 Nov	57.2	0.0351	0.0636	0.000541	12.3	0.0431	4.55	0.00000529	0.00734	0.000578	0.0053	0.0145	0.0000106	8.19	0.00000281	0.000062	0.000214	0.000521	0.0482	0.00000265	1.61	0.002	1.76	0.0258	0.000292	1.17	0.00146	0.00489	0.0000556	0.0000548	0.0000268	0.0638	0.0000529	0.0000789	0.000266	0.00163
2048 Dec	57.1	0.035	0.0635	0.000541	12.3	0.0431	4.55	0.00000529	0.00733	0.000578	0.0053	0.0145	0.0000106	8.18	0.00000281	0.000062	0.000214	0.00052	0.0481	0.00000265	1.61	0.00199	1.76	0.0257	0.000292	1.17	0.00146	0.00488	0.0000557	0.0000548	0.0000268	0.0637	0.0000529	0.0000789	0.000266	0.00163
2049 Jan	57.1	0.035	0.0635	0.000541	12.3	0.0431	4.55	0.00000529	0.00733	0.000578	0.0053	0.0145	0.0000106	8.18	0.00000281	0.000062	0.000214	0.00052	0.0481	0.00000265	1.61	0.00199	1.76	0.0257	0.000292	1.17	0.00146	0.00488	0.0000557	0.0000548	0.0000268	0.0637	0.0000529	0.0000789	0.000266	0.00163
2049 Feb	57.1	0.035	0.0635	0.000541	12.3	0.0431	4.55	0.00000529	0.00733	0.000578	0.0053	0.0145	0.0000106	8.18	0.00000281	0.000062	0.000214	0.00052	0.0481	0.00000265	1.61	0.00199	1.76	0.0257	0.000292	1.17	0.00146	0.00488	0.0000557	0.0000548	0.0000268	0.0637	0.0000529	0.0000789	0.000266	0.00163
2049 Mar	57.1	0.035	0.0635	0.000541	12.3	0.0431	4.55	0.00000529	0.00733	0.000578	0.0053	0.0145	0.0000106	8.18	0.00000281	0.000062	0.000214	0.00052	0.0481	0.00000265	1.61	0.00199	1.76	0.0257	0.000292	1.17	0.00146	0.00488	0.0000557	0.0000548	0.0000268	0.0637	0.0000529	0.0000789	0.000266	0.00163
2049 Apr	57.2	0.0351	0.0636	0.000542	12.3	0.0432	4.56	0.00000533	0.00735	0.000579	0.0053	0.0145	0.0000107	8.2	0.00000282	0.0000621	0.000214	0.000521	0.0482	0.00000265	1.61	0.002	1.76	0.0258	0.000292	1.17	0.00146	0.00489	0.0000557	0.0000549	0.0000269	0.0638	0.0000533	0.0000791	0.000266	0.00163
2049 May	57.6	0.0353	0.0641	0.000544	12.4	0.0434	4.58	0.00000532	0.00739	0.000582	0.00532	0.0146	0.0000107	8.24	0.00000283	0.0000624	0.000216	0.000524	0.0485	0.00000266	1.62	0.00201	1.77	0.026	0.000294	1.18	0.00147	0.00492	0.0000559	0.0000551	0.000027	0.0642	0.0000532	0.0000796	0.000267	0.00164
2049 Jun	57.2	0.0352	0.0639	0.000538	12.3	0.043	4.54	0.00000527	0.00736	0.000579	0.00527	0.0145	0.0000106	8.19	0.0000028	0.0000618	0.000215	0.000521	0.0484	0.00000263	1.61	0.002	1.75	0.0259	0.000293	1.17	0.00146	0.0049	0.0000552	0.0000545	0.0000267	0.064	0.0000527	0.0000793	0.000265	0.00162
2049 Jul	57.4	0.0352	0.0638	0.000541	12.3	0.0432	4.56	0.00000533	0.00737	0.00058	0.00531	0.0145	0.0000107	8.22	0.00000282	0.0000622	0.000215	0.000522	0.0483	0.00000265	1.62	0.002	1.76	0.0259	0.000293	1.17	0.00146	0.00491	0.0000558	0.0000549	0.0000269	0.064	0.0000531	0.0000793	0.000266	0.00163
2049 Aug	58	0.0356	0.0648	0.000543	12.5	0.0435	4.59	0.00000533	0.00745	0.000586	0.00533	0.0147	0.0000107	8.3	0.00000283	0.0000625	0.000217	0.000527	0.049	0.00000266	1.63	0.00203	1.77	0.0263	0.000297	1.18	0.00148	0.00497	0.0000556	0.0000551	0.000027	0.0648	0.000			



C9: WTS Lake																																					
Constituents		Total Dissolved Solids	Ammonia	Nitrate	Nitrite	Chloride	Fluoride	Sulphate	Silver	Aluminum	Arsenic	Boron	Barium	Beryllium	Calcium	Cadmium	Cobalt	Chromium	Copper	Iron	Mercury	Potassium	Lithium	Magnesium	Manganese	Molybdenum	Sodium	Nickel	Phosphorus	Lead	Antimony	Selenium	Strontium	Thallium	Uranium	Vanadium	Zinc
2057 Apr		57	0.0348	0.0632	0.000531	12.2	0.043	4.53	0.00000529	0.00734	0.000575	0.00529	0.0144	0.0000106	8.16	0.00000281	0.0000618	0.000213	0.00052	0.048	0.00000264	1.61	0.00199	1.75	0.0256	0.00029	1.17	0.00145	0.0049	0.0000561	0.0000543	0.0000267	0.0636	0.00000529	0.0000786	0.000265	0.00163
2057 May		57.3	0.035	0.0636	0.000533	12.3	0.0432	4.55	0.00000531	0.00739	0.000578	0.00531	0.0145	0.0000106	8.21	0.00000283	0.0000621	0.000215	0.000523	0.0484	0.00000266	1.62	0.00201	1.76	0.0258	0.000292	1.17	0.00146	0.00493	0.0000562	0.0000546	0.0000268	0.064	0.00000531	0.0000787	0.000266	0.00164
2057 Jun		57	0.0349	0.0634	0.000527	12.2	0.0428	4.51	0.00000526	0.00735	0.000574	0.00526	0.0144	0.0000105	8.15	0.0000028	0.0000615	0.000214	0.000519	0.0482	0.00000263	1.61	0.002	1.74	0.0258	0.000291	1.16	0.00145	0.0049	0.0000556	0.000054	0.0000266	0.0636	0.00000526	0.0000788	0.000263	0.00162
2057 Jul		57.2	0.0349	0.0634	0.000531	12.3	0.0431	4.54	0.0000053	0.00736	0.000576	0.0053	0.0145	0.0000106	8.18	0.00000282	0.0000619	0.000214	0.000521	0.0482	0.00000265	1.61	0.002	1.75	0.0257	0.000291	1.17	0.00146	0.00492	0.0000563	0.0000544	0.0000268	0.0638	0.00000533	0.0000789	0.000265	0.00163
2057 Aug		57.8	0.0354	0.0644	0.000534	12.4	0.0434	4.57	0.00000533	0.00745	0.000583	0.00533	0.0146	0.0000107	8.27	0.00000283	0.0000623	0.000217	0.000527	0.0489	0.00000266	1.63	0.00203	1.77	0.0262	0.000295	1.18	0.00147	0.00498	0.0000561	0.0000547	0.0000269	0.0646	0.00000533	0.0000789	0.000265	0.00164
2057 Sep		57.6	0.0353	0.0642	0.000532	12.4	0.0433	4.55	0.0000053	0.00743	0.000581	0.0053	0.0146	0.0000106	8.24	0.00000282	0.0000621	0.000216	0.000525	0.0488	0.00000265	1.62	0.00202	1.76	0.0261	0.000294	1.17	0.00147	0.00496	0.0000555	0.0000544	0.0000268	0.0644	0.00000533	0.0000798	0.000265	0.00163
2057 Oct		57.3	0.035	0.0637	0.00053	12.3	0.0431	4.54	0.00000529	0.00738	0.000577	0.00529	0.0145	0.0000106	8.19	0.00000281	0.0000619	0.000215	0.000522	0.0484	0.00000264	1.61	0.00201	1.75	0.0259	0.000292	1.17	0.00146	0.00493	0.0000555	0.0000543	0.0000267	0.0639	0.00000529	0.0000786	0.000265	0.00163
2057 Nov		57	0.0348	0.0632	0.00053	12.2	0.043	4.53	0.00000528	0.00735	0.000575	0.00529	0.0144	0.0000106	8.16	0.00000281	0.0000618	0.000213	0.00052	0.0481	0.00000264	1.61	0.00199	1.75	0.0257	0.00029	1.17	0.00145	0.0049	0.0000559	0.0000543	0.0000267	0.0636	0.00000529	0.0000787	0.000264	0.00163
2057 Dec		56.9	0.0348	0.0631	0.00053	12.2	0.0429	4.53	0.00000528	0.00734	0.000574	0.00528	0.0144	0.0000106	8.15	0.00000281	0.0000617	0.000213	0.000519	0.048	0.00000264	1.61	0.00199	1.75	0.0256	0.000289	1.17	0.00145	0.0049	0.000056	0.0000543	0.0000267	0.0635	0.00000528	0.0000785	0.000264	0.00163
2058 Jan		56.9	0.0348	0.0631	0.00053	12.2	0.0429	4.53	0.00000528	0.00734	0.000574	0.00528	0.0144	0.0000106	8.15	0.00000281	0.0000617	0.000213	0.000519	0.048	0.00000264	1.61	0.00199	1.75	0.0256	0.000289	1.17	0.00145	0.0049	0.000056	0.0000543	0.0000267	0.0635	0.00000528	0.0000785	0.000264	0.00163
2058 Feb		56.9	0.0348	0.0631	0.00053	12.2	0.0429	4.53	0.00000528	0.00734	0.000574	0.00529	0.0144	0.0000106	8.15	0.00000281	0.0000617	0.000213	0.000519	0.048	0.00000264	1.61	0.00199	1.75	0.0256	0.000289	1.17	0.00145	0.0049	0.000056	0.0000543	0.0000267	0.0635	0.00000528	0.0000785	0.000264	0.00163
2058 Mar		56.9	0.0348	0.0631	0.00053	12.2	0.0429	4.53	0.00000528	0.00734	0.000574	0.00529	0.0144	0.0000106	8.15	0.00000281	0.0000617	0.000213	0.000519	0.048	0.00000264	1.61	0.00199	1.75	0.0256	0.000289	1.17	0.00145	0.0049	0.000056	0.0000543	0.0000267	0.0635	0.00000529	0.0000787	0.000265	0.00163
2058 Apr		57	0.0348	0.0632	0.00053	12.2	0.043	4.53	0.00000529	0.00735	0.000575	0.00529	0.0144	0.0000106	8.16	0.00000281	0.0000618	0.000214	0.00052	0.0481	0.00000265	1.61	0.002	1.75	0.0257	0.00029	1.17	0.00145	0.00491	0.0000556	0.0000543	0.0000267	0.0636	0.00000529	0.0000787	0.000265	0.00163
2058 May		57.4	0.0351	0.0637	0.000533	12.3	0.0432	4.55	0.00000531	0.0074	0.000579	0.00531	0.0145	0.0000106	8.21	0.00000283	0.0000621	0.000215	0.000523	0.0484	0.00000266	1.62	0.00201	1.76	0.0259	0.000292	1.17	0.00146	0.00494	0.0000561	0.0000546	0.0000269	0.064	0.00000531	0.0000792	0.000266	0.00164
2058 Jun		57	0.0349	0.0635	0.000527	12.2	0.0428	4.51	0.00000526	0.00736	0.000575	0.00526	0.0144	0.0000105	8.15	0.0000028	0.0000615	0.000214	0.00052	0.0482	0.00000263	1.61	0.002	1.74	0.0258	0.000291	1.16	0.00145	0.00491	0.0000555	0.000054	0.0000266	0.0637	0.00000526	0.0000789	0.000263	0.00162
2058 Jul		57.2	0.0349	0.0635	0.000531	12.3	0.0431	4.54	0.0000053	0.00737	0.000577	0.0053	0.0145	0.0000106	8.18	0.00000282	0.0000619	0.000214	0.000522	0.0482	0.00000265	1.61	0.002	1.75	0.0258	0.000291	1.17	0.00146	0.00493								



Appendix C9: WTS Lake																																				
Constituents	Total Dissolved Solids	Ammonia	Nitrate	Nitrite	Chloride	Fluoride	Sulphate	Silver	Aluminum	Arsenic	Boron	Barium	Beryllium	Calcium	Cadmium	Cobalt	Chromium	Copper	Iron	Mercury	Potassium	Lithium	Magnesium	Manganese	Molybdenum	Sodium	Nickel	Phosphorus	Lead	Antimony	Selenium	Strontium	Thallium	Uranium	Vanadium	Zinc
2066 Mar	56.5	0.0345	0.0626	0.000526	12.1	0.0426	4.49	0.00000526	0.00731	0.00057	0.00526	0.0143	0.0000105	8.09	0.0000028	0.0000614	0.000212	0.000516	0.0477	0.00000263	1.59	0.00198	1.73	0.0255	0.000287	1.16	0.00144	0.00488	0.0000556	0.000054	0.0000266	0.063	0.00000526	0.000078	0.000263	0.00162
2066 Apr	56.6	0.0346	0.0628	0.000527	12.1	0.0427	4.5	0.00000526	0.00732	0.000571	0.00526	0.0143	0.0000105	8.1	0.0000028	0.0000615	0.000212	0.000517	0.0478	0.00000263	1.6	0.00198	1.74	0.0255	0.000288	1.16	0.00144	0.00489	0.0000556	0.000054	0.0000266	0.0631	0.00000526	0.0000782	0.000263	0.00162
2066 May	57	0.0348	0.0633	0.000529	12.2	0.0429	4.52	0.00000529	0.00737	0.000574	0.00529	0.0144	0.0000106	8.15	0.00000281	0.0000618	0.000213	0.00052	0.0482	0.00000264	1.61	0.002	1.75	0.0257	0.00029	1.16	0.00145	0.00492	0.0000558	0.0000543	0.0000267	0.0636	0.00000529	0.0000788	0.000264	0.00163
2066 Jun	56.6	0.0346	0.063	0.000523	12.1	0.0425	4.48	0.00000523	0.00732	0.00057	0.00523	0.0143	0.0000105	8.09	0.00000278	0.0000612	0.000212	0.000517	0.0479	0.00000262	1.59	0.00199	1.73	0.0256	0.000289	1.15	0.00144	0.00489	0.0000553	0.0000537	0.0000265	0.0632	0.00000523	0.0000784	0.000262	0.00161
2066 Jul	56.8	0.0347	0.063	0.000527	12.2	0.0428	4.51	0.00000527	0.00734	0.000572	0.00527	0.0144	0.0000105	8.12	0.0000028	0.0000616	0.000213	0.000519	0.048	0.00000263	1.6	0.00199	1.74	0.0256	0.000289	1.16	0.00145	0.00491	0.0000559	0.0000541	0.0000266	0.0633	0.00000527	0.0000785	0.000264	0.00162
2066 Aug	57.4	0.0352	0.064	0.00053	12.3	0.0431	4.54	0.0000053	0.00743	0.000579	0.0053	0.0145	0.0000106	8.21	0.00000282	0.000062	0.000215	0.000524	0.0487	0.00000265	1.62	0.00202	1.75	0.026	0.000293	1.17	0.00146	0.00497	0.0000558	0.0000544	0.0000268	0.0642	0.0000053	0.0000796	0.000265	0.00163
2066 Sep	57.2	0.0351	0.0638	0.000527	12.3	0.0429	4.52	0.00000527	0.0074	0.000576	0.00527	0.0144	0.0000105	8.18	0.0000028	0.0000617	0.000214	0.000522	0.0485	0.00000264	1.61	0.00201	1.75	0.0259	0.000292	1.16	0.00146	0.00495	0.0000552	0.0000541	0.0000267	0.0639	0.00000527	0.0000793	0.000264	0.00162
2066 Oct	56.7	0.0347	0.0631	0.000525	12.2	0.0427	4.49	0.00000525	0.00734	0.000572	0.00525	0.0143	0.0000105	8.11	0.00000279	0.0000614	0.000213	0.000518	0.048	0.00000263	1.6	0.00199	1.74	0.0257	0.000289	1.16	0.00145	0.0049	0.0000551	0.0000539	0.0000266	0.0633	0.00000525	0.0000785	0.000263	0.00162
2066 Nov	56.4	0.0344	0.0625	0.000525	12.1	0.0425	4.48	0.00000525	0.00729	0.000568	0.00525	0.0143	0.0000105	8.07	0.00000279	0.0000612	0.000211	0.000515	0.0476	0.00000262	1.59	0.00197	1.73	0.0254	0.000287	1.15	0.00144	0.00487	0.0000556	0.0000538	0.0000265	0.0629	0.00000525	0.0000779	0.000262	0.00161
2066 Dec	56.3	0.0344	0.0623	0.000525	12.1	0.0425	4.48	0.00000525	0.00728	0.000568	0.00525	0.0142	0.0000105	8.06	0.00000279	0.0000612	0.000211	0.000515	0.0475	0.00000262	1.59	0.00197	1.73	0.0253	0.000286	1.15	0.00143	0.00486	0.0000558	0.0000538	0.0000265	0.0628	0.00000525	0.0000777	0.000262	0.00161
2067 Jan	56.3	0.0344	0.0623	0.000525	12.1	0.0425	4.48	0.00000525	0.00728	0.000568	0.00525	0.0142	0.0000105	8.06	0.00000279	0.0000612	0.000211	0.000515	0.0475	0.00000262	1.59	0.00197	1.73	0.0253	0.000286	1.15	0.00143	0.00486	0.0000558	0.0000538	0.0000265	0.0628	0.00000525	0.0000777	0.000262	0.00161
2067 Feb	56.3	0.0344	0.0623	0.000525	12.1	0.0425	4.48	0.00000525	0.00728	0.000568	0.00525	0.0142	0.0000105	8.06	0.00000279	0.0000612	0.000211	0.000515	0.0475	0.00000262	1.59	0.00197	1.73	0.0253	0.000286	1.15	0.00143	0.00486	0.0000558	0.0000538	0.0000265	0.0628	0.00000525	0.0000777	0.000262	0.00162
2067 Mar	56.3	0.0344	0.0623	0.000525	12.1	0.0425	4.48	0.00000525	0.00728	0.000568	0.00525	0.0142	0.0000105	8.06	0.00000279	0.0000612	0.000211	0.000515	0.0475	0.00000262	1.59	0.00197	1.73	0.0253	0.000286	1.15	0.00143	0.00486	0.0000558	0.0000538	0.0000265	0.0628	0.00000525	0.0000777	0.000262	0.00162
2067 Apr	56.4	0.0344	0.0625	0.000525	12.1	0.0426	4.49	0.00000525	0.0073	0.000569	0.00525	0.0143	0.0000105	8.07	0.00000279	0.0000613	0.000211	0.000516	0.0476	0.00000263	1.59	0.00198	1.73	0.0254	0.000287	1.15	0.00144	0.00487	0.0000558	0.0000539	0.0000266	0.0629	0.00000525	0.0000779	0.000263	0.00162
2067 May	56.8	0.0347	0.063	0.000528	12.2	0.0428	4.51	0.00000528	0.00735	0.000572	0.00528	0.0144	0.0000106	8.12	0.00000281	0.0000616	0.000213	0.000519	0.048	0.00000264	1.6	0.00199	1.74	0.0256	0.000289	1.16	0.00145	0.0049	0.000056	0.0000541	0.0000267	0.0633	0.00000528	0.0000784	0.000264	0.00162
2067 Jun	56.4	0.0345	0.0628	0.000522	12.1	0.0424	4.47	0.00000522	0.00731	0.000569	0.00522	0.0142	0.0000104	8.07	0.00000278	0.0000611	0.000211	0.000515	0.0478	0.00000261	1.59	0.00198	1.73	0.0255	0.000288	1.15	0.00144	0.00488	0.0000556	0.0000536	0.0000264	0.063	0.00000522	0.0000781	0.000261	0.00161
2067 Jul	56.6	0.0346	0.0629	0.000526	12.1	0.0427	4.5	0.00000526	0.00733	0.000571	0.00526	0.0143	0.0000105	8.1	0.0000028	0.0000615	0.000212	0.000518	0.0479	0.00000263	1.6	0.00198	1.74	0.0256	0.000288	1.16	0.00144	0.0049	0.0000563	0.000054	0.0000266	0.0632	0.00000526	0.0000783	0.000263	0.00162
2067 Aug	57.3	0.0351	0.0638	0.000529	12.3	0.043	4.53	0.00000529	0.00741	0.000577	0.00529	0.0145	0.0000106	8.19	0.00000281	0.0000619	0.000215	0.000523	0.0486	0.00000264	1.61	0.00201	1.75	0.026	0.000293	1.17	0.00146	0.00496	0.0000561	0.0000543	0.0000267	0.064	0.00000529	0.0000794	0.000264	0.00163
2067 Sep	57	0.035	0.0636	0.000526	12.2	0.0428	4.51	0.00000526	0.00738	0.000575	0.00526	0.0144	0.0000105	8.16	0.0000028	0.0000616	0.000214	0.000521	0.0484	0.00000263	1.61	0.002	1.74	0.0259	0.000292	1.16	0.00145	0.00494	0.0000556	0.000054	0.0000266	0.0637	0.00000526	0.0000791	0.000263	0.00162
2067 Oct	56.6	0.0346	0.063	0.000524	12.1	0.0426	4.48	0.00000524	0.00733	0.000571	0.00524	0.0143	0.0000105	8.09	0.00000279	0.0000613	0.000212	0.000517	0.0479	0.00000262	1.59	0.00199	1.73	0.0256	0.000289	1.15	0.00144	0.00489	0.0000555	0.0000538	0.0000265	0.0632	0.00000524	0.0000783	0.000262	0.00161
2067 Nov	56.3	0.0344	0.0623	0.000524	12.1	0.0424	4.47	0.00000524	0.00728	0.000567	0.00524	0.0142	0.0000105	8.05	0.00000279	0.0000611	0.000211	0.000514	0.0475	0.00000262	1.59	0.00197	1.73	0.0253	0.000286	1.15	0.00143	0.00486	0.0000561	0.0000538	0.0000265	0.0627				



Appendix C10: Kangisluik Lake																																						
Constituents	Total Dissolved Solids	Ammonia	Nitrate	Nitrite	Chloride	Fluoride	Sulphate	Silver	Aluminum	Arsenic	Boron	Barium	Beryllium	Calcium	Cadmium	Cobalt	Chromium	Copper	Iron	Mercury	Potassium	Lithium	Magnesium	Manganese	Molybdenum	Sodium	Nickel	Phosphorus	Lead	Antimony	Selenium	Strontium	Thallium	Uranium	Vanadium	Zinc		
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Operation (2023 to 2025): Min	127	0.336	0.927	0.0396	27.2	0.0871	28.8	0.0000116	0.0105	0.00454	0.0146	0.0366	0.0000754	24.6	0.00000787	0.000403	0.000455	0.00104	0.0672	0.00000632	3.99	0.00399	5.62	0.129	0.00235	3.17	0.0105	0.00638	0.000101	0.00107	0.000203	0.149	0.0000124	0.000598	0.00203	0.00387		
Operation (2023 to 2025): Average	133	0.421	1.11	0.0458	28.7	0.0947	32.5	0.0000122	0.0149	0.0101	0.0172	0.0381	0.0000799	25.8	0.0000082	0.000514	0.000536	0.00124	0.0998	0.00000761	4.52	0.00426	6.39	0.134	0.00377	3.77	0.015	0.00924	0.000107	0.00179	0.000262	0.165	0.0000172	0.00063	0.00217	0.00409		
Operation (2023 to 2025): Max	139	0.476	1.36	0.0513	32.3	0.101	36	0.0000128	0.0174	0.0133	0.024	0.0394	0.0000891	27.1	0.00000877	0.000773	0.000752	0.00135	0.119	0.00000866	5.65	0.00501	7.02	0.141	0.00451	5.39	0.018	0.0107	0.000116	0.00313	0.000303	0.207	0.0000269	0.000667	0.00229	0.00429		
CMCESWQO (Receiving Environment)	-	0.58	2.93	0.06	120	0.12	variable	0.00025	0.1	0.025	1.5	-	-	-	variable	-	0.001	variable	0.3	0.000026	-	-	-	variable	0.073	-	variable	0.01	0.001	-	0.001	-	0.001	-	0.0008	0.015	-	variable
Active Closure (2026 to Sept. 2042): Min	128	0.092	0.538	0.00997	27.2	0.0652	15.5	0.00000605	0.00897	0.00152	0.00622	0.0328	0.0000156	19.8	0.00000385	0.000121	0.000177	0.000707	0.0478	0.00000319	3.85	0.00341	4.56	0.0566	0.00124	2.73	0.0029	0.00552	0.0000408	0.000289	0.000167	0.137	0.00000609	0.000225	0.000402	0.00185		
Active Closure (2026 to Sept. 2042): Average	147	0.199	0.677	0.0203	30.6	0.0759	20.7	0.00000783	0.0115	0.0041	0.00875	0.0347	0.0000347	21.6	0.00000513	0.000206	0.000261	0.000886	0.069	0.00000478	3.92	0.00361	5.13	0.0796	0.00217	2.88	0.00661	0.00708	0.0000609	0.000523	0.000198	0.142	0.00000803	0.000352	0.000943	0.00252		
Active Closure (2026 to Sept. 2042): Max	156	0.45	0.983	0.0444	32.3	0.0998	33	0.0000119	0.017	0.0102	0.0146	0.0386	0.0000798	25.6	0.00000809	0.000404	0.000458	0.00129	0.118	0.00000841	4.01	0.00401	6.41	0.133	0.00435	3.19	0.0153	0.0107	0.000108	0.00107	0.000269	0.15	0.0000125	0.000644	0.00221	0.00405		
CMCESWQO (Receiving Environment)	-	0.58	2.93	0.06	120	0.12	variable	0.00025	0.1	0.025	1.5	-	-	-	variable	-	0.001	variable	0.3	0.000026	-	-	-	variable	0.073	-	variable	0.01	0.001	-	0.001	-	0.001	-	0.0008	0.015	-	variable
Post Closure (Oct. 2042 to 2070): Min	88.3	0.0919	0.185	0.0035	19.2	0.0568	14.2	0.00000608	0.00905	0.00162	0.00623	0.0202	0.0000466	13.9	0.00000387	0.00012	0.000177	0.000711	0.0449	0.00000321	2.65	0.00344	2.89	0.0568	0.000801	1.63	0.00291	0.00476	0.0000411	0.000288	0.000168	0.088	0.00000611	0.000226	0.000401	0.00185		
Post Closure (Oct. 2042 to 2070): Average	96.8	0.165	0.231	0.00451	20.9	0.0605	15.8	0.00000764	0.0186	0.0106	0.00746	0.022	0.00442	15.3	0.00000653	0.000161	0.000262	0.000877	0.048	0.00000781	2.89	0.0042	3.27	0.0742	0.00104	1.78	0.00538	0.00508	0.0000857	0.000358	0.000216	0.096	0.00000798	0.000514	0.000627	0.00265		
Post Closure (Oct. 2042 to 2070): Max	154	0.178	0.538	0.00987	31.9	0.0655	17.6	0.00000811	0.0211	0.017	0.00787	0.033	0.00522	19.9	0.00000698	0.000181	0.000277	0.000963	0.0514	0.00000881	3.87	0.00447	4.58	0.0775	0.00131	2.74	0.00671	0.00557	0.000091	0.000419	0.000231	0.138	0.0000087	0.000587	0.000712	0.00293		
CMCESWQO (Receiving Environment)	-	0.58	2.93	0.06	120	0.12	variable	0.00025	0.1	0.025	1.5	-	-	-	variable	-	0.001	variable	0.3	0.000026	-	-	-	variable	0.073	-	variable	0.01	0.001	-	0.001	-	0.001	-	0.0008	0.015	-	variable
Model Predictions (2023-2070)																																						
2023 Jan	139	0.345	1.36	0.0462	32.3	0.088	30	0.0000128	0.0106	0.00465	0.024	0.0381	0.0000891	25.7	0.00000877	0.000773	0.000752	0.00104	0.0672	0.00000642	5.65	0.00501	5.84	0.141	0.0024	5.39	0.0109	0.00638	0.000116	0.00313	0.000208	0.207	0.0000269	0.00063	0.00223	0.00408		
2023 Feb	138	0.343	1.34	0.0457	32.1	0.0877	29.8	0.0000127	0.0106	0.00463	0.0238	0.038	0.0000885	25.6	0.00000872	0.000767	0.000747	0.00104	0.0674	0.00000639	5.61	0.00499	5.81	0.14	0.00238	5.35	0.0108	0.00641	0.000115	0.0031	0.000207	0.206	0.0000268	0.000626	0.00221	0.00406		
2023 Mar	138	0.34	1.33	0.0451	31.9	0.0874	29.5	0.0000126	0.0106	0.0046	0.0236	0.0378	0.0000878	25.4	0.00000866	0.000759	0.000742	0.00104	0.0678	0.00000636	5.57	0.00496	5.76	0.139	0.00236	5.3	0.0107	0.00645	0.000115	0.00306	0.000205	0.205	0.0000266	0.00062	0.00219	0.00404		
2023 Apr	137	0.338	1.31	0.0446	31.8	0.0871	29.2	0.0000126	0.0106	0.00458	0.0234	0.0376	0.0000872	25.3	0.0000086	0.000752	0.000737	0.00104	0.0682	0.00000632	5.53	0.00494	5.72	0.138	0.00235	5.25	0.0106	0.00649	0.000114	0.00302	0.000203	0.203	0.0000264	0.000616	0.00217	0.00402		
2023 May	137	0.338	1.28	0.0436	31.8																																	



Whale Tail Modification Water Balance and Water Quality Model - Technical Report

Appendix C10: Kangisulik Lake																																				
Constituents	Total Dissolved Solids	Ammonia	Nitrate	Nitrite	Chloride	Fluoride	Sulphate	Silver	Aluminum	Arsenic	Boron	Barium	Beryllium	Calcium	Cadmium	Cobalt	Chromium	Copper	Iron	Mercury	Potassium	Lithium	Magnesium	Manganese	Molybdenum	Sodium	Nickel	Phosphorus	Lead	Antimony	Selenium	Strontium	Thallium	Uranium	Vanadium	Zinc
2030 Jul	143	0.247	0.74	0.0249	30	0.0806	23.1	0.00000862	0.0127	0.00525	0.00988	0.0355	0.0000433	22.4	0.00000571	0.000244	0.000299	0.000966	0.0784	0.00000551	3.95	0.00369	5.38	0.0899	0.00259	2.94	0.00827	0.00777	0.0000699	0.000628	0.000212	0.143	0.0000089	0.000411	0.00119	0.00282
2030 Aug	145	0.247	0.744	0.0249	30.3	0.0811	23.2	0.00000866	0.0128	0.00524	0.00992	0.0358	0.0000433	22.5	0.00000573	0.000244	0.0003	0.00997	0.0786	0.00000553	3.98	0.00372	5.42	0.0902	0.00259	2.96	0.00827	0.00778	0.0000701	0.000629	0.000214	0.144	0.00000894	0.000412	0.00118	0.00283
2030 Sep	144	0.242	0.734	0.0244	30.2	0.0802	22.8	0.00000854	0.0126	0.00511	0.00976	0.0355	0.0000423	22.3	0.00000565	0.00024	0.000295	0.000958	0.0774	0.00000543	3.96	0.00369	5.36	0.0888	0.00254	2.94	0.00808	0.0077	0.0000689	0.000616	0.000211	0.144	0.00000882	0.000404	0.00116	0.00279
2030 Oct	144	0.239	0.729	0.0241	30.1	0.0798	22.7	0.00000848	0.0125	0.00504	0.00968	0.0354	0.0000418	22.2	0.00000561	0.000237	0.000292	0.000952	0.0767	0.00000538	3.95	0.00368	5.34	0.0881	0.00251	2.93	0.00798	0.00765	0.0000683	0.00061	0.00021	0.143	0.00000875	0.0004	0.00114	0.00277
2030 Nov	144	0.238	0.728	0.024	30.1	0.0796	22.6	0.00000846	0.0125	0.00502	0.00965	0.0353	0.0000416	22.2	0.00000559	0.000236	0.000291	0.00095	0.0765	0.00000537	3.94	0.00367	5.33	0.0878	0.0025	2.92	0.00794	0.00763	0.0000681	0.000607	0.00021	0.143	0.00000873	0.000399	0.00114	0.00276
2030 Dec	144	0.238	0.728	0.024	30.1	0.0796	22.6	0.00000846	0.0125	0.00502	0.00965	0.0353	0.0000416	22.2	0.00000559	0.000236	0.000291	0.000949	0.0765	0.00000537	3.94	0.00367	5.33	0.0878	0.0025	2.92	0.00794	0.00763	0.0000681	0.000607	0.00021	0.143	0.00000873	0.000399	0.00114	0.00276
2031 Jan	144	0.238	0.728	0.024	30.1	0.0796	22.6	0.00000846	0.0125	0.00502	0.00965	0.0353	0.0000416	22.2	0.00000559	0.000236	0.000291	0.000949	0.0765	0.00000537	3.94	0.00367	5.33	0.0878	0.0025	2.92	0.00794	0.00763	0.0000681	0.000607	0.00021	0.143	0.00000873	0.000399	0.00114	0.00276
2031 Feb	144	0.238	0.728	0.024	30.1	0.0796	22.6	0.00000846	0.0125	0.00502	0.00965	0.0353	0.0000416	22.2	0.00000559	0.000236	0.000291	0.00095	0.0765	0.00000537	3.94	0.00367	5.33	0.0878	0.0025	2.92	0.00794	0.00763	0.0000681	0.000607	0.00021	0.143	0.00000873	0.000399	0.00114	0.00276
2031 Mar	144	0.238	0.728	0.024	30.1	0.0796	22.6	0.00000846	0.0125	0.00502	0.00965	0.0353	0.0000416	22.2	0.00000559	0.000236	0.000291	0.00095	0.0765	0.00000537	3.94	0.00367	5.33	0.0878	0.0025	2.92	0.00794	0.00763	0.0000681	0.000607	0.00021	0.143	0.00000873	0.000399	0.00114	0.00276
2031 Apr	144	0.238	0.729	0.024	30.2	0.0797	22.6	0.00000847	0.0125	0.00502	0.00967	0.0354	0.0000416	22.2	0.0000056	0.000237	0.000291	0.000951	0.0766	0.00000537	3.95	0.00368	5.34	0.0879	0.00251	2.93	0.00795	0.00764	0.0000682	0.000608	0.00021	0.143	0.00000874	0.0004	0.00114	0.00276
2031 May	145	0.239	0.733	0.0241	30.4	0.0802	22.8	0.00000852	0.0126	0.00505	0.00972	0.0356	0.0000419	22.4	0.00000563	0.000238	0.000293	0.000956	0.077	0.0000054	3.97	0.0037	5.37	0.0884	0.00252	2.94	0.00799	0.00768	0.0000686	0.000611	0.000211	0.144	0.00000879	0.000402	0.00114	0.00278
2031 Jun	144	0.224	0.708	0.0226	30.1	0.078	21.9	0.00000821	0.0121	0.00469	0.00931	0.0349	0.0000391	21.9	0.00000541	0.000225	0.00028	0.000924	0.0736	0.00000515	3.91	0.00363	5.24	0.0847	0.00238	2.89	0.00746	0.00741	0.0000654	0.000576	0.000205	0.142	0.00000846	0.000382	0.00107	0.00266
2031 Jul	145	0.22	0.706	0.0223	30.4	0.078	21.8	0.00000818	0.0121	0.0046	0.00925	0.0351	0.0000385	21.9	0.00000539	0.000223	0.000278	0.000922	0.0731	0.00000511	3.94	0.00365	5.24	0.0842	0.00235	2.9	0.00734	0.00739	0.0000648	0.000569	0.000205	0.142	0.00000842	0.000378	0.00105	0.00265
2031 Aug	147	0.22	0.709	0.0223	30.7	0.0785	21.9	0.00000822	0.0122	0.00459	0.00929	0.0354	0.0000385	22.1	0.00000541	0.000223	0.000278	0.000926	0.0734	0.00000512	3.97	0.00368	5.28	0.0845	0.00236	2.93	0.00733	0.00742	0.000065	0.00057	0.000206	0.144	0.00000846	0.000379	0.00105	0.00266
2031 Sep	146	0.216	0.701	0.0219	30.6	0.0777	21.6	0.00000812	0.012	0.00449	0.00915	0.0351	0.0000376	21.9	0.00000534	0.000219	0.000274	0.000916	0.0723	0.00000504	3.95	0.00365	5.23	0.0833	0.00231	2.91	0.00718	0.00733	0.000064	0.000559	0.000204	0.143	0.00000835	0.000373	0.00103	0.00263
2031 Oct	146	0.213	0.697	0.0216	30.5	0.0773	21.4	0.00000806	0.0119	0.00443	0.00908	0.035	0.0000372	21.8	0.0000053	0.000217	0.000272	0.00091	0.0717	0.000005	3.94	0.00364	5.21	0.0826	0.00229	2.9	0.00709	0.00728	0.0000635	0.000553	0.000203	0.142	0.00000829	0.00037	0.00101	0.00261
2031 Nov	146	0.212	0.695	0.0215	30.5	0.0772	21.4	0.00000804	0.0119	0.0044	0.00906	0.035	0.000037	21.8	0.00000529	0.000216	0.000271	0.000908	0.0715	0.00000499	3.93	0.00363	5.2	0.08												



Whale Tail Modification Water Balance and Water Quality Model - Technical Report

Appendix C10: Kangisulik Lake																																				
Constituents	Total Dissolved Solids	Ammonia	Nitrate	Nitrite	Chloride	Fluoride	Sulphate	Silver	Aluminum	Arsenic	Boron	Barium	Beryllium	Calcium	Cadmium	Cobalt	Chromium	Copper	Iron	Mercury	Potassium	Lithium	Magnesium	Manganese	Molybdenum	Sodium	Nickel	Phosphorus	Lead	Antimony	Selenium	Strontium	Thallium	Uranium	Vanadium	Zinc
2039 Jun	152	0.109	0.559	0.0116	31.5	0.0667	16.2	0.00000631	0.00936	0.00192	0.0066	0.0331	0.0000185	20	0.00000404	0.000134	0.000189	0.000734	0.0509	0.00000343	3.86	0.00344	4.64	0.06	0.00138	2.75	0.00348	0.00575	0.0000438	0.000325	0.000171	0.137	0.00000638	0.000244	0.000486	0.00195
2039 Jul	153	0.108	0.561	0.0115	31.8	0.0671	16.3	0.00000634	0.0094	0.00191	0.00662	0.0333	0.0000185	20.2	0.00000405	0.000134	0.00019	0.000737	0.0511	0.00000344	3.89	0.00346	4.67	0.0602	0.00138	2.76	0.00346	0.00578	0.0000439	0.000324	0.000172	0.138	0.0000064	0.000244	0.000484	0.00195
2039 Aug	154	0.109	0.566	0.0116	32.1	0.0677	16.4	0.00000639	0.00947	0.00191	0.00667	0.0336	0.0000185	20.3	0.00000409	0.000134	0.000191	0.000743	0.0515	0.00000346	3.92	0.00349	4.71	0.0607	0.00139	2.79	0.00348	0.00583	0.0000442	0.000326	0.000174	0.14	0.00000645	0.000246	0.000486	0.00197
2039 Sep	154	0.107	0.561	0.0114	31.9	0.0672	16.3	0.00000634	0.0094	0.00188	0.00661	0.0334	0.0000183	20.2	0.00000405	0.000133	0.000189	0.000737	0.051	0.00000343	3.9	0.00347	4.68	0.0601	0.00137	2.77	0.00342	0.00578	0.0000438	0.000322	0.000172	0.139	0.0000064	0.000243	0.000478	0.00195
2039 Oct	153	0.106	0.559	0.0113	31.8	0.0669	16.2	0.00000631	0.00935	0.00186	0.00657	0.0333	0.0000181	20.1	0.00000403	0.000132	0.000188	0.000734	0.0507	0.00000341	3.88	0.00346	4.66	0.0598	0.00137	2.76	0.00339	0.00575	0.0000436	0.00032	0.000172	0.138	0.00000637	0.000242	0.000474	0.00194
2039 Nov	153	0.106	0.558	0.0113	31.8	0.0668	16.2	0.0000063	0.00934	0.00185	0.00656	0.0333	0.000018	20.1	0.00000402	0.000132	0.000188	0.000733	0.0506	0.0000034	3.88	0.00346	4.66	0.0597	0.00136	2.76	0.00338	0.00574	0.0000435	0.000319	0.000171	0.138	0.00000636	0.000241	0.000473	0.00194
2039 Dec	153	0.106	0.558	0.0113	31.8	0.0668	16.2	0.0000063	0.00934	0.00185	0.00656	0.0333	0.000018	20.1	0.00000402	0.000132	0.000188	0.000733	0.0506	0.0000034	3.88	0.00346	4.66	0.0597	0.00136	2.76	0.00338	0.00574	0.0000435	0.000319	0.000171	0.138	0.00000636	0.000241	0.000473	0.00194
2040 Jan	153	0.106	0.558	0.0113	31.8	0.0668	16.2	0.0000063	0.00934	0.00185	0.00656	0.0333	0.000018	20.1	0.00000402	0.000132	0.000188	0.000733	0.0506	0.0000034	3.88	0.00346	4.66	0.0597	0.00136	2.76	0.00338	0.00574	0.0000435	0.000319	0.000171	0.138	0.00000636	0.000241	0.000473	0.00194
2040 Feb	153	0.106	0.558	0.0113	31.8	0.0668	16.2	0.0000063	0.00934	0.00185	0.00656	0.0333	0.000018	20.1	0.00000402	0.000132	0.000188	0.000733	0.0506	0.0000034	3.88	0.00346	4.66	0.0597	0.00136	2.76	0.00338	0.00574	0.0000435	0.000319	0.000171	0.138	0.00000636	0.000241	0.000473	0.00194
2040 Mar	153	0.106	0.558	0.0113	31.8	0.0668	16.2	0.0000063	0.00934	0.00185	0.00656	0.0333	0.000018	20.1	0.00000402	0.000132	0.000188	0.000733	0.0506	0.0000034	3.88	0.00346	4.66	0.0597	0.00136	2.76	0.00338	0.00574	0.0000435	0.000319	0.000171	0.138	0.00000636	0.000241	0.000473	0.00194
2040 Apr	153	0.106	0.559	0.0113	31.8	0.0668	16.2	0.00000631	0.00935	0.00186	0.00657	0.0333	0.0000181	20.1	0.00000403	0.000132	0.000188	0.000734	0.0507	0.00000341	3.89	0.00346	4.66	0.0598	0.00136	2.76	0.00339	0.00575	0.0000436	0.00032	0.000172	0.138	0.00000637	0.000242	0.000473	0.00194
2040 May	154	0.107	0.562	0.0114	32	0.0673	16.3	0.00000634	0.00941	0.00187	0.00661	0.0335	0.0000182	20.2	0.00000405	0.000133	0.000189	0.000738	0.051	0.00000343	3.91	0.00348	4.69	0.0601	0.00137	2.78	0.00341	0.00579	0.0000438	0.000322	0.000173	0.139	0.00000641	0.000243	0.000476	0.00195
2040 Jun	152	0.102	0.55	0.0109	31.6	0.0661	15.9	0.00000621	0.0092	0.00177	0.00645	0.033	0.0000174	19.9	0.00000396	0.000128	0.000184	0.000723	0.0497	0.00000333	3.85	0.00343	4.61	0.0587	0.00133	2.74	0.00326	0.00566	0.0000426	0.000311	0.000169	0.137	0.00000626	0.000236	0.000454	0.00191
2040 Jul	154	0.102	0.554	0.0109	31.9	0.0666	16	0.00000624	0.00926	0.00176	0.00648	0.0333	0.0000174	20.1	0.00000398	0.000129	0.000185	0.000728	0.0499	0.00000335	3.89	0.00346	4.64	0.059	0.00133	2.76	0.00325	0.0057	0.0000428	0.000311	0.000171	0.138	0.0000063	0.000237	0.000453	0.00192
2040 Aug	155	0.103	0.558	0.011	32.2	0.0672	16.1	0.00000629	0.00933	0.00177	0.00653	0.0335	0.0000175	20.2	0.00000402	0.00013	0.000187	0.000734	0.0503	0.00000337	3.92	0.00349	4.68	0.0594	0.00134	2.78	0.00327	0.00574	0.0000431	0.000313	0.000172	0.14	0.00000635	0.000239	0.000455	0.00193
2040 Sep	154	0.101	0.554	0.0109	32	0.0666	16	0.00000624	0.00926	0.00174	0.00647	0.0333	0.0000172	20.1	0.00000398	0.000128	0.000185	0.000728	0.0498	0.00000334	3.9	0.00346	4.65	0.0589	0.00132	2.77	0.00322	0.0057	0.0000427	0.000309	0.000171	0.139	0.00000629	0.000236	0.000449	0.00191
2040 Oct	154	0.1	0.551	0.0108	31.9	0.0664	15.9	0.00000621	0.00921	0.00172	0.00644	0.0332	0.0000171																							



Whale Tail Modification Water Balance and Water Quality Model - Technical Report

Appendix C10: Kangisulik Lake																																								
Constituents	Total Dissolved Solids	Ammonia	Nitrate	Nitrite	Chloride	Fluoride	Sulphate	Silver	Aluminum	Arsenic	Boron	Barium	Beryllium	Calcium	Cadmium	Cobalt	Chromium	Copper	Iron	Mercury	Potassium	Lithium	Magnesium	Manganese	Molybdenum	Sodium	Nickel	Phosphorus	Lead	Antimony	Selenium	Strontium	Thallium	Uranium	Vanadium	Zinc				
2048 May	97.9	0.178	0.235	0.00474	21.1	0.0621	17.3	0.00000794	0.019	0.0164	0.00777	0.0222	0.00511	16	0.00000681	0.000172	0.000277	0.000932	0.0509	0.00000813	2.93	0.00446	3.48	0.0775	0.00124	1.8	0.00663	0.00533	0.0000877	0.000394	0.000227	0.098	0.0000083	0.000541	0.000683	0.0028				
2048 Jun	97.8	0.171	0.237	0.0047	21.1	0.0623	16.9	0.00000788	0.0194	0.0154	0.00767	0.0223	0.00487	15.8	0.00000674	0.000173	0.000274	0.000931	0.0499	0.00000824	2.96	0.00438	3.44	0.0754	0.00122	1.8	0.00635	0.00524	0.0000859	0.0004	0.000225	0.0973	0.00000833	0.000549	0.000682	0.00281				
2048 Jul	97.7	0.174	0.234	0.00468	21.1	0.0632	17.1	0.00000801	0.0201	0.0156	0.00779	0.0224	0.00499	15.8	0.00000688	0.000177	0.000274	0.00095	0.0503	0.00000853	2.99	0.00443	3.45	0.0763	0.00123	1.8	0.00643	0.00528	0.0000877	0.000411	0.000229	0.0974	0.00000853	0.000569	0.0007	0.00287				
2048 Aug	98.8	0.174	0.238	0.00473	21.3	0.0637	17.2	0.00000806	0.0202	0.0156	0.00784	0.0226	0.005	16	0.00000691	0.000178	0.000275	0.000955	0.0506	0.00000856	3.02	0.00446	3.48	0.0767	0.00124	1.82	0.00644	0.00532	0.000088	0.000413	0.00023	0.0984	0.00000857	0.000571	0.000703	0.00289				
2048 Sep	98.1	0.173	0.236	0.00471	21.2	0.0629	17	0.00000797	0.0197	0.0154	0.00775	0.0224	0.00497	15.9	0.00000683	0.000175	0.000273	0.000941	0.0502	0.0000084	2.99	0.00443	3.45	0.0761	0.00122	1.8	0.00637	0.00528	0.0000871	0.000404	0.000227	0.0978	0.00000845	0.000559	0.000691	0.00284				
2048 Oct	97.4	0.173	0.234	0.00467	21.1	0.0626	16.9	0.00000794	0.0197	0.0153	0.00773	0.0222	0.00497	15.8	0.00000681	0.000174	0.000272	0.000938	0.05	0.00000838	2.97	0.00441	3.43	0.0759	0.00121	1.79	0.00635	0.00525	0.000087	0.000403	0.000226	0.0972	0.00000842	0.000558	0.000689	0.00283				
2048 Nov	96.8	0.173	0.232	0.00464	21	0.0626	16.9	0.00000795	0.0198	0.0153	0.00774	0.0221	0.005	15.7	0.00000683	0.000175	0.000272	0.000939	0.05	0.00000843	2.96	0.00441	3.42	0.076	0.00121	1.78	0.00636	0.00525	0.0000874	0.000404	0.000227	0.0967	0.00000844	0.000561	0.000691	0.00284				
2048 Dec	96.5	0.174	0.23	0.00462	20.9	0.0624	16.9	0.00000795	0.0198	0.0154	0.00774	0.0221	0.00504	15.7	0.00000684	0.000175	0.000273	0.000938	0.05	0.00000842	2.95	0.00442	3.41	0.0762	0.00121	1.78	0.00639	0.00525	0.0000876	0.000403	0.000227	0.0965	0.00000843	0.00056	0.000691	0.00284				
2049 Jan	96.2	0.175	0.229	0.00461	20.8	0.0624	17	0.00000796	0.0198	0.0154	0.00774	0.022	0.00506	15.7	0.00000685	0.000175	0.000274	0.000938	0.05	0.00000842	2.94	0.00442	3.4	0.0763	0.00121	1.77	0.0064	0.00525	0.0000878	0.000403	0.000227	0.0963	0.00000843	0.00056	0.000692	0.00284				
2049 Feb	96.1	0.175	0.228	0.00459	20.8	0.0623	17	0.00000796	0.0197	0.0155	0.00775	0.022	0.00508	15.7	0.00000685	0.000175	0.000274	0.000937	0.0501	0.00000842	2.94	0.00443	3.4	0.0764	0.00121	1.77	0.00641	0.00525	0.0000879	0.000402	0.000227	0.0962	0.00000842	0.00056	0.000692	0.00284				
2049 Mar	95.9	0.175	0.228	0.00459	20.8	0.0622	17	0.00000796	0.0197	0.0155	0.00775	0.0219	0.00509	15.6	0.00000686	0.000174	0.000274	0.000938	0.0501	0.00000841	2.93	0.00443	3.4	0.0765	0.00121	1.77	0.00642	0.00524	0.000088	0.000402	0.000227	0.0962	0.00000845	0.000559	0.000691	0.00284				
2049 Apr	96	0.176	0.228	0.00459	20.8	0.0623	17	0.00000796	0.0197	0.0155	0.00776	0.0219	0.0051	15.7	0.00000687	0.000174	0.000275	0.000938	0.0502	0.00000841	2.93	0.00444	3.4	0.0766	0.00121	1.77	0.00644	0.00525	0.0000882	0.000401	0.000227	0.0963	0.00000842	0.000559	0.000692	0.00284				
2049 May	96.6	0.177	0.229	0.00462	20.9	0.0626	17.1	0.00000801	0.0198	0.0156	0.0078	0.0221	0.00513	15.8	0.0000069	0.000175	0.000276	0.000943	0.0504	0.00000846	2.95	0.00446	3.42	0.077	0.00121	1.78	0.00647	0.00528	0.0000887	0.000404	0.000228	0.0968	0.00000846	0.000562	0.000695	0.00285				
2049 Jun	96.7	0.17	0.232	0.00461	20.9	0.0627	16.7	0.00000793	0.0201	0.0147	0.0077	0.0222	0.0049	15.6	0.00000681	0.000176	0.000269	0.00094	0.0495	0.00000851	2.98	0.00438	3.39	0.075	0.0012	1.78	0.00621	0.0052	0.0000867	0.000407	0.000226	0.0964	0.00000847	0.000567	0.000692	0.00285				
2049 Jul	96.9	0.173	0.23	0.00461	21	0.0636	16.9	0.00000808	0.0208	0.0149	0.00783	0.0223	0.00503	15.7	0.00000696	0.00018	0.000273	0.000959	0.0501	0.00000879	3.01	0.00444	3.4	0.0761	0.00121	1.79	0.0063	0.00526	0.0000885	0.000418	0.00023	0.0968	0.00000866	0.000586	0.00071	0.00292				
2049 Aug	98	0.174	0.234	0.00466	21.2	0.0641	17	0.00000811	0.0208	0.0148	0.00787	0.0225	0.00503	15.8	0.00000698	0.000181	0.000274	0.000963	0.0503	0.00000881	3.04	0.00447	3.43	0.0764	0.00122	1.81	0.0063	0.00529	0.0000887	0.000419	0.000231	0.0978	0.0000087	0.000587	0.000712	0.00293				
2049 Sep	97.4	0.173	0.233	0.00464	21.1	0.0635	16.9	0.00000804	0.0206	0.0146	0.0078	0.0224	0.005	15.7	0.00000692	0.000179	0.000272	0.000953	0.05	0.0000087	3.01	0.00444	3.41	0.0759	0.0012	1.8														



Whale Tail Modification Water Balance and Water Quality Model - Technical Report

Appendix C10: Kangislulik Lake																																						
Constituents	Total Dissolved Solids	Ammonia	Nitrate	Nitrite	Chloride	Fluoride	Sulphate	Silver	Aluminum	Arsenic	Boron	Barium	Beryllium	Calcium	Cadmium	Cobalt	Chromium	Copper	Iron	Mercury	Potassium	Lithium	Magnesium	Manganese	Molybdenum	Sodium	Nickel	Phosphorus	Lead	Antimony	Selenium	Strontium	Thallium	Uranium	Vanadium	Zinc		
2057 Apr	92.7	0.173	0.212	0.00423	20.2	0.0592	15.7	0.00000765	0.0185	0.0108	0.00748	0.021	0.00495	14.9	0.00000664	0.000159	0.000268	0.000869	0.0478	0.00000786	2.78	0.0043	3.16	0.0756	0.001	1.72	0.00548	0.00502	0.0000886	0.000348	0.000217	0.0933	0.00000792	0.000514	0.000624	0.00264		
2057 May	93.3	0.174	0.214	0.00425	20.3	0.0598	15.8	0.00000772	0.0188	0.0108	0.00754	0.0212	0.00496	15	0.00000671	0.000161	0.000269	0.000879	0.0481	0.00000799	2.81	0.00433	3.18	0.0759	0.00101	1.73	0.0055	0.00505	0.0000893	0.000354	0.000219	0.0938	0.00000802	0.000523	0.000632	0.00267		
2057 Jun	93.6	0.168	0.218	0.00427	20.3	0.059	15.5	0.00000755	0.0183	0.0102	0.00737	0.0212	0.00473	14.9	0.00000652	0.000157	0.000262	0.000859	0.0472	0.00000773	2.79	0.00423	3.16	0.0741	0.000992	1.73	0.0053	0.00497	0.0000866	0.000344	0.000214	0.0936	0.00000783	0.000506	0.000612	0.00261		
2057 Jul	93.9	0.171	0.217	0.00427	20.4	0.0594	15.7	0.00000763	0.0184	0.0104	0.00746	0.0213	0.00484	15	0.00000661	0.000158	0.000266	0.000867	0.0477	0.00000778	2.8	0.00429	3.18	0.0753	0.000996	1.74	0.00538	0.00502	0.000088	0.000346	0.000216	0.0941	0.0000079	0.00051	0.000618	0.00263		
2057 Aug	95.1	0.172	0.221	0.00433	20.6	0.0599	15.8	0.00000768	0.0185	0.0104	0.00751	0.0215	0.00485	15.1	0.00000664	0.000159	0.000268	0.000872	0.0481	0.00000783	2.83	0.00431	3.21	0.0757	0.001	1.76	0.0054	0.00506	0.0000884	0.000348	0.000217	0.0952	0.00000795	0.000513	0.000621	0.00264		
2057 Sep	94.6	0.17	0.22	0.00431	20.5	0.0594	15.7	0.00000761	0.0182	0.0102	0.00744	0.0214	0.0048	15	0.00000657	0.000157	0.000265	0.000863	0.0477	0.00000773	2.81	0.00428	3.19	0.0751	0.000994	1.75	0.00534	0.00503	0.0000875	0.000343	0.000215	0.0947	0.00000787	0.000505	0.000613	0.00261		
2057 Oct	94	0.17	0.218	0.00428	20.4	0.059	15.6	0.00000757	0.018	0.0102	0.00741	0.0212	0.0048	14.9	0.00000654	0.000155	0.000265	0.000857	0.0475	0.00000766	2.79	0.00426	3.17	0.0749	0.000986	1.74	0.00532	0.005	0.0000873	0.000339	0.000214	0.0941	0.00000778	0.0005	0.000608	0.00259		
2057 Nov	93.4	0.171	0.216	0.00425	20.3	0.0588	15.6	0.00000756	0.018	0.0102	0.0074	0.0211	0.00482	14.9	0.00000654	0.000155	0.000265	0.000854	0.0475	0.00000763	2.77	0.00426	3.16	0.075	0.000981	1.73	0.00533	0.005	0.0000875	0.000337	0.000214	0.0937	0.00000778	0.000498	0.000607	0.00259		
2057 Dec	93.1	0.171	0.214	0.00423	20.2	0.0586	15.6	0.00000756	0.0179	0.0103	0.0074	0.021	0.00485	14.9	0.00000655	0.000155	0.000266	0.000853	0.0475	0.00000763	2.76	0.00426	3.15	0.0752	0.000979	1.72	0.00535	0.00499	0.0000878	0.000336	0.000214	0.0935	0.00000777	0.000498	0.000607	0.00258		
2058 Jan	92.8	0.172	0.213	0.00421	20.2	0.0586	15.6	0.00000756	0.0179	0.0103	0.0074	0.021	0.00487	14.8	0.00000655	0.000154	0.000266	0.000853	0.0475	0.00000763	2.75	0.00427	3.14	0.0753	0.000978	1.72	0.00536	0.00499	0.000088	0.000336	0.000214	0.0932	0.00000777	0.000498	0.000607	0.00258		
2058 Feb	92.6	0.172	0.212	0.0042	20.1	0.0585	15.6	0.00000756	0.0179	0.0103	0.00741	0.0209	0.00489	14.8	0.00000656	0.000154	0.000267	0.000852	0.0475	0.00000763	2.74	0.00427	3.14	0.0754	0.000977	1.72	0.00537	0.00499	0.0000881	0.000335	0.000214	0.0931	0.00000776	0.000498	0.000607	0.00258		
2058 Mar	92.5	0.173	0.212	0.0042	20.1	0.0585	15.6	0.00000757	0.0179	0.0103	0.00742	0.0209	0.00491	14.8	0.00000657	0.000154	0.000267	0.000853	0.0476	0.00000764	2.74	0.00428	3.14	0.0756	0.000977	1.72	0.00538	0.005	0.0000884	0.000335	0.000214	0.0932	0.00000777	0.000498	0.000607	0.00258		
2058 Apr	92.6	0.173	0.212	0.0042	20.1	0.0585	15.6	0.00000757	0.0179	0.0103	0.00742	0.0209	0.00491	14.8	0.00000657	0.000154	0.000267	0.000853	0.0476	0.00000764	2.74	0.00428	3.14	0.0756	0.000977	1.72	0.00538	0.005	0.0000884	0.000335	0.000214	0.0932	0.00000777	0.000498	0.000607	0.00258		
2058 May	93.2	0.174	0.213	0.00422	20.3	0.059	15.7	0.00000763	0.0181	0.0104	0.00747	0.0211	0.00493	14.9	0.00000662	0.000156	0.000269	0.000861	0.0479	0.00000773	2.77	0.0043	3.16	0.076	0.000984	1.73	0.00541	0.00503	0.0000889	0.000339	0.000216	0.0937	0.00000785	0.000504	0.000614	0.00261		
2058 Jun	93.2	0.166	0.215	0.00419	20.3	0.0602	15.4	0.00000768	0.0195	0.00973	0.00746	0.0213	0.00465	14.8	0.00000664	0.000163	0.000262	0.000882	0.0471	0.00000816	2.85	0.00422	3.14	0.0738	0.000992	1.72	0.0052	0.00496	0.0000876	0.000361	0.000217	0.0931	0.00000809	0.000535	0.000635	0.0027		
2058 Jul	93.4	0.169	0.213	0.00418	20.3	0.061	15.6	0.0000078	0.02	0.00985	0.00757	0.0214	0.00475	14.9	0.00000677	0.000166	0.000267	0.000897	0.0476	0.00000836	2.87	0.00428	3.15	0.0748	0.001	1.75	0.00528	0.00502	0.0000894	0.000369	0.000221	0.0936	0.00000824	0.000549	0.000648	0.00275		
2058 Aug	94.5	0.17	0.217	0.00424	20.6	0.0614	15.7	0.00000784	0.02	0.00984	0.00761	0.0217	0.00475	15	0.00000																							



Appendix C10: Kangislulik Lake																																				
Constituents	Total Dissolved Solids	Ammonia	Nitrate	Nitrite	Chloride	Fluoride	Sulphate	Silver	Aluminum	Arsenic	Boron	Barium	Beryllium	Calcium	Cadmium	Cobalt	Chromium	Copper	Iron	Mercury	Potassium	Lithium	Magnesium	Manganese	Molybdenum	Sodium	Nickel	Phosphorus	Lead	Antimony	Selenium	Strontium	Thallium	Uranium	Vanadium	Zinc
2066 Mar	89.5	0.164	0.192	0.00371	19.5	0.0587	14.7	0.00000759	0.0196	0.00716	0.00737	0.0206	0.00421	14.2	0.00000661	0.000157	0.000261	0.000853	0.046	0.00000809	2.75	0.00404	2.96	0.074	0.000875	1.65	0.00472	0.00485	0.0000896	0.000338	0.000213	0.0896	0.00000794	0.000525	0.000611	0.00263
2066 Apr	89.6	0.164	0.192	0.00371	19.5	0.0588	14.7	0.00000761	0.0196	0.00717	0.00739	0.0206	0.00421	14.2	0.00000663	0.000157	0.000261	0.000855	0.0461	0.00000811	2.75	0.00405	2.96	0.0741	0.000876	1.66	0.00473	0.00486	0.0000898	0.000339	0.000214	0.0897	0.00000796	0.000527	0.000613	0.00264
2066 May	90.2	0.165	0.193	0.00374	19.6	0.0594	14.8	0.00000767	0.0199	0.00719	0.00744	0.0208	0.00423	14.3	0.00000668	0.000159	0.000263	0.000864	0.0464	0.00000821	2.78	0.00407	2.98	0.0745	0.000884	1.67	0.00476	0.00489	0.0000903	0.000344	0.000216	0.0903	0.00000804	0.000534	0.000619	0.00267
2066 Jun	90.6	0.159	0.198	0.00377	19.7	0.0588	14.6	0.00000753	0.0195	0.00681	0.0073	0.0208	0.00401	14.2	0.00000652	0.000156	0.000256	0.00085	0.0456	0.00000803	2.78	0.00398	2.98	0.0727	0.000875	1.67	0.00459	0.00482	0.0000877	0.000339	0.000212	0.0901	0.00000791	0.000522	0.000605	0.00262
2066 Jul	90.8	0.163	0.197	0.00376	19.7	0.059	14.7	0.00000759	0.0195	0.00691	0.00737	0.0208	0.0041	14.3	0.00000659	0.000157	0.00026	0.000853	0.0461	0.00000805	2.78	0.00403	2.99	0.0738	0.000875	1.68	0.00466	0.00487	0.000089	0.000338	0.000213	0.0905	0.00000794	0.000523	0.000608	0.00263
2066 Aug	92	0.163	0.201	0.00382	20	0.0596	14.8	0.00000764	0.0196	0.0069	0.00742	0.0211	0.0041	14.5	0.00000662	0.000158	0.000261	0.000859	0.0464	0.00000809	2.81	0.00405	3.02	0.0742	0.000883	1.7	0.00468	0.00491	0.0000894	0.00034	0.000215	0.0915	0.00000799	0.000526	0.000611	0.00264
2066 Sep	91.4	0.161	0.199	0.00379	19.8	0.0592	14.7	0.00000758	0.0196	0.00679	0.00736	0.021	0.00404	14.4	0.00000657	0.000157	0.000259	0.000854	0.046	0.00000804	2.79	0.00402	3	0.0736	0.000876	1.68	0.00462	0.00487	0.0000885	0.000338	0.000213	0.0909	0.00000794	0.000523	0.000607	0.00263
2066 Oct	90.5	0.161	0.197	0.00374	19.7	0.0587	14.6	0.00000753	0.0194	0.00675	0.00731	0.0208	0.00403	14.2	0.00000652	0.000155	0.000258	0.000846	0.0457	0.00000797	2.76	0.00399	2.97	0.0732	0.000867	1.67	0.0046	0.00484	0.0000882	0.000335	0.000211	0.0901	0.00000788	0.000518	0.000602	0.00261
2066 Nov	89.9	0.161	0.194	0.00371	19.5	0.0584	14.6	0.00000752	0.0193	0.00677	0.00731	0.0206	0.00405	14.2	0.00000652	0.000155	0.000258	0.000844	0.0457	0.00000795	2.74	0.00399	2.96	0.0734	0.000862	1.66	0.00461	0.00483	0.0000884	0.000332	0.000211	0.0896	0.00000785	0.000516	0.0006	0.0026
2066 Dec	89.5	0.162	0.192	0.00369	19.5	0.0583	14.6	0.00000753	0.0193	0.00679	0.00731	0.0205	0.00407	14.2	0.00000653	0.000155	0.000259	0.000843	0.0457	0.00000796	2.73	0.00399	2.95	0.0735	0.00086	1.65	0.00462	0.00482	0.0000887	0.000332	0.000211	0.0894	0.00000785	0.000516	0.000601	0.0026
2067 Jan	89.2	0.162	0.191	0.00367	19.4	0.0583	14.6	0.00000753	0.0193	0.00681	0.00732	0.0205	0.00409	14.1	0.00000655	0.000155	0.000259	0.000844	0.0457	0.00000798	2.73	0.00399	2.94	0.0736	0.000859	1.65	0.00463	0.00482	0.0000889	0.000332	0.000211	0.0892	0.00000786	0.000517	0.000602	0.0026
2067 Feb	89.1	0.163	0.19	0.00365	19.4	0.0583	14.6	0.00000754	0.0194	0.00683	0.00733	0.0205	0.0041	14.1	0.00000656	0.000155	0.00026	0.000845	0.0457	0.00000801	2.73	0.00399	2.94	0.0737	0.000859	1.65	0.00464	0.00482	0.0000892	0.000333	0.000212	0.089	0.00000789	0.000519	0.000604	0.00261
2067 Mar	88.9	0.163	0.189	0.00364	19.3	0.0584	14.6	0.00000756	0.0195	0.00684	0.00734	0.0204	0.00411	14.1	0.00000657	0.000156	0.00026	0.000847	0.0458	0.00000804	2.73	0.004	2.93	0.0737	0.000859	1.64	0.00465	0.00482	0.0000893	0.000334	0.000212	0.0889	0.00000788	0.000521	0.000606	0.00261
2067 Apr	89	0.163	0.189	0.00364	19.4	0.0585	14.6	0.00000757	0.0196	0.00684	0.00735	0.0205	0.00411	14.1	0.00000659	0.000156	0.00026	0.000849	0.0458	0.00000807	2.73	0.004	2.94	0.0738	0.000861	1.64	0.00465	0.00483	0.0000896	0.000336	0.000213	0.089	0.00000792	0.000524	0.000608	0.00262
2067 May	89.6	0.163	0.19	0.00366	19.5	0.0595	14.7	0.00000769	0.0203	0.00685	0.00744	0.0207	0.00412	14.2	0.00000669	0.00016	0.000262	0.000867	0.0461	0.00000833	2.78	0.00403	2.96	0.0741	0.000875	1.66	0.00468	0.00486	0.0000905	0.000347	0.000216	0.0895	0.0000081	0.000544	0.000624	0.00269
2067 Jun	90.1	0.159	0.196	0.00371	19.6	0.0583	14.5	0.00000747	0.0193	0.00651	0.00725	0.0207	0.00392	14.1	0.00000647	0.000154	0.000255	0.00084	0.0453	0.00000792	2.75	0.00394	2.95	0.0725	0.000858	1.66	0.00452	0.0048	0.0000874	0.000332	0.00021	0.0896	0.00000783	0.000514	0.000597	0.00259
2067 Jul	90.4	0.162	0.195	0.00371	19.6	0.0585	14.6	0.00000754	0.0193	0.00661	0.00732	0.0207	0.00401	14.2	0.00000653	0.000154	0.000259	0.000843	0.0459	0.00000793	2.75	0.00399	2.97	0.0737	0.000858	1.67	0.00459	0.00485	0.0000888	0.000331	0.000211	0.09	0.00000786	0.000514	0.000598	0.0026
2067 Aug	91.5	0.162	0.198	0.00375	19.9	0.0594	14.7	0.00000762	0.0197	0.00659	0.0074	0.021	0.004	14.4	0.0000066	0.000157	0.00026	0.000856	0.0462	0.00000809	2.8	0.00402	3	0.074	0.000871	1.69	0.0046	0.00489	0.0000893	0.000339	0.000214	0.091	0.00000798	0.000525	0.000609	0.00264
2067 Sep	90.9	0.16	0.197	0.00373	19.7	0.0589	14.6	0.00000756	0.0195	0.00649	0.00733	0.0209	0.00395	14.3	0.00000654	0.000156	0.000258	0.000849	0.0458	0.00000801	2.78	0.00398	2.98	0.0733	0.000863	1.67	0.00455	0.00485	0.0000884	0.000335	0.000212	0.0904	0.00000791	0.00052	0.000603	0.00261
2067 Oct	90.1	0.16	0.194	0.00369	19.6	0.0583	14.5	0.00000751	0.0192	0.00645	0.00728	0.0207	0.00394	14.2	0.00000649	0.000154	0.000257	0.000839	0.0455	0.00000791	2.74	0.00395	2.95	0.0731	0.000852	1.66	0.00453	0.00482	0.000088	0.000333	0.000211	0.0896	0.00000785	0.000513	0.000596	0.00258
2067 Nov	89.5	0.161	0.192	0.00365	19.4	0.0582	14.5	0.00000749	0.0192	0.00647	0.00728	0.0205	0.00396	14.1	0.00000649	0.000154	0.000257	0.000838	0.0455	0.0000079	2.73	0.00395	2.94	0.0732	0.000848	1.65	0.00454	0.00481	0.0000883	0.000329	0.00021	0.0892	0.00000782	0.000512	0.000595	0.00258
2067 Dec	89.1	0.161	0.19	0.00363	19.4	0.0581	14.5	0.0000075	0.0193	0.0065	0.00729	0.0205	0.00398																							



Appendix C11: A15 Lake																																					
Constituents	Total Dissolved Solids	Ammonia	Nitrate	Nitrite	Chloride	Fluoride	Sulphate	Silver	Aluminum	Arsenic	Boron	Barium	Beryllium	Calcium	Cadmium	Cobalt	Chromium	Copper	Iron	Mercury	Potassium	Lithium	Magnesium	Manganese	Molybdenum	Sodium	Nickel	Phosphorus	Lead	Antimony	Selenium	Strontium	Thallium	Uranium	Vanadium	Zinc	
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Operation (2023 to 2025): Min	39	0.12	0.299	0.0134	8.2	0.0289	9.57	0.00000388	0.00454	0.00152	0.0048	0.0112	0.00000227	7.61	0.00000271	0.00013	0.00014	0.000378	0.0266	0.00000232	1.26	0.00117	1.94	0.037	0.000727	1	0.00356	0.00254	0.0000652	0.000417	0.0000764	0.00443	0.0000456	0.000178	0.000622	0.00136	
Operation (2023 to 2025): Average	73.1	0.216	0.558	0.0235	15.9	0.0552	17.2	0.0000073	0.0084	0.00509	0.00988	0.0212	0.0000439	14	0.00000495	0.000279	0.00029	0.000693	0.0535	0.00000443	2.49	0.0023	3.51	0.0694	0.00191	2.09	0.00766	0.00507	0.000093	0.000916	0.00014	0.0889	0.0000101	0.000325	0.00117	0.00246	
Operation (2023 to 2025): Max	108	0.337	0.881	0.0363	24.3	0.0821	26.3	0.0000105	0.0137	0.0092	0.0161	0.0313	0.0000651	20.4	0.00000715	0.000472	0.000494	0.00104	0.089	0.00000069	3.94	0.00361	5.29	0.101	0.0032	3.54	0.0126	0.00833	0.000149	0.00171	0.000219	0.144	0.0000172	0.000486	0.00173	0.00357	
CCME/SSWQO (Receiving Environment)	-	0.58	2.93	0.06	120	0.12	variable	0.00025	0.1	0.025	1.5	-	-	-	variable	-	0.001	variable	0.3	0.000026	-	-	-	variable	0.073	-	variable	0.01	0.001	-	0.001	-	0.0008	0.015	-	variable	
Active Closure (2026 to Sept. 2042): Min	47.8	0.0298	0.141	0.00297	10.1	0.0402	6.74	0.00000535	0.00419	0.000597	0.00541	0.0148	0.0000117	8.21	0.00000297	0.0000697	0.0000984	0.000377	0.0183	0.00000273	1.55	0.00124	2.17	0.0153	0.00034	1.31	0.00121	0.00257	0.0000392	0.000114	0.0000622	0.0481	0.00000537	0.0000696	0.000297	0.00164	
Active Closure (2026 to Sept. 2042): Average	59.3	0.0644	0.2	0.00641	12.4	0.0443	8.56	0.00000584	0.00577	0.00142	0.00612	0.0157	0.0000175	9.01	0.00000375	0.0000965	0.000129	0.000451	0.0264	0.00000318	1.72	0.0014	2.4	0.0241	0.000662	1.38	0.0024	0.00311	0.000119	0.000195	0.0000762	0.0549	0.0000059	0.000115	0.00046	0.00192	
Active Closure (2026 to Sept. 2042): Max	66.6	0.18	0.398	0.0181	13.8	0.0518	13.7	0.00000672	0.00744	0.00429	0.00738	0.0177	0.0000329	10.7	0.00000455	0.00017	0.000191	0.000558	0.0472	0.00000397	1.87	0.00164	2.82	0.0527	0.00173	1.54	0.00628	0.00434	0.000166	0.000456	0.000113	0.0616	0.0000686	0.000917	0.00228		
CCME/SSWQO (Receiving Environment)	-	0.58	2.93	0.06	120	0.12	variable	0.00025	0.1	0.025	1.5	-	-	-	variable	-	0.001	variable	0.3	0.000026	-	-	-	variable	0.073	-	variable	0.01	0.001	-	0.001	-	0.0008	0.015	-	variable	
Post Closure (Oct. 2042 to 2070): Min	63.5	0.0329	0.132	0.00262	13.1	0.0413	7.12	0.00000539	0.00535	0.000645	0.00544	0.0154	0.0000135	8.71	0.00000344	0.0000723	0.000104	0.00041	0.0213	0.00000274	1.75	0.0014	2.26	0.0181	0.000399	1.35	0.00127	0.00264	0.0000462	0.000128	0.0000699	0.0556	0.0000054	0.00008	0.0003	0.00175	
Post Closure (Oct. 2042 to 2070): Average	79.8	0.128	0.178	0.00356	17.2	0.0537	12.9	0.00000704	0.0153	0.00816	0.0069	0.0186	0.00337	12.6	0.00000585	0.000135	0.000218	0.00074	0.0389	0.0000066	2.41	0.00333	2.8	0.0569	0.000805	1.54	0.00424	0.00426	0.000116	0.000289	0.000172	0.0781	0.00000731	0.000399	0.00054	0.00246	
Post Closure (Oct. 2042 to 2070): Max	110	0.148	0.33	0.00622	23.1	0.0582	15.2	0.00000755	0.0182	0.014	0.00736	0.0243	0.00431	15.8	0.00000652	0.000157	0.000244	0.000848	0.0446	0.00000765	2.94	0.00384	3.64	0.065	0.0011	2.04	0.00567	0.00511	0.000169	0.000356	0.000197	0.102	0.00000799	0.000485	0.000628	0.00273	
CCME/SSWQO (Receiving Environment)	-	0.58	2.93	0.06	120	0.12	variable	0.00025	0.1	0.025	1.5	-	-	-	variable	-	0.001	variable	0.3	0.000026	-	-	-	variable	0.073	-	variable	0.01	0.001	-	0.001	-	0.0008	0.015	-	variable	
Model Predictions (2023-2070)																																					
2023 Jan	68.5	0.161	0.521	0.021	15.7	0.048	13.2	0.00000696	0.00604	0.00201	0.0114	0.0191	0.0000454	12.3	0.00000496	0.000378	0.000331	0.000568	0.0353	0.0000035	2.66	0.00232	2.85	0.0665	0.000948	2.42	0.00468	0.0036	0.000104	0.00124	0.000104	0.0938	0.0000147	0.00026	0.000991	0.00231	
2023 Feb	64.2	0.151	0.488	0.0197	14.7	0.0449	12.4	0.00000652	0.00566	0.00188	0.0107	0.0179	0.00000425	11.5	0.00000465	0.000354	0.00031	0.000532	0.0331	0.00000328	2.49	0.00217	2.67	0.0623	0.000888	2.27	0.00438	0.00337	0.0000976	0.00116	0.0000972	0.0878	0.0000138	0.000244	0.000928	0.00217	
2023 Mar	58.7	0.138	0.447	0.018	13.5	0.0412	11.3	0.00000597	0.00518	0.00172	0.00977	0.0164	0.00000389	10.6	0.00000426	0.000324	0.000284	0.000487	0.0303	0.000003	2.28	0.00199	2.45	0.057	0.000813	2.08	0.00401	0.00308	0.0000894	0.00106	0.000089	0.0804	0.0000126	0.000223	0.000085	0.00198	
2023 Apr	53.5	0.126	0.406	0.0164	12.2	0.0376	10.3	0.00000546	0.00471	0.00156	0.00891	0.0149	0.00000354	9.61	0.00000389	0.000294	0.000258	0.000444	0.0276	0.00000275	2.08	0.00181	2.23	0.0518	0.000738	1.89	0.00365	0.00294	0.0000813	0.000965	0.000081	0.0731	0.0000115	0.000203	0.000774	0.00181	
2023 May	52.																																				



Whale Tail Modification Water Balance and Water Quality Model - Technical Report

Appendix C11: A15 Lake																																				
Constituents	Total Dissolved Solids	Ammonia	Nitrate	Nitrite	Chloride	Fluoride	Sulphate	Silver	Aluminum	Arsenic	Boron	Barium	Beryllium	Calcium	Cadmium	Cobalt	Chromium	Copper	Iron	Mercury	Potassium	Lithium	Magnesium	Manganese	Molybdenum	Sodium	Nickel	Phosphorus	Lead	Antimony	Selenium	Strontium	Thallium	Uranium	Vanadium	Zinc
2030 Jul	61.7	0.082	0.224	0.00794	12.9	0.0488	9.73	0.00000619	0.00534	0.0018	0.00658	0.0172	0.0000204	8.74	0.0000036	0.00011	0.000447	0.000471	0.0281	0.00000346	1.85	0.00145	2.65	0.0275	0.000801	1.51	0.00303	0.00367	0.0000547	0.000227	0.0000812	0.0581	0.0000627	0.000135	0.000543	0.00195
2030 Aug	56.2	0.0715	0.195	0.00698	11.7	0.0459	8.82	0.0000061	0.00536	0.0016	0.00644	0.0158	0.0000192	8.89	0.00000349	0.00013	0.000137	0.000446	0.0265	0.00000337	1.7	0.00133	2.44	0.0242	0.000701	1.39	0.0027	0.00332	0.0000509	0.000205	0.0000743	0.0527	0.0000617	0.000119	0.000508	0.00191
2030 Sep	56.6	0.0739	0.207	0.00729	11.8	0.0444	8.86	0.00000609	0.00587	0.00164	0.00644	0.0155	0.0000195	8.93	0.00000348	0.000105	0.000133	0.000453	0.0286	0.00000338	1.68	0.00138	2.39	0.0256	0.000737	1.36	0.00271	0.00322	0.0000469	0.000212	0.0000778	0.0535	0.0000617	0.000125	0.000515	0.0019
2030 Oct	58	0.0758	0.215	0.00751	12.1	0.045	9.06	0.0000061	0.00626	0.00168	0.00646	0.0156	0.0000197	9.12	0.00000389	0.000106	0.000137	0.000473	0.0293	0.00000339	1.71	0.00142	2.43	0.0265	0.000762	1.38	0.00276	0.00321	0.000116	0.00022	0.0000801	0.0549	0.0000618	0.000129	0.000522	0.002
2030 Nov	58.4	0.0759	0.216	0.00755	12.2	0.0453	9.11	0.00000609	0.00644	0.00169	0.00646	0.0157	0.0000197	9.18	0.00000414	0.000106	0.00014	0.000482	0.0294	0.00000339	1.72	0.00143	2.44	0.0267	0.000765	1.38	0.00278	0.0032	0.000159	0.000223	0.0000803	0.0554	0.0000618	0.00013	0.000522	0.00206
2030 Dec	58.3	0.0758	0.216	0.00754	12.2	0.0453	9.1	0.00000609	0.00644	0.00169	0.00646	0.0157	0.0000197	9.17	0.00000414	0.000106	0.000139	0.000481	0.0293	0.00000339	1.72	0.00143	2.44	0.0266	0.000764	1.38	0.00278	0.0032	0.000159	0.000223	0.0000802	0.0553	0.0000618	0.00013	0.000522	0.00206
2031 Jan	58.3	0.0757	0.216	0.00753	12.2	0.0453	9.09	0.00000609	0.00643	0.00169	0.00646	0.0157	0.0000197	9.16	0.00000414	0.000106	0.000139	0.000481	0.0293	0.00000339	1.72	0.00143	2.44	0.0266	0.000764	1.38	0.00278	0.00319	0.000159	0.000222	0.0000802	0.0553	0.0000617	0.000129	0.000521	0.00206
2031 Feb	58.3	0.0757	0.216	0.00753	12.2	0.0453	9.09	0.00000609	0.00643	0.00169	0.00645	0.0157	0.0000197	9.16	0.00000414	0.000106	0.000139	0.000481	0.0293	0.00000339	1.72	0.00142	2.44	0.0266	0.000763	1.38	0.00277	0.00319	0.000159	0.000222	0.0000802	0.0552	0.0000617	0.000129	0.000521	0.00206
2031 Mar	58.3	0.0757	0.216	0.00753	12.2	0.0453	9.09	0.00000609	0.00643	0.00169	0.00645	0.0157	0.0000197	9.16	0.00000414	0.000106	0.000139	0.000481	0.0293	0.00000339	1.72	0.00142	2.44	0.0266	0.000763	1.38	0.00277	0.00319	0.000159	0.000222	0.0000802	0.0552	0.0000617	0.000129	0.000521	0.00206
2031 Apr	58.3	0.0757	0.216	0.00753	12.2	0.0453	9.09	0.0000061	0.00643	0.00169	0.00646	0.0157	0.0000197	9.16	0.00000414	0.000106	0.000139	0.000481	0.0293	0.0000034	1.72	0.00143	2.44	0.0266	0.000763	1.38	0.00278	0.00323	0.000159	0.000222	0.0000802	0.0553	0.0000618	0.000129	0.000522	0.00207
2031 May	58.5	0.0756	0.215	0.00752	12.2	0.0456	9.12	0.00000614	0.00644	0.00169	0.0065	0.0157	0.0000198	9.18	0.00000416	0.000107	0.00014	0.000483	0.0293	0.00000341	1.73	0.00143	2.45	0.0266	0.000762	1.39	0.00278	0.00327	0.000159	0.000223	0.0000803	0.0553	0.0000622	0.000129	0.000523	0.00208
2031 Jun	63.2	0.0776	0.224	0.00755	13.2	0.0481	9.57	0.00000605	0.00534	0.00169	0.00641	0.0172	0.0000194	9.76	0.00000362	0.000106	0.00014	0.000468	0.0274	0.00000336	1.87	0.00147	2.63	0.027	0.000771	1.51	0.00285	0.00357	0.0000694	0.000219	0.0000814	0.059	0.0000613	0.000131	0.000515	0.00192
2031 Jul	62.4	0.0738	0.214	0.00715	13	0.048	9.34	0.00000605	0.00514	0.00161	0.00638	0.0171	0.000019	9.62	0.0000035	0.000103	0.00014	0.000458	0.0265	0.00000334	1.85	0.00144	2.61	0.0257	0.00073	1.5	0.00274	0.00355	0.0000527	0.000209	0.000079	0.0579	0.0000613	0.000125	0.000501	0.0019
2031 Aug	56.8	0.0643	0.186	0.00629	11.9	0.0452	8.47	0.00000598	0.00519	0.00142	0.00627	0.0157	0.0000179	8.79	0.0000034	0.0000971	0.000131	0.000434	0.0251	0.00000326	1.69	0.00132	2.4	0.0227	0.000639	1.38	0.00245	0.00322	0.0000492	0.000189	0.0000723	0.0525	0.0000604	0.000111	0.000471	0.00186
2031 Sep	57.2	0.0664	0.197	0.00656	11.9	0.0437	8.49	0.00000596	0.00569	0.00146	0.00626	0.0154	0.0000181	8.82	0.00000339	0.0000987	0.000127	0.000441	0.0271	0.00000327	1.68	0.00137	2.35	0.024	0.000672	1.36	0.00245	0.00311	0.0000452	0.000195	0.0000756	0.0532	0.0000603	0.000116	0.000477	0.00186
2031 Oct	58.6	0.0681	0.205	0.00677	12.2	0.0442	8.68	0.00000597	0.00608	0.0015	0.00628	0.0155	0.0000183	9.01	0.0000038	0.0001	0.000131	0.00046	0.0278	0.00000328	1.71	0.00141	2.39	0.0249	0.000605	1.37	0.0025	0.0031	0.000114	0.000203	0.0000779	0.0547	0.0000604	0.00012	0.000483	0.00186
2031 Nov	59	0.0681	0.206	0.0068	12.3	0.0446</																														



Whale Tail Modification Water Balance and Water Quality Model - Technical Report

Constituents	Total Dissolved Solids	Ammonia	Nitrate	Nitrite	Chloride	Fluoride	Sulphate	Silver	Aluminum	Arsenic	Boron	Barium	Beryllium	Calcium	Cadmium	Cobalt	Chromium	Copper	Iron	Mercury	Potassium	Lithium	Magnesium	Manganese	Molybdenum	Sodium	Nickel	Phosphorus	Lead	Antimony	Selenium	Strontium	Thallium	Uranium	Vanadium	Zinc
2039 Jun	66.1	0.0407	0.177	0.004	13.7	0.0446	7.8	0.00000544	0.00443	0.000798	0.00553	0.0167	0.0000128	9.21	0.00000317	0.0000767	0.000111	0.000408	0.0202	0.00000281	1.86	0.00142	2.45	0.0192	0.000452	1.47	0.00157	0.00305	0.0000608	0.000138	0.000071	0.058	0.00000546	0.0000869	0.000328	0.00169
2039 Jul	64.7	0.0389	0.169	0.00381	13.4	0.0445	7.63	0.00000548	0.00434	0.00077	0.00557	0.0165	0.0000128	9.04	0.00000309	0.0000758	0.000113	0.000401	0.0197	0.00000282	1.83	0.00138	2.43	0.0183	0.000429	1.45	0.00154	0.00304	0.000466	0.000133	0.0000689	0.0566	0.0000055	0.0000832	0.000326	0.00168
2039 Aug	58.8	0.0341	0.147	0.00339	12.2	0.0422	7	0.00000549	0.00449	0.0007	0.00556	0.0152	0.0000125	8.3	0.00000305	0.0000732	0.000108	0.000385	0.0192	0.00000282	1.68	0.00127	2.25	0.0163	0.000378	1.35	0.00141	0.00278	0.000044	0.000123	0.0000636	0.0513	0.0000055	0.000075	0.000319	0.00168
2039 Sep	59.2	0.035	0.157	0.00355	12.3	0.0406	6.95	0.00000545	0.00496	0.000708	0.00553	0.0149	0.0000125	8.3	0.00000302	0.0000739	0.000102	0.000389	0.021	0.0000028	1.66	0.00132	2.19	0.0173	0.000401	1.31	0.00136	0.00266	0.0000396	0.000127	0.0000666	0.052	0.00000547	0.0000789	0.000319	0.00166
2039 Oct	60.9	0.0359	0.164	0.00368	12.6	0.0411	7.12	0.00000544	0.00536	0.000726	0.00552	0.0149	0.0000125	8.5	0.00000347	0.0000746	0.000106	0.000409	0.0216	0.0000028	1.69	0.00136	2.22	0.0181	0.000417	1.33	0.00139	0.00263	0.000117	0.000134	0.0000687	0.0537	0.00000546	0.0000816	0.00032	0.00177
2039 Nov	61.4	0.0358	0.166	0.0037	12.7	0.0415	7.17	0.00000544	0.00554	0.00073	0.00552	0.0151	0.0000125	8.56	0.00000373	0.0000747	0.000109	0.000419	0.0216	0.0000028	1.71	0.00137	2.24	0.0182	0.00042	1.34	0.0014	0.00262	0.000164	0.000136	0.0000689	0.0541	0.00000545	0.0000822	0.00032	0.00183
2039 Dec	61.3	0.0357	0.165	0.0037	12.7	0.0415	7.16	0.00000544	0.00554	0.000729	0.00552	0.0151	0.0000125	8.55	0.00000373	0.0000747	0.000109	0.000418	0.0216	0.00000279	1.71	0.00136	2.24	0.0182	0.000418	1.33	0.0014	0.00262	0.000164	0.000136	0.0000689	0.0541	0.00000545	0.0000821	0.00032	0.00183
2040 Jan	61.3	0.0357	0.165	0.0037	12.7	0.0415	7.16	0.00000544	0.00554	0.000729	0.00552	0.015	0.0000125	8.54	0.00000373	0.0000747	0.000109	0.000418	0.0215	0.00000279	1.7	0.00136	2.24	0.0182	0.000419	1.33	0.0014	0.00261	0.000163	0.000136	0.0000688	0.054	0.00000545	0.000082	0.00032	0.00183
2040 Feb	61.3	0.0357	0.165	0.0037	12.7	0.0415	7.16	0.00000544	0.00554	0.000728	0.00552	0.015	0.0000125	8.54	0.00000373	0.0000747	0.000109	0.000418	0.0215	0.00000279	1.7	0.00136	2.24	0.0182	0.000419	1.33	0.0014	0.00261	0.000163	0.000136	0.0000688	0.054	0.00000545	0.000082	0.00032	0.00183
2040 Mar	61.3	0.0357	0.165	0.0037	12.7	0.0415	7.16	0.00000544	0.00554	0.000728	0.00552	0.015	0.0000125	8.54	0.00000373	0.0000747	0.000109	0.000418	0.0215	0.00000279	1.7	0.00136	2.24	0.0182	0.000419	1.33	0.0014	0.00261	0.000163	0.000136	0.0000688	0.054	0.00000545	0.000082	0.00032	0.00183
2040 Apr	61.3	0.0357	0.165	0.00369	12.7	0.0415	7.16	0.00000545	0.00554	0.000728	0.00553	0.0151	0.0000126	8.54	0.00000374	0.0000748	0.000109	0.000419	0.0215	0.0000028	1.71	0.00136	2.24	0.0182	0.000419	1.33	0.0014	0.00266	0.000163	0.000136	0.0000688	0.054	0.00000546	0.000082	0.00032	0.00183
2040 May	61.4	0.0357	0.165	0.00369	12.7	0.0418	7.18	0.00000549	0.00554	0.000729	0.00557	0.0151	0.0000126	8.56	0.00000375	0.0000751	0.000109	0.00042	0.0215	0.00000282	1.71	0.00137	2.24	0.0181	0.000418	1.34	0.0014	0.00272	0.000163	0.000136	0.0000689	0.054	0.00000551	0.0000819	0.000322	0.00184
2040 Jun	66.4	0.0387	0.175	0.00381	13.7	0.0444	7.71	0.0000054	0.00438	0.000749	0.00548	0.0167	0.0000124	9.19	0.00000314	0.0000751	0.00011	0.000405	0.0198	0.00000278	1.86	0.00142	2.45	0.0188	0.000435	1.47	0.0015	0.00303	0.0000603	0.000134	0.0000705	0.058	0.00000542	0.0000845	0.000317	0.00168
2040 Jul	64.7	0.0369	0.165	0.00361	13.4	0.0444	7.54	0.00000545	0.00425	0.000723	0.00553	0.0165	0.0000124	9	0.00000307	0.0000743	0.000111	0.000397	0.0192	0.0000028	1.83	0.00137	2.42	0.0178	0.000411	1.45	0.00147	0.00302	0.000468	0.000129	0.0000682	0.0564	0.00000547	0.0000806	0.000316	0.00167
2040 Aug	58.9	0.0325	0.145	0.00322	12.2	0.0421	6.92	0.00000546	0.00441	0.00066	0.00553	0.0152	0.0000122	8.27	0.00000303	0.0000718	0.000106	0.000382	0.0188	0.00000279	1.68	0.00127	2.24	0.0158	0.000363	1.35	0.00135	0.00276	0.0000441	0.00012	0.000063	0.0513	0.00000548	0.0000728	0.000311	0.00167
2040 Sep	59.4	0.0333	0.154	0.00338	12.3	0.0405	6.88	0.00000542	0.0049	0.000667	0.00549	0.0149	0.0000122	8.28	0.000003	0.0000725	0.000101	0.000387	0.0207	0.00000277	1.66	0.00132	2.18	0.0169	0.000386	1.31	0.0013	0.00264	0.0000395	0.000123	0.0000661	0.052	0.00000544	0.0000768	0.00031	0.00165
2040 Oct	61.1	0.0342	0.162	0.00351	12.6	0.041																														



Constituents	Total Dissolved Solids	Ammonia	Nitrate	Nitrite	Chloride	Fluoride	Sulphate	Silver	Aluminum	Arsenic	Boron	Barium	Beryllium	Calcium	Cadmium	Cobalt	Chromium	Copper	Iron	Mercury	Potassium	Lithium	Magnesium	Manganese	Molybdenum	Sodium	Nickel	Phosphorus	Lead	Antimony	Selenium	Strontium	Thallium	Uranium	Vanadium	Zinc
2048 May	86.4	0.147	0.2	0.00408	18.5	0.0574	15	0.00000748	0.0166	0.0135	0.00733	0.0199	0.00417	14	0.00000637	0.000152	0.000242	0.000831	0.0439	0.00000723	2.61	0.00379	3.12	0.0643	0.00104	1.64	0.00556	0.00492	0.000125	0.000342	0.000193	0.0853	0.00000781	0.000455	0.000612	0.00266
2048 Jun	78.5	0.125	0.173	0.00354	16.8	0.0545	13.3	0.00000705	0.0142	0.0112	0.00691	0.0187	0.00349	12.6	0.00000555	0.000137	0.000215	0.000737	0.0374	0.00000655	2.4	0.00328	2.9	0.0543	0.000881	1.55	0.00476	0.00432	0.0000743	0.000299	0.000168	0.0674	0.00000736	0.000393	0.000556	0.00243
2048 Jul	80.6	0.132	0.179	0.00367	17.3	0.0558	13.8	0.00000727	0.0155	0.0117	0.00711	0.0192	0.0037	13	0.00000577	0.000145	0.000226	0.000773	0.0397	0.00000695	2.48	0.00344	2.96	0.0573	0.000928	1.58	0.00499	0.00442	0.0000728	0.000318	0.000177	0.0789	0.00000764	0.000424	0.000584	0.00253
2048 Aug	75	0.121	0.164	0.00341	16.1	0.053	12.8	0.00000714	0.0148	0.0108	0.00699	0.0179	0.0034	12.1	0.00000553	0.000137	0.000212	0.000733	0.038	0.00000663	2.32	0.00321	2.77	0.0528	0.000854	1.48	0.00461	0.0041	0.0000692	0.000297	0.000165	0.0733	0.00000748	0.000392	0.00056	0.00246
2048 Sep	74.5	0.121	0.165	0.00342	16	0.052	12.7	0.00000709	0.015	0.0107	0.00694	0.0176	0.00343	12	0.00000552	0.000137	0.000207	0.000733	0.0384	0.00000663	2.29	0.00322	2.72	0.0531	0.000857	1.46	0.00456	0.00402	0.0000691	0.000298	0.000166	0.0731	0.00000743	0.000394	0.000559	0.00245
2048 Oct	77	0.127	0.172	0.00354	16.6	0.0535	13.2	0.00000715	0.0155	0.0112	0.00699	0.018	0.00359	12.4	0.000006	0.00014	0.000217	0.000762	0.0392	0.00000677	2.36	0.00334	2.81	0.0553	0.000889	1.49	0.00474	0.00412	0.000134	0.000309	0.000172	0.0757	0.00000749	0.000409	0.000569	0.00256
2048 Nov	80.4	0.134	0.182	0.00372	17.3	0.0553	13.8	0.00000727	0.0163	0.0118	0.00711	0.0188	0.00382	13	0.0000063	0.000146	0.000228	0.000796	0.0409	0.00000704	2.47	0.00351	2.92	0.0587	0.000941	1.54	0.00501	0.0043	0.000155	0.000326	0.000181	0.0793	0.00000764	0.000434	0.000589	0.00265
2048 Dec	82.8	0.14	0.189	0.00385	17.9	0.0564	14.3	0.00000737	0.0168	0.0124	0.0072	0.0193	0.004	13.4	0.00000638	0.00015	0.000235	0.000817	0.0422	0.00000724	2.54	0.00365	2.99	0.0613	0.000981	1.58	0.00522	0.00444	0.000145	0.000338	0.000187	0.0819	0.00000776	0.000453	0.000604	0.00267
2049 Jan	84.4	0.144	0.194	0.00394	18.2	0.0571	14.6	0.00000744	0.0172	0.0127	0.00727	0.0196	0.00412	13.7	0.00000643	0.000153	0.000239	0.000831	0.0431	0.00000738	2.59	0.00374	3.04	0.063	0.00101	1.6	0.00535	0.00454	0.000138	0.000345	0.000192	0.0836	0.00000784	0.000465	0.000614	0.00269
2049 Feb	85.3	0.146	0.196	0.00399	18.4	0.0575	14.8	0.00000748	0.0174	0.0129	0.0073	0.0198	0.0042	13.8	0.00000646	0.000155	0.000242	0.00084	0.0436	0.00000746	2.62	0.00379	3.07	0.0641	0.00102	1.62	0.00543	0.00459	0.000134	0.00035	0.000195	0.0846	0.00000788	0.000472	0.00062	0.0027
2049 Mar	86	0.148	0.198	0.00403	18.6	0.0578	14.9	0.00000751	0.0175	0.0131	0.00733	0.0199	0.00425	13.9	0.00000649	0.000156	0.000244	0.000846	0.0441	0.00000752	2.64	0.00383	3.09	0.0649	0.00104	1.63	0.0055	0.00463	0.000131	0.000353	0.000197	0.0853	0.00000792	0.000478	0.000625	0.00271
2049 Apr	86	0.148	0.198	0.00403	18.5	0.0579	14.9	0.00000752	0.0175	0.0131	0.00734	0.0199	0.00426	13.9	0.00000647	0.000156	0.000244	0.000846	0.044	0.00000753	2.64	0.00384	3.09	0.0649	0.00104	1.63	0.00551	0.00481	0.000127	0.000353	0.000197	0.0853	0.00000793	0.000478	0.000626	0.00271
2049 May	85.2	0.146	0.195	0.00398	18.3	0.0577	14.8	0.00000753	0.0173	0.0129	0.00735	0.0198	0.0042	13.8	0.00000642	0.000155	0.000241	0.000838	0.0435	0.00000747	2.61	0.00379	3.07	0.0639	0.00102	1.62	0.00544	0.00498	0.000124	0.000349	0.000194	0.0843	0.00000793	0.000471	0.000622	0.0027
2049 Jun	77.8	0.125	0.17	0.00348	16.7	0.0548	13.2	0.00000709	0.0148	0.0107	0.00693	0.0187	0.00351	12.5	0.00000561	0.000139	0.000214	0.000744	0.0372	0.00000675	2.41	0.00329	2.87	0.0542	0.000869	1.54	0.00467	0.0043	0.0000744	0.000304	0.000169	0.0759	0.00000746	0.000407	0.000564	0.00247
2049 Jul	80.3	0.132	0.177	0.00363	17.3	0.0564	13.7	0.00000733	0.016	0.0113	0.00715	0.0192	0.00374	13	0.00000585	0.000147	0.000226	0.000782	0.0395	0.00000717	2.51	0.00346	2.94	0.0574	0.000918	1.58	0.00491	0.00443	0.0000737	0.000324	0.000179	0.0788	0.00000775	0.000439	0.000593	0.00257
2049 Aug	74.1	0.12	0.16	0.00334	16	0.0532	12.6	0.00000716	0.0152	0.0102	0.007	0.0178	0.0034	12	0.00000557	0.000139	0.000211	0.000736	0.0376	0.00000678	2.32	0.0032	2.73	0.0523	0.000836	1.47	0.00449	0.00406	0.0000695	0.0003	0.000165	0.0726	0.00000755	0.000401	0.000565	0.00248
2049 Sep	74.1	0.122	0.163	0.00338	16	0.0525	12.7	0.00000714	0.0155	0.0103	0.00698	0.0176	0.																							



Whale Tail Modification Water Balance and Water Quality Model - Technical Report

Appendix C11: A15 Lake																																				
Constituents	Total Dissolved Solids	Ammonia	Nitrate	Nitrite	Chloride	Fluoride	Sulphate	Silver	Aluminum	Arsenic	Boron	Barium	Beryllium	Calcium	Cadmium	Cobalt	Chromium	Copper	Iron	Mercury	Potassium	Lithium	Magnesium	Manganese	Molybdenum	Sodium	Nickel	Phosphorus	Lead	Antimony	Selenium	Strontium	Thallium	Uranium	Vanadium	Zinc
2057 Apr	82.6	0.145	0.184	0.00369	17.9	0.0552	13.8	0.00000725	0.0164	0.00905	0.0071	0.019	0.00411	13.2	0.00000628	0.000143	0.000237	0.000786	0.0418	0.00000706	2.5	0.0037	2.87	0.0635	0.000857	1.58	0.00467	0.00466	0.00013	0.000307	0.000187	0.0822	0.00000751	0.000439	0.000568	0.00255
2057 May	81.5	0.142	0.18	0.00363	17.5	0.055	13.6	0.00000725	0.0161	0.00887	0.0071	0.0189	0.00402	13	0.00000621	0.000141	0.000233	0.000776	0.041	0.00000699	2.46	0.00364	2.84	0.0622	0.000839	1.57	0.00459	0.00491	0.000125	0.000302	0.000184	0.0809	0.0000075	0.000439	0.000563	0.00253
2057 Jun	75.3	0.123	0.159	0.00322	16.2	0.0523	12.3	0.00000684	0.0136	0.00743	0.00671	0.018	0.00338	11.9	0.00000541	0.000127	0.000209	0.000689	0.0354	0.00000626	2.29	0.00318	2.7	0.0532	0.000721	1.5	0.004	0.00414	0.000074	0.000262	0.000161	0.0736	0.00000704	0.000368	0.000511	0.0023
2057 Jul	77.5	0.129	0.165	0.00334	16.8	0.0533	12.7	0.00000701	0.0144	0.00779	0.00688	0.0184	0.00357	12.3	0.00000558	0.000131	0.000219	0.000713	0.0374	0.00000648	2.35	0.00332	2.76	0.0561	0.000753	1.53	0.00418	0.00423	0.000073	0.000272	0.000168	0.0762	0.00000722	0.000385	0.000527	0.00236
2057 Aug	72.1	0.118	0.151	0.0031	15.6	0.0506	11.8	0.00000688	0.0137	0.00713	0.00677	0.0172	0.00327	11.5	0.00000534	0.000124	0.000206	0.000676	0.0359	0.00000616	2.19	0.00308	2.58	0.0516	0.00069	1.44	0.00386	0.00391	0.0000692	0.000253	0.000156	0.0706	0.00000707	0.000353	0.000505	0.0023
2057 Sep	71.4	0.118	0.152	0.00311	15.4	0.0494	11.7	0.00000682	0.0138	0.0071	0.00671	0.0168	0.00328	11.4	0.00000531	0.000124	0.000201	0.000673	0.0363	0.00000612	2.15	0.00309	2.53	0.0517	0.000691	1.41	0.0038	0.00382	0.0000689	0.000252	0.000156	0.0702	0.00000701	0.000353	0.000502	0.00228
2057 Oct	73.8	0.123	0.158	0.00322	15.9	0.0508	12.1	0.00000687	0.0143	0.00737	0.00675	0.0172	0.00343	11.7	0.00000579	0.000126	0.00021	0.0007	0.037	0.00000623	2.22	0.0032	2.6	0.0539	0.000717	1.45	0.00395	0.00391	0.0000137	0.000262	0.000161	0.0727	0.00000705	0.000365	0.000509	0.00239
2057 Nov	77.1	0.13	0.167	0.00338	16.7	0.0523	12.7	0.00000697	0.0149	0.00781	0.00684	0.0179	0.00364	12.3	0.00000607	0.000131	0.000221	0.000729	0.0385	0.00000644	2.31	0.00336	2.7	0.0572	0.000758	1.49	0.00417	0.00407	0.000159	0.000275	0.000169	0.0762	0.00000715	0.000386	0.000524	0.00246
2057 Dec	79.5	0.136	0.174	0.00351	17.2	0.0532	13.1	0.00000705	0.0154	0.00817	0.00692	0.0183	0.00382	12.6	0.00000614	0.000134	0.000227	0.000748	0.0399	0.00000662	2.38	0.0035	2.77	0.0599	0.000791	1.53	0.00435	0.00421	0.000148	0.000284	0.000176	0.0788	0.00000725	0.000402	0.000536	0.00248
2058 Jan	81	0.141	0.179	0.00359	17.5	0.0539	13.4	0.00000711	0.0157	0.00841	0.00698	0.0186	0.00394	12.9	0.00000619	0.000136	0.000232	0.00076	0.0407	0.00000673	2.42	0.00358	2.81	0.0616	0.000812	1.55	0.00446	0.0043	0.000141	0.00029	0.00018	0.0805	0.00000731	0.000413	0.000544	0.00249
2058 Feb	81.9	0.143	0.181	0.00364	17.7	0.0542	13.5	0.00000715	0.0158	0.00856	0.00701	0.0188	0.00401	13	0.00000621	0.000138	0.000234	0.000767	0.0412	0.0000068	2.45	0.00364	2.84	0.0627	0.000825	1.56	0.00453	0.00435	0.000136	0.000294	0.000183	0.0814	0.00000734	0.00042	0.000549	0.0025
2058 Mar	82.6	0.145	0.183	0.00367	17.9	0.0545	13.7	0.00000717	0.016	0.00867	0.00704	0.019	0.00407	13.2	0.00000624	0.000139	0.000236	0.000772	0.0417	0.00000686	2.47	0.00368	2.86	0.0635	0.000835	1.57	0.00459	0.00439	0.000133	0.000296	0.000185	0.0822	0.00000737	0.000425	0.000553	0.0025
2058 Apr	82.3	0.144	0.182	0.00366	17.8	0.0545	13.6	0.00000718	0.0159	0.00864	0.00704	0.0189	0.00406	13.1	0.0000062	0.000139	0.000235	0.00077	0.0415	0.00000684	2.46	0.00367	2.85	0.0633	0.000831	1.57	0.00458	0.00463	0.000129	0.000295	0.000184	0.0818	0.00000733	0.000423	0.000552	0.00249
2058 May	81.1	0.142	0.178	0.00359	17.5	0.0543	13.5	0.00000717	0.0156	0.00847	0.00704	0.0187	0.00397	12.9	0.00000613	0.000137	0.000232	0.00076	0.0407	0.00000677	2.43	0.0036	2.82	0.0619	0.000814	1.56	0.0045	0.00489	0.000125	0.00029	0.000181	0.0804	0.00000736	0.000414	0.000548	0.00248
2058 Jun	75.7	0.123	0.159	0.00321	16.3	0.0531	12.3	0.00000692	0.0144	0.00716	0.00677	0.0181	0.00358	12	0.00000551	0.000131	0.00021	0.000706	0.0357	0.00000652	2.33	0.0032	2.7	0.0537	0.000727	1.51	0.00397	0.00416	0.000075	0.000273	0.000164	0.074	0.0000072	0.000387	0.000525	0.00236
2058 Jul	77.6	0.129	0.164	0.00331	16.8	0.0545	12.7	0.00000714	0.0155	0.00747	0.00697	0.0186	0.00354	12.3	0.00000572	0.000137	0.00022	0.000737	0.0377	0.00000688	2.41	0.00334	2.75	0.0564	0.000762	1.53	0.00414	0.00425	0.0000743	0.000289	0.000172	0.0763	0.00000746	0.000413	0.000549	0.00245
2058 Aug	71.7	0.117	0.148	0.00305	15.5	0.0514	11.7	0.00000698	0.0147	0.00678	0.00683	0.0173	0.00322	11.4																						



Appendix C11: A15 Lake																																				
Constituents	Total Dissolved Solids	Ammonia	Nitrate	Nitrite	Chloride	Fluoride	Sulphate	Silver	Aluminum	Arsenic	Boron	Barium	Beryllium	Calcium	Cadmium	Cobalt	Chromium	Copper	Iron	Mercury	Potassium	Lithium	Magnesium	Manganese	Molybdenum	Sodium	Nickel	Phosphorus	Lead	Antimony	Selenium	Strontium	Thallium	Uranium	Vanadium	Zinc
2066 Mar	80.7	0.139	0.169	0.0033	17.5	0.0546	13	0.00000718	0.0172	0.00609	0.007	0.0187	0.00354	12.7	0.00000626	0.00014	0.000233	0.000771	0.0407	0.00000717	2.47	0.00351	2.72	0.063	0.000752	1.53	0.00408	0.0043	0.000133	0.000296	0.000185	0.0799	0.00000747	0.000444	0.000552	0.00252
2066 Apr	80.1	0.139	0.167	0.00327	17.3	0.0545	13	0.00000718	0.017	0.00605	0.007	0.0186	0.00352	12.7	0.00000622	0.00014	0.000231	0.000767	0.0404	0.00000714	2.46	0.00349	2.71	0.0625	0.000746	1.53	0.00405	0.00459	0.000128	0.000294	0.000184	0.00793	0.00000746	0.000441	0.000551	0.00251
2066 May	78.6	0.135	0.162	0.0032	16.9	0.0542	12.8	0.00000716	0.0166	0.00589	0.00699	0.0184	0.00342	12.4	0.00000612	0.000138	0.000227	0.000754	0.0394	0.00000704	2.41	0.00341	2.67	0.0607	0.000726	1.51	0.00397	0.0049	0.000123	0.000288	0.00018	0.0775	0.00000744	0.000429	0.000545	0.0025
2066 Jun	73.5	0.118	0.146	0.00288	15.8	0.0523	11.7	0.00000683	0.0147	0.005	0.00667	0.0178	0.0029	11.5	0.00000543	0.000127	0.000205	0.000686	0.0344	0.00000651	2.29	0.00302	2.57	0.0527	0.000643	1.46	0.00351	0.00405	0.0000746	0.00026	0.00016	0.0715	0.00000712	0.000383	0.000508	0.00232
2066 Jul	74.8	0.122	0.149	0.00294	16.2	0.0529	11.9	0.00000697	0.0152	0.00517	0.0068	0.018	0.00301	11.8	0.00000555	0.00013	0.000214	0.000702	0.036	0.00000666	2.32	0.00311	2.61	0.0547	0.000659	1.48	0.00363	0.00409	0.0000735	0.000266	0.000165	0.073	0.00000725	0.000393	0.000519	0.00236
2066 Aug	69.6	0.111	0.136	0.00274	15	0.0501	11.1	0.00000685	0.0145	0.00475	0.0067	0.0168	0.00276	11	0.00000531	0.000124	0.000201	0.000665	0.0347	0.00000632	2.16	0.0029	2.44	0.0503	0.000605	1.39	0.00336	0.00379	0.0000697	0.000247	0.000153	0.0678	0.00000709	0.000361	0.000498	0.0023
2066 Sep	69.6	0.113	0.139	0.00278	15	0.0493	11.1	0.00000681	0.0147	0.00478	0.00666	0.0166	0.0028	11	0.00000533	0.000124	0.000197	0.000669	0.0354	0.00000634	2.15	0.00293	2.41	0.0512	0.000615	1.37	0.00333	0.00373	0.00007	0.00025	0.000156	0.0681	0.00000706	0.000366	0.000498	0.00229
2066 Oct	72.2	0.118	0.145	0.00288	15.6	0.0509	11.5	0.00000686	0.0154	0.00498	0.0067	0.017	0.00293	11.4	0.00000586	0.000127	0.000208	0.0007	0.0362	0.0000065	2.22	0.00305	2.48	0.0536	0.000641	1.41	0.00348	0.00382	0.000146	0.000262	0.000162	0.0708	0.00000712	0.000382	0.000508	0.00242
2066 Nov	75.5	0.126	0.154	0.00302	16.3	0.0525	12.1	0.00000697	0.0162	0.00529	0.0068	0.0177	0.00312	11.9	0.00000615	0.000132	0.000218	0.00073	0.0377	0.00000675	2.32	0.00321	2.58	0.057	0.000679	1.45	0.00368	0.00399	0.000167	0.000275	0.00017	0.0743	0.00000724	0.000405	0.000523	0.00249
2066 Dec	77.7	0.131	0.16	0.00313	16.8	0.0534	12.5	0.00000705	0.0166	0.00551	0.00688	0.0181	0.00327	12.2	0.00000621	0.000135	0.000224	0.000747	0.0389	0.00000693	2.39	0.00333	2.64	0.0595	0.000707	1.49	0.00383	0.00412	0.000154	0.000284	0.000176	0.0766	0.00000733	0.000422	0.000535	0.0025
2067 Jan	79.1	0.135	0.164	0.00319	17.1	0.054	12.7	0.00000711	0.017	0.00567	0.00693	0.0184	0.00337	12.5	0.00000624	0.000138	0.000229	0.000759	0.0397	0.00000706	2.43	0.00341	2.67	0.0612	0.000726	1.51	0.00392	0.00421	0.000146	0.00029	0.000181	0.0781	0.0000074	0.000434	0.000543	0.00252
2067 Feb	79.9	0.137	0.166	0.00323	17.3	0.0543	12.9	0.00000715	0.0172	0.00577	0.00696	0.0186	0.00343	12.6	0.00000627	0.000139	0.000231	0.000766	0.0402	0.00000714	2.45	0.00346	2.7	0.0623	0.000737	1.52	0.00398	0.00426	0.000141	0.000293	0.000183	0.0791	0.00000744	0.000441	0.000548	0.00252
2067 Mar	80.6	0.139	0.168	0.00326	17.5	0.0546	13	0.00000718	0.0173	0.00584	0.00699	0.0187	0.00347	12.7	0.00000629	0.00014	0.000233	0.000772	0.0406	0.0000072	2.47	0.0035	2.71	0.0631	0.000745	1.53	0.00403	0.0043	0.000137	0.000296	0.000185	0.0798	0.00000747	0.000446	0.000552	0.00253
2067 Apr	80	0.138	0.166	0.00323	17.3	0.0545	12.9	0.00000717	0.0172	0.0058	0.00699	0.0186	0.00345	12.6	0.00000624	0.00014	0.000232	0.000767	0.0403	0.00000717	2.46	0.00347	2.7	0.0626	0.000739	1.52	0.00401	0.00458	0.000132	0.000294	0.000184	0.0791	0.00000746	0.000443	0.00055	0.00252
2067 May	78.7	0.135	0.161	0.00316	16.9	0.0543	12.7	0.00000716	0.0168	0.00566	0.00698	0.0184	0.00336	12.4	0.00000615	0.000138	0.000227	0.000756	0.0394	0.00000708	2.42	0.0034	2.67	0.061	0.000721	1.51	0.00393	0.00489	0.000126	0.000288	0.00018	0.0775	0.00000745	0.000433	0.000545	0.0025
2067 Jun	73.2	0.117	0.144	0.00284	15.8	0.052	11.6	0.0000068	0.0145	0.00478	0.00664	0.0177	0.00283	11.5	0.00000654	0.000126	0.000205	0.00068	0.0343	0.00000644	2.27	0.00299	2.56	0.0525	0.000631	1.46	0.00346	0.00404	0.0000746	0.000256	0.000159	0.0711	0.00000706	0.000378	0.000502	0.0023
2067 Jul	74.9	0.122	0.148	0.00292	16.2	0.0528	11.9	0.00000695	0.0151	0.00498	0.00678	0.018	0.00297	11.8	0.00000554	0.000129	0.000214	0.000698	0.0361	0.00000661	2.31	0.0031	2.6	0.055	0.000652	1.48	0.0036	0.0041	0.0000737	0.000263	0.000165	0.0731	0.00000721	0.00039	0.000515	0.00234
2067 Aug	69.6	0.111	0.135	0.00271	15	0.05	11	0.00000683	0.0144	0.00457	0.00668	0.0168	0.00272	11	0.00000553	0.000123	0.000201	0.000662	0.0347	0.00000629	2.15	0.00289	2.43	0.0505	0.000598	1.39	0.00332	0.00378	0.0000698	0.000245	0.000153	0.0678	0.00000706	0.000359	0.000494	0.00228
2067 Sep	69.3	0.113	0.137	0.00274	15	0.0492	11	0.00000679	0.0147	0.00458	0.00664	0.0165	0.00274	10.9	0.00000531	0.000124	0.000197	0.000666	0.0353	0.00000633	2.14	0.00291	2.39	0.0511	0.000607	1.36	0.00329	0.00372	0.00007	0.000248	0.000155	0.0678	0.00000704	0.000365	0.000495	0.00228
2067 Oct	71.8	0.118	0.143	0.00283	15.5	0.0506	11.4	0.00000683	0.0153	0.00476	0.00667	0.0169	0.00286	11.3	0.00000584	0.000126	0.000207	0.000696	0.036	0.00000647	2.21	0.00302	2.47	0.0534	0.000631	1.4	0.00343	0.0038	0.000146	0.000259	0.000161	0.0704	0.00000709	0.000379	0.000504	0.0024
2067 Nov	75.1	0.125	0.152	0.00298	16.3	0.0522	12	0.00000694	0.0161	0.00506	0.00677	0.0176	0.00305	11.8	0.00000612	0.000131	0.000217	0.000725	0.0375	0.00000667	2.31	0.00318	2.56	0.0568	0.000668	1.45	0.00363	0.00398	0.000166	0.000272	0.000169	0.0739	0.0000072	0.000402	0.000519	0.00247
2067 Dec	77.3	0.13	0.158	0.00308	16.7	0.0531	12.4	0.00000703	0.0166	0.00528	0.00685	0.018	0.00319	12.2	0.00000617	0.000134	0.000224	0																		



Whale Tail Modification Water Balance and Water Quality Model - Technical Report

Appendix C12: A12 Lake																																					
Constituents	Total Dissolved Solids	Ammonia	Nitrate	Nitrite	Chloride	Fluoride	Sulphate	Silver	Aluminum	Arsenic	Boron	Barium	Beryllium	Calcium	Cadmium	Cobalt	Chromium	Copper	Iron	Mercury	Potassium	Lithium	Magnesium	Manganese	Molybdenum	Sodium	Nickel	Phosphorus	Lead	Antimony	Selenium	Strontium	Thallium	Uranium	Vanadium	Zinc	
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Operation (2023 to 2025): Min	68.6	0.156	0.424	0.0184	14.5	0.0515	13.9	0.00000698	0.00586	0.00202	0.00863	0.01197	0.0000393	12.9	0.00004467	0.000211	0.000242	0.000592	0.038	0.00000389	2.22	0.002	3.09	0.0569	0.000958	1.78	0.00485	0.00423	0.000693	0.000589	0.000107	0.0776	0.00000818	0.000267	0.00102	0.00239	
Operation (2023 to 2025): Average	81.3	0.229	0.595	0.0251	17.6	0.0626	18.7	0.00000841	0.00928	0.00531	0.0113	0.0236	0.0000485	15.4	0.00000571	0.000312	0.000321	0.00077	0.0575	0.00000499	2.78	0.00253	3.89	0.0745	0.002	2.36	0.00811	0.00554	0.000119	0.00101	0.000151	0.0983	0.0000118	0.000347	0.00127	0.00284	
Operation (2023 to 2025): Max	94.5	0.275	0.724	0.0296	21.4	0.0727	21.9	0.00000946	0.0119	0.00744	0.0146	0.0273	0.0000572	17.4	0.00000645	0.000443	0.000436	0.000894	0.0742	0.00000606	3.48	0.00312	4.46	0.085	0.00262	3.2	0.0103	0.00706	0.000171	0.00148	0.000181	0.126	0.0000179	0.0004	0.00146	0.00319	
CMCE/SSWQO (Receiving Environment)	-	0.58	2.93	0.06	120	0.12	variable	0.00025	0.1	0.025	1.5	-	-	variable	-	0.001	variable	0.3	0.000026	-	-	-	variable	0.073	-	variable	0.01	0.001	-	0.001	-	0.001	-	0.0008	0.015	-	variable
Active Closure (2026 to Sept. 2042): Min	39.8	0.0228	0.1	0.00224	8.33	0.0373	5.65	0.00000524	0.00358	0.000487	0.00527	0.0124	0.0000112	6.77	0.00000286	0.0000638	0.0000892	0.00034	0.0146	0.00000265	1.3	0.00102	1.87	0.0111	0.000249	1.12	0.00101	0.00215	0.0000405	0.0000951	0.0000519	0.0391	0.00000524	0.0000539	0.000283	0.00161	
Active Closure (2026 to Sept. 2042): Average	48.2	0.0486	0.14	0.00476	10	0.0407	7.09	0.00000566	0.005	0.00111	0.00586	0.0133	0.0000156	7.44	0.00000355	0.0000084	0.000114	0.000398	0.0212	0.00000302	1.45	0.00112	2.07	0.0171	0.000479	1.2	0.00191	0.00264	0.000115	0.000156	0.000061	0.0439	0.0000057	0.000086	0.000407	0.00185	
Active Closure (2026 to Sept. 2042): Max	79.8	0.258	0.571	0.0258	16.9	0.0654	19.9	0.00000841	0.0111	0.00622	0.00991	0.024	0.0000482	15.7	0.00000586	0.00025	0.000282	0.000825	0.0689	0.00000556	2.54	0.00242	4.01	0.0759	0.00247	2.03	0.00903	0.00633	0.000157	0.000671	0.000165	0.0906	0.00000882	0.000375	0.00134	0.00289	
CMCE/SSWQO (Receiving Environment)	-	0.58	2.93	0.06	120	0.12	variable	0.00025	0.1	0.025	1.5	-	-	variable	-	0.001	variable	0.3	0.000026	-	-	-	variable	0.073	-	variable	0.01	0.001	-	0.001	-	0.001	-	0.0008	0.015	-	variable
Post Closure (Oct. 2042 to 2070): Min	48.4	0.0231	0.105	0.00224	10	0.0374	5.73	0.00000527	0.00461	0.000495	0.0053	0.0125	0.0000114	6.86	0.00000328	0.0000642	0.0000921	0.000356	0.0167	0.00000267	1.4	0.00106	1.88	0.0116	0.000258	1.13	0.00101	0.00219	0.0000432	0.0001	0.0000533	0.0419	0.00000528	0.0000555	0.000283	0.00171	
Post Closure (Oct. 2042 to 2070): Average	69.4	0.105	0.146	0.003	14.9	0.0495	11.1	0.00000668	0.0132	0.00667	0.00656	0.0166	0.0000156	7.44	0.00000541	0.00012	0.000191	0.000656	0.0334	0.00000585	2.12	0.0028	2.51	0.0464	0.000661	1.4	0.00355	0.00372	0.000131	0.000247	0.000145	0.0672	0.0000069	0.000328	0.000487	0.00233	
Post Closure (Oct. 2042 to 2070): Max	96.3	0.123	0.279	0.00536	20.1	0.0536	13.1	0.00000714	0.0158	0.0115	0.00698	0.0216	0.000352	13.7	0.00000661	0.000139	0.000214	0.000754	0.0384	0.00000678	2.59	0.00325	3.23	0.0536	0.000903	1.84	0.00473	0.00445	0.000199	0.000305	0.000167	0.0887	0.00000752	0.000404	0.000564	0.0026	
CMCE/SSWQO (Receiving Environment)	-	0.58	2.93	0.06	120	0.12	variable	0.00025	0.1	0.025	1.5	-	-	variable	-	0.001	variable	0.3	0.000026	-	-	-	variable	0.073	-	variable	0.01	0.001	-	0.001	-	0.001	-	0.0008	0.015	-	variable
Model Predictions (2023-2070)																																					
2023 Jan	81.8	0.188	0.565	0.0241	18.7	0.0588	15.2	0.00000851	0.00724	0.00219	0.0132	0.0229	0.0000539	14.6	0.00000607	0.000443	0.000367	0.00069	0.0421	0.00000428	3.12	0.0027	3.41	0.0769	0.00104	2.78	0.0053	0.00444	0.000128	0.00135	0.000124	0.109	0.0000179	0.000292	0.00111	0.00284	
2023 Feb	80.7	0.186	0.561	0.0239	18.4	0.0579	15	0.00000839	0.00714	0.00218	0.0131	0.0226	0.0000532	14.4	0.00000598	0.000437	0.000364	0.00068	0.0415	0.00000422	3.08	0.00267	3.37	0.076	0.00103	2.75	0.00524	0.00437	0.000126	0.00134	0.000123	0.107	0.0000177	0.000289	0.0011	0.0028	
2023 Mar	78.9	0.182	0.552	0.0234	18	0.0565	14.7	0.00000819	0.00698	0.00214	0.0128	0.0221	0.0000532	14.1	0.00000584	0.000428	0.000357	0.000664	0.0406	0.00000412	3.02	0.00261	3.29	0.0745	0.00102	2.7	0.00515	0.00426	0.000123	0.00132	0.00012	0.105	0.0000173	0.000284	0.00108	0.00273	
2023 Apr	76.3	0.176	0.536	0.0226	17.4	0.0547	14.3	0.00000792	0.00674	0.00208	0.0124	0.0214	0.0000503	13.6	0.00000564	0.000414	0.000347	0.000642	0.0392	0.00000399	2.92	0.00253	3.18	0.072	0.000985	2.61	0.00499	0.00423	0.000119	0.00128	0.000116	0.102	0.0000167	0.000275	0.00105	0.00264	
2023 May	74	0.17																																			



Constituents	Total Dissolved Solids	Ammonia	Nitrate	Nitrite	Chloride	Fluoride	Sulphate	Silver	Aluminum	Arsenic	Boron	Barium	Beryllium	Calcium	Cadmium	Cobalt	Chromium	Copper	Iron	Mercury	Potassium	Lithium	Magnesium	Manganese	Molybdenum	Sodium	Nickel	Phosphorus	Lead	Antimony	Selenium	Strontium	Thallium	Uranium	Vanadium	Zinc
2030 Jul	50.9	0.0598	0.155	0.00567	10.6	0.0445	7.95	0.00000585	0.00436	0.00134	0.00613	0.0148	0.0000174	8.06	0.00000334	0.000092	0.000126	0.000406	0.0214	0.00000319	1.57	0.00115	2.29	0.0192	0.000563	1.32	0.00232	0.00311	0.0000565	0.000174	0.000639	0.0468	0.00000592	0.0000978	0.000456	0.00184
2030 Aug	48.6	0.0557	0.146	0.00535	10.1	0.0429	7.56	0.00000586	0.00463	0.00127	0.00612	0.0141	0.000017	7.7	0.00000321	0.0000899	0.000122	0.000399	0.0216	0.00000317	1.5	0.00112	2.18	0.0182	0.00053	1.26	0.0022	0.00293	0.0000524	0.000166	0.000618	0.0446	0.00000592	0.000093	0.000446	0.00183
2030 Sep	45.6	0.0522	0.138	0.00506	9.5	0.0402	7.09	0.00000577	0.00491	0.00119	0.00601	0.0131	0.0000165	7.25	0.00000321	0.0000871	0.000113	0.000388	0.022	0.00000311	1.4	0.00109	2.03	0.0174	0.000502	1.17	0.00202	0.00267	0.0000456	0.000159	0.000604	0.0421	0.00000582	0.000089	0.00043	0.00179
2030 Oct	45.7	0.052	0.14	0.00508	9.5	0.0401	7.09	0.00000575	0.00523	0.00119	0.00599	0.0129	0.0000164	7.24	0.00000355	0.000087	0.000114	0.0004	0.0222	0.0000031	1.39	0.00109	2.01	0.0175	0.000505	1.16	0.00201	0.0026	0.000108	0.000162	0.000661	0.0422	0.0000058	0.0000894	0.00043	0.00187
2030 Nov	45.9	0.0518	0.14	0.00508	9.55	0.0403	7.1	0.00000574	0.00539	0.00119	0.00598	0.0129	0.0000164	7.26	0.00000378	0.000087	0.000116	0.000407	0.0222	0.0000031	1.4	0.00109	2.02	0.0175	0.000505	1.16	0.00201	0.00257	0.000147	0.000164	0.000661	0.0424	0.0000058	0.0000895	0.00043	0.00192
2030 Dec	45.8	0.0518	0.14	0.00508	9.54	0.0403	7.1	0.00000574	0.00539	0.00119	0.00598	0.0129	0.0000164	7.26	0.00000378	0.000087	0.000116	0.000407	0.0222	0.0000031	1.4	0.00109	2.02	0.0175	0.000505	1.16	0.00201	0.00257	0.000147	0.000164	0.000661	0.0424	0.0000058	0.0000895	0.00043	0.00192
2031 Jan	45.8	0.0518	0.14	0.00508	9.54	0.0403	7.1	0.00000574	0.00539	0.00119	0.00598	0.0129	0.0000164	7.25	0.00000378	0.000087	0.000116	0.000407	0.0222	0.0000031	1.4	0.00109	2.02	0.0175	0.000505	1.16	0.00201	0.00257	0.000147	0.000164	0.000661	0.0424	0.0000058	0.0000895	0.00043	0.00192
2031 Feb	45.8	0.0518	0.14	0.00508	9.54	0.0403	7.1	0.00000574	0.00539	0.00119	0.00598	0.0129	0.0000164	7.26	0.00000378	0.000087	0.000116	0.000407	0.0222	0.0000031	1.4	0.00109	2.02	0.0175	0.000505	1.16	0.00201	0.00257	0.000147	0.000164	0.000661	0.0424	0.0000058	0.0000894	0.00043	0.00192
2031 Mar	45.8	0.0518	0.14	0.00508	9.54	0.0403	7.1	0.00000574	0.00539	0.00119	0.00598	0.0129	0.0000164	7.26	0.00000378	0.000087	0.000116	0.000407	0.0222	0.0000031	1.4	0.00109	2.02	0.0175	0.000505	1.16	0.00201	0.00257	0.000147	0.000164	0.000661	0.0424	0.0000058	0.0000894	0.00043	0.00192
2031 Apr	45.9	0.0518	0.14	0.00508	9.55	0.0403	7.11	0.00000575	0.00539	0.00119	0.00599	0.0129	0.0000164	7.26	0.00000378	0.0000871	0.000116	0.000408	0.0222	0.0000031	1.4	0.00109	2.02	0.0175	0.000505	1.16	0.00201	0.0026	0.000147	0.000164	0.000661	0.0424	0.00000581	0.0000895	0.00043	0.00193
2031 May	46.2	0.052	0.141	0.0051	9.59	0.0406	7.15	0.00000579	0.00542	0.0012	0.00603	0.013	0.0000165	7.3	0.00000381	0.0000877	0.000117	0.00041	0.0223	0.00000313	1.41	0.0011	2.03	0.0176	0.000507	1.17	0.00202	0.00265	0.000147	0.000165	0.000614	0.0426	0.00000585	0.0000899	0.000433	0.00194
2031 Jun	50	0.0537	0.145	0.00509	10.4	0.043	7.55	0.0000057	0.00431	0.0012	0.00593	0.0143	0.0000162	7.77	0.00000334	0.0000866	0.000117	0.000395	0.0201	0.00000307	1.53	0.00112	2.2	0.0177	0.00051	1.28	0.00209	0.00292	0.0000736	0.000161	0.000615	0.0455	0.00000575	0.0000901	0.000425	0.00181
2031 Jul	51.4	0.0541	0.148	0.00512	10.7	0.044	7.68	0.00000576	0.00422	0.0012	0.00599	0.0147	0.0000163	7.97	0.00000327	0.0000874	0.000121	0.000397	0.0203	0.0000031	1.57	0.00114	2.26	0.0179	0.000513	1.31	0.00212	0.00303	0.0000548	0.000161	0.000623	0.0467	0.0000058	0.0000909	0.000427	0.0018
2031 Aug	49	0.0503	0.139	0.00483	10.2	0.0424	7.29	0.00000577	0.0045	0.00114	0.00599	0.014	0.000016	7.62	0.00000324	0.0000856	0.000118	0.00039	0.0205	0.00000309	1.5	0.00111	2.16	0.017	0.000483	1.25	0.00201	0.00285	0.0000508	0.000155	0.000602	0.0445	0.00000582	0.0000866	0.000418	0.0018
2031 Sep	46.1	0.0471	0.132	0.00458	9.57	0.0397	6.85	0.00000568	0.00479	0.00107	0.00589	0.013	0.0000156	7.18	0.00000315	0.0000831	0.000109	0.00038	0.021	0.00000304	1.4	0.00108	2	0.0163	0.000459	1.17	0.00185	0.0026	0.0000443	0.000148	0.000589	0.042	0.00000573	0.000083	0.000406	0.00176
2031 Oct	46.1	0.0469	0.133	0.00459	9.58	0.0396	6.85	0.00000567	0.00511	0.00107	0.00587	0.0128	0.0000155	7.17	0.00000349	0.000083	0.00011	0.000391	0.0213	0.00000303	1.39	0.00108	1.99	0.0164	0.000461	1.16	0.00183	0.00253	0.000106	0.000151	0.000595	0.0421	0.00000571	0.0000833	0.000405	0.00184
2031 Nov	46.3	0.0467	0.134	0.0046	9.62	0.0398	6.86	0.00000566	0.00527	0.00107	0.00586</																									



Appendix C12: A12 Lake																																				
Constituents	Total Dissolved Solids	Ammonia	Nitrate	Nitrite	Chloride	Fluoride	Sulphate	Silver	Aluminum	Arsenic	Boron	Barium	Beryllium	Calcium	Cadmium	Cobalt	Chromium	Copper	Iron	Mercury	Potassium	Lithium	Magnesium	Manganese	Molybdenum	Sodium	Nickel	Phosphorus	Lead	Antimony	Selenium	Strontium	Thallium	Uranium	Vanadium	Zinc
2039 Jun	51.9	0.0294	0.115	0.00276	10.7	0.0407	6.39	0.00000529	0.0037	0.000611	0.00536	0.0139	0.0000119	7.41	0.00000305	0.00000673	0.0000981	0.000355	0.0153	0.00000271	1.52	0.00109	2.08	0.0126	0.0003	1.25	0.00125	0.00258	0.0000682	0.000108	0.0000546	0.0448	0.00000531	0.0000612	0.000301	0.00165
2039 Jul	53	0.0297	0.117	0.00278	11.1	0.0415	6.48	0.00000536	0.00367	0.000618	0.00542	0.0143	0.000012	7.57	0.00000298	0.0000681	0.000102	0.000357	0.0155	0.00000274	1.55	0.0011	2.13	0.0128	0.000304	1.28	0.00128	0.00267	0.000051	0.000108	0.0000553	0.0457	0.00000538	0.0000619	0.000304	0.00165
2039 Aug	50.5	0.0276	0.111	0.00265	10.5	0.0401	6.19	0.0000054	0.00397	0.000592	0.00546	0.0137	0.000012	7.25	0.00000297	0.0000676	0.0001	0.000353	0.0161	0.00000276	1.49	0.00107	2.04	0.0122	0.000288	1.22	0.00123	0.00252	0.0000473	0.000105	0.0000538	0.0436	0.00000542	0.0000596	0.000304	0.00166
2039 Sep	47.4	0.0258	0.104	0.00253	9.8	0.0375	5.8	0.00000534	0.0043	0.000559	0.00539	0.0126	0.0000118	6.82	0.0000029	0.0000662	0.0000917	0.000345	0.0169	0.00000272	1.38	0.00104	1.89	0.0118	0.000275	1.14	0.00111	0.00229	0.0000407	0.000102	0.0000528	0.0411	0.00000535	0.0000575	0.000298	0.00163
2039 Oct	47.5	0.0256	0.106	0.00255	9.83	0.0375	5.81	0.00000531	0.00466	0.000559	0.00537	0.0124	0.0000117	6.82	0.0000033	0.0000662	0.0000939	0.000359	0.0171	0.00000271	1.38	0.00105	1.88	0.0119	0.000278	1.13	0.0011	0.00221	0.000113	0.000105	0.0000534	0.0413	0.00000533	0.000058	0.000297	0.00172
2039 Nov	47.8	0.0254	0.107	0.00256	9.89	0.0377	5.83	0.00000531	0.00484	0.000561	0.00536	0.0124	0.0000117	6.84	0.00000355	0.0000661	0.0000961	0.000367	0.0171	0.0000027	1.39	0.00105	1.88	0.012	0.000279	1.13	0.00111	0.00218	0.000156	0.000108	0.0000535	0.0416	0.00000532	0.0000582	0.000297	0.00178
2039 Dec	47.7	0.0254	0.107	0.00256	9.88	0.0377	5.83	0.00000531	0.00484	0.00056	0.00536	0.0124	0.0000117	6.84	0.00000355	0.0000661	0.0000961	0.000367	0.0171	0.0000027	1.39	0.00105	1.88	0.012	0.000279	1.13	0.0011	0.00218	0.000156	0.000108	0.0000535	0.0415	0.00000532	0.0000582	0.000297	0.00178
2040 Jan	47.7	0.0254	0.107	0.00256	9.88	0.0377	5.83	0.00000531	0.00483	0.00056	0.00536	0.0124	0.0000117	6.84	0.00000354	0.0000661	0.0000961	0.000367	0.0171	0.0000027	1.39	0.00105	1.88	0.012	0.000279	1.13	0.0011	0.00218	0.000156	0.000108	0.0000535	0.0415	0.00000532	0.0000582	0.000297	0.00178
2040 Feb	47.7	0.0254	0.107	0.00256	9.88	0.0377	5.83	0.00000531	0.00483	0.00056	0.00536	0.0124	0.0000117	6.84	0.00000354	0.0000661	0.0000961	0.000367	0.0171	0.0000027	1.39	0.00105	1.88	0.012	0.000279	1.13	0.0011	0.00218	0.000156	0.000108	0.0000535	0.0415	0.00000532	0.0000582	0.000297	0.00178
2040 Mar	47.7	0.0254	0.107	0.00256	9.88	0.0377	5.83	0.00000531	0.00483	0.00056	0.00536	0.0124	0.0000117	6.84	0.00000354	0.0000661	0.0000961	0.000367	0.0171	0.0000027	1.39	0.00105	1.88	0.012	0.000279	1.13	0.0011	0.00218	0.000156	0.000108	0.0000535	0.0415	0.00000532	0.0000582	0.000297	0.00178
2040 Apr	47.8	0.0254	0.107	0.00256	9.89	0.0378	5.84	0.00000532	0.00484	0.000561	0.00537	0.0124	0.0000117	6.85	0.00000355	0.0000663	0.0000962	0.000367	0.0171	0.00000271	1.39	0.00105	1.89	0.012	0.000279	1.13	0.00111	0.00222	0.000156	0.000108	0.0000536	0.0416	0.00000533	0.0000583	0.000298	0.00178
2040 May	48.1	0.0256	0.107	0.00257	9.92	0.0381	5.88	0.00000536	0.00485	0.000564	0.00541	0.0125	0.0000118	6.88	0.00000357	0.0000667	0.0000966	0.00037	0.0172	0.00000273	1.4	0.00106	1.9	0.012	0.00028	1.14	0.00111	0.00228	0.000156	0.000108	0.0000538	0.0418	0.00000537	0.0000585	0.0003	0.00018
2040 Jun	52.1	0.0281	0.114	0.00264	10.7	0.0406	6.33	0.00000527	0.00367	0.00058	0.00532	0.0139	0.0000116	7.4	0.00000303	0.0000663	0.0000972	0.000353	0.015	0.00000269	1.52	0.00109	2.08	0.0123	0.000289	1.25	0.00121	0.00257	0.0000679	0.000105	0.0000543	0.0448	0.00000528	0.0000597	0.000295	0.00165
2040 Jul	53.2	0.0285	0.115	0.00266	11	0.0415	6.44	0.00000535	0.00362	0.000587	0.0054	0.0143	0.0000118	7.56	0.00000297	0.0000671	0.000101	0.000355	0.0152	0.00000272	1.56	0.0011	2.13	0.0125	0.000292	1.28	0.00124	0.00266	0.0000514	0.000105	0.0000549	0.0458	0.00000536	0.0000604	0.000298	0.00164
2040 Aug	50.7	0.0264	0.108	0.00253	10.5	0.0401	6.14	0.00000539	0.00392	0.000562	0.00543	0.0137	0.0000118	7.24	0.00000296	0.0000667	0.0000991	0.000351	0.0158	0.00000274	1.49	0.00107	2.04	0.012	0.000277	1.23	0.00119	0.00251	0.0000477	0.000103	0.0000534	0.0437	0.0000054	0.0000581	0.000298	0.00165
2040 Sep	47.5	0.0246	0.103	0.00241	9.82	0.0375	5.75	0.00000532	0.00392	0.000531	0.00536	0.0126	0.0000116	6.8	0.00000288	0.0000653	0.0000906	0.000343	0.0166	0.00000272	1.39	0.00104	1.88	0.0115	0.000264	1.14	0.00107	0.00227	0.0000408	0.000099	0.0000524	0.0411	0.00000533	0.0000561	0.00029	



Appendix C12: A12 Lake																																				
Constituents	Total Dissolved Solids	Ammonia	Nitrate	Nitrite	Chloride	Fluoride	Sulphate	Silver	Aluminum	Arsenic	Boron	Barium	Beryllium	Calcium	Cadmium	Cobalt	Chromium	Copper	Iron	Mercury	Potassium	Lithium	Magnesium	Manganese	Molybdenum	Sodium	Nickel	Phosphorus	Lead	Antimony	Selenium	Strontium	Thallium	Uranium	Vanadium	Zinc
2048 May	75.7	0.122	0.168	0.00347	16.2	0.0529	13	0.00000707	0.0146	0.0112	0.00694	0.0178	0.00341	12.2	0.00000597	0.000135	0.000213	0.000741	0.038	0.00000644	2.3	0.00322	2.79	0.0532	0.000865	1.48	0.00467	0.0043	0.000155	0.000295	0.000165	0.074	0.00000736	0.000381	0.000552	0.00254
2048 Jun	68.8	0.103	0.141	0.00296	14.7	0.0505	11.5	0.00000664	0.0118	0.00911	0.00653	0.0169	0.00281	11	0.00000498	0.00012	0.000187	0.000642	0.0312	0.00000572	2.12	0.00274	2.63	0.0439	0.000716	1.43	0.00398	0.00386	0.000708	0.000249	0.000144	0.066	0.00000688	0.000317	0.000495	0.00225
2048 Jul	73.3	0.113	0.155	0.00323	15.7	0.0527	12.3	0.00000692	0.0132	0.01	0.00679	0.0179	0.00313	11.8	0.00000527	0.00013	0.000204	0.000692	0.0346	0.00000622	2.26	0.003	2.76	0.0489	0.000794	1.49	0.00435	0.00407	0.0000665	0.000275	0.000154	0.071	0.00000721	0.000358	0.000531	0.00236
2048 Aug	68.5	0.105	0.143	0.00302	14.7	0.0503	11.5	0.00000685	0.013	0.0093	0.00672	0.0168	0.00291	11	0.0000051	0.000125	0.000193	0.000664	0.0338	0.00000601	2.12	0.00283	2.59	0.0455	0.000738	1.4	0.00406	0.00378	0.0000634	0.000261	0.000145	0.063	0.00000712	0.000366	0.000515	0.00232
2048 Sep	64.6	0.0995	0.135	0.00287	13.8	0.0476	10.9	0.00000671	0.0128	0.00879	0.00659	0.0156	0.00278	10.4	0.00000496	0.000121	0.00018	0.000642	0.0333	0.00000585	2	0.00271	2.43	0.0433	0.000702	1.31	0.00308	0.00351	0.0000661	0.000251	0.00014	0.0627	0.00000699	0.000323	0.000501	0.00227
2048 Oct	66.3	0.103	0.139	0.00295	14.2	0.0487	11.3	0.00000675	0.0134	0.00908	0.00662	0.0159	0.00289	10.7	0.00000545	0.000123	0.000188	0.000668	0.0338	0.00000595	2.05	0.00279	2.48	0.0448	0.000724	1.34	0.00392	0.00355	0.000135	0.000261	0.000144	0.0645	0.00000703	0.000333	0.000508	0.00239
2048 Nov	68.9	0.108	0.146	0.00308	14.8	0.0501	11.7	0.00000683	0.014	0.00953	0.0067	0.0164	0.00285	11.1	0.00000558	0.000127	0.000197	0.000696	0.0348	0.00000613	2.13	0.00291	2.57	0.0471	0.00076	1.37	0.00411	0.00366	0.000175	0.000273	0.00015	0.0672	0.00000712	0.00035	0.000521	0.00248
2048 Dec	71.1	0.113	0.153	0.0032	15.3	0.0511	12.1	0.00000691	0.0144	0.00998	0.00678	0.0168	0.0032	11.5	0.00000589	0.000131	0.000203	0.000715	0.036	0.0000063	2.19	0.00303	2.63	0.0494	0.000794	1.41	0.00428	0.00379	0.000171	0.000283	0.000156	0.0695	0.00000722	0.000366	0.000534	0.00251
2049 Jan	72.8	0.117	0.158	0.0033	15.7	0.0518	12.4	0.00000698	0.0147	0.0103	0.00684	0.0172	0.00331	11.8	0.00000596	0.000133	0.000207	0.00073	0.0369	0.00000644	2.24	0.00312	2.68	0.0511	0.000821	1.43	0.00442	0.00388	0.000167	0.000291	0.00016	0.0713	0.0000073	0.000379	0.000544	0.00254
2049 Feb	73.8	0.12	0.162	0.00336	15.9	0.0523	12.6	0.00000702	0.015	0.0105	0.00688	0.0174	0.00339	11.9	0.000006	0.000135	0.00021	0.000739	0.0374	0.00000653	2.28	0.00317	2.72	0.0522	0.000839	1.45	0.00445	0.00394	0.000164	0.000296	0.000163	0.0724	0.00000735	0.000387	0.000551	0.00255
2049 Mar	74.7	0.122	0.164	0.00341	16.1	0.0527	12.8	0.00000706	0.0152	0.0107	0.00691	0.0176	0.00345	12.1	0.00000604	0.000137	0.000213	0.000747	0.0379	0.0000066	2.3	0.00322	2.74	0.0531	0.000853	1.46	0.00458	0.00399	0.000161	0.00029	0.000166	0.0734	0.00000739	0.000393	0.000556	0.00256
2049 Apr	75.2	0.123	0.166	0.00343	16.2	0.053	12.9	0.00000709	0.0152	0.0108	0.00694	0.0177	0.00349	12.2	0.00000605	0.000138	0.000214	0.000751	0.0381	0.00000664	2.32	0.00325	2.76	0.0536	0.000861	1.47	0.00462	0.00418	0.000158	0.000303	0.000167	0.0738	0.00000743	0.000397	0.00056	0.00257
2049 May	75.1	0.122	0.165	0.00342	16.1	0.0532	12.9	0.00000712	0.0152	0.0108	0.00697	0.0177	0.00347	12.1	0.00000603	0.000138	0.000213	0.00075	0.038	0.00000665	2.32	0.00324	2.76	0.0534	0.000857	1.47	0.00461	0.00438	0.000154	0.000302	0.000167	0.0736	0.00000746	0.000395	0.00056	0.00257
2049 Jun	68.2	0.103	0.138	0.00291	14.6	0.0508	11.4	0.00000668	0.0122	0.00871	0.00655	0.0169	0.00283	10.9	0.00000503	0.000122	0.000187	0.000648	0.031	0.00000589	2.13	0.00275	2.6	0.0438	0.000705	1.42	0.00391	0.00385	0.0000704	0.000254	0.000141	0.0655	0.00000696	0.000328	0.000501	0.00228
2049 Jul	72.9	0.113	0.152	0.00318	15.7	0.0532	12.3	0.00000697	0.0137	0.00959	0.00682	0.0179	0.00315	11.7	0.00000533	0.000131	0.000203	0.000699	0.0344	0.00000639	2.28	0.00301	2.74	0.0488	0.000782	1.48	0.00427	0.00407	0.0000672	0.00028	0.000155	0.0707	0.0000073	0.000369	0.000537	0.00239
2049 Aug	67.6	0.104	0.139	0.00295	14.5	0.0504	11.4	0.00000686	0.0133	0.00881	0.00673	0.0166	0.0029	10.9	0.00000513	0.000126	0.000192	0.000666	0.0334	0.00000613	2.12	0.00281	2.55	0.045	0.000721	1.39	0.00395	0.00375	0.0000636	0.000263	0.000145	0.0655	0.00000718	0.000343	0.000518	0.00234
2049 Sep	64.3	0.0995	0.133	0.00284	13.8	0.0479	10.9	0.00000675	0.0133	0.00841	0.00662	0.0																								



Appendix C12: A12 Lake																																				
Constituents	Total Dissolved Solids	Ammonia	Nitrate	Nitrite	Chloride	Fluoride	Sulphate	Silver	Aluminum	Arsenic	Boron	Barium	Beryllium	Calcium	Cadmium	Cobalt	Chromium	Copper	Iron	Mercury	Potassium	Lithium	Magnesium	Manganese	Molybdenum	Sodium	Nickel	Phosphorus	Lead	Antimony	Selenium	Strontium	Thallium	Uranium	Vanadium	Zinc
2057 Apr	72.5	0.12	0.154	0.00316	15.6	0.051	12	0.00000687	0.0145	0.00749	0.00675	0.017	0.00337	11.6	0.00000591	0.000127	0.000208	0.000704	0.0363	0.00000629	2.21	0.00314	2.58	0.0525	0.000715	1.43	0.00393	0.00406	0.000161	0.000267	0.000159	0.0713	0.0000071	0.000367	0.000514	0.00244
2057 May	72.3	0.119	0.152	0.00314	15.5	0.0511	11.9	0.00000669	0.0143	0.00744	0.00677	0.017	0.00335	11.5	0.00000588	0.000127	0.000207	0.000702	0.036	0.00000628	2.2	0.00313	2.58	0.0521	0.00071	1.43	0.00392	0.00404	0.000155	0.000265	0.000159	0.0709	0.00000712	0.000365	0.000514	0.00244
2057 Jun	65.9	0.1	0.128	0.00268	14.1	0.0489	10.6	0.00000648	0.0113	0.00602	0.00637	0.0163	0.00271	10.4	0.00000487	0.000112	0.000182	0.000604	0.0294	0.00000552	2.03	0.00264	2.46	0.0427	0.000584	1.38	0.00334	0.00372	0.0000697	0.000221	0.000134	0.0634	0.00000665	0.000298	0.00046	0.00215
2057 Jul	70.2	0.11	0.141	0.00291	15.1	0.0507	11.4	0.00000671	0.0124	0.0066	0.0066	0.0171	0.00299	11.1	0.0000051	0.000119	0.000197	0.000617	0.0324	0.00000586	2.15	0.00288	2.58	0.0473	0.000641	1.44	0.00363	0.0039	0.0000667	0.000238	0.000145	0.0681	0.00000689	0.000327	0.000484	0.00223
2057 Aug	65.9	0.102	0.131	0.00274	14.2	0.0484	10.7	0.00000664	0.0121	0.00615	0.00654	0.0161	0.00279	10.5	0.00000495	0.000114	0.000188	0.000617	0.0318	0.00000565	2.02	0.00272	2.43	0.0443	0.000598	1.37	0.00341	0.00363	0.0000636	0.000225	0.000137	0.0639	0.00000681	0.000305	0.000471	0.0022
2057 Sep	62	0.0966	0.123	0.00261	13.3	0.0455	10.1	0.00000605	0.0119	0.0058	0.0064	0.015	0.00265	9.89	0.00000479	0.00011	0.000175	0.000594	0.0314	0.00000545	1.89	0.00259	2.27	0.042	0.000565	1.28	0.00318	0.00335	0.0000609	0.000214	0.000131	0.0603	0.00000665	0.000289	0.000455	0.00214
2057 Oct	63.6	0.1	0.128	0.00268	13.7	0.0465	10.3	0.00000652	0.0123	0.00599	0.00642	0.0152	0.00275	10.1	0.00000528	0.000112	0.000182	0.000618	0.0319	0.00000552	1.93	0.00267	2.32	0.0435	0.000583	1.3	0.00327	0.00337	0.000136	0.000223	0.000135	0.062	0.00000667	0.000298	0.00046	0.00225
2057 Nov	66	0.105	0.134	0.0028	14.2	0.0477	10.7	0.00000658	0.0129	0.00628	0.00648	0.0156	0.0029	10.5	0.00000562	0.000115	0.00019	0.000642	0.0328	0.00000567	2	0.00278	2.39	0.0457	0.000611	1.33	0.00343	0.00348	0.000178	0.000233	0.000141	0.0645	0.00000674	0.000312	0.00047	0.00234
2057 Dec	68.1	0.11	0.14	0.00291	14.7	0.0486	11.1	0.00000666	0.0133	0.00658	0.00658	0.0161	0.00304	10.8	0.0000057	0.000118	0.000196	0.000659	0.0339	0.00000581	2.06	0.00289	2.45	0.0479	0.000639	1.36	0.00357	0.00359	0.000173	0.000241	0.000146	0.0667	0.00000682	0.000326	0.00048	0.00236
2058 Jan	69.7	0.114	0.145	0.00299	15	0.0492	11.4	0.00000671	0.0136	0.0068	0.0066	0.0164	0.00315	11.1	0.00000576	0.00012	0.000201	0.000671	0.0348	0.00000593	2.1	0.00298	2.49	0.0496	0.000661	1.39	0.00368	0.00368	0.000169	0.000247	0.00015	0.0684	0.00000688	0.000337	0.000488	0.00238
2058 Feb	70.7	0.116	0.148	0.00305	15.3	0.0497	11.6	0.00000675	0.0137	0.00695	0.00664	0.0166	0.00323	11.3	0.0000058	0.000122	0.000203	0.000679	0.0353	0.000006	2.13	0.00303	2.52	0.0507	0.000675	1.4	0.00375	0.00374	0.000166	0.000251	0.000153	0.0695	0.00000692	0.000344	0.000493	0.00239
2058 Mar	71.6	0.118	0.151	0.00309	15.5	0.05	11.7	0.00000678	0.0139	0.00708	0.00667	0.0168	0.00329	11.4	0.00000583	0.000123	0.000206	0.000686	0.0358	0.00000607	2.16	0.00308	2.55	0.0517	0.000686	1.41	0.00381	0.00378	0.000164	0.000254	0.000155	0.0705	0.00000695	0.00035	0.000498	0.00239
2058 Apr	72	0.119	0.152	0.00311	15.5	0.0503	11.8	0.0000068	0.0139	0.00713	0.00669	0.0168	0.00331	11.4	0.00000583	0.000123	0.000207	0.000689	0.0359	0.00000609	2.17	0.0031	2.56	0.0521	0.000691	1.42	0.00384	0.00403	0.00016	0.000255	0.000156	0.0708	0.00000697	0.000352	0.0005	0.0024
2058 May	71.7	0.118	0.151	0.00309	15.4	0.0504	11.8	0.00000683	0.0138	0.00708	0.00672	0.0168	0.00329	11.4	0.0000058	0.000123	0.000205	0.000686	0.0356	0.00000609	2.16	0.00309	2.56	0.0517	0.000686	1.42	0.00383	0.00432	0.000154	0.000254	0.000156	0.0704	0.000007	0.000349	0.0005	0.00239
2058 Jun	66.5	0.102	0.129	0.00269	14.2	0.0494	10.7	0.00000654	0.0118	0.00587	0.00642	0.0164	0.00273	10.5	0.00000494	0.000114	0.000184	0.000616	0.0298	0.00000569	2.06	0.00268	2.46	0.0435	0.00059	1.39	0.00335	0.00375	0.0000706	0.000228	0.000137	0.064	0.00000674	0.000311	0.000468	0.00219
2058 Jul	70.7	0.111	0.142	0.00291	15.3	0.0517	11.4	0.00000681	0.0133	0.00639	0.00667	0.0173	0.003	11.2	0.00000523	0.000123	0.000199	0.000662	0.0329	0.00000617	2.2	0.00292	2.58	0.048	0.000652	1.45	0.00363	0.00392	0.0000679	0.000251	0.00015	0.0686	0.00000707	0.00035	0.000501	0.0023
2058 Aug	65.7	0.101	0.129	0.00271	14.2	0.049	10.6	0.00000672	0.0129	0.00588	0.00659	0.0162	0.00276																							



Appendix C12: A12 Lake																																				
Constituents	Total Dissolved Solids	Ammonia	Nitrate	Nitrite	Chloride	Fluoride	Sulphate	Silver	Aluminum	Arsenic	Boron	Barium	Beryllium	Calcium	Cadmium	Cobalt	Chromium	Copper	Iron	Mercury	Potassium	Lithium	Magnesium	Manganese	Molybdenum	Sodium	Nickel	Phosphorus	Lead	Antimony	Selenium	Strontium	Thallium	Uranium	Vanadium	Zinc
2066 Mar	70.3	0.115	0.14	0.00281	15.2	0.0501	11.3	0.00000679	0.0148	0.00501	0.00664	0.0166	0.00288	11.1	0.00000586	0.000124	0.000204	0.000685	0.0351	0.0000063	2.16	0.00296	2.45	0.0515	0.000621	1.38	0.00341	0.00372	0.000164	0.000253	0.000156	0.0689	0.00000702	0.000364	0.000496	0.00241
2066 Apr	70.6	0.115	0.141	0.00282	15.2	0.0503	11.3	0.00000681	0.0148	0.00504	0.00666	0.0167	0.0029	11.1	0.00000585	0.000124	0.000204	0.000687	0.0352	0.00000633	2.17	0.00297	2.45	0.0518	0.000624	1.39	0.00344	0.00402	0.000159	0.000254	0.000157	0.0691	0.00000704	0.000366	0.000498	0.00241
2066 May	70.1	0.114	0.139	0.00279	15	0.0505	11.3	0.00000683	0.0146	0.00499	0.00668	0.0166	0.00286	11.1	0.0000058	0.000124	0.000202	0.000683	0.0348	0.0000063	2.16	0.00295	2.45	0.0512	0.000617	1.39	0.00341	0.00436	0.000152	0.000252	0.000155	0.0684	0.00000706	0.000362	0.000498	0.0024
2066 Jun	64.6	0.0965	0.118	0.00242	13.8	0.0489	10.2	0.00000648	0.0122	0.00409	0.00634	0.0161	0.00233	10.1	0.00000489	0.000112	0.000179	0.000602	0.0288	0.00000573	2.03	0.00253	2.36	0.0424	0.000523	1.35	0.00296	0.00366	0.0000697	0.00022	0.000134	0.0618	0.00000671	0.000311	0.000458	0.00217
2066 Jul	68.2	0.105	0.128	0.0026	14.7	0.0505	10.8	0.00000669	0.0132	0.00443	0.00655	0.0168	0.00255	10.7	0.00000511	0.000119	0.000193	0.000636	0.0315	0.00000606	2.13	0.00272	2.45	0.0465	0.000567	1.4	0.00319	0.00379	0.0000671	0.000235	0.000144	0.0658	0.00000694	0.000338	0.00048	0.00224
2066 Aug	63.6	0.0963	0.118	0.00243	13.7	0.0479	10	0.00000661	0.0128	0.0041	0.00648	0.0158	0.00236	10	0.00000493	0.000114	0.000183	0.000608	0.0308	0.0000058	1.99	0.00256	2.3	0.0432	0.000525	1.32	0.00297	0.00351	0.0000638	0.00022	0.000135	0.0613	0.00000683	0.000312	0.000464	0.00219
2066 Sep	60.4	0.0926	0.113	0.00234	13	0.0453	9.57	0.00000648	0.0126	0.00392	0.00636	0.0148	0.00227	9.55	0.00000448	0.00011	0.000172	0.000589	0.0307	0.00000562	1.88	0.00247	2.16	0.0416	0.000503	1.24	0.00279	0.00327	0.0000616	0.000212	0.000131	0.0585	0.00000669	0.000299	0.000452	0.00214
2066 Oct	62.4	0.0965	0.118	0.00242	13.4	0.0465	9.91	0.00000651	0.0132	0.00407	0.00638	0.015	0.00237	9.84	0.00000538	0.000112	0.00018	0.000619	0.0313	0.00000573	1.94	0.00255	2.22	0.0434	0.000523	1.27	0.00289	0.0033	0.00015	0.000222	0.000136	0.0605	0.00000672	0.000312	0.000458	0.00228
2066 Nov	64.9	0.101	0.124	0.00252	14	0.048	10.3	0.00000658	0.0139	0.00428	0.00645	0.0155	0.0025	10.2	0.00000575	0.000116	0.00019	0.000646	0.0322	0.00000591	2.01	0.00267	2.29	0.0457	0.00055	1.3	0.00304	0.00341	0.000195	0.000234	0.000142	0.0632	0.0000068	0.000328	0.000469	0.00237
2066 Dec	67	0.106	0.13	0.00262	14.5	0.0488	10.7	0.00000666	0.0143	0.00448	0.00651	0.0159	0.00262	10.6	0.00000582	0.000119	0.000195	0.000662	0.0333	0.00000607	2.07	0.00277	2.35	0.048	0.000575	1.33	0.00317	0.00353	0.000189	0.000242	0.000147	0.0653	0.00000689	0.000343	0.00048	0.0024
2067 Jan	68.6	0.11	0.134	0.0027	14.8	0.0495	10.9	0.00000672	0.0147	0.00464	0.00657	0.0163	0.00272	10.8	0.00000588	0.000121	0.0002	0.000675	0.0341	0.0000062	2.12	0.00286	2.39	0.0497	0.000595	1.36	0.00327	0.00362	0.000183	0.000248	0.000152	0.067	0.00000696	0.000355	0.000488	0.00241
2067 Feb	69.7	0.113	0.137	0.00275	15	0.05	11.1	0.00000676	0.0149	0.00474	0.00661	0.0165	0.00278	11	0.00000591	0.000123	0.000202	0.000683	0.0347	0.00000629	2.15	0.00291	2.42	0.0509	0.000608	1.37	0.00334	0.00368	0.000179	0.000252	0.000154	0.0682	0.000007	0.000363	0.000494	0.00242
2067 Mar	70.5	0.115	0.14	0.00279	15.2	0.0503	11.3	0.00000679	0.0151	0.00483	0.00664	0.0167	0.00284	11.1	0.00000594	0.000124	0.000205	0.00069	0.0352	0.00000636	2.18	0.00296	2.44	0.0518	0.000619	1.38	0.00339	0.00373	0.000176	0.000256	0.000157	0.0691	0.00000704	0.000369	0.000498	0.00243
2067 Apr	70.7	0.115	0.14	0.0028	15.2	0.0506	11.3	0.00000681	0.0151	0.00485	0.00666	0.0167	0.00285	11.1	0.00000593	0.000125	0.000205	0.000692	0.0352	0.00000639	2.18	0.00297	2.45	0.0521	0.000622	1.39	0.00341	0.00402	0.00017	0.000256	0.000158	0.0692	0.00000706	0.000371	0.0005	0.00243
2067 May	70.4	0.114	0.139	0.00278	15.1	0.0507	11.3	0.00000684	0.0149	0.00481	0.00668	0.0167	0.00283	11.1	0.00000588	0.000125	0.000204	0.000688	0.0349	0.00000637	2.18	0.00295	2.45	0.0516	0.000616	1.39	0.0034	0.00437	0.000161	0.000255	0.000157	0.0687	0.00000708	0.000368	0.0005	0.00242
2067 Jun	64.3	0.0959	0.117	0.00238	13.8	0.0487	10.1	0.00000645	0.0121	0.00391	0.00632	0.0161	0.00228	10.1	0.00000486	0.000111	0.000179	0.000597	0.0286	0.00000568	2.02	0.0025	2.35	0.0423	0.000513	1.35	0.00292	0.00365	0.00007	0.000217	0.000133	0.0615	0.00000667	0.000307	0.000454	0.00215
2067 Jul	68.3	0.105	0.128	0.00258	14.7	0.0504	10.7	0.00000667	0.0132	0.00426	0.00653	0.0168	0.00251	10.7	0.00000509	0.000118	0.000193	0.000633	0.0315	0.00000602	2.13	0.00271	2.45	0.0467	0.000561	1.4	0.00316	0.0038	0.0000674	0.000232	0.000144	0.0658	0.0000069	0.000335	0.000477	0.00223
2067 Aug	63.6	0.0963	0.117	0.00241	13.7	0.0477	10	0.00000659	0.0128	0.00395	0.00646	0.0157	0.00232	10	0.00000491	0.000113	0.000183	0.000605	0.0308	0.00000576	1.98	0.00255	2.29	0.0433	0.000518	1.32	0.00294	0.0035	0.0000639	0.000218	0.000135	0.0613	0.0000068	0.00031	0.000461	0.00218
2067 Sep	60.3	0.0925	0.112	0.00232	13	0.0452	9.53	0.00000647	0.0126	0.00377	0.00634	0.0147	0.00223	9.53	0.00000479	0.00011	0.000172	0.000588	0.0307	0.0000056	1.88	0.00246	2.16	0.0417	0.000497	1.24	0.00277	0.00326	0.0000617	0.00021	0.000131	0.0584	0.00000667	0.000298	0.00045	0.00214
2067 Oct	62.1	0.096	0.116	0.00239	13.4	0.0464	9.84	0.00000649	0.0132	0.0039	0.00636	0.015	0.00231	9.79	0.00000536	0.000112	0.00018	0.000616	0.0312	0.00000571	1.93	0.00253	2.21	0.0433	0.000515	1.26	0.00285	0.00329	0.00015	0.000221	0.000135	0.0603	0.0000067	0.00031	0.000456	0.00227
2067 Nov	64.7	0.101	0.123	0.00249	13.9	0.0478	10.2	0.00000656	0.0138	0.0041	0.00643	0.0155	0.00244	10.2	0.00000572	0.000115	0.000189	0.000642	0.0321	0.00000588	2	0.00264	2.28	0.0456	0.000541	1.3	0.003	0.0034	0.000193	0.000231	0.000141	0.0629	0.00000678	0.000326	0.000466	0.00236
2067 Dec	66.7	0.106	0.128	0.00259	14.4	0.0487	10.6	0.00000664	0.0143	0.00429	0.0065	0.0159	0.00256	10.5	0.00000579	0.000118																				



Appendix C13: A43 Lake																																				
Constituents	Total Dissolved Solids	Ammonia	Nitrate	Nitrite	Chloride	Fluoride	Sulphate	Silver	Aluminum	Arsenic	Boron	Barium	Beryllium	Calcium	Cadmium	Cobalt	Chromium	Copper	Iron	Mercury	Potassium	Lithium	Magnesium	Manganese	Molybdenum	Sodium	Nickel	Phosphorus	Lead	Antimony	Selenium	Strontium	Thallium	Uranium	Vanadium	Zinc
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Operation (2023 to 2025): Min	21.1	0.00664	0.00312	0.000416	4.26	0.0268	3.03	0.00000416	0.00217	0.000211	0.00416	0.00704	0.00008833	3.33	0.00000237	0.0000416	0.0000611	0.000217	0.00604	0.00000208	0.726	0.000416	1.12	0.000668	0.0000214	0.679	0.000525	0.00129	0.0000543	0.000044	0.0000214	0.0169	0.0000416	0.0000127	0.000208	0.00132
Operation (2023 to 2025): Average	24.1	0.00752	0.00361	0.000469	4.91	0.0305	3.45	0.00000469	0.00256	0.000241	0.00469	0.00804	0.00000938	3.8	0.00000265	0.0000469	0.0000694	0.000244	0.00702	0.00000234	0.83	0.000469	1.27	0.000781	0.0000243	0.774	0.000595	0.00153	0.0000763	0.0000493	0.000024	0.0194	0.0000469	0.0000143	0.000234	0.00148
Operation (2023 to 2025): Max	26.3	0.00838	0.00399	0.000506	5.4	0.0332	3.76	0.00000506	0.00287	0.000263	0.00506	0.00884	0.0000101	4.16	0.00000291	0.0000506	0.0000755	0.000265	0.00775	0.00000253	0.91	0.000506	1.39	0.00085	0.0000264	0.847	0.000654	0.0017	0.0000941	0.0000536	0.0000258	0.0212	0.0000506	0.0000154	0.000253	0.00161
CCMESSWQO (Receiving Environment)	-	0.58	2.93	0.06	120	0.12	variable	0.00025	0.1	0.025	1.5	-	-	-	variable	-	0.001	variable	0.3	0.000026	-	-	-	variable	0.73	-	variable	0.01	0.001	-	0.001	-	0.0008	0.015	-	variable
Active Closure (2026 to Sept. 2042): Min	25.7	0.00786	0.00387	0.000504	5.27	0.0326	3.68	0.00000504	0.00261	0.000259	0.00504	0.00855	0.0000101	4.07	0.00000285	0.0000504	0.0000745	0.000263	0.00725	0.00000252	0.886	0.000504	1.36	0.000783	0.0000262	0.824	0.000629	0.00162	0.0000725	0.0000532	0.0000258	0.0208	0.0000504	0.0000153	0.000252	0.0016
Active Closure (2026 to Sept. 2042): Average	27	0.00829	0.00404	0.00053	5.51	0.0342	3.87	0.0000053	0.003	0.000271	0.0053	0.00898	0.0000106	4.27	0.00000304	0.000053	0.0000775	0.000278	0.0081	0.00000265	0.93	0.00053	1.42	0.000882	0.0000278	0.866	0.000661	0.0017	0.0000954	0.0000562	0.0000272	0.0218	0.000053	0.0000162	0.000265	0.00169
Active Closure (2026 to Sept. 2042): Max	27.8	0.0088	0.0042	0.00054	5.69	0.0352	3.98	0.00000538	0.00317	0.000278	0.0054	0.00932	0.0000108	4.39	0.00000316	0.000054	0.0000796	0.000284	0.00838	0.0000027	0.96	0.00054	1.47	0.000929	0.0000282	0.894	0.000689	0.00178	0.00011	0.0000576	0.0000276	0.0224	0.000054	0.0000165	0.00027	0.00173
CCMESSWQO (Receiving Environment)	-	0.58	2.93	0.06	120	0.12	variable	0.00025	0.1	0.025	1.5	-	-	-	variable	-	0.001	variable	0.3	0.000026	-	-	-	variable	0.73	-	variable	0.01	0.001	-	0.001	-	0.0008	0.015	-	variable
Post Closure (Oct. 2042 to 2070): Min	25.6	0.00771	0.00369	0.000518	5.07	0.0327	3.7	0.00000518	0.00282	0.000259	0.00518	0.0084	0.0000104	4.03	0.00000294	0.0000518	0.0000725	0.000271	0.00756	0.00000259	0.877	0.000518	1.34	0.000818	0.0000269	0.82	0.000625	0.00166	0.0000779	0.0000549	0.0000266	0.0205	0.0000518	0.0000158	0.000259	0.00165
Post Closure (Oct. 2042 to 2070): Average	26.4	0.00804	0.00386	0.000529	5.29	0.0337	3.81	0.00000529	0.0031	0.000266	0.00529	0.00874	0.0000106	4.17	0.00000307	0.0000529	0.0000753	0.000279	0.0082	0.00000265	0.909	0.000529	1.39	0.0009	0.0000278	0.849	0.000652	0.00176	0.000101	0.0000564	0.0000272	0.0212	0.0000529	0.0000163	0.000265	0.00169
Post Closure (Oct. 2042 to 2070): Max	27.6	0.0087	0.00411	0.000538	5.58	0.0349	3.96	0.00000538	0.00324	0.000276	0.00538	0.00922	0.0000108	4.34	0.00000316	0.0000538	0.0000783	0.000284	0.00844	0.00000269	0.952	0.000538	1.46	0.000929	0.0000282	0.888	0.000685	0.00192	0.000115	0.0000576	0.0000276	0.0221	0.0000538	0.0000165	0.000269	0.00173
CCMESSWQO (Receiving Environment)	-	0.58	2.93	0.06	120	0.12	variable	0.00025	0.1	0.025	1.5	-	-	-	variable	-	0.001	variable	0.3	0.000026	-	-	-	variable	0.73	-	variable	0.01	0.001	-	0.001	-	0.0008	0.015	-	variable
Model Predictions (2023-2070)																																				
2023 Jan	21.1	0.00664	0.00312	0.000416	4.26	0.0268	3.03	0.00000416	0.00233	0.000211	0.00416	0.00704	0.00008833	3.33	0.00000237	0.0000416	0.0000611	0.000217	0.00632	0.00000208	0.726	0.000416	1.12	0.000719	0.0000214	0.679	0.000525	0.00129	0.000071	0.000044	0.0000214	0.0169	0.0000416	0.0000127	0.000208	0.00132
2023 Feb	21.1	0.00664	0.00312	0.000416	4.26	0.0268	3.03	0.00000416	0.00233	0.000211	0.00416	0.00704	0.00008833	3.33	0.00000237	0.0000416	0.0000611	0.000217	0.00632	0.00000208	0.726	0.000416	1.12	0.000719	0.0000214	0.679	0.000525	0.00129	0.000071	0.000044	0.0000214	0.0169	0.0000416	0.0000127	0.000208	0.00132
2023 Mar	21.1	0.00664	0.00312	0.000416	4.26	0.0268	3.04	0.00000416	0.00233	0.000211	0.00416	0.00704	0.00008833	3.33	0.00000237	0.0000416	0.0000611	0.000218	0.00632	0.00000208	0.726	0.000416	1.12	0.000719	0.0000214	0.679	0.000525	0.00129	0.000071	0.000044	0.0000214	0.0169	0.0000416	0.0000127	0.000208	0.00132
2023 Apr	21.1	0.00665	0.00313	0.000417	4.26	0.0268	3.04	0.00000417	0.00234	0.000212	0.00417	0.00705	0.00000834	3.33	0.00000237	0.0000417	0.0000612	0.000218	0.00633	0.00000209	0.727	0.000417	1.12	0.00072	0.0000214	0.68	0.000526	0.00132	0.000711	0.0000441	0.0000215	0.017	0.0000417	0.0000127	0.000209	0.00132
2023 May	21.3	0.0067	0.00315	0.000421	4.29	0.027	3.07																													



Appendix C13: A43 Lake																																				
Constituents	Total Dissolved Solids	Ammonia	Nitrate	Nitrite	Chloride	Fluoride	Sulphate	Silver	Aluminum	Arsenic	Boron	Barium	Beryllium	Calcium	Cadmium	Cobalt	Chromium	Copper	Iron	Mercury	Potassium	Lithium	Magnesium	Manganese	Molybdenum	Sodium	Nickel	Phosphorus	Lead	Antimony	Selenium	Strontium	Thallium	Uranium	Vanadium	Zinc
2030 Jul	27.8	0.00876	0.00419	0.000531	5.68	0.035	3.97	0.00000531	0.00276	0.000276	0.00531	0.0093	0.0000106	4.38	0.00000297	0.000531	0.0000788	0.000276	0.00761	0.00000265	0.958	0.000531	1.47	0.000824	0.0000275	0.892	0.000684	0.00178	0.0000826	0.0000557	0.0000271	0.0223	0.0000531	0.0000161	0.000265	0.00167
2030 Aug	27.8	0.00865	0.00419	0.000537	5.69	0.0351	3.97	0.00000537	0.00287	0.000278	0.00537	0.00931	0.0000107	4.39	0.000003	0.000537	0.0000796	0.000279	0.00794	0.00000269	0.96	0.000537	1.47	0.000875	0.000028	0.893	0.000687	0.00177	0.0000816	0.0000563	0.0000274	0.0224	0.0000537	0.0000164	0.000269	0.00169
2030 Sep	27.1	0.00839	0.00406	0.000533	5.55	0.0344	3.88	0.00000533	0.00295	0.000273	0.00533	0.00906	0.0000107	4.29	0.00000296	0.000533	0.0000774	0.000276	0.00822	0.00000266	0.936	0.000533	1.43	0.000895	0.0000281	0.872	0.000663	0.00172	0.0000776	0.0000557	0.0000273	0.0219	0.0000533	0.0000163	0.000266	0.00167
2030 Oct	26.9	0.00827	0.00403	0.000531	5.51	0.0342	3.86	0.00000531	0.00303	0.000272	0.00531	0.00895	0.0000106	4.26	0.00000303	0.000531	0.0000774	0.000278	0.00827	0.00000266	0.928	0.000531	1.42	0.000898	0.0000279	0.864	0.000655	0.00169	0.0000923	0.0000562	0.0000273	0.0218	0.0000531	0.0000163	0.000266	0.00169
2030 Nov	26.9	0.00819	0.00403	0.00053	5.51	0.0342	3.85	0.0000053	0.00307	0.000271	0.0053	0.00893	0.0000106	4.26	0.00000308	0.00053	0.0000778	0.000279	0.00827	0.00000265	0.927	0.00053	1.42	0.000899	0.0000279	0.862	0.000655	0.00168	0.000102	0.0000566	0.0000272	0.0217	0.000053	0.0000163	0.000265	0.0017
2030 Dec	26.9	0.00819	0.00403	0.00053	5.51	0.0342	3.85	0.0000053	0.00307	0.000271	0.0053	0.00893	0.0000106	4.26	0.00000308	0.00053	0.0000778	0.000279	0.00827	0.00000265	0.927	0.00053	1.42	0.000899	0.0000279	0.862	0.000655	0.00168	0.000102	0.0000566	0.0000272	0.0217	0.000053	0.0000163	0.000265	0.0017
2031 Jan	26.9	0.00819	0.00403	0.00053	5.51	0.0342	3.85	0.0000053	0.00307	0.000271	0.0053	0.00893	0.0000106	4.26	0.00000308	0.00053	0.0000778	0.000279	0.00827	0.00000265	0.927	0.00053	1.42	0.000899	0.0000279	0.862	0.000655	0.00168	0.000102	0.0000566	0.0000272	0.0217	0.000053	0.0000163	0.000265	0.0017
2031 Feb	26.9	0.00819	0.00403	0.000531	5.51	0.0342	3.85	0.00000531	0.00307	0.000271	0.00531	0.00893	0.0000106	4.26	0.00000308	0.000531	0.0000778	0.000279	0.00827	0.00000265	0.927	0.000531	1.42	0.000899	0.0000279	0.862	0.000655	0.00168	0.000102	0.0000566	0.0000272	0.0217	0.0000531	0.0000163	0.000265	0.0017
2031 Mar	26.9	0.00819	0.00403	0.000531	5.51	0.0342	3.85	0.00000531	0.00307	0.000271	0.00531	0.00893	0.0000106	4.26	0.00000308	0.000531	0.0000778	0.000279	0.00827	0.00000265	0.927	0.000531	1.42	0.000899	0.0000279	0.862	0.000655	0.00168	0.000102	0.0000566	0.0000272	0.0217	0.0000531	0.0000163	0.000265	0.0017
2031 Apr	27	0.0082	0.00404	0.000532	5.52	0.0342	3.86	0.00000532	0.00308	0.000272	0.00532	0.00894	0.0000106	4.27	0.00000309	0.000532	0.0000779	0.00028	0.00828	0.00000266	0.929	0.000532	1.42	0.0009	0.0000279	0.863	0.000656	0.00169	0.000102	0.0000567	0.0000273	0.0218	0.0000532	0.0000163	0.000266	0.0017
2031 May	27.2	0.00827	0.00407	0.000536	5.56	0.0345	3.89	0.00000536	0.0031	0.000274	0.00536	0.00901	0.0000107	4.3	0.00000311	0.000536	0.0000785	0.000282	0.00834	0.00000268	0.936	0.000536	1.43	0.000907	0.0000281	0.87	0.000661	0.00171	0.000103	0.0000571	0.0000275	0.0219	0.0000536	0.0000164	0.000268	0.00171
2031 Jun	27.3	0.0086	0.00411	0.000527	5.58	0.0345	3.92	0.00000527	0.0028	0.000273	0.00527	0.00913	0.0000105	4.31	0.00000298	0.000527	0.0000774	0.000275	0.00765	0.00000264	0.943	0.000527	1.44	0.00082	0.0000274	0.878	0.000671	0.00174	0.000087	0.0000555	0.0000269	0.022	0.0000527	0.000016	0.000264	0.00167
2031 Jul	27.8	0.00878	0.00419	0.000532	5.69	0.0351	3.97	0.00000532	0.00277	0.000277	0.00532	0.00931	0.0000106	4.38	0.00000298	0.000532	0.0000788	0.000276	0.00763	0.00000266	0.959	0.000532	1.47	0.000825	0.0000276	0.893	0.000685	0.00178	0.0000825	0.0000558	0.0000271	0.0224	0.0000532	0.0000161	0.000266	0.00167
2031 Aug	27.8	0.00867	0.00419	0.000538	5.69	0.0352	3.98	0.00000538	0.00288	0.000278	0.00538	0.00932	0.0000108	4.39	0.000003	0.000538	0.0000796	0.000279	0.00796	0.00000269	0.96	0.000538	1.47	0.000876	0.0000281	0.894	0.000688	0.00178	0.0000815	0.0000563	0.0000274	0.0224	0.0000538	0.0000164	0.000269	0.00169
2031 Sep	27.2	0.00841	0.00407	0.000534	5.56	0.0344	3.89	0.00000534	0.00296	0.000273	0.00534	0.00907	0.0000107	4.3	0.00000296	0.000534	0.0000774	0.000276	0.00823	0.00000267	0.937	0.000534	1.43	0.000897	0.0000281	0.873	0.000663	0.00172	0.0000775	0.0000558	0.0000274	0.0219	0.0000534	0.0000164	0.000267	0.00167
2031 Oct	27.2	0.00829	0.00404	0.000532	5.52	0.0342	3.86	0.00000532	0.00304	0.000272	0.00532	0.00896	0.0000106	4.27	0.00000304	0.000532	0.0000775	0.000278	0.00829																	



Appendix C13: A43 Lake																																				
Constituents	Total Dissolved Solids	Ammonia	Nitrate	Nitrite	Chloride	Fluoride	Sulphate	Silver	Aluminum	Arsenic	Boron	Barium	Beryllium	Calcium	Cadmium	Cobalt	Chromium	Copper	Iron	Mercury	Potassium	Lithium	Magnesium	Manganese	Molybdenum	Sodium	Nickel	Phosphorus	Lead	Antimony	Selenium	Strontium	Thallium	Uranium	Vanadium	Zinc
2039 Jun	27.2	0.00855	0.00405	0.000528	5.51	0.0344	3.91	0.0000528	0.00283	0.000271	0.00528	0.00908	0.0000106	4.29	0.000003	0.0000528	0.0000767	0.000275	0.00763	0.00000264	0.939	0.000528	1.44	0.000821	0.0000274	0.875	0.000672	0.00172	0.000089	0.0000557	0.0000269	0.0218	0.0000528	0.0000161	0.000264	0.00167
2039 Jul	27.7	0.00872	0.00414	0.000533	5.62	0.0349	3.97	0.0000533	0.00281	0.000275	0.00533	0.00925	0.0000107	4.36	0.000003	0.0000533	0.0000783	0.000277	0.00766	0.00000267	0.954	0.000533	1.46	0.000834	0.0000276	0.89	0.000685	0.00177	0.0000849	0.0000566	0.0000275	0.0222	0.0000533	0.0000162	0.000267	0.00168
2039 Aug	27.7	0.00861	0.00414	0.00054	5.63	0.0351	3.97	0.000054	0.00292	0.000277	0.0054	0.00927	0.0000108	4.37	0.00000302	0.000054	0.000079	0.00028	0.00798	0.00000267	0.956	0.00054	1.46	0.000884	0.0000281	0.892	0.000689	0.00176	0.0000839	0.0000566	0.0000275	0.0223	0.000054	0.0000165	0.00027	0.0017
2039 Sep	27	0.00835	0.00401	0.000535	5.49	0.0343	3.88	0.0000535	0.003	0.000272	0.00535	0.00902	0.0000107	4.28	0.00000298	0.0000535	0.0000768	0.000277	0.00826	0.00000268	0.932	0.000535	1.43	0.000904	0.0000282	0.87	0.000663	0.00171	0.0000797	0.0000566	0.0000274	0.0218	0.0000535	0.0000164	0.000268	0.00168
2039 Oct	26.8	0.00821	0.00398	0.000533	5.45	0.0341	3.85	0.0000533	0.00308	0.000271	0.00533	0.00891	0.0000107	4.24	0.00000306	0.0000533	0.000077	0.000279	0.00831	0.00000266	0.924	0.000533	1.41	0.000906	0.000028	0.861	0.000655	0.00167	0.0000965	0.0000565	0.0000274	0.0216	0.0000533	0.0000164	0.000266	0.0017
2039 Nov	26.8	0.00812	0.00398	0.000532	5.45	0.0341	3.85	0.0000532	0.00313	0.00027	0.00532	0.00888	0.0000106	4.24	0.00000312	0.0000532	0.0000774	0.000281	0.00831	0.00000266	0.923	0.000532	1.41	0.000907	0.0000279	0.859	0.000655	0.00166	0.000107	0.000057	0.0000273	0.0216	0.0000532	0.0000163	0.000266	0.00171
2039 Dec	26.8	0.00812	0.00398	0.000532	5.45	0.0341	3.85	0.0000532	0.00313	0.00027	0.00532	0.00887	0.0000106	4.24	0.00000312	0.0000532	0.0000773	0.000281	0.00831	0.00000266	0.923	0.000532	1.41	0.000907	0.0000279	0.859	0.000655	0.00166	0.000107	0.000057	0.0000273	0.0216	0.0000532	0.0000163	0.000266	0.00171
2040 Jan	26.8	0.00812	0.00398	0.000532	5.45	0.0341	3.85	0.0000532	0.00313	0.00027	0.00532	0.00887	0.0000106	4.24	0.00000312	0.0000532	0.0000773	0.000281	0.00831	0.00000266	0.922	0.000532	1.41	0.000907	0.0000279	0.859	0.000655	0.00166	0.000107	0.000057	0.0000273	0.0216	0.0000532	0.0000163	0.000266	0.00171
2040 Feb	26.8	0.00812	0.00398	0.000532	5.45	0.0341	3.85	0.0000532	0.00313	0.00027	0.00532	0.00887	0.0000106	4.24	0.00000312	0.0000532	0.0000773	0.000281	0.00831	0.00000266	0.922	0.000532	1.41	0.000907	0.0000279	0.859	0.000655	0.00166	0.000107	0.000057	0.0000273	0.0216	0.0000532	0.0000163	0.000266	0.00171
2040 Mar	26.8	0.00812	0.00398	0.000532	5.45	0.0341	3.85	0.0000532	0.00313	0.00027	0.00532	0.00888	0.0000106	4.24	0.00000312	0.0000532	0.0000773	0.000281	0.00831	0.00000266	0.923	0.000532	1.41	0.000907	0.000028	0.859	0.000655	0.00166	0.000107	0.000057	0.0000273	0.0216	0.0000532	0.0000163	0.000266	0.00171
2040 Apr	26.9	0.00813	0.00399	0.000533	5.46	0.0341	3.85	0.0000533	0.00314	0.000271	0.00533	0.00889	0.0000107	4.24	0.00000313	0.0000533	0.0000775	0.000282	0.00833	0.00000267	0.924	0.000533	1.41	0.000908	0.000028	0.86	0.000656	0.00167	0.000107	0.0000571	0.0000274	0.0216	0.0000533	0.0000164	0.000267	0.00171
2040 May	27.1	0.0082	0.00402	0.000537	5.5	0.0344	3.89	0.0000537	0.00316	0.000273	0.00537	0.00896	0.0000107	4.28	0.00000315	0.0000537	0.000078	0.000284	0.00838	0.00000269	0.932	0.000537	1.42	0.000915	0.0000282	0.867	0.000662	0.0017	0.000108	0.0000575	0.0000276	0.0218	0.0000537	0.0000165	0.000269	0.00173
2040 Jun	27.2	0.00854	0.00404	0.000527	5.5	0.0344	3.91	0.0000527	0.00283	0.000271	0.00527	0.00907	0.0000105	4.28	0.000003	0.0000527	0.0000766	0.000275	0.00763	0.00000264	0.938	0.000527	1.44	0.000821	0.0000274	0.875	0.000671	0.00172	0.0000897	0.0000557	0.0000269	0.0218	0.0000527	0.0000161	0.000264	0.00167
2040 Jul	27.7	0.00873	0.00414	0.000534	5.62	0.035	3.97	0.0000534	0.00281	0.000276	0.00534	0.00926	0.0000107	4.36	0.00000301	0.0000534	0.0000783	0.000278	0.00765	0.00000267	0.955	0.000534	1.46	0.000831	0.0000277	0.891	0.000685	0.00177	0.0000859	0.0000561	0.0000272	0.0222	0.0000534	0.0000162	0.000267	0.00168
2040 Aug	27.7	0.00862	0.00414	0.00054	5.63	0.0351	3.98	0.000054	0.00292	0.000277	0.0054	0.00928	0.0000108	4.37	0.00000303	0.000054	0.000079	0.000281	0.00797	0.00000267	0.957	0.00054	1.47	0.000881	0.0000281	0.892	0.000689	0.00176	0.0000849	0.0000567	0.0000275	0.0223	0.000054	0.0000165	0.00027	0.0017
2040 Sep	27.1	0.00836	0.00401	0.000535	5.49	0.0343	3.88	0.0000535	0.003	0.000272	0.00535	0.00901	0.0000107	4.27	0.00000298	0.0000535	0.0000767	0.000278	0.00825	0.00000																



Appendix C13: A43 Lake																																				
Constituents	Total Dissolved Solids	Ammonia	Nitrate	Nitrite	Chloride	Fluoride	Sulphate	Silver	Aluminum	Arsenic	Boron	Barium	Beryllium	Calcium	Cadmium	Cobalt	Chromium	Copper	Iron	Mercury	Potassium	Lithium	Magnesium	Manganese	Molybdenum	Sodium	Nickel	Phosphorus	Lead	Antimony	Selenium	Strontium	Thallium	Uranium	Vanadium	Zinc
2048 May	26.8	0.00807	0.00394	0.000536	5.39	0.0341	3.85	0.00000536	0.00318	0.00027	0.00536	0.00884	0.0000107	4.22	0.00000315	0.0000536	0.0000768	0.000283	0.00839	0.00000268	0.921	0.000536	1.41	0.000915	0.0000282	0.858	0.000656	0.00178	0.00011	0.0000574	0.0000275	0.0215	0.00000536	0.0000165	0.000268	0.00172
2048 Jun	26.9	0.00843	0.00396	0.000525	5.39	0.0341	3.88	0.00000525	0.00285	0.000268	0.00525	0.00896	0.0000105	4.23	0.00000299	0.0000525	0.0000753	0.000285	0.0076	0.00000263	0.927	0.000525	1.42	0.000819	0.0000274	0.866	0.000666	0.00178	0.0000903	0.0000555	0.0000268	0.0215	0.0000525	0.000016	0.000263	0.00167
2048 Jul	27.3	0.00858	0.00405	0.000531	5.5	0.0346	3.93	0.00000531	0.00283	0.000272	0.00531	0.00913	0.0000106	4.3	0.00000301	0.0000531	0.000077	0.000277	0.00765	0.00000266	0.942	0.000531	1.44	0.000835	0.0000276	0.88	0.00068	0.00181	0.0000863	0.0000559	0.0000271	0.0219	0.00000531	0.0000162	0.000266	0.00168
2048 Aug	27.3	0.00843	0.00403	0.000537	5.5	0.0346	3.92	0.00000537	0.00295	0.000273	0.00537	0.00911	0.0000107	4.3	0.00000301	0.0000537	0.0000775	0.000279	0.00799	0.00000268	0.941	0.000537	1.44	0.000888	0.000028	0.879	0.000681	0.0018	0.0000847	0.0000563	0.0000273	0.0219	0.00000537	0.0000164	0.000268	0.00169
2048 Sep	26.6	0.00816	0.0039	0.000532	5.36	0.0338	3.82	0.00000532	0.00303	0.000268	0.00532	0.00885	0.0000106	4.2	0.00000296	0.0000532	0.0000757	0.000276	0.00829	0.00000266	0.916	0.000532	1.4	0.000909	0.0000281	0.856	0.000654	0.00173	0.0000801	0.0000557	0.0000272	0.0213	0.00000532	0.0000164	0.000266	0.00167
2048 Oct	26.4	0.00802	0.00387	0.000529	5.32	0.0336	3.8	0.00000529	0.00312	0.000266	0.00529	0.00873	0.0000106	4.17	0.00000305	0.0000529	0.0000753	0.000278	0.00835	0.00000265	0.907	0.000529	1.39	0.000911	0.0000279	0.847	0.000645	0.0017	0.0000969	0.0000562	0.0000272	0.0212	0.00000529	0.0000163	0.000265	0.00169
2048 Nov	26.3	0.00793	0.00387	0.000528	5.31	0.0336	3.79	0.00000528	0.00316	0.000266	0.00528	0.0087	0.0000106	4.16	0.00000311	0.0000528	0.0000757	0.000279	0.00834	0.00000264	0.906	0.000528	1.39	0.000911	0.0000278	0.844	0.000645	0.00168	0.000108	0.0000566	0.0000272	0.0212	0.00000528	0.0000163	0.000264	0.0017
2048 Dec	26.3	0.00793	0.00387	0.000528	5.31	0.0336	3.79	0.00000528	0.00316	0.000266	0.00528	0.0087	0.0000106	4.16	0.00000311	0.0000528	0.0000757	0.000279	0.00834	0.00000264	0.906	0.000528	1.39	0.000911	0.0000278	0.844	0.000645	0.00169	0.000108	0.0000566	0.0000272	0.0212	0.00000528	0.0000163	0.000264	0.0017
2049 Jan	26.3	0.00793	0.00387	0.000528	5.31	0.0336	3.79	0.00000528	0.00316	0.000266	0.00528	0.0087	0.0000106	4.16	0.00000311	0.0000528	0.0000757	0.000279	0.00834	0.00000264	0.906	0.000528	1.39	0.000911	0.0000278	0.844	0.000645	0.00169	0.000108	0.0000566	0.0000272	0.0212	0.00000528	0.0000163	0.000264	0.0017
2049 Feb	26.3	0.00793	0.00388	0.000528	5.31	0.0336	3.79	0.00000528	0.00316	0.000266	0.00528	0.0087	0.0000106	4.16	0.00000311	0.0000528	0.0000757	0.000279	0.00834	0.00000264	0.906	0.000528	1.39	0.000911	0.0000278	0.844	0.000645	0.00169	0.000108	0.0000566	0.0000272	0.0212	0.00000528	0.0000163	0.000264	0.0017
2049 Mar	26.3	0.00793	0.00388	0.000528	5.31	0.0336	3.79	0.00000528	0.00316	0.000266	0.00528	0.0087	0.0000106	4.16	0.00000311	0.0000528	0.0000757	0.000279	0.00834	0.00000264	0.906	0.000528	1.39	0.000911	0.0000278	0.844	0.000645	0.00169	0.000108	0.0000566	0.0000272	0.0212	0.00000528	0.0000163	0.000264	0.0017
2049 Apr	26.4	0.00794	0.00388	0.000529	5.31	0.0336	3.8	0.00000529	0.00316	0.000267	0.00529	0.00871	0.0000106	4.17	0.00000311	0.0000529	0.0000758	0.00028	0.00835	0.00000265	0.908	0.000529	1.39	0.000912	0.0000279	0.846	0.000646	0.00173	0.000108	0.0000567	0.0000272	0.0212	0.00000529	0.0000163	0.000265	0.0017
2049 May	26.6	0.008	0.0039	0.000534	5.34	0.0339	3.83	0.00000534	0.00318	0.000269	0.00534	0.00878	0.0000107	4.19	0.00000313	0.0000534	0.0000763	0.000282	0.0084	0.00000267	0.914	0.000534	1.4	0.000918	0.0000281	0.852	0.000652	0.00179	0.000108	0.0000571	0.0000274	0.0213	0.00000534	0.0000164	0.000267	0.00171
2049 Jun	26.7	0.00837	0.00392	0.000524	5.34	0.0339	3.85	0.00000524	0.00285	0.000267	0.00524	0.0089	0.0000105	4.2	0.00000298	0.0000524	0.0000747	0.000273	0.0076	0.00000262	0.92	0.000524	1.41	0.000821	0.0000273	0.86	0.000663	0.00177	0.0000892	0.0000553	0.0000268	0.0213	0.00000524	0.000016	0.000262	0.00166
2049 Jul	27.2	0.00856	0.00402	0.000531	5.47	0.0345	3.92	0.00000531	0.00284	0.000271	0.00531	0.00909	0.0000106	4.28	0.00000299	0.0000531	0.0000765	0.000276	0.00766	0.00000265	0.939	0.000531	1.44	0.000835	0.0000276	0.877	0.000678	0.00181	0.0000859	0.0000558	0.0000271	0.0218	0.00000531	0.0000162	0.000265	0.00167
2049 Aug	27.2	0.00838	0.004	0.000536	5.46	0.0345	3.91	0.00000536	0.00296	0.00027																										



Constituents	Total Dissolved Solids	Ammonia	Nitrate	Nitrite	Chloride	Fluoride	Sulphate	Silver	Aluminum	Arsenic	Boron	Barium	Beryllium	Calcium	Cadmium	Cobalt	Chromium	Copper	Iron	Mercury	Potassium	Lithium	Magnesium	Manganese	Molybdenum	Sodium	Nickel	Phosphorus	Lead	Antimony	Selenium	Strontium	Thallium	Uranium	Vanadium	Zinc
2057 Apr	26.2	0.00783	0.00383	0.000529	5.24	0.0335	3.78	0.00000529	0.0032	0.000265	0.00529	0.00864	0.0000106	4.13	0.00000312	0.000529	0.0000753	0.00028	0.00839	0.00000265	0.9	0.000529	1.38	0.000924	0.00000279	0.84	0.000645	0.00178	0.00011	0.0000568	0.00000272	0.021	0.00000529	0.0000163	0.000265	0.0017
2057 May	26.4	0.00789	0.00385	0.000533	5.26	0.0337	3.81	0.00000533	0.00322	0.000267	0.00533	0.0087	0.0000107	4.16	0.00000314	0.000533	0.0000757	0.000282	0.00844	0.00000267	0.907	0.000533	1.39	0.000929	0.00000281	0.847	0.00065	0.00186	0.00011	0.0000572	0.00000274	0.0211	0.00000533	0.0000165	0.000267	0.00172
2057 Jun	26.5	0.00828	0.00387	0.000523	5.28	0.0337	3.83	0.00000523	0.00287	0.000265	0.00523	0.00883	0.0000105	4.17	0.00000298	0.000523	0.0000742	0.000273	0.00762	0.00000261	0.914	0.000523	1.4	0.000828	0.0000273	0.855	0.000661	0.00183	0.0000901	0.0000553	0.00000267	0.0212	0.00000523	0.000016	0.000261	0.00166
2057 Jul	27.1	0.00847	0.00397	0.00053	5.41	0.0344	3.9	0.0000053	0.00286	0.00027	0.0053	0.00903	0.0000106	4.26	0.000003	0.00053	0.0000761	0.000276	0.00768	0.00000265	0.933	0.00053	1.43	0.000844	0.0000276	0.873	0.000677	0.00187	0.000087	0.0000559	0.00000271	0.0216	0.0000053	0.0000162	0.000265	0.00168
2057 Aug	27.1	0.00834	0.00397	0.000536	5.41	0.0344	3.9	0.00000536	0.00298	0.000272	0.00536	0.00904	0.0000107	4.27	0.00000302	0.000536	0.0000768	0.000279	0.00802	0.00000268	0.934	0.000536	1.43	0.000898	0.000028	0.873	0.00068	0.00186	0.0000857	0.0000554	0.00000273	0.0216	0.00000536	0.0000165	0.000268	0.00169
2057 Sep	26.4	0.00809	0.00385	0.000532	5.28	0.0337	3.81	0.00000532	0.00306	0.000267	0.00532	0.00878	0.0000106	4.17	0.00000297	0.000532	0.0000746	0.000276	0.00831	0.00000266	0.91	0.000532	1.39	0.000918	0.0000281	0.851	0.000654	0.00179	0.0000811	0.0000557	0.00000273	0.0212	0.00000532	0.0000164	0.000266	0.00167
2057 Oct	26.2	0.00795	0.00382	0.000529	5.25	0.0335	3.78	0.00000529	0.00314	0.000265	0.00529	0.00867	0.0000106	4.14	0.00000306	0.000529	0.0000748	0.000278	0.00837	0.00000265	0.902	0.000529	1.38	0.00092	0.0000279	0.843	0.000645	0.00175	0.0000984	0.0000563	0.00000272	0.021	0.00000529	0.0000163	0.000265	0.00169
2057 Nov	26.2	0.00786	0.00383	0.000529	5.25	0.0335	3.78	0.00000529	0.00319	0.000265	0.00529	0.00864	0.0000106	4.13	0.00000312	0.000529	0.0000753	0.00028	0.00836	0.00000264	0.901	0.000529	1.38	0.00092	0.0000278	0.84	0.000645	0.00174	0.000109	0.0000567	0.00000272	0.021	0.00000529	0.0000163	0.000264	0.0017
2057 Dec	26.2	0.00786	0.00383	0.000529	5.25	0.0335	3.78	0.00000529	0.00319	0.000265	0.00529	0.00864	0.0000106	4.13	0.00000312	0.000529	0.0000753	0.00028	0.00836	0.00000264	0.901	0.000529	1.38	0.00092	0.0000278	0.84	0.000645	0.00174	0.000109	0.0000567	0.00000272	0.021	0.00000529	0.0000163	0.000264	0.0017
2058 Jan	26.2	0.00786	0.00383	0.000529	5.25	0.0335	3.78	0.00000529	0.00319	0.000265	0.00529	0.00864	0.0000106	4.13	0.00000312	0.000529	0.0000753	0.00028	0.00836	0.00000264	0.901	0.000529	1.38	0.00092	0.0000278	0.84	0.000645	0.00174	0.000109	0.0000567	0.00000272	0.021	0.00000529	0.0000163	0.000264	0.0017
2058 Feb	26.2	0.00786	0.00383	0.000529	5.25	0.0335	3.78	0.00000529	0.00319	0.000265	0.00529	0.00864	0.0000106	4.13	0.00000312	0.000529	0.0000753	0.00028	0.00836	0.00000264	0.901	0.000529	1.38	0.00092	0.0000278	0.84	0.000645	0.00174	0.000109	0.0000567	0.00000272	0.021	0.00000529	0.0000163	0.000264	0.0017
2058 Mar	26.2	0.00786	0.00383	0.000529	5.25	0.0335	3.78	0.00000529	0.00319	0.000265	0.00529	0.00864	0.0000106	4.13	0.00000312	0.000529	0.0000753	0.00028	0.00836	0.00000264	0.901	0.000529	1.38	0.00092	0.0000278	0.84	0.000645	0.00174	0.000109	0.0000567	0.00000272	0.021	0.00000529	0.0000163	0.000264	0.0017
2058 Apr	26.2	0.00787	0.00383	0.00053	5.24	0.0335	3.79	0.0000053	0.00319	0.000265	0.0053	0.00866	0.0000106	4.14	0.00000312	0.00053	0.0000753	0.00028	0.00837	0.00000265	0.902	0.00053	1.38	0.00092	0.0000279	0.842	0.000646	0.00179	0.000109	0.0000568	0.00000272	0.021	0.0000053	0.0000163	0.000265	0.0017
2058 May	26.4	0.00793	0.00385	0.000534	5.26	0.0338	3.82	0.00000534	0.00321	0.000267	0.00534	0.00872	0.0000107	4.17	0.00000314	0.000534	0.0000758	0.000282	0.00841	0.00000267	0.909	0.000534	1.39	0.000925	0.0000281	0.848	0.000652	0.00188	0.00011	0.0000572	0.00000274	0.0211	0.00000534	0.0000165	0.000267	0.00172
2058 Jun	26.6	0.00831	0.00388	0.000524	5.28	0.0338	3.84	0.00000524	0.00286	0.000265	0.00524	0.00884	0.0000105	4.17	0.00000298	0.000524	0.0000742	0.000274	0.0076	0.00000262	0.915	0.000524	1.4	0.000826	0.0000273	0.857	0.000662	0.00184	0.00009	0.0000553	0.00000267	0.0212	0.00000524	0.000016	0.000262	0.00166
2058 Jul	27.1	0.00849	0.00397	0.000531	5.4	0.0344	3.91	0.00000531	0.00286	0.00027	0.00531	0.00904	0.0000106	4.26	0.000003	0.000531	0.000076	0.000277	0.00767	0.00000265	0															



Appendix C13: A43 Lake																																					
Constituents		Total Dissolved Solids	Ammonia	Nitrate	Nitrite	Chloride	Fluoride	Sulphate	Silver	Aluminum	Arsenic	Boron	Barium	Beryllium	Calcium	Cadmium	Cobalt	Chromium	Copper	Iron	Mercury	Potassium	Lithium	Magnesium	Manganese	Molybdenum	Sodium	Nickel	Phosphorus	Lead	Antimony	Selenium	Strontium	Thallium	Uranium	Vanadium	Zinc
2066 Mar	25.9	0.0078	0.00375	0.000526	5.15	0.0331	3.74	0.00000526	0.00321	0.000262	0.00526	0.00852	0.00000311	0.0000526	0.0000742	0.000279	0.00837	0.00000263	0.888	0.000526	1.36	0.00092	0.0000276	0.83	0.000635	0.00172	0.000111	0.0000565	0.0000271	0.0207	0.00000526	0.0000162	0.000263	0.0017			
2066 Apr	25.9	0.00781	0.00375	0.000527	5.15	0.0332	3.75	0.00000527	0.00321	0.000262	0.00527	0.00853	0.0000105	4.08	0.00000312	0.0000743	0.000279	0.00837	0.00000263	0.89	0.000527	1.36	0.00092	0.0000277	0.831	0.000637	0.00179	0.000111	0.0000566	0.0000272	0.0207	0.00000527	0.0000162	0.000263	0.0017		
2066 May	26.1	0.00787	0.00377	0.000531	5.16	0.0334	3.78	0.00000531	0.00322	0.000264	0.00531	0.00859	0.0000106	4.11	0.00000314	0.0000531	0.0000747	0.000281	0.00841	0.00000265	0.896	0.000531	1.37	0.000925	0.0000279	0.838	0.000643	0.00189	0.000111	0.000057	0.0000274	0.0208	0.00000531	0.0000164	0.000265	0.00171	
2066 Jun	26.3	0.00825	0.00381	0.00052	5.19	0.0334	3.81	0.0000052	0.00286	0.000262	0.0052	0.00873	0.0000104	4.12	0.00000297	0.000052	0.0000732	0.000272	0.00757	0.0000026	0.904	0.00052	1.38	0.000823	0.000027	0.847	0.000655	0.00185	0.0000908	0.000055	0.0000267	0.0209	0.0000052	0.0000159	0.00026	0.00165	
2066 Jul	26.8	0.00843	0.00391	0.000528	5.31	0.034	3.87	0.00000528	0.00286	0.000267	0.00528	0.00892	0.0000106	4.21	0.00000299	0.0000528	0.0000751	0.000275	0.00764	0.00000264	0.923	0.000528	1.41	0.000841	0.0000273	0.864	0.00067	0.00188	0.0000874	0.0000556	0.000027	0.0213	0.00000528	0.0000161	0.000264	0.00167	
2066 Aug	26.8	0.00828	0.00389	0.000533	5.32	0.0341	3.87	0.00000533	0.00298	0.000269	0.00533	0.00892	0.0000107	4.21	0.000003	0.0000533	0.0000757	0.000278	0.008	0.00000267	0.922	0.000533	1.41	0.000896	0.0000278	0.864	0.000672	0.00187	0.0000858	0.0000561	0.0000273	0.0213	0.00000533	0.0000164	0.000267	0.00168	
2066 Sep	26.1	0.00802	0.00377	0.000528	5.18	0.0333	3.77	0.00000528	0.00306	0.000263	0.00528	0.00865	0.0000106	4.11	0.00000295	0.0000528	0.0000734	0.000274	0.0083	0.00000264	0.897	0.000528	1.37	0.000916	0.0000279	0.84	0.000644	0.00179	0.0000808	0.0000554	0.0000272	0.0208	0.00000528	0.0000163	0.000264	0.00166	
2066 Oct	25.7	0.00785	0.00373	0.000524	5.12	0.0329	3.73	0.00000524	0.00316	0.000261	0.00524	0.00849	0.0000105	4.06	0.00000305	0.0000524	0.0000734	0.000276	0.00838	0.00000262	0.884	0.000524	1.35	0.000917	0.0000276	0.827	0.00063	0.00173	0.000101	0.0000559	0.0000271	0.0206	0.00000524	0.0000162	0.000262	0.00168	
2066 Nov	25.7	0.00775	0.00373	0.000524	5.12	0.0329	3.72	0.00000524	0.00322	0.000261	0.00524	0.00846	0.0000105	4.06	0.00000312	0.0000524	0.0000739	0.000278	0.00837	0.00000262	0.883	0.000524	1.35	0.000917	0.0000275	0.825	0.00063	0.00172	0.000114	0.0000564	0.0000271	0.0206	0.00000524	0.0000162	0.000262	0.00169	
2066 Dec	25.7	0.00775	0.00373	0.000524	5.12	0.0329	3.72	0.00000524	0.00322	0.000261	0.00524	0.00846	0.0000105	4.06	0.00000312	0.0000524	0.0000739	0.000278	0.00837	0.00000262	0.883	0.000524	1.35	0.000917	0.0000275	0.825	0.00063	0.00172	0.000114	0.0000564	0.0000271	0.0206	0.00000524	0.0000162	0.000262	0.00169	
2067 Jan	25.7	0.00775	0.00373	0.000524	5.12	0.0329	3.72	0.00000524	0.00322	0.000261	0.00524	0.00846	0.0000105	4.06	0.00000312	0.0000524	0.0000739	0.000278	0.00837	0.00000262	0.883	0.000524	1.35	0.000917	0.0000275	0.825	0.00063	0.00172	0.000114	0.0000564	0.0000271	0.0206	0.00000524	0.0000162	0.000262	0.00169	
2067 Feb	25.7	0.00775	0.00373	0.000524	5.12	0.0329	3.72	0.00000524	0.00322	0.000261	0.00524	0.00846	0.0000105	4.06	0.00000312	0.0000524	0.0000739	0.000278	0.00837	0.00000262	0.883	0.000524	1.35	0.000917	0.0000275	0.825	0.00063	0.00172	0.000114	0.0000564	0.0000271	0.0206	0.00000524	0.0000162	0.000262	0.00169	
2067 Mar	25.7	0.00775	0.00373	0.000524	5.12	0.0329	3.72	0.00000524	0.00322	0.000261	0.00524	0.00846	0.0000105	4.06	0.00000312	0.0000524	0.0000739	0.000278	0.00837	0.00000262	0.883	0.000524	1.35	0.000918	0.0000275	0.825	0.00063	0.00172	0.000114	0.0000564	0.0000271	0.0206	0.00000524	0.0000162	0.000262	0.00169	
2067 Apr	25.8	0.00776	0.00374	0.000525	5.12	0.033	3.73	0.00000525	0.00322	0.000261	0.00525	0.00847	0.0000105	4.06	0.00000312	0.0000525	0.000074	0.000279	0.00838	0.00000262	0.885	0.000525	1.35	0.000918	0.0000276	0.826	0.000632	0.00179	0.000114	0.0000565	0.0000271	0.0206	0.00000525	0.0000162	0.000262	0.0017	
2067 May	25.9	0.00782	0.00376	0.000529	5.14	0.0333	3.76	0.00000529	0.00323	0.000263	0.00529	0.00853	0.0000106	4.09	0.00000315	0.0000529	0.0000744	0.000281	0.00842	0.00000264	0.891	0.000529	1.36	0.000923	0.0000278	0.833	0.000638	0.00189	0.000114	0.000057	0.0000273	0.0207	0.00000529	0.0000163	0.000264	0.00171	
2067 Jun	26.2	0.00822	0.00379	0.000519	5.16	0.0333	3.79	0.00000519	0.00287	0.000261	0.00519	0.00869	0.0000104	4.11	0.00000298	0.0000519	0.0000729	0.000272	0.00758	0.00000259	0.9	0.000519	1.38	0.000821	0.000027	0.844	0.000651	0.00184	0.0000929	0.000055	0.0000266	0.0208	0.00000519	0.0000159	0.000259	0.00165	
2067 Jul	26.7	0.00841	0.00389	0.000526	5.3	0.034	3.86	0.00000526	0.00287	0.000267	0.00526	0.00889	0.0000105	4.19	0.00000299	0.0000526	0.0000748	0.000275	0.00764	0.00000263	0.92	0.000526	1.41	0.000837	0.0000273	0.861	0.000667	0.00188	0.0000897	0.0000556	0.000027	0.0213	0.00000526	0.0000161	0.000263	0.00167	
2067 Aug	26.7	0.00825	0.00388	0.000532	5.3	0.034	3.86	0.00000532	0.00299	0.000268	0.00532	0.00888	0.0000106	4.2	0.00000301	0.0000532	0.0000755	0.000277	0.00801	0.00000266	0.918	0.000532	1.41	0.000895	0.0000277	0.86	0.000668	0.00186	0.0000878	0.0000556	0.0000272	0.0213	0.00000532	0.0000163	0.000266	0.00168	
2067 Sep	26	0.00799	0.00376	0.000527	5.16	0.0331	3.76	0.00000527	0.00307	0.000262	0.00527	0.00861	0.0000105	4.1	0.00000296	0.0000527	0.0000732	0.000274	0.0083	0.00000263	0.894	0.000527	1.37	0.000915	0.0000278	0.837	0.00064	0.00179	0.0000827	0.0000553	0.0000271	0.0208	0.00000527	0.0000163	0.000263	0.00166	
2067 Oct	25.7	0.00783	0.00371	0.000523	5.1	0.0328	3.71	0.00000523	0.00317	0.00026	0.00523	0.00845	0.0000105	4.05	0.00000305	0.0000523	0.0000732	0.000276	0.00838	0.00000262	0.881	0.000523	1.35	0.000916	0.0000275	0.824	0.000627	0.00173	0.000103	0.0000559	0.0000271	0.0206	0.00000523	0.0000161	0.000262	0.00168	
2067 Nov	25.6	0.00773	0.00372	0.000522	5.11	0.0328	3.71	0.00000522	0.00322	0.00026	0.00522	0.00843	0.0000104																								



Appendix C14: A76 Lake																																				
Constituents	Total Dissolved Solids	Ammonia	Nitrate	Nitrite	Chloride	Fluoride	Sulphate	Silver	Aluminum	Arsenic	Boron	Barium	Beryllium	Calcium	Cadmium	Cobalt	Chromium	Copper	Iron	Mercury	Potassium	Lithium	Magnesium	Manganese	Molybdenum	Sodium	Nickel	Phosphorus	Lead	Antimony	Selenium	Strontium	Thallium	Uranium	Vanadium	Zinc
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Operation (2023 to 2025): Min	32.1	0.0707	0.198	0.00861	6.84	0.0262	6.64	0.0000035	0.0027	0.00091	0.00421	0.00955	0.0000181	5.99	0.00000224	0.0000988	0.000112	0.000277	0.0173	0.00000192	1.04	0.009922	1.49	0.0261	0.000458	8.873	0.00218	0.002	0.0000354	0.000281	0.000491	0.0358	0.00000392	0.000121	0.000482	0.00115
Operation (2023 to 2025): Average	41.5	0.112	0.293	0.0123	9.04	0.0322	9.3	0.00000435	0.00459	0.00253	0.00582	0.0121	0.0000247	7.81	0.00000291	0.00016	0.000163	0.000388	0.0287	0.00000255	1.43	0.00129	1.97	0.0371	0.000968	1.21	0.00393	0.0028	0.0000549	0.000506	0.0000751	0.0502	0.00000619	0.000172	0.000635	0.00145
Operation (2023 to 2025): Max	45.3	0.13	0.35	0.014	10.2	0.0349	10.5	0.00000459	0.00577	0.00345	0.0071	0.0131	0.0000274	8.37	0.00000314	0.000212	0.000208	0.000433	0.036	0.00000296	1.67	0.00149	2.16	0.0402	0.00125	1.54	0.00483	0.00333	0.0000716	0.000702	0.0000864	0.0601	0.00000892	0.000193	0.000702	0.00156
CCME/SSWQO (Receiving Environment)	-	0.58	2.93	0.06	120	0.12	variable	0.00025	0.1	0.025	1.5	-	-	-	variable	-	0.001	variable	0.3	0.000026	-	-	-	variable	0.073	-	variable	0.01	0.001	-	0.001	-	0.0008	0.015	-	variable
Active Closure (2026 to Sept. 2042): Min	20.4	0.0116	0.0491	0.00112	4.28	0.019	2.86	0.00000261	0.00183	0.000249	0.00263	0.0063	0.00000558	3.38	0.00000149	0.0000316	0.0000459	0.000172	0.00713	0.00000132	0.668	0.000509	0.946	0.00536	0.000123	0.571	0.000522	0.00113	0.0000265	0.0000482	0.0000254	0.0201	0.00000262	0.0000264	0.000141	0.000826
Active Closure (2026 to Sept. 2042): Average	24	0.0244	0.0682	0.00236	4.99	0.0207	3.57	0.00000286	0.00233	0.00056	0.00297	0.00678	0.00000789	3.73	0.00000168	0.0000423	0.0000568	0.000195	0.0103	0.00000153	0.731	0.00055	1.05	0.00837	0.000236	0.609	0.000967	0.00136	0.0000394	0.0000776	0.0000301	0.0218	0.00000289	0.0000425	0.000206	0.000909
Active Closure (2026 to Sept. 2042): Max	42.5	0.132	0.293	0.0131	9.05	0.0351	10.4	0.0000046	0.00582	0.00324	0.00539	0.0128	0.0000255	8.29	0.00000309	0.000133	0.00015	0.000436	0.0363	0.00000298	1.36	0.00129	2.11	0.0394	0.00127	1.09	0.00465	0.00334	0.0000715	0.000359	0.000087	0.0482	0.00000485	0.000195	0.000707	0.00155
CCME/SSWQO (Receiving Environment)	-	0.58	2.93	0.06	120	0.12	variable	0.00025	0.1	0.025	1.5	-	-	-	variable	-	0.001	variable	0.3	0.000026	-	-	-	variable	0.073	-	variable	0.01	0.001	-	0.001	-	0.0008	0.015	-	variable
Post Closure (Oct. 2042 to 2070): Min	23.9	0.0113	0.0491	0.00107	4.93	0.019	2.85	0.00000265	0.00207	0.000243	0.00266	0.00631	0.00000565	3.39	0.00000152	0.0000319	0.000046	0.000173	0.00778	0.00000134	0.696	0.000513	0.946	0.0054	0.000122	0.571	0.000509	0.00112	0.0000219	0.0000479	0.0000257	0.0205	0.00000265	0.0000265	0.000142	0.00083
Post Closure (Oct. 2042 to 2070): Average	32.8	0.0477	0.0667	0.00139	7.02	0.024	5.22	0.00000328	0.0061	0.00303	0.00323	0.00796	0.00123	5.16	0.00000255	0.0000568	0.0000897	0.000309	0.0156	0.00000278	1	0.00129	1.2	0.021	0.00301	0.674	0.00163	0.00175	0.0000555	0.000114	0.0000668	0.0315	0.00000338	0.000149	0.000233	0.00112
Post Closure (Oct. 2042 to 2070): Max	44.2	0.0539	0.126	0.00244	9.23	0.0264	6.05	0.0000035	0.00715	0.00504	0.00343	0.0102	0.00153	6.25	0.00000285	0.0000644	0.0000989	0.000348	0.0175	0.00000315	1.19	0.00145	1.5	0.0235	0.000396	0.877	0.0021	0.00204	0.0000827	0.000138	0.000075	0.0403	0.00000365	0.000179	0.000265	0.00124
CCME/SSWQO (Receiving Environment)	-	0.58	2.93	0.06	120	0.12	variable	0.00025	0.1	0.025	1.5	-	-	-	variable	-	0.001	variable	0.3	0.000026	-	-	-	variable	0.073	-	variable	0.01	0.001	-	0.001	-	0.0008	0.015	-	variable
Model Predictions (2023-2070)																																				
2023 Jan	39.8	0.0891	0.249	0.0114	9.07	0.0289	7.07	0.00000415	0.00333	0.00091	0.00605	0.0112	0.0000259	7.01	0.00000291	0.000209	0.00016	0.000336	0.0201	0.00000209	1.49	0.00128	1.66	0.0362	0.000458	1.28	0.0024	0.00223	0.0000514	0.000576	0.0000612	0.0512	0.00000892	0.000133	0.000492	0.00139
2023 Feb	39.9	0.0894	0.251	0.0114	9.08	0.0289	7.1	0.00000415	0.00334	0.000921	0.00608	0.0112	0.000026	7.03	0.00000292	0.000209	0.000161	0.000337	0.0201	0.00000209	1.49	0.00128	1.66	0.0363	0.000462	1.28	0.00242	0.00223	0.0000521	0.000582	0.0000612	0.0514	0.00000892	0.000133	0.000496	0.00139
2023 Mar	39.9	0.0896	0.254	0.0115	9.09	0.0289	7.12	0.00000415	0.00336	0.000934	0.00611	0.0112	0.0000266	7.04	0.00000292	0.00021	0.000163	0.000337	0.0202	0.00000209	1.5	0.00129	1.67	0.0364	0.000466	1.29	0.00243	0.00222	0.000053	0.000589	0.0000612	0.0515	0.00000891	0.000134	0.0005	0.00139
2023 Apr	39.9	0.0898	0.256	0.0115	9.09	0.0289	7.15	0.00000415	0.00338	0.000947	0.00615	0.0112	0.000026	7.04	0.00000293	0.00021	0.000164	0.000337	0.0202	0.00000209	1.5	0.00129	1.67	0.0365	0.00047	1.3	0.00245	0.00223	0.0000538	0.000596	0.0000611	0.0517	0.00000889	0.000135	0.000505	0.00139
2023 May	40.1	0.0903	0.259	0.0116	9.13	0.029	7.21	0.00000418	0.0034	0.000963	0.00621	0.0113	0.0000262	7.08	0.00000294	0.000212	0.000166	0.000338	0.0203	0.000002021	1.51	0.0013	1.67	0.0368	0.000476	1.31	0.00247	0.00225	0.0000547	0.0						



Appendix C14: A76 Lake																																				
Constituents	Total Dissolved Solids	Ammonia	Nitrate	Nitrite	Chloride	Fluoride	Sulphate	Silver	Aluminum	Arsenic	Boron	Barium	Beryllium	Calcium	Cadmium	Cobalt	Chromium	Copper	Iron	Mercury	Potassium	Lithium	Magnesium	Manganese	Molybdenum	Sodium	Nickel	Phosphorus	Lead	Antimony	Selenium	Strontium	Thallium	Uranium	Vanadium	Zinc
2030 Jul	24.5	0.0286	0.0728	0.00271	5.1	0.022	3.87	0.00000295	0.0022	0.000646	0.00308	0.00717	0.0000086	3.9	0.00000172	0.0000453	0.0000611	0.000202	0.0104	0.0000016	0.762	0.000556	1.11	0.00903	0.000267	0.642	0.00112	0.0015	0.0000369	0.0000845	0.000031	0.0225	0.00000298	0.0000467	0.000226	0.000935
2030 Aug	24.9	0.0288	0.0736	0.00273	5.18	0.0223	3.91	0.00000301	0.00228	0.000652	0.00314	0.00727	0.00000874	3.95	0.00000174	0.0000461	0.0000623	0.000205	0.0107	0.00000163	0.773	0.000566	1.13	0.00915	0.00027	0.652	0.00113	0.00152	0.0000369	0.0000855	0.0000314	0.0228	0.0000304	0.0000473	0.000229	0.000951
2030 Sep	23.5	0.0267	0.0691	0.00256	4.9	0.0211	3.67	0.00000293	0.00232	0.00061	0.00305	0.00684	0.00000838	3.74	0.00000166	0.0000442	0.0000588	0.000197	0.0106	0.00000158	0.728	0.000544	1.06	0.00864	0.000253	0.614	0.00105	0.00141	0.0000289	0.0000807	0.0000301	0.0216	0.0000296	0.0000447	0.000219	0.000917
2030 Oct	23	0.0259	0.0675	0.00249	4.78	0.0206	3.58	0.0000029	0.00239	0.000592	0.00301	0.00663	0.00000823	3.65	0.00000168	0.0000434	0.0000575	0.000196	0.0106	0.00000156	0.709	0.000536	1.03	0.00846	0.000246	0.597	0.00102	0.00136	0.0000355	0.0000793	0.0000298	0.0211	0.0000292	0.0000437	0.000215	0.000917
2030 Nov	22.8	0.0256	0.067	0.00247	4.75	0.0204	3.55	0.00000289	0.00242	0.000587	0.003	0.00657	0.00000819	3.62	0.00000171	0.0000432	0.0000573	0.000196	0.0106	0.00000155	0.703	0.000534	1.02	0.00841	0.000245	0.591	0.00101	0.00134	0.0000408	0.0000791	0.0000297	0.021	0.00000291	0.0000434	0.000214	0.000921
2030 Dec	22.8	0.0256	0.067	0.00247	4.75	0.0204	3.55	0.00000289	0.00242	0.000587	0.003	0.00656	0.00000819	3.62	0.00000171	0.0000432	0.0000573	0.000196	0.0106	0.00000155	0.703	0.000534	1.02	0.00841	0.000244	0.591	0.00101	0.00134	0.0000408	0.0000791	0.0000297	0.021	0.00000291	0.0000434	0.000214	0.000921
2031 Jan	22.8	0.0256	0.067	0.00247	4.74	0.0204	3.55	0.00000289	0.00242	0.000587	0.003	0.00656	0.00000819	3.62	0.00000171	0.0000432	0.0000573	0.000196	0.0106	0.00000155	0.703	0.000534	1.02	0.00841	0.000244	0.591	0.00101	0.00134	0.0000409	0.0000791	0.0000297	0.021	0.00000291	0.0000434	0.000214	0.000921
2031 Feb	22.8	0.0256	0.067	0.00247	4.75	0.0204	3.55	0.00000289	0.00242	0.000587	0.003	0.00656	0.00000819	3.62	0.00000171	0.0000432	0.0000573	0.000196	0.0106	0.00000156	0.703	0.000534	1.02	0.00841	0.000244	0.591	0.00101	0.00134	0.0000409	0.0000791	0.0000297	0.021	0.00000291	0.0000434	0.000214	0.000921
2031 Mar	22.9	0.0257	0.0672	0.00248	4.76	0.0205	3.56	0.0000029	0.00243	0.000589	0.00301	0.00658	0.00000821	3.63	0.00000171	0.0000433	0.0000575	0.000197	0.0106	0.00000156	0.705	0.000535	1.03	0.00843	0.000245	0.593	0.00101	0.00135	0.0000411	0.0000793	0.0000297	0.021	0.00000292	0.0000435	0.000215	0.000924
2031 Apr	23.1	0.0259	0.0678	0.0025	4.8	0.0207	3.59	0.00000293	0.00246	0.000594	0.00304	0.00664	0.00000829	3.67	0.00000173	0.0000438	0.000058	0.000199	0.0107	0.00000158	0.712	0.000541	1.04	0.00851	0.000247	0.599	0.00102	0.00136	0.0000418	0.0000793	0.0000297	0.021	0.00000295	0.0000439	0.000217	0.000934
2031 Jun	23.4	0.0248	0.0657	0.00235	4.82	0.0207	3.56	0.00000283	0.00219	0.000559	0.00294	0.00672	0.0000079	3.65	0.00000168	0.0000419	0.0000563	0.000193	0.00971	0.00000152	0.718	0.000529	1.04	0.00808	0.000234	0.605	0.000978	0.00136	0.0000425	0.0000762	0.0000291	0.0212	0.00000286	0.0000418	0.000206	0.000906
2031 Jul	24.8	0.0258	0.0692	0.00244	5.14	0.0217	3.73	0.0000029	0.00213	0.000579	0.00301	0.00713	0.00000809	3.86	0.00000168	0.0000431	0.0000589	0.000197	0.00982	0.00000156	0.761	0.000552	1.1	0.00843	0.000243	0.639	0.00102	0.00146	0.0000358	0.0000784	0.0000301	0.0224	0.00000292	0.0000434	0.000211	0.000917
2031 Aug	25.1	0.026	0.07	0.00246	5.21	0.022	3.77	0.00000296	0.00221	0.000584	0.00308	0.00723	0.00000823	3.91	0.0000017	0.0000438	0.0000601	0.000201	0.0101	0.00000159	0.771	0.000562	1.12	0.00855	0.000245	0.648	0.00103	0.00148	0.0000339	0.0000793	0.0000306	0.0227	0.00000289	0.0000439	0.000215	0.000933
2031 Sep	23.7	0.0241	0.0658	0.00231	4.93	0.0208	3.55	0.00000289	0.00226	0.000547	0.00299	0.00681	0.00000791	3.7	0.00000163	0.0000421	0.0000568	0.000193	0.0101	0.00000154	0.728	0.00054	1.05	0.0081	0.000231	0.611	0.000962	0.00138	0.0000281	0.0000751	0.0000294	0.0215	0.00000291	0.0000416	0.000206	0.000901
2031 Oct	23.2	0.0234	0.0643	0.00225	4.81	0.0203	3.46	0.00000286	0.00233	0.000532	0.00296	0.0066	0.00000778	3.61	0.00000165	0.0000414	0.0000556	0.000192	0.0101	0.00000152	0.708	0.000532	1.02	0.00793	0.000225	0.594	0.000929	0.00132	0.0000347	0.0000739	0.0000291	0.021	0.00000288	0.0000407	0.000203	0.000901
2031 Nov	23	0.0231	0.0639	0.00223	4.78	0.0202	3.43	0.00000285	0.00236	0.000528	0.00295	0.00653	0.00000774	3.59	0.00000167	0.0000413	0.0000554	0.000192	0.0101	0.00000152	0.703	0.00053	1.01	0.00788	0.00022323</											



Constituents	Total Dissolved Solids	Ammonia	Nitrate	Nitrite	Chloride	Fluoride	Sulphate	Silver	Aluminum	Arsenic	Boron	Barium	Beryllium	Calcium	Cadmium	Cobalt	Chromium	Copper	Iron	Mercury	Potassium	Lithium	Magnesium	Manganese	Molybdenum	Sodium	Nickel	Phosphorus	Lead	Antimony	Selenium	Strontium	Thallium	Uranium	Vanadium	Zinc
2039 Jun	24.1	0.0134	0.0513	0.00127	4.95	0.0196	3.01	0.00000264	0.00192	0.000287	0.00267	0.00653	0.00000587	3.47	0.00000156	0.0000329	0.0000472	0.000174	0.00743	0.000000135	0.713	0.000511	0.982	0.00567	0.000136	0.59	0.000589	0.0012	0.0000417	0.00000515	0.0000258	0.0208	0.00000265	0.0000283	0.000149	0.000836
2039 Jul	25.6	0.0142	0.0544	0.00132	5.26	0.0206	3.17	0.00000271	0.00186	0.0003	0.00274	0.00694	0.00000602	3.66	0.00000155	0.0000339	0.0000496	0.000179	0.00754	0.000000138	0.755	0.000534	1.04	0.00597	0.000143	0.624	0.00062	0.00129	0.0000348	0.00000532	0.0000268	0.022	0.00000272	0.0000295	0.000153	0.000846
2039 Aug	25.9	0.0143	0.0552	0.00134	5.35	0.0209	3.21	0.00000278	0.00194	0.000304	0.00281	0.00705	0.00000616	3.72	0.00000157	0.0000346	0.0000509	0.000182	0.00782	0.000000142	0.766	0.000544	1.06	0.00608	0.000145	0.634	0.000631	0.00131	0.0000328	0.0000054	0.0000273	0.0223	0.00000278	0.0000301	0.000156	0.000863
2039 Sep	24.4	0.0133	0.0519	0.00127	5.05	0.0197	3.01	0.00000271	0.00201	0.000287	0.00274	0.00661	0.00000597	3.52	0.0000015	0.0000335	0.0000482	0.000175	0.00794	0.000000138	0.721	0.000522	0.99	0.00579	0.000137	0.596	0.000587	0.00122	0.0000265	0.00000515	0.0000263	0.0211	0.00000271	0.0000287	0.000152	0.000834
2039 Oct	23.8	0.0128	0.0508	0.00124	4.92	0.0192	2.93	0.00000268	0.0021	0.000279	0.00271	0.00639	0.0000059	3.43	0.00000154	0.0000331	0.0000472	0.000175	0.00805	0.000000137	0.7	0.000514	0.961	0.00569	0.000134	0.578	0.000565	0.00116	0.0000355	0.0000051	0.0000259	0.0206	0.00000269	0.0000281	0.00015	0.000838
2039 Nov	23.6	0.0127	0.0505	0.00123	4.89	0.0191	2.91	0.00000267	0.00214	0.000277	0.0027	0.00633	0.00000588	3.4	0.00000157	0.000033	0.0000471	0.000175	0.00808	0.000000136	0.695	0.000512	0.952	0.00567	0.000133	0.573	0.000559	0.00114	0.0000421	0.00000511	0.0000259	0.0204	0.00000268	0.000028	0.000149	0.000845
2039 Dec	23.6	0.0127	0.0505	0.00123	4.88	0.0191	2.91	0.00000267	0.00214	0.000277	0.0027	0.00633	0.00000588	3.4	0.00000157	0.000033	0.0000471	0.000175	0.00808	0.000000136	0.694	0.000512	0.952	0.00567	0.000133	0.573	0.000558	0.00114	0.0000422	0.00000511	0.0000259	0.0204	0.00000268	0.000028	0.000149	0.000845
2040 Jan	23.6	0.0127	0.0505	0.00123	4.88	0.0191	2.91	0.00000267	0.00214	0.000277	0.0027	0.00633	0.00000588	3.4	0.00000157	0.000033	0.0000471	0.000175	0.00808	0.000000136	0.694	0.000512	0.952	0.00567	0.000133	0.572	0.000558	0.00114	0.0000423	0.00000511	0.0000259	0.0204	0.00000268	0.000028	0.000149	0.000845
2040 Feb	23.6	0.0127	0.0505	0.00123	4.88	0.0191	2.91	0.00000267	0.00214	0.000277	0.0027	0.00633	0.00000588	3.4	0.00000157	0.000033	0.0000471	0.000175	0.00808	0.000000136	0.694	0.000512	0.952	0.00567	0.000133	0.574	0.000556	0.00115	0.0000425	0.00000513	0.0000259	0.0205	0.00000269	0.0000281	0.00015	0.000848
2040 Mar	23.7	0.0127	0.0505	0.00123	4.89	0.0191	2.91	0.00000267	0.00214	0.000277	0.0027	0.00633	0.00000588	3.4	0.00000157	0.000033	0.0000472	0.000175	0.00808	0.000000136	0.695	0.000512	0.952	0.00567	0.000133	0.573	0.000559	0.00114	0.0000423	0.00000511	0.0000259	0.0204	0.00000268	0.000028	0.000149	0.000846
2040 Apr	23.6	0.0127	0.0506	0.00124	4.9	0.0192	2.92	0.00000268	0.00215	0.000278	0.00271	0.00634	0.0000059	3.41	0.00000158	0.0000331	0.0000473	0.000176	0.00811	0.000000137	0.697	0.000514	0.955	0.00568	0.000133	0.574	0.000556	0.00115	0.0000425	0.00000513	0.0000259	0.0205	0.00000269	0.0000281	0.00015	0.000848
2040 May	23.9	0.0128	0.0511	0.00125	4.94	0.0194	2.95	0.00000271	0.00217	0.000281	0.00274	0.0064	0.00000596	3.45	0.0000016	0.0000334	0.0000478	0.000178	0.00819	0.000000138	0.703	0.000519	0.964	0.00574	0.000135	0.58	0.000566	0.00117	0.0000435	0.00000518	0.0000263	0.0207	0.00000272	0.0000284	0.000151	0.000858
2040 Jun	24.2	0.0128	0.0507	0.00121	4.96	0.0195	2.98	0.00000263	0.0019	0.000272	0.00265	0.00653	0.00000575	3.46	0.00000155	0.0000324	0.0000468	0.000173	0.00732	0.000000134	0.713	0.000511	0.98	0.00556	0.000131	0.59	0.000568	0.00119	0.0000417	0.00000503	0.0000257	0.0208	0.00000263	0.0000276	0.000146	0.000832
2040 Jul	25.7	0.0136	0.0538	0.00127	5.28	0.0205	3.14	0.0000027	0.00185	0.000285	0.00273	0.00694	0.00000592	3.66	0.00000155	0.0000335	0.0000492	0.000178	0.00743	0.000000138	0.756	0.000534	1.04	0.00585	0.000138	0.625	0.000599	0.00128	0.0000352	0.00000519	0.0000267	0.022	0.00000271	0.0000289	0.00015	0.000844
2040 Aug	26	0.0137	0.0545	0.00128	5.37	0.0209	3.18	0.00000277	0.00193	0.000289	0.00279	0.00705	0.00000605	3.72	0.00000157	0.0000342	0.0000504	0.000181	0.0077	0.000000141	0.767	0.000544	1.05	0.00596	0.00014	0.634	0.000609	0.0013	0.0000332	0.00000527	0.0000272	0.0224	0.00000277	0.0000293	0.000153	0.000861
2040 Sep	24.5	0.0127	0.0511	0.00121	5.06	0.0197	2.99	0.0000027	0.00199	0.000272	0.00272	0.00661	0.00000587	3.51	0.0000015	0.000033	0.0000476	0.000174	0.00781	0.000000137	0.721	0.000521	0.988	0.00566	0.000132	0.596										



Appendix C14: A76 Lake																																				
Constituents	Total Dissolved Solids	Ammonia	Nitrate	Nitrite	Chloride	Fluoride	Sulphate	Silver	Aluminum	Arsenic	Boron	Barium	Beryllium	Calcium	Cadmium	Cobalt	Chromium	Copper	Iron	Mercury	Potassium	Lithium	Magnesium	Manganese	Molybdenum	Sodium	Nickel	Phosphorus	Lead	Antimony	Selenium	Strontium	Thallium	Uranium	Vanadium	Zinc
2048 May	34.6	0.0532	0.0736	0.00155	7.4	0.025	5.86	0.00000343	0.00667	0.00489	0.00338	0.00826	0.00148	5.58	0.00000279	0.0000627	0.0000972	0.000342	0.0174	0.00000299	1.06	0.00143	1.3	0.0232	0.000381	0.696	0.00207	0.00188	0.0000709	0.000133	0.0000737	0.0336	0.00000356	0.000168	0.000259	0.00122
2048 Jun	32.4	0.0473	0.0642	0.00137	6.88	0.0244	5.41	0.00000325	0.00548	0.00419	0.0032	0.00805	0.00128	5.18	0.00000241	0.0000567	0.0000885	0.000304	0.0146	0.00000271	1	0.00127	1.26	0.0201	0.000328	0.684	0.00185	0.00183	0.0000309	0.000116	0.0000648	0.0309	0.00000335	0.000145	0.000236	0.0011
2048 Jul	35.9	0.0538	0.0738	0.00155	7.68	0.0263	6	0.00000344	0.00616	0.00475	0.00338	0.00883	0.00147	5.75	0.00000258	0.0000624	0.0000982	0.000334	0.0163	0.00000299	1.11	0.00143	1.37	0.023	0.000375	0.742	0.00208	0.00201	0.0000341	0.00013	0.0000732	0.0345	0.00000357	0.000167	0.000257	0.00116
2048 Aug	35.7	0.0538	0.0736	0.00155	7.65	0.0262	5.98	0.00000349	0.00636	0.00476	0.00343	0.00877	0.00148	5.73	0.00000266	0.0000632	0.0000989	0.000337	0.0167	0.00000303	1.1	0.00144	1.36	0.0231	0.000376	0.736	0.00208	0.00199	0.0000335	0.000132	0.0000737	0.0344	0.00000362	0.000169	0.000261	0.00118
2048 Sep	32.6	0.0492	0.0669	0.00143	6.98	0.0242	5.48	0.00000336	0.00623	0.00436	0.0033	0.00797	0.00137	5.26	0.00000247	0.00006	0.0000911	0.000319	0.0163	0.00000289	1.01	0.00134	1.24	0.0214	0.000347	0.671	0.0019	0.00179	0.0000307	0.000124	0.0000689	0.0315	0.00000349	0.000158	0.000249	0.00113
2048 Oct	32.1	0.0489	0.0662	0.00141	6.87	0.0238	5.42	0.00000333	0.00633	0.00432	0.00328	0.00779	0.00136	5.18	0.00000255	0.0000597	0.0000902	0.00032	0.0163	0.00000288	0.995	0.00133	1.21	0.0212	0.000344	0.656	0.00187	0.00174	0.0000466	0.000124	0.0000687	0.0311	0.00000347	0.000158	0.000248	0.00115
2048 Nov	32.3	0.0495	0.0669	0.00143	6.93	0.024	5.47	0.00000334	0.00644	0.00436	0.00328	0.0078	0.00138	5.22	0.00000265	0.0000601	0.0000915	0.000325	0.0164	0.0000029	1	0.00135	1.22	0.0215	0.000348	0.658	0.00189	0.00174	0.0000626	0.000126	0.0000694	0.0314	0.00000347	0.00016	0.000249	0.00117
2048 Dec	32.7	0.0503	0.0681	0.00145	7.01	0.0242	5.54	0.00000335	0.00654	0.00444	0.00329	0.00788	0.00141	5.28	0.00000269	0.0000607	0.0000927	0.000329	0.0166	0.00000293	1.01	0.00137	1.23	0.0219	0.000354	0.664	0.00192	0.00176	0.0000661	0.000128	0.0000704	0.0318	0.00000349	0.000163	0.000251	0.00119
2049 Jan	33.1	0.0511	0.0692	0.00147	7.1	0.0244	5.6	0.00000337	0.00662	0.00451	0.0033	0.00795	0.00143	5.34	0.00000272	0.0000613	0.0000938	0.000333	0.0167	0.00000296	1.02	0.00138	1.24	0.0222	0.000359	0.669	0.00195	0.00177	0.0000682	0.00013	0.0000714	0.0321	0.00000351	0.000165	0.000253	0.00119
2049 Feb	33.3	0.0517	0.07	0.00148	7.15	0.0245	5.65	0.00000338	0.00668	0.00456	0.00331	0.008	0.00145	5.38	0.00000274	0.0000617	0.0000946	0.000335	0.0169	0.00000298	1.03	0.0014	1.25	0.0225	0.000363	0.673	0.00197	0.00179	0.0000692	0.000131	0.0000721	0.0324	0.00000352	0.000167	0.000255	0.0012
2049 Mar	33.6	0.0522	0.0707	0.0015	7.21	0.0246	5.7	0.00000339	0.00674	0.00461	0.00332	0.00805	0.00147	5.42	0.00000276	0.0000621	0.0000953	0.000337	0.017	0.000003	1.04	0.00141	1.26	0.0227	0.000367	0.676	0.00199	0.0018	0.00007	0.000132	0.0000727	0.0327	0.00000353	0.000169	0.000256	0.0012
2049 Apr	34	0.053	0.0717	0.00152	7.29	0.0248	5.77	0.00000341	0.00681	0.00468	0.00334	0.00813	0.00149	5.48	0.00000279	0.0000628	0.0000964	0.000341	0.0172	0.00000303	1.05	0.00143	1.27	0.0231	0.000372	0.682	0.00202	0.00183	0.0000709	0.000134	0.0000737	0.0331	0.00000355	0.000171	0.000258	0.00121
2049 May	34.5	0.0539	0.0729	0.00154	7.39	0.0252	5.86	0.00000345	0.00692	0.00476	0.00339	0.00825	0.00152	5.57	0.00000283	0.0000632	0.0000979	0.000346	0.0174	0.00000308	1.07	0.00145	1.29	0.0235	0.000379	0.693	0.00205	0.00189	0.0000718	0.000136	0.0000749	0.0336	0.0000036	0.000174	0.000262	0.00123
2049 Jun	32.1	0.0473	0.0629	0.00135	6.82	0.0245	5.37	0.00000326	0.00568	0.00401	0.00321	0.00802	0.0013	5.14	0.00000243	0.0000575	0.0000883	0.000307	0.0145	0.00000279	1	0.00127	1.24	0.02	0.000323	0.68	0.00181	0.00183	0.0000386	0.000118	0.0000653	0.0307	0.00000339	0.00015	0.000239	0.00111
2049 Jul	35.5	0.0535	0.072	0.00151	7.61	0.0264	5.94	0.00000346	0.00635	0.00452	0.00339	0.0088	0.00147	5.69	0.0000026	0.0000632	0.0000977	0.000336	0.0162	0.00000306	1.11	0.00143	1.35	0.0228	0.000367	0.738	0.00203	0.002	0.0000344	0.000132	0.0000734	0.0341	0.00000361	0.000171	0.00026	0.00118
2049 Aug	35.2	0.0532	0.0716	0.00151	7.55	0.0262	5.89	0.00000335	0.00653	0.00451	0.00343	0.00871	0.00148	5.65	0.00000261	0.0000638	0.0000981	0.000338	0.0165	0.00000301	1.1	0.00143	1.34	0.0229	0.000367	0.729	0.00203	0.00197	0.0000337	0.000133	0.0000736	0.0339	0.00000365	0.000173	0.000263	0.00119
2049 Sep	32.4	0.049																																		



Whale Tail Modification Water Balance and Water Quality Model - Technical Report

Constituents	Total Dissolved Solids	Ammonia	Nitrate	Nitrite	Chloride	Fluoride	Sulphate	Silver	Aluminum	Arsenic	Boron	Barium	Beryllium	Calcium	Cadmium	Cobalt	Chromium	Copper	Iron	Mercury	Potassium	Lithium	Magnesium	Manganese	Molybdenum	Sodium	Nickel	Phosphorus	Lead	Antimony	Selenium	Strontium	Thallium	Uranium	Vanadium	Zinc
2057 Apr	32.8	0.052	0.0668	0.0014	7.07	0.024	5.38	0.0000332	0.00655	0.00325	0.00327	0.00784	0.00145	5.24	0.00000274	0.0000586	0.0000941	0.000322	0.0165	0.0000029	1.01	0.00139	1.19	0.0227	0.000312	0.665	0.00173	0.00177	0.0000723	0.000119	0.0000708	0.0321	0.0000343	0.00016	0.00024	0.00116
2057 May	33.4	0.053	0.068	0.00142	7.18	0.0243	5.47	0.0000337	0.00665	0.00331	0.00331	0.00797	0.00148	5.3	0.00000278	0.0000595	0.0000957	0.000328	0.0167	0.00000295	1.02	0.00141	1.21	0.0231	0.000317	0.666	0.00176	0.00178	0.0000733	0.000121	0.0000772	0.0326	0.0000347	0.000163	0.000244	0.00118
2057 Jun	31	0.046	0.0582	0.00124	6.6	0.0236	5	0.0000318	0.00532	0.00277	0.00313	0.00775	0.00124	4.9	0.00000236	0.0000532	0.0000857	0.000287	0.0137	0.00000263	0.958	0.00123	1.17	0.0195	0.000267	0.664	0.00155	0.00177	0.0000382	0.000103	0.000062	0.0296	0.0000326	0.000137	0.000221	0.00106
2057 Jul	34.2	0.0518	0.0665	0.00139	7.34	0.0254	5.5	0.0000335	0.00585	0.00311	0.003	0.00846	0.0014	5.41	0.00000251	0.0000577	0.0000946	0.000312	0.0153	0.00000285	1.05	0.00137	1.28	0.0221	0.000302	0.719	0.00173	0.00192	0.0000344	0.000114	0.0000691	0.0329	0.0000344	0.000154	0.000238	0.00111
2057 Aug	34.3	0.0521	0.0669	0.0014	7.36	0.0254	5.52	0.0000334	0.00601	0.00313	0.00335	0.00846	0.00141	5.43	0.00000253	0.0000584	0.0000959	0.000315	0.0153	0.00000289	1.05	0.00138	1.27	0.0224	0.000304	0.717	0.00174	0.00191	0.0000339	0.000115	0.0000698	0.033	0.0000349	0.000155	0.000241	0.00113
2057 Sep	31.4	0.048	0.0613	0.0013	6.75	0.0233	5.07	0.0000327	0.00582	0.00289	0.00322	0.0077	0.00131	5	0.0000024	0.0000551	0.0000887	0.000297	0.0153	0.00000273	0.962	0.00129	1.16	0.0208	0.000281	0.656	0.0016	0.00172	0.0000309	0.000107	0.0000652	0.0304	0.0000335	0.000144	0.000228	0.00108
2057 Oct	30.9	0.0476	0.0606	0.00129	6.63	0.0229	5	0.0000324	0.00587	0.00286	0.00319	0.00749	0.0013	4.92	0.00000247	0.0000545	0.0000877	0.000297	0.0154	0.0000027	0.942	0.00128	1.14	0.0206	0.000278	0.64	0.00157	0.00166	0.0000465	0.000107	0.0000648	0.0299	0.0000331	0.000142	0.000226	0.00109
2057 Nov	31.1	0.0481	0.0613	0.0013	6.68	0.023	5.04	0.0000323	0.00597	0.00288	0.00319	0.00749	0.00132	4.95	0.00000257	0.0000547	0.0000889	0.000301	0.0155	0.00000271	0.947	0.00129	1.14	0.0209	0.000281	0.641	0.00158	0.00166	0.0000625	0.000108	0.0000654	0.0302	0.0000331	0.000143	0.000226	0.00111
2057 Dec	31.4	0.0489	0.0624	0.00132	6.76	0.0231	5.1	0.0000325	0.00605	0.00293	0.0032	0.00755	0.00134	5	0.0000026	0.0000552	0.00009	0.000305	0.0157	0.00000273	0.957	0.00131	1.15	0.0213	0.000285	0.645	0.00161	0.00167	0.0000662	0.000109	0.0000663	0.0306	0.0000332	0.000146	0.000228	0.00112
2058 Jan	31.8	0.0496	0.0634	0.00133	6.83	0.0233	5.16	0.0000326	0.00613	0.00298	0.00321	0.00761	0.00137	5.06	0.00000263	0.0000556	0.000091	0.000308	0.0158	0.00000275	0.966	0.00133	1.16	0.0216	0.00029	0.65	0.00163	0.00169	0.0000684	0.000111	0.0000672	0.0309	0.0000333	0.000148	0.00023	0.00113
2058 Feb	32	0.0502	0.0641	0.00135	6.89	0.0234	5.2	0.0000326	0.00618	0.00301	0.00322	0.00766	0.00138	5.09	0.00000265	0.0000561	0.0000917	0.00031	0.0159	0.00000277	0.973	0.00134	1.17	0.0219	0.000293	0.653	0.00165	0.0017	0.0000695	0.000112	0.0000678	0.0312	0.0000334	0.00015	0.000231	0.00113
2058 Mar	32.2	0.0507	0.0648	0.00136	6.94	0.0235	5.24	0.0000327	0.00622	0.00304	0.00322	0.0077	0.0014	5.13	0.00000267	0.0000563	0.0000924	0.000312	0.0161	0.00000279	0.979	0.00135	1.17	0.0221	0.000296	0.657	0.00166	0.00171	0.0000704	0.000113	0.0000684	0.0314	0.0000335	0.000151	0.000232	0.00113
2058 Apr	32.6	0.0515	0.0658	0.00138	7.02	0.0237	5.3	0.0000329	0.0063	0.00309	0.00324	0.00778	0.00142	5.19	0.0000027	0.0000569	0.0000935	0.000315	0.0162	0.00000281	0.99	0.00137	1.18	0.0224	0.0003	0.663	0.00169	0.00176	0.0000714	0.000114	0.0000693	0.0318	0.0000337	0.000153	0.000234	0.00114
2058 May	33.2	0.0526	0.067	0.0014	7.13	0.0241	5.4	0.0000334	0.0064	0.00315	0.00329	0.00791	0.00145	5.28	0.00000274	0.0000578	0.000095	0.000321	0.0165	0.00000286	1.01	0.0014	1.2	0.0229	0.000306	0.674	0.00172	0.00182	0.0000724	0.000116	0.0000706	0.0324	0.0000342	0.000156	0.000238	0.00116
2058 Jun	31.3	0.0467	0.059	0.00125	6.67	0.0238	5.04	0.0000319	0.00545	0.0027	0.00314	0.00781	0.00125	4.95	0.00000239	0.0000538	0.0000866	0.000291	0.0139	0.00000267	0.968	0.00124	1.18	0.0199	0.000269	0.667	0.00156	0.00179	0.0000386	0.000105	0.0000631	0.0299	0.0000328	0.00014	0.000223	0.00106
2058 Jul	34.6	0.0527	0.0674	0.0014	7.43	0.0257	5.56	0.0000339	0.00619	0.00304	0.00333	0.00856	0.00142	5.47	0.00000256	0.0000595	0.0000959	0.00032	0.0155	0.00000296	1.07	0.00139	1.28	0.0226	0.000307	0.723	0.00174	0.00194	0.0000349	0.000119	0.0000711	0.0333	0.0000335	0.000163	0.000244	0.00113
2058 Aug	34.3	0.0524	0.067	0.0014	7.39	0.0256	5.53	0.0000343	0.00637	0.00303	0.00337	0.0085																								



Appendix C14: A76 Lake																																							
Constituents	Total Dissolved Solids	Ammonia	Nitrate	Nitrite	Chloride	Fluoride	Sulphate	Silver	Aluminum	Arsenic	Boron	Barium	Beryllium	Calcium	Cadmium	Cobalt	Chromium	Copper	Iron	Mercury	Potassium	Lithium	Magnesium	Manganese	Molybdenum	Sodium	Nickel	Phosphorus	Lead	Antimony	Selenium	Strontium	Thallium	Uranium	Vanadium	Zinc			
2066 Mar	31.6	0.0491	0.06	0.00124	6.81	0.0235	5.03	0.00000327	0.00658	0.00215	0.0032	0.00762	0.00122	4.99	0.00000268	0.0000564	0.0000914	0.000311	0.0157	0.00000287	0.978	0.0013	1.13	0.022	0.000267	0.642	0.00149	0.00168	0.0000718	0.000112	0.0000684	0.0307	0.00000337	0.000156	0.00023	0.00114			
2066 Apr	32	0.0499	0.0611	0.00125	6.89	0.0237	5.1	0.00000329	0.00667	0.00219	0.00323	0.0077	0.00124	5.05	0.00000271	0.0000571	0.0000926	0.000314	0.0159	0.00000287	0.99	0.00132	1.14	0.0224	0.000271	0.649	0.00151	0.00173	0.0000727	0.000113	0.0000694	0.0311	0.00000339	0.000159	0.000233	0.00115			
2066 May	32.6	0.051	0.0623	0.00128	7.01	0.0241	5.2	0.00000334	0.00678	0.00224	0.00327	0.00784	0.00127	5.14	0.00000276	0.000058	0.0000942	0.00032	0.0162	0.00000295	1.01	0.00134	1.16	0.0228	0.000277	0.66	0.00154	0.00181	0.0000737	0.000115	0.0000707	0.0317	0.00000344	0.000162	0.000236	0.00117			
2066 Jun	30.4	0.0442	0.0536	0.00112	6.46	0.0236	4.78	0.00000317	0.00566	0.00188	0.00311	0.00766	0.00107	4.76	0.00000236	0.0000532	0.0000845	0.000285	0.0134	0.00000271	0.956	0.00117	1.13	0.0193	0.000238	0.649	0.00138	0.00175	0.0000378	0.000102	0.0000618	0.0289	0.00000327	0.000141	0.000219	0.00106			
2066 Jul	33.5	0.05	0.0615	0.00126	7.2	0.0254	5.27	0.00000335	0.00632	0.00212	0.00328	0.00838	0.00121	5.26	0.00000252	0.0000581	0.0000936	0.000312	0.015	0.00000297	1.05	0.00131	1.22	0.022	0.000271	0.702	0.00154	0.00189	0.0000345	0.000114	0.0000694	0.0321	0.00000347	0.000161	0.000237	0.00112			
2066 Aug	33.3	0.0498	0.0611	0.00125	7.16	0.0252	5.24	0.00000339	0.00643	0.00211	0.00332	0.00831	0.00121	5.23	0.00000253	0.0000584	0.0000941	0.000313	0.0153	0.00000298	1.04	0.00131	1.21	0.0221	0.00027	0.696	0.00153	0.00186	0.0000339	0.000114	0.0000694	0.0319	0.0000035	0.000161	0.000238	0.00113			
2066 Sep	30.4	0.0456	0.0557	0.00116	6.54	0.0231	4.8	0.00000325	0.00618	0.00194	0.00319	0.00752	0.00111	4.8	0.00000239	0.0000549	0.0000866	0.000293	0.0149	0.0000028	0.951	0.00122	1.1	0.0204	0.000248	0.633	0.0014	0.00167	0.000031	0.000105	0.0000646	0.0293	0.00000335	0.000148	0.000226	0.00107			
2066 Oct	30	0.0455	0.0554	0.00115	6.44	0.0227	4.74	0.00000321	0.00626	0.00192	0.00315	0.00731	0.00111	4.73	0.00000249	0.0000544	0.0000859	0.000295	0.015	0.00000277	0.933	0.00121	1.08	0.0204	0.000247	0.618	0.00138	0.00161	0.0000519	0.000105	0.0000645	0.0289	0.00000331	0.000147	0.000223	0.00109			
2066 Nov	30.3	0.0462	0.0563	0.00117	6.52	0.0229	4.81	0.00000322	0.0064	0.00195	0.00316	0.00735	0.00113	4.79	0.00000262	0.0000548	0.0000877	0.000301	0.0151	0.0000028	0.943	0.00123	1.09	0.0207	0.00025	0.622	0.0014	0.00161	0.0000718	0.000107	0.0000654	0.0293	0.00000332	0.000149	0.000225	0.00112			
2066 Dec	30.7	0.047	0.0573	0.00118	6.61	0.0231	4.87	0.00000323	0.0065	0.00199	0.00317	0.00743	0.00115	4.85	0.00000266	0.0000553	0.0000889	0.000305	0.0153	0.00000283	0.955	0.00125	1.1	0.0211	0.000255	0.627	0.00142	0.00163	0.0000754	0.000109	0.0000664	0.0298	0.00000334	0.000152	0.000226	0.00113			
2067 Jan	31.1	0.0479	0.0584	0.0012	6.69	0.0233	4.93	0.00000325	0.00659	0.00202	0.00318	0.0075	0.00117	4.9	0.00000269	0.0000559	0.0000901	0.000308	0.0155	0.00000285	0.966	0.00127	1.11	0.0215	0.000259	0.633	0.00144	0.00165	0.0000775	0.000111	0.0000673	0.0301	0.00000335	0.000155	0.000228	0.00114			
2067 Feb	31.4	0.0485	0.0591	0.00121	6.76	0.0234	4.98	0.00000326	0.00665	0.00205	0.00319	0.00756	0.00119	4.95	0.00000271	0.0000563	0.0000909	0.000311	0.0156	0.00000288	0.974	0.00128	1.12	0.0218	0.000263	0.637	0.00146	0.00166	0.0000786	0.000112	0.0000681	0.0304	0.00000336	0.000157	0.00023	0.00115			
2067 Mar	31.6	0.049	0.0598	0.00123	6.81	0.0235	5.02	0.00000327	0.00671	0.00207	0.0032	0.00761	0.0012	4.99	0.00000273	0.0000567	0.0000917	0.000313	0.0158	0.0000029	0.981	0.00129	1.12	0.0221	0.000266	0.64	0.00147	0.00167	0.0000793	0.000113	0.0000687	0.0307	0.00000337	0.000158	0.000231	0.00115			
2067 Apr	32	0.0499	0.0608	0.00124	6.9	0.0238	5.09	0.00000329	0.0068	0.00211	0.00322	0.0077	0.00123	5.05	0.00000276	0.0000574	0.0000929	0.000317	0.016	0.00000293	0.994	0.00131	1.14	0.0225	0.00027	0.647	0.0015	0.00173	0.0000801	0.000115	0.0000698	0.0311	0.0000034	0.000161	0.000233	0.00116			
2067 May	32.7	0.0512	0.0623	0.00127	7.04	0.0242	5.21	0.00000335	0.00694	0.00216	0.00328	0.00786	0.00126	5.16	0.00000281	0.0000586	0.0000948	0.000323	0.0163	0.00000299	1.02	0.00135	1.16	0.023	0.000277	0.66	0.00154	0.00181	0.000081	0.000117	0.0000714	0.0318	0.00000346	0.000165	0.000238	0.00118			
2067 Jun	30.2	0.0439	0.053	0.0011	6.43	0.0235	4.75	0.00000316	0.00563	0.0018	0.0031	0.00764	0.00104	4.74	0.00000236	0.0000528	0.0000842	0.000284	0.0133	0.0000027	0.952	0.00116	1.12	0.0192	0.000234	0.647	0.00136	0.00175	0.0000386	0.000101	0.0000615	0.0287	0.00000326	0.00014	0.000218	0.00105			
2067 Jul	33.5	0.0498	0.061	0.00124	7.19	0.0253	5.25	0.00000334	0.00628	0.00203	0.00327	0.00836	0.00118	5.24	0.00000251	0.0000577	0.0000934	0.00031	0.0149	0.00000295	1.05	0.0013	1.22	0.022	0.000267	0.701	0.00152	0.00189	0.0000347	0.000112	0.000069	0.032	0.00000345	0.00016	0.000235	0.00111			
2067 Aug	33.2	0.0496	0.0606	0.00124	7.13	0.025	5.2	0.00000337	0.00638	0.00202	0.0033	0.00827	0.00118	5.21	0.00000252	0.0000578	0.0000939	0.00031	0.0153	0.00000295	1.04	0.0013	1.21	0.022	0.000266	0.693	0.00151	0.00186	0.0000339	0.000112	0.000069	0.0318	0.00000348	0.000159	0.000236	0.00112			
2067 Sep	30.4	0.0456	0.0554	0.00115	6.53	0.023	4.78	0.00000324	0.00616	0.00187	0.00318	0.00751	0.00109	4.79	0.00000239	0.0000545	0.0000866	0.000292	0.0149	0.00000279	0.948	0.00121	1.1	0.0205	0.000245	0.632	0.00139	0.00166	0.000031	0.000104	0.0000644	0.0292	0.00000334	0.000147	0.000224	0.00107			
2067 Oct	29.9	0.0454	0.0549	0.00114	6.42	0.0226	4.72	0.00000321	0.00625	0.00185	0.00315	0.00729	0.00109	4.72	0.00000248	0.0000541	0.0000858	0.000294	0.015	0.00000276	0.93	0.00121	1.07	0.0204	0.000244	0.616	0.00136	0.0016	0.0000516	0.000104	0.0000643	0.0289	0.00000333	0.000146	0.000222	0.00109			
2067 Nov	30.2	0.046	0.0557	0.00115	6.5	0.0228	4.78	0.00000321	0.00639	0.00187	0.00315	0.00734	0.00111	4.77	0.00000261	0.0000545	0.0000875	0.0003	0.0151	0.00000279	0.94	0.00122	1.08	0.0207	0.000247	0.62	0.00138	0.00161	0.0000707	0.000107	0.0000651	0.0292	0.00000331	0.000149	0.000223	0.00112			
2067 Dec	30.6	0.046																																					



Whale Tail Modification Water Balance and Water Quality Model - Technical Report

Appendix C15: DSI																																					
Constituents	Total Dissolved Solids	Ammonia	Nitrate	Nitrite	Chloride	Fluoride	Sulphate	Silver	Aluminum	Arsenic	Boron	Barium	Beryllium	Calcium	Cadmium	Cobalt	Chromium	Copper	Iron	Mercury	Potassium	Lithium	Magnesium	Manganese	Molybdenum	Sodium	Nickel	Phosphorus	Lead	Antimony	Selenium	Strontium	Thallium	Uranium	Vanadium	Zinc	
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Operation (2023 to 2025): Min	22.2	0.0137	0.021	0.00129	2.06	0.0265	3.71	0.0000461	0.00171	0.000274	0.00479	0.00704	0.000109	3.31	0.00000243	0.0000558	0.0000566	0.000256	0.0061	0.00000235	0.772	0.000549	1.14	0.00301	0.0000575	0.711	0.000768	0.00109	0.0000272	0.000075	0.0000276	0.0148	0.0000471	0.0000342	0.000269	0.00141	
Operation (2023 to 2025): Average	27.5	0.0393	0.0887	0.00394	5.17	0.0299	5.09	0.0000483	0.00337	0.000935	0.00524	0.00865	0.0000143	4.71	0.00000274	0.0000806	0.0000889	0.000296	0.0137	0.00000253	0.95	0.000732	1.4	0.0115	0.000315	0.864	0.00158	0.00176	0.0000534	0.00018	0.0000404	0.0261	0.00000528	0.0000619	0.000367	0.00152	
Operation (2023 to 2025): Max	37.8	0.0846	0.23	0.009	8.27	0.0344	7.94	0.0000496	0.00573	0.00221	0.00608	0.0109	0.0000207	6.81	0.00000425	0.0001139	0.000162	0.00041	0.0265	0.00000278	1.34	0.00112	1.83	0.0268	0.0000819	1.17	0.00324	0.0027	0.000288	0.000463	0.000065	0.0444	0.00000633	0.000131	0.000546	0.00185	
CCME/SSWQO (Receiving Environment)	-	0.58	2.93	0.06	120	0.12	variable	0.00025	0.1	0.025	1.5	-	-	-	variable	-	0.001	variable	0.3	0.000026	-	-	-	variable	0.73	-	variable	0.01	0.001	-	0.001	-	0.0008	0.015	-	variable	
Active Closure (2026 to Sept. 2042): Min	18.4	0.00284	0.0025	0.0005	1.58	0.0234	2.57	0.00000466	0.0015	0.000206	0.00467	0.00564	0.00000939	2.91	0.00000237	0.0000475	0.0000495	0.000239	0.005	0.00000234	0.624	0.0005	0.939	0.000575	0.000025	0.596	0.000275	0.001	0.000025	0.0000497	0.000025	0.0126	0.00000467	0.0000137	0.000235	0.00141	
Active Closure (2026 to Sept. 2042): Average	21.8	0.00909	0.00814	0.00063	3.74	0.0281	3.27	0.00000484	0.00298	0.00025	0.00485	0.00705	0.00000984	3.41	0.00000276	0.0000494	0.00006	0.000256	0.00751	0.00000243	0.749	0.000503	1.14	0.00145	0.0000406	0.707	0.000574	0.00129	0.0000826	0.0000545	0.0000259	0.0167	0.00000484	0.0000169	0.000246	0.00154	
Active Closure (2026 to Sept. 2042): Max	29.4	0.0253	0.0391	0.00202	6.2	0.035	4.47	0.000005	0.00591	0.000579	0.00504	0.00996	0.0000119	4.72	0.00000653	0.0000599	0.000103	0.00038	0.014	0.0000594	1.01	0.000594	1.56	0.00536	0.000174	0.927	0.000982	0.0021	0.000738	0.0000872	0.0000324	0.0247	0.000005	0.0000356	0.000305	0.00246	
CCME/SSWQO (Receiving Environment)	-	0.58	2.93	0.06	120	0.12	variable	0.00025	0.1	0.025	1.5	-	-	-	variable	-	0.001	variable	0.3	0.000026	-	-	-	variable	0.73	-	variable	0.01	0.001	-	0.001	-	0.0008	0.015	-	variable	
Post Closure (Oct. 2042 to 2070): Min	19.5	0.00501	0.00324	0.00051	3.12	0.0196	2.78	0.00000279	0.00173	0.000221	0.0028	0.00608	0.0000061	3.2	0.00000166	0.0000331	0.0000467	0.000181	0.00505	0.00000141	0.655	0.000501	0.957	0.000691	0.0000266	0.581	0.000429	0.001	0.0000235	0.0000488	0.000025	0.0162	0.00000279	0.0000157	0.000148	0.000887	
Post Closure (Oct. 2042 to 2070): Average	28	0.0301	0.0395	0.00101	5.69	0.0259	4.36	0.00000399	0.00497	0.00184	0.00396	0.00756	0.000016	4.41	0.00000267	0.0000538	0.000079	0.000388	0.0128	0.00000265	0.891	0.000956	1.17	0.0126	0.000185	0.685	0.00118	0.0015	0.000068	0.000088	0.0000494	0.0252	0.00000405	0.0000926	0.00024	0.00131	
Post Closure (Oct. 2042 to 2070): Max	42.3	0.0507	0.118	0.0023	8.8	0.0332	5.69	0.00000498	0.00672	0.0047	0.00498	0.00988	0.00142	5.99	0.00000515	0.0000623	0.0000951	0.000345	0.0166	0.00000305	1.15	0.00138	1.52	0.0219	0.000371	0.907	0.00198	0.00203	0.000546	0.00013	0.000071	0.0384	0.00000498	0.000167	0.000258	0.00201	
CCME/SSWQO (Receiving Environment)	-	0.58	2.93	0.06	120	0.12	variable	0.00025	0.1	0.025	1.5	-	-	-	variable	-	0.001	variable	0.3	0.000026	-	-	-	variable	0.73	-	variable	0.01	0.001	-	0.001	-	0.0008	0.015	-	variable	
Model Predictions (2023-2070)																																					
2023 Jan	23.6	0.0225	0.041	0.00213	4.04	0.0271	3.71	0.00000487	0.00254	0.000319	0.00516	0.00754	0.0000124	3.82	0.00000256	0.0000737	0.0000664	0.000263	0.00726	0.00000244	0.844	0.000617	1.21	0.006	0.0000899	0.791	0.000768	0.00144	0.0000289	0.000129	0.0000304	0.0203	0.00000559	0.0000316	0.000286	0.00148	
2023 Feb	24.2	0.0249	0.0487	0.00246	4.22	0.0271	3.83	0.00000485	0.00257	0.000342	0.00519	0.00767	0.0000129	3.93	0.00000258	0.0000786	0.00007	0.000266	0.00772	0.00000243	0.867	0.000641	1.23	0.0071	0.000104	0.809	0.000828	0.00147	0.0000299	0.000146	0.0000315	0.0214	0.00000571	0.0000353	0.000294	0.00148	
2023 Mar	26.1	0.0271	0.0507	0.00248	4.58	0.0294	4.16	0.00000485	0.00184	0.000357	0.0052	0.00877	0.0000129	4.27	0.00000258	0.0000789	0.0000704	0.000266	0.00774	0.00000243	0.895	0.000642	1.36	0.00713	0.000105	0.893	0.00102	0.00163	0.00003	0.0000316	0.023	0.00000571	0.000037	0.000295	0.00148		
2023 Apr	22.9	0.0154	0.0304	0.00171	2.41	0.033	4.11	0.00000491	0.00171	0.000313	0.00513	0.00718	0.00000118	3.43	0.00000255	0.0000677	0.0000626	0.00026	0.00667	0.00000246	0.846	0.000587	1.14	0.00454	0.0000074	0.801	0.000879	0.0014	0.0000282	0.00011	0.0000029	0.0169	0.00000543	0.0000287	0.000278	0.00149	
2023 May	24.9	0.0144	0.021	0.00129	4.05	0.0299	3.89	0.00000494	0.00238	0.000274	0.00509	0.0082	0.00000112	3.8	0.00000253	0.0000617	0.0000584	0.000																			



Constituents	Total Dissolved Solids	Ammonia	Nitrate	Nitrite	Chloride	Fluoride	Sulphate	Silver	Aluminum	Arsenic	Boron	Barium	Beryllium	Calcium	Cadmium	Cobalt	Chromium	Copper	Iron	Mercury	Potassium	Lithium	Magnesium	Manganese	Molybdenum	Sodium	Nickel	Phosphorus	Lead	Antimony	Selenium	Strontium	Thallium	Uranium	Vanadium	Zinc	
2030 Jul	18.4	0.00334	0.00475	0.000571	3.74	0.0249	2.59	0.00000493	0.00477	0.000224	0.00494	0.00643	0.00000096	3.06	0.00000248	0.0000499	0.0000891	0.000248	0.0139	0.00000247	0.625	0.000502	1.01	0.00273	0.0000328	0.606	0.000684	0.00102	0.0000254	0.0000511	0.0000252	0.015	0.00000494	0.0000175	0.000249	0.00148	
2030 Aug	19.3	0.00463	0.00826	0.000681	4.03	0.0248	2.73	0.00000484	0.00441	0.000255	0.00485	0.00606	0.0000099	3.19	0.00000244	0.0000497	0.0000501	0.000246	0.0128	0.00000243	0.66	0.000505	0.946	0.00198	0.0000529	0.598	0.000459	0.00104	0.0000258	0.0000529	0.0000255	0.0162	0.00000484	0.0000199	0.000248	0.00146	
2030 Sep	19.9	0.0109	0.00798	0.00067	3.82	0.0249	3.06	0.00000483	0.00354	0.000243	0.00484	0.00597	0.00000987	3.23	0.00000243	0.0000495	0.0000508	0.000246	0.0117	0.00000243	0.649	0.000504	1.02	0.00166	0.0000438	0.624	0.000316	0.00103	0.0000254	0.0000526	0.0000317	0.0168	0.00000483	0.0000177	0.000248	0.00145	
2030 Oct	25.2	0.00378	0.00757	0.000609	5.37	0.0337	3.64	0.00000488	0.0059	0.000283	0.00489	0.00726	0.0000099	3.96	0.00000652	0.0000496	0.000102	0.000379	0.00861	0.00000245	0.852	0.000502	1.29	0.00137	0.0000371	0.738	0.000639	0.00102	0.000737	0.0000847	0.0000253	0.0212	0.00000489	0.000017	0.000248	0.00246	
2030 Nov	18.7	0.0102	0.00989	0.000726	2.96	0.0236	2.82	0.00000476	0.0032	0.000244	0.00477	0.00568	0.00000979	2.94	0.00000241	0.0000492	0.0000508	0.000244	0.000504	0.603	0.00000239	0.63	0.000504	0.985	0.00159	0.0000501	0.603	0.000337	0.00175	0.0000268	0.0000533	0.0000255	0.0139	0.00000476	0.0000156	0.000246	0.00143
2030 Dec	21	0.0126	0.0119	0.00074	3.35	0.026	3.17	0.00000474	0.0024	0.00026	0.00476	0.00686	0.00000978	3.3	0.0000024	0.0000492	0.0000509	0.000243	0.000504	0.727	0.00000238	0.727	0.000504	1.12	0.00163	0.0000517	0.691	0.000544	0.0013	0.0000269	0.0000535	0.0000256	0.0156	0.00000475	0.0000174	0.000246	0.00143
2031 Jan	21	0.0126	0.0119	0.00074	3.35	0.026	3.17	0.00000474	0.0024	0.00026	0.00476	0.00686	0.00000978	3.3	0.0000024	0.0000492	0.0000509	0.000243	0.000504	0.727	0.00000238	0.727	0.000504	1.12	0.00163	0.0000517	0.691	0.000544	0.0013	0.0000269	0.0000535	0.0000256	0.0156	0.00000475	0.0000174	0.000246	0.00143
2031 Feb	20.8	0.0118	0.00859	0.000637	3.27	0.0263	3.15	0.00000485	0.0024	0.000241	0.00486	0.00687	0.00000987	3.28	0.00000244	0.0000495	0.0000505	0.000246	0.00539	0.00000243	0.728	0.000502	1.13	0.00123	0.0000403	0.697	0.000517	0.0013	0.000261	0.000052	0.0000253	0.0153	0.00000485	0.0000159	0.000248	0.00146	
2031 Mar	23.1	0.0139	0.0088	0.000592	3.63	0.0291	3.51	0.0000049	0.00154	0.000247	0.00491	0.00816	0.00000992	3.66	0.00000246	0.0000497	0.0000503	0.000247	0.00526	0.00000246	0.834	0.000502	1.28	0.00103	0.0000352	0.796	0.000724	0.00149	0.0000257	0.0000514	0.0000252	0.0169	0.0000049	0.0000168	0.000248	0.00147	
2031 Apr	20.8	0.00615	0.0025	0.0005	1.58	0.0335	3.73	0.000005	0.0015	0.000235	0.005	0.00667	0.00001	2.98	0.0000025	0.00005	0.00005	0.00025	0.005	0.0000025	0.765	0.0005	1.08	0.000575	0.000025	0.739	0.000685	0.0013	0.000025	0.00005	0.000025	0.0126	0.000005	0.0000155	0.00025	0.0015	
2031 May	23.7	0.00868	0.00317	0.00052	3.67	0.0299	3.63	0.00000498	0.0023	0.000224	0.00498	0.00794	0.00000998	3.54	0.00000249	0.0000499	0.0000501	0.00025	0.00506	0.00000249	0.799	0.0005	1.25	0.000696	0.0000273	0.791	0.000693	0.001	0.0000252	0.0000503	0.0000251	0.0171	0.00000498	0.0000158	0.00025	0.00149	
2031 Jun	28.7	0.0124	0.0132	0.000757	6.05	0.0343	4.1	0.0000047	0.0016	0.000233	0.00471	0.00969	0.00000971	4.51	0.00000239	0.0000498	0.0000767	0.000242	0.00565	0.00000236	0.988	0.000504	1.5	0.00151	0.0000539	0.907	0.00076	0.002	0.0000275	0.0000536	0.0000256	0.0235	0.00000497	0.0000183	0.000244	0.00142	
2031 Jul	18.4	0.00325	0.00465	0.000563	3.74	0.0249	2.59	0.00000493	0.00476	0.000222	0.00494	0.00642	0.00000994	3.06	0.00000247	0.0000498	0.000089	0.000248	0.0139	0.00000247	0.625	0.000502	1.01	0.00271	0.0000332	0.606	0.000681	0.00101	0.0000254	0.0000509	0.0000252	0.015	0.00000493	0.0000174	0.000249	0.00148	
2031 Aug	19.4	0.00459	0.00852	0.000675	4.04	0.0247	2.73	0.00000482	0.00439	0.000252	0.00483	0.00606	0.00000984	3.19	0.00000243	0.0000494	0.0000509	0.000246	0.0127	0.00000242	0.661	0.000505	0.946	0.00199	0.0000527	0.598	0.000456	0.00104	0.0000257	0.0000526	0.0000255	0.0163	0.00000482	0.0000199	0.000247	0.00145	
2031 Sep	20	0.0107	0.00772	0.00065	3.82	0.0249	3.05	0.00000483	0.00354	0.000238	0.00484	0.00596	0.00000983	3.23	0.00000243	0.0000494	0.0000506	0.000245	0.0116	0.00000242	0.649	0.000503	1.02	0.00162	0.000042	0.623	0.000309	0.00103	0.0000253	0.0000521	0.0000316	0.0168	0.00000483	0.0000175	0.000246	0.00145	
2031 Oct	25.2	0.00364	0.00741	0.000596	5.37	0.0337	3.63	0.00000488	0.00589	0.000238	0.00489	0.00726	0.00000988	3.96	0.00000652	0.0000495	0.000102	0.000379	0.00859	0.00000245	0.852	0.000502															



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Constituents	Total Dissolved Solids	Ammonia	Nitrate	Nitrite	Chloride	Fluoride	Sulphate	Silver	Aluminum	Arsenic	Boron	Barium	Beryllium	Calcium	Cadmium	Cobalt	Chromium	Copper	Iron	Mercury	Potassium	Lithium	Magnesium	Manganese	Molybdenum	Sodium	Nickel	Phosphorus	Lead	Antimony	Selenium	Strontium	Thallium	Uranium	Vanadium	Zinc
2039 Jun	28.8	0.0108	0.0112	0.000606	6.07	0.0342	4.02	0.00000467	0.00156	0.000285	0.00468	0.00966	0.00000943	4.48	0.00000237	0.0000476	0.0000755	0.00024	0.00534	0.00000234	0.988	0.000501	1.5	0.00117	0.0000403	0.905	0.000706	0.00197	0.0000274	0.0000502	0.0000251	0.0235	0.0000467	0.0000164	0.000236	0.00141
2039 Jul	18.5	0.00291	0.00432	0.000529	3.75	0.0248	2.57	0.00000492	0.00475	0.000213	0.00492	0.00642	0.00000986	3.06	0.00000247	0.0000494	0.0000886	0.000248	0.00138	0.00000246	0.625	0.000501	1.01	0.00264	0.0000291	0.606	0.000668	0.00101	0.0000253	0.0000504	0.0000251	0.015	0.0000492	0.000017	0.000247	0.00148
2039 Aug	19.4	0.00342	0.00663	0.000566	4.04	0.0247	2.67	0.00000482	0.00439	0.000227	0.00483	0.00603	0.0000097	3.17	0.00000243	0.0000488	0.0000501	0.000245	0.0126	0.00000241	0.659	0.000503	0.94	0.00172	0.0000425	0.596	0.000418	0.00102	0.0000256	0.0000503	0.0000252	0.0162	0.0000483	0.0000185	0.000243	0.00145
2039 Sep	20	0.00984	0.00659	0.000564	3.83	0.0248	3.01	0.00000481	0.00351	0.000216	0.00481	0.00595	0.00000967	3.22	0.00000242	0.0000487	0.0000499	0.000244	0.0114	0.00000241	0.648	0.000502	1.01	0.00143	0.0000343	0.622	0.000278	0.00102	0.0000252	0.0000501	0.0000251	0.0167	0.0000481	0.0000164	0.000242	0.00145
2039 Oct	25.2	0.00309	0.00677	0.000542	5.37	0.0336	3.6	0.00000487	0.00587	0.000266	0.00487	0.00725	0.00000976	3.95	0.0000065	0.000049	0.0000378	0.0000102	0.00000243	0.651	0.000501	1.28	0.00123	0.0000312	0.736	0.000654	0.00101	0.0000735	0.0000803	0.0000251	0.0212	0.0000487	0.0000162	0.000244	0.00245	
2039 Nov	18.8	0.00871	0.00796	0.000583	2.98	0.0234	2.75	0.00000473	0.00317	0.000209	0.00474	0.00565	0.00000953	2.91	0.00000239	0.0000481	0.0000497	0.000242	0.00535	0.00000237	0.628	0.000501	0.977	0.00127	0.0000373	0.6	0.00285	0.00173	0.000027	0.0000501	0.0000251	0.0138	0.0000474	0.0000138	0.000239	0.00143
2039 Dec	21.1	0.011	0.00986	0.000589	3.37	0.0258	3.09	0.00000472	0.00237	0.000223	0.00472	0.00683	0.0000095	3.27	0.00000239	0.0000479	0.0000497	0.000241	0.00538	0.00000236	0.726	0.000502	1.11	0.0013	0.0000382	0.689	0.00049	0.00128	0.0000271	0.0000501	0.0000251	0.0156	0.0000472	0.0000155	0.000238	0.00142
2040 Jan	21.1	0.011	0.00986	0.000589	3.37	0.0258	3.09	0.00000472	0.00237	0.000223	0.00472	0.00683	0.0000095	3.27	0.00000239	0.0000479	0.0000497	0.000241	0.00538	0.00000236	0.726	0.000502	1.11	0.0013	0.0000382	0.689	0.00049	0.00128	0.0000271	0.0000501	0.0000251	0.0156	0.0000472	0.0000155	0.000238	0.00142
2040 Feb	20.9	0.0109	0.00772	0.000555	3.29	0.0262	3.1	0.00000482	0.00238	0.000222	0.00483	0.00685	0.00000969	3.27	0.00000243	0.0000487	0.0000498	0.000244	0.00523	0.00000241	0.727	0.000501	1.12	0.00107	0.0000332	0.695	0.000486	0.00129	0.0000263	0.0000501	0.0000251	0.0153	0.0000482	0.0000149	0.000242	0.00145
2040 Mar	23.1	0.0133	0.00743	0.000524	3.62	0.0292	3.49	0.00000492	0.00152	0.000232	0.00492	0.00817	0.00000986	3.65	0.00000247	0.0000494	0.0000499	0.000248	0.0051	0.00000246	0.835	0.0005	1.28	0.000836	0.0000286	0.798	0.000705	0.00149	0.0000256	0.00005	0.000025	0.0169	0.0000492	0.0000159	0.000247	0.00148
2040 Apr	20.8	0.00616	0.0026	0.000502	1.59	0.0335	3.73	0.000005	0.0015	0.000235	0.005	0.00667	0.00000999	2.98	0.0000025	0.0000501	0.000025	0.00501	0.0000025	0.765	0.0005	1.07	0.000586	0.0000252	0.739	0.000685	0.0013	0.000025	0.00005	0.000025	0.0126	0.0000495	0.0000155	0.00025	0.0015	
2040 May	23.7	0.00855	0.00308	0.000509	3.68	0.0299	3.62	0.00000497	0.00023	0.000221	0.00497	0.00794	0.00000995	3.54	0.00000249	0.0000498	0.00005	0.000249	0.00504	0.00000249	0.799	0.0005	1.25	0.000676	0.0000263	0.79	0.000689	0.001	0.0000253	0.00005	0.000025	0.0171	0.0000497	0.0000157	0.000249	0.00149
2040 Jun	28.8	0.0107	0.0111	0.000598	6.07	0.0342	4.02	0.0000467	0.00156	0.000283	0.00468	0.00966	0.00000941	4.48	0.00000237	0.0000476	0.0000754	0.000239	0.00532	0.00000234	0.988	0.000501	1.5	0.00116	0.0000396	0.905	0.000703	0.00197	0.0000274	0.00005	0.0000251	0.0235	0.0000467	0.0000163	0.000236	0.00141
2040 Jul	18.5	0.00292	0.00441	0.000529	3.75	0.0248	2.57	0.00000491	0.00474	0.000213	0.00492	0.00642	0.00000985	3.06	0.00000246	0.0000494	0.0000885	0.000247	0.0138	0.00000246	0.625	0.000501	1.01	0.00264	0.0000292	0.606	0.000667	0.00101	0.0000254	0.0000501	0.0000251	0.015	0.0000492	0.000017	0.000246	0.00148
2040 Aug	19.4	0.00338	0.00659	0.000562	4.04	0.0247	2.67	0.00000482	0.00439	0.000225	0.00483	0.00603	0.00000969	3.17	0.00000243	0.0000487	0.00005	0.000245	0.0126	0.00000241	0.659	0.000503	0.94	0.00171	0.0000421	0.596	0.000416	0.00102	0.0000256	0.0000502	0.0000252	0.0162	0.0000482	0.0000184	0.000242	0.00145
2040 Sep	20	0.0098	0.00667	0.000561	3.84	0.0248	3.01	0.0000048	0.00351	0.000215	0.00481	0.00595	0.00000965	3.22	0.0000024																					



Constituents	Total Dissolved Solids	Ammonia	Nitrate	Nitrite	Chloride	Fluoride	Sulphate	Silver	Aluminum	Arsenic	Boron	Barium	Beryllium	Calcium	Cadmium	Cobalt	Chromium	Copper	Iron	Mercury	Potassium	Lithium	Magnesium	Manganese	Molybdenum	Sodium	Nickel	Phosphorus	Lead	Antimony	Selenium	Strontium	Thallium	Uranium	Vanadium	Zinc
2048 May	23.9	0.00919	0.00359	0.000516	3.72	0.0299	3.67	0.00000498	0.00237	0.000292	0.00498	0.00796	0.0000326	3.57	0.0000025	0.0000502	0.0000507	0.000519	0.000519	0.00000251	0.804	0.000514	1.25	0.000962	0.0000305	0.792	0.000711	0.00101	0.0000257	0.0000513	0.0000258	0.0173	0.00000498	0.0000178	0.00025	0.0015
2048 Jun	20.4	0.00886	0.0216	0.000746	6.42	0.0331	4.53	0.0000045	0.000262	0.00139	0.00448	0.00956	0.000037	4.79	0.00000247	0.0000518	0.0000823	0.000265	0.00769	0.00000255	1.02	0.000717	1.49	0.00599	0.00011	0.878	0.00104	0.00202	0.0000285	0.0000684	0.0000362	0.0258	0.00000498	0.0000512	0.000246	0.00138
2048 Jul	20.4	0.00886	0.0113	0.000629	4.18	0.0251	2.98	0.0000048	0.00501	0.000773	0.0048	0.0067	0.0000191	3.37	0.00000251	0.0000515	0.0000901	0.00026	0.0143	0.00000256	0.68	0.000615	1.05	0.00506	0.0000683	0.622	0.000844	0.00112	0.0000261	0.0000599	0.000031	0.0171	0.00000482	0.0000351	0.000251	0.00146
2048 Aug	22.7	0.0143	0.0188	0.000741	4.78	0.0253	3.4	0.00000465	0.005	0.00126	0.00464	0.0066	0.0000347	3.72	0.00000252	0.000053	0.0000612	0.00027	0.0139	0.00000262	0.754	0.000716	1.03	0.00635	0.000112	0.626	0.000786	0.00123	0.0000227	0.0000688	0.0000362	0.0199	0.00000468	0.0000523	0.000252	0.00143
2048 Sep	25.5	0.0278	0.0321	0.000927	5.21	0.0247	4.14	0.00000424	0.00484	0.00212	0.00421	0.00683	0.0000364	4.13	0.00000248	0.0000546	0.0000688	0.000281	0.0138	0.00000268	0.81	0.000886	1.11	0.0104	0.000173	0.644	0.00101	0.00136	0.0000276	0.0000839	0.0000489	0.0233	0.0000043	0.000081	0.000249	0.00133
2048 Oct	30	0.0346	0.047	0.00113	6.42	0.0271	4.87	0.00000385	0.00626	0.00307	0.00381	0.00764	0.0000946	4.81	0.00000386	0.0000567	0.0000948	0.000342	0.0139	0.00000277	0.954	0.00108	1.24	0.015	0.000246	0.684	0.0015	0.00151	0.000273	0.00012	0.0000552	0.028	0.00000394	0.00014	0.000248	0.00158
2048 Nov	30.5	0.0441	0.0586	0.00131	6.39	0.024	5.11	0.00000355	0.00604	0.00382	0.0035	0.00751	0.0012	4.91	0.00000263	0.0000588	0.0000861	0.000315	0.0149	0.00000285	0.952	0.00124	1.19	0.0188	0.000306	0.651	0.00168	0.00175	0.0005577	0.000116	0.0000637	0.029	0.0000367	0.00014	0.000249	0.00122
2048 Dec	31.6	0.0467	0.0623	0.00136	6.67	0.0244	5.32	0.0000035	0.00616	0.00405	0.00345	0.00779	0.00128	5.1	0.00000267	0.0000597	0.0000889	0.000322	0.0155	0.00000289	0.988	0.00129	1.22	0.02	0.000324	0.667	0.00179	0.00171	0.0006624	0.000121	0.0000663	0.0302	0.0000363	0.000149	0.000251	0.00121
2049 Jan	32.1	0.0481	0.0643	0.0014	6.8	0.0245	5.42	0.00000349	0.00631	0.00419	0.00343	0.00787	0.00133	5.18	0.0000027	0.0000604	0.0000905	0.000326	0.0159	0.00000293	1	0.00132	1.23	0.0206	0.000334	0.671	0.00184	0.00174	0.0006649	0.000124	0.0000679	0.0309	0.0000362	0.000154	0.000253	0.00122
2049 Feb	32.6	0.0494	0.0663	0.00143	6.93	0.0246	5.51	0.00000347	0.00644	0.00432	0.00341	0.00794	0.00137	5.27	0.00000273	0.0000611	0.0000921	0.00033	0.0162	0.00000295	1.02	0.00135	1.24	0.0213	0.000344	0.674	0.00189	0.00176	0.0006668	0.000126	0.0000695	0.0314	0.000036	0.000159	0.000254	0.00122
2049 Mar	33.2	0.0507	0.0681	0.00146	7.06	0.0248	5.61	0.00000345	0.00653	0.00444	0.00339	0.00806	0.00141	5.35	0.00000275	0.0000617	0.0000935	0.000334	0.0165	0.00000298	1.03	0.00138	1.26	0.0219	0.000354	0.681	0.00194	0.00179	0.0006682	0.000129	0.0000709	0.0321	0.0000359	0.000163	0.000256	0.00122
2049 Apr	28.8	0.0348	0.0448	0.00112	5.07	0.0281	4.97	0.00000402	0.00475	0.00295	0.00398	0.00756	0.000915	4.51	0.00000267	0.0000578	0.0000783	0.000306	0.0125	0.00000282	0.939	0.00107	1.19	0.0143	0.000238	0.704	0.0015	0.00162	0.0000531	0.000101	0.0000548	0.0251	0.0000041	0.00011	0.000255	0.00132
2049 May	23.9	0.00922	0.00361	0.000516	3.72	0.0299	3.67	0.00000498	0.00237	0.000292	0.00498	0.00796	0.0000338	3.57	0.00000251	0.0000502	0.0000508	0.000252	0.0052	0.00000251	0.804	0.000515	1.25	0.000976	0.0000306	0.792	0.000712	0.00101	0.0000257	0.0000514	0.0000258	0.0173	0.00000498	0.000018	0.00025	0.0015
2049 Jun	30.3	0.0207	0.021	0.000735	6.41	0.0331	4.51	0.00000451	0.00266	0.00132	0.00449	0.00956	0.000368	4.78	0.00000247	0.000052	0.0000822	0.000265	0.00762	0.00000258	1.02	0.000715	1.48	0.0059	0.000108	0.877	0.00103	0.00202	0.0000284	0.0000688	0.0000362	0.0257	0.00000454	0.0000521	0.000247	0.00139
2049 Jul	19.8	0.00736	0.00912	0.000597	4.06	0.0251	2.87	0.00000485	0.00499	0.000621	0.00485	0.00663	0.000149	3.29	0.00000251	0.0000513	0.0000907	0.000258	0.0142	0.00000255	0.667	0.000588	1.04	0.00445	0.0000576	0.618	0.0008	0.0011	0.0000259	0.0000578	0.0000296	0.0166	0.00000487	0.0000312	0.000251	0.00147
2049 Aug	22.5	0.014	0.0182	0.000729	4.75	0.0253	3.37	0.00000466	0.00504	0.00119	0.00464	0.00657	0.000342	3.69	0.00000253	0.0000531	0.0000906	0.00027	0.0138	0.00000263	0.752	0.000711	1.02	0.00623	0.000109	0.624	0.000769	0.00122	0.0							



Constituents	Total Dissolved Solids	Ammonia	Nitrate	Nitrite	Chloride	Fluoride	Sulphate	Silver	Aluminum	Arsenic	Boron	Barium	Beryllium	Calcium	Cadmium	Cobalt	Chromium	Copper	Iron	Mercury	Potassium	Lithium	Magnesium	Manganese	Molybdenum	Sodium	Nickel	Phosphorus	Lead	Antimony	Selenium	Strontium	Thallium	Uranium	Vanadium	Zinc
2057 Apr	27.8	0.0331	0.0402	0.00103	4.81	0.0279	4.69	0.00000401	0.00447	0.002	0.00398	0.00735	0.0000854	4.3	0.00000264	0.000055	0.0000758	0.000292	0.0117	0.00000273	0.906	0.00102	1.14	0.0135	0.000193	0.695	0.0013	0.00157	0.0000527	0.0000906	0.0000518	0.024	0.00000407	0.0001	0.000244	0.0013
2057 May	23.9	0.00942	0.00384	0.0000519	3.73	0.0299	3.67	0.00000497	0.000239	0.000283	0.00497	0.00796	0.0000401	3.58	0.00000251	0.0000502	0.0000502	0.0000251	0.000524	0.00000251	0.805	0.000519	1.25	0.00108	0.000031	0.791	0.000712	0.00102	0.0000527	0.0000915	0.000026	0.0174	0.00000497	0.0000185	0.00025	0.00149
2057 Jun	29.9	0.02	0.0192	0.000699	6.34	0.033	4.4	0.0000045	0.00253	0.000956	0.00448	0.0095	0.000342	4.71	0.00000246	0.0000508	0.0000814	0.00026	0.00734	0.00000253	1.01	0.000696	1.47	0.0056	0.0000905	0.875	0.000948	0.00201	0.0000283	0.0000644	0.000035	0.0254	0.00000452	0.0000476	0.000242	0.00138
2057 Jul	19.5	0.00651	0.00771	0.000572	3.99	0.025	2.79	0.00000486	0.00493	0.000446	0.00486	0.00657	0.000123	3.23	0.0000025	0.0000506	0.0000904	0.000255	0.0141	0.00000253	0.655	0.00057	1.03	0.00411	0.0000475	0.614	0.000756	0.00107	0.0000258	0.0000552	0.0000286	0.0162	0.00000487	0.0000277	0.000249	0.00147
2057 Aug	21.9	0.0126	0.0156	0.000683	4.62	0.0251	3.22	0.00000467	0.00489	0.000812	0.00466	0.00656	0.0000295	3.59	0.00000251	0.0000517	0.0000593	0.000263	0.0136	0.00000258	0.731	0.000679	1	0.0562	0.0000888	0.618	0.000763	0.00119	0.0000268	0.0000632	0.0000341	0.0192	0.00000469	0.0000455	0.000248	0.00142
2057 Sep	24.7	0.0263	0.0282	0.000849	5.04	0.0244	3.9	0.00000424	0.0046	0.00138	0.00422	0.00666	0.0005078	3.97	0.00000245	0.0000522	0.0000668	0.00027	0.0133	0.0000026	0.78	0.000844	1.08	0.00966	0.000137	0.637	0.000838	0.00131	0.0000275	0.0000749	0.0000646	0.0224	0.00000427	0.0000713	0.00024	0.00131
2057 Oct	29.1	0.0328	0.0421	0.00103	6.23	0.0267	4.56	0.00000381	0.00595	0.00201	0.00378	0.00743	0.00088	4.61	0.00000389	0.000053	0.0000934	0.000328	0.0131	0.00000263	0.916	0.00102	1.19	0.0142	0.000195	0.675	0.00127	0.00145	0.000287	0.0000995	0.0000518	0.0271	0.00000386	0.000101	0.000234	0.00157
2057 Nov	29.4	0.043	0.0538	0.0012	6.17	0.0231	4.74	0.00000346	0.00563	0.00254	0.00342	0.00724	0.00115	4.68	0.00000256	0.0000541	0.0000839	0.000295	0.0141	0.00000268	0.905	0.00119	1.12	0.0183	0.000248	0.636	0.00141	0.00168	0.0000577	0.000101	0.0000602	0.028	0.0000353	0.000127	0.000229	0.00116
2057 Dec	30.5	0.0454	0.0571	0.00124	6.43	0.0235	4.92	0.0000034	0.00573	0.00269	0.00336	0.00749	0.00122	4.85	0.0000026	0.0000547	0.0000864	0.0003	0.0147	0.00000271	0.936	0.00124	1.15	0.0194	0.000262	0.651	0.00151	0.00164	0.0000625	0.000104	0.0000626	0.0292	0.0000347	0.000134	0.00023	0.00115
2058 Jan	30.9	0.0467	0.059	0.00127	6.56	0.0235	5	0.00000339	0.00585	0.00277	0.00334	0.00756	0.00127	4.92	0.00000262	0.0000552	0.0000888	0.000303	0.015	0.00000273	0.948	0.00126	1.16	0.02	0.00027	0.654	0.00155	0.00166	0.0000652	0.000106	0.000064	0.0297	0.0000346	0.000138	0.000231	0.00115
2058 Feb	31.4	0.048	0.0608	0.0013	6.68	0.0236	5.08	0.00000336	0.00597	0.00286	0.00331	0.00762	0.00131	4.99	0.00000264	0.0000557	0.0000894	0.000307	0.0153	0.00000275	0.959	0.00129	1.16	0.0207	0.000278	0.656	0.00158	0.00168	0.0000671	0.000108	0.0000654	0.0303	0.0000343	0.000142	0.000232	0.00115
2058 Mar	31.9	0.0493	0.0625	0.00133	6.81	0.0237	5.17	0.00000334	0.00604	0.00293	0.00329	0.00773	0.00134	5.07	0.00000266	0.0000561	0.0000907	0.00031	0.0156	0.00000277	0.974	0.00132	1.18	0.0213	0.000285	0.663	0.00163	0.00171	0.0000686	0.00011	0.0000667	0.0309	0.0000341	0.000146	0.000233	0.00115
2058 Apr	27.7	0.0328	0.0397	0.00102	4.78	0.0277	4.65	0.00000399	0.00432	0.00191	0.00396	0.00732	0.000839	4.28	0.00000261	0.000054	0.0000755	0.000288	0.0116	0.00000268	0.896	0.00101	1.14	0.0134	0.000187	0.694	0.00127	0.00156	0.0000522	0.0000877	0.000051	0.0239	0.0000404	0.0000964	0.00024	0.00129
2058 May	23.9	0.00949	0.00394	0.00052	3.74	0.0299	3.67	0.00000496	0.00239	0.000285	0.00496	0.00796	0.0000421	3.58	0.00000251	0.0000502	0.000051	0.000252	0.00526	0.00000251	0.805	0.00052	1.25	0.00111	0.0000313	0.791	0.000713	0.00102	0.000026	0.0000515	0.000026	0.0174	0.00000497	0.0000186	0.00025	0.00149
2058 Jun	30	0.0206	0.0199	0.000709	6.36	0.0329	4.42	0.00000448	0.0026	0.000962	0.00447	0.00949	0.000358	4.72	0.00000246	0.0000501	0.0000817	0.000261	0.00748	0.00000254	1.01	0.000707	1.46	0.00589	0.0000932	0.873	0.000956	0.00201	0.0000285	0.0000652	0.0000356	0.0256	0.00000451	0.0000496	0.000242	0.00138
2058 Jul	19.7	0.00696	0.00826	0.00058	4.02	0.0251	2.82	0.00000486	0.00497	0.000461	0.00485	0.00659	0.000135	3.25	0.0000025	0.0000508	0.0000905	0.000256	0.0141	0.00000254	0.66	0.000579	1.03	0.0043	0.0000501	0.615	0.000765	0.00108	0.0000259	0.0000561	0.0000291	0.0164	0.00000487	0.0000295	0.000	



Appendix C15: DS1

Constituents	Total Dissolved Solids	Ammonia	Nitrate	Nitrite	Chloride	Fluoride	Sulphate	Silver	Aluminum	Arsenic	Boron	Barium	Beryllium	Calcium	Cadmium	Cobalt	Chromium	Copper	Iron	Mercury	Potassium	Lithium	Magnesium	Manganese	Molybdenum	Sodium	Nickel	Phosphorus	Lead	Antimony	Selenium	Strontium	Thallium	Uranium	Vanadium	Zinc
2066 Mar	31.3	0.0478	0.058	0.00121	6.69	0.0237	4.97	0.00000333	0.00639	0.00208	0.00327	0.00764	0.00118	4.94	0.00000268	0.0000562	0.0000899	0.000308	0.0153	0.00000286	0.973	0.00127	1.13	0.0212	0.000258	0.648	0.00146	0.00167	0.00007	0.000109	0.0000668	0.0302	0.00000343	0.000151	0.000231	0.00115
2066 Apr	27.4	0.0321	0.0372	0.000947	4.74	0.0276	4.54	0.00000398	0.00457	0.00139	0.00394	0.00728	0.000743	4.21	0.00000262	0.0000541	0.0000752	0.000288	0.0115	0.00000274	0.897	0.000984	1.11	0.0135	0.000171	0.685	0.00117	0.00155	0.0000533	0.0000875	0.0000513	0.0235	0.00000404	0.000101	0.000239	0.00129
2066 May	23.9	0.00946	0.00384	0.000518	3.74	0.0299	3.67	0.00000496	0.0024	0.000265	0.00496	0.00795	0.0000384	3.58	0.00000251	0.0000502	0.000051	0.000252	0.00525	0.00000251	0.805	0.000519	1.25	0.00111	0.0000307	0.79	0.000709	0.0102	0.0000261	0.0000515	0.000026	0.0174	0.00000497	0.0000188	0.00025	0.00149
2066 Jun	29.8	0.02	0.0186	0.000674	6.31	0.0328	4.35	0.00000448	0.00267	0.000735	0.00446	0.00945	0.000308	4.67	0.00000246	0.0000508	0.0000812	0.00026	0.00736	0.00000256	1.01	0.000689	1.45	0.00578	0.0000853	0.868	0.000909	0.002	0.0000284	0.0000647	0.0000354	0.0253	0.00000451	0.0000504	0.000241	0.00137
2066 Jul	19.6	0.00684	0.00788	0.000569	4.01	0.025	2.8	0.00000485	0.00498	0.000384	0.00484	0.00658	0.000119	3.24	0.0000025	0.0000507	0.0000903	0.000256	0.0141	0.00000254	0.659	0.000574	1.02	0.0043	0.0000475	0.614	0.000749	0.0108	0.0000259	0.0000558	0.000029	0.0163	0.00000486	0.0000297	0.000249	0.00146
2066 Aug	22.1	0.0132	0.0158	0.000671	4.66	0.025	3.22	0.00000463	0.00502	0.00065	0.00462	0.00648	0.000282	3.6	0.00000251	0.0000519	0.00006	0.000264	0.0135	0.00000261	0.739	0.000685	0.994	0.00606	0.0000876	0.616	0.000658	0.0012	0.0000227	0.0000645	0.0000351	0.0193	0.00000466	0.0000501	0.000247	0.00141
2066 Sep	24	0.0244	0.0245	0.000772	4.88	0.0243	3.74	0.00000427	0.0047	0.000924	0.00425	0.00654	0.000466	3.85	0.00000245	0.0000519	0.000065	0.000268	0.0131	0.00000262	0.768	0.000797	1.05	0.00904	0.000117	0.626	0.000723	0.00127	0.0000274	0.0000727	0.0000453	0.0216	0.00000431	0.00007	0.00024	0.00132
2066 Oct	28.3	0.0304	0.0373	0.000923	6.08	0.0269	4.36	0.00000384	0.00621	0.00134	0.0038	0.00731	0.000723	4.47	0.00000402	0.0000528	0.0000927	0.000329	0.0127	0.00000268	0.908	0.000963	1.16	0.0135	0.000169	0.663	0.00112	0.00139	0.00031	0.0000983	0.0000506	0.0262	0.00000391	0.000101	0.000233	0.00161
2066 Nov	28.8	0.0414	0.0495	0.00108	6.05	0.023	4.55	0.00000344	0.00601	0.00173	0.00339	0.00713	0.000989	4.54	0.00000261	0.0000542	0.000083	0.000295	0.0139	0.00000276	0.903	0.00114	1.07	0.0182	0.000222	0.619	0.00125	0.00163	0.0000659	0.0001	0.0000603	0.0273	0.00000353	0.000132	0.000228	0.00117
2066 Dec	29.8	0.0439	0.0527	0.00113	6.31	0.0234	4.72	0.00000339	0.00614	0.00183	0.00333	0.00738	0.00105	4.71	0.00000265	0.0000549	0.0000856	0.0003	0.0144	0.0000028	0.935	0.00118	1.1	0.0194	0.000235	0.634	0.00134	0.0016	0.0000711	0.000104	0.0000628	0.0285	0.00000348	0.00014	0.000229	0.00116
2067 Jan	30.4	0.0453	0.0547	0.00115	6.45	0.0235	4.81	0.00000337	0.0063	0.0019	0.00331	0.00746	0.00109	4.79	0.00000268	0.0000555	0.0000873	0.000304	0.0148	0.00000283	0.95	0.00122	1.11	0.0201	0.000243	0.637	0.00138	0.00162	0.0000774	0.000107	0.0000644	0.0291	0.00000346	0.000145	0.00023	0.00117
2067 Feb	30.8	0.0465	0.0563	0.00118	6.57	0.0236	4.88	0.00000335	0.00643	0.00195	0.00328	0.00753	0.00113	4.86	0.0000027	0.000056	0.0000888	0.000308	0.0151	0.00000286	0.961	0.00124	1.12	0.0207	0.000251	0.64	0.00141	0.00164	0.0000758	0.000109	0.0000659	0.0296	0.00000345	0.000149	0.000231	0.00116
2067 Mar	31.3	0.0478	0.0579	0.0012	6.7	0.0237	4.97	0.00000333	0.00652	0.002	0.00326	0.00763	0.00116	4.94	0.00000272	0.0000565	0.0000902	0.000311	0.0154	0.00000288	0.976	0.00127	1.13	0.0213	0.000257	0.646	0.00145	0.00167	0.0000773	0.000111	0.0000672	0.0302	0.00000343	0.000153	0.000232	0.00116
2067 Apr	27.6	0.0328	0.0381	0.000954	4.83	0.0275	4.56	0.00000395	0.00473	0.00138	0.00391	0.00729	0.000752	4.24	0.00000266	0.0000544	0.0000761	0.00029	0.0117	0.00000276	0.904	0.000996	1.11	0.0139	0.000175	0.682	0.00118	0.00155	0.0000587	0.0000893	0.0000523	0.0239	0.00000402	0.000104	0.00024	0.00129
2067 May	24.9	0.019	0.0102	0.0006	4.1	0.0292	3.83	0.00000478	0.0029	0.000471	0.00478	0.00794	0.000171	3.75	0.00000254	0.0000511	0.0000558	0.000259	0.00646	0.00000256	0.828	0.000609	1.24	0.00351	0.0000576	0.776	0.000799	0.0011	0.0000322	0.0000587	0.000031	0.019	0.0000048	0.0000348	0.000248	0.00146
2067 Jun	29.8	0.0194	0.0184	0.00067	6.3	0.0328	4.34	0.00000447	0.00267	0.000713	0.00445	0.00944	0.000302	4.67	0.00000245	0.0000507	0.0000811	0.000259	0.00734	0.00000255	1.01	0.000687	1.45	0.00577	0.0000842	0.867	0.000944	0.002	0.0000286	0.0000644	0.0000353	0.0252	0.00000445	0.0000297	0.000241	0.00137
2067 Jul	19.6	0.00682	0.00784	0.000567	4.01	0.025	2.8	0.00000485	0.00498	0.000376	0.00484	0.00658	0.000117	3.24	0.0000025	0.0000507	0.0000903	0.000255	0.0141	0.00000254	0.659	0.000573	1.02	0.0043	0.0000471	0.614	0.000747	0.00108	0.0000259	0.0000557	0.000029	0.0163	0.00000486	0.0000296	0.000249	0.00146
2067 Aug	22.1	0.0132	0.0158	0.000668	4.66	0.025	3.22	0.00000463	0.00501	0.000631	0.00461	0.00648	0.000278	3.59	0.0000025	0.0000518	0.00006	0.000264	0.0135	0.0000026	0.738	0.000683	0.993	0.00607	0.0000868	0.615	0.000654	0.00119	0.0000227	0.0000642	0.000035	0.0193	0.00000465	0.0000498	0.000247	0.00141
2067 Sep	24	0.0244	0.0243	0.000767	4.87	0.0243	3.73	0.00000427	0.00469	0.000891	0.00424	0.00654	0.000457	3.84	0.00000245	0.0000518	0.0000649	0.000267	0.0131	0.00000262	0.766	0.000794	1.05	0.00904	0.000116	0.626	0.000716	0.00127	0.0000274	0.0000723	0.0000452	0.0216	0.00000431	0.0000695	0.000239	0.00132
2067 Oct	28.3	0.0301	0.0368	0.000911	6.06	0.0269	4.34	0.00000385	0.00621	0.00128	0.00381	0.0073	0.000704	4.45	0.00000404	0.0000526	0.0000927	0.000328	0.0127	0.00000267	0.905	0.000955	1.16	0.0135	0.000166	0.662	0.00111	0.00139	0.000313	0.0000976	0.0000503	0.0261	0.00000391	0.0000996	0.000232	0.00161
2067 Nov	28.7	0.0413	0.0491	0.00107	6.03	0.023	4.52	0.00000344	0.006	0.00166	0.00338	0.00711	0.000969	4.53	0.00000259	0.000054	0.0000828	0.000293	0.0138	0.00000275	0.9	0.00113	1.07	0.0182	0.0000219	0.618	0.00124	0.00163	0.000065	0.0000994	0.0000601	0.0272	0.00000353	0.000131	0.000227	0.00117
2067 Dec	29.8	0.0437	0.0522	0.00111	6.29	0.0233	4.69	0.00000338	0.00613	0.00176	0.00332	0.00737	0.00103	4.69	0.00000264	0.0000546	0.0000854	0.000299	0.0144	0.00000279	0.932	0.00118	1.1	0.0193	0.000232	0.632	0.00132	0.0016	0.0000701	0.000103	0.0000626	0.0284	0.00000347	0.000139	0.000227	0.00116
2068 Jan	30.3	0.0451	0.0541	0.00114	6.43	0.0234	4.78	0.00000336	0.00628	0.00182	0.0033	0.00744	0.00107	4.77	0.00000267	0.0000552	0.0000871	0.000303	0.0147	0.00000282	0.946	0.00121	1.11	0.02	0.00024	0.636	0.00136	0.00162	0.0000729	0.000106	0.0000642	0.029	0.00000346	0.000144	0.000229	0.00116
2068 Feb	30.7	0.0463	0.0557	0.00116	6.55	0.0235	4.85	0.00000334	0.00641	0.00187	0.00328	0.0075	0.0011	4.84	0.00000269	0.0000557	0.0000886	0.000306	0.015	0.00000285	0.958	0.00123	1.11	0.0207	0.000247	0.638	0.00139	0.00164	0.0000748	0.000108	0.0000656	0.0295	0.00000344	0.000148	0.00023	0.00116
2068 Apr	31.2	0.0475	0.0573	0.00118	6.67	0.0237	4.94	0.00000332	0.0065	0.00192	0.00326	0.00761	0.00114	4.92	0.00000271	0.0000562	0.0000899	0.000309	0.0153	0.00000287	0.972	0.00126	1.12	0.0213	0.000253	0.644	0.00143	0.00166	0.0000763	0.000111	0.0000669	0.0301	0.00000342	0.000152	0.00023	0.00116
2068 May	27.3	0.0316	0.0363	0.000926	4.68	0.0277	4.5	0.00000399	0.00459	0.00128	0.00395	0.00725	0.000706	4.18	0.00000264	0.0000541	0.0000749	0.000288	0.0114	0.00000274	0.896	0.00097	1.11	0.0134	0.000166	0.683	0.00115	0.00154	0.0000567	0.0000871	0.000051	0.0233	0.00000405	0.0001	0.000239	0.0013
2068 Jun	23.9	0.00947	0.00385	0.000517	3.74	0.0299	3.67	0.00000496	0.0024	0.000262	0.00446	0.00795	0.000379	3.58	0.00000251	0.0000502	0.0000811	0.000252	0.00734	0.00000255	1.01	0.000687	1.45	0.00577	0.0000842	0.867	0.000944	0.002	0.0000							



Constituents	Total Dissolved Solids	Ammonia	Nitrate	Nitrite	Chloride	Fluoride	Sulphate	Silver	Aluminum	Arsenic	Boron	Barium	Beryllium	Calcium	Cadmium	Cobalt	Chromium	Copper	Iron	Mercury	Potassium	Lithium	Magnesium	Manganese	Molybdenum	Sodium	Nickel	Phosphorus	Lead	Antimony	Selenium	Strontium	Thallium	Uranium	Vanadium	Zinc			
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L			
Operation (2023 to 2025): Min	22.2	0.0137	0.022	0.00133	2.06	0.027	3.94	0.00000443	0.00172	0.000284	0.0047	0.00704	0.0000109	3.31	0.0000024	0.0000558	0.0000566	0.000258	0.0063	0.00000229	0.804	0.000549	1.14	0.00302	0.0000635	0.747	0.000843	0.00111	0.0000276	0.0000751	0.0000281	0.0148	0.0000458	0.0000258	0.000273	0.00136			
Operation (2023 to 2025): Average	28.7	0.0456	0.106	0.00465	5.47	0.0301	5.46	0.00000478	0.00344	0.00107	0.00528	0.00895	0.0000152	4.97	0.00000273	0.0000871	0.0000948	0.000303	0.015	0.00000254	0.99	0.000779	1.45	0.0137	0.000373	0.894	0.00179	0.00185	0.0000499	0.000207	0.0000433	0.0281	0.00000534	0.0000715	0.000391	0.00151			
Operation (2023 to 2025): Max	39.3	0.0941	0.256	0.01	8.61	0.0344	8.44	0.00000496	0.00568	0.00244	0.00621	0.0113	0.00000219	7.15	0.00000394	0.000149	0.000168	0.000412	0.0287	0.00000281	1.39	0.00119	1.89	0.0298	0.000912	1.23	0.00354	0.00276	0.000229	0.000508	0.0000697	0.0472	0.00000649	0.000145	0.000581	0.00177			
CMCE/SSWQO (Receiving Environment)	-	0.58	2.93	0.06	120	0.12	variable	0.00025	0.1	0.025	1.5	-	-	-	variable	-	0.001	variable	0.3	0.00026	-	-	-	variable	0.073	-	variable	0.01	0.001	-	0.001	-	0.0008	0.015	-	variable			
Active Closure (2026 to Sept. 2042): Min	18.5	0.00304	0.0025	0.0005	1.58	0.0231	2.58	0.00000447	0.0015	0.000209	0.00448	0.0057	0.00000905	2.95	0.00000229	0.000046	0.0000492	0.000233	0.005	0.00000225	0.627	0.0005	0.944	0.000575	0.000025	0.597	0.00029	0.001	0.000025	0.0000496	0.000025	0.0126	0.00000447	0.0000147	0.000226	0.00135			
Active Closure (2026 to Sept. 2042): Average	21.9	0.00973	0.0108	0.000707	3.79	0.0277	3.28	0.00000475	0.00295	0.000263	0.00476	0.00703	0.00000974	3.42	0.00000272	0.000049	0.0000599	0.000254	0.00765	0.00000239	0.748	0.000505	1.14	0.00176	0.0000493	0.702	0.000593	0.00129	0.0000812	0.0000555	0.000026	0.0169	0.00000475	0.0000181	0.000244	0.00151			
Active Closure (2026 to Sept. 2042): Max	29.2	0.034	0.06	0.00293	6.17	0.0341	4.63	0.00000505	0.00579	0.000797	0.00507	0.00984	0.000013	4.77	0.00000637	0.0000659	0.000102	0.000374	0.014	0.00000259	1	0.000651	1.54	0.00816	0.000264	0.912	0.00128	0.00211	0.000714	0.000109	0.000369	0.0251	0.000005	0.0000487	0.000338	0.00241			
CMCE/SSWQO (Receiving Environment)	-	0.58	2.93	0.06	120	0.12	variable	0.00025	0.1	0.025	1.5	-	-	-	variable	-	0.001	variable	0.3	0.00026	-	-	-	variable	0.073	-	variable	0.01	0.001	-	0.001	-	0.0008	0.015	-	variable			
Post Closure (Oct. 2042 to 2070): Min	20.1	0.00623	0.00366	0.000516	3.21	0.0194	2.83	0.00000273	0.00183	0.000221	0.00275	0.00616	0.00000597	3.21	0.00000164	0.0000327	0.0000466	0.000179	0.00508	0.00000138	0.672	0.000501	0.953	0.000735	0.0000274	0.578	0.000456	0.001	0.0000232	0.0000486	0.0000251	0.0166	0.00000273	0.0000158	0.000146	0.000871			
Post Closure (Oct. 2042 to 2070): Average	28.6	0.0323	0.043	0.00106	5.85	0.0256	4.47	0.0000039	0.00511	0.002	0.00386	0.00761	0.0000783	4.5	0.00000263	0.0000541	0.0000803	0.00029	0.0131	0.00000267	0.904	0.001	1.17	0.0137	0.0002	0.683	0.00124	0.00153	0.0000637	0.0000913	0.0000516	0.026	0.00000396	0.0001	0.000239	0.00128			
Post Closure (Oct. 2042 to 2070): Max	42.6	0.0514	0.12	0.00233	8.88	0.0318	5.72	0.00000497	0.00681	0.00477	0.00496	0.00977	0.00144	6.03	0.00000458	0.0000625	0.0000943	0.000339	0.0168	0.00000306	1.16	0.00139	1.5	0.0222	0.000376	0.886	0.002	0.002	0.000466	0.000132	0.0000718	0.0388	0.00000497	0.00017	0.000258	0.00183			
CMCE/SSWQO (Receiving Environment)	-	0.58	2.93	0.06	120	0.12	variable	0.00025	0.1	0.025	1.5	-	-	-	variable	-	0.001	variable	0.3	0.00026	-	-	-	variable	0.073	-	variable	0.01	0.001	-	0.001	-	0.0008	0.015	-	variable			
Model Predictions (2023-2070)																																							
2023 Jan	24.9	0.028	0.0583	0.0029	4.46	0.0272	3.99	0.00000481	0.0026	0.000368	0.00523	0.00785	0.0000135	4.08	0.00000259	0.000085	0.0000742	0.000269	0.00832	0.00000241	0.897	0.000672	1.25	0.00851	0.00012	0.831	0.000904	0.00151	0.0000308	0.000166	0.000033	0.0229	0.00000587	0.00004	0.000303	0.00147			
2023 Feb	25	0.0284	0.0596	0.00295	4.48	0.0272	4.01	0.00000481	0.00261	0.000373	0.00524	0.00787	0.0000136	4.1	0.00000259	0.0000857	0.0000749	0.000269	0.00839	0.00000241	0.901	0.000676	1.25	0.00868	0.000123	0.835	0.000914	0.00151	0.0000311	0.000169	0.0000331	0.0231	0.00000588	0.0000406	0.000305	0.00147			
2023 Mar	27	0.031	0.0633	0.00304	4.86	0.0294	4.35	0.0000048	0.00193	0.000393	0.00526	0.00893	0.0000137	4.4	0.0000026	0.0000871	0.0000761	0.00027	0.00851	0.00000241	0.992	0.000682	1.38	0.00895	0.000127	0.918	0.00111	0.00167	0.0000315	0.000175	0.0000334	0.0248	0.00000591	0.000043	0.000308	0.00147			
2023 Apr	23.1	0.0162	0.0329	0.00182	2.48	0.0329	4.14	0.0000049	0.00172	0.00032	0.00514	0.00722	0.0000119	3.47	0.00000255	0.0000692	0.0000637	0.00026	0.00682	0.00000245	0.853	0.000595	1.15	0.00488	0.0000783	0.806	0.000896	0.00141	0.0000284	0.000115	0.0000293								



Constituents	Total Dissolved Solids	Ammonia	Nitrate	Nitrite	Chloride	Fluoride	Sulphate	Silver	Aluminum	Arsenic	Boron	Barium	Beryllium	Calcium	Cadmium	Cobalt	Chromium	Copper	Iron	Mercury	Potassium	Lithium	Magnesium	Manganese	Molybdenum	Sodium	Nickel	Phosphorus	Lead	Antimony	Selenium	Strontium	Thallium	Uranium	Vanadium	Zinc
2030 Jul	18.5	0.00383	0.00609	0.000613	3.76	0.0248	2.62	0.0000049	0.00472	0.000232	0.0049	0.00644	0.00000993	3.08	0.00000246	0.0000498	0.0000885	0.000248	0.0138	0.00000245	0.627	0.000503	1.01	0.00285	0.0000374	0.607	0.000693	0.00103	0.0000256	0.0000518	0.0000253	0.0151	0.0000049	0.000018	0.000049	0.00147
2030 Aug	19.5	0.00575	0.0113	0.000776	4.08	0.0247	2.79	0.00000475	0.00431	0.000273	0.00477	0.00611	0.00000475	3.22	0.00000244	0.0000495	0.0000515	0.000244	0.0127	0.00000239	0.665	0.000508	0.954	0.00231	0.0000363	0.6	0.00049	0.00106	0.0000262	0.0000544	0.0000258	0.0165	0.00000476	0.0000212	0.000247	0.00143
2030 Sep	20.1	0.0118	0.0112	0.000768	3.88	0.0247	3.1	0.00000473	0.00348	0.000262	0.00475	0.00601	0.00000979	3.26	0.00000239	0.0000493	0.0000512	0.000243	0.0116	0.00000238	0.653	0.000506	1.02	0.00202	0.0000547	0.623	0.000355	0.00106	0.0000256	0.000054	0.0000316	0.017	0.00000474	0.0000191	0.000246	0.00143
2030 Oct	25.1	0.00455	0.00966	0.000675	5.34	0.0333	3.63	0.00000481	0.00577	0.000294	0.00482	0.00724	0.00000984	3.95	0.00000635	0.0000494	0.000101	0.000373	0.00868	0.00000242	0.846	0.000503	1.28	0.00162	0.0000444	0.733	0.000691	0.00103	0.000713	0.0000485	0.0000254	0.0212	0.00000482	0.000018	0.000247	0.00241
2030 Nov	19	0.014	0.0144	0.000863	5.1	0.0233	2.88	0.00000461	0.00314	0.000271	0.00463	0.00574	0.00000984	2.99	0.00000235	0.0000488	0.0000513	0.00024	0.00603	0.00000233	0.635	0.000506	0.988	0.00213	0.0000654	0.702	0.000389	0.00172	0.0000279	0.0000553	0.0000259	0.0145	0.00000462	0.0000178	0.000243	0.00139
2030 Dec	21.1	0.0136	0.0165	0.000884	3.46	0.0255	3.2	0.00000459	0.0024	0.000288	0.00461	0.00683	0.00000965	3.33	0.00000235	0.0000487	0.0000514	0.000239	0.00609	0.00000232	0.725	0.000507	1.11	0.00219	0.0000677	0.683	0.000582	0.00131	0.0000281	0.0000557	0.0000259	0.0161	0.00000459	0.0000196	0.000243	0.00139
2031 Jan	21.1	0.0136	0.0165	0.000884	3.46	0.0255	3.2	0.00000459	0.0024	0.000287	0.00461	0.00683	0.00000965	3.33	0.00000235	0.0000487	0.0000514	0.000239	0.00609	0.00000232	0.725	0.000507	1.11	0.00219	0.0000677	0.683	0.000582	0.00131	0.0000281	0.0000557	0.0000259	0.0161	0.00000459	0.0000196	0.000243	0.00139
2031 Feb	20.9	0.0124	0.0112	0.000719	3.33	0.026	3.17	0.00000476	0.0024	0.000256	0.00478	0.00686	0.0000098	3.3	0.00000241	0.0000492	0.0000508	0.000244	0.00562	0.00000239	0.727	0.000504	1.12	0.00155	0.0000494	0.692	0.000538	0.0013	0.0000268	0.0000532	0.0000255	0.0156	0.00000477	0.0000171	0.000246	0.00144
2031 Mar	23.1	0.0142	0.0105	0.000648	3.67	0.0288	3.51	0.00000484	0.00157	0.000257	0.00485	0.00811	0.00000986	3.66	0.00000244	0.0000495	0.0000505	0.000246	0.00542	0.00000243	0.83	0.000503	1.27	0.00125	0.0000414	0.789	0.000732	0.00149	0.0000262	0.0000522	0.0000253	0.0171	0.00000484	0.0000176	0.000247	0.00146
2031 Apr	20.8	0.00615	0.0025	0.0005	1.58	0.0335	3.73	0.000005	0.0015	0.000235	0.005	0.00667	0.00001	2.98	0.0000025	0.00005	0.0000501	0.000249	0.00505	0.0000025	0.765	0.0005	1.08	0.00075	0.0000225	0.739	0.000685	0.0013	0.000025	0.00005	0.000025	0.0126	0.000005	0.0000155	0.00025	0.0015
2031 May	23.7	0.00878	0.00356	0.000532	3.68	0.0299	3.63	0.00000497	0.0023	0.000226	0.00497	0.00793	0.00000997	3.54	0.00000249	0.0000499	0.0000501	0.000249	0.00509	0.00000249	0.799	0.000501	1.25	0.000743	0.0000286	0.739	0.000695	0.00101	0.0000253	0.0000505	0.0000251	0.0171	0.00000497	0.000016	0.000249	0.00149
2031 Jun	28.2	0.0135	0.018	0.000903	5.94	0.0331	4.05	0.00000453	0.00165	0.000345	0.00455	0.00941	0.00000954	4.43	0.00000232	0.0000482	0.0000748	0.000238	0.00603	0.00000239	0.963	0.000506	1.46	0.00211	0.0000704	0.879	0.00078	0.00194	0.0000289	0.0000557	0.0000259	0.0233	0.00000453	0.0000204	0.00024	0.00137
2031 Jul	18.5	0.0037	0.00593	0.0006	3.76	0.0248	2.61	0.00000489	0.00471	0.000229	0.0049	0.00644	0.0000099	3.08	0.00000246	0.0000497	0.0000884	0.000247	0.0138	0.00000245	0.627	0.000503	1.01	0.00282	0.0000362	0.607	0.000688	0.00102	0.0000256	0.0000515	0.0000253	0.0151	0.00000489	0.0000179	0.000248	0.00147
2031 Aug	19.6	0.00566	0.0116	0.000764	4.1	0.0246	2.78	0.00000472	0.00428	0.000269	0.00474	0.00612	0.00000976	3.22	0.00000239	0.0000491	0.0000513	0.000243	0.0126	0.00000238	0.666	0.000508	0.954	0.00232	0.0000623	0.6	0.000485	0.00106	0.0000261	0.0000539	0.0000257	0.0166	0.00000473	0.000021	0.000245	0.00142
2031 Sep	20.2	0.0114	0.0108	0.000736	3.88	0.0247	3.08	0.00000473	0.00347	0.000254	0.00474	0.00601	0.00000973	3.26	0.00000239	0.000049	0.0000509	0.000243	0.0115	0.00000238	0.653	0.000505	1.02	0.00195	0.0000518	0.623	0.000343	0.00105	0.0000255	0.0000533	0.0000315	0.017	0.00000473	0.0000187	0.000244	0.00142
2031 Oct	25.1	0.00433	0.0094	0.000654	5.35	0.0332	3.62	0.00000481	0.00577	0.000288	0.00482	0.00724	0.0000098	3.95	0.00000635	0.0000492	0.000101	0.000373	0.00864	0.00000242	0.846															



Constituents	Total Dissolved Solids	Ammonia	Nitrate	Nitrite	Chloride	Fluoride	Sulphate	Silver	Aluminum	Arsenic	Boron	Barium	Beryllium	Calcium	Cadmium	Cobalt	Chromium	Copper	Iron	Mercury	Potassium	Lithium	Magnesium	Manganese	Molybdenum	Sodium	Nickel	Phosphorus	Lead	Antimony	Selenium	Strontium	Thallium	Uranium	Vanadium	Zinc
2039 Jun	28.4	0.0111	0.0148	0.000666	5.97	0.0328	3.93	0.00000449	0.00159	0.000285	0.000449	0.000938	0.00000091	4.39	0.00000023	0.00000463	0.00000729	0.0000234	0.000533	0.000000225	0.962	0.000502	1.45	0.000158	0.000049	0.876	0.000695	0.0019	0.0000288	0.0000503	0.0000252	0.0232	0.00000449	0.0000175	0.000228	0.00136
2039 Jul	18.6	0.00315	0.00539	0.000546	3.78	0.0248	2.58	0.00000487	0.00468	0.000215	0.000487	0.000643	0.000000978	3.07	0.00000245	0.00000491	0.00000878	0.0000316	0.000471	0.00000224	0.628	0.000502	1.01	0.000271	0.0000316	0.606	0.000667	0.00102	0.0000255	0.0000502	0.0000251	0.0151	0.00000487	0.0000172	0.000245	0.00146
2039 Aug	19.6	0.00391	0.00881	0.000601	4.09	0.0245	2.7	0.00000473	0.00428	0.00023	0.000474	0.000608	0.000000954	3.19	0.00000239	0.00000481	0.00000501	0.000242	0.0124	0.00000237	0.664	0.000505	0.945	0.00191	0.0000471	0.598	0.000427	0.00104	0.0000259	0.0000505	0.0000253	0.0164	0.00000473	0.000019	0.000239	0.00142
2039 Sep	20.3	0.01	0.00897	0.000601	3.9	0.0246	3.01	0.00000447	0.00344	0.00022	0.000471	0.000598	0.000000948	3.23	0.00000237	0.00000479	0.00000498	0.00024	0.0113	0.00000235	0.652	0.000503	1.01	0.00165	0.0000396	0.621	0.000295	0.00103	0.0000253	0.0000502	0.0000311	0.017	0.00000447	0.0000171	0.000237	0.00141
2039 Oct	25.2	0.00344	0.00837	0.000568	5.35	0.0331	3.57	0.00000479	0.00573	0.000266	0.000479	0.000721	0.000000962	3.93	0.00000632	0.00000484	0.00000997	0.00037	0.000846	0.000000224	0.845	0.000501	1.27	0.00139	0.0000339	0.621	0.000651	0.00101	0.000071	0.00000819	0.0000251	0.0211	0.00000479	0.0000167	0.000241	0.00239
2039 Nov	19.2	0.00902	0.0113	0.000634	3.12	0.0231	2.76	0.00000457	0.00309	0.000214	0.000458	0.00057	0.000000925	2.95	0.00000233	0.00000469	0.00000495	0.000236	0.000556	0.000000229	0.634	0.000502	0.975	0.00162	0.00000448	0.598	0.000306	0.00168	0.0000281	0.0000502	0.0000252	0.0144	0.00000458	0.0000149	0.000232	0.00138
2039 Dec	21.3	0.0111	0.0132	0.000643	3.49	0.0253	3.08	0.00000455	0.00235	0.000227	0.000455	0.000679	0.000000922	3.28	0.00000232	0.00000467	0.00000494	0.000235	0.00056	0.000000228	0.723	0.000502	1.1	0.00166	0.000046	0.679	0.000495	0.00127	0.0000284	0.0000502	0.0000252	0.016	0.00000455	0.0000166	0.00023	0.00137
2040 Jan	21.3	0.0111	0.0132	0.000643	3.49	0.0253	3.08	0.00000455	0.00235	0.000227	0.000455	0.000679	0.00000092	3.28	0.00000232	0.00000467	0.00000494	0.000235	0.00056	0.000000228	0.723	0.000502	1.1	0.00166	0.000046	0.679	0.000495	0.00127	0.0000284	0.0000502	0.0000252	0.016	0.00000455	0.0000166	0.00023	0.00137
2040 Feb	21.1	0.011	0.00975	0.000588	3.36	0.0258	3.1	0.00000472	0.00237	0.000222	0.000473	0.000683	0.000000951	3.27	0.00000239	0.0000048	0.0000497	0.000241	0.000537	0.000000236	0.726	0.000501	1.11	0.00128	0.0000379	0.689	0.000489	0.00128	0.0000271	0.0000501	0.0000251	0.0155	0.00000472	0.0000155	0.000238	0.00142
2040 Mar	23.1	0.0133	0.00833	0.000539	3.65	0.0289	3.48	0.00000488	0.00153	0.000233	0.000488	0.000813	0.000000978	3.65	0.00000245	0.00000491	0.00000498	0.000246	0.000516	0.000000244	0.832	0.000501	1.27	0.000937	0.0000308	0.793	0.000702	0.00148	0.0000259	0.0000501	0.0000251	0.0169	0.00000488	0.0000162	0.000245	0.00147
2040 Apr	20.8	0.00617	0.00267	0.000503	1.6	0.0335	3.73	0.00000499	0.0015	0.000235	0.000499	0.000667	0.000000999	2.98	0.00000025	0.00000499	0.000005	0.00025	0.000501	0.00000025	0.765	0.0005	1.07	0.000593	0.0000254	0.739	0.000685	0.0013	0.0000251	0.00005	0.0000251	0.0126	0.00000499	0.0000155	0.00025	0.00015
2040 May	23.7	0.00858	0.00342	0.000514	3.68	0.0298	3.62	0.00000496	0.0023	0.000221	0.000496	0.000793	0.000000992	3.54	0.00000248	0.00000497	0.000005	0.000249	0.000506	0.000000248	0.798	0.0005	1.24	0.000712	0.0000271	0.789	0.000688	0.001	0.0000255	0.00005	0.000025	0.0171	0.00000496	0.0000157	0.000248	0.00149
2040 Jun	28.4	0.0109	0.0147	0.000654	5.97	0.0328	3.92	0.00000449	0.00159	0.000282	0.000449	0.000938	0.000000982	4.39	0.00000229	0.00000462	0.0000728	0.000233	0.000551	0.000000225	0.962	0.000502	1.45	0.00156	0.000048	0.876	0.000691	0.0019	0.0000288	0.0000501	0.0000251	0.0232	0.00000449	0.0000173	0.000227	0.00136
2040 Jul	18.6	0.00315	0.0055	0.000545	3.78	0.0247	2.59	0.00000487	0.00468	0.000214	0.000487	0.000643	0.000000976	3.07	0.00000244	0.0000049	0.00000876	0.000246	0.0136	0.000000243	0.628	0.000502	1.01	0.00272	0.0000316	0.606	0.000666	0.00102	0.0000256	0.0000501	0.0000251	0.0151	0.00000487	0.0000172	0.000244	0.00146
2040 Aug	19.7	0.00385	0.00875	0.000594	4.1	0.0245	2.7	0.00000473	0.00428	0.000228	0.000473	0.000608	0.000000952	3.19	0.00000239	0.00000481	0.000005	0.000242	0.0124	0.000000237	0.664	0.000505	0.944	0.0019	0.0000465	0.598	0.000425	0.00104	0.0000259	0.0000503	0.0000253	0.0164	0.00000473	0.0000189	0.000238	0.00142
2040 Sep	20.3	0.00996	0.00908	0.000596	3.91	0.0245	3.01	0.00000469	0.00343	0.000219	0.000469	0.000599	0.000000945	3.23	0.00000237	0.000																				



Constituents		Total Dissolved Solids	Ammonia	Nitrate	Nitrite	Chloride	Fluoride	Sulphate	Silver	Aluminum	Arsenic	Boron	Barium	Beryllium	Calcium	Cadmium	Cobalt	Chromium	Copper	Iron	Mercury	Potassium	Lithium	Magnesium	Manganese	Molybdenum	Sodium	Nickel	Phosphorus	Lead	Antimony	Selenium	Strontium	Thallium	Uranium	Vanadium	Zinc
2048 May	24	0.00958	0.00422	0.000526	3.75	0.0299	3.69	0.00000496	0.00241	0.000333	0.00496	0.00797	0.0000455	3.59	0.00000251	0.00000503	0.0000511	0.000252	0.0053	0.00000251	0.807	0.000523	1.25	0.00116	0.0000336	0.791	0.000724	0.00102	0.0000261	0.000052	0.0000362	0.0175	0.00000497	0.0000192	0.00025	0.00149	
2048 Jun	30.7	0.0252	0.0287	0.00085	6.5	0.0316	4.67	0.00000428	0.00309	0.00186	0.00426	0.0093	0.0000523	4.85	0.00000246	0.00000583	0.0000833	0.000301	0.00083	0.00000258	1.02	0.00081	1.45	0.00084	0.0000147	0.845	0.00118	0.00199	0.0000267	0.0000649	0.0000339	0.0184	0.00000473	0.00000668	0.000244	0.00133	
2048 Jul	21.5	0.012	0.0157	0.000694	4.43	0.0252	3.19	0.00000471	0.00509	0.00105	0.0047	0.00685	0.000281	3.54	0.00000251	0.0000523	0.0000914	0.000265	0.0144	0.00000259	0.71	0.000672	1.07	0.00632	0.0000898	0.63	0.00093	0.00119	0.0000267	0.0000649	0.0000339	0.0184	0.00000473	0.00000443	0.000251	0.00144	
2048 Aug	24.3	0.0193	0.0258	0.000844	5.14	0.0254	3.73	0.0000045	0.00518	0.00171	0.00448	0.00687	0.000492	3.98	0.00000253	0.0000544	0.0000661	0.000279	0.0142	0.00000267	0.798	0.000809	1.07	0.0085	0.000146	0.64	0.000952	0.00132	0.0000278	0.0000768	0.000041	0.0218	0.00000455	0.0000672	0.000254	0.00139	
2048 Sep	27	0.0322	0.0393	0.00103	5.58	0.0246	4.42	0.00000406	0.00513	0.00258	0.00402	0.00707	0.000786	4.37	0.00000248	0.0000557	0.0000734	0.000289	0.0143	0.00000272	0.851	0.00098	1.14	0.0127	0.00209	0.649	0.00119	0.00145	0.0000282	0.0000922	0.000053	0.025	0.00000413	0.000097	0.000249	0.00129	
2048 Oct	30.5	0.0383	0.052	0.00121	6.54	0.0263	5.01	0.00000372	0.00628	0.00339	0.00367	0.00768	0.00105	4.91	0.00000352	0.0000575	0.0000937	0.000336	0.0145	0.00000028	0.964	0.00114	1.23	0.0166	0.000271	0.677	0.0016	0.00157	0.0000214	0.000115	0.0000587	0.0288	0.00000382	0.000125	0.000248	0.00147	
2048 Nov	31.2	0.0462	0.0618	0.00135	6.6	0.024	5.25	0.00000347	0.0062	0.00403	0.00341	0.00763	0.00127	5.03	0.00000264	0.0000593	0.0000883	0.000319	0.0155	0.00000287	0.972	0.00128	1.2	0.0199	0.000322	0.654	0.00176	0.00174	0.0000596	0.00012	0.0000659	0.0299	0.00000359	0.000148	0.000249	0.0012	
2048 Dec	32.1	0.0482	0.0646	0.0014	6.81	0.0243	5.41	0.00000344	0.00631	0.00421	0.00338	0.00782	0.00133	5.17	0.00000268	0.0000601	0.0000904	0.000325	0.0159	0.00000291	0.998	0.00132	1.23	0.0207	0.000336	0.666	0.00184	0.00173	0.0000639	0.000124	0.000068	0.0309	0.00000357	0.000155	0.000251	0.0012	
2049 Jan	32.5	0.0493	0.0663	0.00143	6.92	0.0245	5.49	0.00000344	0.00643	0.00432	0.00338	0.0079	0.00137	5.25	0.00000271	0.0000608	0.0000919	0.000329	0.0162	0.00000294	1.01	0.00135	1.24	0.0213	0.000344	0.67	0.00189	0.00175	0.0000662	0.000126	0.0000693	0.0314	0.00000357	0.000159	0.000253	0.00121	
2049 Feb	32.9	0.0504	0.0678	0.00145	7.02	0.0246	5.57	0.00000343	0.00654	0.00442	0.00337	0.00796	0.0014	5.31	0.00000273	0.0000613	0.0000931	0.000332	0.0165	0.00000297	1.02	0.00137	1.25	0.0218	0.000352	0.674	0.00192	0.00177	0.0000678	0.000128	0.0000705	0.0319	0.00000357	0.000162	0.000254	0.00121	
2049 Mar	33.3	0.0514	0.0692	0.00147	7.12	0.0247	5.65	0.00000342	0.00662	0.00451	0.00336	0.00805	0.00143	5.38	0.00000275	0.0000619	0.0000943	0.000335	0.0167	0.00000299	1.03	0.00139	1.26	0.0222	0.000359	0.679	0.00196	0.00179	0.000069	0.00013	0.0000716	0.0323	0.00000356	0.000165	0.000256	0.00121	
2049 Apr	29.3	0.0365	0.0474	0.00116	5.28	0.0278	5.05	0.00000396	0.00495	0.00311	0.00392	0.00761	0.000969	4.6	0.00000268	0.0000582	0.00008	0.000309	0.0129	0.00000284	0.949	0.0011	1.2	0.0152	0.00025	0.702	0.00155	0.00164	0.0000547	0.000104	0.0000565	0.0258	0.00000406	0.000117	0.000255	0.00131	
2049 May	24	0.00963	0.00424	0.000526	3.75	0.0299	3.69	0.00000496	0.00241	0.000332	0.00496	0.00797	0.0000473	3.59	0.00000251	0.0000504	0.0000512	0.000252	0.00531	0.00000252	0.807	0.000524	1.25	0.00118	0.0000338	0.791	0.000724	0.00102	0.0000261	0.0000521	0.0000362	0.0175	0.00000497	0.0000194	0.00025	0.00149	
2049 Jun	30.5	0.0251	0.0279	0.000836	6.47	0.0317	4.65	0.0000043	0.00315	0.00177	0.00428	0.0093	0.000521	4.83	0.00000247	0.0000529	0.0000831	0.000272	0.00875	0.00000261	1.02	0.000807	1.44	0.00824	0.000143	0.844	0.00116	0.00199	0.00003	0.0000768	0.000041	0.0265	0.00000435	0.0000682	0.000245	0.00134	
2049 Jul	20.7	0.0098	0.0124	0.000645	4.25	0.0252	3.03	0.00000478	0.00506	0.000827	0.00477	0.00674	0.000219	3.41	0.00000251	0.0000519	0.0000911	0.000262	0.0143	0.00000258	0.69	0.000633	1.05	0.00542	0.000074	0.624	0.000865	0.00114	0.0000263	0.0000617	0.0000319	0.0175	0.0000048	0.0000387	0.000251	0.00145	
2049 Aug	24.1	0.019	0.0249	0.000828	5.1	0.0254	3.69	0.00000451	0.00523	0.00161	0.00449	0.00684	0.000486	3.94	0.00000254	0.0000544	0.0000656	0.000279	0.0142	0.00000269	0.796	0.000803	1.06	0.00834	0.000142	0.637	0.000928	0.00131	0.0000278	0.0000677	0.0000408	0.0216	0.00000456				



Constituents	Total Dissolved Solids	Ammonia	Nitrate	Nitrite	Chloride	Fluoride	Sulphate	Silver	Aluminum	Arsenic	Boron	Barium	Beryllium	Calcium	Cadmium	Cobalt	Chromium	Copper	Iron	Mercury	Potassium	Lithium	Magnesium	Manganese	Molybdenum	Sodium	Nickel	Phosphorus	Lead	Antimony	Selenium	Strontium	Thallium	Uranium	Vanadium	Zinc
2057 Apr	28.3	0.0347	0.0425	0.00106	5	0.0275	4.75	0.00000395	0.00464	0.00211	0.00392	0.00739	0.000905	4.38	0.00000264	0.0000553	0.0000774	0.000295	0.0121	0.00000275	0.914	0.00105	1.15	0.0143	0.000203	0.692	0.00133	0.00158	0.0000544	0.0000931	0.0000534	0.0247	0.00000402	0.00106	0.000244	0.00129
2057 May	24	0.00994	0.00053	0.00041	3.77	0.0298	3.69	0.00000495	0.00244	0.00032	0.00495	0.00796	0.0000574	3.6	0.00000251	0.0000503	0.0000515	0.0000251	0.000334	0.000538	0.808	0.000725	0.00103	0.000785	0.000119	0.79	0.000725	0.00103	0.0000265	0.0000523	0.0000265	0.0176	0.00000495	0.0000203	0.00025	0.00149
2057 Jun	30.1	0.0242	0.0256	0.000787	6.38	0.0314	4.49	0.00000428	0.00298	0.00125	0.00426	0.00921	0.000488	4.74	0.00000244	0.0000511	0.0000821	0.000264	0.000837	0.00000255	1	0.000781	1.42	0.00785	0.0000119	0.84	0.00105	0.00197	0.0000298	0.0000707	0.0000394	0.0261	0.00000431	0.0000621	0.000238	0.00132
2057 Jul	20.1	0.00852	0.0103	0.000608	4.13	0.025	2.91	0.00000408	0.00497	0.000563	0.00479	0.00665	0.00018	3.32	0.00000251	0.0000509	0.0000905	0.000257	0.0141	0.00000254	0.672	0.000606	1.04	0.00491	0.0000588	0.619	0.000799	0.00111	0.0000261	0.0000578	0.0000304	0.0169	0.00000481	0.0000333	0.000248	0.00145
2057 Aug	23.3	0.0171	0.0215	0.000766	4.94	0.0251	3.48	0.00000453	0.00502	0.00108	0.00451	0.00669	0.000424	3.8	0.00000251	0.0000525	0.0000635	0.000269	0.0138	0.00000261	0.768	0.00076	1.03	0.000756	0.0000114	0.629	0.000796	0.00127	0.0000276	0.0000692	0.0000382	0.0208	0.00000455	0.0000582	0.000247	0.00139
2057 Sep	26.1	0.0307	0.0349	0.000941	5.39	0.0242	4.14	0.00000404	0.00485	0.00169	0.00401	0.00687	0.000728	4.18	0.00000244	0.0000528	0.0000712	0.000276	0.0137	0.00000262	0.817	0.000935	1.09	0.0119	0.000166	0.64	0.000993	0.0014	0.0000282	0.0000814	0.0000502	0.024	0.00000408	0.0000861	0.000238	0.00126
2057 Oct	29.5	0.0366	0.0468	0.0011	6.33	0.0257	4.67	0.00000367	0.00593	0.00222	0.00363	0.00744	0.000987	4.69	0.00000353	0.0000534	0.0000952	0.00032	0.0137	0.00000265	0.922	0.00109	1.18	0.0158	0.000216	0.666	0.00135	0.0015	0.000226	0.000101	0.0000551	0.0278	0.00000372	0.000111	0.000232	0.00145
2057 Nov	30.1	0.045	0.0567	0.00124	6.37	0.0231	4.86	0.00000337	0.00577	0.00267	0.00333	0.00734	0.00122	4.78	0.00000256	0.0000543	0.0000858	0.000297	0.0147	0.00000269	0.921	0.00123	1.13	0.0193	0.000261	0.638	0.00148	0.00167	0.0000596	0.000103	0.0000622	0.0289	0.00000344	0.000133	0.000228	0.00114
2057 Dec	30.8	0.0468	0.0592	0.00127	6.57	0.0233	4.99	0.00000334	0.00586	0.00279	0.00329	0.00752	0.00127	4.91	0.00000261	0.0000549	0.0000878	0.000302	0.0151	0.00000272	0.944	0.00127	1.15	0.0202	0.000271	0.649	0.00155	0.00165	0.0000641	0.000106	0.0000664	0.0297	0.00000341	0.000139	0.000229	0.00114
2058 Jan	31.3	0.0479	0.0608	0.0013	6.67	0.0234	5.07	0.00000333	0.00596	0.00286	0.00329	0.00758	0.00131	4.98	0.00000263	0.0000554	0.0000892	0.000305	0.0153	0.00000274	0.955	0.00129	1.16	0.0207	0.000278	0.652	0.00158	0.00167	0.0000665	0.000108	0.0000653	0.0302	0.00000341	0.000142	0.00023	0.00114
2058 Feb	31.6	0.0489	0.0622	0.00132	6.77	0.0235	5.13	0.00000332	0.00606	0.00292	0.00327	0.00764	0.00134	5.04	0.00000265	0.0000558	0.0000904	0.000308	0.0156	0.00000276	0.965	0.00131	1.17	0.0212	0.000284	0.655	0.00161	0.00169	0.0000681	0.000111	0.0000664	0.0307	0.00000339	0.000145	0.000231	0.00114
2058 Mar	32	0.0499	0.0634	0.00134	6.86	0.0236	5.2	0.00000331	0.00612	0.00298	0.00326	0.00772	0.00137	5.1	0.00000267	0.0000562	0.0000914	0.000311	0.0158	0.00000278	0.976	0.00133	1.18	0.0216	0.00029	0.66	0.00164	0.00171	0.0000693	0.000111	0.0000674	0.0311	0.00000339	0.000148	0.000232	0.00114
2058 Apr	28.1	0.0344	0.0419	0.00105	4.97	0.0274	4.7	0.00000393	0.00449	0.00201	0.0039	0.00736	0.000888	4.35	0.00000262	0.0000542	0.0000777	0.00029	0.012	0.00000269	0.904	0.00104	1.14	0.0142	0.000196	0.691	0.00131	0.00158	0.0000538	0.0000899	0.0000525	0.0245	0.00000398	0.000101	0.00024	0.00128
2058 May	24	0.01	0.00475	0.000532	3.78	0.0298	3.69	0.00000494	0.00244	0.000322	0.00494	0.00796	0.0000603	3.6	0.00000251	0.0000503	0.0000516	0.000253	0.0054	0.00000251	0.808	0.000531	1.25	0.00139	0.0000348	0.789	0.000726	0.00103	0.0000266	0.0000523	0.0000266	0.0176	0.00000495	0.0000204	0.00025	0.00149
2058 Jun	30.2	0.0249	0.0265	0.000799	6.41	0.0313	4.52	0.00000427	0.00307	0.00125	0.00425	0.00921	0.000507	4.76	0.00000245	0.0000514	0.0000825	0.000266	0.000855	0.00000256	1	0.000796	1.42	0.00822	0.000123	0.838	0.00106	0.00197	0.0000301	0.0000718	0.0000402	0.0263	0.00000493	0.0000647	0.000239	0.00132
2058 Jul	20.4	0.00922	0.0112	0.00062	4.19	0.0251	2.95	0.00000478	0.00503	0.000588	0.00478	0.00669	0.000198	3.36	0.00000251	0.0000513	0.0000908	0.000259	0.0142	0.00000256	0.681	0.000619	1.04	0.00521	0.0000628	0.621	0.000813									



Appendix C16: DS2																																				
Constituents	Total Dissolved Solids	Ammonia	Nitrate	Nitrite	Chloride	Fluoride	Sulphate	Silver	Aluminum	Arsenic	Boron	Barium	Beryllium	Calcium	Cadmium	Cobalt	Chromium	Copper	Iron	Mercury	Potassium	Lithium	Magnesium	Manganese	Molybdenum	Sodium	Nickel	Phosphorus	Lead	Antimony	Selenium	Strontium	Thallium	Uranium	Vanadium	Zinc
2066 Mar	31.4	0.0483	0.0589	0.00122	6.74	0.0236	5	0.00000331	0.00647	0.00211	0.00324	0.00763	0.0012	4.96	0.00000268	0.0000563	0.0000905	0.000309	0.0155	0.00000286	0.975	0.00128	1.13	0.0215	0.000262	0.646	0.00147	0.00168	0.0000708	0.00011	0.0000674	0.0304	0.0000034	0.000153	0.000231	0.00115
2066 Apr	27.8	0.0337	0.0393	0.000974	4.93	0.0273	4.59	0.00000392	0.00475	0.00146	0.00388	0.00731	0.000787	4.28	0.00000263	0.0000544	0.0000768	0.00029	0.0119	0.00000275	0.906	0.00101	1.11	0.0143	0.00018	0.682	0.0012	0.00156	0.000055	0.0000898	0.0000529	0.0242	0.00000398	0.000106	0.000239	0.00128
2066 May	24	0.01	0.0046	0.000528	3.78	0.0298	3.69	0.00000494	0.00246	0.000291	0.00494	0.00795	0.0000545	3.6	0.00000251	0.0000503	0.0000516	0.000253	0.00539	0.00000252	0.808	0.00053	1.25	0.0014	0.0000339	0.789	0.00072	0.00103	0.0000267	0.0000523	0.0000266	0.0176	0.00000495	0.0000207	0.00025	0.00149
2066 Jun	29.9	0.024	0.0245	0.000749	6.33	0.0312	4.42	0.00000425	0.00317	0.000927	0.00423	0.00915	0.000435	4.69	0.00000244	0.0000512	0.0000817	0.000264	0.00836	0.00000258	1	0.00077	1.4	0.00806	0.000111	0.831	0.000987	0.00196	0.0000299	0.0000709	0.0000398	0.0259	0.0000043	0.0000658	0.000237	0.00132
2066 Jul	20.3	0.0091	0.0107	0.000605	4.18	0.025	2.93	0.00000477	0.00505	0.000474	0.00476	0.00667	0.000176	3.34	0.00000225	0.0000511	0.0000904	0.000258	0.0141	0.00000256	0.68	0.000612	1.04	0.00523	0.0000592	0.618	0.00079	0.00112	0.0000263	0.0000588	0.0000311	0.0171	0.00000479	0.0000366	0.000248	0.00145
2066 Aug	23.4	0.0177	0.0214	0.000742	4.96	0.025	3.47	0.00000448	0.00519	0.000828	0.00446	0.0067	0.000395	3.8	0.00000251	0.0000527	0.0000642	0.00027	0.0137	0.00000265	0.776	0.000761	1.02	0.00802	0.00011	0.626	0.000765	0.00128	0.0000278	0.0000705	0.0000393	0.0209	0.00000452	0.0000636	0.000246	0.00138
2066 Sep	25.3	0.0287	0.0308	0.000851	5.21	0.0241	3.95	0.00000406	0.005	0.00113	0.00403	0.00674	0.000597	4.04	0.00000244	0.0000525	0.0000693	0.000273	0.0135	0.00000266	0.805	0.000883	1.06	0.0113	0.000144	0.628	0.00086	0.00135	0.0000281	0.0000793	0.0000492	0.0232	0.00000412	0.0000858	0.000237	0.00127
2066 Oct	28.7	0.0342	0.0418	0.00098	6.17	0.0258	4.45	0.00000369	0.00623	0.00149	0.00364	0.00731	0.000821	4.53	0.00000364	0.0000532	0.000091	0.00032	0.0133	0.0000027	0.914	0.00103	1.14	0.0153	0.000188	0.652	0.00119	0.00145	0.000245	0.0001	0.0000541	0.0269	0.00000376	0.000112	0.00023	0.00148
2066 Nov	29.4	0.0433	0.0522	0.00112	6.23	0.023	4.65	0.00000336	0.00617	0.00182	0.0033	0.00722	0.00104	4.64	0.00000261	0.0000544	0.0000848	0.000297	0.0144	0.00000277	0.919	0.00117	1.08	0.0192	0.000233	0.62	0.00131	0.00162	0.0000682	0.000103	0.0000623	0.0281	0.00000345	0.000139	0.000227	0.00115
2066 Dec	30.2	0.0452	0.0546	0.00115	6.43	0.0233	4.78	0.00000333	0.00629	0.0019	0.00326	0.0074	0.00109	4.76	0.00000265	0.0000551	0.0000869	0.000302	0.0148	0.00000281	0.943	0.00121	1.1	0.0201	0.000243	0.631	0.00137	0.00161	0.0000729	0.000106	0.0000642	0.029	0.00000342	0.000145	0.000228	0.00115
2067 Jan	30.7	0.0464	0.0562	0.00117	6.55	0.0234	4.86	0.00000332	0.00642	0.00195	0.00326	0.00748	0.00113	4.84	0.00000268	0.0000557	0.0000885	0.000306	0.0151	0.00000284	0.956	0.00124	1.11	0.0207	0.00025	0.635	0.0014	0.00163	0.0000754	0.000108	0.0000656	0.0295	0.00000342	0.000149	0.000229	0.00116
2067 Feb	31	0.0473	0.0575	0.00119	6.65	0.0235	4.92	0.00000331	0.00652	0.00199	0.00325	0.00754	0.00115	4.9	0.00000271	0.0000561	0.0000897	0.000309	0.0153	0.00000286	0.966	0.00126	1.12	0.0212	0.000256	0.639	0.00143	0.00165	0.000077	0.00011	0.0000668	0.03	0.00000341	0.000152	0.00023	0.00116
2067 Mar	31.4	0.0483	0.0587	0.00121	6.74	0.0236	4.99	0.0000033	0.0066	0.00203	0.00324	0.00762	0.00118	4.96	0.00000273	0.0000566	0.0000908	0.000312	0.0155	0.00000289	0.978	0.00128	1.13	0.0216	0.000261	0.644	0.00146	0.00167	0.0000782	0.000112	0.0000678	0.0304	0.00000341	0.000155	0.000231	0.00116
2067 Apr	28.1	0.0346	0.0404	0.000983	5.04	0.0271	4.61	0.00000388	0.00495	0.00145	0.00384	0.00733	0.000801	4.32	0.00000267	0.0000547	0.0000778	0.000293	0.0121	0.00000278	0.913	0.00103	1.11	0.0148	0.000184	0.678	0.00121	0.00157	0.0000609	0.0000919	0.0000541	0.0246	0.00000395	0.00011	0.000239	0.00128
2067 May	25.1	0.015	0.0116	0.000617	4.17	0.0291	3.87	0.00000475	0.003	0.000515	0.00474	0.00794	0.0002	3.79	0.00000255	0.0000513	0.0000568	0.000261	0.00671	0.00000257	0.833	0.000628	1.24	0.00402	0.0000633	0.773	0.000818	0.00112	0.0000335	0.0000602	0.0000321	0.0193	0.00000476	0.0000383	0.000248	0.00145
2067 Jun	29.8	0.0239	0.0243	0.000743	6.32	0.0312	4.41	0.00000425	0.00317	0.000896	0.00422	0.00913	0.000426	4.68	0.00000244	0.0000511	0.0000816	0.000263	0.00834	0.00000258	0.998	0.000766	1.39	0.00805	0.00011	0.829	0.00098	0.00195	0.0000301	0.0000705	0.0000397	0.0258	0.00000429	0.0000654	0.000237	0.00132
2067 Jul	20.3	0.00902	0.0106	0.000602	4.17	0.025	2.92	0.00000477	0.00505	0.00046	0.00476	0.00667	0.000172	3.34	0.00000225	0.000051	0.0000904	0.000258	0.0141	0.00000256	0.679	0.00061	1.03	0.0052	0.0000583	0.618	0.000787	0.00112	0.0000263	0.0000586	0.0000311	0.0171	0.00000479	0.0000362	0.000248	0.00145
2067 Aug	23.5	0.0181	0.0217	0.000744	4.98	0.025	3.48	0.00000446	0.00519	0.000816	0.00444	0.00671	0.000398	3.81	0.00000251	0.0000526	0.0000645	0.00027	0.0138	0.00000265	0.778	0.000765	1.02	0.00819	0.000111	0.626	0.000768	0.00128	0.0000279	0.0000705	0.0000395	0.021	0.00000445	0.0000643	0.000245	0.00137
2067 Sep	25.3	0.0287	0.0306	0.000844	5.2	0.024	3.94	0.00000406	0.00498	0.00109	0.00403	0.00673	0.000586	4.03	0.00000244	0.0000524	0.0000693	0.000272	0.0134	0.00000265	0.803	0.000879	1.06	0.0114	0.000142	0.627	0.000852	0.00135	0.0000282	0.0000787	0.0000491	0.0231	0.00000411	0.0000852	0.000236	0.00127
2067 Oct	28.7	0.0338	0.0412	0.000967	6.15	0.0258	4.43	0.00000369	0.00622	0.00142	0.00365	0.0073	0.000799	4.52	0.00000366	0.0000533	0.000091	0.00032	0.0132	0.00000269	0.912	0.00102	1.14	0.0152	0.000185	0.651	0.00117	0.00144	0.0000249	0.0000993	0.0000537	0.0248	0.00000376	0.000111	0.00023	0.00148
2067 Nov	29.3	0.0431	0.0517	0.0011	6.21	0.0229	4.62	0.00000335	0.00615	0.00175	0.00329	0.0072	0.00102	4.62	0.0000026	0.0000542	0.0000846	0.000296	0.0143	0.00000277	0.916	0.00117	1.08	0.0192	0.00023	0.619	0.00129	0.00162								



Appendix C17: Whale Tail North Basin																																				
Constituents	Total Dissolved Solids	Ammonia	Nitrate	Nitrite	Chloride	Fluoride	Sulphate	Silver	Aluminum	Arsenic	Boron	Barium	Beryllium	Calcium	Cadmium	Cobalt	Chromium	Copper	Iron	Mercury	Potassium	Lithium	Magnesium	Manganese	Molybdenum	Sodium	Nickel	Phosphorus	Lead	Antimony	Selenium	Strontium	Thallium	Uranium	Vanadium	Zinc
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Active Closure (June 2038 to Sept. 2042): Min	12.8	0.028	0.0278	0.000631	2.72	0.00849	2.82	0.00000116	0.00255	0.00404	0.00114	0.00289	0.000746	2.3	0.000000997	0.0000257	0.0000436	0.000138	0.00789	0.00000113	0.377	0.000628	0.527	0.012	0.000226	0.231	0.00134	0.000804	0.0000128	0.000061	0.0000333	0.013	0.00000118	0.0000765	0.000108	0.000405
Active Closure (June 2038 to Sept. 2042): Avera	88.5	0.195	0.188	0.00428	19	0.0594	19.1	0.00000809	0.0181	0.0262	0.00798	0.0201	0.0054	15.8	0.00000703	0.000177	0.000304	0.000956	0.0544	0.00000802	2.63	0.00444	3.57	0.0831	0.00148	1.61	0.00883	0.00555	0.0000916	0.000414	0.000232	0.0908	0.00000824	0.000538	0.000739	0.00283
Active Closure (June 2038 to Sept. 2042): Max	92.2	0.202	0.2	0.00453	19.6	0.0613	20.3	0.00000834	0.0185	0.0291	0.00823	0.0208	0.00595	16.6	0.00000719	0.000185	0.000314	0.000995	0.057	0.000008021	2.72	0.00462	3.79	0.0862	0.00163	1.67	0.00963	0.00581	0.0000943	0.000439	0.000239	0.0941	0.00000849	0.000552	0.000775	0.00293
Post Closure (Oct. 2042 to 2070): Min	75.5	0.18	0.122	0.00267	16.6	0.0523	14	0.00000735	0.0169	0.00661	0.00723	0.0173	0.00444	12.8	0.00000659	0.000138	0.000276	0.000772	0.0455	0.00000735	2.25	0.00389	2.58	0.0786	0.0007	1.41	0.00482	0.00467	0.0000937	0.000267	0.000203	0.0787	0.00000724	0.000464	0.000557	0.00239
Post Closure (Oct. 2042 to 2070): Average	81.2	0.194	0.157	0.00356	17.8	0.0553	16	0.00000769	0.0174	0.00759	0.0184	0.0057	0.00444	14.1	0.00000609	0.000153	0.00029	0.000845	0.0488	0.00000771	2.41	0.00438	2.95	0.0811	0.000973	1.53	0.00627	0.00499	0.0000963	0.000232	0.000218	0.0852	0.00000767	0.000499	0.000627	0.00258
Post Closure (Oct. 2042 to 2070): Max	88.3	0.202	0.188	0.00431	19.1	0.0596	18.8	0.00000815	0.0184	0.0239	0.00803	0.02	0.00641	15.7	0.00000718	0.000176	0.000305	0.000951	0.0539	0.00000818	2.64	0.00465	3.47	0.0838	0.00139	1.63	0.00838	0.0055	0.0000978	0.000403	0.000235	0.0912	0.00000829	0.000546	0.00073	0.00284
CCME/SSWQO (Receiving Environment)	-	0.58	2.93	0.06	120	0.12	variable	0.000025	0.1	0.025	1.5	-	-	-	variable	-	0.001	variable	0.3	0.000026	-	-	-	variable	0.073	-	variable	0.01	0.001	-	0.001	-	0.0008	0.015	-	variable
Model Predictions (June 2038-2070)																																				
2038 Jun	12.8	0.028	0.0278	0.000631	2.72	0.00849	2.82	0.00000116	0.00255	0.00404	0.00114	0.00289	0.000746	2.3	0.000000997	0.0000257	0.0000436	0.000138	0.00789	0.00000113	0.377	0.000628	0.527	0.012	0.000226	0.231	0.00134	0.000804	0.0000128	0.000061	0.0000333	0.013	0.00000118	0.0000765	0.000108	0.000405
2038 Jul	92.2	0.201	0.2	0.00453	19.6	0.0613	20.3	0.00000834	0.0184	0.0291	0.00823	0.0208	0.00535	16.6	0.00000718	0.000185	0.000314	0.000995	0.057	0.00000815	2.72	0.00452	3.79	0.0862	0.00163	1.67	0.00963	0.00581	0.0000925	0.000439	0.000239	0.0941	0.00000849	0.000551	0.000775	0.00293
2038 Aug	91.8	0.2	0.198	0.00448	19.6	0.0612	20.1	0.00000832	0.0183	0.0288	0.00821	0.0208	0.00528	16.5	0.00000715	0.000184	0.000314	0.000991	0.0569	0.00000811	2.71	0.00449	3.77	0.0857	0.00161	1.66	0.00954	0.0058	0.0000922	0.000436	0.000238	0.0938	0.00000846	0.000547	0.000771	0.00292
2038 Sep	91.6	0.199	0.196	0.00444	19.5	0.0611	20	0.0000083	0.0183	0.0287	0.00819	0.0207	0.00522	16.4	0.00000712	0.000184	0.000313	0.000988	0.0568	0.00000809	2.7	0.00447	3.76	0.0854	0.0016	1.66	0.00948	0.00579	0.000092	0.000434	0.000237	0.0934	0.00000845	0.000546	0.000768	0.00291
2038 Oct	91.4	0.198	0.195	0.00442	19.5	0.061	20	0.00000829	0.0183	0.0286	0.00818	0.0207	0.00519	16.4	0.00000712	0.000183	0.000312	0.000987	0.0567	0.00000809	2.7	0.00446	3.75	0.0854	0.0016	1.65	0.00945	0.00578	0.0000922	0.000433	0.000237	0.0932	0.00000844	0.000545	0.000767	0.00291
2038 Nov	91.4	0.198	0.195	0.00441	19.5	0.061	20	0.00000829	0.0183	0.0286	0.00818	0.0207	0.00517	16.4	0.00000713	0.000183	0.000312	0.000987	0.0566	0.0000081	2.7	0.00445	3.75	0.0853	0.0016	1.65	0.00945	0.00577	0.0000924	0.000433	0.000237	0.0932	0.00000844	0.000546	0.000767	0.00291
2038 Dec	91.4	0.198	0.195	0.0044	19.5	0.0609	20	0.00000829	0.0183	0.0285	0.00818	0.0207	0.00516	16.4	0.00000713	0.000183	0.000312	0.000987	0.0566	0.00000808	2.7	0.00445	3.74	0.0853	0.00159	1.65	0.00944	0.00577	0.0000925	0.000432	0.000237	0.0932	0.00000843	0.000546	0.000766	0.0029
2039 Jan	91.4	0.197	0.194	0.00439	19.5	0.0608	20	0.00000829	0.0183	0.0285	0.00817	0.0207	0.00515	16.4	0.00000713	0.000183	0.000312	0.000986	0.0565	0.00000809	2.7	0.00445	3.74	0.0852	0.00159	1.65	0.00943	0.00576	0.0000926	0.000431	0.000237	0.0931	0.00000842	0.000546	0.000765	0.0029
2039 Feb	91.4	0.197	0.194	0.00438	19.5	0.0608	20	0.00000829	0.0183	0.0284	0.00817	0.0207	0.00514	16.4	0.00000714	0.000182	0.000313	0.000985	0.0565	0.00000809	2.7	0.00444	3.74	0.0852	0.00159	1.65	0.00943	0.00576	0.0000927	0.000431	0.000238	0.0931	0.00000841	0.000545	0.00	



Appendix C17: Whale Tail North Basin																																				
Constituents	Total Dissolved Solids	Ammonia	Nitrate	Nitrite	Chloride	Fluoride	Sulphate	Silver	Aluminum	Arsenic	Boron	Barium	Beryllium	Calcium	Cadmium	Cobalt	Chromium	Copper	Iron	Mercury	Potassium	Lithium	Magnesium	Manganese	Molybdenum	Sodium	Nickel	Phosphorus	Lead	Antimony	Selenium	Strontium	Thallium	Uranium	Vanadium	Zinc
2046 Jun	86.1	0.201	0.182	0.00418	18.8	0.0581	17.8	0.00000799	0.018	0.0203	0.00788	0.0195	0.0062	15.2	0.00000708	0.000167	0.0003	0.000914	0.0521	0.0000808	2.56	0.00463	3.29	0.083	0.00124	1.61	0.00765	0.00531	0.0000949	0.000374	0.000229	0.09	0.0000807	0.000528	0.000694	0.00275
2046 Jul	86	0.202	0.183	0.00421	18.8	0.0581	17.8	0.00000799	0.018	0.0202	0.00789	0.0195	0.0063	15.2	0.00000708	0.000168	0.0003	0.000913	0.0521	0.0000801	2.56	0.00465	3.29	0.083	0.00124	1.61	0.00762	0.00532	0.0000949	0.000374	0.000228	0.0901	0.0000807	0.000528	0.000694	0.00275
2046 Aug	86	0.202	0.183	0.0042	18.8	0.0582	17.8	0.000008	0.018	0.0201	0.00789	0.0195	0.00628	15.2	0.00000709	0.000168	0.0003	0.000914	0.0521	0.0000802	2.56	0.00465	3.29	0.0831	0.00124	1.61	0.00762	0.00532	0.000095	0.000374	0.000228	0.0901	0.0000808	0.000529	0.000695	0.00275
2046 Sep	85.8	0.202	0.182	0.00417	18.7	0.0581	17.7	0.00000798	0.018	0.02	0.00788	0.0195	0.00623	15.1	0.00000708	0.000167	0.0003	0.000912	0.052	0.0000801	2.56	0.00463	3.28	0.083	0.00123	1.61	0.00759	0.00531	0.0000949	0.000373	0.000228	0.0899	0.0000807	0.000528	0.000693	0.00275
2046 Oct	85.7	0.201	0.181	0.00415	18.7	0.0581	17.7	0.00000798	0.018	0.0199	0.00787	0.0194	0.0062	15.1	0.00000707	0.000167	0.000299	0.000911	0.052	0.0000808	2.56	0.00462	3.27	0.0829	0.00123	1.61	0.00756	0.0053	0.0000949	0.000372	0.000227	0.0897	0.0000807	0.000528	0.000692	0.00274
2046 Nov	85.7	0.201	0.181	0.00414	18.7	0.058	17.7	0.00000798	0.018	0.0198	0.00787	0.0194	0.00618	15.1	0.00000707	0.000167	0.000299	0.000911	0.0519	0.0000808	2.55	0.00462	3.27	0.0829	0.00123	1.6	0.00755	0.0053	0.0000951	0.000372	0.000228	0.0897	0.0000806	0.000528	0.000691	0.00274
2046 Dec	85.7	0.201	0.18	0.00414	18.7	0.058	17.7	0.00000798	0.018	0.0198	0.00787	0.0194	0.00618	15.1	0.00000708	0.000167	0.000299	0.000911	0.0519	0.0000801	2.55	0.00462	3.27	0.0829	0.00123	1.6	0.00756	0.0053	0.0000952	0.000372	0.000228	0.0897	0.0000806	0.000528	0.000692	0.00274
2047 Jan	85.8	0.201	0.18	0.00414	18.7	0.058	17.7	0.00000798	0.018	0.0198	0.00787	0.0194	0.00618	15.1	0.00000709	0.000167	0.0003	0.000911	0.0519	0.0000801	2.55	0.00462	3.27	0.0829	0.00123	1.6	0.00756	0.00529	0.0000953	0.000372	0.000228	0.0897	0.0000806	0.000529	0.000692	0.00274
2047 Feb	85.8	0.201	0.18	0.00414	18.7	0.0579	17.8	0.00000798	0.018	0.0198	0.00788	0.0194	0.00617	15.1	0.0000071	0.000167	0.0003	0.000911	0.0519	0.0000801	2.55	0.00462	3.27	0.0829	0.00123	1.6	0.00757	0.00529	0.0000954	0.000372	0.000229	0.0897	0.0000805	0.000529	0.000691	0.00274
2047 Mar	85.8	0.201	0.18	0.00413	18.7	0.0579	17.8	0.00000798	0.018	0.0198	0.00788	0.0194	0.00617	15.1	0.0000071	0.000167	0.0003	0.000911	0.0518	0.0000802	2.55	0.00462	3.27	0.083	0.00123	1.6	0.00757	0.00529	0.0000955	0.000372	0.000229	0.0897	0.0000805	0.000529	0.000691	0.00274
2047 Apr	85.9	0.201	0.18	0.00413	18.7	0.0579	17.8	0.00000799	0.018	0.0198	0.00788	0.0194	0.00617	15.1	0.00000711	0.000167	0.0003	0.000911	0.0518	0.0000802	2.55	0.00462	3.27	0.083	0.00123	1.6	0.00758	0.00529	0.0000957	0.000372	0.00023	0.0897	0.0000804	0.00053	0.000691	0.00274
2047 May	86	0.201	0.18	0.00413	18.8	0.0579	17.8	0.00000799	0.018	0.0198	0.00789	0.0194	0.00617	15.2	0.00000712	0.000167	0.0003	0.000911	0.0518	0.0000802	2.55	0.00462	3.28	0.0831	0.00123	1.6	0.00759	0.00528	0.0000958	0.000372	0.00023	0.0898	0.0000804	0.00053	0.000692	0.00274
2047 Jun	85.5	0.201	0.18	0.00413	18.7	0.0577	17.6	0.00000795	0.0179	0.0194	0.00785	0.0193	0.00624	15	0.00000707	0.000165	0.000299	0.000904	0.0516	0.00000796	2.54	0.00463	3.25	0.0828	0.00121	1.6	0.00746	0.00527	0.0000952	0.000367	0.000227	0.0895	0.0000801	0.000524	0.000685	0.00272
2047 Jul	85.4	0.202	0.181	0.00416	18.7	0.0578	17.5	0.00000795	0.0179	0.0192	0.00785	0.0193	0.00634	15	0.00000706	0.000165	0.000299	0.000904	0.0516	0.00000796	2.54	0.00465	3.24	0.0828	0.0012	1.6	0.00744	0.00527	0.0000951	0.000367	0.000227	0.0897	0.0000802	0.000524	0.000685	0.00272
2047 Aug	85.4	0.202	0.181	0.00415	18.7	0.0578	17.5	0.00000796	0.0179	0.0192	0.00785	0.0194	0.00632	15	0.00000707	0.000166	0.000299	0.000904	0.0516	0.00000798	2.54	0.00465	3.24	0.0829	0.0012	1.6	0.00743	0.00527	0.0000952	0.000367	0.000227	0.0897	0.0000802	0.000525	0.000685	0.00273
2047 Sep	85.3	0.202	0.181	0.00416	18.7	0.0578	17.5	0.00000795	0.0179	0.0192	0.00785	0.0193	0.00634	15	0.00000706	0.000165	0.000299	0.000904	0.0516	0.00000796	2.54	0.00465	3.24	0.0828	0.0012	1.6	0.00744	0.00527	0.0000951	0.000367	0.000227	0.0897	0.0000802	0.000524	0.000685	0.00272
2047 Oct	85.2	0.202	0.18	0.00413	18.6	0.0577	17.5	0.00000794	0.0179	0.0191	0.00784	0.0193	0.00627	15	0.00000706	0.000165	0.000298																			



Appendix C17: Whale Tail North Basin																																						
Constituents	Total Dissolved Solids	Ammonia	Nitrate	Nitrite	Chloride	Fluoride	Sulphate	Silver	Aluminum	Arsenic	Boron	Barium	Beryllium	Calcium	Cadmium	Cobalt	Chromium	Copper	Iron	Mercury	Potassium	Lithium	Magnesium	Manganese	Molybdenum	Sodium	Nickel	Phosphorus	Lead	Antimony	Selenium	Strontium	Thallium	Uranium	Vanadium	Zinc		
2055 May	81.8	0.197	0.162	0.0037	18	0.0553	16.2	0.00000772	0.0173	0.0136	0.00762	0.0185	0.00607	14.2	0.00000697	0.000153	0.000291	0.000848	0.0488	0.00000773	2.42	0.0045	2.96	0.0815	0.000978	1.54	0.00633	0.00499	0.0000971	0.000322	0.000221	0.0862	0.00000767	0.000502	0.000629	0.00258		
2055 Jun	81.3	0.197	0.161	0.00368	17.9	0.0552	16	0.00000768	0.0172	0.0133	0.00759	0.0184	0.00607	14.1	0.00000691	0.000152	0.00029	0.000842	0.0487	0.00000767	2.41	0.00448	2.94	0.0812	0.000964	1.54	0.00624	0.00498	0.0000964	0.000318	0.000218	0.0859	0.00000764	0.000496	0.000624	0.00256		
2055 Jul	81.3	0.198	0.162	0.0037	17.9	0.0552	16	0.00000768	0.0173	0.0132	0.00759	0.0184	0.00611	14.1	0.00000691	0.000152	0.00029	0.000842	0.0487	0.00000768	2.41	0.00449	2.94	0.0812	0.000962	1.54	0.00622	0.00498	0.0000963	0.000319	0.000217	0.0859	0.00000765	0.000496	0.000624	0.00257		
2055 Aug	81.3	0.198	0.161	0.00369	17.9	0.0553	16	0.00000769	0.0173	0.0132	0.0076	0.0184	0.00609	14.1	0.00000691	0.000152	0.00029	0.000843	0.0488	0.00000769	2.41	0.00449	2.94	0.0813	0.000962	1.54	0.00622	0.00498	0.0000964	0.000319	0.000218	0.0859	0.00000766	0.000497	0.000625	0.00257		
2055 Sep	81.2	0.197	0.161	0.00367	17.9	0.0552	15.9	0.00000768	0.0173	0.0131	0.00759	0.0184	0.00605	14.1	0.0000069	0.000152	0.00029	0.000842	0.0487	0.00000769	2.41	0.00447	2.93	0.0812	0.000959	1.54	0.0062	0.00498	0.0000963	0.000318	0.000217	0.0858	0.00000765	0.000497	0.000624	0.00257		
2055 Oct	81.1	0.197	0.16	0.00365	17.9	0.0552	15.9	0.00000768	0.0173	0.013	0.00758	0.0184	0.00601	14	0.00000689	0.000152	0.000289	0.000841	0.0487	0.00000768	2.41	0.00446	2.93	0.0811	0.000956	1.54	0.00618	0.00498	0.0000964	0.000318	0.000217	0.0856	0.00000765	0.000496	0.000623	0.00256		
2055 Nov	81.1	0.197	0.16	0.00364	17.9	0.0551	15.9	0.00000768	0.0173	0.013	0.00758	0.0184	0.006	14	0.0000069	0.000152	0.000289	0.000841	0.0486	0.00000768	2.41	0.00446	2.93	0.0811	0.000955	1.54	0.00617	0.00497	0.0000965	0.000318	0.000217	0.0856	0.00000764	0.000496	0.000622	0.00256		
2055 Dec	81.1	0.196	0.159	0.00364	17.9	0.0551	15.9	0.00000768	0.0173	0.013	0.00758	0.0184	0.00599	14	0.00000691	0.000152	0.000289	0.000841	0.0486	0.00000769	2.41	0.00446	2.93	0.0811	0.000955	1.54	0.00618	0.00497	0.0000966	0.000318	0.000218	0.0856	0.00000764	0.000497	0.000623	0.00256		
2056 Jan	81.2	0.196	0.159	0.00364	17.9	0.0551	16	0.00000768	0.0173	0.013	0.00758	0.0184	0.00599	14.1	0.00000691	0.000152	0.00029	0.000841	0.0486	0.00000769	2.41	0.00446	2.93	0.0811	0.000954	1.54	0.00619	0.00497	0.0000967	0.000318	0.000218	0.0856	0.00000764	0.000497	0.000623	0.00256		
2056 Feb	81.2	0.196	0.159	0.00363	17.9	0.0551	16	0.00000768	0.0173	0.013	0.00759	0.0184	0.00599	14.1	0.00000692	0.000152	0.00029	0.000841	0.0486	0.0000077	2.41	0.00446	2.93	0.0811	0.000954	1.53	0.00619	0.00497	0.0000969	0.000318	0.000218	0.0856	0.00000764	0.000498	0.000623	0.00256		
2056 Mar	81.2	0.196	0.159	0.00363	17.9	0.0551	16	0.00000769	0.0173	0.013	0.00759	0.0184	0.00598	14.1	0.00000693	0.000152	0.00029	0.000841	0.0486	0.0000077	2.41	0.00446	2.93	0.0812	0.000954	1.53	0.0062	0.00496	0.000097	0.000318	0.000219	0.0856	0.00000763	0.000498	0.000623	0.00256		
2056 Apr	81.3	0.196	0.159	0.00363	17.9	0.055	16	0.00000769	0.0173	0.0129	0.00759	0.0184	0.00598	14.1	0.00000694	0.000152	0.00029	0.000841	0.0485	0.0000077	2.41	0.00446	2.93	0.0812	0.000954	1.53	0.0062	0.00496	0.0000971	0.000318	0.000219	0.0856	0.00000763	0.000499	0.000623	0.00256		
2056 May	81.4	0.196	0.159	0.00363	17.9	0.055	16.1	0.00000769	0.0173	0.0129	0.0076	0.0184	0.00598	14.1	0.00000695	0.000152	0.000291	0.000841	0.0485	0.00000771	2.41	0.00446	2.93	0.0813	0.000954	1.53	0.00621	0.00496	0.0000973	0.000318	0.00022	0.0857	0.00000763	0.000499	0.000623	0.00256		
2056 Jun	80.9	0.196	0.159	0.00362	17.8	0.0549	15.9	0.00000766	0.0172	0.0127	0.00756	0.0183	0.00598	14	0.00000689	0.000151	0.000289	0.000836	0.0484	0.00000765	2.4	0.00445	2.91	0.081	0.000941	1.53	0.00612	0.00495	0.0000965	0.000314	0.000217	0.0854	0.00000761	0.000494	0.000618	0.00255		
2056 Jul	80.9	0.197	0.159	0.00363	17.8	0.055	15.8	0.00000766	0.0172	0.0126	0.00756	0.0183	0.00602	14	0.00000689	0.000151	0.000289	0.000836	0.0485	0.00000766	2.4	0.00446	2.91	0.081	0.000939	1.53	0.0061	0.00496	0.0000965	0.000314	0.000217	0.0855	0.00000762	0.000494	0.000618	0.00255		
2056 Aug	80.9	0.197	0.159	0.00362	17.8	0.055	15.8	0.00000766	0.0173	0.0126	0.00757	0.0183	0.006	14	0.00000689	0.000151	0.000289	0.000837	0.0485	0.00000767	2.4	0.00446	2.91	0.0811	0.000938	1.53	0.0061	0.00496	0.0000965	0.000314	0.000217	0.0854	0.00000762	0.000495	0.000619	0.00255		
2056 Sep	80.7	0.196	0.158	0.00359	17.8	0.055	15.8	0.00000765	0.0172	0.0125	0.00756																											



Appendix C17: Whale Tail North Basin																																				
Constituents	Total Dissolved Solids	Ammonia	Nitrate	Nitrite	Chloride	Fluoride	Sulphate	Silver	Aluminum	Arsenic	Boron	Barium	Beryllium	Calcium	Cadmium	Cobalt	Chromium	Copper	Iron	Mercury	Potassium	Lithium	Magnesium	Manganese	Molybdenum	Sodium	Nickel	Phosphorus	Lead	Antimony	Selenium	Strontium	Thallium	Uranium	Vanadium	Zinc
2064 Apr	78.2	0.188	0.139	0.0031	17.2	0.0533	15	0.00000751	0.0171	0.009	0.0074	0.0177	0.00522	13.4	0.00000679	0.000143	0.000283	0.0008	0.0466	0.00000753	2.32	0.00418	2.72	0.0799	0.000797	1.47	0.00539	0.00478	0.0000976	0.000287	0.000213	0.082	0.0000074	0.000481	0.000584	0.00246
2064 May	78.3	0.188	0.139	0.0031	17.2	0.0533	15	0.00000752	0.0171	0.009	0.00741	0.0177	0.00522	13.4	0.00000681	0.000143	0.000284	0.000801	0.0466	0.00000754	2.32	0.00418	2.73	0.08	0.000797	1.47	0.0054	0.00478	0.0000978	0.000288	0.000213	0.082	0.0000074	0.000482	0.000585	0.00246
2064 Jun	77.8	0.188	0.138	0.00309	17.1	0.0533	14.8	0.00000749	0.0171	0.0088	0.00738	0.0177	0.0052	13.3	0.00000675	0.000143	0.000282	0.000797	0.0466	0.00000751	2.31	0.00416	2.71	0.0798	0.000788	1.47	0.00532	0.00478	0.000097	0.000286	0.00021	0.0817	0.0000074	0.000479	0.000582	0.00246
2064 Jul	77.8	0.188	0.138	0.00309	17.1	0.0534	14.8	0.00000749	0.0171	0.00876	0.00738	0.0177	0.00523	13.3	0.00000675	0.000143	0.000282	0.000797	0.0466	0.00000752	2.31	0.00417	2.71	0.0798	0.000787	1.47	0.00531	0.00478	0.0000969	0.000286	0.00021	0.0818	0.00000741	0.000479	0.000582	0.00246
2064 Aug	77.8	0.188	0.138	0.00308	17.2	0.0534	14.8	0.0000075	0.0172	0.00874	0.00739	0.0177	0.00521	13.3	0.00000676	0.000143	0.000282	0.000798	0.0466	0.00000753	2.31	0.00417	2.71	0.0799	0.000787	1.47	0.00531	0.00478	0.000097	0.000286	0.00021	0.0818	0.00000742	0.00048	0.000583	0.00246
2064 Sep	77.7	0.188	0.137	0.00306	17.1	0.0534	14.7	0.00000749	0.0171	0.00868	0.00738	0.0177	0.00516	13.3	0.00000674	0.000143	0.000282	0.000797	0.0466	0.00000752	2.31	0.00415	2.7	0.0797	0.000785	1.47	0.00529	0.00478	0.0000968	0.000286	0.00021	0.0816	0.00000741	0.000479	0.000581	0.00246
2064 Oct	77.5	0.187	0.137	0.00305	17.1	0.0533	14.7	0.00000748	0.0171	0.00863	0.00737	0.0177	0.00512	13.2	0.00000673	0.000143	0.000281	0.000796	0.0466	0.0000075	2.31	0.00413	2.7	0.0796	0.000782	1.46	0.00527	0.00477	0.0000968	0.000285	0.000209	0.0814	0.0000074	0.000477	0.000578	0.00246
2064 Nov	77.5	0.187	0.136	0.00304	17.1	0.0533	14.7	0.00000748	0.0171	0.0086	0.00737	0.0177	0.00511	13.2	0.00000673	0.000143	0.000281	0.000795	0.0465	0.0000075	2.31	0.00413	2.7	0.0796	0.000781	1.46	0.00526	0.00477	0.0000969	0.000285	0.000209	0.0814	0.0000074	0.000477	0.000578	0.00245
2064 Dec	77.5	0.187	0.136	0.00304	17.1	0.0533	14.7	0.00000748	0.0171	0.0086	0.00737	0.0177	0.0051	13.2	0.00000673	0.000143	0.000282	0.000796	0.0465	0.00000751	2.31	0.00413	2.7	0.0796	0.000781	1.46	0.00527	0.00477	0.000097	0.000285	0.00021	0.0814	0.0000074	0.000478	0.000578	0.00245
2065 Jan	77.6	0.187	0.136	0.00303	17.1	0.0532	14.7	0.00000748	0.0171	0.00859	0.00737	0.0177	0.0051	13.2	0.00000674	0.000143	0.000282	0.000796	0.0465	0.00000751	2.31	0.00413	2.7	0.0796	0.000781	1.46	0.00528	0.00477	0.0000972	0.000285	0.00021	0.0814	0.00000739	0.000478	0.000578	0.00245
2065 Feb	77.6	0.187	0.136	0.00303	17.1	0.0532	14.8	0.00000748	0.0171	0.00859	0.00737	0.0177	0.0051	13.3	0.00000675	0.000143	0.000282	0.000796	0.0465	0.00000751	2.31	0.00413	2.7	0.0796	0.000781	1.46	0.00528	0.00476	0.0000973	0.000285	0.00021	0.0814	0.00000739	0.000479	0.000578	0.00245
2065 Mar	77.7	0.187	0.136	0.00303	17.1	0.0532	14.8	0.00000749	0.0171	0.00859	0.00737	0.0177	0.0051	13.3	0.00000676	0.000143	0.000282	0.000796	0.0465	0.00000752	2.31	0.00413	2.7	0.0797	0.00078	1.46	0.00529	0.00476	0.0000974	0.000285	0.000211	0.0814	0.00000739	0.000479	0.000578	0.00245
2065 Apr	77.7	0.187	0.136	0.00303	17.1	0.0532	14.8	0.00000749	0.0171	0.00858	0.00738	0.0176	0.00509	13.3	0.00000677	0.000143	0.000282	0.000796	0.0464	0.00000752	2.31	0.00413	2.7	0.0797	0.00078	1.46	0.0053	0.00476	0.0000975	0.000285	0.000211	0.0814	0.00000738	0.00048	0.000578	0.00245
2065 May	77.8	0.187	0.136	0.00303	17.1	0.0532	14.8	0.0000075	0.0171	0.00858	0.00738	0.0177	0.00509	13.3	0.00000678	0.000143	0.000283	0.000796	0.0464	0.00000753	2.31	0.00413	2.7	0.0798	0.000781	1.46	0.0053	0.00476	0.0000977	0.000285	0.000212	0.0815	0.00000739	0.00048	0.000581	0.00245
2065 Jun	77.4	0.187	0.136	0.00303	17.1	0.0531	14.6	0.00000746	0.017	0.0084	0.00735	0.0176	0.00512	13.2	0.00000672	0.000142	0.000281	0.000792	0.0464	0.00000747	2.3	0.00413	2.68	0.0795	0.000771	1.46	0.00523	0.00476	0.0000969	0.000282	0.000209	0.0813	0.00000736	0.000475	0.000576	0.00244
2065 Jul	77.4	0.187	0.136	0.00304	17.1	0.0532	14.6	0.00000746	0.0171	0.00836	0.00735	0.0176	0.00514	13.2	0.00000672	0.000142	0.000281	0.000792	0.0464	0.00000748	2.3	0.00413	2.68	0.0795	0.00077	1.46	0.00522	0.00476	0.0000968	0.000282	0.000209	0.0813	0.00000737	0.000475	0.000577	0.00244
2065 Aug	77.4	0.187	0.136	0.00303	17.1	0.0532	14.6	0.00000747	0.0171	0.00835	0.00736	0.0176	0.00513	13.2	0.00000673	0.000142	0.000281	0.000793	0.0464	0.00000749	2.3	0.00413	2.69	0.0796	0.000771	1.46	0.00522	0.00476	0.0000969	0.000283	0.000209	0.0813	0.00000738	0.000476	0.000578	0.00245
2065 Sep	77.3	0.187	0.135	0.00301	17	0.0532	14.6	0.00000746	0.0171	0.0083	0.00735	0.0176	0.00509	13.2	0.00000672	0.000142	0.000281	0.000792	0.0464	0.00000748	2.3	0.00412	2.68	0.0796	0.000769	1.46	0.0052	0.00476	0.0000968	0.000282	0.000209	0.0812	0.00000738	0.000476	0.000577	0.00245
2065 Oct	77.2	0.187	0.135	0.003	17	0.0531	14.6	0.00000746	0.0171	0.00826	0.00735	0.0176	0.00506	13.2	0.00000671	0.000142	0.000281	0.000792	0.0464	0.00000748	2.3	0.00411	2.68	0.0795	0.000767	1.46	0.00519	0.00476	0.0000968	0.000282	0.000208	0.0811	0.00000737	0.000475	0.000576	0.00244
2065 Nov	77.																																			



**APPENDIX C • 2023 FRESHET ACTION PLAN**





**AGNICO EAGLE**

**MEADOWBANK COMPLEX**

**WHALE TAIL FRESHET ACTION PLAN**

**MARCH 2023**

**VERSION 5**



## EXECUTIVE SUMMARY

The purpose of this Freshet Action Plan is to identify areas of concern around the Whale Tail Mine and the associated Hauling road needing to be managed in an organized and timely manner during the annual freshet period to prevent adverse environmental and operational impacts. The Plan outlines specified actions that will be taken by Agnico to manage and mitigate areas where environmental incidents could occur, as well as addressing historical incidents, specifically the WRSF dike seepage.

The freshet period is typically initiated during the annual snow and ice melt sometime around mid-May. During this period excess water is created and must be managed through additional pumping and management practices at vulnerable areas around the site. Mitigation techniques, timeframes and specified roles and responsibilities are outlined in this document for each area of concern.

The main areas of concern are the mining pit, the WT WRSF surrounding and pond, the IVR WRSF, the Whale Tail Attenuation Pond, the IVR attenuation Pond, the South Whale Tail Diversion Channel, and the IVR Diversion Channel.

It is important for all water management and associated infrastructure to be in good working order and adequate to manage the expected water flows associated with the freshet period; this includes but is not limited to pumps, ditch, culvert and sump maintenance, critical piping system installation and inspection, as well as adequate resource allocation for preparative work. A summary of the 2023 preparation works and roles and responsibilities is presented in the attached Appendix 1 (2023 Freshet Action Plan Procedures). Appendix 1 will be updated yearly to reflect changes in conditions at the Whale Tail site.



## DOCUMENT CONTROL

#	Revision			Pages Revised	Remarks
	Prep.	Rev.	Date		
01	Agnico	Internal	March 2019	All	Initial Version
02	Agnico	Internal	March 2020	All	Comprehensive update from 2019 plan
03	Agnico	Internal	March 2021	All	Comprehensive update from 2020 plan to include IVR infrastructures
04	Agnico	Internal	March 2022	All	Comprehensive update from 2021 plan
05	Agnico	Internal	March 2023	2	Figure 2-1 was updated
				5	Included the new pads that were built in 2022
				6	Section 2.13 was added to include the east and west abutment
				Appendix 2	Included a 2023 version
				Appendix 3	Included a 2023 version - Modifications with the pit transfers

Prepared By: Meadowbank Environment

Approved by:



Eric Haley

Environment & Critical Infrastructure Superintendent



## TABLE OF CONTENTS

<b>1</b>	<b>INTRODUCTION .....</b>	<b>1</b>
<b>2</b>	<b>AREAS OF CONCERN .....</b>	<b>2</b>
2.1	Mining Pits and Pit Walls .....	3
2.2	Whale Tail Waste Rock Storage Facility .....	3
2.3	IVR Waste Rock Storage Facility .....	3
2.4	South Whale Tail Diversion Channel .....	4
2.5	IVR Diversion Channel .....	4
2.6	Whale Tail Attenuation Pond .....	4
2.7	Whale Tail Dike Seepage .....	4
2.8	IVR Attenuation Pond .....	4
2.9	Whale Tail Fuel Tank Farms .....	5
2.10	Haul road Culverts and bridges .....	5
2.11	2022-2023 Pad Constructions and Road Culverts .....	5
2.12	Underground WRSF Water Collection System .....	6
2.13	Whale Tail Dike East and West Abutment .....	6
<b>3</b>	<b>ADAPTIVE WATER MANAGEMENT STRATEGY .....</b>	<b>6</b>
<b>4</b>	<b>SNOW MANAGEMENT .....</b>	<b>6</b>

## LIST OF FIGURES

Figure 2-1: View of Whale Tail areas .....	2
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## List of Appendix

- Appendix 1 - 2023 Freshet Action Plan Procedure
- Appendix 2 – 2022-2023 Snow Management Map
- Appendix 3 – 2023 Freshet flowchart and plan view



## 1 INTRODUCTION

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The purpose of the Whale Tail (WT) Freshet Action Plan is to ensure that Agnico can address and manage excess water associated with the freshet season at the Whale Tail site, and to ensure Agnico has implemented specific management and mitigation measures in response to environmental incidents with potential for off site impacts to water or land.

The freshet season is loosely defined as starting approximately May 15<sup>th</sup>, and in some cases, actions and mitigation measures can extend up to early fall when freezing re-occurs. There are many areas around the site that are vulnerable to excess water; the goal is to identify these areas and develop a clear plan with defined roles and responsibilities (amongst Agnico departments), and to manage the freshet flows.

In addition, several guiding principles are applicable to the formation of this plan. The highest priority principles are:

- 1) to ensure that the health and safety of Agnico employees is protected, especially with respect to mining operations when excess water is present;
- 2) to ensure that mine contact water from runoff or seepage is managed to prevent adverse environmental impacts; and
- 3) to make sure the site is in compliance with the Nunavut Water Board (NWB) License, Part D, Item 21 and Part E, Item 11.

The plan will identify the areas of concern and discuss the potential risks as well as mitigation measures necessary to address the identified issues. The overall site footprint has increased, and experience needs to be gained in identifying key location; lessons learned from the Meadowbank site will provide the necessary guidance. Appendix 1 contains the defined 2023 procedures, the roles and responsibilities and associated timelines. Agnico's intent is to update the Procedural Appendix on a yearly basis. There may be additional mitigation measures for a defined problem area or in some cases a previously defined issue may be permanently rectified.

The main areas of concern are:

- Mining pits and pit walls;
- Whale Tail WRSF and WRSF pond;
- IVR WRSF;
- South Whale Tail Diversion Channel;
- IVR Diversion Channel;
- Whale Tail Attenuation pond;
- Whale Tail Dike Seepage;
- IVR Attenuation Pond;
- WT Fuel Tank farms;
- Haul road culverts and bridges;
- Pads and roads built since 2022;
- Underground WRSF;and
- Whale Tail Dike East and West Abutment.

Each area identified above will be discussed in detail below. All areas of concern are considered priorities based on the guiding principles.



## 2 AREAS OF CONCERN

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Table 2-1 View of Whale Tail Areas





## 2.1 MINING PITS AND PIT WALLS

All ramps, jump ramps, ditches and sumps must be cleaned of all ice and snow before May in order to contain any water resulting from the snow melt. All allocated pumps must be checked and serviced before the month of May. In addition, a check must be completed confirming that all piping systems starting from the different pits leading to the Whale Tail attenuation pond are free of ice, or any obstruction.

The water management strategy for the pits will be to send water from the WT Pit and IVR Pit area to either the WT Attenuation Pond or the IVR Attenuation Pond.

- A sump and ditch system is used to manage runoff water within the pit footprints. The infrastructures location will be modified or added as required based on the mining sequence.
- Sumps outside of the pit footprint are planned to prevent runoff from reporting to the Pit and to prevent water from ponding against the pit crest;
  - At WT Pit this includes the sumps located at the downstream area of Mammoth Dike and the North-West sump;
  - At IVR Pit this include the sump located in former Lake A47 (A47-S sump) and in the Northern area of IVR Pit (A47-N sump).

## 2.2 WHALE TAIL WASTE ROCK STORAGE FACILITY

Runoff from the Whale Tail Waste Rock Storage Facility (WT WRSF) is collected by 5 sumps (WT WRSF 1,2,3,4 & 5) as well as the WRSF pond delimited by WRSF Dike. Water from these sumps is pumped to the WRSF Pond and the WRSF Pond water is pumped to the WT Attenuation Pond or IVR Attenuation Pond.

The WT WRSF will require weekly inspections around the perimeter beginning as soon as the freshet starts (May) until freeze up to identify any seepage. In the event that seepage is observed from the WT WRSF, it must be reported to the Environment Departments and samples must be taken to determine the water quality and source. A mitigation plan will be prepared and implemented if necessary. Based on field observation, it may be deemed necessary to remove snow accumulation in the sumps around the WT WRSF to mitigate risk of snowmelt reporting to the surrounding environment. Runoff originating from the WT WRSF ultimately ends up in the WT WRSF pond. In August 2019, seepage from this pond was found to have reported through the WRSF Dike to the Mammoth lake. Remediation measures put in place in 2020 demonstrated to be successful. Daily inspections of the WRSF Downstream Pond will be required to confirm no seepage is occurring. A pump must be available in this location to pump any water potentially seeping through the structure back into the WRSF Pond.

## 2.3 IVR WASTE ROCK STORAGE FACILITY

Runoff from the IVR Waste Rock Storage Facility (WRSF) is collected by 5 sumps (IW A,B,C,D,E). Water from these sumps is sent to the IVR Attenuation Pond either by pumping or by gravity.

The IVR Waste Rock Storage Facility (IVR WRSF) will require weekly inspections around the perimeter beginning as soon as the freshet starts (May) until freeze up to identify any seepage and ensure that the gravity flow to the IVR Attenuation Pond are occurring as planned. In the event that



seepage is observed from the IVR WRSF, it must be reported to the Environment Departments and samples must be taken to determine the water quality and source. A mitigation plan will be prepared and implemented if necessary. Based on field observation, it may be deemed necessary to remove snow accumulation in key locations around the IVR WRSF to mitigate risk of snowmelt reporting to the surrounding environment.

## **2.4 SOUTH WHALE TAIL DIVERSION CHANNEL**

The South Whale Tail Diversion Channel was constructed in 2020. In early May, partial snow removal will be required in this infrastructure to form a preferential water path and prevent snow blockage. Daily inspection at the start of freshet will be required until freshet is completed and following rain events, to ensure no contaminant is transported into Mammoth Lake. Turbidity barriers were left in place at the end of the previous summer to secure subsequent freshets. Barrier inspection will be required to ensure they perform as intended.

## **2.5 IVR DIVERSION CHANNEL**

The IVR Diversion Channel was constructed during the fall of 2020. The IVR Diversion Channel serves to divert the watershed reporting to the IVR Pit towards the C-Watershed. This will reduce the amount of contact water to manage on site. In early May, partial snow removal will be required in this infrastructure to form a preferential water path and prevent snow blockage. Daily inspection at the start of freshet will be required until freshet is completed and following rain events, to ensure no contaminant is transported into the surrounding environment. Additional mitigation measures may be required, based on field observations.

## **2.6 WHALE TAIL ATTENUATION POND**

The Whale Tail Attenuation Pond is the secondary contact water management basin on site. Contact water from surrounding infrastructure is pumped to the pond. From there, Whale Tail Attenuation Pond water can be pumped to either the IVR Attenuation Pond or the AsWTP, for treatment, if required, and discharge to approved final effluent locations within Whale Tail South or Mammoth lake. A 10-day notice prior to changing effluent discharge locations must be submitted to CIRNAC. The plant's treatment abilities were designed to remove TSS and arsenic. All piping and the discharge diffuser must be inspected prior to freshet, in order to have all installations in place to proceed with pumping and/or treatment activities during freshet. The pond water levels will be managed closely and inspected regularly.

## **2.7 WHALE TAIL DIKE SEEPAGE**

Water from the Whale Tail Dike seepage is reporting to the WT Attenuation Pond through either a pumping system or by gravity. If water quality criteria are met, it is possible for the system to discharge directly to WTS, a 10-day notice to ECCC would be required. The system is not expected to be put in operation due to the current water quality.

## **2.8 IVR ATTENUATION POND**

The IVR Attenuation Pond is the main contact water management basin on site. Contact water from surrounding infrastructure is pumped to the pond. From there, water can be discharged to approved final effluent locations within Whale Tail South or Mammoth lake, or may be sent to the AsWTP, for



treatment, if required, prior to discharge. A 10-day notice prior to changing effluent discharge locations must be submitted to CIRNAC. The plant's treatment abilities were designed to remove TSS and arsenic. All piping and the discharge diffuser must be inspected prior to freshet, in order to have all installations in place to proceed with pumping and/or treatment activities during freshet. The pond water levels will be managed closely and inspected regularly.

## **2.9 WHALE TAIL FUEL TANK FARMS**

The main fuel farm containments were built in 2019, and will be monitored throughout freshet. Snow and ice accumulation within the fuel tank farms must be adequately managed to prevent overflow to the environment and/or damage to the fuel handling systems. The Energy and Infrastructure Department will advise the Environmental Department of their intent to pump the containment area once ice/snow begins to melt. Water samples will be taken in accordance with the Water License to ensure compliance prior to its release. A notice must be provided to the CIRNAC Inspector 10 days prior to this pumping activity. Once sample results have been obtained, the Environmental Department will advise the Energy and Infrastructure Department. If sample results permit, the pumping may begin to direct water to the tundra/ground in a way to prevent erosion. The volume of water pumped from secondary containment(s) will be track by the Energy and Infrastructure Department and/or Environment Department. In the event that the water sample results do not meet discharge criteria the water could be trucked in a tanker and transported to the Meadowbank site to be disposed of in the TSF.

## **2.10 HAUL ROAD CULVERTS AND BRIDGES**

Daily inspections will be undertaken starting in May at all culverts and bridges along the Haul road to ensure that water during freshet is flowing freely and no erosion is occurring. If elevated TSS/Turbidity levels are observed sampling will occur and the results assessed. Turbidity barrier will be installed if required. The Mine department will also be advised if severe erosion/scouring is observed. In addition, snow and ice removal may be required to allow the water to flow as per design specifications. Daily inspections will be performed during the freshet period by the Environment department.

## **2.11 2022-2023 PAD CONSTRUCTIONS AND ROAD CULVERTS**

Weekly inspections at the start of snowmelt will be required to monitor for potential erosion and sediment transport. Mitigation measures may be required to minimize transport of sediments towards water bodies. See below for a list of such constructions:

- Underground Emulsion transfer pads;
- Nemo Lake pad;
- Mammoth Lake road; and
- Qamanittuaq SANA crusher pad.

In addition to the pads, some culverts around site drain towards water bodies. Daily inspections will be undertaken by the Environment Department starting in May for all culverts around the mine site to ensure the water during freshet is flowing freely and no erosion is occurring. If elevated TSS/Turbidity levels are observed sampling will occur and the results assessed. Turbidity control



equipment will be installed if required. Snow and ice removal may be required to allow the water to flow as per design specifications.

### **2.12 UNDERGROUND WRSF WATER COLLECTION SYSTEM**

The Underground WRSF Water Collection System was built in 2019 to collect any water running off the underground infrastructure, and direct runoff water into GSP1. Steaming of culverts may be necessary if snow or ice blockage are identified prior to the start of freshet. Weekly inspection will be required during freshet to validate operationality and liner integrity of collection system.

### **2.13 WHALE TAIL DIKE EAST AND WEST ABUTMENT**

In 2022-2023, two thermal berms at the East and West abutment of Whale Tail Dike were built to prevent water to ingress further in the abutment. Daily inspections of the East and West abutment of Whale Tail Dike will be monitored throughout freshet and following rain events. TSS control measures such as turbidity barrier may be installed at the abutments if required.

## **3 ADAPTIVE WATER MANAGEMENT STRATEGY**

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An Adaptive Water Management Plan was developed to document specific mitigation measures and associated management actions to be taken when specified thresholds are exceeded. Mitigation measures may include special studies, operational changes, revised or new water and waste management systems, structures and/or facilities, or implementing mitigation activities to prevent, stabilize or reverse a change in environmental conditions or to otherwise protect the receiving environment. The Adaptive Management Plan is to be reviewed periodically to account for the dynamics of mine construction and operation, and adjusted as needed.

Various level thresholds were identified for surface water management, based on the capacity of different water management infrastructure to retain water on site. The objective is to trigger management strategy actions based on the capacity of these structures. The main management response is based on increasing the discharge rate especially when water is meeting effluent discharge criteria.

## **4 SNOW MANAGEMENT**

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A snow management procedure has been developed internally in 2020 and will be updated annually. Refer to Appendix 2 for the snow management map. Temporary snow storage dumps and snow accumulation areas of concern were identified on a map. Removal will be managed accordingly.





## **APPENDIX 1**

### **2023 Freshet Action Plan Procedure**



Section	Area of Concern	Role/Action	Responsibilities	Dates
2.1 MINING PITS AND PIT WALLS				
2.1	Mining Pit and Pit walls - General	1) Clean all ice, mud and snow on all permanent ramps, jump ramps, etc.	Mine Operations	Before May
		2) Check and service all pumps.	E&I (Energy and Infrastructure) and Maintenance	Before May
		3) Check that all piping systems starting from the pit leading to the Attenuation ponds are free of ice by validating pumping values (if pumping systems active) and/or performing an air test in the pipe with a compressor.	E&I/Mine Operations	Before May
2.2 WHALE TAIL WASTE ROCK STORAGE FACILITY				
2.2.	WT WRSF Inspection	1) Weekly inspection around the WRSF perimeter to identify any seepage.	Env. Department	May - as soon as freshet starts until freeze up
		2) Pump if required from the WRSF periphery to WRSF Pond	E&I	May - as soon as freshet starts until freeze up
		3) If seepage observed notify Env Department AND sample for Water License Parameters.	Env. Department	May - as soon as freshet starts until freeze up
WRSF Pond		Daily inspection - keep record	Env. Department	May - until freshet complete



				and after rain events	
	1)	Maintain WRSF Pond as dry as possible	E&I	May - until freeze up	
	2)	Pump any water reporting to the WRSF downstream water collection system – Volumes required to be documented	E&I/Engineering	May - until freeze up	
	3)	Sample upstream and downstream	Env. Department	May - until freeze up	
	4)	Report any discharge of TSS to Mammoth Lake to ECCC/NWB (if grab > 30 mg/L).	Env. Department	May - until freshet complete and after rain events	
<b>2.3 IVR WASTE ROCK STORAGE FACILITY</b>					
2.3.	IVR WRSF Inspection	1)	Weekly inspection around the IVR WRSF perimeter to identify any seepage.	Env. Department	May - as soon as freshet starts until freeze up
		2)	Pump if required from the IVR WRSF periphery to IVR attenuation pond	E&I	May - as soon as freshet starts until freeze up
		3)	If seepage observed notify Env Department AND sample for Water License Parameters.	Env. Department	May - as soon as freshet starts until freeze up



2.4 SOUTH WHALE TAIL DIVERSION CHANNEL				
2.4	South Whale Tail Diversion Channel	1) Daily inspection - keep record	Env. Department	May - until freshet complete and after rain events
		2) Install mitigation measures, if needed (elevated TSS observed), and maintain	Env. Department	May - until freshet complete and after rain events
		3) Sample monitoring for TSS, if excess turbidity observed - use external lab.	Env. Department	May - until freshet complete and after rain events
		4) Report any discharge of TSS to Mammoth Lake to ECCC/NWB (if grab > 30 mg/L).	Env. Department	May - until freshet complete and after rain events
2.5 IVR DIVERSION CHANNEL				
2.5	IVR Diversion Channel	1) Daily inspection - keep record	Env. Department	May - until freshet complete and after rain events
		2) Install mitigation measures, if needed (elevated TSS observed), and maintain	Env. Department	May - until freshet complete and after rain events
		3) Sample monitoring for TSS, if excess turbidity observed - use external lab.	Env. Department	May - until freshet complete and after rain events



		4) Report any discharge of TSS to Mammoth Lake to ECCC/NWB (if grab > 30 mg/L).	Env. Department	May - until freshet complete and after rain events
2.6 WHALE TAIL ATTENUATION POND				
2.6	Whale Tail Attenuation Pond	1) Set-up pumping of the WT Attenuation Pond to prevent water from flowing into the pit area, keeping track of all daily volumes	E&I	At all time
		2) Notify Environmental Department before any environmental discharge.	E&I	At all time
		3) Inspect all piping and discharge diffuser	E&I	May
2.8 IVR ATTENUATION POND				
2.8	IVR Attenuation Pond	1) Set-up pumping of IVR Attenuation Pond through the AsWTP, keeping track of all daily volumes	E&I	At all time
		2) Notify Environmental Department before any environmental discharge.	E&I	At all time
		3) Inspect all piping and discharge diffuser	E&I	May
2.9 FUEL TANK FARMS				
2.9	WT Tank Farm	1) E&I Dept to advise Env Dept in advance of intent to pump once ice melts in containment area.	E&I and Env. Department	Probably mid-June and September



		2) Sample water in accordance with Water License to ensure compliance with limits prior to release.	Env. Department	Probably mid-June and September
		3) Provide notice to Inspector 10 days prior to pumping.	Env. Department	Probably mid-June and September
		4) Advise Energy and Infrastructure Dept if pumping can begin based on sample results.	Env. Department	Probably mid-June and September
		5) Pump to tundra/ground or Meadowbank TSF. <b>NOTE: The water cannot be pumped out to the tundra if it does not meet the Water License criteria.</b>	E&I	Probably mid-June and September
2.10 WHALE TAIL HAUL ROAD CULVERTS AND BRIDGES				
2.10	Recent pad and road constructions	1) Daily inspection of and bridges on the Whale Tail Haul Road	Env. Department	May and after rain events
		2) Sample for TSS and Turbidity if elevated TSS observed.	Env. Department	May - until freeze up
		3) Notify E&I Dept & the mine department if severe erosion/scouring observed - for repair action.	Env. Department	May - until freeze up
		4) Install mitigation measures if required.	Env. Department	May - until freeze up
2.11 RECENT PAD AND ROAD CONSTRUCTIONS				



2.11	Recent pad and road constructions	1) Daily inspection of culverts around site (Road to emulsion plant, IVR access road)	Env. Department	May and after rain events
		2) Weekly inspection of toes of constructions built in the last year.	Env. Department	May and after rain events
		3) Sample for TSS and Turbidity if elevated TSS observed.	Env. Department	May - until freeze up
		4) Notify E&I Dept if severe erosion/scouring observed - for repair action.	Env. Department	May - until freeze up
		5) Install mitigation measures if required.	Env. Department	May - until freeze up

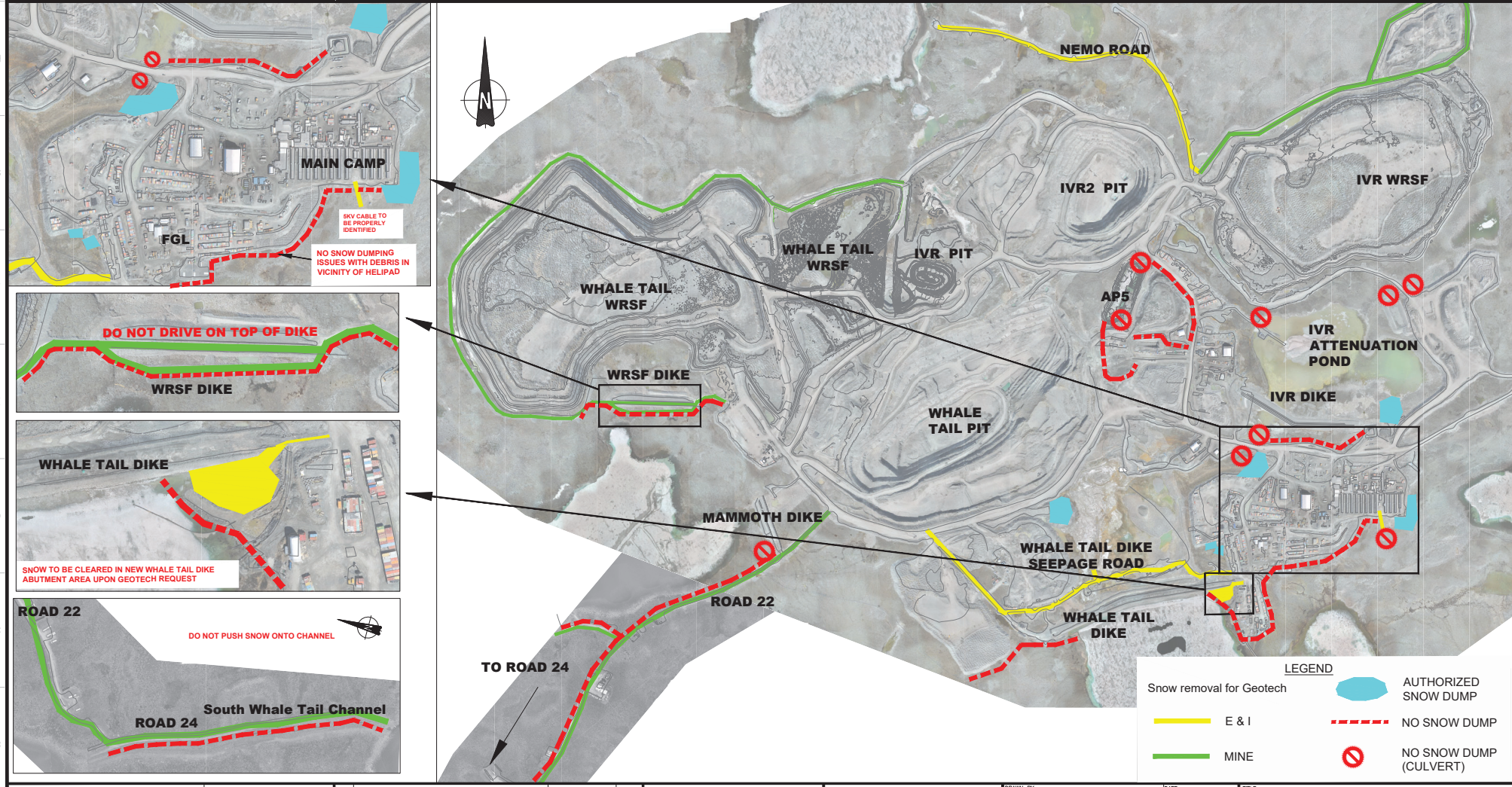




## APPENDIX 2

### 2022-2023 Snow Management Map





TITLE	# DWG	REV	DESCRIPTION	DATE	BY
REFERENCE DRAWINGS			REVISIONS		



DRAWN BY	T. DAHM/G. BARIL	DATE	2022-10-30
CHECKED BY			
APPROVED BY			
PROJECT NO.			
DATE			

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TITLE	
AGNICO-EAGLE - MEADOWBANK DIVISION GEOTECHNICAL REQUIREMENTS SNOW CLEARING MAP 2022-2023	
SCALE	N.T.S.
FILE	.DWG
DRAWING NO.	
REVISION	
SHEET	1 / 1





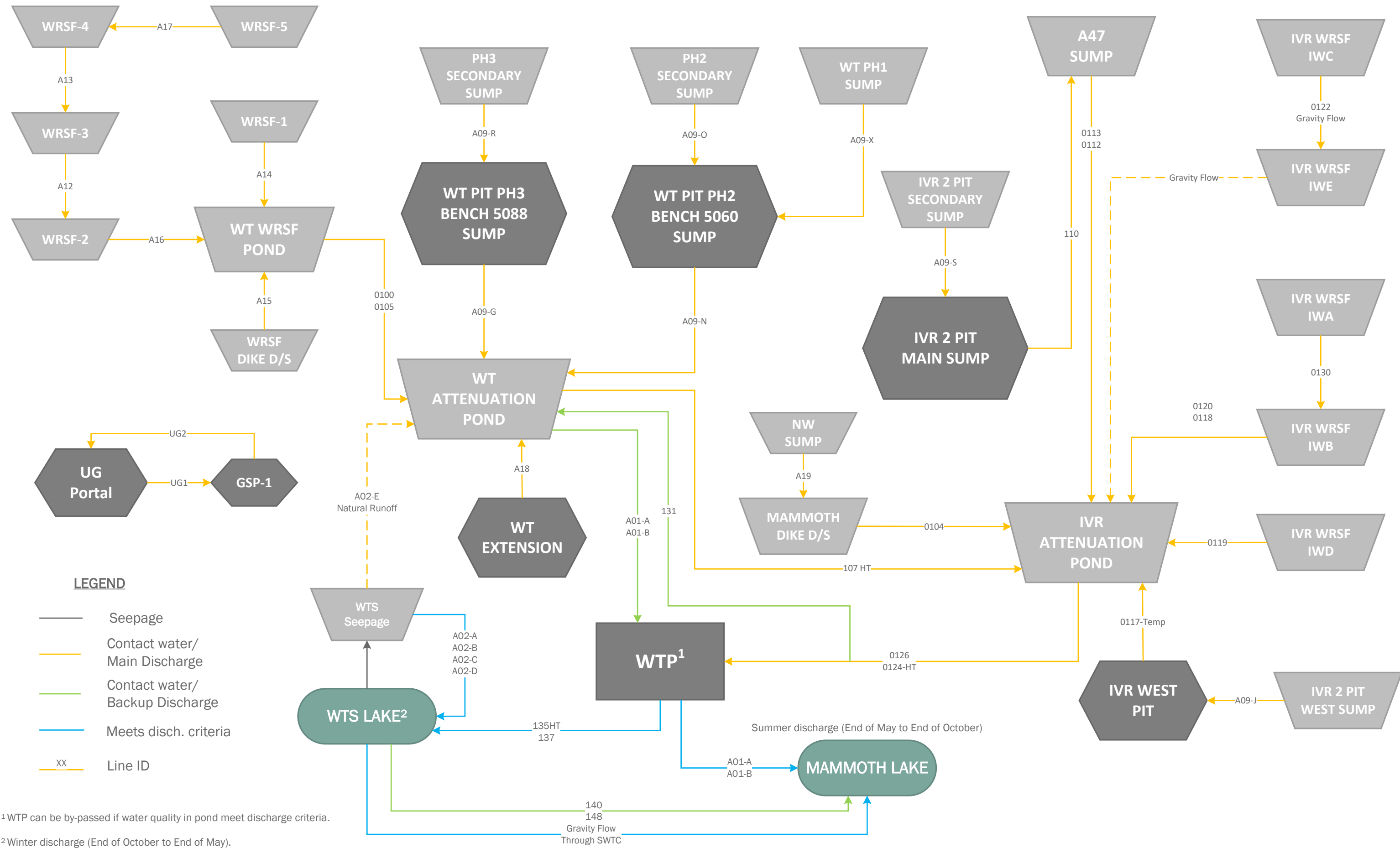
## APPENDIX 3

2023 Freshet flowchart and plan view



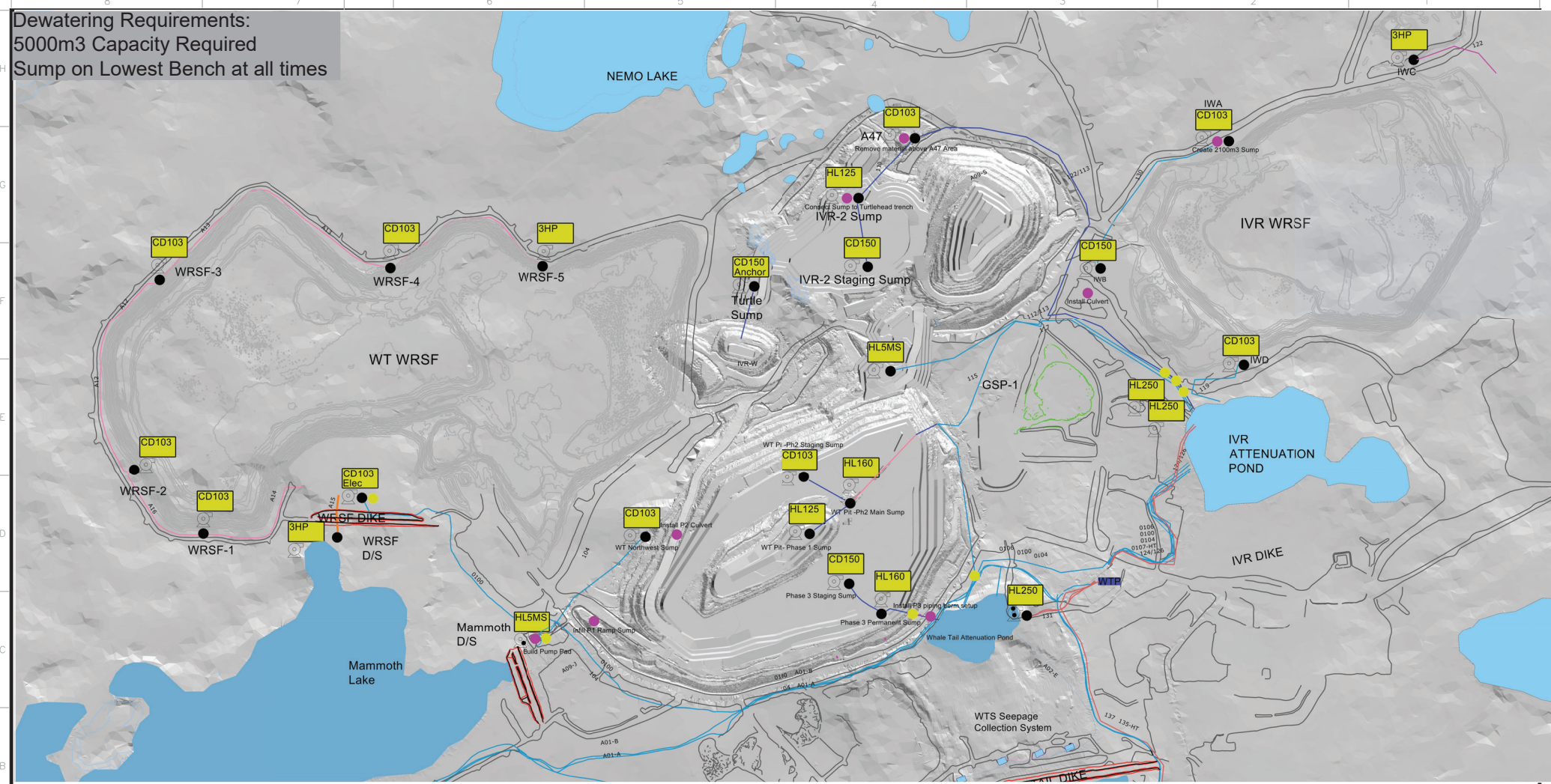
Whale Tail Mine 2023 Detailed Freshet Flowsheet












Updated by : C. Pelletier  
Date: 2022-03-25







Dewatering Requirements:  
5000m3 Capacity Required  
Sump on Lowest Bench at all times



GENO	Description	Color	Sump	Earthworks
	4" HDPE DR11			
	4" HDPE DR17			
	4" Layflat			
	8" HDPE DR9			
	8" HDPE DR11			
	8" HDPE DR17			
	12" MineFlex			
	14" HDPE DR11			
	14" HDPE DR17			

Flowmeter Pump

Pump Model

Pump	Required			On Site*	Surplus
	AMQ	IMB	TOTAL		
3HP	3	11	14	18	4
HL25M	4	3	7	9	2
HL160M	2	0	3	4	1
HL125M	3	0	2	2	0
HL5MS	2	0	2	2	0
John Deere	0	0	0	1	1
CD150M	3	0	3	4	1
CD103M	9	3	12	14	2
CD103M-ELEC	1	2	3	4	1
CD100M	0	1	1	1	0
CD80	0	1	1	2	1
40HP	0	1	1	4	3
150HP	0	1	1	7	6



	John Gage	DATE	2023-03-11	TITLE	Whale Tail Mine Freshet 2023 Plan		
DRAWN BY	John Gage	DATE	2023-03-15				
MODIFY BY							
				SCALE	1:10000	6/21/2023	FILE
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