APPENDIX A

EA Response to NFG

Government of Newfoundland and Labrador
Environment, Climate Change and Municipalities
Environmental Assessment Division

October 23, 2020 File Ref No. 200.20.3025

New Found Gold Corp.
Greg Matheson
300 Garrett Drive
Gander, NL
A1V 1W7

Project: **Mineral Exploration - Line Cutting within PPWSA**
Location: **Appleton**

Please be advised that The Environmental Assessment Regulations, 2003, Sections 48(1)(h) and 52(b) define your project as an undertaking requiring environmental review pursuant to the Environmental Protection Act, SNL 2002, cE-14.2.

New Found Gold was advised in a letter from the Director of Environmental Assessment on September 21, 2020 that the exploration activity described under Mineral Resources Application #E200303 is required to be registered for environmental assessment. As such, under section 48 of the Environmental Protection Act, no mineral exploration activities can commence in this area until the undertaking has been exempted or released under this Act. All activities must be described in the environmental assessment registration document, including those proposed under this application.

The attached booklet entitled “Environmental Assessment: A Guide to the Process” provides the registration format and other information to assist you in the development of your registration document. It is recommended that a draft of the registration document be submitted for review.

Please be aware that under provisions of the Act, undertakings may not proceed and other government agencies may not issue any relevant authorizations until a decision is rendered by the Minister. A decision by the Minister will be provided to you within 45 days following receipt of your registration.

Please be advised that, in accordance with Government's Proactive Disclosure Initiative, all Ministerial decision letters related to your project will be posted online subject to any exceptions to disclosure provided under the Access to Information and Protection of Privacy Act, 2015.

If you have any questions, please contact Vicki Ficzere, Environmental Scientist at (709) 729-2822 or vickificzere@gov.nl.ca.

Sincerely,

Joanne Sweeney

Joanne Sweeney
Director (A)
Environmental Assessment Division

c.c. Kevin Sheppard

APPENDIX B

Environmental Protection Plan
Exploration

Environmental Protection Plan

Mineral Exploration Activities
Queensway Gold Project

New Found Gold Corp.
300 Garrett Drive
Gander, NL, A1V 0H5

April 2021

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1.0 INTRODUCTION

New Found Gold Corp. (NFGC) is a publicly traded mineral exploration company (NFG:TSX-V) exploring for gold in the central portion of the Island of Newfoundland (Figure 1). The Queensway Gold Project consists of 6041 claims as part of 86 Mineral Licences covering an area of 1510 km^2 or 151,000 hectares (ha) (Figure 2). The Queensway North Gold Project, the focus of more advanced mineral exploration, consists of the northern extents of the Queensway Project and is located approximately 15 kilometers (km) west of the Town of Gander, and just east of the Town of Appleton in central Newfoundland (Figure 1). Other properties associated with the Queensway Gold Project include Twin Ponds and Queensway South. Exploration work is ongoing at all three properties.

This EPP is applicable to mineral exploration activities relative to the Queensway Gold Project (the Properties) and will be updated as required to reflect ongoing activities in the various Queensway exploration areas. NFGC has been conducting various mineral exploration work at the Properties since early 2016. Prior intermittent gold exploration work was conducted by various companies dating back to the early 1980s. NFGC is planning to conduct additional mineral exploration work at the Properties and commits to conduct work in a manner that limits the potential for adverse environmental impacts.

1.1 Purpose of the EPP

The purpose of the EPP is to outline potential environmental concerns and protection procedures related to the exploration activities carried out on the Properties. This EPP also outlines practical procedures required for exploration personnel (i.e., NFGC employees, contractors and suppliers) to limit potential adverse environmental effects, as well as instructions for addressing planned and unplanned activities or events associated with ongoing exploration work. NFGC will implement best management practices to aid in the mitigation of concerns identified.

Figure 1: Queensway Project Location

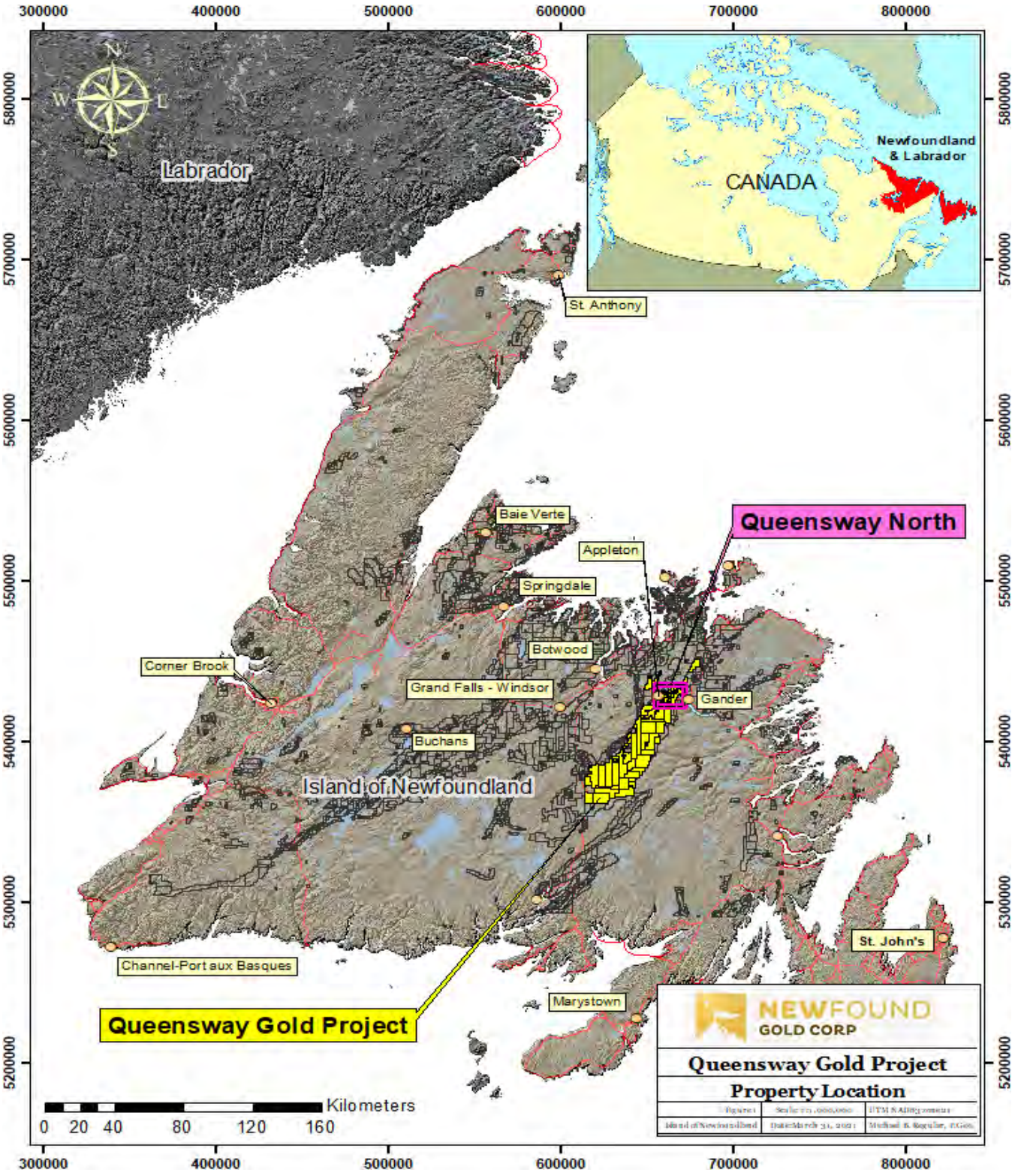
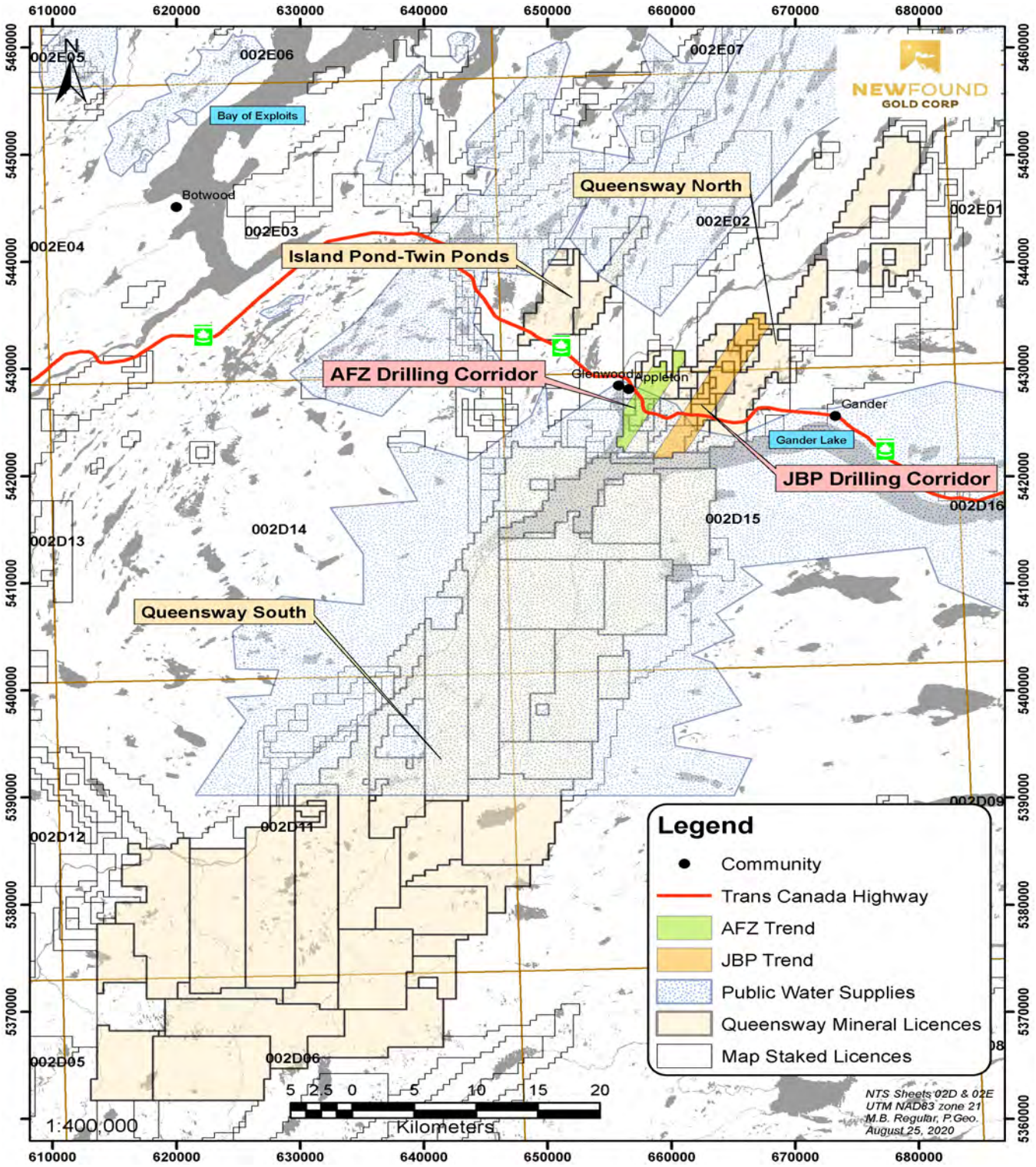


Figure 2: Queensway Properties on the Island of Newfoundland



1.2 Objectives of the EPP

To ensure exploration activities are carried out in an environmental responsible manner, this EPP has the following objectives:

- confirm commitments to limit adverse environmental effects are met;
- document environmental concerns and appropriate protection measures;
- provide a reference document for personnel when planning and/or conducting specific activities;
- provide direction in the event of accidental events;
- communicate changes in the EPP through the revision process;
- serve as a reference for NFGC personnel and regulators to monitor compliance and recommend improvements, and
- provide direction at the corporate level for ensuring commitments made in the EPP are implemented and monitored.

Deviations from the procedures and commitments outlined in this EPP will be discussed with and approved by NFGC.

1.3 Roles and Responsibilities

This section outlines the roles and responsibilities of parties involved with the on-going exploration activities on the Properties.

1.3.1 Senior Project Manager

NFGC's Senior Project Manager or designate will provide overall leadership and support of the EPP during exploration activities carried out on the Properties. Specific responsibilities include:

- provide final approval for the EPP and subsequent revisions;
- monitor and inspect work associated with the exploration activities;
- liaise with relevant government agencies and stakeholders as required;
- distribute the EPP and revisions to appropriate individuals noted in Appendix B;
- manage reviews of the EPP on an as-needed basis, and
- maintain overall document control.

1.3.2 Field Manager

NFGC's designated Field Manager will report directly to the Senior Project Manager and manage activities carried out on the Properties. Specific duties include:

- act as NFGC's representative on-site and be responsible for overall environmental protection;
- hold initial orientation sessions for contractors and other personnel to be involved in exploration activities;
- confirm employees and contractors/sub-contractors on-site are familiar with the EPP contents and are able to implement all aspects of the EPP, including revisions and procedures;
- communicate proposed work activities to the Senior Project Manager to ensure applicable approvals, authorizations and permits can be obtained in a timely manner;
- monitor, or designate a representative to monitor, exploration work and environmental protection measures to maintain compliance with the EPP, and regulatory requirements and commitments;
- report to Senior Project Manager incidents of environmental non-compliance;
- support and/or manage periodic reviews of the EPP; and
- contact the appropriate regulatory agencies in the event of an environmental emergency.

1.3.3 Other Site Personnel and Contractors

Contractors, subcontractors and site personnel involved in exploration activities on the Properties will:

- review and become familiar with procedures outlined in the EPP, including revisions;
- follow and implement commitments noted in the EPP, including regulatory conditions noted in approvals, authorizations and permits;
- immediately report concerns, including spills or other event that may have an adverse effect on the environment, to NFGC's Field Manager or designate;
- carry out clean-up, reclamation or restoration as directed by NFGC's Field Manager or regulatory agencies; and
- provide feedback to NFGC's Field Manager regarding revisions that could improve the EPP.

1.4 Orientation

Through ongoing orientation and awareness training, NFGC will confirm that exploration personnel understand their roles and responsibilities, as well as the potential environmental effects of overall exploration and their specific work activities. Workers will receive an orientation from an immediate supervisor prior to the start of a new activity and thereafter on an as-needed basis. New personnel arriving at the properties will receive an orientation, to be given by NFGC's Field Manager or designate.

2.0 EXPLORATION ACTIVITIES

The following activities will be carried out on the Properties:

- Up to 200,000 metres (m) of core drilling in up to 1,500 drill holes in the Appleton Fault Zone, Joe Batts Pond Fault Zone and areas south of Gander Lake;
- Trenching in selected areas where anomalous gold numbers have been indicated from both grab rock samples and till sample surveys;
- Airborne and ground based geophysical surveys over new ground or untested ground;
- Geochemical surveys combined with prospecting and mapping;
- Geophysical interpretation and spectral interpretation of lithologies from core and imagery; and
- Line cutting for Induced Polarization (IP) surveys; and
- Limited seismic surveys.

Exploration work will require the creation of drill pads and access trails extending from existing forest access roads and trails. Drill pads are areas cleared of brush and trees (15 m radius), by using forestry mulchers to allow the operation of an exploration drill rig. Drill access trails are temporary trails (<5 m) cleared of brush and trees by mulching to allow access to the drill pads.

Access to the exploration areas will be via existing access roads and trails, where possible and practical. If additional access trails are required during the exploration program a route will be selected to ensure minimal disturbance to the existing environment and NFGC will adhere to requirements outlined in applicable permits, approval and/or authorizations during exploration activities. The EPP will be revisited and reviewed with respect to ongoing exploration activities, as required.

3.0 REGULATORY REQUIREMENTS

3.1 Potential Approvals, Permits and/or Authorizations

Regulatory approvals, permits and/or authorizations are required for exploration activities. Conditions and expiry dates of approvals, permits and/or authorizations will be considered in this EPP, and personnel will be familiar with, and adhere to, requirements of approvals, permits and/or authorizations.

A general list of permits, approvals and/or authorizations that may be required for exploration activities on the Properties are presented in Table 3.1.

Table 3.1 Potential Permits, Approvals and/or Authorizations

Department/Agency	Approval/Permit/Authorization	Exploration Element
Federal		
Department of Fisheries and Oceans (DFO)	Self-assessment, Authorization for works in fish bearing waters	Installation of bridges and/or culverts
Provincial		
NL Power and NL Hydro		Permission to work around powerlines and transmission lines
Department of Fisheries, Forestry and Agriculture (DFFA), Forestry Branch	• Cutting permit • Permit to burn • Operating permit	Clearing for trails, drill pads
Department Industry, Energy and Technology (DIET), Mines Branch, Mineral Lands Division	Exploration Approval	Ongoing exploration work
DECC, Water Resources Management Division (WRMD)	Permit to Alter a Body of Water Section 48 • Fording • Bridges • Culverts • Site Drainage	Activities for work near or within a waterbody
	Water Use Licence	Water use
Department of Transportation and Works		Working within protected road corridors.
DFFA, Wildlife Division	Authorization to control nuisance animals	Exploration activity
Department of Digital Government and Service NL(DDGSNL), Service NL	Certificate of approval for storage and handling of gasoline and associated products	Storage, handling and transportation of fuel
	Temporary Fuel Cache	Fuel Storage

3.2 Environmental Compliance Monitoring

3.2.1 Site Inspections

Site inspections will be conducted by company personnel before, during and after site disturbances related to exploration activities performed by NFGC, or contractors on behalf of NFGC. For site inspections conducted prior to exploration activity, site details including vegetation, general terrain/topography and drainage patterns will be recorded. Photographs should be taken during each site inspection. The required frequency of site inspections performed during exploration activities will be determined by the Field Manager or designate and will depend on the duration and type of activity being performed. Where conditions permit, drone imagery will also be collected.

Regular site inspections will aid in the implementation of the environmental protection measures that are specified in this EPP and that will be specified in the applicable contracts and other relevant permits, approvals and/or authorizations.

Environmental issues or concerns should be reported to the NFGC Field Manager or designate.

3.2.2 Monitoring

Monitoring will confirm that exploration activities comply with applicable regulatory requirements and that mitigation measures are being employed effectively. NFGC's Field Manager or designate will be responsible for on-site environmental compliance monitoring during exploration activities.

Compliance monitoring will be required for various activities during exploration (e.g., monitoring of site drainage). Compliance standards that may apply to exploration activities include, but are not limited to, those listed in Table 3.2. Personnel will comply with relevant permits, approvals, authorizations and legislation while conducting exploration work.

Table 3.2 Environmental Compliance Standards

Legislation/ Guidelines	Activity Requiring Compliance	Responsible Agency	Comment
Federal			
Canada *Fisheries Act,* Deleterious Substances, S.36(3)	Run-off from the exploration site to receiving waters	Environment and Climate Change Canada (ECCC)	Deposited substances or discharges must not be deleterious (i.e., acutely non-lethal). Liquid effluents that enter freshwater or marine waters must comply with the Act.
Species at Risk Act	Mortality of endangered species or other species under federal authority.	ECCC	Measures taken to avoid or lessen adverse effects on species at risk (SAR). Mitigation measures will be consistent with recovery strategies and action plans for species.
Migratory Birds Convention Act	Mortality of migratory birds, and species under federal authority.	ECCC, Canadian Wildlife Service (CWS)	CWS should be notified about the mortality of endangered migratory bird in the exploration area, including passerine (songbirds), seabird and waterfowl species. Harmful substances such as oil and wastes that are harmful to migratory birds must not be deposited into waters that are frequented by them. Nests, eggs, nest shelters of migratory birds must not be disturbed or destroyed. Notice should also be given about the mortality of endangered species (under federal regulation).
Transportation of Dangerous Goods Act and Regulations	Handling and transporting of dangerous goods.	Transport Canada	If the materials are transported and handled fully in compliance with the regulations, a permit is not required. A Permit of Equivalent Level of Safety is required if a variance from the regulations is necessary.
Canadian Environmental Protection Act	Activities that have the potential to interact with the environment and human health.	ECCC	CEPA provides framework for setting environmental quality objectives, guidelines and codes of practice, pollution prevention plans, regulation of toxic substances, controlling pollution of other wastes and environmental emergency plans
Provincial			
Environmental Protection Act	Exploration	Pollution Prevention Division (PPD), DECC	Waste material shall be considered, prior to disposal, for reuse, resale or recycling. Waste materials, associated with exploration shall be disposed at an approved waste disposal site.
	Exploration	PPD, DECC	Activities associated with exploration are subject to the *Air Pollution Control Regulations*. Materials stipulated in the Regulations cannot be burned in the open.
	Site drainage during exploration	PPD, DECC	Waters discharged from exploration sites must comply with the *Environmental Control Water and Sewage Regulations.*

Legislation/ Guidelines	Activity Requiring Compliance	Responsible Agency	Comment
	Storage, handling and disposal of gasoline and other fuels.	Service NL (DDGSNL)	Petroleum storage and handling is subject to the *Storage and Handling of Gasoline and Associated Products Regulations*. Section 5.1 of the EPP addresses a Fuel and Hazardous Material Spills Contingency Plan.
	Disposal of used oil.	Service NL (DDGSNL)	The storage and disposal of used oil is subject to the *Used Oil Control Regulations*.
	Handling and storage of hazardous materials.	Service NL (DDGSNL)	Activities involving the use of designated hazardous materials are subject to Workplace Hazardous Materials Information System (WHMIS). WHMIS outlines procedures for handling hazardous materials and provides details on various hazardous materials.
Dangerous Goods Transportation Act and Regulations	Transporting fuel to the site.	Department of Transportation and Works	Transporting goods considered dangerous to public safety must comply with regulations.
Historic Resources Act	General exploration activities.	Provincial Archaeology Office (PAO), Department of Tourism, Culture, Arts and Recreation	Archaeology sites and artifacts are considered the property of the Crown and must not be disturbed. Archaeology materials encountered must be reported to the PAO.
Forestry Act	Cutting, burning, operating	Forestry Branch DFFA	Cutting and clearing of trees for exploration activities must comply with the Act.
Minerals Act	Exploration	Mines Branch, Mineral Lands Division, DIET	Exploration work must comply with the Minerals Act.
Occupational Health and Safety Act & Regulations	Exploration	Service NL (DDGSNL)	Activities should comply with the *Occupation Health and Safety Act and Regulations*,

3.3 Rehabilitation of Exploration Work Sites

Once exploration activities are completed in an area, NFGC will begin rehabilitation. The general rehabilitation activities highlighted below follow guidance from the Mines Branch (DIET 1995). Where applicable, the rehabilitation process will include:

- stabilization of surface disturbances on an ongoing basis to limit erosion and promote natural revegetation;
- natural revegetation of surface disturbances will be encouraged, and active revegetation will be pursued where this is deemed critical, and where terrain and soil conditions permit;
- NFGC will incorporate environmental measures in tender documents, and require contractors to conduct their work in accordance with this EPP;
- dismantling and removal of temporary surface infrastructure (e.g., site trailers, portable lavatories, fuel drums);
- handling of hydrocarbon and/or hazardous materials according to provincial and/or federal requirements;
- general ground surface contouring to establish permanent drainage patterns, minimize erosion, and promote public safety;
- replacement (where appropriate) of stockpiled overburden, or other suitable materials to encourage natural revegetation, and
- revegetation where applicable.

During exploration activities, terrain, soil and vegetation disturbances will occur only where necessary, and where possible, overburden and excavated rock will be stockpiled separately and reserved for rehabilitation work.

3.4 Reporting

3.4.1 Internal Communication

The NFGC Field Manager will be responsible for communicating policies, procedures, and legal and other requirements to exploration personnel. Exploration personnel will communicate environmental incidents to NFGC's Field Manager as per the Reporting Procedures.

3.4.2 External Communication

When required, NFGC, through the Senior Project Manager, will report on environmental issues relating to exploration activities to the DECC.
Spills of petroleum products or other hazardous materials will be reported to:

Environmental Emergencies 24 Hour Report Line (Coast Guard Traffic Centre, St. John's)
(St. John's: **709-772-2083** or Other Areas: **1-800-563-9089**); and

Petroleum and Environmental Services Inc., (Appleton: **877- 449-2335)**

NFGC notes the difference between reportable spills on-land versus in freshwater environments. Other compliance reporting required by permits or through compliance requirements not listed above will be submitted to the DECC.

4.0 ENVIRONMENTAL PROTECTION PROCEDURES

The various environmental protection procedures for exploration-related activities are described below. As required, this EPP will be revised to include new or amended environmental protection procedures so that exploration activities are completed properly.

4.1 Surveying

Potential Environmental Concerns

Surveying activities could potentially disturb wildlife species, vegetation and historic resources.

Environmental Protection Procedures

a) Width of survey lines for IP will be limited to 1.5 m or less.

b) Width of survey lines for seismic will be the minimum needed, e.g., <3 m.

c) Whenever possible, cutting lines to the boundary between treed and open areas will be avoided and flagged lines will be used to mark buffer areas.

d) Trees and shrubs will be cut flush to the ground wherever possible.

e) Cutting of survey lines will be kept to a minimum. Where possible, alternate areas not requiring cut lines will be used.

f) Trees not exactly on transit lines will be left standing.

g) No attempt to harass or disturb wildlife will be made by workers.

h) Vehicles will yield the right-of-way to wildlife.

i) There will be no cutting in areas designated as sensitive without notification and approval of the Site Manager.

j) No motorized vehicles will enter the areas designated as sensitive without notification and approval of the Field Manager or as dictated by permits.

k) Historic resource discoveries will be reported to the PAO.

l) Sites where surface disturbances are planned or may occur will be inspected and monitored prior to, during, and after the work.

m) The use of ATVs will be restricted to designated trails, thus minimizing ground disturbance - except as approved by the Site Manager or as dictated by permits. ATV use will comply with the Motorized Snow Mobile and All-Terrain Vehicle Regulations, 1996 under the *Motorized Snow Mobile and All-Terrain Vehicle Act* and the Environmental Guidelines for Stream Crossings by ATV issued by the DECC.

4.2 Buffer Zones

Potential Environmental Concerns

Buffer zones are boundaries of undisturbed vegetation maintained along water bodies or other sensitive landscape features. Without adequate buffer zone vegetation, streams, ponds and lakes can potentially become laden with silt from run-off. Vegetation also provides cover for fish in various aquatic environments.

Environmental Protection Procedures

A minimum buffer zone of 30 m of undisturbed natural vegetation will be maintained between exploration work areas and water bodies, visible on a 1:50,000 topographic map. Where recommended or required, additional buffer widths will be maintained according to Table 3.3. For watercourses that are licensed salmon rivers, NFGC will work with public and regulatory bodies to promote and maintain the health of these important habitats.

Table 3.3 Recommended Buffer Zones for Queensway Project Exploration Work

Activity / Feature	Recommended Buffer Width	Source
Activities around watercourses/bodies visible on a 1:50,000 topographic map	30 m	WRMD
Activities around the Gander River	100 m	WRMD/PAO
Main tributaries of Gander Lake	100 m	WRMD
Gander Lake	300 m	WRMD/PAO
Public Protected Water Supplies	Defined boundary	WRMD
Resource roads or highways running adjacent to water bodies	20 m + 1.5 X slope (%)	Gosse et al.
Piling of wood and slash – Grubbing	30 m	Gosse et al.
Placement of Temporary Site Trailers - Fuel storage	100 m	Gosse et al.
T'Railway Provincial Park	50 m either side	DTCAR

4.3 Laydown and Storage Areas

Potential Environmental Concerns

Laydown areas may be necessary for storing and maintaining equipment and supplies during exploration activities. Potential erosion and run-off of sediment into nearby water bodies will be prevented.

Environmental Protection Procedures

a) Existing laydown and storage areas will be used where feasible.

b) New laydown, maintenance or storage areas required for exploration activities will be established within the claim boundaries.

c) Establishing new laydown or storage areas will follow the procedures for vegetation clearing/grubbing (Section 4.4 and 4.5) and erosion prevention (Section 4.6).

d) External storage areas will be placed on level terrain and kept free of ponding or run-off.

e) Drainage from areas of exposed soil will be controlled by grade or ditching and by directing run-off away from water bodies.

f) Laydown and storage areas no longer required for exploration activities will be rehabilitated.

g) Fuel will be stored, handled and transported according to Section 4.14.

4.4 Clearing Vegetation

Potential Environmental Concerns

Vegetation clearing of trees and shrubs may be required in advance of trail creation, drill pad preparation and for surveying. Potential concerns include stockpiling vegetation in or near watercourses and wildlife disturbance.

Environmental Protection Procedures

a) Clearing activities will comply with the requirements of all applicable permits. No burning will occur.

b) All cleared vegetation and trees will be mulched.

c) Clearing or removal of trees will be kept to a minimum.

d) Clearing will consist of cutting to within 15 cm of the ground or as dictated by permits and disposing of standing trees, as well as removing shrubs, debris and other vegetation from the area indicated on the exploration program drawings. These materials will be stacked clear of on-going exploration activities for future rehabilitation. The *Environmental Protection Guidelines for Ecologically Based Forest Resource Management* (DFRA 1998*)* will be followed.

e) If merchantable or usable timber is encountered, it will be removed by a local contractor.

f) Disposing of cleared un-merchantable timber, slash and cuttin*gs* by burning will comply with the *Forest Fire Regulations, 1996 (a*mended 2002) under the *Forestry Act*, Environmental Code of Practice for Open Burning and the Permit to Burn (from the Newfoundland and Labrador Department of Natural Resources Forestry Branch). At no time will a fire be left unattended.

g) Slash and other material or debris related to exploration activities will not be permitted to enter watercourses and will be piled above spring flood levels.

h) Chain saws or other hand-held equipment will be used in clearing vegetation.

i) Appropriate buffer zones of undisturbed vegetation will be maintained between exploration activities and waterbodies, and other landscape features as noted in Table 3.3.

j) Timber shall be felled inward toward the work area to avoid damaging standing trees within the immediate work area.

k) Workers will not destroy or disturb features indicative of a cultural or archaeological site. Such features should be avoided until a report has been made to the PAO and clearance to proceed has been received.

l) Where feasible, vegetation clearing will be scheduled to avoid disturbance during the critical bird nesting period.

m) Bog mats will be used to limit disturbance to wetlands. Wetland disturbance will be avoided outside the work area.

n) Sites where surface disturbances are planned or may occur, will be inspected and monitored prior to, during, and after the work.

4.5 Grubbing

Potential Environmental Concerns

Grubbing refers to the removal of the roots that remain in the soil after clearing. The main concerns associated with grubbing and disposal of related debris are the potential adverse effects on freshwater ecosystems and water quality through the release of sediment into watercourses, as well as the potential for disturbing historic resources.

Environmental Protection Procedures

a) Grubbing activities will adhere to buffer zone requirements.

b) Grubbing of the organic vegetation mat and/or the upper soil horizons will be restricted to the minimum area required.

c) Nests, eggs, nest shelters of migratory birds or other wildlife should not be disturbed or destroyed. Efforts will be taken to complete clearing in these areas, if required, outside of the bird breeding season.

d) Should additional clearing be required outside the breeding season and a nest is found, the following mitigative actions will be taken:
   - the nest site and neighbouring vegetation should be left undisturbed until nesting is completed; and
   - exploration activities should be minimized in the immediate area until nesting is completed.

e) Topsoil and organics should be stored in low stable piles (i.e., 1 to 2 m). Surplus material will be stored or stockpiled for site rehabilitation and revegetation purposes.

f) Measures will be implemented to reduce and control runoff of sediment-laden water during grubbing, and the re-spreading and stockpiling of grubbed materials. Where grubbed materials are re-spread or stockpiled, as many stumps and roots as possible will be left on the ground surface to maintain soil cohesion, dissipate the energy of runoff and promote natural revegetation. Erosion control measures will be implemented in areas prone to soil loss.

g) Grubbed areas will be left exposed to the natural elements for as brief a time as possible to limit unnecessary erosion. Silt curtains may be used to prevent erosion from exposed areas.

4.6 Erosion

Potential Environmental Concerns

Eroded material could potentially cause siltation in water bodies, potentially impacting habitat for aquatic and terrestrial animals.

Environmental Protection Procedures

a) The disturbance of new areas will be minimized.

b) Work will be conducted according to the conditions set out in regulatory permits, approvals and/or authorizations.

c) Drainage ditches, if required, will be stabilized (e.g., lining with vegetation or rock, terracing, interceptor swales, installation of rock check dams, hay bales) to reduce soil erosion. These measures will be inspected and maintained following installation.

d) Areas of exposed erodible soil will be stabilized, e.g., back-blading, grading and/or compacting, revegetation or other mitigation.

e) If an inspection reveals that silt is entering a waterbody, further mitigative measures may be implemented to intercept run-off, e.g., temporary drainage ditches, siltation control (settling) ponds, ditch blocks/check dams or sediment dam traps. The necessary or appropriate measures will be determined in the field.

f) Work and laydown areas will be monitored for erosion and appropriate repair action taken as necessary.

g) Existing or new siltation control structures used will be monitored for excessive accumulation of sediment. Accumulated sediment will be removed from control structures to gain full effectiveness of the systems. Effluent from control structures will be released to flow overland for appropriate filtration prior to entering waterbodies.

4.7 Water Withdrawal/Supply

Potential Environmental Concerns

The potential environmental concerns related to water withdrawal relate to potential adverse effects to the terrestrial and aquatic habitats in and around the subject waterbody.

Environmental Protection Procedures

a) The water intakes will have an appropriate screen to prevent damage to fish. Guidelines for the screening of water intakes are provided by DFO.

b) Mitigation specific to the use of Pumps and Generators and Dewatering Work Areas and Site Drainage are relevant to the supply of Project water and will be implemented as needed.

4.8 Watercourse (Stream) Crossings

Potential Environmental Concerns

The potential environmental concerns associated with stream crossings and culvert installations include direct disturbances and/or mortality of fish, and potential loss of fish habitat resulting from sedimentation and removal of habitat and stream bank vegetation. An evaluation of soil erosion potential will be conducted at each stream crossing. The assessment of soil erosion potential will assist in the development of specific erosion stabilization methods, and effective sedimentation control practices on a site-specific basis.

Environmental Protection Procedures

No work below the high water mark of surface water features will be conducted without prior notification and assessment by the Field Manager. Stream crossings will be constructed in compliance with the required Permit for Culvert Installation from the Water Resources Management Division (WRMD), DECC, and required approvals other regulatory agencies. If fording is required, a Fording Permit will be obtained from DECC and the conditions followed.

The following measures will be implemented to minimize potential impacts to stream crossings:

a) Between September 15 and June 15 (i.e., typical sensitive fish life stages) or other sensitive periods specific to the region, stream crossing during exploration activities will be undertaken under the direct supervision of the Site Manager.

b) Avoid the entry of deleterious substances (e.g., sediment and fuel) to watercourses and waterbodies during watercourse crossing work.

c) If culverts are required in areas of fish habitat, application will be made to the appropriate regulatory agency, usually DECC and DFO. The culverts will be installed according to permit specifications and in accordance with the Environmental Guidelines for Culverts from the DECC. The following measures will also be implemented:

   i) install culvert(s) in accordance with good engineering and environmental practices.

   ii) unless otherwise indicated, work should take place in dry conditions, either by the use of cofferdams or by diverting the stream.

   iii) installation of cylindrical culverts shall be counter sunk only where necessary to protect fish habitat such that the culvert bottom is one-third the diameter below the streambed in the case of culverts less than 750 mm outside the diameter; for culverts greater than 750 mm outside diameter, the culvert bottom shall be installed a minimum of 300 mm below the streambed.

iv) in multiple (gang) culvert installations, install one culvert at an elevation lower than the others.

v) the natural low flow regime of the watercourse will not be altered.

vi) a culvert will not be installed before site specific information such as localized stream gradient, fish habitat type and species present have been evaluated. Culverts are to be installed using the guidelines provided in Gosse et al. (1998).

vii) riprap outlets and inlets to prevent erosion of fill slopes.

viii) use culverts of sufficient length to extend a short distance beyond the toe of the fill material.

ix) use backfilling material that is of a texture that shall support the culvert and limit seepage and subsequent washing out.

x) align culverts such that the original direction of stream flow is not significantly altered.

xi) remove fill and exploration related debris from the culvert area to a location above the peak flow level to prevent its entry into the stream.

xii) fill material shall not be removed from streambeds or banks; except when installing a culvert when removal of material is necessary for the foundation.

xiii) culverts should be marked to indicate their position under the snow.

xiv) minimize and restrict the use of heavy equipment in and near watercourses; where possible, an excavator will be used from shore rather than a bulldozer in the watercourse. Where it is absolutely necessary to do so, instream work will be performed by rubber tired vehicles (Gosse et al. 1998) only and will only be done with prior notification of NFGC's Field Manager, in compliance with applicable regulatory agencies.

xv) as required, cofferdams of non-erodible material will be used to separate work areas from the watercourse when excavating for culverts and footings, and

xvi) cofferdams will be removed upon completion of exploration and the streambed returned as closely as possible to its original condition.

d) When fording watercourses, the DECC Environmental Guidelines and applicable permits will be adhered to, along with the following:

i) areas of spawning habitat will be avoided.

ii) crossings shall be restricted to a single location and crossings made at right angles to the watercourse.

iii) equipment activity within the watercourse shall be minimized by limiting the number of crossings.

iv) equipment will be mechanically sound to avoid leaks of oil, gasoline and hydraulic fluids.

v) no servicing or washing of heavy equipment will occur adjacent to watercourses; temporary fueling, servicing or washing of equipment in areas other than the main fuel storage site will not be allowed within 30 m of a watercourse.

vi) stabilize the entire fording area using vegetation mats, corduroy roads or coarse material (125 mm diameter or greater), when the ford area is not natural bedrock, or is easily disturbed by fording. When the substrate of the ford area is not subject to easy disturbance by fording, or coarse material is not easily available within the lease boundaries, fording under existing substrate conditions may occur under the direction of the Field Manager.

vii) fording activities will not decrease the depth of the watercourses to less than 20 cm. Where the existing depth is less than 20 cm, that depth will be maintained.

viii) fording activities will be halted during seasonal, or precipitation related high flow periods, and

ix) stabilize bank sections that contain loose or erodible materials. If banks must be sloped for stabilization, no material will be deposited in the watercourse and sloping will be accomplished by back-blading and the material removed will be deposited above the high water mark of the watercourse.

4.9 Exploration Drilling on Land, Water Well Drilling and Pump Tests

Potential Environmental Concerns

The potential environmental concerns related to exploration drilling, water well drilling and pump tests include surface disturbances, disposal of drilling fluids and cuttings, siltation, generation of dust, noise and impacts to terrestrial habitats, decreased air quality, adversely impacted aquatic ecosystems and disturbance of historic resources.

Environmental Protection Procedures

a) Proposed drilling sites in sensitive areas should be inspected prior to drill site preparation by the Site Manager.

b) Vegetation will be cleared following the procedures detailed in Section 4.4.

c) Waste oil will be removed from the drill site and properly disposed of, as per the WMP.

d) Water applications will be used to control dust where necessary. The use of water for dust control or lubrication during drilling will be undertaken in such a manner that runoff will not enter watercourses.

e) Water used per a Water Use Licence will remain at the drill site. Every effort will be made to prevent turbid water from entering watercourses.

f) Drill cuttings will be removed from site in areas associated with the PPSWSA. All others will remain on site, but in the immediate location of drilling activities and outside required buffer zones. This is in accordance with NFGC's current exploration license.

g) Drilling equipment will have muffled exhaust to minimize noise.

h) Fuel will be stored, handled and transported according to Section 4.14.

i) Garbage and solid waste will be removed from work sites and disposed of in an approved waste disposal area, and as described in the WMP.

j) The nature of drilling activities (i.e., use of quicksnaps and couplings) may lead to oil drops and leaks. Rigs and worksites will be equipped with oil absorbent material and spill kits to be used in the event of a leak or spill and be kept available in case of a hydrocarbon spill.

k) Drilling of water wells will be conducted in compliance with the *Water Resources Act* and *Well Drilling Regulations*.

l) Completed exploration drill holes will retain casings and remain open for future probing. If a completed drill hole is producing water, it will be temporarily capped or indefinitely sealed with appropriate material to allow for necessary future downhole testing. When test work on the holes has been completed, the casing will be removed.

4.10 Trenching

Potential Environmental Concerns

Where excavation for trenching occurs, potential runoff of sediment-laden water could result in adverse effects on freshwater fish habitat and water quality.

Environmental Protection Procedures

The following measures will be employed to minimize the potential adverse impacts of trenching:

a) The topsoil, and excavated overburden and bedrock will be stored in separate stockpiles for later use during rehabilitation.

b) Material unsuitable for future rehabilitation will be disposed of in a disposal area approved by the Site Manger or designate.

c) Dewatering of trenches will make use of measures to minimize and control the release of sediment laden water through the use of various filtration measures including, but not limited to, erosion control devices, settling ponds, straw bales, geotextile or other devices. Water quality monitoring of run-off or discharges may be required by the PPD (DECC), to ensure no adverse effects on the receiving environment.

4.11 Pumps and Generators

Potential Environmental Concerns

A variety of water pumps, hoses and generators may be used at exploration sites and to support site trailers. Potential environmental concerns associated with their use include potential accidental spills or chronic leaks that could adversely impact waterbodies.

Environmental Protection Procedure

a) To reduce fire hazards, fuel should not be stored immediately adjacent to generators, and the fuel storage area should be well ventilated. Fuel should not be stored within 100 m of waterbodies (Gosse et al. 1998).

b) Fuel storage containers are to have spill trays beneath with a potential capacity of 110% of volume. They should also be in a covered and secured area.

c) Drip pans are placed underneath pumps and generators located near waterbodies.

d) Hoses and connections on equipment located near waterbodies should be inspected routinely for leaks and drips.

e) Leaks will be reported immediately to the NFGC's Field Manager.

f) In addition to spill kits located at fuel storage tanks, additional spill kits will be located at designated central storage location(s). Personnel involved with fueling, fuel transfer, and pumps and generators are trained in the use of spill kits.

4.12 Dewatering Work Areas and Site Drainage

Potential Environmental Concerns

The main concern associated with site dewatering and drainage relates to potential siltation of waterbodies and direct fish mortality and/or habitat destruction for freshwater aquatic species.

Environmental Protection Procedures

a) Site water will be discharged to vegetated areas to limit potential adverse effects on waterbodies.

b) Discharged water will follow natural surface drainage patterns.

c) Monitoring of site run-off at exploration sites will be conducted as per provincial requirements, and in compliance with effluent quality standards.

d) To reduce siltation to a waterbody, filtration or other suitable measures, (e.g., silt fences and/or dykes) will be used to limit silt and reduce the turbidity of water prior to discharging.

e) If monitoring indicates regulated water quality standards are exceeded, NFGC will, in consultation with applicable regulatory agencies, develop additional mitigations. The use of a settling pond outside the main drilling area the main and PPWSAs will allow for natural attenuation of drill water.

4.13 Equipment Use and Maintenance

Potential Environmental Concerns

Various vehicles and heavy equipment may be used during exploration activities. Potential environmental concerns associated with operating and using vehicles and equipment include air emissions, accidental spills and hydrocarbon leaks that may contaminate on-site water bodies.

Environmental Protection Procedure

a) Equipment maintenance and fueling activities will be performed at sites designated by the Field Manager and in compliance with applicable regulations.

b) Drip pans will be placed under pumps, fuel containers, and generators.

c) Hoses and connections on equipment will be inspected routinely for leaks and drips.

d) Only minor repairs and maintenance (e.g., lubrication) of 'non-mobile' equipment will be performed on-site. Major repairs will be performed at a location outside of the exploration area, where possible.

e) Fuel/oil leaks will be repaired and reported immediately to NFGC's Field Manager.

f) Fuel and other hazardous materials will be handled according to procedures in Section 4.14.

g) In addition to spill kits located at fuel storage tanks, additional spill kits will be located at designated central storage location(s). Personnel involved with fueling, fuel transfer, and pumps and generators will be trained in the use of spill kits.

4.14 Storage, Handling and Transfer of Fuel, and Other Hazardous Material

Typical hazardous substances that may be used on site include, but are not limited to:

- petroleum, oil and lubricants;
- chlorinated and non-chlorinated solvents (e.g., cleaner-degreasers);
- flammable gases (e.g., acetylene);
- waste petroleum products (e.g., used engine oil);
- corrosives (e.g., battery acid); and/or
- glycol (e.g., antifreeze).

Potential Environmental Concerns

The main concern relative to hazardous substances is a potential uncontrolled release to the environment through spillage, and subsequent adverse effects on the environment, (i.e., terrestrial and aquatic habitat and species, soil and groundwater quality), and human health and safety.

Environmental Protection Procedures

a) The *WHMIS Regulations* under the *Occupational Health and Safety Act* will apply to the handling and storage of hazardous materials. Relevant and current Material Safety Data Sheets (MSDS) will be readily available for the site.

b) Necessary precautions will be taken to prevent and reduce the spillage, misplacement or loss of fuels and other hazardous materials. In the event of a reportable spill on-land or a spill, regardless of size, in the freshwater environment, the **Environmental Emergencies 24-Hour Report Line** will be contacted as noted in the contact list in Section 7.0.

   A spill is defined as reportable, depending on the class and quantity of dangerous goods involved, which varies between applicable Regulations:

   - Reportable spill quantities for hazardous materials are listed in the *Transportation of Dangerous Goods Act.*
   - A reportable hydrocarbon spill is defined as loss of gasoline or associated products in excess of 70 litres in the *Storage and Handling of Gasoline and Associated Products Regulations*.
   - A spill, regardless of size, that may enter the freshwater environment, must be reported according to the *Fisheries Act*.

c) A copy of the Contingency Plan (located in Section 5.1) for fuel and hazardous material spills will be readily available.

d) Fuel storage systems will be registered and comply with the *Storage and Handling of Gasoline and Associated Products Regulations*.

e) Only workers who are qualified and trained in handling these materials as stated in the manufacturer's instructions and government laws and regulations will handle fuel and other hazardous materials.

f) Operators will stay present during the entire refueling operation. At no time should it be left unattended.

g) Fuel and other hazardous materials should be stored at least 100 m from surface waterbodies (Gosse et al. 1998).

h) Handling and fueling procedures will comply with the *Storage and Handling of Gasoline and Associated Products* and additional requirements put forth by applicable regulators in order to limit potential contamination.

i) Fuel storage areas and non-portable transfer lines will be clearly marked or barricaded so that they are not damaged by moving vehicles. The markers will be visible under all weather conditions. Barriers will be constructed in compliance with the *Storage and Handling of Gasoline and Associated Product Regulations*.

j) Waste oils, lubricants and other used oil will be retained in a tank or closed container and disposed of in accordance with the *Used Oil Control Regulations*. Spill trays will be used, and substances will be stored in a secured area.

k) Fire and spill response materials will be kept nearby.

l) Soil contaminated by small leaks of oil or grease from equipment will be disposed of according to the *Environmental Protection Act*.

m) Storage tank systems will be inspected on a regular basis by the operator as per the *Storage and Handling of Gasoline and Associated Products Regulations*. This involves, but is not limited to, gauging or dipping, reconciliation of records and the proper maintenance of reconciliation records for the applicable timeframe noted within permits and regulations.

n) Contracted fuel suppliers will, before transporting or positioning fuel or oil, provide NFGC with a copy of their fuel and hazardous material spills contingency plan.

o) Transportation of hazardous and dangerous materials will be conducted in accordance with applicable regulations. Transportation documents will be retained in a retrievable filing system and stored for the duration of the undertaking.

p) Smoking will be prohibited within 10 m of a fuel storage area.

q) Fueling or servicing of mobile equipment will be conducted in designated areas and should not occur within 100 m of a body of water (Gosse et al. 1998).

r) Drum storage areas will not be located within 100 m of a water body (Gosse et al. 1998). Drums containing hydrocarbon or other hazardous materials will be transported, stored, handled and disposed of such that spillage or leakage does not occur. NFGC must approve the location of drum storage areas.

s) Small quantities of hazardous material (e.g., drums, cans and other containers under 20 L) will be stored in a secure location protected from weather and freezing, as well as vehicle traffic.

t) Where hazardous materials are to be stored outdoors, a designated area will be established, graded and fitted with an impermeable membrane covered with local soil and surrounded by an earth berm.

u) Decommissioning of temporary storage tank systems will be conducted according to the *Environmental Code of Practice for Aboveground Storage Tank Systems Containing Petroleum Products.*

v) Hazardous waste will be moved to an appropriate hazardous waste storage area (refer to Section 4.18 for disposal). These areas are constructed in compliance with applicable legislation.

4.15 Propane Use

Potential Environmental Concerns

There are potential risks associated with propane storage and use. It is a flammable substance and poses potential threat to human and animals. In the liquid form, propane could potentially cause frostbite on skin contact. Propane containers could potentially explode if exposed to heat or fire.

Environmental Protection Procedures

a) Propane storage tanks will be installed and used as per manufacturer's specifications.

b) Tank maintenance schedules will be set and followed.

c) Tanks will be free of corrosion and damages.

d) Areas surrounding propane storage tanks will be well ventilated and free of possible ignition sources, and combustible materials.

4.16 Waste Disposal

Potential Environmental Concerns

Waste (e.g., domestic and industrial wastes, grey water, paper, cardboard and wood), if not properly controlled and disposed of, will be unsightly and could potentially cause human safety and health concerns. It could also attract wildlife leading to the potential for human-wildlife conflicts. NFGC has developed a Waste Management Plan (WMP) that identifies the various waste streams anticipated from exploration activities and provides appropriate waste management procedures to follow. A summary of the WMP is presented below.

Environmental Protection Procedures

a) Solid waste will be handled according to the provincial *Environmental Protection Act*.

b) Solid waste materials shall be considered, prior to disposal, for reuse, resale, or recycling.

c) Solid waste produced by site personnel will be collected and disposed of at an approved facility, with permission obtained from that facility.

d) Waste accumulated on site prior to disposal will be confined, so that it does not pose an environmental or health hazard.

e) Work areas will be kept clear of waste and litter to reduce the potential for attracting wildlife and reducing potential interactions with wildlife.

f) Food waste that may attract animals will be stored in covered, wildlife-proof containers.

g) Burning of waste is not permitted without appropriate permits.

h) Hazardous wastes generated will be handled according to the procedures for handling fuel and hazardous materials.

4.17 Sewage Disposal

Potential Environmental Concerns

The release of untreated sewage is a potential concern to human health, drinking water quality, and aquatic and terrestrial habitats. Sewage disposal is also addressed in NFGC's WMP.

Environmental Protection Procedures

a) The sewage will be removed from portable toilets by a licensed contractor and disposed in compliance with the NL Department of Health guidelines, the *Lands Act*, *Waste Management Regulations*, 2003 under the *Environmental Protection Act* and the *Environmental Control Water and Sewage Regulations, 2003* under the *Environmental Protection Act*.

b) Portable toilets or pit privies will be located a distance of at least 25 m from exploration sites in a direction away from bodies of water. Pit privies will be backfilled upon abandonment of the exploration site.

4.18 Hazardous Waste Disposal

Potential Environmental Concerns

The primary concern with disposing of hazardous substances is the potential for an uncontrolled release to the environment through leakage or accidental spillage, and subsequent adverse effects on terrestrial and aquatic habitat and species, soil, groundwater quality, and human health and safety. The management of hazardous waste is addressed in NFGC's WMP

Environmental Protection Procedures

a) Hazardous waste will be handled according to the provincial *Environmental Protection Act*. Waste classified as "hazardous" or "special" that cannot be disposed of in regular landfill sites will be sent for disposal to a licensed hazardous waste management company.

b) Necessary precautions will be taken to prevent and reduce the spillage, misplacement or loss of fuels and other hazardous materials. In the event of a spill on-land or in the freshwater environment, refer to the Contingency Plan (Section 5.1).

c) A copy of NFGC's Contingency Plan will be present at hazardous material storage sites and fuel transfer locations.

d) Hazardous waste materials will only be handled by workers who are qualified and trained in handling these materials as stipulated in government laws and regulations.

e) Waste accumulated on site prior to disposal will be confined, so that it does not pose an environmental or health hazard.

f) Waste material will not be disposed of on-site or in a body of water.

g) Burning of waste is not permitted.

h) Where hazardous waste materials are to be stored outdoors, a designated area will be established, graded and fitted with an impermeable membrane covered with local soil and surrounded by an earth berm.

i) Waste oils, lubricants and other used oil will be retained in a tank or closed container and disposed of in accordance with the *Used Oil Control Regulations*.

j) Soil contaminated by small leaks of oil or grease from equipment will be disposed of according to the *Environmental Protection Act*.

k) Hazardous wastes generated, by alternative treatments will be handled according to the procedures for handling fuel and hazardous materials (Section 4.14).

4.19 Vehicle Traffic

Potential Environmental Concerns

Vehicular traffic can result in fugitive dust, emissions and noise. NFGC is committed to the proper operation and maintenance of its vehicles to reduce environmental impacts.

Environmental Protection Procedures

a) Vehicles and equipment, including ATVs, will be restricted to designated routes within and between work, laydown, maintenance and storage areas.

b) Vehicles and equipment will be properly maintained to meet emission standards.

c) Travel in areas outside designated work areas will not be permitted.

d) Vehicles and equipment will yield to wildlife.

e) Vehicles and equipment will yield to people, if present, and reduced speeds will be maintained on roadways.

f) Chasing and/or harassing wildlife with vehicles and equipment will not be permitted.

g) Maintaining and refueling vehicles will be restricted to designated areas (See Section 4.14).

h) Heavy equipment (e.g., dump trucks and front-end loaders) will only be used in work areas.

i) Access roads will be monitored for signs of erosion and appropriate action will be taken to repair roads, when necessary.

j) As required, the contractor will implement dust suppression measures such as watering the roads.

4.20 Dust Control

Potential Environmental Concerns

The environmental concerns associated with dust include potential human health effects and potential effects on aquatic ecosystems and vegetation.

Environmental Protection Procedures

a) Dust from exploration activities will be controlled using water. In the event of excessive dust, water will be applied to travel and work surfaces.

b) Waste oil will not be used for dust control, but other agents such as calcium chloride may be used with the approval of the appropriate regulatory agencies.

4.21 Noise Control

Potential Environmental Concerns

A variety of noises associated with exploration activity can adversely impact the distribution and abundance of wildlife resources in the area. Noises associated with heavy equipment use are temporary in nature and noises associated with drilling are more long term but localized.

Environmental Protection Procedures

Mitigation measures will be implemented where possible to limit potential impacts from exploration noise.

a) Adherence to permits, approvals and/or authorizations.

b) Vehicles and generators will have exhaust systems regularly inspected and mufflers will be operating properly.

5.0 CONTINGENCY PLANS

The following contingency plans to address accidents and unplanned events have been developed and will be modified as required throughout exploration activities.

- Fuel and Hazardous Material Spills;
- Wildlife Encounters;
- Forest Fires, and
- Discovery of Historic Resources.

5.1 Fuel and Hazardous Material Spills

Potential Environmental Concerns

Fuel and hazardous materials can potentially be damaging to vegetation, soil, surface water, groundwater, wildlife, aquatic organisms, historic resources, and human health and safety.

Environmental Protection and Response Procedures

In case of a fuel or hazardous material spill, the following procedures will apply.

a) The individual who discovers the leak or spill will make a reasonable attempt to immediately stop the leakage and contain the flow, if safe to do so. Spill kits are located at fuel storage tanks and at designated central storage location(s).

b) Spill location, type of fuel or hazardous material, volume and terrain condition at the spill site will be determined and reported immediately to the Field Manager, who will report it immediately to the applicable regulatory agency.

c) In the event of a reportable spill on-land or a spill regardless of size that may enter a waterbody frequented by fish must be reported immediately to the Environmental Emergencies 24 Hour Report Line **709-772-2083 or 800-563-9089**. (Refer to Section 4.14 for the definition of reportable spills on-land versus in freshwater environments.) The spill occurrence shall be documented on the Spill Report Form in Appendix C.

Required information may include any or all of the following:

i) name of reporter and phone number;
ii) time of spill or leak;
iii) time of detection of spill or leak;
iv) type of product spilled or leaked;
v) amount of product spilled or leaked;
vi) location of spill or leak;
vii) source of spill or leak;
viii) type of accident - collision, rupture, overflow, other;
ix) owner of product and phone number;
x) if the spill or leak is still occurring;
xi) if the spill or leaked product is contained, and if not, where it is flowing;
xii) wind velocity and direction;
xiii) temperature;
xiv) proximity to waterbodies, water intakes, and facilities, and
xv) snow cover and depth, terrain, and soil conditions.

d) The Field Manager will act as the "On-Scene-Commander" for the purposes of cleaning up a fuel or hazardous materials spill. The Field Manager will be familiar with spill clean-up procedures and mobilization procedures of the clean-up equipment and will have full authority to take necessary and appropriate action without unnecessary delay.

e) The overall responsibility of coordinating clean-up and maintaining the contingency plan current and up-to-date will be the Senior Project Manager.

f) Personnel will be trained in the procedures to follow in case of a fuel or hazardous material spill, and spill communication procedures. NFGC will update the personnel responsibilities list specific to spill response on an ongoing basis.

A complete list of spill response equipment will be available and distributed at exploration sites before the start of exploration activities.

g) In reaching decisions on containment and clean-up procedures, the following criteria will be applied:
   i) limit danger to workers and the public;
   ii) protect public water supplies;
   iii) limit adverse impacts to waterbodies;
   iv) limit area affected by spill, and
   v) limit the degree of disturbance to the area and waterbodies during clean-up.

h) The Field Manager or Senior Project Manager will act in consultation with the authorities to:
   i) assess site conditions and environmental impacts of various cleanup procedures;
   ii) assess potential for fuel recovery versus burning;
   iii) deploy on-site staff to mobilize pumps and empty 215-L drums or other appropriate storage containers to the spill site;
   iv) deploy on-site staff to build containment dykes and commence pumping contaminant into drums;
   v) apply absorbent as necessary;
   vi) dispose of contaminated debris, cleaning materials and absorbent by burning, if appropriate, or by placing it in an approved land-fill site, and
   vii) take necessary precautions to avoid the incident in the future.

i) The Field Manager will be responsible for the preparation of a written report which will be sent (as soon as possible and no later than 30 days after the spill) to NFGC's Senior Project Manager and, from there, to the applicable regulatory agencies.

5.2 Wildlife Encounters

Potential Environmental Concerns

Wildlife encounters pose a potential risk for stress or injury to both the wildlife and site personnel.

Environmental Protection and Response Procedures

Personnel and contractors are responsible that the following procedures are followed:

a) Hunting, trapping or fishing by exploration personnel will not be permitted on the Properties.
b) Site and working areas will be kept clean of food scraps and garbage.
c) Waste will be collected for disposal in appropriate containers and routinely transferred to an approved location or facility.
c) No personnel will chase, catch, divert, follow or otherwise harass wildlife by vehicle or on foot at the exploration sites.
d) Equipment and vehicles will yield the right-of-way to wildlife.
e) Personnel should be aware of the potential for encounters with wildlife. Wildlife sightings will be recorded on the wildlife sighting forms.
f) The Field Manager will be responsible for actions in response to nuisance animals (e.g., bears) in the exploration areas and will advise the Senior Project Manager for further action.
g) Under provincial wildlife regulations, the displacement and release of an animal is the sole jurisdiction of the DECC, and is to be undertaken only under appropriate supervision.
h) If the nest of a raptor, or other birds are encountered during exploration activities, work in the area is to be halted until the Field Manager and/or Senior Project Manager is contacted and has had the opportunity to contact the Wildlife Division and appropriate mitigation is applied.

5.3 Forest Fires

Potential Environmental Concerns

Certain activities associated with exploration work could potentially result in a fire, which could spread to the surrounding area. Such events could potentially be damaging to the biophysical environment (i.e., vegetation, wildlife, air quality, water quality), and human health and safety, and NFGC assets.

Environmental Protection and Response Procedures

NFGC and their contractors will take precautions to limit the potential for fire when working at the exploration sites. These precautions include, but are not limited to:

a) Disposal of flammable waste on a regular basis. There will be no open fires during fire season.

b) NFGC or their contractor will provide sufficient firefighting equipment to suit its labour force and fire hazards. Such equipment will be in good working order, comply with, and be maintained to the manufacturer's standards.

c) NFGC or their contractor will ensure personnel are trained in the use of firefighting equipment.

d) In the event of a forest fire, NFGC or the contractor will take immediate steps to contain or extinguish the fire, if safe to do so.

e) NFGC's Field Manager will appoint a supervisory staff member as "On-Scene-Commander" for fighting forest fires, if safe to do so.

f) Fires should be reported immediately to:

    i. the Field Manager and Senior Project Manager; and

    ii. Forestry Branch, 24 hr Forest Fire Emergency Line at **(800)-898-4528**.

i) The following information will be provided:

    i. name of the reporter and phone number;

    ii. time of detection of the fire;

    iii. size of the fire; and

    iv. location of the fire.

5.4 Discovery of Historic Resources

Potential Environmental Concerns

Historic resource material that is disturbed, destroyed or improperly removed from a site represents a potential cultural loss of information and history that could otherwise be handled and interpreted in an efficient and appropriate manner.

Environmental Protection and Response Procedures

a) If suspected archaeological material is encountered, stop work in the immediate area of the discovery until authorized personnel from NFGC, having consulted with the PAO, permit resumption of the work.

b) Mark the site's visible boundaries. Personnel will not move or remove artifacts or associated material unless the integrity of the material is threatened.

c) The Field Manager will report the find with the following information to the PAO and comply with the instruction provided:

   i) nature of the find;

   ii) precise description, map location and time of the find;

   iii) nature of the activity resulting in the find;

   iv) identity of the worker(s) making the find;

   v) present location of the material, if moved, and protective measures initiated for the material and the site, and

   vi) extenuating circumstances.

6.0 EPP CONTROL REVISIONS

This EPP will be revised as necessary to reflect site-specific environmental protection requirements and allow updates as work progresses or changes. EPP holders may initiate revisions by forwarding proposed revisions to the Field Manager and/or the Senior Project Manager. The following information will be provided on the Revision Request Form (Appendix D) for revision requests:

- section to be revised;
- nature of the revision;
- rationale for the revision (e.g., environment and/or worker safety), and
- who submitted the revision request.

Approval for revisions will be required from NFGC. When the Senior Project Manager approves a revision request, details of the revision will be distributed to EPP holders and will be documented in the Revision History Log (Appendix E). Each revision will be accompanied by:

- revision instructions;
- list of sections being superseded; and
- an updated Table of Contents indicating the status of each section in the EPP.

When EPP Holders receive a revision, they will, in a timely manner:

- read the text of the revision;
- check the control sheet to confirm that the listed pages have been received;
- remove and destroy the superseded pages from their copy of the EPP;
- insert the revised pages in the proper place in their copy of the EPP;
- page check the EPP, using the updated table of contents to confirm the EPP is complete and current;
- enter the revision number and date entered on the Revision History Log;
- incorporate the revision into the area of responsibility, as appropriate, and
- confirm that their personnel are familiar with the revisions.

7.0 CONTACT LIST

New Found Gold Corp. Main Office
(709) 381-9353

New Found Gold Corp.
Greg Matheson, P.Geo. – Chief Operating Officer
(709) 570-1233

New Found Gold Corp.
Mike Regular, P.Geo.- Senior Project Manger
(709) 486-7705

New Found Gold Corp.
Kevin Keats – Field Manager
(709) 424-1077

New Found Gold Corp.
Stephen Keats – Occupational Health and Safety Manager
(709) 424-6535

Canadian Coast Guard Environmental Emergencies, 24-Hour Report Line
St. John's (709) 772-2083
Other Areas 1-800-563-9089

Service NL, Occupational Health and Safety Division
Grand Falls-Windsor Office, Tel: (709) 292-4400
Serious Workplace Accidents (24 hrs): (709) 729-4444

Department of Environment and Climate Change
Water Resources Management Division
Director, Tel. (709) 729-2563

Department of Environment and Climate Change
Pollution Prevention Division
Director, Tel. (709) 729-5782

Department of Department of Fisheries, Forestry and Agriculture
Wildlife Division
Wildlife Biologist, Tel: (709) 637-2353

Department of Fisheries, Forestry and Agriculture
Crown Lands Administration Division
Western and Labrador Regional Lands Office, Tel: (709) 637-2390

Department of Fisheries, Forestry and Agriculture
24 hr Forest Fire Emergency Line
Tel. (800)-898-4528

Department of Industry, Energy and Technology,
Director, **Mineral Lands**
Tel. (709) 729-6425

Department of Tourism, Culture, Arts and Recreation
Provincial Archaeology Office, Tel. (709) 729-2462

Environment and Climate Change Canada
Environmental Emergencies Coordinator
Tel. (709) 772-7285

Environment and Climate Change Canada – Canadian Wildlife Service
Manager, Regulatory Affairs
Tel: (709) 772-7456 or (709) 690-3382

Department of Fisheries and Oceans
Area Habitat Biologist, Central, Tel: (709) 292-5197

Town of Gander
Tel: (709) 651-2930 Fax: (709) 256-5809

Town of Appleton
Tel: (709) 679-2289 Fax :(709) 679-5552

Town of Glenwood
Tel: (709) 679-2159 Fax: (709) 679-5470

RCMP
1-800-709-7267 (non-emergency)

Petroleum & Environmental Services Inc.
10 Simms Rd, Glenwood, NL A0G 2K0
Tel: 1-877-449-2335 (24hrs) Fax: 1-709-679-2205
Email: info@pesnl.ca

8.0 REFERENCE MATERIAL

Canadian Council of Ministers of the Environment. 1994 and updates. Environmental Code of Practice for Aboveground Storage Tank Systems Containing Petroleum Products.

Department of Environment, Climate Change and Municipalities, Water Resources Management Division. Environmental Guidelines for Stream Crossings by All-Terrain Vehicles.

Department of Industry, Energy and Technology. Mines Branch. Estimated 1995. Environmental Guidelines for Construction and Mineral Exploration Companies.

DFRA (Department of Forest Resources and Agrifoods). 1998. Environmental Protection Guidelines for Ecologically Based Forest Resource Management (Stand Level Operations).

Gosse, M.M., A.S. Power, D.E. Hyslop, and S.L. Pierce. 1998. Guidelines for Protection of Freshwater Fish Habitat in Newfoundland and Labrador. Fisheries and Oceans, St. John's, NL.

9.0 SIGNATURE PAGE

New Found Gold Corporation

The undersigned certify that they have reviewed, and understand their role and responsibility regarding:

QUEENSWAY GOLD PROJECT

EXPLORATION ACTIVITIES

ENVIRONMENTAL PROTECTION PLAN

As part of their Exploration Activities Orientation.

_____ representing -

_____

Name (Printed) Company

_____ -

_____

Signature of above Date

_____

Name of Manager or Supervisor

_____ -

_____

Manager or Supervisor's Signature Date

APPENDIX A
LIST OF ABBREVIATIONS AND ACRONYMS

LIST OF ABBREVIATIONS AND ACRONYMS

ATV	–	All-terrain Vehicle
DFO	–	Department of Fisheries and Oceans
NLDECC	–	Newfoundland and Labrador Department of Environment, Climate Change
NLDIET	–	Newfoundland and Labrador Department of Industry, Energy and Technology
NLDFFA		Newfoundland and Labrador Department of Fisheries, Forestry and Agriculture
NLDTCAR	–	Newfoundland and Labrador Department of Tourism, Culture, Arts and Recreation
EPP		Environmental Protection Plan
MSDS	–	Material Safety Data Sheet
PES		Petroleum and Environmental Services Inc.
PPD	-	Pollution Prevention Division
WHMIS		Workplace Hazardous Materials Information System
WRMD		Water Resources Management Division

APPENDIX B
CONTROLLED COPY DISTRIBUTION LIST

CONTROLLED COPY DISTRIBUTION LIST

New Found Gold	Individual or Location

APPENDIX C
SPILL REPORT FORM

NFGC Fuel and Hazardous Materials Spill Report Form

1. Name of reporter and phone number: _____
2. Time of spill or leak: _____
3. Time of detection of spill or leak: _____
4. Type of product spilled or leaked: _____
5. Amount of product spilled or leaked: _____
6. Location of spill or leak: _____
7. Source of spill or leak: _____
8. Type of accident - collision, rupture, overflow, other: _____
9. Owner of product and phone number:

   _____
10. Is the spill or leak still occurring: YES NO
11. Is the spill or leaked product contained: YES NO

    If NO, where it is flowing and what actions are being taken for containment:

    _____

    _____
12. Wind velocity and direction: _____
13. Temperature: _____
14. Proximity to waterbodies, water intakes, and facilities: _____

    _____
15. Snow cover and depth, terrain, and soil conditions: _____

    _____

In the event of a reportable spill on-land or any spill regardless of size that may enter a waterbody frequented by fish must be reported immediately to:

Environmental Emergencies 24 Hour Report Line 709-772-2083 or **800-563-9089**.

APPENDIX D
REVISION REQUEST FORM

SECTION TO BE REVISED:

NATURE OF REVISION:

RATIONALE FOR REVISION:
(i.e., environment/worker safety, etc.)

SUBMITTED BY:

Please submit request to the New Found Gold Field Manager.

APPENDIX E
REVISION HISTORY LOG

REVISION HISTORY LOG

Version	Date Issued	Revision Notes

APPENDIX C

Environmental Spill Response Plan

ENVIRONMENTAL SPILL RESPONSE PLAN

1. Introduction

The environmental spill response plan has been developed to mitigate the potential negative environmental effects of a spill arising from field operations. The plan outlines the roles and responsibilities of person's involved, necessary equipment, tools and training along with contact details for outside agencies required during a spill.

Emphasis is placed on the prevention of spills however contingency planning is necessary in event of highly unusual circumstances.

2. Definitions

a. **A spill** is defined as an unauthorized discharge into the natural environment of a solid, liquid, or gas, that is abnormal in quality or quantity.

b. **Hazardous materials** that may or may not be present at a field project site include:

   i. Petroleum products: oils, fuel oil, gasoline, greases

   ii. Contaminated water: drill return water, silty water resulting from precipitation

   iii. Coolants: glycols other

   iv. Human waste

c. **A spill to land** shall mean any spill that spills onto soil, vegetation or other hard surface or spills to standing water (puddles etc.)

d. **A spill to water** shall mean any spills into water that are connected to local drainage.

e. **Personnel** shall mean all employees, contractors and agents of New Found Gold Corp.

3. Spills Reporting

a. All personnel are required to report spills of any size to the project site manager.

b. The project site manager is responsible for the reporting of spills that exceed the spill reporting guidelines to the appropriate authorities. Triggers for the reporting of a spill to MOECC:

   i. Petroleum product spill to land greater than 70 litres or of unknown quantity.

   ii. Petroleum product spill to water of any quantity.

   iii. Spill of glycol or other antifreeze of any quantity.

   iv. Spill of silt, sediment laden water into a waterway.

c. All spills shall be documented in a spill report, this is to include the product, volume, location, persons involved, possible causes, recommended preventative measures, cleanup measures taken and post cleanup inspection.

4. Protective/Preventative Measures

a. Secondary Containments

All locations with containers carrying fuel or other petroleum based product will at all times be contained with a secondary containment structure which shall be of sufficient volume to contain 110% of the volume of liquid held in the primary container.

Drilling sites are to be prepared in such a way that berms and sumps placed on the downslope side of the drilling location are sufficient to contain the drill return waters and have sufficient retention time to allow for the settling of drill cuttings before the water absorbs into the natural environment. In no case should drilling waters be allow to travel more than 30 metres from a drill site.

At drilling locations, all drill cuttings, muds and additives will be collected with a sludge collector system affixed to the drill and all resulting collected muds, drill cuttings and additives shall be disposed of at a waste disposal site approved by service NL.

Other locations where sedimentation into water body seems probable, erosion control measures such as silt fencing, straw bales shall be used. This could include stream crossing or other locations close to waterbodies.

b. Spill Cleanup Materials

Locations, vehicles, equipment that contains a hazardous product must have spill cleanup materials readily available. This should include absorbent pads, pillows, socks and booms as required. The size of spill kit should be proportional to the volume of liquid being stored.

After a spill has occurred and cleanup is completed the used spill cleanup materials shall be placed into an approved holding bin at the project site and promptly removed from the site to an approved disposal location.

A complete oil spill clean-up kit must be on site at all times when gasoline or fuel powered equipment is being used or refueled. The kit must contain the following:

- Fire pump and 100 metres of hose
- Two hand operated fuel pumps

- Six recovery containers such as empty 205 litre drums
- Four shovels
- Two pick axes
- Ten metres of containment boom
- On hundred litres of loose absorbent material

c. Drip Prevention

Equipment such as drill pumps, portable pump, engine housing shall include a drip pan lined with absorbent oil pads and promptly removed before overflow can occur.

d. Diversion Tools

Diversion tools should be made readily available including shovels; when available heavy equipment should also be utilized.

e. Water based containments

Areas such as drill pump or fire pump locations where petroleum products are to be in proximity to waterbodies require the installation of floating oil booms as a preventative measure.

f. Buffer Zones

Drilling or excavating shall not occur within 30m of all natural water bodies, with exception of pumping locations no other activity is to occur within 30m of a natural water body. This buffer is expanded to 300m for work specifically occurring near Gander Lake and 100m from any tributaries running directly into Gander Lake.

g. Storage of hazardous materials

Hazardous materials should never be stored within 30 metres of a water body or 300 metres of Gander Lake.

h. Erosion control measures

Erosion control materials primarily as silt fencing will be made available on site.

i. Transfer/transport of hazardous materials

Hazardous materials are always to be handled with care; the transfer of petroleum products should always occur at site specific transfer locations and never left unattended during

transfers. Transport of petroleum products shall be done with either CSA approved slip tanks with volumes less than 500 litres or jerry cans with volumes less than 25 litres.

j. Human Waste

Human waste generated at the site will be trucked off site to an approved sewage plant. Contractor owned "porta-jon" will be used with regular service.

k. Solid Waste

Solid waste is to be transported off site regularly by the contractor and disposed at their shop through normal solid waste stream approved by Services NL.

l. Records

All areas of new disturbance, drill trails and drill pads will undergo pre and post drilling photography via drone or ground images for records purposes. Drill pad pre and post inspections will be retained for the duration of the project. Periodically the company shall use satellite imagery to monitor the scale of its development and reclamation efforts.

5. Spills Cleanup

a. All personnel on site whether contractors or employees and dealing with hazardous materials shall be trained in the basic use of spill response equipment and clean up procedures. All personnel shall be required to review the site specific environmental spill response plan.

b. MSDS sheets for all hazardous materials present at the project site should be readily available.

c. Personnel involved in spills clean up should always wear protective clothing/equipment as required in the product's MSDS sheet.

6. Spills Cleanup Procedures

a. Discover spill and complete initial assessment

- Prior to initiating response plan, identify immediate hazards and use appropriate PPE.
- Halt activities that are causing the spill. If safe to do so, STOP THE PRODUCT FLOW! I.e. close valves, elevate leaking hoses, shut off pumps, etc.
- Prior to taking further action, complete an incident assessment - identify product, determine volume spilled, environmental impact and safety precautions to be taken.

b. Notify

- Report spill in accordance with company and local legislative requirements.

- If spill is beyond the crew's level of training and experience, seek assistance from a spill response specialist.

c. Containment and Recovery

- Employ hand tools, heavy equipment and spill response equipment available at hand to minimize the spread and impact of the spill until additional resources and expertise arrive, if required.

d. Spills to Land

- Determine area/extent of spill. Contain spills away from any water course.
- Mark the perimeter of the spill. Dig recovery ditches around the perimeter and sump(s) within the spill area.
- Monitor ditches and sump(s) to ensure the collection system is effective.
- Recover the product from the containment area, treat and/or dispose of in an approved manner.

e. Spills to Water

- Corral the spill using whatever surface water containment system possible.
- Divert and corral the spilled product to the containment system using absorbent booms or other methods.
- Continue to sweep and corral the spilled product to one corner for recovery.

f. Document, Follow-up, Disposal and Site Remediation

- Ensure spills have been documented in a spill report and reported to agencies and/or designated persons.
- Complete clean-up and required mitigation actions. If required contact a spill response specialist for assistance.
- Complete and submit an Incident Report within 24 hrs.

7. Spill Roles and Responsibilities

a. First on Scene

i. Evaluate, identify the source of the spill and spilled product
ii. Implementation of security measures, ensure unauthorized persons are not entering the spill location
iii. Can you stop the spill safely? If so close the valve, turn off pumps or other gravity flow hoses.
iv. Prevent access of spilled material to water through diversion channels, sumps.
v. Contact site manager and include location and status report as soon as possible
vi. Assist spill response team members in conducting spills response cleanup.

b. Spill Response Team

i. Stop or reduce the discharge, if safe to do so

ii. Deploy spill response equipment
iii. If possible, prevent access of spilled material to water
iv. Continue cleanup as directed by the site project manager or until relieved
v. Restore damaged environment and property as directed
vi. Collect contaminated and hazardous materials and store them in separate sealed containers
vii. Prepare the materials for transport to an authorized disposal site
viii. In case of large spills, collect soil/water samples for a characterization by an accredited laboratory, as directed.
ix. Complete a spill report and assist in remediation efforts as required

c. Project/Site Manager

i. Assess risk for potential spills and identify preventative and control measures required.
ii. Ensure Emergency Response Plan is readily available on site.
iii. Ensure Spill Response Plan is readily available on site.
iv. Ensure all workers are familiar with potential spill activities/sites, spill kit requirements and locations.
v. Ensure workers are trained in WHMIS and spill response.
vi. Have appropriate Material Safety Data Sheets (MSDS) readily available for all controlled products on site.
vii. Conduct periodic spill preparedness and response drills.
viii. Complete spill kit inspections and maintain spill kits as necessary.
ix. Respond to all spills in accordance with the Environmental Spill Response Plan. The person responsible for a spill of hazardous material is responsible for taking appropriate actions to minimize environmental impact.
x. Report all reportable spills and complete a spill report including follow up remediation report.

8. Liabilities/Responsibilities

It is the responsibility of all personnel involved in field operations to ensure that spills do not occur and proper protective measures are in place. As project owner New Found Gold Corp has the ultimate responsibility for the protection of the environment at its project sites from harm that may arise from operations. Owing to the fact most work conducted at the site will be done so by contractors NFGC is committed to ensuring those contractors are best in class and are directly liable for spills resulting from their negligence/ non-adherence to the Environmental Spill Response Plan. NFGC and contractors must carry insurance coverage for spills and environmental cleanup in amounts no less than $1.0 Million.

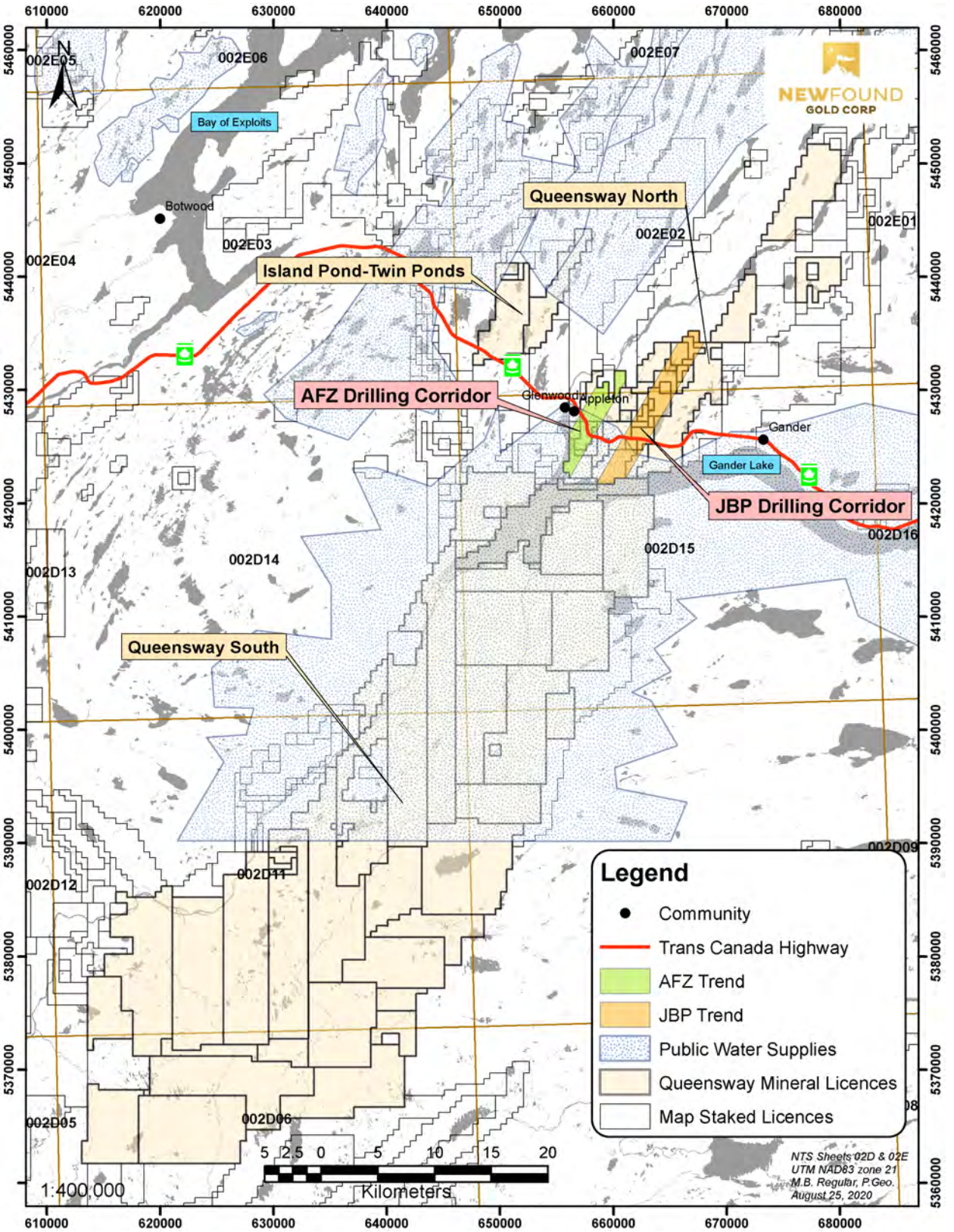
9. Site Specific Spill Response Plan - Drilling East of Appleton, NL (sites A,B,C,E) and South of the TCH (site D)

- Drilling of 750 diamond drill holes or reverse circulation drill holes including 300 drill holes inside of the Gander Lake PPWSA
- Clearing of 8000m of access trails inside of the Gander Lake PPWSA
- All bulk fuel and waste storage will be outside of GLPPWS
- Anticipated fuel use will be approximately 360L/day of coloured diesel per diamond drill up to 10 drill
- Fuel storage within the Protected Public Water Supply Area shall be limited to the amount of fuel required to drill each borehole up to a maximum of no more than two (2) new 205 litre drums, or one (1) CSA or ULC approved slip tank having a capacity of 500 litres. All fuel drums or slip tanks must be in good condition. Refueling sites shall be located at least 30 metres from any water body or wetland. Fuel drums or slip tanks shall have metal trays, absorbent pads or impervious liners under them to catch and contain in excess of 110 % of the aggregate volume of fuel.
- Anticipated water taking will be 200m^3/day and shall be verified periodically by bucket testing
- Sediment/Erosion control material installation do not appear necessary upon preliminary inspection however materials will be on site to be deployed as necessitated. Drilling pads are to be designed to allow for containment of hazardous substances.
- A 30 metre buffer for drill pad locations will be maintained surrounding all natural water bodies and expanded to a 300 metre buffer for working around Gander Lake including 100m around all tributaries running into Gander Lake.

10. Site Specific Water Quality Management - Drilling East of Appleton, NL (sites A,B,C,E) and South of the TCH (site D)

- All water, runoff or effluent from the mineral exploration activity that is pumped or flows by gravity, shall have silt, sludge, sediment, cuttings, and visible turbidity removed by means of sediment boxes, settling tanks, settling ponds, sumps dug into the ground, filtration or other suitable treatment, to less than or equal to 30 milligrams per litre of Total Suspended Solids (TSS), before being discharged to the environment. More specifically, at the last point of control, the final discharge of all water, runoff or effluent must conform to the limits specified in Schedule A of the Environmental Control Water and Sewer Regulations, 2003, https://www.assembly.nl.ca/Legislation/sr/Regulations/rc030065.htm. It is the responsibility of New Found Gold Corp to demonstrate, that the final discharge meets the requirement of these Regulations. A minimum of one grab sample must be collected from the final discharge point for each borehole, analyzed at an accredited Laboratory, and the results provided to the Water Resources Management Division, Department of Municipal Affairs and Environment within seven (7) days of the receipt of analytical results. Sample are to be analyzed for:
    - Total Dissolved Solids
    - Total Suspended Solids
    - Arsenic

  - Barium
  - Boron
  - Cadmium
  - Chlorine
  - Chromium
  - Copper
  - Cyanide
  - Iron
  - Lead
  - Mercury
  - Nickel
  - Nitrates
  - Nitrogen (ammoniacal)
  - Phosphorous
  - Selenium
  - Sulfides
  - Silver
  - Zinc”
- All silt, sludge, sediment, cuttings, drilling additives, and drilling mud must be collected and disposed of at a waste disposal site approved by Service NL


NEWFOUND
GOLD CORP
Bay of Exploits
Botwood
Queensway North
Island Pond-Twin Ponds
AFZ Drilling Corridor
JBP Drilling Corridor
Queensway South
Glenwood
Appleton
Gander
Gander Lake
002E01
002E02
002E03
002E04
002E05
002E06
002E07
002D09
002D11
002D12
002D13
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5440000
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5420000
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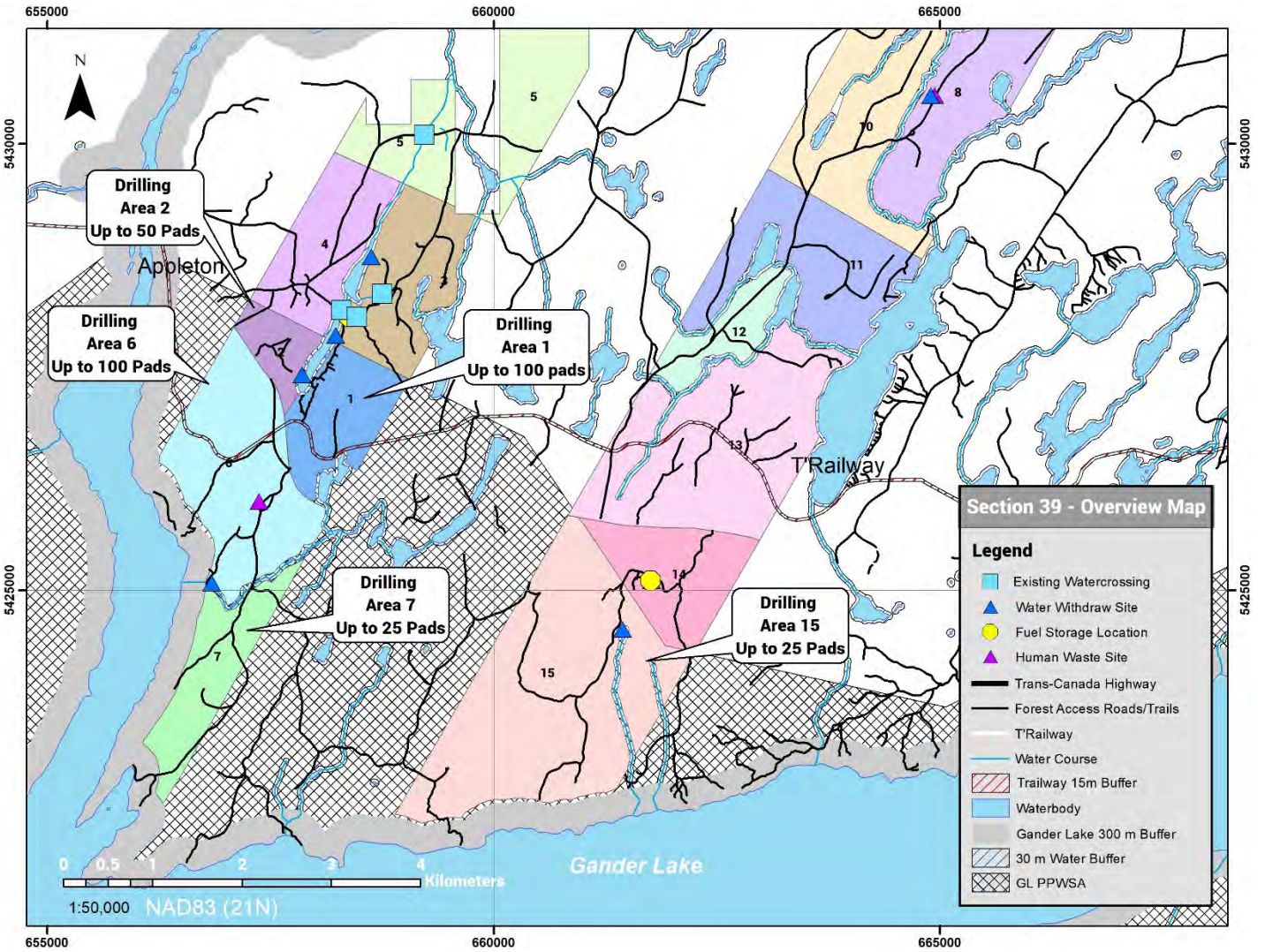
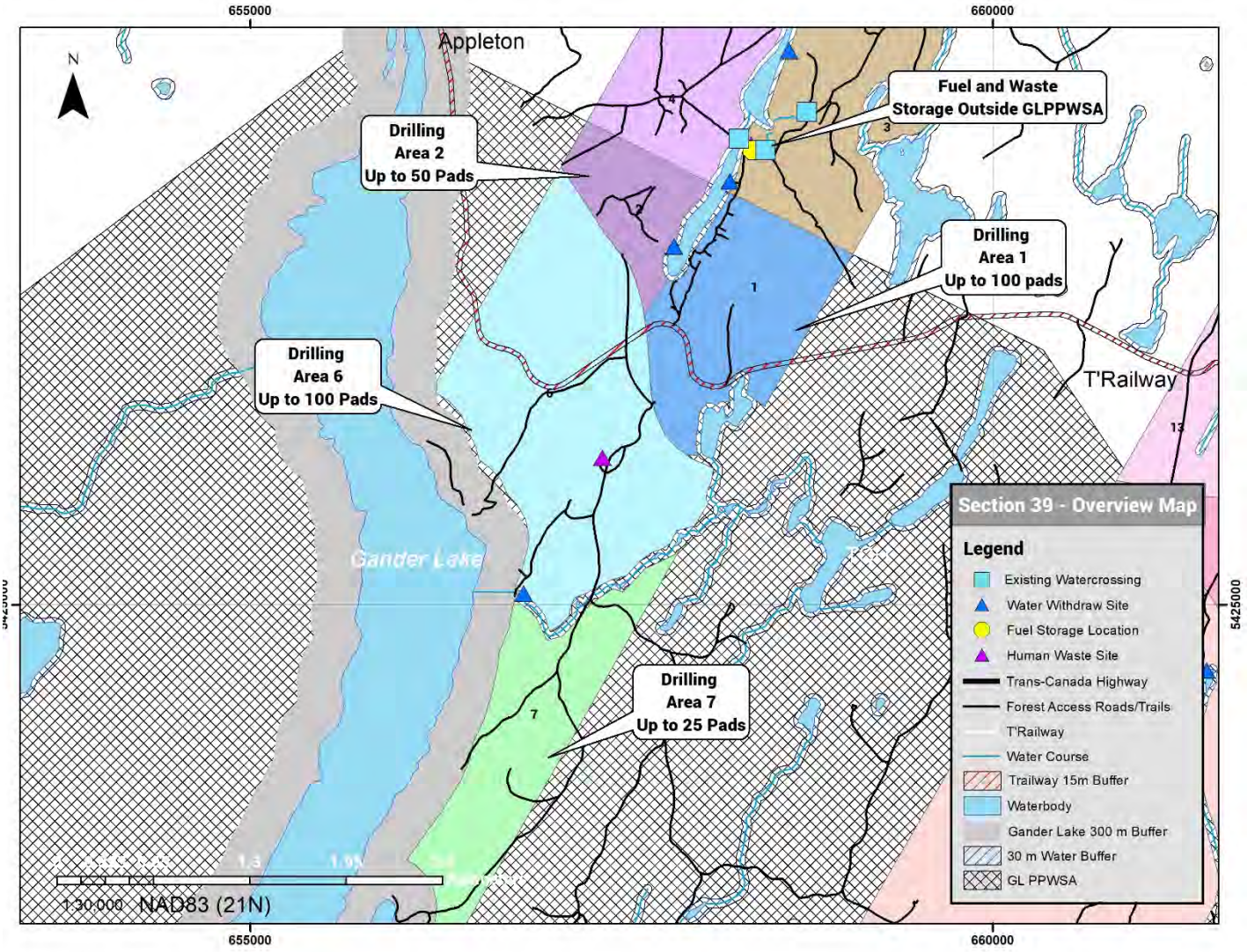
Legend
Community
Trans Canada Highway
AFZ Trend
JBP Trend
Public Water Supplies
Queensway Mineral Licences
Map Staked Licences
5 2.5 0 5 10 15 20
Kilometers
1:400,000
NTS Sheets 02D & 02E
UTM NAD83 zone 21
M.B. Regular, P.Geo.
August 25, 2020


655000
660000
665000
5430000
5425000
N
Drilling
Area 2
Up to 50 Pads
Appleton
Drilling
Area 6
Up to 100 Pads
Drilling
Area 1
Up to 100 pads
T'Railway
Drilling
Area 7
Up to 25 Pads
Drilling
Area 15
Up to 25 Pads
Gander Lake
0 0.5 1 2 3 4
Kilometers
1:50,000 NAD83 (21N)
Section 39 - Overview Map
Legend
Existing Watercrossing
Water Withdraw Site
Fuel Storage Location
Human Waste Site
Trans-Canada Highway
Forest Access Roads/Trails
T'Railway
Water Course
Trailway 15m Buffer
Waterbody
Gander Lake 300 m Buffer
30 m Water Buffer
GL PPWSA


655000
660000
N
Appleton
Drilling
Area 2
Up to 50 Pads
Fuel and Waste
Storage Outside GLPPWSA
Drilling
Area 1
Up to 100 pads
Drilling
Area 6
Up to 100 Pads
T'Railway
Gander Lake
Drilling
Area 7
Up to 25 Pads
Section 39 - Overview Map
Legend
Existing Watercrossing
Water Withdraw Site
Fuel Storage Location
Human Waste Site
Trans-Canada Highway
Forest Access Roads/Trails
T'Railway
Water Course
Trailway 15m Buffer
Waterbody
Gander Lake 300 m Buffer
30 m Water Buffer
GL PPWSA
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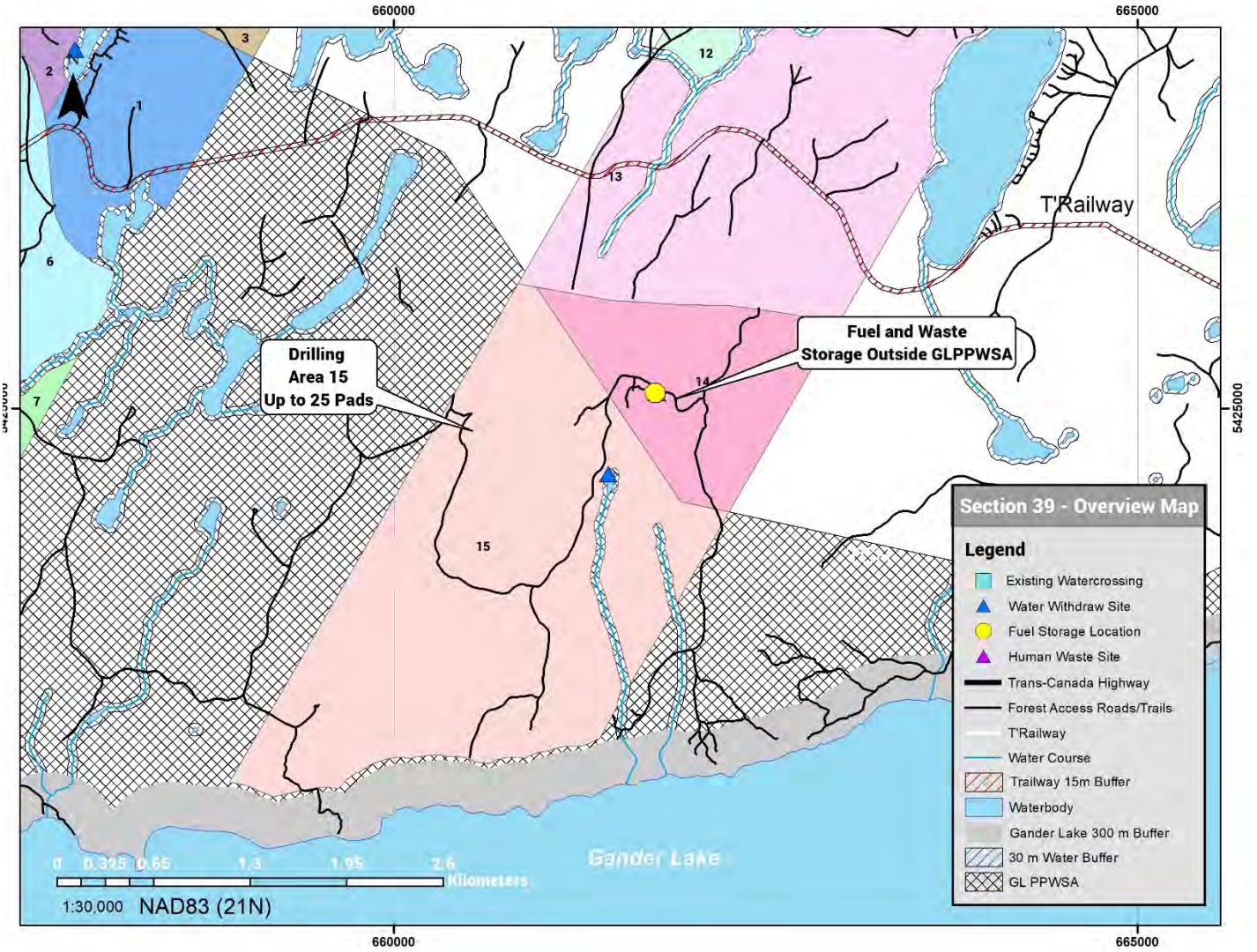
NAD83 (21N)
5425000


660000
665000
5425000
T'Railway
Drilling
Area 15
Up to 25 Pads
Fuel and Waste
Storage Outside GLPPWSA
Gander Lake
0 0.325 0.65 1.3 1.95 2.6
Kilometers
1:30,000 NAD83 (21N)
Section 39 - Overview Map
Legend
Existing Watercrossing
Water Withdraw Site
Fuel Storage Location
Human Waste Site
Trans-Canada Highway
Forest Access Roads/Trails
T'Railway
Water Course
Trailway 15m Buffer
Waterbody
Gander Lake 300 m Buffer
30 m Water Buffer
GL PPWSA

Proposed Work Locations:

Planned Site	Easting (NAD 83)	Northing (NAD 83)
Water Withdraw Point (Area 3+4) – Outside of GLPPWSA	658227	5427850
Water Withdraw Point (Area 2)	657852	5427412
Water Withdraw Point (Area 6+7)	656838	5425075
Water Withdraw Point (Area 15)	661439	5424556
Water Withdraw Point (Area 3) – Outside of GLPPWSA	668627	5428731
Water Withdraw Point (Area 8+9)	664897	5430539
Fuel and Oil Storage (Area 1+2+3+4+5) – Outside of GLPPWSA	658380	5428061
Fuel and Oil Storage (Area 13+14+15) – Outside of GLPPWSA	661754	5425106
Human Waste Site (Area 1+2+3+4+5) – Outside of GLPPWSA	658369	5428098
Human Waste Site (Area 6+7)	657368	5425991
Human Waste Site (Area 13+14+15)	661768	5425103
Human Waste Site (Area 8+9+10+11+12+13) – Outside of GLPPWSA	664941	5430543

11. Site Specific Closure/Rehab Plans

Drill pad sites are to be leveled and covered with existing vegetative materials available at the site. The rehab of drill site will be photographed via drone or ground imagery post drilling/post closure. Drill hole collars will be plugged and grouted (cemented) from a depth no less than 10 metres below bedrock interface to 10 metres above the bedrock interface such that no artesian flow can occur. Drill pad locations will be periodically seeded with an approved reclamation mixture of native seeds to encourage root development and limit erosion.

All drill cuttings contained in sumps at the drill pad locations to be removed with hydravac trucks and disposed at an approved waste disposal facility. Sumps will be refilled and leveled.

New drill trails will be scarified and allowed to revegetate naturally or as required seeded with approved reclamation mixture. Existing roads will be repaired where use has caused degradation.

Post drilling inspections are to include visual appearance, evidence of petroleum products, any trash left at the site and monitoring of natural drainage of the site.

Spill Response Contact Details

NEW FOUND GOLD CORP
Kevin Keats, Site Manager 300 Garrett Drive Gander, Newfoundland A1V 0H5 Cell: (709) 424-1077 Email: kkeats@newfoundgold.ca
Greg Matheson, COO (acting site manager) 69 Yonge St. Suite 1010 Toronto, Ontario M5E 1K3 Cell: (705) 570-1233 Email: gmatheson@newfoundgold.ca

MOECC Spill Reporting (800) 563-9089

Emergency Contact Numbers

(Newfoundland and Labrador)

Provincial Contacts		
DNR-Mines - St.Johns, NL	TEL: (709) 670-5798	
(Matthew Snow – Mineral Exploration Site Inspector)		
DMAE - St. Johns, NL	TEL: (709) 729-7634	
(Janice McCarthy-Senior Engineer)		
DMAE - St. Johns, NL	TEL: (709) 729-2657	
(Shabnam, Mostofi – Environmental Engineer)		
GLWMC - Gander, NL	TEL: (709) 651-5915	
(James Blackwood – Committee Chair)		
MOECC - Atlantic	TEL: (800) 563-9089	

Federal Contacts		
MOECC - Downsview, ON	TEL: (416) 739-4809	FAX: (416) 739-4776
DFO - Ottawa, ON	TEL: (613) 993-0999	FAX: (613) 990-1866

General Emergencies - 911	
Police (RCMP) -	TEL: (709) 256-6841
Ambulance - Gander	TEL: (709) 651-2111
Air Ambulance - Gander	TEL: (709) 777-6320
Forest Fire - FLR Fire Management	TEL: (866) 709-3473
Hospital - Gander	TEL: (709) 256-2500
COVID-19 HOTLINE	**811**

Environmental Contractors	
H. Warehams & Sons	TEL: (709) 256-4753
(Vacuum truck services)	
Petroleum and Environmental Serivices Inc.	TEL: 1 (877) 449-2335
(Environmental First Responders)	
PBO Industrial Disposal	TEL: (709) 489-9896
(Solid Waste Disposal)	
Feldhams Construction	TEL: (709) 533-3322
(Porta-Jon Rentals)	
(Vacuum truck services)	

APPENDIX D

Waste Management Plan
Queensway North Project

Waste Management Plan

Mineral Exploration Activities
Queensway North Gold Project

New Found Gold Corp.
300 Garrett Drive
Gander, NL, A1V 0H5

April, 2021

Emergency Phone Numbers	
Organization	**Phone**
Bell Place Community Health Centre	1-709-651-6225/6241
James Paton Memorial Regional Health Centre	1-709-256-2500
Gander RCMP	1-709-256-6841
Gander Fire Department	1-709-673-4333/3394
Gander Fire Rescue	1-709-256-8887
Department of Transportation & Infrastructure – Central Region	1-709-292-4163
Emergency Measures Organization – Fire and Emergency	1-709-729-3830/729-1608
Health and Community Services - Poison Control Centre	1-709-722-1110 Toll Free 1-866-727-1110
Department of Environment, Climate Change and Municipalities (PPD))	1-709-729-5782
Occupational Health and Safety	1-800-563-5471
New Found Gold - Main Office	1-709-381-9353
Greg Matheson, P.Geo. – Chief Operating Officer	1-709-570-1233
Mike Regular, P.Geo. – Senior Project Manager, NL	1-709-486-7705
Kevin Keats – Field Manager	1-709-424-1077
Stephen Keats – Occupational Health and Safety Manager	1-709-424-6535
Spill Kits Hi-Point Industries Bishop's Falls, NL	1-709-258-9274
Dumpsters PBO Industrial Disposal Grand Falls-Windsor, NL	1-709-489-9896
Spill Response Petroleum & Environmental Services Appleton, NL	1-877-449-2335
Vac Truck Services Feltham's Construction Glovertown, NL	1-709-533-3322
Industrial Waste Disposal Exploits Salvage and Demolition Ltd. Grand Falls-Windsor, NL	1-709- 489-1170
Waste Oil Disposal Pardy's Waste Management St. John's, NL	1-709- 368-4350
Hazardous Waste Disposal Terrapure Industrial St. John's, NL	1-709- 834-7350

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LIST OF FIGURES

LIST OF TABLES

1.0 INTRODUCTION

New Found Gold Corp. (NFGC) is a publicly traded mineral exploration company (NFG:TSX-V) exploring for gold in the central portion of the Island of Newfoundland (Figure 1). NFGC submitted an Environmental Registration document detailing their planned exploration activities specific to the Queensway North Gold Project (the Project) to the Newfoundland and Labrador (NL) Environmental Assessment Division (EAD) on October 30, 2020. On December 17, 2020, the Project (2106) was released from the EA process with a number of conditions and recommendations. A recommendation from the Pollution Prevention Division (PPD) of the Department of Environment and Climate Change (DECC) was the development of a comprehensive Waste Management Plan (WMP) for the Project.

This WMP is applicable to Queensway North Gold Project and includes the following activities:

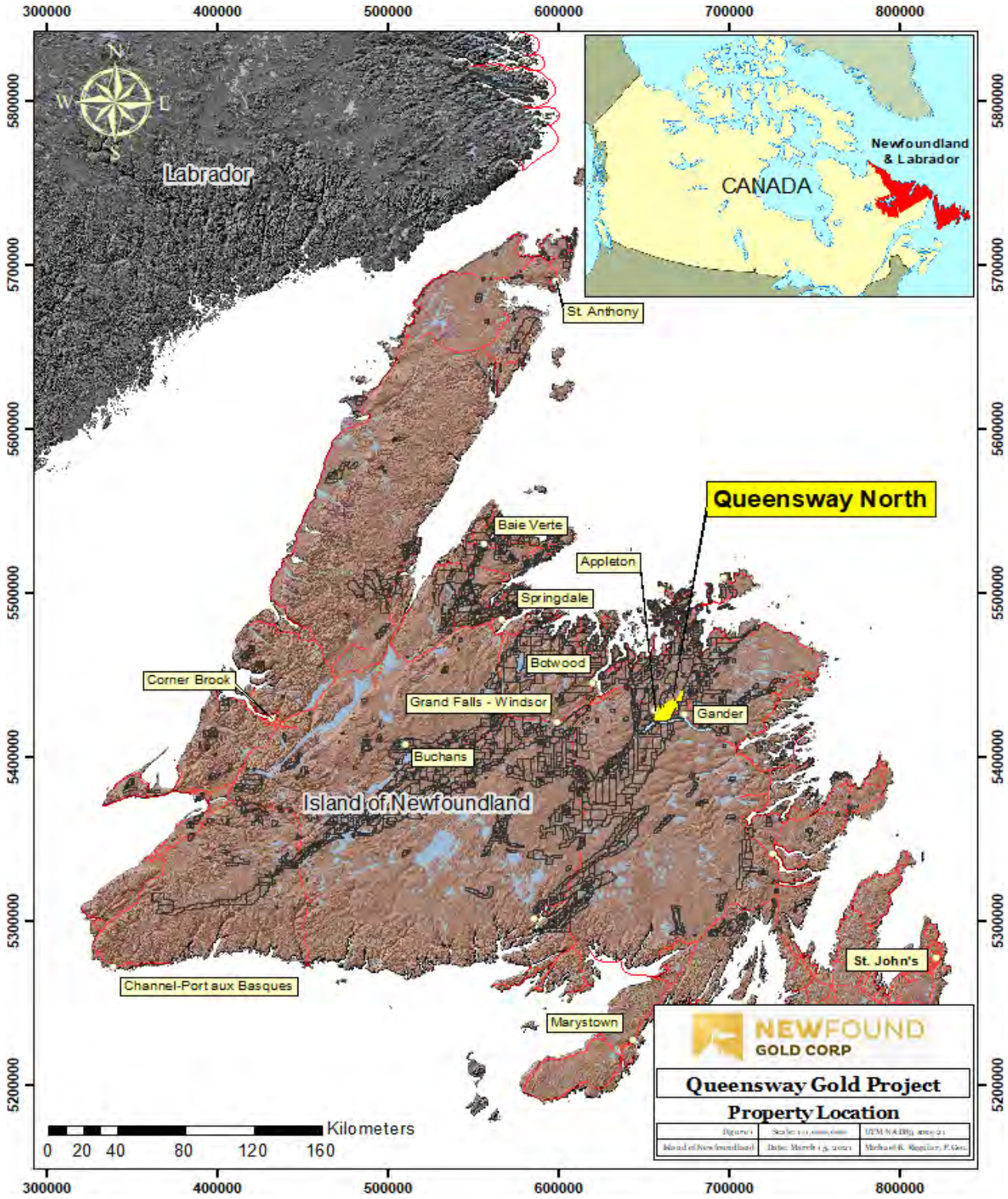
- Up to 200,000 metres (m) of core drilling in up to 1500 drill holes in the Appleton Fault Zone, Joe Batts Pond Fault Zone.
- Trenching in selected areas where anomalous gold numbers have been indicated from both grab rock samples and till sample surveys.
- Airborne and ground based geophysical surveys over new ground or untested ground.
- Geochemical surveys combined with prospecting and mapping.
- Geophysical interpretation and spectral interpretation of lithologies from core and satellite imagery.
- Line cutting, including limited seismic, on the same property described in the original Registration document (Registration 2061) released from EA review in October 2020.

The Project will require the creation of drill pads and access trails extending from existing forest access roads and trails. Drill pads are areas temporarily cleared of brush and trees (15 m radius) to allow the operation of an exploration drill rig. Drill access trails are temporary trails (5 m) cleared of brush and trees to allow access to the drill pads. There are no remote camps associated with the Queensway North Project. During the field season NFGC contractors and personnel stay at rented outfitter lodges as required, and drill crews stay at a commercial camp at Twin Ponds, west of Appleton.. A second registration document specific to line cutting and associated exploration work in the same area will be submitted in Q2 2021.

This WMP provides information on the management of liquid and solid waste generated as a result of Project activities. All waste types are identified and a description of waste management practices from generation to treatment and/or disposal are provided. This WMP considers basic waste management principles of reducing, reusing, recycling and recovering, and appropriate disposal options for Project waste generated.

The WMP demonstrates NFGC's commitment to environmental compliance, as well as to ensuring the health, safety and well-being of all personnel involved in the Project.

Figure 1: Project Location



1.1 Project Location

The Queensway North Gold Project (Northern extents of the Queensway Project) is located approximately 15 kilometers (km) west of the Town of Gander and just east of the Town of Appleton in central Newfoundland, NL (Figure 1). The Queensway North Project consists of 631 claims as part of 36 mineral licences covering and area of 157.75 km^2 or 15,775 ha, The Project spans 1.0 to 12 km width, and stretches 111 km from the Baie d'Espoir Highway to Little Rocky Brook north of Jonathan's Pond Park (Figures 2 and 3).

1.2 Objectives and Scope of the WMP

The objective of NFGC's WMP is to ensure that all wastes produced by Project activities are handled, stored and/or disposed of in a safe and responsible manner, and complies with all applicable legislation, regulations, authorizations, permits and licenses for the duration of the Project. The WMP provides a waste management system to deal with waste streams and allows for the implementation of reduction and diversion opportunities. The WMP also serves as an internal quality control document that provides clear and concise direction for company staff and contractors regarding waste management policies and procedures that must be followed.

The objectives of this WMP are to:

- Ensure compliance with applicable acts, regulations, and standards;
- Promote compliance with industry guidelines and best management practices;
- Minimize adverse effects on the environment;
- Incorporate and optimize the basic principles of waste management including reduce, reuse, recycle, recovery and residual waste disposal;
- Identification and classification of potential wastes types and quantities generated;
- Provide guidelines for proper collection, segregation, storage and disposal of waste;
- Minimize the amount of waste generated;
- Reduce waste disposal costs;
- Protect the health and safety of Project personnel; and
- Ensure compliance with waste management protocols through operator and attendant training, appropriate surveillance and monitoring, and audits.

Figure 2: Mineral Claims and Licenses – Queensway Project

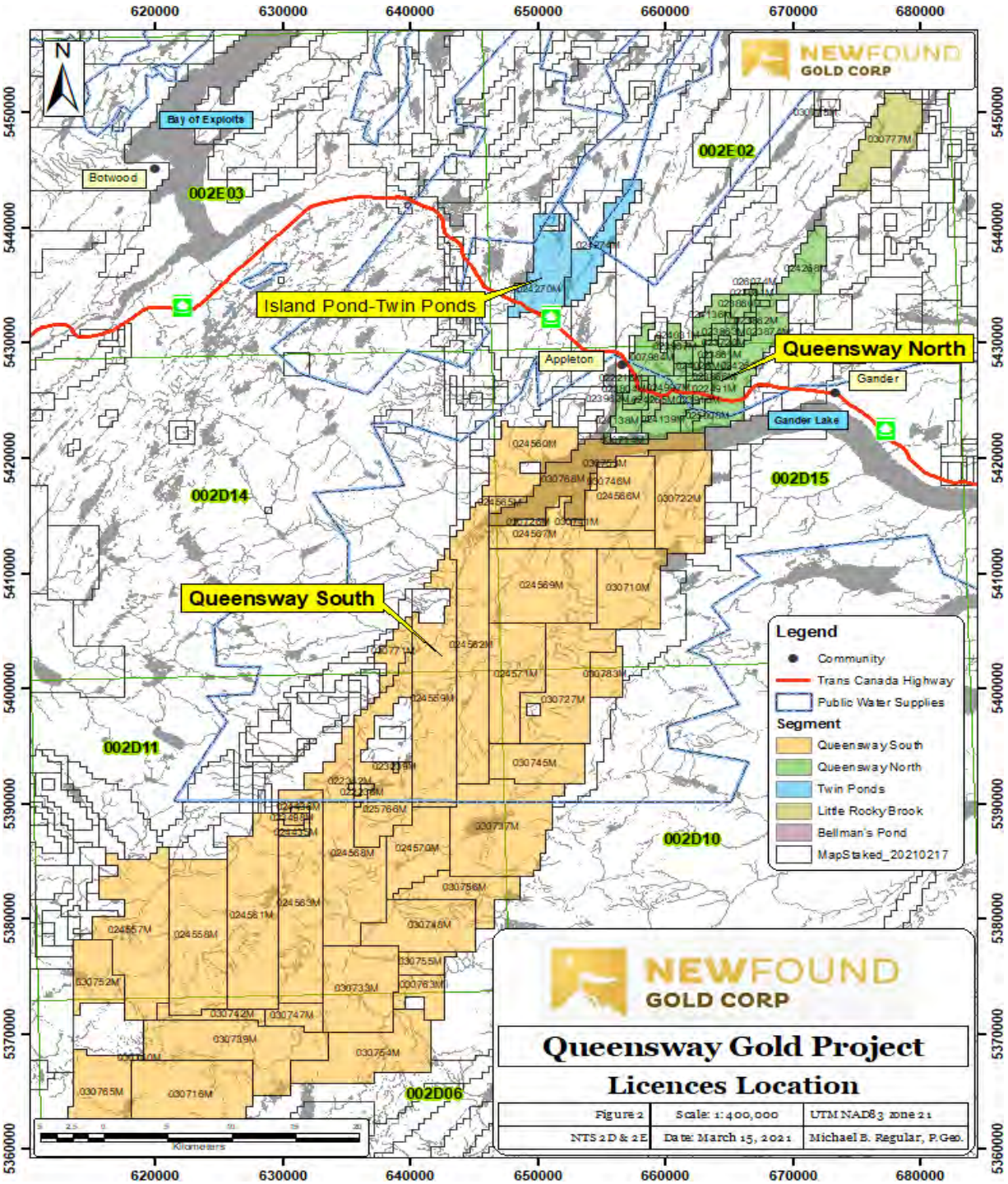
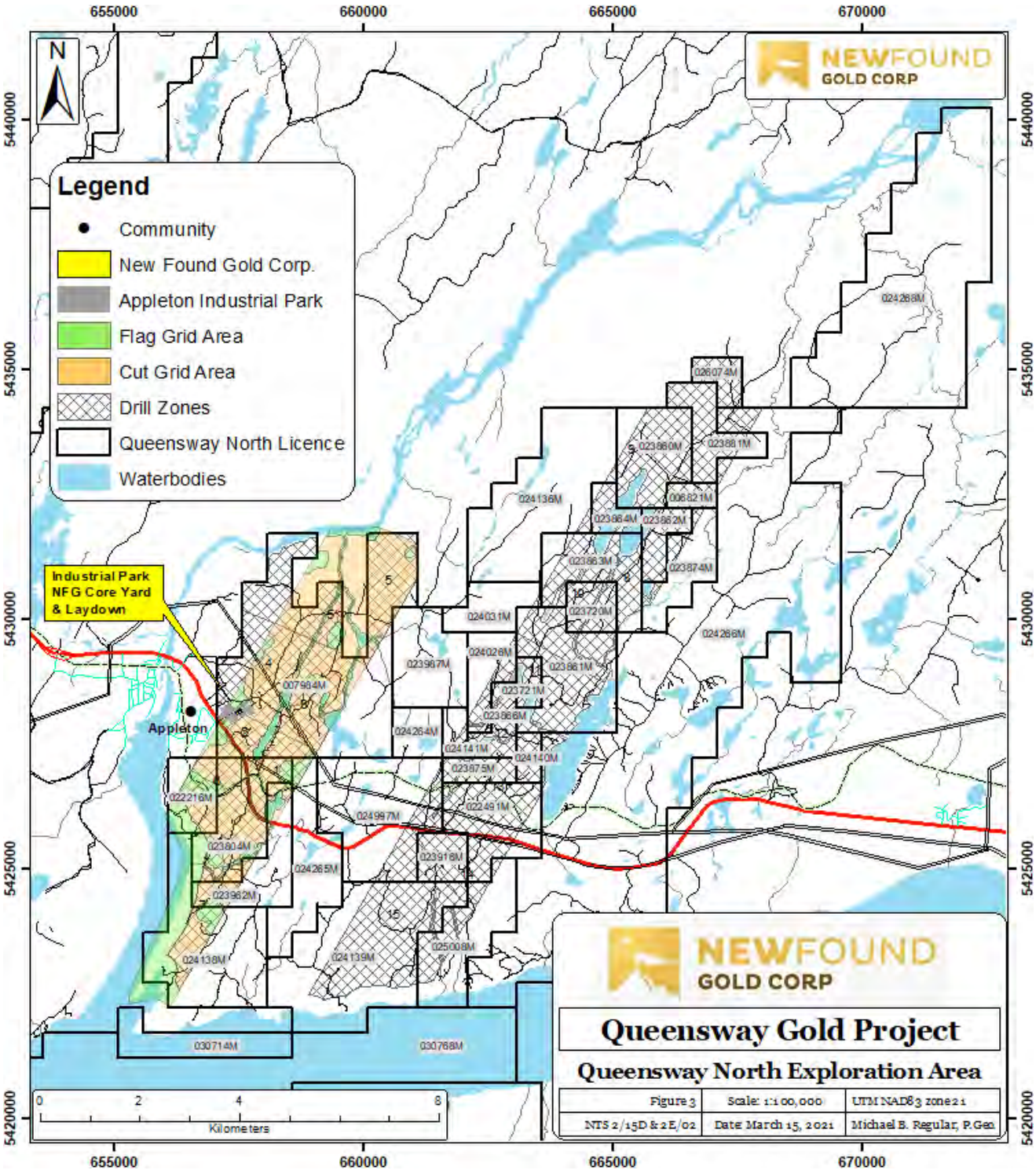


Figure 3: Queensway North Exploration Areas



NFGC is committed to ensuring that collection, storage, transportation and disposal of all waste generated is conducted in a safe, efficient and environmentally compliant manner. The first essential step toward achieving these goals is the preparation of this WMP that identifies potential waste streams and establishes roles and responsibilities for all site personnel. There will be contractual obligations of each contractor to manage wastes generated at the Project site, however the principals and details provided in this WMP will be standard for all personnel.

The WMP will be reviewed on an annual basis and will be updated as necessary to accommodate changes in the Project.

NFGC is committed to minimizing the impact of its exploration activities on the environment, and to protecting the safety of nearby communities, personnel and contractors, and wildlife. The WMP will act as a directive for the proper handling and management of a variety of waste streams resulting from the Project.

The scope of the WMP is described as follows:

- Identify roles and responsibilities of Company personnel in the execution of the WMP;
- Identify all potential waste streams from Project activities;
- Identify procedures to promote reduction, reuse, and recycling of waste materials;
- Identify practices and procedures for waste handling, collection, storage, transport, and disposal; and
- Identify waste monitoring and mitigation procedures.

2.0 REGULATORY FRAMEWORK

The WMP is informed by the regulatory framework for industrial waste management in NL and considers legislation, regulations and guidelines at the federal, provincial and municipal levels. The key regulations and guidelines that may apply to waste management for the Project are provided below.

2.1 Provincial Acts and Regulations

- *Transportation of Dangerous Goods Act* and *Regulations*;
- *Fire Protection Act* and *Regulations*;
- *Water Resources Act*;
- *Environmental Protection Act*;
- *Storage and Handling of Gasoline and Associated Products Regulations*;
- *Used Oil Control Regulations*;
- *Air Pollution Control Regulations*;
- *Water and Sewer Regulations*;
- *Occupational Health and Safety Act* and *Regulations*;
- *Workplace Hazardous Materials Information System (WHMIS) Regulations*; and
- *Waste Management Regulations*.

2.1.1 Provincial Guidelines

- The Provincial Solid Waste Management Strategy (NL);
- Best Management Practices for storage of waste, dangerous goods/hazardous waste (WDG/HW) at business sites;
- Management of Waste Dangerous Goods/Hazardous Waste (WDG/HW) 2003-2013 for Newfoundland and Labrador;
- Environmental Standards for Construction and Demolition Waste Disposal Sites;
- Guide for the Disposal of Off the Road (OTR) Tires and Tire Material;
- NORM Waste Management; and
- Landfill Bans, Special Wastes and Diversion Programs.

2.2 Federal Acts and Regulations

- *Canada Environmental Protection Act*;
- *Transportation of Dangerous Goods Act* and *Regulations;* and
- *Canada Fisheries Act*.

2.3 Definitions

For purposes of this WMP, waste includes both Solid (Municipal Solid Waste) and Special Waste. Under the NL Solid Waste Management Strategy (NLSWMS), municipal solid waste (MSW) includes garbage, refuse, rubbish, litter and other discarded materials resulting from residential, commercial, institutional and industrial activities which are commonly accepted at a municipal solid waste management facility, mixed or unmixed.

Under the NLSWMS, Special Waste includes any waste material that requires special treatment or disposal precautions, due to its nature, quantity, volume, potential to react and/ or potential to produce an adverse effect. Examples include, animal carcasses/mortalities or roadkill, asbestos containing material, fish plant waste, and process related commercial or industrial waste streams.

Hazardous waste or material is defined in NLSWMS as wastes or materials that are corrosive, reactive, flammable, ignitable, carcinogenic, teratogenic, mutagenic, infectious, oxidizing, radioactive, explosive, poisonous/toxic (acute and chronic), bioaccumulative, persistent, TCLP* (Toxicity Characteristic Leaching Procedure USEP A 1311) leachable toxic, or any wastes which do not meet any of the above criteria but have other properties of concern which are significant enough to consider the material to be hazardous.

Hazardous waste is any waste which contains a hazardous substance in such a quantity liable to cause death, injury or impairment to living beings, pollution of water, air and soil, or unacceptable impact on the environment, if handled, treated or disposed of improperly. Includes ‘waste dangerous goods’ as defined under the NL *Environmental Protection Act*.

A hazardous waste transporter (licensed) is a company that holds a Certificate of Approval to transport hazardous waste in NL as issued under the *Environmental Protection Act.*

Regulated wastes include any waste material which is specifically regulated as hazardous and dangerous for transport. All waste for this project will be classified into three basic categories from which best management practices can be applied.

3.0 ROLES AND RESPONSIBILITIES

All Project personnel will have roles and responsibilities relative to appropriate waste management and the execution of the WMP. The effectiveness of the WMP depends on the commitment and actions of all personnel.

3.1 Management Commitment

NFGC is committed to the preservation and protection of the environment and commits to the implementation, maintenance and upgrading of this Plan that incorporates existing waste management strategies with new initiatives.

The management of NFGC recognizes that staff time and resources are required to implement and maintain the WMP.

3.2 Field Manager

The Field Manager will be responsible for the overall management of contractors managing Project waste and for reviewing Plan initiatives and procedures with Occupational Health and Safety (OHS) Manager. This will ensure that the Plan is carried out pursuant to all applicable regulations and requirements, and that the Plan will be effectively implemented.

3.3 Occupational Health and Safety Manager

The OHS Manager will provide guidance and expertise to the senior NFGC's management team on all aspects of waste management activities. In addition, the Field Manager will:

- Support waste management orientation and awareness training for all NFGC employees and contractors.
- Review results of routine monitoring and/or audits specific to waste handling, infrastructure, equipment and contractors as part of the continual approval process.
- Consult with regulators relative to waste management and recycling programs as required.

3.4 Senior Project Manager

The Senior Project Manager will be responsible for ensuring onsite operational compliance with the Plan at all time. In addition, the Senior Project Manager will:

- Review onsite waste management needs and contract requirements with the OHS Manager and Field Manager.
- Report any health and safety issues relative to the WMP to the OHS Manager.

- Respond to any urgent onsite waste management issues.
- Report on any issues relating to the implementation of the WMP.
- Forward results of routine monitoring and/or audits relative to waste handling, infrastructure and equipment to the OHS Manager.
- Collect and maintain all records pertaining to waste management activities for compliance monitoring.
- Maintain all necessary documentation relative to the transportation, final disposal location and disposal process for all waste removed from Project sites to the OHS Manager.

3.5 Employees

Generally, all employees will be aware of and understand the waste management requirements specific to their area or type of work. In addition, all employees:

- Are encouraged to increase their efforts and awareness in waste reduction, reuse and recycling.
- Will participate in a site waste management orientation and training session and acknowledge receipt of this information.
- Are encouraged to share feedback with management related to site waste management practices, participating in efforts for continuous improvement.

3.6 Contractors

There will be several contractors, including New Valley Drilling Company Limited and Rally Drilling Services, involved in the Project. Each will have obligations to manage waste generated at the Project site. Contractors will be responsible for:

- Contractual obligations pertaining to managing and disposing of their own wastes generated at the Project site.
- Compliance with protocols outlined in this WMP.
- Ensuring waste materials are disposed of in accordance with Material Safety Data Sheets (MSDS) and waste disposal site requirements.
- Development of waste management strategies, in consultation with Newfound Gold, for the work being executed.
- Providing the necessary training to their employees for waste management requirements unique to their activities and/or work areas.

4.0 WASTE CHARACTERIZATION

An effective WMP endeavors to provide a qualitative and quantitative characterization of the waste materials being generated. This characterization establishes the baseline conditions and serves as a guide for monitoring and auditing. A material becomes waste when it can no longer be used for its original intended purpose. Waste types considered in this WMP include non-hazardous waste such as cans, filters, scrap metal, drill cutting and domestic garbage, and hazardous waste such as used oils, and solvents.

The WMP is intended to be flexible and responsive to changes in the various waste management streams, and includes provisions for reporting and monitoring procedures. These procedures will:

- Provide a means to review waste quantities generated and their segregation into specific waste streams;
- Provide appropriate infrastructure and equipment for handling waste materials;
- Establish appropriate collection frequency of waste materials; and
- Assist in assessing the feasibility of new waste reduction, diversion and disposal options.

A list of potential waste materials, sources and disposal categories based on anticipated waste streams are provided in Table 1 and Table 2 below.

Table 1: Waste Handling, Storage and Disposal Categories – Non-Hazardous Materials

Category	Waste Type	Source	Initial Storage Location	Management/ Disposal
General	Domestic waste (all materials that cannot be recycled or reused)	All Areas	Laydown Area	Landfill
	Phones, computers, monitors, printers and related hardware	Office	Laydown Area	Recycled/reused
Sewage	Biological waste	Drill Sites & Office	Portable Toilets	Vacuumed out and disposed of in certified location
Drill and Core Cuttings	The sump is allowed to settle, and water is drained to a centralized settling pond via 2 inch hoses and pumps. The remaining cuttings are collected using Vac Truck technology on wheels or floats and transported to a holding tank. Periodically the cuttings holding tank is again vac trucked and transported to a landfill. Cuttings from sawing core.	Drilling and Core Sawing Activities	Sump adjacent to drill setup and Core Storage	Settling pond and vac truck to landfill
Beverage Containers	Aluminum cans, plastic beverage & food containers, glass bottles, drink boxes etc.	All Areas	Laydown Area	Recycled/Landfill

Category	Waste Type	Source	Initial Storage Location	Management/ Disposal
Food	Personnel lunches	All Areas	Laydown Area	Landfill
Wood and Paper	Pallets	All Areas	Laydown Area	Landfill
	Wire/cable spools	All Areas	Laydown Area	Recycled
	Scrap wood	All Areas	Laydown Area	Landfill
	Cardboard and Paper	Office	Laydown Area	Recycled
Metals	Drilling Rods	All Areas	Laydown Area	Recycled or Reused
	Scrap metal, piping, saw blades, small parts and machinery	All Areas including core storage	Laydown Area	

Table 2: Waste Handling, Storage and Disposal Categories – Hazardous Materials

Category	Waste Type	Source	Initial Storage Location	Management/ Disposal
Hazardous Materials	Aerosol cans	All Areas	Hazardous Materials Storage/Laydown Area. In appropriately labelled containers.	Licensed Contractor
	Lithium/NiCad batteries			
	Spray Paint			
	Biomedical Waste • Materials such as bandages, gloves, needles, dressing etc. • COVID19 testing swabs	Office	Office – proper waste container and/or sharps container	Nurse or Licensed Contractor
Hydrocarbon Materials	Fuel and oil filters	Mobile Equipment	Hazardous Materials Storage/Laydown Area. In appropriately labelled containers. Berms will be in place, where required.	Licensed Contractor
	Solvent/oil contaminated rags, workwear, and absorbent pads			
	Used oil			
	Grease tubes			
	Hydraulic hoses			
	Solvents and oils			
	Glycol			

5.0 ORIENTATION, AWARENESS AND TRAINING

Information on the Project WMP will be provided to all new employees, contractors and consultants during standard site orientation training. Project personnel and contractors will undergo regular training and refreshers to ensure they are familiar with potential environmental issues, roles and responsibilities, mitigation requirements, communication of concerns, and emergency response procedures. Additional information and training will be provided on an individual basis, specific to the work area of the employee, contractor and/or consultant as required.

Minimum training requirements for Project personnel and contractors include:

- Identification of waste streams, and proper disposal and storage procedures for each;
- WHMIS; and
- Emergency and spill response.

A record of all personnel trained (e.g., employees, staff, contractors and consultants), dates of training, and any updates or additional training required will be maintained by the OHS Manager.

6.0 OPERATIONAL PROCEDURES

6.1 Waste Disposal

There will be no on-site waste disposal. All waste will be collected onsite and disposed of, recycled or reused off-site.

Off-site waste includes waste materials to be recycled, reused, treated, stored, sent to an off-site landfill, or returned to distributers. All waste products to be disposed of off-site will be handled by designated and trained employees.

The nearest commercial waste storage facility to the Project is the Central Newfoundland Waste Management (CNWM) facility located at Norris Arm North, approximately 30 km west of Appleton on the Trans-Canada Highway (TCH). This facility serves all communities of the region and is a state-of-the-art waste management facility using one of the most progressive recycling and garbage programs in Canada (www.cnwmc.com).

Recycling bins will be stored at various locations at the Project site to collect recyclables, e.g., air filters, batteries, pop bottles, etc., before they are transported offsite to the nearest recycling depot or donated to an organization, as applicable.

Items such as clean, non-recyclable metals and other inert materials will be trucked to the designated landfill. Non-recyclable empty containers and steel drums will be drained, flushed if necessary, crushed and disposed of in the landfill. All non-recyclable scrap vehicle parts and machinery will be drained of their petroleum products prior to transporting to an offsite landfill or salvage yard. Inert office refuse, non-recyclable metal materials and other non-recyclable materials will also go to landfills.

Food waste will be placed in covered containers at the Project site and hauled to the nearest permitted landfill or solid waste disposal site as required.

Non-recyclable and non-hazardous waste will be collected in bags and brought to dumpsters or to the Norris Arm North Landfill at least once a week. This waste will be collected from drills, vehicles, office trailer and the shed at the core storage yard.

NFGC maintains four plots of land in the industrial park on Simms Road in Appleton (Figure 4). Two of these plots are fenced, have several trailers and sea cans and are used as a core storage yard. The remaining two plots will serve as a laydown area and multi-purpose plot for whatever is needed. The core logging facilities in Gander will follow the same protocols for the collection of recyclable and non-recyclable waste. The core logging facilities are located at 300 Garret Drive and 51 McCurdy Drive in Gander.

Used oil filters will be crushed or drained, then collected by approved handling companies. Waste oil, oily rags and used absorbent materials will also be collected and stored in appropriate containers before disposal by an approved waste management company.

Drill cuttings will generally remain onsite and will be collected directly into a sump adjacent to each drill setup and outside all required buffer areas. Drill cuttings will be removed from areas associated with the PPSWSA. This procedure is in accordance with NFGC's current exploration license.

Hazardous wastes will be handled by trained personnel in accordance with provincial regulations. If any materials are not designated for a disposal site, they will be sorted and shipped to an approved company for recycling or disposal.

6.2 Waste Diversion and Reduction Programs

NFGC recognizes that although waste cannot be completely eliminated, the amount of waste designated for disposal can be reduced. Waste diversion is a method of reducing the amount of landfill material to remove waste volume from the waste stream. Waste diversion is based on a strategy of reducing, reusing, recycling, recovery, and eventual disposal.

Both waste diversion and waste reduction programs contribute to decreasing the volume of waste materials produced, reducing the cost of purchased materials, and increasing the return, rebate and sale of recyclable or reusable materials. NFGC management will review the WMP waste reduction and diversion practices on a regular basis. That review will, at a minimum, cover the following aspects:

- Purchasing practices;
- Packaging materials;
- Supplier rebates;
- Recycling or reuse returns and rebates;
- Regional, government and commercial waste management initiatives, operations and services; and
- Examination of potential partnerships with regional municipalities and businesses to manage waste.

Over the life of the Project, NFGC will actively strive to reduce the volume of waste generated from all waste streams. A number of waste reduction initiatives will be implemented at the start of the Project (Table 3).

Table 3: Waste Reduction and Diversion Options and Initiatives

Initiative	Options and Issues
Reduce amount of food a & beverage containers, e.g., glass bottles, plastic bottles, aluminum cans etc.	• Supply refillable thermos bottles for personnel • Install large water coolers and containers
Increase Project personnel participation in recycling programs	• Post signage as reminders to use recycling bins • Provide concrete examples of recycling benefits, e.g., donations to local charities
Reduce amount of plastic waste disposed in landfill	• Investigate recycling possibilities, including suppliers accepting return of plastic containers for re-use • Consider bulk packaging possibilities
Reduce amount of cardboard/paper waste disposed in landfill	• Maximize amount that can be shredded and added to recycling system • Investigate recycling possibilities
Reduce amount of paper and ink cartridges	• Implement employee awareness training aimed at reducing paper use and printing, e.g., distribute electronically, double sided printing, print only required documents, reuse one-sided paper, circulate hardcopies where possible • Maintain copiers and printers in good repair • Use refillable ink cartridges, if possible
Metal segregation in the Laydown area	• Separate scrap metal that can likely be reused or recycled from that destined for a landfill

With diversion practices in place, NFGC is confident that disposal volumes for materials destined for landfills will decrease as the Project advances. Given the nominal waste quantities estimated to be generated for the Project, NFGC has not implemented a tracking system to record volumes of waste generated. However, as the Project advances, and if new waste streams or greater volumes of waste are generated, NFGC will maintain a database/spreadsheet that records approximate volumes of waste material generated and how they were managed.

6.3 Waste Handling

By implementing waste reduction practices, the volume of waste material generated over the Project life will be reduced. Waste handling procedures will conform to existing regulations and policies as identified in this WMP, and will be modified to reflect other internal and external regulations and policies that come into effect over the life of the Project.

A summary of the current general waste handling procedures, including collection, storage and transportation practices are provided in Tables 1 and 2. Handling of waste material will be conducted using appropriate equipment and appropriate personal protective equipment (PPE) at all times. Note there are no plans for open burning at the Project site. Should this change, NFGC will apply for and obtain the appropriate permits.

Handling of waste related to an employee's specific job should be conducted by the employee as required within their normal duties. Depending on the waste type and method of storage, proper training and orientation may be required to ensure that the procedures as outlined in this WMP are followed.

6.3.1 Special Waste Handling

Special wastes are defined as wastes that must receive special handling to ensure that the material does not cause contamination, fire or affect the health of personnel. Special wastes may include hydrocarbons, sewage, bio-medical waste, hazardous or any other waste that, when not handled properly, could induce additional risk to personnel or property.

Special waste handling procedures are as follows:

- Special wastes will be handled by employees trained in all aspects of handling, transportation and storage of the material(s), or by a licensed waste disposal contractor.
- Inventory of special waste at the Project site will be completed on a monthly basis.
- All special wastes transported off-site will be in accordance with applicable transport laws, to a facility permitted in NL to receive them, by a carrier permitted in NL to receive and transport special wastes according to the TDG Regulations.
- A movement control document (manifest) will be completed to document each shipment of special waste, as per TDG Regulations.
- Solid waste to be recycled or treated should be separately binned and/or stored in temporary containers until final storage. These wastes include, but are not limited to:
    - Aerosol cans;
    - Lithium and NiCad batteries; and
    - Plastic drums, e.g., totes and bags etc., containing contaminant residues.
- Liquid and liquid contaminated wastes to be recycled or treated will be drummed or put in approved containers ensuring no mixing of materials. These wastes include, but are not limited to:
    - Fuel and oil filters;
    - Solvent or oil contaminated rags, workwear, and absorbent pads;
    - Spray Paint;
    - Grease tubes;
    - Hydraulic hoses;
    - Solvents and oils; and
    - Glycol.

- For drum storage of waste, the following practices will be followed. Drummed waste will be stored in a properly dyked and protected storage area. In addition, adequate spill kits will be located in each area. The Field Manager will be responsible for ensuring that there are proper interim storage areas for these materials. The drums must be clearly labelled indicating their contents, and procedures followed to ensure the materials do not mix. The following handling and storage procedures are required:
  - Full Drums
    - Drums must have proper labelling and have MSDS labels where applicable.
    - Drums must be stored on pallets and in designated areas with proper ventilation to protect from damage.
    - Prior to moving, verify that drums are tightly closed to prevent spills.
    - For multiple drums, ensure drums are secured on pallet before moving.
    - For single drums, use proper slings or secure drum to cart before moving.
  - In-use Drums
    - Drums must have proper labelling and MSDS labels where applicable.
    - Drums must be stored in designated areas with proper ventilation to protect from damage.
    - Prior to moving, verify that drums are tightly closed to prevent spills.
    - When decanting, ensure the installed decanting nozzle does not leak. Use a drip pan when decanting to prevent spills and keep clean-up material nearby. Use only properly labelled decanting containers and do not mix products.
- Bio-medical waste removal from the Project site will be handled by the on-site nurse or contractors trained and certified in the TDG Regulations.
- Appropriate equipment and appropriate PPE will be used at all times when handling special wastes.
- Hazardous products will be transported from site via a licensed transporter to a licensed disposal facility.

6.3.2 Waste Transportation

Specific procedures apply to the movement of waste materials and will be conducted using appropriate equipment and appropriate PPE at all times.

Transportation of waste may include:

- Movement of waste from a work area to the appropriate disposal or temporary storage area.
- Movement of waste from a temporary disposal or storage area to a bulk storage area or off-site.
- Movement of waste from a bulk storage area or laydown area to off-site.

The movement of common or routine waste from a work area to the appropriate disposal or storage area should be completed by a designated employee. The employee should be aware of the type of waste and the proper handling and transportation procedures specific to that type of waste.

The movement of waste from a temporary disposal or storage area to a bulk storage area or off-site storage should be completed by trained waste handling personnel, unless additional employees or contractors are designated to do that.

6.3.3 Waste Storage

Waste storage refers to the storage of waste on on-site temporary pallets, in bins, in laydown areas and in bulk storage areas. The following procedures relative to waste storage should be followed:

- All waste should be stored at the designated location in, or in approved containers, pallets or laydown areas and be in a dyke/berm, if required.
- Storage areas and containers are to be clearly marked and located at approved locations around the site based on the waste generated in each area.
- Waste placed at laydown areas or stored in containers will be collected at appropriate intervals to avoid spillage, overflow or congestion.
- Bulk storage areas will be maintained to ensure safety, will maximize available space and will provide access for waste haulers to all adjacent areas.
- Storage areas will be inspected and assessed to confirm adequate space, storage procedures, access, etc. as required or at a minimum, annually.
- The hydrocarbon and hazardous waste containment area will be properly maintained and inspected to ensure full access, proper storage procedures and early leak or spill detection.
- Used oil storage containers must be inspected and maintained on a regular basis.

6.3.4 Infrastructure and Equipment Maintenance

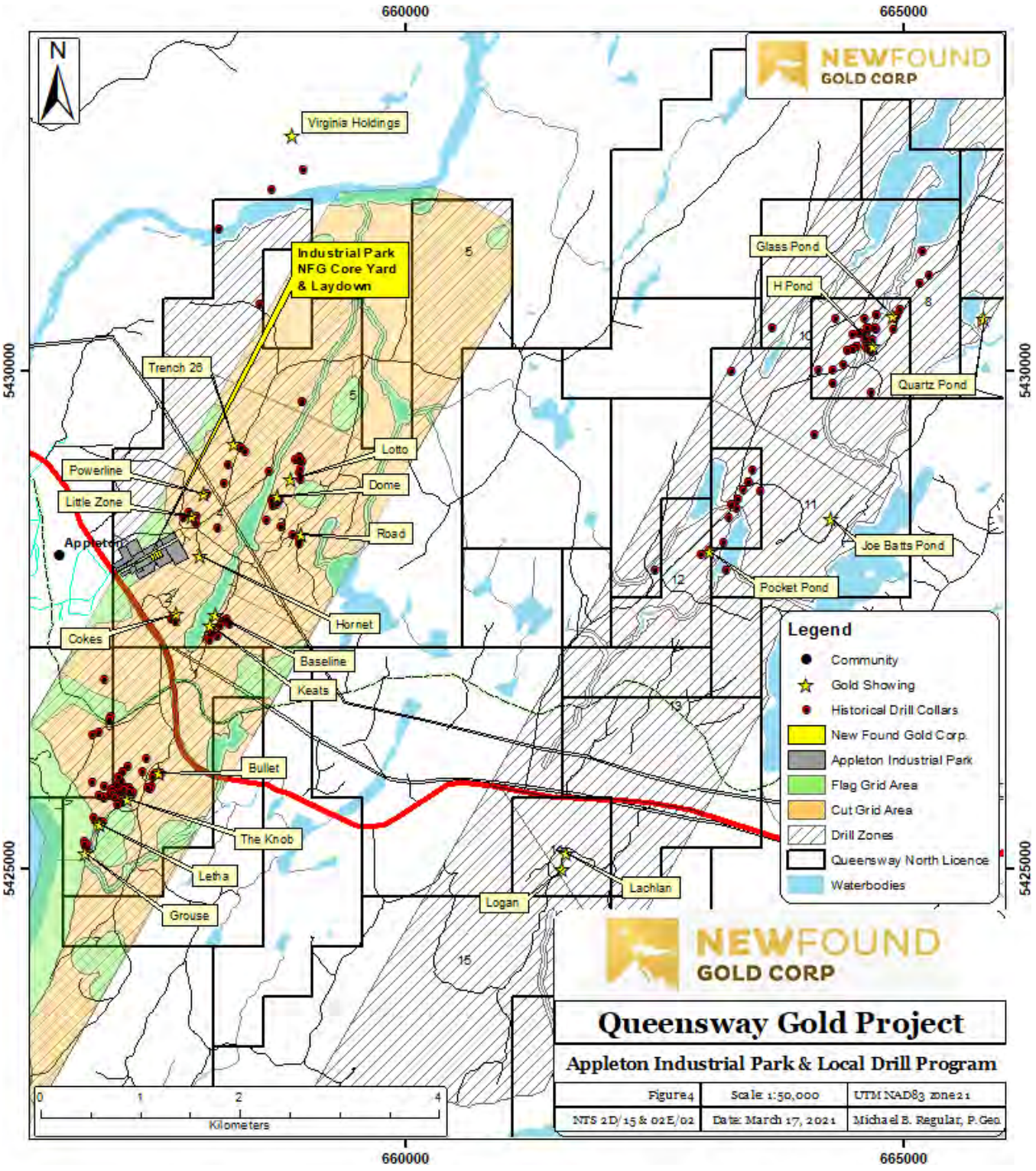
Waste management infrastructure and equipment includes infrastructure and equipment required for the handling, transportation, storage or removal of wastes from various locations at the Project site. The planned layout for a laydown area for temporary waste storage is shown on Figure 4. Note the location may change as the Project advances. In this area, old equipment, scrap metal and wood, etc. will be stored temporarily while awaiting offsite transport for recycling or disposal. A designated storage area within the laydown area will be available for the temporary storage of hazardous waste in acceptable leak proof containers.

All waste management infrastructure and equipment will be maintained to ensure the health and safety of employees and to avoid contamination or degradation of waste during storage or transportation.

NFGC will use Project equipment, e.g., excavators, pickup trucks, dozers, telehandler, to aid in the management of waste materials. Inspection and maintenance of vehicles involved will be routinely carried out as the Project advances. Inspections generally include the following:

- an assessment of the condition of equipment or infrastructure. Any required repairs will be noted and completed, and
- the location of the equipment or infrastructure.

Figure 4: Planned Location of Laydown Area for Waste Material Storage



7.0 MONITORING, REPORTING AND AUDITS

Annual review of the WMP will be completed and will identify problems or aspects of the WMP that can be improved on, and appropriate action to address.

7.1 Reporting of Problems or Concerns

All NFGC employees are responsible for, and are encouraged to report problems or concerns related to the contents of this WMP.

Issues pertaining to training, waste handling, transportation, storage, infrastructure and equipment should be reported to the Field Manager. Issues will be reviewed and, where appropriate, forwarded to the Senior Project Manager, to be addressed accordingly. A record will be kept of issues identified.

7.2 Record Keeping

Records related to the WMP will be kept by the Field Manager and copies will be provided to the Senior Management Team.

Records may include documents and information related to:

- orientation and waste management training;
- waste characterization;
- waste management legislation, regulations and guidelines;
- waste management contractors;
- off-site waste disposal;
- inspections of waste storage facilities; and
- any other aspects or issues related to Project waste management.

All records, including inventory and tracking of hazardous materials transported to site will be maintained and made available for inspection by designated regulatory personnel.

7.3 Routine Monitoring

Routine monitoring of waste management activities will be conducted to ensure that procedures outlined in the WMP are being followed. Routine monitoring may consist of informal or formal checks on personnel, equipment and contractors, and a review of records related to waste management activities.

Monitoring may include, but will not be limited to:

- verifying location and condition of on-site waste and recycling collection bins;
- verifying condition and organization of waste laydown and storage areas;
- verifying waste collection, transportation and handling operations for NFGC employees and waste management contractors;
- verifying waste volumes from the Project site; and
- any other aspects or issues related to the waste management system.

7.4 Annual Monitoring, Reporting and Plan Revision

This WMP will be reviewed annually, or as necessary to ensure that all components of the WMP are current and operating properly. The review of the WMP will be conducted by the Field Manager, OHS Mangers and the Senior Project Manager.

The annual review will confirm that the WMP:

- conforms with existing, new, and/or upcoming changes in legislation, regulations and guidelines;
- follows existing and potential waste diversion and reduction programs;
- accounts for any new waste streams at the Project site; and
- has functional operational procedures, equipment and infrastructure.

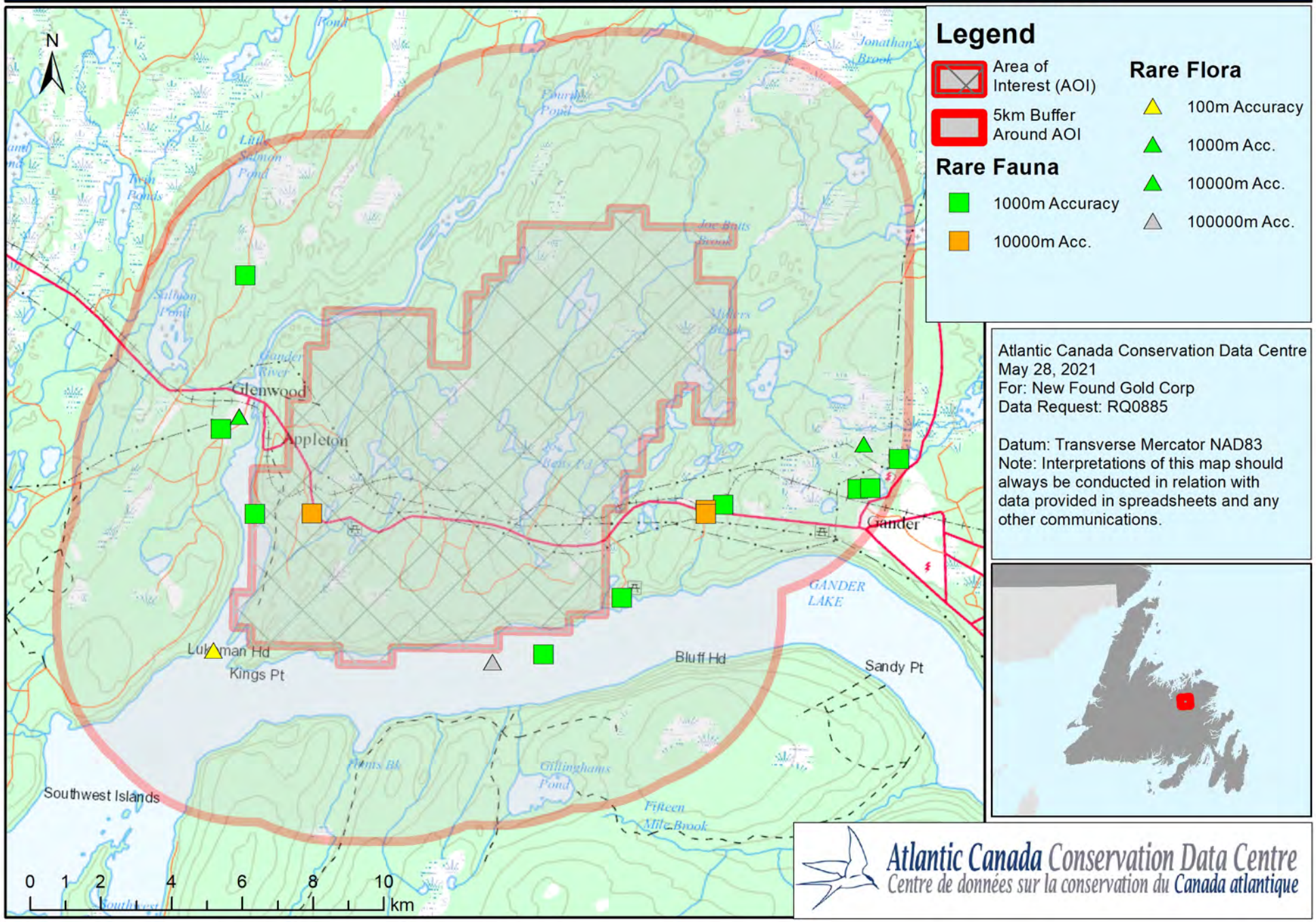
Monitoring of some components of the waste management system may be required prior to, or as a result of the annual review process. If monitoring is required as a result of the review, an additional formal WMP review may be required that may also result in changes.

Revisions to the WMP may only be completed with the approval of the Senior Project Manager. Personnel affected by any revisions or changes will be notified by the Field Manager and their training updated if necessary.

APPENDIX E

ACCDC Search Results
Queensway Properties

GIS Scan of Rare and Provincially/Federally Listed Species for Queensway North Area near Appleton, Newfoundland and Labrador



Legend

Area of Interest (AOI)

5km Buffer Around AOI

Rare Fauna

- 1000m Accuracy
- 10000m Acc.

Rare Flora

- 100m Accuracy
- 1000m Acc.
- 10000m Acc.
- 100000m Acc.

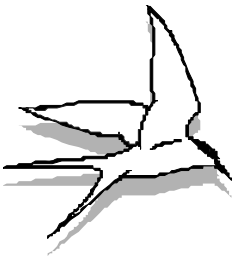
Atlantic Canada Conservation Data Centre
May 28, 2021
For: New Found Gold Corp
Data Request: RQ0885

Datum: Transverse Mercator NAD83
Note: Interpretations of this map should always be conducted in relation with data provided in spreadsheets and any other communications.

Atlantic Canada Conservation Data Centre
Centre de données sur la conservation du Canada atlantique

TABLE B1: SPECIES STATUS

Common Name	Scientific Name	COSEWIC	SARA	NFLD SAR	AC CDC
Flora					
Boreal Felt Lichen	*Erioderma pedicellatum*	Special Concern	Special Concern	Vulnerable	S3
Dry-Spike Sedge	*Carex foenea*	-	-	-	S3
Drooping Bluegrass	*Poa saltuensis*	-	-	-	S3S4
Crowded Sedge	*Carex adusta*	-	-	-	S3
American Mannagrass	*Glyceria grandis*	-	-	-	S2S3
Western dock, windowed dock	*Rumex occidentalis*	-	-	-	S2S3
Crowded Sedge	*Carex adusta*	-	-	-	S3
Three-Way Sedge	*Dulichium arundinaceum*	-	-	-	S3S4
Aquatic Fauna					
Banded Killfish	*Fundulus diaphanus*	Special Concern	Special Concern	Vulnerable	S3
Avifauna					
Red Crossbill	*Loxia curvirostra percna*	Threatened	Endangered	Endangered	S1S2
Rusty Blackbird	*Euphagus carolinus*	Special Concern	Special Concern	Vulnerable	S2S3B,SUM
Short-eared Owl	*Asio flammeus*	Special Concern	Special Concern	Vulnerable	S2B,SUM
Harlequin Duck	*Histrionicus histrionicus*	Special Concern	Special Concern	Vulnerable	S3B, S2N,SUM
Peregrine Falcon	*Falco peregrinus anatum*	Special Concern	Special Concern	Vulnerable	S3M, S2N
Olive-sided Flycatcher	*Contopus cooperi*	Special Concern	Threatened	Threatened	S3B,SUM
Newfoundland Gray cheeked Thrush	*Catharus minimus minimus*	-	-	Threatened	S2B,SUM
Northern Hawk-Owl	*Surnia ulula*	-	-	-	S3
Northern Goshawk	*Accipiter gentilis*	-	-	-	S3
Northern Harrier	*Circus cyaneus*	-	-	-	S3?B
Bank Swallow	*Riparia riparia*	Threatened	-	-	S3B
Mammals					
Little brown bat	*Myotis lucifugus*	Endangered	Endangered	Endangered	S3S4
Northern long-eared bat	*Myotis septentrionalis*	Endangered	Endangered	Endangered	S2S3
Newfoundland Marten	*Martes americana atrata*	Threatened	Threatened	Threatened	S3



Atlantic Canada CDC Canada Atlantique

2012 Edition

Part I. Conservation Data Centre Subnational Rarity Ranks

Biological diversity or biodiversity can be described at a number of levels, from molecules to ecosystems. Biodiversity is a combination of species diversity (the variety of species), genetic diversity (the genetic variability among individuals of that species), and ecological diversity (the variety of ecosystems/habitats in which they live). Conservation Data Centres (CDCs), as part of The NatureServe* international network, track biodiversity at two levels: species and ecological communities. Species and ecological communities are referred to as **elements** of biodiversity. Elements are ranked in each jurisdiction (province or state) and at global and national levels in order to help prioritize conservation efforts.

NatureServe and all CDCs (called Heritage Programs in the US) use a standardized element ranking system that has evolved over some 30 years, with input from hundreds of scientists, managers and conservationists. The following material describes this element ranking system at the subnational (S) or provincial level and explains how ranks are assigned for species elements of biodiversity. (The community ranking process is slightly different.)

* Formerly known as The Nature Conservancy (TNC)

Definitions of Provincial (subnational) ranks - SRANKS

S1 **Critically Imperiled**—Critically imperiled in the jurisdiction because of extreme rarity or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from the jurisdiction.

S2 **Imperiled**—Imperiled in the jurisdiction because of rarity due to very restricted range, very few populations, steep declines, or other factors making it very vulnerable to extirpation from jurisdiction.

S3 **Vulnerable**—Vulnerable in the jurisdiction due to a restricted range, relatively few populations, recent and widespread declines, or other factors making it vulnerable to extirpation.

S4 **Apparently Secure**—Uncommon but not rare; some cause for long-term concern due to declines or other factors.

S5 **Secure**—Common, widespread, and abundant in the jurisdiction.

SX Pr**esumed Extirpated**—Species or ecosystem is believed to be extirpated from the jurisdiction (i.e., nation or state/province). Not located despite intensive searches of historical sites and other appropriate habitat, and virtually no likelihood that it will be rediscovered.

SH **Possibly Extirpated**— Known from only historical records but still some hope of rediscovery. There is evidence that the species or ecosystem may no longer be present in the jurisdiction, but not enough to state this with certainty. Examples of such evidence include (1) that a species has not been documented in approximately 20-40 years despite some searching or some evidence of significant habitat loss or degradation; (2) that a species or ecosystem has been searched for unsuccessfully, but not thoroughly enough to presume that it is no longer present in the jurisdiction.

S#S# **Range Rank** — A numeric range rank (e.g., S2S3 or S1S3) is used to indicate any range of uncertainty about the status of the species or ecosystem. Ranges cannot skip more than two ranks (e.g., SU is used rather than S1S4).

SU **Unrankable**—Currently unrankable due to lack of information or due to substantially conflicting information about status or trends.

SNR **Unranked**—National or subnational conservation status not yet assessed.

SNA **Not Applicable** —A conservation status rank is not applicable because the species or ecosystem is not a suitable target for conservation activities.

Not applicable cases:
Hybrid – Element represents an interspecific hybrid without conservation value. (Note that hybrids may be assigned a numeric rank if they do have a conservation value.)

Exotic Origin – Element is not native to the nation or subnation.

Accidental/Nonregular – Element is not regularly found in the nation or subnation, in other words, infrequent and outside of normal range.

Not Confidently Present – Element's presence in the nation or subnation has been reported, but the report is unconfirmed or doubtful; Element has been falsely reported, and may or may not potentially occur; Element may potentially occur (e.g., habitat is suitable); Element was never present in the nation or subnation despite presence in surrounding areas.

No Definable Occurrences – Element is native and appears regularly but lacks practical conservation concern in the subnation because it is transient or occurs in a dispersed, unpredictable manner.

Synonym – Element reported as occurring in the nation or subnation, but the national or provincial data center does not recognize this taxon; therefore the Element is not assigned a national or subnational rank.

Rank Qualifier

S#? **Inexact Numeric Rank**—Denotes inexact numeric rank. This designation should not be used with any of the variant national or subnational conservation status ranks or NX, SX, NH, or SH.

Breeding Status Qualifiers[4]

B **Breeding**—Conservation status refers to the breeding population of the species in the nation or state/province.

N **Nonbreeding**—Conservation status refers to the non-breeding population of the species in the nation or state/province.

M **Migrant**—Migrant species occurring regularly on migration at particular staging areas or concentration spots where the species might warrant conservation attention. Conservation status refers to the aggregating transient population of the species in the nation or state/province.

[4] 4A breeding status is only used for species that have distinct breeding and/or non-breeding populations in the nation or state/province. A breeding-status S-rank can be coupled with its complementary non-breeding-status S-rank if the species also winters in the nation or state/province. In addition, a breeding-status S-rank can also be coupled with a migrant-status S-rank if, on migration, the species occurs regularly at particular staging areas or concentration spots where it might warrant conservation attention. Multiple conservation status ranks (typically two, or rarely three) are separated by commas (e.g., S2B,S3N or SHN,S4B,S1M).

Part II. The Ranking Process

To rank species elements, 8-10 different biological criteria are assessed for each species. The ten factors considered in assigning status ranks are described below.

Ranking Matrix Eight ranking criteria and value of letter scores for each criterion.

	MATRIX SCORE								
	A	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**
CRITERIA									
Population size	1-50	50-250	250-1000	1000-2500	2500-10000	10000-100000	100000-1000000	>1000000	
Range Extent	<100km²	100-250km²	250-1000km²	1000-5000km²	5000-20000 km²	20000-200000 km²	200000 – 2500000 km²		
Short-term Trend	Decline >90%	Decline of 80-90%	Decline of 70-80%	Decline of 50-70%	Decline of 30-50%	Decline of 10-30%	Relatively Stable (<10% change)	Increase of 10-25%	Increase of >25%
Long-term Trend	Decline >90%	Decline of 80-90%	Decline of 70-80%	Decline of 50-70%	Decline of 30-50%	Decline of 10-30%	Relatively Stable (<10% change)	Increase of 10-25%	Increase of >25%
Area of Occupancy	<0.4km²	0.4-4km²	4-20km²	20-100km²	100-500km²	500-2000km²	2000-20000km²	>20000 km²	
Number of Element Occurrences (EOs)	0-5	6-20	21-100	>100					
Number of EOs with Good Viability	No occurrences with excellent or good viability or ecological integrity	Very few (1-3) occurrences with excellent or good viability or ecological integrity	Few (4-12) occurrences with excellent or good viability or ecological integrity	Some (13-40) occurrences with excellent or good viability or ecological integrity	Many (41-125) occurrences with excellent or good viability or ecological integrity	Very Many (>125) occurrences with excellent or good viability or ecological integrity			
Environmental Specificity	Very Narrow	Narrow	Moderate	Broad					
Threat Scope	Pervasive (71-100%)	Large (31-70%)	Restricted (11-30%)	Small (1-10%)					
Threat Severity	Pervasive (71-100%)	Large (31-70%)	Restricted (11-30%)	Small (1-10%)					

1. Population Size

Population size is the estimated current total population of the species which is naturally occurring and wild within the area of interest (globe, nation, or subnation), and that is of reproductive age or stage (at an appropriate time of the year), including mature but currently non-reproducing individuals, which should be included in counts or estimates. Abundance is measured in different ways depending on the biology of the species. For animal populations it is usually measured by the number of individuals, for plants it may be measured by the area occupied by a distinct population, and for aquatic invertebrates it may be measured by the stream length that the species occupies:

Z = Zero, no individuals believed extant (i.e., species presumed extinct)
A = 1–50 individuals
B = 50–250 individuals
C = 250–1,000 individuals
D = 1,000–2,500 individuals
E = 2,500–10,000 individuals
F = 10,000–100,000 individuals
G = 100,000–1,000,000 individuals
H = >1,000,000 individuals
U = Unknown
Null = Factor not assessed

*A value range (e.g., DE) can also be used to indicate uncertainty.
(DE would indicate between 1000 – 10000 individuals).

2. Range Extent

This denotes the approximate range of the species as a percentage of the province's area. It is defined as the current area contained within the shortest continuous imaginary boundary which can be drawn to encompass all the known, inferred or projected sites of occurrence, but, *excluding* significant areas where the species does not occur due to unsuitable habitat. Thus the estimate of range for a species exhibiting a linear use of coastal forests or riverine habitats would not consider tracts of unsuitable habitat in the interior of the polygon.

Z = Zero (no occurrences believed extant; species presumed extinct or ecosystem believed eliminated throughout its range)
A = <100 km²
(less than about 40 square miles)
B = 100–250 km²
(about 40–100 square miles)
C = 250–1,000 km²
(100–400 square miles)
D = 1,000–5,000 km²
(400–2,000 square miles)
E = 5,000–20,000 km²
(2,000–8,000 square miles)
F = 20,000–200,000 km²
(8,000–80,000 square miles)

G = 200,000–2,500,000 km²
(80,000–1,000,000 square miles)
H = >2,500,000 km²
(greater than 1,000,000 square miles)

3. Short-term Trend

The rating code that best describes the observed, estimated, inferred, or suspected degree of change in population size, extent of occurrence (range extent), area of occupancy, number of occurrences, and/or number of occurrences or percent area with good viability or ecological integrity over the short term, whichever most significantly affects the conservation status assessment in the area of interest (globe, nation, or subnation). Consider short-term historical trend within ten years or three generations (for long-lived taxa), whichever is the longer (up to a maximum of 100 years), or, for communities and systems, typically 30 years, depending on the characteristics of the type.

The trend may be recent or current, and the trend may or may not be known to be continuing. Trends may be smooth, irregular, or sporadic. Fluctuations will not normally count as trends, but an observed change should not be considered as merely a fluctuation rather than a trend unless there is evidence for this. Conservation Status Assessments: Factors for Assessing Extinction Risk 25
In considering trends, do not consider newly discovered but presumably long existing occurrences, nor newly discovered individuals in previously poorly known areas.

Also, consider fragmentation of previously larger occurrences into a greater number of smaller occurrences to represent a decreasing area of occupancy as well as decreasing number of good occurrences or populations.

A = Decline of >90%
B = Decline of 80–90%
C = Decline of 70–80%
D = Decline of 50–70%
E = Decline of 30–50%
F = Decline of 10–30%
G = Relatively Stable (≤10% change)
H = Increase of 10–25%
I = Increase of >25%
U = Short-term trend unknown
Null = Factor not assessed

4. Long-term Trend

The rating code that best describes the observed, estimated, inferred, or suspected degree of change in population size, extent of occurrence (range extent), area of occupancy, number of occurrences, and/or number of occurrences or percent area with good viability or ecological integrity over the long term (ca. 200 years) in the area of interest (globe, nation, or subnation).

A = Decline of >90%

B = Decline of 80–90%
C = Decline of 70–80%
D = Decline of 50–70%
E = Decline of 30–50%
F = Decline of 10–30%
G = Relatively Stable (≤10% change)
H = Increase of 10–25%
I = Increase of >25%
U = Long-term trend unknown
Null = Factor not assessed

5. Area of Occupancy

Area of occupancy for taxa can be defined as (modified from the International Union for the Conservation of Nature 2001):
"...the area within its 'extent of occurrence', which is occupied by a taxon or ecosystem type, excluding cases of vagrancy. The measure reflects the fact that a taxon or type will not usually occur throughout the area of its extent of occurrence, which may contain unsuitable or unoccupied habitats. In some cases, (e.g., irreplaceable colonial nesting sites, crucial feeding sites for migratory taxa) the area of occupancy is the smallest area essential at any stage to the survival of existing populations of a taxon. The size of the area of occupancy will be a function of the scale at which it is measured, and should be at a scale appropriate to relevant biological or ecological aspects of the taxon or type, the nature of threats and the available data."

A = <0.4km²
B = 0.4-4
C = 4-20 km²
D = 20-100 km²
E = 100-500 km²
F = 500-2000 km²
G = 2000-20000 km²
H = >20000 km²

5b. Linear Distance of Occupancy

Ecosystems that occur as linear strips. They are often ecotonal between terrestrial and aquatic ecosystems. In undisturbed conditions, typical occurrences range in linear distance from 0.5 to 100 km.

A = <4km²
B = 4-40
C = 40-200 km²
D = 200-1000 km²
E = 1000-5000 km²
F = 5000-20000 km²
G = 20000-200000 km²
H = >200000 km²

6. Number of Element Occurrences (EOs)

An “element occurrence” is the mapping unit of CDC methodology. It is generally defined as an area of land or water on which an “element of biodiversity” (plant and animal species or natural community) is or was present. It is a physical location important to the conservation of a species or community, an area worth preserving to insure the survival of a community or species at risk. For a species it is generally the habitat occupied by a local population, for a community it is the area containing a stand or patch. What constitutes an occurrence also varies between species (e.g. hibernacula, den sites, breeding ponds where adults, egg masses and/or larvae have been identified, breeding colonies, etc.). Some species can have more than one type of occurrence, for example breeding and wintering occurrences.

A single letter code (below) represents the number of estimated occurrences believed extant for the species in the province. When a species’ distribution is extremely limited and there are very few site occurrences, it is very susceptible to any number of ecological disturbances, both predictable and unpredictable. This criteria is therefore an important factor influencing SRANK when the number of occurrences is few. If the letter code for this field is A or B, the species usually qualifies for a rank of S1 or S2.

A = 0 - 5 occurrences
B = 6 - 20 occurrences
C = 21 - 100 occurrences
D = 101+ occurrences

7. Number of EOs with Good Viability

For species, an occurrence with at least good (i.e., excellent-to-good) viability exhibits favorable characteristics with respect to population size and/or quality and quantity of occupied habitat; and, if current conditions prevail, the occurrence is likely to persist for the foreseeable future (i.e., at least 20–30 years) in its current condition or better. See Hammerson et al. (2008) for more details. For ecosystems, an occurrence has excellent-to-good ecological integrity when it exhibits favorable characteristics with respect to reference conditions for structure, composition, and function, operating within the bounds of natural or historic disturbance regimes, and is of exemplary size (Faber-Langendoen et al. 2008). One would expect only minor to moderate alterations to these characteristics for an occurrence to maintain good ecological integrity.

For many occurrences, viability or ecological integrity assessments or ranks have been applied by biologists and ecologists throughout the NatureServe network. For species, these Element Occurrence (EO) ranks estimate the probability of persistence of the occurrence. For ecosystems, the rank is a succinct assessment of the degree to which, under current conditions, an occurrence of an ecosystem matches reference conditions for that system, without any presumptions made about future status or persistence. Ranks for species and ecosystems are based on a set of “occurrence rank factors,” namely size (including population size and/or occupied area), abiotic and biotic condition, and landscape context. These factors may be further refined to specific indicators or metrics. The overall ranks range from A = Excellent viability/integrity, to D = Poor viability/integrity

A = No occurrences with excellent or good (assessed as A or B) viability or ecological integrity

B = Very few (1–3) occurrences with excellent or good viability or ecological integrity
C = Few (4–12) occurrences with excellent or good viability or ecological Integrity
D = Some (13–40) occurrences with excellent or good viability or ecological integrity
E = Many (41–125) occurrences with excellent or good viability or ecological integrity
F = Very many (>125) occurrences with excellent or good viability or ecological integrity
U = Unknown number of occurrences with excellent or good viability or ecological integrity
Null = Factor not assessed

8. Environmental Specificity

Environmental Specificity is the degree to which a species or ecosystem depends on a relatively scarce set of habitats, substrates, food types, or other abiotic and/or biotic factors within the overall range. Relatively narrow requirements are thought to increase the vulnerability of a species or ecosystem. This factor is most important when the number of occurrences, and the range extent or area of occupancy, are largely unknown.

A = Very Narrow. Specialist or ecosystem with key requirements scarce. For species, specific habitat(s), substrate(s), food type(s), hosts, breeding/non-breeding microhabitats, or other abiotic and/or biotic factor(s) are used or required by the species or ecosystem in the area of interest, with these habitat(s) and/or other requirements furthermore being scarce within the generalized range of the species or ecosystem within the area of interest, and the population (or the number of breeding attempts) expected to decline significantly if any of these key requirements become unavailable. For ecosystems, environmental requirements are both narrow
and scarce (e.g., calcareous seepage fens).

B = Narrow. Specialist or ecosystem with key requirements common. Specific habitat(s) or other abiotic and/or biotic factors (see above) are used or required by the species or ecosystem, but these key requirements are common and within the generalized range of the species or ecosystem within the area of interest. For ecosystems, environmental requirements are narrow but common (e.g., floodplain forest, alpine tundra).

C = Moderate. Generalist or community with some key requirements scarce. Broad-scale or diverse (general) habitat(s) or other abiotic and/or biotic factors are used or required by the species or ecosystem, but some key requirements are scarce in the generalized range of the species or ecosystem within the area of interest. For ecosystems, environmental requirements are broad but scarce (e.g., talus or cliff forests and woodlands, alvars, many rock outcrop communities dependent more on thin, droughty soils per se than specific substrate factors).

D = Broad. Generalist or community with all key requirements common. Broad-scale or diverse (general) habitat(s) or abiotic and/or biotic factors are used or required by the species or ecosystem, with all key

requirements common in the generalized range of the species or ecosystem in the area of interest. For animals, if the preferred food(s) or breeding/non-breeding microhabitat(s) become unavailable, the species switches to an alternative with no resulting decline in numbers of individuals or number of breeding attempts. For ecosystems, environmental requirements are broad and common (e.g., forests or prairies on glacial till, or forests and meadows on montane slopes).

9. Threat Severity

Within the scope (as defined spatially and temporally in assessing the scope of the Threat), severity is the level of damage to the species or ecosystem from the Threat that can reasonably be expected with continuation of current circumstances and trends (including potential new threats) (Table 7). Note that severity of Threats is assessed within a ten-year or three-generation time frame, whichever is longer (up to 100 years).

For species, severity is usually measured as the degree of reduction of the species' population. Surrogates for adult population size (e.g., area) should be used with caution, as occupied areas, for example, will have uneven habitat suitability and uneven population density. For ecosystems, severity is typically measured as the degree of degradation or decline in integrity (of one or more key characteristics).

Extreme	Within the scope, the Threat is likely to destroy or eliminate the occurrences of an ecological community, system or species, or reduce the species population by 71–100%
Serious	Within the scope, the Threat is likely to seriously degrade/reduce the effected occurrences or habitat or, for species, to reduce the species population by 31–70%
Moderate	Within the scope, the Threat is likely to moderately degrade/reduce the effected occurrences or habitat or, for species, to reduce the species population by 11–30%
Slight	Within the scope, the Threat is likely to only slightly degrade/reduce the effected occurrences or habitat or, for species, to reduce the species population by 1–10%

10. Threat Scope

Scope is defined herein as the proportion of the species or ecosystem that can reasonably be expected to be affected (that is, subject to one or more stresses) by the Threat within ten years with continuation of current circumstances and trends (Table 6). Current circumstances and trends include both existing as well as potential new threats. The ten-year time frame can be extended for some longer-term threats, such as global warming, that need to be addressed today. For species, scope is measured as the proportion of the species' population in the area of interest (globe, nation, or subnation) affected by the Threat. For ecosystems, scope is measured as the proportion of the occupied area of interest (globe, nation, or subnation) affected by the Threat. If a species or ecosystem is evenly distributed, then the proportion of the population or area affected is equivalent to the proportion of the range extent affected by the Threat; however, if the population or area is patchily distributed, then the proportion differs from that of range extent.

Pervasive Affects all or most (71–100%) of the total population or occurrences
Large Affects much (31–70%) of the total population or occurrences
Restricted Affects some (11–30%) of the total population or occurrences.
Small Affects a small (1–10%) proportion of the total population or occurrences.

11. Intrinsic Vulnerability

Note that this factor is not used if the Threats status factor has been assessed.

Intrinsic Vulnerability is the observed, inferred, or suspected degree to which characteristics of the species or ecosystem (such as life history or behavior characteristics of species, or likelihood of regeneration or recolonization for ecosystems) make it vulnerable or resilient to natural or anthropogenic stresses or catastrophes. For ecosystems, Intrinsic Vulnerability is most readily assessed using the dominant species and vegetation structure that characterize the ecosystem, but it can also refer to ecological processes that make an ecosystem vulnerable or lack resiliency (e.g., shoreline fens along estuarine and marine coasts subject to rising sea levels).

Since geographically or ecologically disjunct or peripheral occurrences may show additional vulnerabilities not generally characteristic of a species or ecosystem, characteristics of Intrinsic Vulnerability are to be assessed for the species or ecosystem throughout the area of interest, or at least for its better occurrences. Information on population size, number of occurrences, area of occupancy, extent of occurrence, or environmental characteristics that affect resiliency should not be considered when assessing Intrinsic Vulnerability; these are addressed using other status factors.

Note that the Intrinsic Vulnerability characteristics exist independent of human influence, but may make the species or ecosystem more susceptible to disturbance by human activities. The extent and effects of current or projected extrinsic influences themselves should be addressed in the comments field of the Threats status factor.

A = Highly Vulnerable. Species is slow to mature, reproduces infrequently, and/or has low fecundity such that populations are very slow (>20 years or five generations) to recover from decreases in abundance; or species has low dispersal capability such that extirpated populations are unlikely

to become reestablished through natural recolonization (unaided by humans). Ecosystem occurrences are highly susceptible to changes in composition and structure that rarely if ever are reversed through natural processes even over substantial time periods (>100 years).

B = Moderately Vulnerable. Species exhibits moderate age of maturity, frequency of reproduction, and/or fecundity such that populations generally tend to recover from decreases in abundance over a period of several years (on the order of 5–20 years or 2–5 generations); or species has moderate dispersal capability such that extirpated populations generally become reestablished through natural recolonization (unaided by humans). Ecosystem occurrences may be susceptible to changes in composition and structure but tend to recover through natural processes given reasonable time (10–100 years).

C = Not Intrinsically Vulnerable. Species matures quickly, reproduces frequently, and/or has high fecundity such that populations recover quickly (<5 years or 2 generations) from decreases in abundance; or species has high dispersal capability such that extirpated populations soon become reestablished through natural recolonization (unaided by humans). Ecosystem occurrences are resilient or resistant to irreversible changes in composition and structure and quickly recover (within 10 years).

U = Unknown

Null = Factor not assessed

12. Other Considerations

Other considerations in determining the rank that are not apparent from the letter codes selected for the above criteria. Generally, these considerations will raise rather than lower the rank, e.g., "Never sexually reproduces" or "All occurrences are in areas under development".

References

Master, L., D. Faber-Langendoen, R. Bittman, G. A. Hammerson, B. Heidel, J. Nichols, L. Ramsay, and A. Tomaino. 2009. NatureServe Conservation Status Assessments: Factors for Assessing Extinction Risk. NatureServe, Arlington, VA.

DATA DICTIONARY

GNAME	Scientific Name of taxon
GCOMNAME	Common name of taxon
FAMILY	Family of taxon
OBSERVER	Person or persons who observed the taxon
TOTAL NUMBER	The number of specimens at a given observation.
MONTH	Month of survey
DAY	Day of survey
YEAR	Year of survey
SRANK_2010	Subnational rank - CDC ranking system
SRANK_2015	Subnational rank - CDC ranking system
NRANK	National Rank - CDC ranking system
GRANK	Global Rank - CDC ranking system
GeneralStatusRanks	General Status text for the province
COSEWIC_STATUS	Denotes the COSEWIC status.
PROVINCIAL_STATUS	Denotes if the species is on the provincial endangered species list.
SARA	Denotes if the species is on the federal SARA list.
HABITAT	Description of the habitat where plant or animal was found
SITE_NAME	The name of the place where the occurrence occurred
ACCURACY	The accuracy in metres of the location.
SYNAME	Synonym for the plant or animal name in cases it is known by more than one scientific name.
ACRONYM OF HERBARIA	Acronym of the herbarium where this specimen is kept, see the complete definitions of the acronyms in the HERBARIA.xls
COLLECTION NUMBER	The collection number assigned to the specimen by the collector, this should be used to refer to the specimen when contacting the herbarium
CITATION	Primary source of the data
IDNUM	Field Office Number: Internal ACCDC record reference (not the EONUM)

DATA SOURCES:
All data housed at Atlantic Canada Conservation Data Centre (ACCDC). Refer to 'CITATION' field for data sources.

CAVEATS:
ACCDC rare taxa occurrence records are offered as a guide recognizing that the ability to find plants and animals will depend upon the season. The ACCDC makes a strong effort to verify the accuracy of all the data it obtains, generates and manages, but it will not be held responsible for inaccuracies in data that it provides.

PLEASE NOTE:
* ACCDC data is restricted for use by the specified data user only; any third party requiring data must make its own request to the ACCDC.
* Specified data users may not publish any information provided by the ACCDC or its partners without prior permission.
* To ensure the currency of the data, the ACCDC requires Data Users to destroy all copies of data 18 months after the date of receipt.
* ACCDC data reports are restricted to that data in our Data System at the time of the request.
* Data accuracy is qualified as to location (Accuracy) and time (Date)
* ACCDC data reports are not to be constructed as exhaustive inventories of taxa in an area.
* The non-occupancy of a taxon cannot be inferred by its absence in an ACCDC data report.
* Museum databases, which are the basis for more accessible public databases, such as those of the ACCDC, are works in progress. Essentially, they are finding aids and dynamic data records, constructed primarily to serve scientists engaged in the continuing, active process of plant systematics and taxonomy. Ongoing additions of new collections, and frequent upgrades to the identifications of all plant specimens housed in museum herbaria, may not always be reflected, in real time, by databases such as those of the ACCDC. Specifically, the conservation status of individual species recorded in the ACCDC database may not be absolutely current. It is therefore the responsibility of the data user to contact the relevant museums directly, in order to check for the most current identifications of specimens of interest, and to ascertain from the scientists concerned, their current understanding of the conservation status of individual species in question. The absolute conservation status of any given species is dynamic, and subject to change over short periods of time.

APPENDIX F

Preliminary Aquatic Survey Results
Sample Area

Aquatic Survey Point	Method	Fish Present	Species	Water Quality Parameters	Habitat Description	Notes
AQ1	Electrofisher	Yes Fish are considered present based on observed feeding	No Fish Collected	Temp - 14.7°C Dissolved O2 - 49.0% Dissolved O2 - 4.95 mg/L Conductivity - 43.5 C us/-cm 6.27 pH	Large marsh water course with deep silty substrate	Electrofishing resulting in no fish captured Multiple fish seen feeding within the watercourse Watercourse difficult to effectively electrofish due to depth and substrate type.
AQ2	Minnow trap	Yes Fish are considered present based on observed suspected three-spined stickleback.	No Fish Collected	Temp - 12.8°C Dissolved O2 - 44.9% Dissolved O2 - 4.76 mg/L Conductivity - 48.7 C us/-cm 6.63 pH	Surveyed creek flowing into pond. Creek identified within wetland (marsh) Average Wetted Width – 5 m Average Depth - 1m Substrate – organics with presence of boulders Vegetation – submergent / emergent present Vegetated banks present	Minnow net set for 48hrs observed 1 - three-spined stickleback - not captured
AQ3 – AQ6	Electrofisher	Yes Three Species collected 11 total individuals collected	Brook Trout Three Spined Stickleback	Temp - 10.3°C Dissolved O2 - 91.9% Dissolved O2 - 10.31 mg/L Conductivity - 19.2 C us/-cm 6.50 pH	Brook/Stream Riffles & pools present Wetted Width - 3m Average Depth - 25cm Substrate: 50% sand/ 30% silt/ 20% organic 0% canopy cover Vegetation – Submergent / emergent present Vegetated banks present Undercut banks present	-
AQ7	Electrofisher	Yes 2 individuals collected 1 individual observed	Brook Trout	Temp - 13.4°C Dissolved O2 - 88.2% Dissolved O2 - 9.21 mg/L conductivity - 22.0 C us/-cm 5.76 pH	Brook/Stream Riffles & pools present Average Channel Width - 1.2m Average Wetted Width - 1m Average Depth - 20cm Substrate: 50% gravel/ 30% sand/ 10% silt/ 10% boulder Moderate flow 1m Corrugated Steel Pipe under roadway – No obstruction for fish passage Vegetated bank overhang	
AQ8	Electrofisher	Yes 4 individuals collected 2 individuals observed	Brook Trout Atlantic Salmon Three-spined Stickleback	Temp - 12.8°C Dissolved O2 - 87.7% Dissolved O2 - 9.21 mg/L Conductivity - 46.8 C us/-cm 5.90 pH	Brook/Stream Riffles/ pools/ runs present Average Channel Width - 3m Average Wetted Width - 2.5m Average Depth - 25cm Substrate: 60% gravel/ 10% sand/ 30% cobble Fast flow Corrugated Steel Pipe under roadway - fish passible 100% canopy cover - speckled alder dominate Eroded banks and defined channel present Vegetated on one side	Trout & salmonids presents
AQ9	Electrofisher/ Minnow Trap	No	-	Temp - 15.4°C Dissolved O2 - 88.8% Dissolved O2 - 8.88 mg/L Conductivity - 22.6 C us/-cm 5.56 pH	Brook/Stream Riffles & pools present Average Channel Width - 1.25m Average Wetted Width - 1m Average Depth - 15cm depth Substrate: rock/ cobble Emergent/ submerging vegetation high flow Dense alder canopy	Electrofishing proved ineffective due to overgrowth in stream Minnow traps were set for 24hrs to account for areas not electrofished.
AQ10	Minnow Trap	No	-	Water Quality Parameters Not Recorded	Watercourse surveyed at edge of pond Watercourse surrounded by wetland	Electrofishing not possible due to width and depth of watercourse. Traps were set for 24 hours. No individuals collected

Aquatic Survey Point	Method	Fish Present	Species	Water Quality Parameters	Habitat Description	Notes
AQ11	Electrofisher	Yes 4 individuals collected	Brook Trout Three-spined Stickleback	Temp - 12.7°C Dissolved O2 - 66.9% Dissolved O2 - 7.01 mg/L Conductivity - 61.6 C us/-cm 6.64 pH	Beaver dam/Beaver Pond/Brook Beaver dam present Riffles & pools present Average Channel Width - 3m Average Wetted Width - 2m Average Depth - 25cm Substrate: 15% boulder/ 40% cobble/ 45% organics Low-moderate flow No canopy Vegetated banks	
AQ12	Electrofisher	Yes 7 individuals collected	Brook Trout		Surveyed watercourse upstream of beaver pond WP0791	1 tadpole collected through electrofishing
AQ13	Electrofisher	Yes 2 individuals collected	Brook Trout Three-spined Stickleback	Temp - 13.6°C Dissolved O2 - 84.3% Dissolved O2 - 8.79 mg/L Conductivity - 21.1 C us/-cm 6.36 pH	Stream within valley Riffles & pools present Average Channel Width - 1m Average Wetted Width - 1m Average Depth - 30cm Substrate: 30% sand/ 30% gravel/ 20% silt/ 20% cobble Low flow Vegetated banks 30% shrub cover Emergent/ submergent vegetation present	
AQ 14	Electrofisher	Yes 3 individuals collected	Brook Trout	Temp - 16.5°C Dissolved O2 – 60.1% Dissolved O2 – 5.82 mg/L Conductivity – 31.2C us/-cm 5.86 pH	Stream – originating from wetland Corrugated Steel Pipe under roadway Riffles and pools present Pool downstream of CSP Average Channel Width - 0.75m Average Wetted Width - 0.75m Average Depth - 0.4m Moderate flow Substrate: 50% gravel/ 30% sand/ 20% cobble Dense canopy downstream of road No canopy upstream of road Vegetated banks	Minnow traps set for 24 hours
AQ15-AQ16	Electrofisher	Yes 12 individuals collected	Brook Trout Three-spined Stickleback	Temp - 14.9°C Dissolved O2 - 92.9% Dissolved O2 - 9.43 mg/L Conductivity - 23.9 C us/-cm 6.42 pH	Stream Riffles & pools present Average Channel Width - 2m Average Wetted Width - 2m Average Depth - 30cm Substrate: 70% gravel/ 20% sand/ 10% cobble Moderate flow Vegetated defined channel Stream flows into pond	
AQ17	Minnow trap	Yes 2 individuals collected	Brook Trout	Temp - 15.5°C Dissolved O2 - 47.5% Dissolved O2 - 4.74 mg/L Conductivity - 27.9 C us/-cm 5.84 pH	Stream Riffles & pools present Average Channel Width - 3.2m Average Wetted Width - 3.2m Average Depth - 35cm Substrate: 50% sand/ 30% gravel/ 20% organics Low flow 0.75m Corrugated Steel Pipe under roadway – (no observed obstruction to fish passage) Pool created by culvert influence Dense mature alder canopy	Minnow traps set for 24 hours

Aquatic Survey Point	Method	Fish Present	Species	Water Quality Parameters	Habitat Description	Notes
AQ18-AQ19	Electrofisher	No	No Fish Collected	Temp - 13.1°C Dissolved O2 - 46.1% Dissolved O2 - 4.82 mg/L Conductivity - 23.9 C us/-cm 6.15 pH	Stream/Brook Poor fish habitat No riffles present Average Channel Width - 2m Average Wetted Width - 1.5m Average Depth - 35cm Sediment – Organic substrate dominant Very low flow Dense vegetation growth between brook and pond Low ability of fish migration to pond	
AQ20	No Sampling Completed	-	-	-	Watercourse present beneath Trans-Canada Highway 2 m CSP identified under highway (Fish passable) Riffles and Pools Present Average Channel Width – 1.5 m Average Wetted Width – 1.5 m Average Depth – 45-60 cm Moderate Flow Substrate – Mix of sand, organics, gravel and cobble Flowing South No vegetation providing canopy	
AQ21	No Sampling Completed	-	-	-	Watercourse present beneath Trans-Canada Highway 1 m CSP identified under highway (Fish passable) Riffles and Pools Present Average Channel Width – 0.5 m Average Wetted Width – 0.5 m Average Depth – 15-20 cm Moderate Flow Flowing North Fish habitat present downstream of pond Large pool present adjacent to culvert	
AQ22	Electrofisher/ Minnow Trap	No	No Fish Collected	Temp - 14.0°C Dissolved O2 - 78.9% Dissolved O2 - 8.03 mg/L Conductivity - 17.4 C us/-cm 6.24 pH	Stream Riffles and pools present Average Channel Width ~1m Average Wetted Width - 0.75m Average Depth - 75cm (20cm depth in riffles) Moderate flow Eroded banks ~15cm higher than water level 1m Corrugated Steel Pipe under roadway pool downstream of CSP Substrate: rock/cobble/gravel/sand Vegetated banks 100% canopy (mature speckled alder) Possible fish bearing Dead tree material in stream offering covered habitat	Minnow traps set for 24 hours

APPENDIX G

Water Quality Results Summary Tables

Table 1 - Sample Location GPS Coordinates

Sample ID	GPS Coordinates (UTM NAD83 Zone 21 N)	
	Easting	Northing
Site 1 - SW / SED	660787	5432824
Site 2 - SW / SED	661586	5431308
Site 3 - SW / SED	659585	5431695
Site 4 - SW / SED	659218	5430105
Site 5 - SW / SED	662423	5427983
Site 6 - SW / SED	658359	5428317
Site 7 - SW / SED	657853	5427178
Site 8 - SW / SED	656525	5425133
Site 9 - SW / SED	662529	5427592
Site 10 - SW / SED	664021	5427614
Site 11 - SW / SED	657667	5422333
Site 12 - SW / SED	661564	5422997
Site 13 - SW / SED	661850	5422551
Site 14 - SW / SED	663620	5423220
Site 15 - SW / SED	664895	5429124
Site 16 - SW / SED	664445	5431080
Site 17 - SW / SED	668388	5435416
Site 18 - SW / SED	669671	5438385
Site 19 - SW / SED	661222	5429628
Site 20 - SW / SED	664053	5424994
Site 21 - SW / SED	664997	5429455
Site 22 - SW / SED*	657971	5427407
Site 23 - SW / SED	659621	5431681
Site 24 - SW / SED	662775	5434932

Notes:
SED - Sediment
SW - Surface Water
* - No Samples Taken

Table 2 - Field Parameter Measurements

Location	Sample Event	Temperature (°C)	pH (Unitless)	Dissolved Oxygen (%)	Conductivity (µS/cm)	ORP (mV)
Site 1 - SW / SED	1-Mar-21	-	-	-	-	-
	1-May-21	7.5	6.88	36.2	19.6	164.8
	6-Aug-21	19.2	7.04	90.0	41.1	98.7
	8-Dec-21	0.8	6.29	92.7	16.7	157.8
	31-Mar-22	1.3	5.94	95.0	13.4	182.1
	19-Jun-22	15.9	6.64	88.1	32.5	169.9
Site 2 - SW / SED	14-Mar-21	0.0	6.29	89.9	16.1	183.0
	8-May-21	8.6	6.94	35.0	19.1	168.3
	6-Aug-21	21.4	6.92	83.3	43.0	99.1
	8-Dec-21	0.8	6.27	87.0	16.8	169.5
	31-Mar-22	1.7	5.78	97.7	15.5	181.2
	17-Jun-22	26.7	6.53	76.0	33.1	160.7
Site 3 - SW / SED	14-Mar-21	-	-	-	-	-
	7-May-21	9.4	6.79	39.3	18.3	192.2
	3-Aug-21	19.8	6.91	84.0	28.5	134.6
	5-Dec-21	0.7	6.74	88.1	15.2	158.4
	29-Mar-22	1.3	5.82	87.3	14.2	188.8
	18-Jun-22	18.7	6.33	98.1	30.9	167.2
Site 4 - SW / SED	12-Mar-21	0.6	7.83	97.4	36.7	126.4
	7-May-21	7.3	7.05	33.0	46.7	186.3
	3-Aug-21	16.4	7.53	72.2	-	119.4
	5-Dec-21	0.3	6.59	81.7	42.4	148.0
	29-Mar-22	1.9	6.31	88.7	42.1	201.3
	18-Jun-22	14.2	6.85	98.4	73.3	148.1
Site 5 - SW / SED	14-Mar-21	0.8	6.46	82.3	18.5	166.2
	5-May-21	9.4	6.33	39.8	22.6	158.1
	4-Aug-21	16.4	6.22	54.6	-	88.5
	8-Dec-21	2.1	6.04	74.1	18.5	178.5
	30-Mar-22	0.3	5.32	80.5	17.2	207.3
	20-Jun-22	-	-	-	-	-
Site 6 - SW / SED	12-Mar-21	0.5	8.06	97.7	71.3	63.6
	6-May-21	10.3	6.94	36.2	102.5	193.1
	3-Aug-21	20.9	6.11	68.5	88.0	92.7
	13-Dec-21	1.1	6.17	99.7	75.7	246.0
	31-Mar-22	1.8	5.96	98.1	56.1	187.7
	20-Jun-22	20.5	6.18	96.8	175.6	153.2
Site 7 - SW / SED	12-Mar-21	2.6	7.22	67.4	22.1	148.9
	6-May-21	8.0	6.32	23.5	22.7	216.3
	3-Aug-21	18.9	6.07	35.7	105.7	-55.7
	13-Dec-21	0.3	5.35	87.1	19.0	270.8
	31-Mar-22	0.1	5.05	75.1	22.8	225.1
	18-Jun-22	14.2	6.85	198.4	73.3	148.1
Site 8 - SW / SED	12-Mar-21	0.1	7.10	104.4	92.2	146.6
	8-May-21	9.5	6.91	38.1	98.1	185.8
	4-Aug-21	16.1	7.34	88.5	161.7	124.4
	13-Dec-21	0.3	6.28	98.0	48.2	137.3
	29-Mar-22	0.3	6.14	92.9	58.3	202.2
	20-Jun-22	17.7	6.47	98.0	161.2	160.3
Site 9 - SW / SED	14-Mar-21	-0.1	6.09	81.3	190.0	196.5
	5-May-21	10.6	6.50	43.9	41.0	175.1
	6-Aug-21	24.8	7.08	78.4	117.9	93.0
	5-Dec-21	0.1	6.24	93.9	29.6	170.2
	28-Mar-22	0.2	6.11	86.4	55.7	144.2
	17-Jun-22	26.8	6.43	78.3	65.1	146.2

Table 2 - Field Parameter Measurements

Location	Sample Event	Temperature (°C)	pH (Unitless)	Dissolved Oxygen (%)	Conductivity (µS/cm)	ORP (mV)
Site 10 - SW / SED	14-Mar-21	0.4	6.51	89.2	81.4	177.8
	5-May-21	13.7	6.52	42.4	35.1	180.2
	5-Aug-21	22.4	6.75	86.9	53.8	104.0
	3-Dec-21	5.5	6.13	90.0	29.2	191.3
	30-Mar-22	1.3	5.67	93.6	30.0	187.3
	19-Jun-22	18.4	6.12	99.3	48.9	174.4
SD - SW / SED*	14-Mar-21	0.4	6.51	89.2	81.4	177.8
	5-May-21	13.7	6.52	42.4	35.1	180.2
	31-Mar-22	3.0	5.19	97.3	14.7	216.4
Site 11 - SW / SED	15-Mar-21	-0.1	7.17	91.0	13.0	183.2
	6-May-21	7.0	7.21	33.8	15.1	166.4
	4-Aug-21	15.1	6.45	77.7	38.6	152.9
	13-Dec-21	0.6	5.46	95.9	12.9	238.3
	29-Mar-22	0.0	5.67	90.6	11.6	206.0
	20-Jun-22	14.2	6.36	98.6	27.6	174.7
Site 12 - SW / SED	15-Mar-21	-	-	-	-	-
	6-May-21	-	-	-	-	-
	4-Aug-21	16.3	6.40	58.1	30.6	154.0
	14-Dec-21	0.7	5.89	93.4	13.0	219.9
	29-Mar-22	0.0	5.2	89.5	12.6	232.4
	21-Jun-22	12.2	5.88	85.5	27.2	192.4
Site 13 - SW / SED	15-Mar-21	-	-	-	-	-
	6-May-21	-	-	-	-	-
	5-Aug-21	-	-	-	-	-
	14-Dec-21	-	-	-	-	-
	29-Mar-22	-	-	-	-	-
	21-Jun-22	13.7	6.15	83.4	21.6	184.2
Site 14 - SW / SED	15-Mar-21	-	-	-	-	-
	9-May-21	8.2	7.21	36.5	39.5	180.1
	4-Aug-21	16.2	7.05	66.3	112.2	135.5
	14-Dec-21	0.5	6.76	98.6	22.6	168.4
	29-Mar-22	0.4	5.82	86.6	20.6	198.8
	21-Jun-22	13.2	6.1	99.9	86.1	183.5
Site 15 - SW / SED	13-Mar-21	1.0	7.76	82.4	38.9	110.8
	5-May-21	9.0	6.94	45.9	46.4	191.8
	5-Aug-21	17.7	6.92	89.7	58.1	125.0
	3-Dec-21	5.2	6.26	108.0	41.0	170.0
	30-Mar-22	3.1	5.7	96.8	45.6	192.3
	21-Jun-22	21.0	6.16	82.7	54.2	168.9
Site 16 - SW / SED	14-Mar-21	-0.1	6.95	83.1	17.4	181.3
	8-May-21	8.7	6.57	36.4	20.7	165.7
	5-Aug-21	19.5	6.81	84.2	49.1	78.9
	8-Dec-21	0.8	5.58	82.4	16.6	226.5
	30-Mar-22	1.3	5.27	89.6	13.3	212.3
	20-Jun-22	17.7	6.44	98.1	42.2	158.0
Site 17 - SW / SED	13-Mar-21	-0.1	7.31	80.1	25.6	144.8
	8-May-21	9.0	6.63	36.8	36.3	193.8
	5-Aug-21	23.9	7.21	90.1	55.3	103.4
	8-Dec-21	1.3	6.15	88.3	25.1	199.2
	30-Mar-22	3.3	5.88	97.0	27.0	179.4
	20-Jun-22	20.8	6.27	95.4	52.8	161.4

Table 2 - Field Parameter Measurements

Location	Sample Event	Temperature (°C)	pH (Unitless)	Dissolved Oxygen (%)	Conductivity (µS/cm)	ORP (mV)
Site 18 - SW / SED	13-Mar-21	-	-	-	-	-
	8-May-21	-	-	-	-	-
	5-Aug-21	-	-	-	-	-
	8-Dec-21	-	-	-	-	-
	29-Mar-22	-	-	-	-	-
	19-Jun-22	16.9	6.76	95.1	52.6	153.3
Site 19 - SW / SED	14-Mar-21	1.1	5.80	72.5	14.4	208.5
	8-May-21	8.8	6.40	35.0	12.3	196.3
	5-Aug-21	18.4	5.76	34.5	21.9	142.9
	8-Dec-21	1.6	6.35	89.0	13.4	179.2
	31-Mar-22	3.0	5.19	97.3	14.7	216.4
	17-Jun-22	24.5	6.66	77.1	19.3	146.5
SD - SW / SED**	5-Aug-21	18.4	5.76	34.5	21.9	142.9
	8-Dec-21	1.6	6.35	89.0	13.4	179.2
Site 20 - SW / SED	15-Mar-21	0.7	6.55	60.2	44.2	198.7
	5-May-21	9.8	7.07	38.7	44.6	203.5
	4-Aug-21	23.1	6.60	79.0	69.2	101.4
	3-Dec-21	6.7	6.81	90.4	43.7	162.0
	28-Mar-22	3.0	6.13	38.4	42.4	148.2
	18-Jun-22	18.9	6.43	85.6	65.4	163.0
Site 21 - SW / SED	15-Mar-21	-	-	-	-	-
	6-May-21	9.1	6.85	35.7	39.0	186.9
	4-Aug-21	20.8	6.34	77.9	55.1	129.4
	3-Dec-21	5.2	6.24	98.6	33.8	178.5
	30-Mar-22	2.6	5.9	93.7	34.0	179.1
	21-Jun-22	20.5	6.12	99.7	62.3	164.8
Site 22 - SW / SED	15-Mar-21	-	-	-	-	-
	6-May-21	-	-	-	-	-
	4-Aug-21	-	-	-	-	-
	3-Dec-21	-	-	-	-	-
	30-Mar-22	-	-	-	-	-
	20-Jun-22	-	-	-	-	-
Site 23 - SW / SED	15-Mar-21	-	-	-	-	-
	6-May-21	-	-	-	-	-
	4-Aug-21	-	-	-	-	-
	3-Dec-21	-	-	-	-	-
	30-Mar-22	-	-	-	-	-
	19-Jun-22	16.5	6.23	88.8	36.7	183.3
Site 24 - SW / SED	15-Mar-21	-	-	-	-	-
	6-May-21	-	-	-	-	-
	4-Aug-21	-	-	-	-	-
	3-Dec-21	-	-	-	-	-
	30-Mar-22	-	-	-	-	-
	19-Jun-22	14.6	6.47	94.9	33.1	179.8

Notes:

SW = Surface Water

SED = Sediment

SD-SW / SED = Field Duplicate Sample of Site 10 SW / SED during Winter and Spring, and of Site 19 SW / SED during Summer and Fall.

- = Not sampled during this event

No samples were collected at location Site 13 - SW / SED or Site 18 - SW / SED due to access restrictions

°C = Degrees Celsius

µS/cm = micro siemens per centimeter

mV = millivolts

ORP = Oxidation-Reduction Potential

Table 3 - Analytical Results for Inorganic Parameters in Surface Water

Parameter	RDL[!]	Units	Guideline[1]	Site 1-SW						Site 2-SW						Site 3-SW					
			Sampling Event	14-Mar-21	7-May-21	6-Aug-21	8-Dec-21	31-Mar-22	19-Jun-22	14-Mar-21	8-May-21	6-Aug-21	8-Dec-21	31-Mar-22	17-Jun-22	14-Mar-21	7-May-21	3-Aug-21	5-Dec-21	29-Mar-22	18-Jun-22
			Field-measured pH	-	6.88	7.04	6.29	5.94	6.64	6.29	6.94	6.92	6.27	5.78	6.53	-	6.79	6.91	6.74	5.82	6.33
			Field measured temperature (°C)	-	7.5	19.2	0.8	1.3	15.9	0.0	8.6	21.4	0.8	1.7	26.7	-	9.4	19.8	0.7	1.3	18.7
			Ammonia guideline (mg/L as N)[2]	-	8.5	1.3	39.7	125.8	4.0	60.0	8.5	2.8	39.7	125.8	2.0	-	8.5	4.0	12.6	125.8	12.5
pH	NA	UNITS	6.5-9.0	-	**6.46**	6.66	**6.46**	**6.33**	6.7	**6.20**	**6.34**	6.65	**6.38**	**6.17**	6.79	-	**6.38**	**6.39**	**6.48**	**6.19**	6.67
Reactive Silica	0.5	mg/L	-	-	1.6	3.5	1.4	2.3	1.4	4.1	1.1	3.5	1.3	2.4	2.1	-	0.7	3	<0.5	1.9	<0.5
Chloride	1	mg/L	120	-	2	3	4	3	3	3	2	3	5	3	3	-	2	2	4	3	3
Fluoride	0.12	mg/L	0.12	-	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	-	<0.12	<0.12	<0.12	<0.12	<0.12
Sulphate	2	mg/L	128	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	-	<2	<2	<2	<2	<2
Alkalinity	5	mg/L	-	-	7	13	<5	5	9	6	5	13	<5	<5	8	-	<5	8	<5	<5	9
True Color	5.00	TCU	-	-	52.2	25.0	43.0	34.8	19.3	44.8	67.0	37.3	44.1	35.5	34.3	-	46.3	14.8	29.4	32.8	22.4
Turbidity	0.5	NTU	-	-	0.6	0.6	2.5	2.1	4.1	0.8	0.7	0.7	0.9	1.4	<0.5	-	0.6	1.1	0.7	0.8	5.4
Electrical Conductivity	1	umho/cm	-	-	28	45	32	23	32	29	26	45	31	23	31	-	25	31	28	21	30
Nitrate + Nitrite as N	0.05	mg/L	-	-	<0.05	<0.05	0.06	0.05	0.1	0.15	<0.05	<0.05	0.06	<0.05	<0.05	-	<0.05	0.11	0.06	<0.05	<0.05
Nitrate as N	0.05	mg/L	13	-	<0.05	<0.05	0.06	0.05	0.1	0.15	<0.05	<0.05	0.06	<0.05	<0.05	-	<0.05	0.05	0.06	<0.05	<0.05
Nitrite as N	0.05	mg/L	0.06	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	0.06	<0.05	<0.05	<0.05
Ammonia as N	0.03	mg/L	Calculated[2]	-	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.13	-	<0.03	<0.03	<0.03	<0.03	<0.03
Total Organic Carbon	0.5/1	mg/L	-	-	7.0	5.4	8.4	8.6	5.8	8.4	8.6	7.9	8.7	8.2	8	-	6.4	3.9	8	6.9	8
Ortho-phosphate as P	0.01	mg/L	-	-	<0.01	<0.01	<0.01	0.02	<0.01	0.02	<0.01	<0.01	<0.01	0.01	<0.01	-	<0.01	<0.01	<0.01	0.01	<0.01
Total Sodium	0.1/0.22/0.45/1	mg/L	-	-	2.6	3	2.79	2.5	2.9	2.8	2.5	2.94	2.98	2.5	2.6	-	2.3	2.32	2.76	2.4	2.5
Total Potassium	0.1/0.58/1.15	mg/L	-	-	0.3	<0.58	<1.15	0.4	0.3	0.3	0.4	<0.58	<1.15	0.5	0.3	-	0.3	<0.58	<1.15	0.3	0.2
Total Calcium	0.1/0.16/0.32	mg/L	-	-	1.8	3.42	2.1	1.4	2.1	1.8	1.8	3.69	2.07	1.4	2.2	-	1.8	2.08	1.86	1.4	2.4
Total Magnesium	0.1 /0.17/0.34	mg/L	-	-	0.9	1.51	0.85	0.8	1	0.8	0.8	1.56	0.85	0.8	0.9	-	0.8	1.04	0.96	0.7	1.1
Total Phosphorous	0.02/0.10	mg/L	-	-	0.03	<0.10	<0.10	<0.02	<0.02	<0.02	0.03	<0.10	<0.10	<0.02	<0.02	-	0.03	<0.10	<0.10	<0.02	<0.02
Bicarbonate Alkalinity $CaC0_3$	5	mg/L	-	-	7	13	<5	5	9	6	5	13	<5	<5	8	-	<5	8	<5	<5	9
Carbonate Alkalinity $CaC0_3$	10	mg/L	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	-	<10	<10	<10	<10	<10
Hydroxide	5	mg/L	-	-	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	-	<5	<5	<5	<5	<5
Calculated TDS	1	mg/L	-	-	12	19	10	12	15	13	11	19	12	9	14	-	7	13	10	8	15
Hardness	0.5	mg/L	-	-	8.2	14.8	8.7	6.8	9.4	7.8	7.8	15.6	8.7	6.8	9.2	-	7.8	9.5	8.6	6.4	10.5
Langelier Index (@20C)	NA	mg/L	-	-	-3.94	-3.21	-4.03	-4.32	-3.53	-4.27	-4.20	-3.18	-4.12	-4.49	-3.47	-	-4.16	-3.88	-4.06	-4.46	-3.5
Langelier Index (@ 4C)	NA	NA	-	-	-4.26	-3.53	-4.35	-4.64	-3.85	-4.59	-4.52	-3.5	-4.44	-4.81	-3.79	-	-4.48	-4.2	-4.38	-4.78	-3.82
Saturation pH (@ 20C)	NA	NA	-	-	10.4	9.87	10.5	10.6	10.2	10.5	10.5	9.83	10.5	10.7	10.3	-	10.5	10.3	10.5	10.7	10.2
Saturation pH (@ 4C)	NA	NA	-	-	10.7	10.2	10.8	11	10.5	10.8	10.9	10.2	10.8	11	10.6	-	10.9	10.6	10.9	11	10.5
Anion Sum	NA	me/L	-	-	0.2	0.34	0.12	0.19	0.27	0.22	0.16	0.34	0.15	0.08	0.24	-	0.06	0.22	0.12	0.08	0.26
Cation sum	NA	me/L	-	-	0.3	0.44	0.32	0.28	0.33	0.31	0.29	0.46	0.32	0.29	0.33	-	0.28	0.3	0.31	0.26	0.33
% Difference/ Ion Balance	NA	%	-	-	21.5	12.1	46.2	18.8	9.1	18.4	30.6	14.3	38	54.3	14.2	-	66.2	14.3	44.5	50.7	11.6
Total Suspended Solids	5	mg/L	-	-	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	-	<5	<5	<5	<5	<5

Notes:

1=Atlantic Risk-Based Corrective Action (ARBCA) - Ecological Tier I Environmental Quality Standards (EQS) for Surface Water [Freshwater] (2022)

2 = The guideline for Ammonia decreases as pH and temperature increase. For guideline selection for each sample, field-measured pH rounded up to the next 0.5 pH unit, and field-measured temperature rounded up to the nearest 5 degrees Celsius. Highest ammonia guideline value conservatively referenced for samples with pH less than 6.

"-" = no applicable guideline or not analyzed

NA = Not applicable
RDL = Reported Detection Limit; for all events unless otherwise noted (!)
- Total organic carbon RDL 0.5 mg/L for all samples; except December 2021 samples at Sites 3, 4, 6 to 12, 14, 15, 20 and 21 (RDL 1 mg/L)
- RDL for sodium (March and May 2021, March 2022 samples at Sites 1 to 5, 7, 10 to 21, and June 2022 samples at Sites 1 to 5, 7, and 9 to 24 / August 2021 / December 2021 / March 2022 samples at Sites 6, 8 and 9, and June 2022 samples at Sites 6 and 8)
- RDLs for potassium, calcium and magnesium (March and May 2021, and March and June 2022 / August 2021 / December 2021)
- RDL for phosphorous (March and May 2021, and March and June, 2022 / August and December 2021)
SD-SW* = Field Duplicate Sample of Site 10-SW (June 2022 event SW-SD-02 on laboratory certificate); SD-SW** = Field Duplicate Sample of Site 19-SW (June 2022 event SW-SD-01 on laboratory certificate)

Bolded/Shaded = Value exceeds guideline

Table 3 - Analytical Results for Inorganic Parameters in Surface Water

Parameter	RDL[!]	Units	Guideline[1]	Site 4-SW						Site 5-SW						Site 6-SW					
			Sampling Event	12-Mar-21	7-May-21	3-Aug-21	5-Dec-21	29-Mar-22	18-Jun-22	14-Mar-21	5-May-21	4-Aug-21	8-Dec-21	30-Mar-22	18-Jun-22	12-Mar-21	6-May-21	3-Aug-21	13-Dec-21	31-Mar-22	20-Jun-22
			Field-measured pH	7.83	7.05	7.53	6.59	6.31	6.85	6.46	6.33	6.22	6.04	5.32	-	8.06	6.94	6.11	6.17	5.96	6.18
			Field measured temperature (°C)	0.6	7.3	16.4	0.3	1.9	14.2	0.8	9.4	16.4	2.1	0.3	-	0.5	10.3	20.9	1.1	1.8	20.5
			Ammonia guideline (mg/L as N)[2]	1.3	2.7	0.4	12.6	39.5	5.7	39.7	26.6	12.5	39.7	125.8	-	0.4	5.7	8.7	39.7	125.8	8.7
pH	NA	UNITS	6.5-9.0	6.62	6.63	**6.00**	6.82	6.55	6.83	**6.18**	**6.30**	**6.46**	**6.29**	**6.19**	-	6.73	6.79	**6.46**	7	6.54	6.86
Reactive Silica	0.5	mg/L	-	4.3	1.8	5.9	<0.5	2.7	2.7	5.0	2.6	6.8	<0.5	2.9	-	3.1	<0.5	2.5	2.8	2.7	0.7
Chloride	1	mg/L	120	9	10	4	14	13	9	3	2	3	4	4	-	25	27	11	27	17	38
Fluoride	0.12	mg/L	0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	-	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12
Sulphate	2	mg/L	128	2	<2	<2	2	<2	<2	<2	<2	2	<2	<2	-	4	4	<2	4	2	4
Alkalinity	5	mg/L	-	9	9	6	10	6	16	6	7	16	<5	5	-	12	11	14	9	8	16
True Color	5.00	TCU	-	14.9	44.2	40	49.3	23.2	19.6	70.8	71.7	120	114	<5.00	-	22.3	42.1	40.6	33.2	91.1	27.5
Turbidity	0.5	NTU	-	1.2	0.7	0.8	3.4	4.2	2.2	0.8	<0.5	2.6	0.8	1.3	-	1.7	2.4	2.2	10.7	15.8	2.2
Electrical Conductivity	1	umho/cm	-	64	66	59	78	66	71	32	30	68	34	26	-	125	136	80	140	81	174
Nitrate + Nitrite as N	0.05	mg/L	-	0.55	0.13	0.19	0.22	0.25	0.11	0.44	0.12	0.44	0.24	0.13	-	0.40	<0.05	<0.05	0.25	0.27	0.05
Nitrate as N	0.05	mg/L	13	0.55	0.13	0.19	0.22	0.25	0.11	0.44	0.12	0.06	0	0.13	-	0.40	<0.05	<0.05	0.25	0.27	0.05
Nitrite as N	0.05	mg/L	0.06	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.38**	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ammonia as N	0.03	mg/L	Calculated[2]	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.08	<0.03	0.57	<0.03	<0.03	-	<0.03	<0.03	<0.03	0.13	<0.03	<0.03
Total Organic Carbon	0.5/1	mg/L	-	5.5	6.5	6.5	7	7.8	5.5	8.2	8	33.4	11.9	7.2	-	7.4	7.2	8.7	14.0	7.4	14.9
Ortho-phosphate as P	0.01	mg/L	-	<0.01	<0.01	0.01	0.01	<0.01	0.01	0.01	<0.01	<0.01	<0.01	0.01	-	<0.01	<0.01	<0.01	<0.01	0.01	<0.01
Total Sodium	0.1/0.22/0.45/1	mg/L	-	6.6	7.4	4.18	12.1	9	7.5	2.5	2.6	3.05	2.71	2.4	-	15.1	16.2	7.6	17.5	10	23
Total Potassium	0.1/0.58/1.15	mg/L	-	0.3	0.4	<0.58	<1.15	0.5	0.4	0.2	0.3	1.91	<1.15	0.2	-	0.3	0.5	<0.58	<1.15	0.6	0.7
Total Calcium	0.1/0.16/0.32	mg/L	-	4.2	3.6	5.21	5.87	4.1	5.2	2.0	2.4	5.24	2.51	1.5	-	6.7	6.0	5.02	6.9	4.8	7.8
Total Magnesium	0.1 /0.17/0.34	mg/L	-	1.2	1.0	1.38	2.06	1.3	1.4	1.1	1.2	2.8	1.3	0.9	-	1.6	1.2	1.19	2.0	1.5	1.9
Total Phosphorous	0.02/0.10	mg/L	-	<0.02	0.03	<0.10	<0.10	<0.02	<0.02	<0.02	0.03	<.0.10	<0.10	<0.02	-	<0.02	0.03	<0.10	<0.10	0.02	0.03
Bicarbonate Alkalinity $CaC0_3$	5	mg/L	-	9	9	6	10	6	16	6	7	16	<5	5	-	12	11	14	9	8	16
Carbonate Alkalinity $CaC0_3$	10	mg/L	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	-	<10	<10	<10	<10	<10	<10
Hydroxide	5	mg/L	-	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	-	<5	<5	<5	<5	<5	<5
Calculated TDS	1	mg/L	-	31	29	20	44	33	34	15	14	32	12	13	-	62	62	34	65	43	86
Hardness	0.5	mg/L	-	15.4	13.1	18.7	23.1	15.6	18.7	9.5	10.9	24.6	11.6	7.5	-	23.3	19.9	17.4	25.5	18.2	27.3
Langelier Index (@20C)	NA	mg/L	-	-3.34	-3.39	-4.02	-2.96	-3.6	-2.79	-4.25	-3.98	-3.16	-4.13	-4.43	-	-2.93	-2.96	-3.23	-2.78	-3.43	-2.62
Langelier Index (@ 4C)	NA	NA	-	-3.66	-3.71	-4.34	-3.28	-3.92	-3.11	-4.57	-4.30	-3.48	-4.45	-4.75	-	-3.25	-3.28	-3.55	-3.10	-3.75	-2.94
Saturation pH (@ 20C)	NA	NA	-	9.96	10.0	10	9.78	10.1	9.62	10.4	10.3	9.62	10.4	10.6	-	9.66	9.75	9.69	9.78	9.97	9.48
Saturation pH (@ 4C)	NA	NA	-	10.3	10.3	10.3	10.1	10.5	9.94	10.7	10.6	9.94	10.7	10.9	-	9.98	10.1	10	10.1	10.3	9.8
Anion Sum	NA	me/L	-	0.51	0.47	0.25	0.65	0.5	0.58	0.24	0.20	0.48	0.13	0.22	-	1.06	1.06	0.59	1.04	0.7	1.48
Cation sum	NA	me/L	-	0.62	0.61	0.58	1.02	0.75	0.72	0.34	0.37	0.8	0.38	0.28	-	1.15	1.14	0.7	1.33	0.87	1.58
% Difference/ Ion Balance	NA	%	-	9.0	12.8	40.6	22.0	19.7	10.6	17.6	28.3	25.3	49	10.9	-	4.3	3.4	8.8	12.1	10.9	3.3
Total Suspended Solids	5	mg/L	-	<5	<5	<5	<5	<5	<5	<5	<5	8	<5	<5	-	<5	<5	16	<5	7	<5

Notes:

1=Atlantic Risk-Based Corrective Action (ARBCA) - Ecological Tier I Environmental Quality Standards (EQS) for Surface Water [Freshwater] (2022)

2 = The guideline for Ammonia decreases as pH and temperature increase. For guideline selection for each sample, field-measured pH rounded up to the next 0.5 pH unit, and field-measured temperature rounded up to the nearest 5 degrees Celsius. Highest ammonia guideline value conservatively referenced for samples with pH less than 6.

"-" = no applicable guideline or not analyzed

NA = Not applicable
RDL = Reported Detection Limit; for all events unless otherwise noted (!)
- Total organic carbon RDL 0.5 mg/L for all samples; except December 2021 samples at Sites 3, 4, 6 to 12, 14, 15, 20 and 21 (RDL 1 mg/L)
- RDL for sodium (March and May 2021, March 2022 samples at Sites 1 to 5, 7, 10 to 21, and June 2022 samples at Sites 1 to 5, 7, and 9 to 24 / August 2021 / December 2021 / March 2022 samples at Sites 6, 8 and 9, and June 2022 samples at Sites 6 and 8)
- RDLs for potassium, calcium and magnesium (March and May 2021, and March and June 2022 / August 2021 / December 2021)
- RDL for phosphorous (March and May 2021, and March and June, 2022 / August and December 2021)
SD-SW* = Field Duplicate Sample of Site 10-SW (June 2022 event SW-SD-02 on laboratory certificate); SD-SW** = Field Duplicate Sample of Site 19-SW (June 2022 event SW-SD-01 on laboratory certificate)

Bolded/Shaded = Value exceeds guideline

Table 3 - Analytical Results for Inorganic Parameters in Surface Water

Parameter	RDL[!]	Units	Guideline[1]	Site 7-SW						Site 8-SW						Site 9-SW					
			Sampling Event	12-Mar-21	6-May-21	3-Aug-21	13-Dec-21	31-Mar-22	20-Jun-22	12-Mar-21	8-May-21	4-Aug-21	13-Dec-21	29-Mar-22	20-Jun-22	14-Mar-21	5-May-21	6-Aug-21	5-Dec-21	28-Mar-22	17-Jun-22
			Field-measured pH	7.22	6.32	6.07	5.35	5.05	6.85	7.10	6.91	7.34	6.28	6.14	6.47	6.09	6.50	7.08	6.24	6.11	6.43
			Field measured temperature (°C)	2.6	8.0	18.9	0.3	0.1	14.2	0.1	9.5	16.1	0.3	0.3	17.7	-0.1	10.6	24.8	0.1	0.2	26.8
			Ammonia guideline (mg/L as N)[2]	4.0	26.6	12.5	125.8	125.8	5.7	4.0	8.5	1.3	39.7	39.7	12.5	60.0	18.1	0.9	39.7	39.7	6.2
pH	NA	UNITS	6.5-9.0	**5.70**	**6.18**	6.71	**6.04**	**6.01**	6.61	6.67	6.74	6.85	6.72	6.52	6.89	**6.10**	**6.25**	6.55	**6.19**	**6.21**	6.67
Reactive Silica	0.5	mg/L	-	3.6	2.2	5.3	3.7	2.6	3.3	3.5	1.0	3.8	2.9	1.8	1.2	4.1	1.0	2.4	1.5	4	<0.5
Chloride	1	mg/L	120	4	3	6	4	5	4	40	29	41	18	22	36	91	9	22	11	24	10
Fluoride	0.12	mg/L	0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12
Sulphate	2	mg/L	128	<2	<2	2	<2	<2	<2	3	2	3	2	<2	<2	5	<2	3	<2	<2	<2
Alkalinity	5	mg/L	-	<5	5	16	<5	<5	16	8	7	17	5	6	15	<5	6	12	<5	<5	10
True Color	5.00	TCU	-	25.5	45.8	43	85.5	43.2	43	17.7	41.5	12.4	53.2	40.2	26.1	44.5	52.0	46	38.3	35.7	55.1
Turbidity	0.5	NTU	-	0.8	0.6	0.9	7.2	6.4	2.4	0.9	<0.5	0.6	1.3	0.8	1	1.6	0.8	2.1	0.9	4.4	3.8
Electrical Conductivity	1	umho/cm	-	33	34	58	35	36	58	158	134	194	92	94	164	326	53	117	55	96	63
Nitrate + Nitrite as N	0.05	mg/L	-	0.44	0.10	1.15	0.12	<0.05	<0.05	0.16	<0.05	0.11	0.09	0.06	0.07	0.46	<0.05	<0.05	0.12	0.09	<0.05
Nitrate as N	0.05	mg/L	13	0.44	0.10	1.15	0.12	<0.05	<0.05	0.16	<0.05	0.11	0.09	0.06	0.07	0.38	<0.05	<0.05	0.12	0.09	<0.05
Nitrite as N	0.05	mg/L	0.06	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.08**	<0.05	<0.05	<0.05	<0.05	<0.05
Ammonia as N	0.03	mg/L	Calculated[2]	<0.03	<0.03	<0.03	0.15	<0.03	0.06	<0.03	<0.03	<0.03	14.6	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Total Organic Carbon	0.5/1	mg/L	-	8.7	10.1	10.4	20.4	13.9	17.3	6.1	6.2	2.2	13.0	6.8	10.6	7.7	9.2	8.3	10	6.6	11.3
Ortho-phosphate as P	0.01	mg/L	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	0.01	<0.01
Total Sodium	0.1/0.22/0.45/1	mg/L	-	3.0	3.1	3.86	3.8	3.5	4.9	28.5	19.4	24.7	13.0	12	25	57.5	7.4	14.4	7.64	14	8.2
Total Potassium	0.1/0.58/1.15	mg/L	-	0.2	0.6	<0.58	1.22	0.6	0.9	0.2	0.3	<0.58	<1.15	0.2	0.3	0.3	0.3	<0.58	<1.15	0.2	0.2
Total Calcium	0.1/0.16/0.32	mg/L	-	2.4	2.5	4.78	2.5	2.2	4.9	4.8	3.8	7.0	2.8	3.3	5.6	5.8	1.8	3.49	2.04	2	2.7
Total Magnesium	0.1 /0.17/0.34	mg/L	-	0.7	0.7	1.27	0.9	0.8	1.5	1.4	1.0	1.8	1.0	1	1.5	1.9	0.8	1.94	1.13	1	1.3
Total Phosphorous	0.02/0.10	mg/L	-	<0.02	0.03	<0.10	<0.10	<0.02	0.02	<0.02	0.03	<0.10	<0.10	<0.02	0.02	<0.02	0.03	<0.10	<0.10	<0.02	0.02
Bicarbonate Alkalinity $CaC0_3$	5	mg/L	-	<5	5	16	<5	<5	16	8	7	17	5	6	15	<5	6	12	<5	<5	10
Carbonate Alkalinity $CaC0_3$	10	mg/L	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Hydroxide	5	mg/L	-	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Calculated TDS	1	mg/L	-	13	14	34	14	13	28	84	60	88	59	43	78	164	24	53	23	42	30
Hardness	0.5	mg/L	-	8.9	9.1	17.2	9.7	8.8	18.4	17.8	13.6	25.0	11.2	12.4	20.2	22.3	7.8	16.7	9.7	9.1	12.1
Langelier Index (@20C)	NA	mg/L	-	-4.73	-4.23	-2.94	-4.39	-4.46	-3.03	-3.33	-3.40	-2.66	-3.69	-3.73	-2.76	-4.05	-4.24	-3.39	-4.33	-4.34	-3.43
Langelier Index (@ 4C)	NA	NA	-	-5.05	-4.55	-3.26	-4.71	-4.78	-3.35	-3.65	-3.72	-2.98	-4.01	-4.05	-3.08	-4.37	-4.56	-3.71	-4.65	-4.66	-3.75
Saturation pH (@ 20C)	NA	NA	-	10.4	10.4	9.65	10.40	10.5	9.64	10.0	10.1	9.5	10.40	10.3	9.65	10.1	10.5	9.94	10.5	10.6	10.1
Saturation pH (@ 4C)	NA	NA	-	10.8	10.7	9.97	10.7	10.8	9.96	10.3	10.5	9.8	10.7	10.6	9.97	10.5	10.8	10.3	10.8	10.9	10.4
Anion Sum	NA	me/L	-	0.14	0.19	0.61	0.12	0.14	0.43	1.36	1.00	1.57	0.66	0.74	1.32	2.70	0.37	0.92	0.32	0.68	0.48
Cation sum	NA	me/L	-	0.34	0.37	0.57	0.46	0.41	0.68	1.61	1.13	1.58	1.85	0.79	1.51	3.00	0.52	1.01	0.55	0.84	0.67
% Difference/ Ion Balance	NA	%	-	40.1	31.8	3.7	58.5	48.4	21.9	8.3	6.3	0.5	47.7	3.1	6.8	5.1	16.3	4.7	26.8	10.1	16.7
Total Suspended Solids	5	mg/L	-	85	<5	<5	16	6	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5

Notes:

1=Atlantic Risk-Based Corrective Action (ARBCA) - Ecological Tier I Environmental Quality Standards (EQS) for Surface Water [Freshwater] (2022)

2 = The guideline for Ammonia decreases as pH and temperature increase. For guideline selection for each sample, field-measured pH rounded up to the next 0.5 pH unit, and field-measured temperature rounded up to the nearest 5 degrees Celsius. Highest ammonia guideline value conservatively referenced for samples with pH less than 6.

"-" = no applicable guideline or not analyzed

NA = Not applicable
RDL = Reported Detection Limit; for all events unless otherwise noted (!)
- Total organic carbon RDL 0.5 mg/L for all samples; except December 2021 samples at Sites 3, 4, 6 to 12, 14, 15, 20 and 21 (RDL 1 mg/L)
- RDL for sodium (March and May 2021, March 2022 samples at Sites 1 to 5, 7, 10 to 21, and June 2022 samples at Sites 1 to 5, 7, and 9 to 24 / August 2021 / December 2021 / March 2022 samples at Sites 6, 8 and 9, and June 2022 samples at Sites 6 and 8)
- RDLs for potassium, calcium and magnesium (March and May 2021, and March and June 2022 / August 2021 / December 2021)
- RDL for phosphorous (March and May 2021, and March and June, 2022 / August and December 2021)
SD-SW* = Field Duplicate Sample of Site 10-SW (June 2022 event SW-SD-02 on laboratory certificate); SD-SW** = Field Duplicate Sample of Site 19-SW (June 2022 event SW-SD-01 on laboratory certificate)

Bolded/Shaded = Value exceeds guideline

Table 3 - Analytical Results for Inorganic Parameters in Surface Water

Parameter	RDL[!]	Units	Guideline[1]	Site 10-SW						SD-SW*			Site 11-SW					
			Sampling Event	14-Mar-21	5-May-21	5-Aug-21	3-Dec-21	30-Mar-22	19-Jun-22	14-Mar-21	5-May-21	19-Jun-22	15-Mar-21	6-May-21	4-Aug-21	13-Dec-21	29-Mar-22	20-Jun-22
			Field-measured pH	6.51	6.52	6.75	6.13	5.67	6.12	6.51	6.52	6.12	7.17	7.21	6.45	5.46	5.67	6.36
			Field measured temperature (°C)	0.4	13.7	22.4	5.5	1.3	18.4	0.4	13.7	18.4	-0.1	7.0	15.1	0.6	0.0	14.2
			Ammonia guideline (mg/L as N)[2]	12.6	5.7	2.8	26.6	125.8	12.5	12.6	5.7	12.5	6.0	2.7	3.5	125.8	125.8	18.1
pH	NA	UNITS	6.5-9.0	**6.32**	**6.31**	6.58	**6.40**	**6.17**	6.7	**6.38**	**6.37**	6.7	**5.94**	**6.40**	**6.23**	**5.92**	**5.94**	6.64
Reactive Silica	0.5	mg/L	-	4.3	<0.5	2.4	6	2.2	0.8	4.4	0.8	0.8	3.2	1.5	3.3	2.5	1.8	1.6
Chloride	1	mg/L	120	35	7	7	8	10	7	35	7	7	3	2	2	3	3	2
Fluoride	0.12	mg/L	0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12
Sulphate	2	mg/L	128	2	<2	<2	<2	<2	<2	2	<2	<2	<2	<2	<2	<2	<2	<2
Alkalinity	5	mg/L	-	5	5	11	<5	<5	8	6	6	9	<5	5	<5	<5	<5	8
True Color	5.00	TCU	-	30.7	44.0	50.1	60	37.2	35.2	42.6	57.7	48.9	41.4	42.8	6.08	67.6	48.5	16
Turbidity	0.5	NTU	-	1.6	0.7	0.6	1.3	1.4	1.9	1.0	0.8	2.5	1.6	<0.5	<0.5	1.8	0.8	2.7
Electrical Conductivity	1	umho/cm	-	140	42	55	46	48	48	142	43	49	23	22	48	25	19	27
Nitrate + Nitrite as N	0.05	mg/L	-	0.42	<0.05	<0.05	0.12	0.07	<0.05	0.42	<0.05	<0.05	0.22	<0.05	2.61	0.13	0.05	0.19
Nitrate as N	0.05	mg/L	13	0.42	<0.05	<0.05	0.12	0.07	<0.05	0.42	<0.05	<0.05	0.22	<0.05	2.61	0.13	0.05	0.19
Nitrite as N	0.05	mg/L	0.06	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ammonia as N	0.03	mg/L	Calculated[2]	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.23	<0.03	<0.03
Total Organic Carbon	0.5/1	mg/L	-	7.5	7.9	4.2	9	7.1	14.7	7.7	8.0	8.7	7.3	5.5	1.3	14	9.5	8.3
Ortho-phosphate as P	0.01	mg/L	-	0.01	<0.01	<0.01	<0.01	0.01	<0.01	0.02	<0.01	<0.01	0.01	<0.01	<0.01	0.01	<0.01	<0.01
Total Sodium	0.1/0.22/0.45/1	mg/L	-	17.5	5.5	5.64	6.52	6	5.8	18.0	5.8	5.8	2.1	2.2	2.87	5.13	1.9	2.7
Total Potassium	0.1/0.58/1.15	mg/L	-	0.3	0.3	<0.58	<1.15	0.2	0.2	0.3	0.3	0.2	0.1	0.1	<0.58	3.54	0.2	0.2
Total Calcium	0.1/0.16/0.32	mg/L	-	3.4	1.6	2.3	2.23	1.4	2.2	3.6	1.7	2.1	1.4	1.4	3.05	6.22	1.1	1.9
Total Magnesium	0.1 /0.17/0.34	mg/L	-	1.8	0.9	1.63	1.38	0.8	1.3	1.8	0.9	1.3	0.6	0.7	1.2	5.73	0.5	1
Total Phosphorous	0.02/0.10	mg/L	-	<0.02	0.03	<0.10	<0.10	<0.02	<0.02	<0.02	0.04	0.02	<0.02	0.02	<0.10	<0.10	<0.02	<0.02
Bicarbonate Alkalinity $CaC0_3$	5	mg/L	-	5	5	11	<5	<5	8	6	6	9	<5	5	<5	<5	<5	8
Carbonate Alkalinity $CaC0_3$	10	mg/L	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Hydroxide	5	mg/L	-	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Calculated TDS	1	mg/L	-	66	19	23	19	19	22	67	20	22	9	10	21	25	7	14
Hardness	0.5	mg/L	-	15.9	7.7	12.5	11.3	6.8	10.8	16.4	8.0	10.6	6.0	6.4	12.6	39.1	4.8	8.9
Langelier Index (@20C)	NA	mg/L	-	-4.02	-4.30	-3.54	-4.08	-4.51	-3.58	-3.86	-4.14	-3.55	-4.72	-4.24	-4.11	-4.12	-4.82	-3.68
Langelier Index (@ 4C)	NA	NA	-	-4.34	-4.62	-3.86	-4.4	-4.83	-3.9	-4.18	-4.46	-3.87	-5.04	-4.56	-4.43	-4.44	-5.14	-4
Saturation pH (@ 20C)	NA	NA	-	10.3	10.6	10.1	10.5	10.7	10.3	10.2	10.5	10.2	10.7	10.6	10.3	10	10.8	10.3
Saturation pH (@ 4C)	NA	NA	-	10.7	10.9	10.4	10.8	11	10.6	10.6	10.8	10.6	11.0	11.0	10.7	10.4	11.1	10.6
Anion Sum	NA	me/L	-	1.16	0.30	0.42	0.23	0.29	0.36	1.18	0.32	0.38	0.10	0.16	0.24	0.09	0.09	0.23
Cation sum	NA	me/L	-	1.12	0.42	0.5	0.53	0.43	0.49	1.15	0.44	0.49	0.23	0.24	0.38	1.14	0.22	0.31
% Difference/ Ion Balance	NA	%	-	1.8	17.3	9.1	39	19.4	15.7	1.1	16.3	12.5	39.5	21.2	22.6	84.8	42	14.2
Total Suspended Solids	5	mg/L	-	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5

Notes:

1=Atlantic Risk-Based Corrective Action (ARBCA) - Ecological Tier I Environmental Quality Standards (EQS) for Surface Water [Freshwater] (2022)

2 = The guideline for Ammonia decreases as pH and temperature increase. For guideline selection for each sample, field-measured pH rounded up to the next 0.5 pH unit, and field-measured temperature rounded up to the nearest 5 degrees Celsius. Highest ammonia guideline value conservatively referenced for samples with pH less than 6.

"-" = no applicable guideline or not analyzed

NA = Not applicable
RDL = Reported Detection Limit; for all events unless otherwise noted (!)
- Total organic carbon RDL 0.5 mg/L for all samples; except December 2021 samples at Sites 3, 4, 6 to 12, 14, 15, 20 and 21 (RDL 1 mg/L)
- RDL for sodium (March and May 2021, March 2022 samples at Sites 1 to 5, 7, 10 to 21, and June 2022 samples at Sites 1 to 5, 7, and 9 to 24 / August 2021 / December 2021 / March 2022 samples at Sites 6, 8 and 9, and June 2022 samples at Sites 6 and 8)
- RDLs for potassium, calcium and magnesium (March and May 2021, and March and June 2022 / August 2021 / December 2021)
- RDL for phosphorous (March and May 2021, and March and June, 2022 / August and December 2021)
SD-SW* = Field Duplicate Sample of Site 10-SW (June 2022 event SW-SD-02 on laboratory certificate); SD-SW** = Field Duplicate Sample of Site 19-SW (June 2022 event SW-SD-01 on laboratory certificate)

Bolded/Shaded = Value exceeds guideline

Table 3 - Analytical Results for Inorganic Parameters in Surface Water

Parameter	RDL[!]	Units	Guideline[1]	Site 12-SW						Site 13-SW						Site 14-SW					
Sampling Event				15-Mar-21	6-May-21	4-Aug-21	14-Dec-21	29-Mar-22	21-Jun-22	15-Mar-21	6-May-21	4-Aug-21	14-Dec-21	29-Mar-22	21-Jun-22	15-Mar-21	9-May-21	4-Aug-21	14-Dec-21	29-Mar-22	21-Jun-22
Field-measured pH				-	-	6.4	5.89	5.2	5.88	-	-	-	-	-	6.15	-	7.21	7.05	6.76	5.82	6.1
Field measured temperature (°C)				-	-	16.3	0.7	0	12.2	-	-	-	-	-	13.7	-	8.2	16.2	0.5	0.4	13.2
Ammonia guideline (mg/L as N)[2]				-	-	4.0	125.8	125.8	57.3	-	-	-	-	-	18.1	-	2.7	1.3	12.6	125.8	18.1
pH	NA	UNITS	6.5-9.0	-	-	**6.17**	**5.96**	**5.88**	**6.48**	-	-	-	-	-	6.52	-	7.00	7.48	6.83	6.61	7.27
Reactive Silica	0.5	mg/L	-	-	-	5.4	3.9	2.3	2.5	-	-	-	-	-	1.2	-	4.2	15.3	7.2	4.4	7.2
Chloride	1	mg/L	120	-	-	3	4	3	3	-	-	-	-	-	2	-	3	4	4	3	3
Fluoride	0.12	mg/L	0.12	-	-	<0.12	<0.12	<0.12	<0.12	-	-	-	-	-	<0.12	-	<0.12	<0.12	<0.12	<0.12	<0.12
Sulphate	2	mg/L	128	-	-	3	<2	<2	<2	-	-	-	-	-	<2	-	<2	<2	<2	<2	<2
Alkalinity	5	mg/L	-	-	-	<5	<5	<5	6	-	-	-	-	-	5	-	22	62	10	6	44
True Color	5.00	TCU	-	-	-	9.1	65.4	46.8	23	-	-	-	-	-	17.9	-	166	57.5	91.9	44.6	79.9
Turbidity	0.5	NTU	-	-	-	0.5	0.6	1	2.2	-	-	-	-	-	2	-	0.6	0.6	0.8	1.2	1.4
Electrical Conductivity	1	umho/cm	-	-	-	36	26	19	26	-	-	-	-	-	22	-	55	134	44	32	87
Nitrate + Nitrite as N	0.05	mg/L	-	-	-	0.56	0.13	0.06	0.08	-	-	-	-	-	0.05	-	<0.05	0.08	0.16	0.08	<0.05
Nitrate as N	0.05	mg/L	13	-	-	0.56	0.13	0.06	0.08	-	-	-	-	-	0.05	-	<0.05	0.08	0.16	0.08	<0.05
Nitrite as N	0.05	mg/L	0.06	-	-	<0.05	<0.05	<0.05	<0.05	-	-	-	-	-	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05
Ammonia as N	0.03	mg/L	Calculated[2]	-	-	<0.03	0.15	<0.03	<0.03	-	-	-	-	-	<0.03	-	<0.03	<0.03	0.16	<0.03	0.04
Total Organic Carbon	0.5/1	mg/L	-	-	-	2.8	12	8.5	8.4	-	-	-	-	-	9.1	-	12.6	<0.5	19	8	18.4
Ortho-phosphate as P	0.01	mg/L	-	-	-	<0.01	<0.01	0.02	<0.01	-	-	-	-	-	<0.01	-	<0.01	0.01	0.01	0.02	<0.01
Total Sodium	0.1/0.22/0.45/1	mg/L	-	-	-	2.67	2.46	2.3	2.8	-	-	-	-	-	2.7	-	2.8	2.85	2.27	2	2.9
Total Potassium	0.1/0.58/1.15	mg/L	-	-	-	<0.58	<1.15	0.2	0.1	-	-	-	-	-	0.1	-	0.3	<0.58	<1.15	0.2	0.2
Total Calcium	0.1/0.16/0.32	mg/L	-	-	-	1.86	1.23	0.9	1.4	-	-	-	-	-	1	-	2.3	4.89	1.38	0.9	3.5
Total Magnesium	0.1 /0.17/0.34	mg/L	-	-	-	1.24	0.9	0.6	0.9	-	-	-	-	-	0.8	-	5.1	12.2	3.27	2.4	8.8
Total Phosphorous	0.02/0.10	mg/L	-	-	-	<0.10	<0.10	<0.02	0.02	-	-	-	-	-	0.02	-	0.06	<0.10	<0.10	<0.02	0.02
Bicarbonate Alkalinity $CaC0_3$	5	mg/L	-	-	-	<5	<5	<5	6	-	-	-	-	-	5	-	22	62	10	6	44
Carbonate Alkalinity $CaC0_3$	10	mg/L	-	-	-	<10	<10	<10	<10	-	-	-	-	-	<10	-	<10	<10	<10	<10	<10
Hydroxide	5	mg/L	-	-	-	<5	<5	<5	<5	-	-	-	-	-	<5	-	<5	<5	<5	<5	<5
Calculated TDS	1	mg/L	-	-	-	16	10	8	12	-	-	-	-	-	10	-	27	62	18	13	45
Hardness	0.5	mg/L	-	-	-	9.8	6.8	4.7	7.2	-	-	-	-	-	5.8	-	26.7	62.4	16.9	12.1	45
Langelier Index (@20C)	NA	mg/L	-	-	-	-4.37	-4.76	-4.97	-4.09	-	-	-	-	-	-4.27	-	-2.83	-1.6	-3.54	-4.16	-2.1
Langelier Index (@ 4C)	NA	NA	-	-	-	-4.69	-5.08	-5.29	-4.41	-	-	-	-	-	-4.59	-	-3.15	-1.92	-3.86	-4.48	-2.42
Saturation pH (@ 20C)	NA	NA	-	-	-	10.5	10.7	10.8	10.6	-	-	-	-	-	10.8	-	9.8	9.08	10.4	10.8	9.37
Saturation pH (@ 4C)	NA	NA	-	-	-	10.9	11	11.2	10.9	-	-	-	-	-	11.1	-	10.1	9.4	10.7	11.1	9.69
Anion Sum	NA	me/L	-	-	-	0.19	0.12	0.09	0.21	-	-	-	-	-	0.16	-	0.52	1.36	0.32	0.21	0.96
Cation sum	NA	me/L	-	-	-	0.37	0.27	0.23	0.28	-	-	-	-	-	0.25	-	0.71	1.39	0.47	0.36	1.05
% Difference/ Ion Balance	NA	%	-	-	-	32.4	38.3	44.3	14.5	-	-	-	-	-	21.9	-	15.1	1.1	18.7	26.5	4
Total Suspended Solids	5	mg/L	-	-	-	<5	<5	<5	<5	-	-	-	-	-	<5	-	<5	<5	<5	<5	<5

Notes:

1=Atlantic Risk-Based Corrective Action (ARBCA) - Ecological Tier I Environmental Quality Standards (EQS) for Surface Water [Freshwater] (2022)

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- RDLs for potassium, calcium and magnesium (March and May 2021, and March and June 2022 / August 2021 / December 2021)
- RDL for phosphorous (March and May 2021, and March and June, 2022 / August and December 2021)
SD-SW* = Field Duplicate Sample of Site 10-SW (June 2022 event SW-SD-02 on laboratory certificate); SD-SW** = Field Duplicate Sample of Site 19-SW (June 2022 event SW-SD-01 on laboratory certificate)

Bolded/Shaded = Value exceeds guideline

Table 3 - Analytical Results for Inorganic Parameters in Surface Water

Parameter	RDL[!]	Units	Guideline[1]	Site 15-SW						Site 16-SW						Site 17-SW					
			Sampling Event	13-Mar-21	5-May-21	5-Aug-21	3-Dec-21	30-Mar-22	21-Jun-22	14-Mar-21	8-May-21	5-Aug-21	8-Dec-21	30-Mar-22	20-Jun-22	13-Mar-21	8-May-21	5-Aug-21	8-Dec-21	30-Mar-22	20-Jun-22
			Field-measured pH	7.76	6.94	6.92	6.26	5.7	6.16	6.95	6.57	6.81	5.58	5.27	6.44	7.31	6.63	7.21	6.15	5.88	6.27
			Field measured temperature (°C)	1.0	9.0	17.7	5.2	3.1	21.0	-0.1	8.7	19.5	0.8	6.4	17.7	-0.1	9.0	23.9	1.3	3.3	20.8
			Ammonia guideline (mg/L as N)[2]	1.3	8.5	4.0	26.6	125.8	8.7	19.0	8.5	4.0	125.8	125.8	12.5	6.0	8.5	0.9	39.7	125.8	8.7
pH	NA	UNITS	6.5-9.0	**6.42**	6.52	**6.43**	6.86	**6.38**	6.65	**5.72**	**6.38**	6.73	**5.79**	**5.86**	6.83	**6.23**	**6.42**	6.98	6.71	**6.31**	6.75
Reactive Silica	0.5	mg/L	-	3.7	2.5	1.4	21.8	3.1	1.1	4.8	1.6	7.3	0.8	2.6	2.3	4.4	1.7	3.8	4.5	2.5	0.8
Chloride	1	mg/L	120	12	11	12	12	14	9	3	2	3	4	3	3	7	8	4	7	7	8
Fluoride	0.12	mg/L	0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	0.12	<0.12	<0.12	0.12	<0.12	<0.12	<0.12
Sulphate	2	mg/L	128	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Alkalinity	5	mg/L	-	7	<5	7	8	7	7	<5	6	17	<5	`	14	6	<5	18	<5	<5	9
True Color	5.00	TCU	-	38.1	57.4	28.4	<5.00	35	30.1	78.8	110	59.4	121	51.2	95.5	62.4	81.2	23.1	54.4	47.1	36.7
Turbidity	0.5	NTU	-	0.8	0.9	0.7	1.3	1.3	1.7	0.8	0.6	2.1	1.2	1.3	2.4	1.8	0.6	<0.5	1.3	1.9	2.4
Electrical Conductivity	1	umho/cm	-	66	64	67	67	65	54	31	28	54	32	21	41	46	50	56	47	41	53
Nitrate + Nitrite as N	0.05	mg/L	-	0.23	0.17	<0.05	<0.05	0.11	<0.05	0.58	<0.05	0.08	0.25	0.12	0.05	0.34	0.13	<0.05	0.12	0.08	<0.05
Nitrate as N	0.05	mg/L	13	0.23	0.17	<0.05	<0.05	0.11	<0.05	0.58	<0.05	0.08	0.25	0.12	0.05	0.34	0.13	<0.05	0.12	0.08	<0.05
Nitrite as N	0.05	mg/L	0.06	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ammonia as N	0.03	mg/L	Calculated[2]	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.08	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Total Organic Carbon	0.5/1	mg/L	-	8.3	8.2	5.4	7	7.4	7.6	8.2	10.5	7	16.7	8.3	13.8	11.4	8.8	3.6	10.4	7.8	11.3
Ortho-phosphate as P	0.01	mg/L	-	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	0.01	<0.01	<0.01	<0.01	0.01	<0.01	0.01	<0.01	<0.01	0.02	0.01	<0.01
Total Sodium	0.1/0.22/0.45/1	mg/L	-	8.2	8.2	8.5	10.4	8.3	6.8	2.6	2.6	3.16	2.86	2.1	3.1	4.8	6.2	4.66	5.45	4.5	6.8
Total Potassium	0.1/0.58/1.15	mg/L	-	0.2	0.3	<0.58	<1.15	0.2	0.2	0.3	0.3	<0.58	<1.15	0.2	0.3	0.3	0.3	<0.58	<1.15	0.2	0.2
Total Calcium	0.1/0.16/0.32	mg/L	-	2.1	1.8	1.8	2.45	1.9	1.8	1.7	2.1	4.08	2.3	1	3.4	1.8	1.8	3	2.1	1.4	2.2
Total Magnesium	0.1 /0.17/0.34	mg/L	-	1.8	1.4	1.5	2.47	1.7	1.5	1.0	1.1	2.41	1.1	0.7	1.9	1.4	1.4	2.09	1.5	1.1	1.6
Total Phosphorous	0.02/0.10	mg/L	-	<0.02	0.03	<0.10	<0.10	<0.02	0.02	<0.02	0.03	<0.10	<0.10	<0.02	0.03	<0.02	0.03	<0.10	<0.10	<0.02	0.02
Bicarbonate Alkalinity $CaC0_3$	5	mg/L	-	7	<5	7	8	7	7	<5	6	17	<5	<5	14	6	<5	18	<5	<5	9
Carbonate Alkalinity $CaC0_3$	10	mg/L	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Hydroxide	5	mg/L	-	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Calculated TDS	1	mg/L	-	30	24	28	32	31	24	12	12	24	12	8	22	21	19	25	17	15	25
Hardness	0.5	mg/L	-	12.7	10.3	10.8	16.3	11.7	10.7	8.4	9.8	20.1	10.1	5.4	16.3	10.3	10.3	16.1	11.3	8	12.1
Langelier Index (@20C)	NA	mg/L	-	-3.95	-4.06	-4.00	-3.39	-4.03	-3.77	-4.86	-4.02	-2.95	-4.67	-4.94	-3.01	-4.26	-4.15	-2.81	-3.80	-4.36	-3.48
Langelier Index (@ 4C)	NA	NA	-	-4.27	-4.38	-4.32	-3.71	-4.35	-4.09	-5.18	-4.34	-3.27	-4.99	-5.26	-3.33	-4.58	-4.47	-3.13	-4.12	-4.68	-3.8
Saturation pH (@ 20C)	NA	NA	-	10.4	10.6	10.4	10.2	10.4	10.4	10.6	10.4	9.68	10.50	10.8	9.84	10.5	10.6	9.79	10.50	10.7	10.2
Saturation pH (@ 4C)	NA	NA	-	10.7	10.9	10.8	10.6	10.7	10.7	10.9	10.7	10	10.8	11.1	10.2	10.8	10.9	10.1	10.8	11	10.5
Anion Sum	NA	me/L	-	0.49	0.32	0.48	0.5	0.54	0.39	0.13	0.18	0.43	0.13	0.09	0.37	0.34	0.23	0.47	0.21	0.2	0.41
Cation sum	NA	me/L	-	0.64	0.59	0.59	0.79	0.62	0.53	0.32	0.35	0.58	0.36	0.22	0.53	0.45	0.50	0.54	0.48	0.38	0.56
% Difference/ Ion Balance	NA	%	-	12.9	29.2	10.5	22.8	6.3	15.2	43.7	32.9	15.1	47.0	41.4	18.4	13.3	36.4	6.3	40.0	30	16
Total Suspended Solids	5	mg/L	-	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5

Notes:

1=Atlantic Risk-Based Corrective Action (ARBCA) - Ecological Tier I Environmental Quality Standards (EQS) for Surface Water [Freshwater] (2022)

2 = The guideline for Ammonia decreases as pH and temperature increase. For guideline selection for each sample, field-measured pH rounded up to the next 0.5 pH unit, and field-measured temperature rounded up to the nearest 5 degrees Celsius. Highest ammonia guideline value conservatively referenced for samples with pH less than 6.

"-" = no applicable guideline or not analyzed

NA = Not applicable
RDL = Reported Detection Limit; for all events unless otherwise noted (!)
- Total organic carbon RDL 0.5 mg/L for all samples; except December 2021 samples at Sites 3, 4, 6 to 12, 14, 15, 20 and 21 (RDL 1 mg/L)
- RDL for sodium (March and May 2021, March 2022 samples at Sites 1 to 5, 7, 10 to 21, and June 2022 samples at Sites 1 to 5, 7, and 9 to 24 / August 2021 / December 2021 / March 2022 samples at Sites 6, 8 and 9, and June 2022 samples at Sites 6 and 8)
- RDLs for potassium, calcium and magnesium (March and May 2021, and March and June 2022 / August 2021 / December 2021)
- RDL for phosphorous (March and May 2021, and March and June, 2022 / August and December 2021)
SD-SW* = Field Duplicate Sample of Site 10-SW (June 2022 event SW-SD-02 on laboratory certificate); SD-SW** = Field Duplicate Sample of Site 19-SW (June 2022 event SW-SD-01 on laboratory certificate)

Bolded/Shaded = Value exceeds guideline

Table 3 - Analytical Results for Inorganic Parameters in Surface Water

Parameter	RDL[!]	Units	Guideline[1]	Site 18-SW						Site 19-SW						SD-SW**			
			Sampling Event	15-Mar-21	6-May-21	5-Aug-21	8-Dec-21	30-Mar-22	19-Jun-22	14-Mar-21	8-May-21	5-Aug-21	8-Dec-21	29-Mar-22	17-Jun-22	5-Aug-21	8-Dec-21	29-Mar-22	17-Jun-22
			Field-measured pH	-	-	-	-	-	6.76	5.80	6.40	5.76	6.35	5.19	6.66	5.76	6.35	5.19	6.66
			Field measured temperature (°C)	-	-	-	-	-	16.9	1.1	8.8	18.4	1.6	3.0	24.5	18.4	1.6	3.00	24.5
			Ammonia guideline (mg/L as N)[2]	-	-	-	-	-	4.0	125.8	26.6	39.5	39.7	125.8	2.8	39.5	39.7	125.8	2.8
pH	NA	UNITS	6.5-9.0	-	-	-	-	-	6.72	**5.90**	**5.92**	**5.98**	**6.28**	**5.92**	**6.29**	**6.03**	**6.26**	**5.97**	**6.11**
Reactive Silica	0.5	mg/L	-	-	-	-	-	-	1	2.2	<0.5	1.1	1.1	1.2	<0.5	1.3	<0.5	1.1	<0.5
Chloride	1	mg/L	120	-	-	-	-	-	8	3	2	3	3	3	2	3	4	3	3
Fluoride	0.12	mg/L	0.12	-	-	-	-	-	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12
Sulphate	2	mg/L	128	-	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Alkalinity	5	mg/L	-	-	-	-	-	-	9.95	<5	<5	6	<5	<5	5	<5	<5	<5	<5
True Color	5.00	TCU	-	-	-	-	-	-	35.7	27.5	50.0	9.89	34.7	39	25	18.8	33.6	35.2	19.6
Turbidity	0.5	NTU	-	-	-	-	-	-	2	0.8	0.5	0.8	3.5	0.9	<0.5	0.8	1.4	1.2	2.4
Electrical Conductivity	1	umho/cm	-	-	-	-	-	-	52	25	16	25	24	22	19	24	24	22	21
Nitrate + Nitrite as N	0.05	mg/L	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Nitrate as N	0.05	mg/L	13	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Nitrite as N	0.05	mg/L	0.06	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ammonia as N	0.03	mg/L	Calculated[2]	-	-	-	-	-	0.04	<0.03	<0.03	<0.03	0.5	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Total Organic Carbon	0.5/1	mg/L	-	-	-	-	-	-	10.6	7.8	6.7	4.1	8.2	9	8.1	4.4	7.9	9	8.5
Ortho-phosphate as P	0.01	mg/L	-	-	-	-	-	-	<0.01	0.01	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	0.01	<0.01
Total Sodium	0.1/0.22/0.45/1	mg/L	-	-	-	-	-	-	6	2.5	1.8	1.88	2.4	2.2	1.9	1.89	2.4	2.3	2.1
Total Potassium	0.1/0.58/1.15	mg/L	-	-	-	-	-	-	0.2	0.3	0.3	<0.58	<1.15	0.3	0.3	<0.58	<1.15	0.4	0.3
Total Calcium	0.1/0.16/0.32	mg/L	-	-	-	-	-	-	2.1	1.3	1.0	1.38	1.6	1.3	1	1.45	1.7	1.3	1.1
Total Magnesium	0.1 /0.17/0.34	mg/L	-	-	-	-	-	-	1.5	0.6	0.4	0.47	0.54	0.6	0.4	0.44	0.66	0.6	0.5
Total Phosphorous	0.02/0.10	mg/L	-	-	-	-	-	-	0.02	0.02	0.03	<0.10	<0.10	<0.02	<0.02	<0.10	<0.10	<0.02	0.02
Bicarbonate Alkalinity $CaC0_3$	5	mg/L	-	-	-	-	-	-	9.95	<5	<5	6	<5	<5	5	<5	<5	<5	<5
Carbonate Alkalinity $CaC0_3$	10	mg/L	-	-	-	-	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Hydroxide	5	mg/L	-	-	-	-	-	-	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Calculated TDS	1	mg/L	-	-	-	-	-	-	24	8	6	11	8	8	9	8	9	8	7
Hardness	0.5	mg/L	-	-	-	-	-	-	11.4	5.7	4.1	5.4	6.3	5.7	4.1	5.4	6.9	5.7	4.8
Langelier Index (@20C)	NA	mg/L	-	-	-	-	-	-	-3.49	-4.79	-4.87	-4.59	-4.31	-4.77	-4.49	-4.59	-4.32	-4.72	-4.65
Langelier Index (@ 4C)	NA	NA	-	-	-	-	-	-	-3.81	-5.11	-5.19	-4.91	-4.63	-5.09	-4.81	-4.91	-4.64	-5.04	-4.97
Saturation pH (@ 20C)	NA	NA	-	-	-	-	-	-	10.2	10.7	10.8	10.6	10.60	10.7	10.8	10.6	10.60	10.7	10.8
Saturation pH (@ 4C)	NA	NA	-	-	-	-	-	-	10.5	11.0	11.1	10.9	10.9	11	11.1	10.9	10.9	11	11.1
Anion Sum	NA	me/L	-	-	-	-	-	-	0.42	0.08	0.06	0.2	0.08	0.08	0.16	0.08	0.11	0.08	0.08
Cation sum	NA	me/L	-	-	-	-	-	-	0.52	0.25	0.18	0.24	0.28	0.24	0.18	0.23	0.26	0.24	0.21
% Difference/ Ion Balance	NA	%	-	-	-	-	-	-	10.1	48.9	52.9	7	53.7	47.4	8.2	46.8	39.6	48.5	41.9
Total Suspended Solids	5	mg/L	-	-	-	-	-	-	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5

Notes:

1=Atlantic Risk-Based Corrective Action (ARBCA) - Ecological Tier I Environmental Quality Standards (EQS) for Surface Water [Freshwater] (2022)

2 = The guideline for Ammonia decreases as pH and temperature increase. For guideline selection for each sample, field-measured pH rounded up to the next 0.5 pH unit, and field-measured temperature rounded up to the nearest 5 degrees Celsius. Highest ammonia guideline value conservatively referenced for samples with pH less than 6.

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RDL = Reported Detection Limit; for all events unless otherwise noted (!)
- Total organic carbon RDL 0.5 mg/L for all samples; except December 2021 samples at Sites 3, 4, 6 to 12, 14, 15, 20 and 21 (RDL 1 mg/L)
- RDL for sodium (March and May 2021, March 2022 samples at Sites 1 to 5, 7, 10 to 21, and June 2022 samples at Sites 1 to 5, 7, and 9 to 24 / August 2021 / December 2021 / March 2022 samples at Sites 6, 8 and 9, and June 2022 samples at Sites 6 and 8)
- RDLs for potassium, calcium and magnesium (March and May 2021, and March and June 2022 / August 2021 / December 2021)
- RDL for phosphorous (March and May 2021, and March and June, 2022 / August and December 2021)
SD-SW* = Field Duplicate Sample of Site 10-SW (June 2022 event SW-SD-02 on laboratory certificate); SD-SW** = Field Duplicate Sample of Site 19-SW (June 2022 event SW-SD-01 on laboratory certificate)

Bolded/Shaded = Value exceeds guideline

Table 3 - Analytical Results for Inorganic Parameters in Surface Water

Parameter	RDL[!]	Units	Guideline[1]	Site 20-SW						Site 21-SW						Site 22-SW					
			Sampling Event	15-Mar-21	5-May-21	4-Aug-21	3-Dec-21	28-Mar-22	18-Jun-22	15-Mar-21	6-May-21	4-Aug-21	3-Dec-21	30-Mar-22	21-Jun-22	15-Mar-21	6-May-21	4-Aug-21	3-Dec-21	30-Mar-22	21-Jun-22
			Field-measured pH	6.55	7.07	6.60	6.81	6.13	6.43	-	6.85	6.34	6.24	5.9	6.12	-	-	-	-	-	-
			Field measured temperature (°C)	0.7	9.8	23.1	6.7	3.0	18.9	-	9.1	20.8	5.2	2.6	20.5	-	-	-	-	-	-
			Ammonia guideline (mg/L as N)[2]	12.6	2.7	2.8	8.5	39.7	12.5	-	8.5	8.7	26.6	125.8	8.7	-	-	-	-	-	-
pH	NA	UNITS	6.5-9.0	6.65	6.91	6.71	7.05	6.74	6.96	-	**6.29**	6.54	6.61	**6.34**	6.7	-	-	-	-	-	-
Reactive Silica	0.5	mg/L	-	7.8	3.1	1.5	2.7	1.8	0.7	-	2.0	2.8	4.0	2.7	1.1	-	-	-	-	-	-
Chloride	1	mg/L	120	9	6	8	8	9	5	-	9	7	9	10	12	-	-	-	-	-	-
Fluoride	0.12	mg/L	0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	-	<0.12	<0.12	<0.12	<0.12	<0.12	-	-	-	-	-	-
Sulphate	2	mg/L	128	<2	<2	<2	<2	<2	<2	-	<2	<2	<2	<2	<2	-	-	-	-	-	-
Alkalinity	5	mg/L	-	16	14	16	20	15	23	-	<5	13	5	<5	7	-	-	-	-	-	-
True Color	5.00	TCU	-	54.1	65.6	35.9	37.1	30.8	59.3	-	94.6	28.6	27.0	40.1	26	-	-	-	-	-	-
Turbidity	0.5	NTU	-	1.0	1.1	0.9	10.8	0.6	4.3	-	0.8	1.6	1.0	0.9	2.4	-	-	-	-	-	-
Electrical Conductivity	1	umho/cm	-	77	60	70	67	68	64	-	53	59	56	50	63	-	-	-	-	-	-
Nitrate + Nitrite as N	0.05	mg/L	-	0.38	<0.05	0.06	0.09	0.06	<0.05	-	0.14	<0.05	<0.05	0.11	<0.05	-	-	-	-	-	-
Nitrate as N	0.05	mg/L	13	0.38	<0.05	0.06	0.09	0.06	<0.05	-	0.14	<0.05	<0.05	0.11	<0.05	-	-	-	-	-	-
Nitrite as N	0.05	mg/L	0.06	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	-	-	-
Ammonia as N	0.03	mg/L	Calculated[2]	<0.03	<0.03	<0.03	<0.03	<0.03	0.05	-	<0.03	<0.03	<0.03	<0.03	<0.03	-	-	-	-	-	-
Total Organic Carbon	0.5/1	mg/L	-	9.9	10.7	9.6	11.0	6.5	12.6	-	8.8	3.9	8.0	7.3	12.1	-	-	-	-	-	-
Ortho-phosphate as P	0.01	mg/L	-	0.01	<0.01	<0.01	<0.01	0.02	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-
Total Sodium	0.1/0.22/0.45/1	mg/L	-	5.4	5.6	5.94	5.81	6.3	4.4	-	6.7	5.86	7.75	6.9	8.2	-	-	-	-	-	-
Total Potassium	0.1/0.58/1.15	mg/L	-	0.2	0.3	<0.58	<1.15	0.2	0.2	-	0.3	<0.58	<1.15	0.2	0.2	-	-	-	-	-	-
Total Calcium	0.1/0.16/0.32	mg/L	-	3.1	3.1	2.51	4.12	3.1	3.5	-	1.7	2.57	2.23	1.8	1.7	-	-	-	-	-	-
Total Magnesium	0.1 /0.17/0.34	mg/L	-	3.7	3.1	3.4	4.75	3.5	3.6	-	1.3	1.99	2.10	1.5	1.5	-	-	-	-	-	-
Total Phosphorous	0.02/0.10	mg/L	-	<0.02	0.04	<0.10	0.11	<0.02	<0.02	-	0.03	<0.10	<0.10	<0.02	0.02	-	-	-	-	-	-
Bicarbonate Alkalinity $CaC0_3$	5	mg/L	-	16	14	16	20	15	23	-	<5	13	5	<5	7	-	-	-	-	-	-
Carbonate Alkalinity $CaC0_3$	10	mg/L	-	<10	<10	<10	<10	<10	<10	-	<10	<10	<10	<10	<10	-	-	-	-	-	-
Hydroxide	5	mg/L	-	<5	<5	<5	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-	-	-
Calculated TDS	1	mg/L	-	33	27	30	36	32	31	-	20	26	24	21	28	-	-	-	-	-	-
Hardness	0.5	mg/L	-	23.0	20.5	20.3	29.8	22.2	23.6	-	9.6	14.6	14.2	10.7	10.4	-	-	-	-	-	-
Langelier Index (@20C)	NA	mg/L	-	-3.19	-2.98	-3.22	-2.58	-3.13	-2.67	-	-4.31	-3.46	-3.87	-4.23	-3.76	-	-	-	-	-	-
Langelier Index (@ 4C)	NA	NA	-	-3.51	-3.30	-3.54	-2.90	-3.45	-2.99	-	-4.63	-3.78	-4.19	-4.55	-4.08	-	-	-	-	-	-
Saturation pH (@ 20C)	NA	NA	-	9.84	9.89	9.93	9.63	9.87	9.63	-	10.6	10.0	10.5	10.6	10.5	-	-	-	-	-	-
Saturation pH (@ 4C)	NA	NA	-	10.2	10.2	10.3	10.0	10.2	9.95	-	10.9	10.3	10.8	10.9	10.8	-	-	-	-	-	-
Anion Sum	NA	me/L	-	0.60	0.45	0.55	0.63	0.56	0.6	-	0.26	0.46	0.35	0.29	0.48	-	-	-	-	-	-
Cation sum	NA	me/L	-	0.73	0.69	0.67	0.90	0.74	0.69	-	0.51	0.57	0.63	0.54	0.58	-	-	-	-	-	-
% Difference/ Ion Balance	NA	%	-	9.5	20.9	10.2	17.7	13.9	7	-	31.9	11.2	28.3	29.7	9.5	-	-	-	-	-	-
Total Suspended Solids	5	mg/L	-	<5	<5	<5	17	<5	<5	-	<5	8	<5	<5	<5	-	-	-	-	-	-

Notes:

1=Atlantic Risk-Based Corrective Action (ARBCA) - Ecological Tier I Environmental Quality Standards (EQS) for Surface Water [Freshwater] (2022)

2 = The guideline for Ammonia decreases as pH and temperature increase. For guideline selection for each sample, field-measured pH rounded up to the next 0.5 pH unit, and field-measured temperature rounded up to the nearest 5 degrees Celsius. Highest ammonia guideline value conservatively referenced for samples with pH less than 6.

"-" = no applicable guideline or not analyzed

NA = Not applicable
RDL = Reported Detection Limit; for all events unless otherwise noted (!)
- Total organic carbon RDL 0.5 mg/L for all samples; except December 2021 samples at Sites 3, 4, 6 to 12, 14, 15, 20 and 21 (RDL 1 mg/L)
- RDL for sodium (March and May 2021, March 2022 samples at Sites 1 to 5, 7, 10 to 21, and June 2022 samples at Sites 1 to 5, 7, and 9 to 24 / August 2021 / December 2021 / March 2022 samples at Sites 6, 8 and 9, and June 2022 samples at Sites 6 and 8)
- RDLs for potassium, calcium and magnesium (March and May 2021, and March and June 2022 / August 2021 / December 2021)
- RDL for phosphorous (March and May 2021, and March and June, 2022 / August and December 2021)
SD-SW* = Field Duplicate Sample of Site 10-SW (June 2022 event SW-SD-02 on laboratory certificate); SD-SW** = Field Duplicate Sample of Site 19-SW (June 2022 event SW-SD-01 on laboratory certificate)

Bolded/Shaded = Value exceeds guideline

Table 3 - Analytical Results for Inorganic Parameters in Surface Water

Parameter	RDL[!]	Units	Guideline[1]	Site 23-SW						Site 24-SW					
			Sampling Event	15-Mar-21	6-May-21	4-Aug-21	3-Dec-21	30-Mar-22	19-Jun-22	15-Mar-21	6-May-21	4-Aug-21	3-Dec-21	30-Mar-22	19-Jun-22
			Field-measured pH	-	-	-	-	-	6.23	-	-	-	-	-	6.47
			Field measured temperature (°C)	-	-	-	-	-	16.5	-	-	-	-	-	14.6
			Ammonia guideline (mg/L as N)[2]	-	-	-	-	-	12.5	-	-	-	-	-	18.1
pH	NA	UNITS	6.5-9.0	-	-	-	-	-	6.68	-	-	-	-	-	6.82
Reactive Silica	0.5	mg/L	-	-	-	-	-	-	0.8	-	-	-	-	-	2.8
Chloride	1	mg/L	120	-	-	-	-	-	4	-	-	-	-	-	3
Fluoride	0.12	mg/L	0.12	-	-	-	-	-	<0.12	-	-	-	-	-	<0.12
Sulphate	2	mg/L	128	-	-	-	-	-	<2	-	-	-	-	-	<2
Alkalinity	5	mg/L	-	-	-	-	-	-	10	-	-	-	-	-	13
True Color	5.00	TCU	-	-	-	-	-	-	17.8	-	-	-	-	-	22.7
Turbidity	0.5	NTU	-	-	-	-	-	-	4.7	-	-	-	-	-	4.3
Electrical Conductivity	1	umho/cm	-	-	-	-	-	-	37	-	-	-	-	-	41
Nitrate + Nitrite as N	0.05	mg/L	-	-	-	-	-	-	0.08	-	-	-	-	-	0.14
Nitrate as N	0.05	mg/L	13	-	-	-	-	-	0.08	-	-	-	-	-	0.14
Nitrite as N	0.05	mg/L	0.06	-	-	-	-	-	<0.05	-	-	-	-	-	<0.05
Ammonia as N	0.03	mg/L	Calculated[2]	-	-	-	-	-	<0.03	-	-	-	-	-	<0.03
Total Organic Carbon	0.5/1	mg/L	-	-	-	-	-	-	6	-	-	-	-	-	5.7
Ortho-phosphate as P	0.01	mg/L	-	-	-	-	-	-	<0.01	-	-	-	-	-	<0.01
Total Sodium	0.1/0.22/0.45/1	mg/L	-	-	-	-	-	-	3.3	-	-	-	-	-	3.3
Total Potassium	0.1/0.58/1.15	mg/L	-	-	-	-	-	-	0.3	-	-	-	-	-	0.3
Total Calcium	0.1/0.16/0.32	mg/L	-	-	-	-	-	-	2.4	-	-	-	-	-	3
Total Magnesium	0.1 /0.17/0.34	mg/L	-	-	-	-	-	-	1	-	-	-	-	-	1.3
Total Phosphorous	0.02/0.10	mg/L	-	-	-	-	-	-	0.04	-	-	-	-	-	<0.02
Bicarbonate Alkalinity $CaC0_3$	5	mg/L	-	-	-	-	-	-	10	-	-	-	-	-	13
Carbonate Alkalinity $CaC0_3$	10	mg/L	-	-	-	-	-	-	<10	-	-	-	-	-	<10
Hydroxide	5	mg/L	-	-	-	-	-	-	<5	-	-	-	-	-	<5
Calculated TDS	1	mg/L	-	-	-	-	-	-	17	-	-	-	-	-	19
Hardness	0.5	mg/L	-	-	-	-	-	-	10.1	-	-	-	-	-	12.8
Langelier Index (@20C)	NA	mg/L	-	-	-	-	-	-	-3.45	-	-	-	-	-	-3.1
Langelier Index (@ 4C)	NA	NA	-	-	-	-	-	-	-3.77	-	-	-	-	-	-3.42
Saturation pH (@ 20C)	NA	NA	-	-	-	-	-	-	10.1	-	-	-	-	-	9.92
Saturation pH (@ 4C)	NA	NA	-	-	-	-	-	-	10.5	-	-	-	-	-	10.2
Anion Sum	NA	me/L	-	-	-	-	-	-	0.32	-	-	-	-	-	0.35
Cation sum	NA	me/L	-	-	-	-	-	-	0.36	-	-	-	-	-	0.41
% Difference/ Ion Balance	NA	%	-	-	-	-	-	-	5.9	-	-	-	-	-	7.4
Total Suspended Solids	5	mg/L	-	-	-	-	-	-	<5	-	-	-	-	-	<5

Notes:

1=Atlantic Risk-Based Corrective Action (ARBCA) - Ecological Tier I Environmental Quality Standards (EQS) for Surface Water [Freshwater] (2022)

2 = The guideline for Ammonia decreases as pH and temperature increase. For guideline selection for each sample, field-measured pH rounded up to the next 0.5 pH unit, and field-measured temperature rounded up to the nearest 5 degrees Celsius. Highest ammonia guideline value conservatively referenced for samples with pH less than 6.

"-" = no applicable guideline or not analyzed

NA = Not applicable
RDL = Reported Detection Limit; for all events unless otherwise noted (!)
- Total organic carbon RDL 0.5 mg/L for all samples; except December 2021 samples at Sites 3, 4, 6 to 12, 14, 15, 20 and 21 (RDL 1 mg/L)
- RDL for sodium (March and May 2021, March 2022 samples at Sites 1 to 5, 7, 10 to 21, and June 2022 samples at Sites 1 to 5, 7, and 9 to 24 / August 2021 / December 2021 / March 2022 samples at Sites 6, 8 and 9, and June 2022 samples at Sites 6 and 8)
- RDLs for potassium, calcium and magnesium (March and May 2021, and March and June 2022 / August 2021 / December 2021)
- RDL for phosphorous (March and May 2021, and March and June, 2022 / August and December 2021)
SD-SW* = Field Duplicate Sample of Site 10-SW (June 2022 event SW-SD-02 on laboratory certificate); SD-SW** = Field Duplicate Sample of Site 19-SW (June 2022 event SW-SD-01 on laboratory certificate)

Bolded/Shaded = Value exceeds guideline

Table 4 - Analytical Results for Total Metals in Surface Water

Parameter	RDL[!]	Units	Guideline[1]	Site 1-SW						Site 2-SW						Site 3-SW					
Sampling Event				14-Mar-21	7-May-21	6-Aug-21	8-Dec-21	31-Mar-22	19-Jun-22	14-Mar-21	8-May-21	6-Aug-21	8-Dec-21	31-Mar-22	17-Jun-22	14-Mar-21	7-May-21	3-Aug-21	5-Dec-21	29-Mar-22	18-Jun-22
Aluminum[2]	5/10	µg/L	5	-	**73**	**33.1**	**113**	**104**	**23**	**111**	**85**	**43.2**	**109**	**140**	**35**	-	**56.0**	**31.8**	**67.9**	**95**	**32**
Antimony	2/3.00	µg/L	9	-	<2	<3.0	<3.0	<2	<2	<2	<2	<3.0	<3.0	<2	<2	-	<2	<3.0	<3.0	<2	<2
Arsenic	2/3.00	µg/L	5	-	<2	<3.0	<3.0	<2	<2	<2	<2	<3.0	<3.0	<2	<2	-	<2	<3.0	<3.0	<2	<2
Barium	5/2.00	µg/L	1000	-	<5	<2.0	<2.0	<5	<5	<5	<5	<2.0	<2.0	<5	<5	-	<5	<2.0	<2.0	<5	<5
Beryllium[3]	2/0.50	µg/L	0.15	-	<2	<0.50	<0.50	<2	<2	<2	<2	<0.50	<0.50	<2	<2	-	<2	<0.50	<0.50	<2	<2
Bismuth	2	µg/L	–	-	<2	<2.0	<2.0	<2	<2	<2	<2	<2.0	<2.0	<2	<2	-	<2	<2.0	<2.0	<2	<2
Boron	5/10	µg/L	1500	-	<5	<10	<10	<5	<5	<5	<5	<10	<10	<5	5	-	<5	<10	<10	<5	<5
Cadmium[4]	0.09/0.017/0.10	µg/L	0.09	-	<0.09	<0.10	<0.10	<0.09	<0.09	<0.017	<0.09	<0.10	<0.10	<0.09	<0.09	-	<0.09	<0.10	<0.10	<0.09	<0.09
Chromium	1/3.0	µg/L	8.9	-	<1	<3.0	<3.0	<1	<1	<1	<1	<3.0	<3.0	<1	<1	-	<1	<3.0	<3.0	<1	<1
Cobalt	1/0.5	µg/L	1	-	<1	<0.50	**1.04**	<1	<1	<1	<1	<0.50	<0.50	<1	<1	-	<1	<0.50	<0.50	<1	<1
Copper	1	µg/L	2	-	<1	1	1.1	<1	<1	<1	<1	<1.0	<1.0	<1	<1	-	<1	1.1	<1.0	<1	<1
Iron	50	µg/L	300	-	217	171	192	163	<50	**316**	206	252	194	232	153	-	176	96	139	147	111
Lead	0.5/1.0	µg/L	1	-	<0.5	<1.0	<1.0	<0.5	<0.5	<0.5	<0.5	<1.0	<1.0	<0.5	<0.5	-	<0.5	<1.0	<1.0	<0.5	<0.5
Manganese	2	µg/L	430	-	90	166	71	77	83	85	62	88.2	40.7	119	60	-	40	125	20.2	69	60
Mercury	0.026	µg/L	0.026	-	**0.648**	<0.026	<0.026	<0.026	<0.026	<0.026	**0.630**	<0.026	<0.026	<0.026	<0.026	-	**0.647**	<0.026	<0.026	<0.026	<0.026
Molybdenum	2	µg/L	73	-	<2	<2.0	<2.0	<2	<2	<2	<2	<2.0	<2.0	<2	<2	-	<2	<2.0	<2.0	<2	<2
Nickel	2/3.0	µg/L	25	-	<2	<3.0	<3.0	<2	<2	<2	<2	<3.0	<3.0	<2	<2	-	<2	<3.0	<3.0	<2	<2
Selenium	1	µg/L	1	-	<1	<1.0	<1.0	<1	<1	<1	<1	<1.0	<1.0	<1	<1	-	<1	<1.0	**1.8**	<1	<1
Silver	0.1	µg/L	0.25	-	<0.1	<0.10	**0.28**	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.1	<0.1	-	<0.1	<0.10	<0.10	<0.1	<0.1
Strontium	5	µg/L	21000	-	13	25.6	15.9	9	15	10	13	31.2	12.1	9	16	-	13	17.6	11.5	9	16
Thallium	0.1/0.3	µg/L	0.8	-	<0.1	<0.30	<0.30	<0.1	<2	<0.1	<0.1	<0.30	<0.30	<0.1	<0.1	-	<0.1	<0.30	<0.30	<0.1	<2
Tin	2	µg/L	–	-	<2	<2.0	<2.0	<2	<2	<2	<2	<2.0	<2.0	<2	<2	-	<2	<2.0	<2.0	<2	<2
Titanium	2/10.0	µg/L	–	-	<2	<2.0	<10.0	<2	<2	<2	<2	3.5	<10.0	<2	<2	-	<2	3.5	<10.0	<2	<2
Uranium	0.2/0.50	µg/L	15	-	<0.2	<0.50	<0.50	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.2	<0.2	-	<0.2	<0.50	<0.50	<0.2	<0.2
Vanadium	2	µg/L	120	-	<2	<2.0	2.3	<2	<2	<2	<2	<2.0	<2.0	<2	<2	-	<2	<2.0	<2.0	<2	<2
Zinc[5]	5/20	ug/L	7.0	-	<5	<5.0	<20	<5	<5	5	<5	<5.0	<20	<5	<5	-	6	<5.0	<20	<5	<5

Notes:

1=Atlantic Risk-Based Corrective Action (ARBCA) - Ecological Tier I Environmental Quality Standards (EQS) for Surface Water [Freshwater] (2022)

2= RDL for aluminum was higher than the guideline during August 2021 and December 2021 sampling event.

3= RDLs for beryllium were higher than the guideline for all events.

4= RDLs for cadmium for August and December 2021 events were higher than guideline

5= RDL for zinc for December 2021 event was higher than guideline

"-" = no applicable guideline or not analyzed

NA = Not applicable

RDL = Reported Detection Limit; for all events unless otherwise noted (!)
- RDL for aluminum, antimony, arsenic, barium, beryllium, boron, chromium, cobalt, lead, nickel, thallium, and uranium (all events except August and December 2021/August and December 2021)
- RDL for cadmium (all events except for March, August and December, 2021/March 2021/August and December 2021)
- RDL for titanium and zinc (all events except for December, 2021/March 2021/December 2021)

SD-SW* = Field Duplicate Sample of Site 10-SW (June 2022 event SW-SD-02 on laboratory certificate); SD-SW** = Field Duplicate Sample of Site 19-SW (June 2022 event SW-SD-01 on laboratory certificate)

Bolded/Shaded = Value exceeds guideline

Table 4 - Analytical Results for Total Metals in Surface Water

Parameter	RDL[!]	Units	Guideline[1]	Site 4-SW						Site 5-SW						Site 6-SW					
Sampling Event				12-Mar-21	7-May-21	3-Aug-21	5-Dec-21	29-Mar-22	18-Jun-22	14-Mar-21	5-May-21	4-Aug-21	8-Dec-21	30-Mar-22	20-Jun-22	12-Mar-21	6-May-21	3-Aug-21	13-Dec-21	31-Mar-22	20-Jun-22
Aluminum[2]	5/10	µg/L	5	**52.0**	**82**	**89.6**	**177**	**230**	**31**	**84**	**95**	**155**	**111**	**83**	-	**118**	**142**	**77.4**	**308**	**390**	**62**
Antimony	2/3.00	µg/L	9	<2	<2	<3.0	<3.0	<2	<2	<2	<2	<3.0	<3.0	<2	-	<2	<2	<3.0	<3.0	<2	<2
Arsenic	2/3.00	µg/L	5	<2	<2	3.3	<3.0	<2	<2	<2	<2	**7.9**	<3.0	<2	-	<2	2	3.4	3.9	3	4
Barium	5/2.00	µg/L	1000	<5	<5	2.5	2.4	<5	<5	<5	<5	7.7	2.5	<5	-	<5	<5	2.4	3.9	<5	<5
Beryllium[3]	2/0.50	µg/L	0.15	<2	<2	<0.50	<0.50	<2	<2	<2	<2	<0.50	<0.50	<2	-	<2	<2	<0.50	<0.50	<2	<2
Bismuth	2	µg/L	–	<2	<2	<2.0	<2.0	<2	<2	<2	<2	<2.0	<2.0	<2	-	<2	<2	<2.0	<2.0	<2	<2
Boron	5/10	µg/L	1500	<5	<5	<10	<10	<5	<5	<5	<5	12	<10	<5	-	<5	<5	<10	<10	<5	<5
Cadmium[4]	0.09/0.017/0.10	µg/L	0.09	<0.017	<0.09	<0.10	<0.10	<0.09	<0.09	<0.017	<0.09	<0.10	<0.10	<0.09	-	<0.017	<0.09	<0.10	<0.10	<0.09	<0.09
Chromium	1/3.0	µg/L	8.9	<1	<1	<3.0	<3.0	<1	<1	<1	<1	<3.0	<3.0	<1	-	<1	<1	<3.0	<3.0	<1	<1
Cobalt	1/0.5	µg/L	1	<1	<1	<0.50	<0.50	<1	<1	<1	<1	0.59	<0.50	<1	-	<1	<1	<0.50	<0.50	<1	<1
Copper	1	µg/L	2	**4**	1	1.8	<1.0	<1	1	<1	1	1.8	<1.0	<1	-	<1	1	1.2	1.9	2	<1
Iron	50	µg/L	300	155	150	**341**	256	246	70	**424**	**344**	**1320**	**395**	179	-	172	197	206	**451**	**332**	179
Lead	0.5/1.0	µg/L	1	<0.5	<0.5	<1.0	<1.0	<0.5	<0.5	<0.5	<0.5	<1.0	<1.0	<0.5	-	<0.5	<0.5	<1.0	<1.0	<0.5	<0.5
Manganese	2	µg/L	430	38	30	95.3	62.7	52	49	54	102	**635**	72.1	56	-	48	34	238	20.5	96	82
Mercury	0.026	µg/L	0.026	<0.026	**0.659**	<0.026	<0.026	<0.026	<0.026	<0.026	**0.630**	<0.026	<0.026	<0.026	-	<0.026	**0.565**	<0.026	<0.026	<0.026	<0.026
Molybdenum	2	µg/L	73	<2	<2	<2.0	<2.0	<2	<2	<2	<2	<2.0	<2.0	<2	-	<2	<2	<2.0	3.5	<2	<2
Nickel	2/3.0	µg/L	25	2	<2	<3.0	<3.0	<2	<2	<2	<2	<3.0	<3.0	<2	-	<2	<2	<3.0	<3.0	<2	<2
Selenium	1	µg/L	1	<1	<1	<1.0	<1.0	<1	<1	<1	<1	<1.0	**1.8**	<1	-	<1	<1	<1.0	<1.0	<1	<1
Silver	0.1	µg/L	0.25	<0.1	<0.1	<0.10	<0.10	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	0.1	-	<0.1	<0.1	<0.10	<0.10	<0.1	<0.1
Strontium	5	µg/L	21000	21	26	39.7	33.4	22	33	11	18	51.8	17.1	10	-	33	38	38.3	48.3	25	54
Thallium	0.1/0.3	µg/L	0.8	<0.1	<0.1	<0.30	<0.30	<0.1	<2	<0.1	<0.1	<0.30	<0.30	<0.1	-	<0.1	<0.1	<0.30	<0.30	<0.1	<0.1
Tin	2	µg/L	–	<2	<2	<2.0	<2.0	<2	<2	<2	<2	<2.0	<2.0	<2	-	<2	<2	<2.0	<2.0	<2	<2
Titanium	2/10.0	µg/L	–	<2	<2	4	<10.0	3	<2	<2	<2	<2.0	<10.0	<2	-	<2	<2	4.3	<10.0	4	<2
Uranium	0.2/0.50	µg/L	15	<0.2	<0.2	<0.50	<0.50	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.2	-	<0.2	<0.2	<0.50	<0.50	<0.2	<0.2
Vanadium	2	µg/L	120	<2	<2	<2.0	<2.0	<2	<2	<2	<2	<2.0	<2.0	<2	-	<2	<2	<2.0	<2.0	<2	<2
Zinc[5]	5/20	ug/L	7.0	<5	<5	<5.0	<20	<5	<5	<5	**8**	5.2	<20	<5	-	<5	6	5.8	<20	<5	<5

Notes:

1=Atlantic Risk-Based Corrective Action (ARBCA) - Ecological Tier I Environmental Quality Standards (EQS) for Surface Water [Freshwater] (2022)

2= RDL for aluminum was higher than the guideline during August 2021 and December 2021 sampling event.

3= RDLs for beryllium were higher than the guideline for all events.

4= RDLs for cadmium for August and December 2021 events were higher than guideline

5= RDL for zinc for December 2021 event was higher than guideline

"-" = no applicable guideline or not analyzed

NA = Not applicable

RDL = Reported Detection Limit; for all events unless otherwise noted (!)
- RDL for aluminum, antimony, arsenic, barium, beryllium, boron, chromium, cobalt, lead, nickel, thallium, and uranium (all events except August and December 2021/August and December 2021)
- RDL for cadmium (all events except for March, August and December, 2021/March 2021/August and December 2021)
- RDL for titanium and zinc (all events except for December, 2021/March 2021/December 2021)

SD-SW* = Field Duplicate Sample of Site 10-SW (June 2022 event SW-SD-02 on laboratory certificate); SD-SW** = Field Duplicate Sample of Site 19-SW (June 2022 event SW-SD-01 on laboratory certificate)

Bolded/Shaded = Value exceeds guideline

Table 4 - Analytical Results for Total Metals in Surface Water

Parameter	RDL[!]	Units	Guideline[1]	Site 7-SW						Site 8-SW						Site 9-SW					
Sampling Event				12-Mar-21	6-May-21	3-Aug-21	13-Dec-21	31-Mar-22	20-Jun-22	12-Mar-21	8-May-21	4-Aug-21	13-Dec-21	29-Mar-22	20-Jun-22	14-Mar-21	5-May-21	6-Aug-21	5-Dec-21	28-Mar-22	17-Jun-22
Aluminum[2]	5/10	µg/L	5	**134**	**137**	**147**	**384**	**307**	**99**	**36**	**44**	**40.4**	**117**	**94**	**37**	**103**	**123**	**101**	**104**	**198**	**77**
Antimony	2/3.00	µg/L	9	<2	<2	<3.0	<3.0	<2	<2	<2	<2	<3.0	<3.0	<2	<2	<2	<2	<3.0	<3.0	<2	<2
Arsenic	2/3.00	µg/L	5	<2	<2	<3.0	<3.0	<2	2	<2	<2	<3.0	<3.0	<2	<2	3	<2	4.1	<3.0	<2	3
Barium	5/2.00	µg/L	1000	<5	<5	5.2	2.3	<5	<5	<5	<5	2.3	<2.0	<5	<5	<5	<5	<2.0	<2.0	<5	<5
Beryllium[3]	2/0.50	µg/L	0.15	<2	<2	<0.50	<0.50	<2	<2	<2	<2	<0.50	<0.50	<2	<2	<2	<2	<0.50	<0.50	<2	<2
Bismuth	2	µg/L	-	<2	<2	<2.0	<2.0	<2	<2	<2	<2	<2.0	<2.0	<2	<2	<2	<2	<2.0	<2.0	<2	<2
Boron	5/10	µg/L	1500	<5	<5	<10	<10	<5	<5	<5	<5	<10	<10	<5	<5	<5	<5	<10	<10	<5	<5
Cadmium[4]	0.09/0.017/0.10	µg/L	0.09	<0.017	<0.09	<0.10	<0.10	<0.09	<0.09	0.021	<0.09	<0.10	<0.10	<0.09	<0.09	<0.017	<0.09	<0.10	<0.10	<0.09	<0.09
Chromium	1/3.0	µg/L	8.9	<1	<1	<3.0	<3.0	<1	<1	<1	<1	<3.0	<3.0	<1	<1	<1	<1	<3.0	<3.0	<1	<1
Cobalt	1/0.5	µg/L	1	<1	<1	<0.50	<0.50	<1	<1	<1	<1	<0.50	<0.50	<1	<1	<1	<1	<0.50	<0.50	<1	<1
Copper	1	µg/L	2	<1	**4**	<1.0	1.2	1	1	<1	<1	<1.0	<1.0	<1	<1	<1	<1	**2.5**	<1.0	<1	<1
Iron	50	µg/L	300	175	241	**357**	**414**	**621**	**464**	158	163	122	211	169	254	**450**	**432**	**950**	**314**	**325**	**891**
Lead	0.5/1.0	µg/L	1	<0.5	<0.5	<1.0	<1.0	<0.5	<0.5	<0.5	<0.5	<1.0	<1.0	<0.5	<0.5	<0.5	<0.5	<1.0	<1.0	<0.5	<0.5
Manganese	2	µg/L	430	44	357	**646**	162	129	**1070**	28	21	26	41.6	68	70	390	131	326	53.3	206	**852**
Mercury	0.026	µg/L	0.026	<0.026	**0.625**	<0.026	<0.026	<0.026	<0.026	<0.026	**0.638**	<0.026	<0.026	<0.026	<0.026	<0.026	**0.645**	<0.026	<0.026	<0.026	<0.026
Molybdenum	2	µg/L	73	<2	<2	<2.0	<2.0	<2	<2	<2	<2	<2.0	<2.0	<2	<2	<2	<2	<2.0	<2.0	<2	<2
Nickel	2/3.0	µg/L	25	<2	3	<3.0	<3.0	<2	2	<2	<2	<3.0	<3.0	<2	<2	<2	<2	<3.0	<3.0	<2	<2
Selenium	1	µg/L	1	<1	<1	<1.0	**1.1**	<1	<1	<1	<1	<1.0	<1.0	<1	<1	<1	<1	<1.0	**2.5**	<1	<1
Silver	0.1	µg/L	0.25	<0.1	<0.1	<0.10	<0.10	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	0.4	<0.1
Strontium	5	µg/L	21000	11	16	39.3	11.9	12	29	24	26	51.6	18.6	17	37	28	13	32	14.6	13	22
Thallium	0.1/0.3	µg/L	0.8	<0.1	<0.1	<0.30	<0.30	<0.1	<0.1	<0.1	<0.1	<0.30	<0.30	<2	<0.1	<0.1	<0.1	<0.30	<0.30	<0.1	<0.1
Tin	2	µg/L	-	<2	<2	<2.0	<2.0	<2	<2	<2	<2	<2.0	<2.0	<2	<2	<2	<2	<2.0	<2.0	<2	<2
Titanium	2/10.0	µg/L	-	<2	<2	4.5	11.2	3	<2	<2	<2	3.5	<10.0	<2	<2	<2	<2	2.6	<10.0	3	<2
Uranium	0.2/0.50	µg/L	15	<0.2	<0.2	<0.50	<0.50	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.2	<0.2
Vanadium	2	µg/L	120	<2	<2	<2.0	<2.0	<2	<2	<2	<2	<2.0	<2.0	<2	<2	4	<2	<2.0	<2.0	<2	<2
Zinc[5]	5/20	ug/L	7.0	<5	6	5.9	<20	<5	6	<5	<5	<5.0	<20	<5	<5	<5	<5	<5.0	<20	<5	<5

Notes:

1=Atlantic Risk-Based Corrective Action (ARBCA) - Ecological Tier I Environmental Quality Standards (EQS) for Surface Water [Freshwater] (2022)

2= RDL for aluminum was higher than the guideline during August 2021 and December 2021 sampling event.

3= RDLs for beryllium were higher than the guideline for all events.

4= RDLs for cadmium for August and December 2021 events were higher than guideline

5= RDL for zinc for December 2021 event was higher than guideline

"-" = no applicable guideline or not analyzed

NA = Not applicable

RDL = Reported Detection Limit; for all events unless otherwise noted (!)
- RDL for aluminum, antimony, arsenic, barium, beryllium, boron, chromium, cobalt, lead, nickel, thallium, and uranium (all events except August and December 2021/August and December 2021)
- RDL for cadmium (all events except for March, August and December, 2021/March 2021/August and December 2021)
- RDL for titanium and zinc (all events except for December, 2021/March 2021/December 2021)

SD-SW* = Field Duplicate Sample of Site 10-SW (June 2022 event SW-SD-02 on laboratory certificate); SD-SW** = Field Duplicate Sample of Site 19-SW (June 2022 event SW-SD-01 on laboratory certificate)

Bolded/Shaded = Value exceeds guideline

Table 4 - Analytical Results for Total Metals in Surface Water

Parameter	RDL[!]	Units	Guideline[1]	Site 10-SW						SD-SW*						Site 11-SW					
Sampling Event				14-Mar-21	5-May-21	5-Aug-21	3-Dec-21	30-Mar-22	19-Jun-22	14-Mar-21	5-May-21	4-Aug-21	13-Dec-21	30-Mar-22	19-Jun-22	15-Mar-21	6-May-21	4-Aug-21	13-Dec-21	29-Mar-22	20-Jun-22
Aluminum[2]	5/10	µg/L	5	**95.0**	**81.0**	**39.4**	**137**	**96**	**33**	**101**	**90**	-	-	**82**	**32**	**74**	**64**	**34.7**	**159**	**154**	**53**
Antimony	2/3.00	µg/L	9	<2	<2	<3.0	<3.0	<2	<2	<2	<2	-	-	<2	<2	<2	<2	<3.0	<3.0	<2	<2
Arsenic	2/3.00	µg/L	5	<2	<2	<3.0	<3.0	<2	<2	<2	<2	-	-	<2	<2	<2	<2	<3.0	<3.0	<2	<2
Barium	5/2.00	µg/L	1000	<5	<5	<2.0	<2.0	<5	<5	<5	<5	-	-	<5	<5	<5	<5	2.2	2.2	<5	<5
Beryllium[3]	2/0.50	µg/L	0.15	<2	<2	<0.50	<0.50	<2	<2	<2	<2	-	-	<2	<2	<2	<2	<0.50	<0.50	<2	<2
Bismuth	2	µg/L	–	<2	<2	<2.0	<2.0	<2	<2	<2	<2	-	-	<2	<2	<2	<2	<2.0	<2.0	<2	<2
Boron	5/10	µg/L	1500	<5	<5	<10	<10	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<10	<10	<5	<5
Cadmium[4]	0.09/0.017/0.10	µg/L	0.09	<0.017	<0.09	<0.10	<0.10	<0.09	<0.09	<0.017	<0.09	-	-	<0.09	<0.09	<0.017	<0.09	<0.10	<0.10	<0.09	<0.09
Chromium	1/3.0	µg/L	8.9	<1	<1	<3.0	<3.0	<1	<1	<1	<1	-	-	<1	<1	<1	<1	<3.0	<3.0	<1	<1
Cobalt	1/0.5	µg/L	1	<1	<1	<0.50	<0.50	<1	<1	<1	<1	-	-	<1	<1	<1	<1	<0.50	<0.50	<1	<1
Copper	1	µg/L	2	1	<1	<1.0	<1.0	<1	<1	<1	<1	-	-	<1	<1	<1	<1	**4.5**	<1.0	<1	<1
Iron	50	µg/L	300	**322**	273	131	235	220	265	**349**	**289**	-	-	175	263	230	195	<50	282	284	<50
Lead	0.5/1.0	µg/L	1	<0.5	<0.5	<1.0	<1.0	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<1.0	<1.0	<0.5	<0.5
Manganese	2	µg/L	430	265	54	57.3	33.7	122	90	284	56	-	-	86	90	23	10	8.6	69.7	98	11
Mercury	0.026	µg/L	0.026	<0.026	**0.604**	<0.026	<0.026	<0.026	<0.026	<0.026	**0.569**	-	-	<0.026	<0.026	<0.026	**0.550**	<0.026	<0.026	<0.026	<0.026
Molybdenum	2	µg/L	73	<2	<2	<2.0	<2.0	<2	<2	<2	<2	-	-	<2	<2	<2	<2	<2.0	<2.0	<2	<2
Nickel	2/3.0	µg/L	25	3	<2	<3.0	<3.0	<2	<2	12	<2	-	-	<2	<2	<2	**69**	**28.7**	4.6	<2	<2
Selenium	1	µg/L	1	<1	<1	<1.0	**1.7**	<1	<1	<1	<1	-	-	<1	<1	<1	<1	**1.1**	<1.0	<1	<1
Silver	0.1	µg/L	0.25	<0.1	<0.1	<0.10	<0.10	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.1	<0.1
Strontium	5	µg/L	21000	19	12	17.7	12.9	9	16	20	12	-	-	8	15	9	12	28.8	12	8	16
Thallium	0.1/0.3	µg/L	0.8	<0.1	<0.1	<0.30	<0.30	<2	<2	<0.1	<0.1	-	-	<0.1	<2	<0.1	<0.1	<0.30	<0.30	<0.1	<2
Tin	2	µg/L	–	<2	<2	<2.0	<2.0	<2	<2	<2	<2	-	-	<2	<2	<2	<2	<2.0	<2.0	<2	<2
Titanium	2/10.0	µg/L	–	<2	<2	<2.0	<10.0	<2	<2	<2	<2	-	-	<2	<2	<2	<2	<2.0	<10.0	<2	<2
Uranium	0.2/0.50	µg/L	15	<0.2	<0.2	<0.50	<0.50	<0.2	<0.2	<0.2	<0.2	-	-	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.2	<0.2
Vanadium	2	µg/L	120	<2	<2	<2.0	<2.0	<2	<2	<2	<2	-	-	<2	<2	<2	<2	<2.0	<2.0	<2	<2
Zinc[5]	5/20	ug/L	7.0	7	<5	<5.0	<20	<5	<5	**8**	<5	-	-	<5	<5	<5	<5	<5.0	<20	<5	<5

Notes:

1=Atlantic Risk-Based Corrective Action (ARBCA) - Ecological Tier I Environmental Quality Standards (EQS) for Surface Water [Freshwater] (2022)

2= RDL for aluminum was higher than the guideline during August 2021 and December 2021 sampling event.

3= RDLs for beryllium were higher than the guideline for all events.

4= RDLs for cadmium for August and December 2021 events were higher than guideline

5= RDL for zinc for December 2021 event was higher than guideline

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- RDL for aluminum, antimony, arsenic, barium, beryllium, boron, chromium, cobalt, lead, nickel, thallium, and uranium (all events except August and December 2021/August and December 2021)
- RDL for cadmium (all events except for March, August and December, 2021/March 2021/August and December 2021)
- RDL for titanium and zinc (all events except for December, 2021/March 2021/December 2021)

SD-SW* = Field Duplicate Sample of Site 10-SW (June 2022 event SW-SD-02 on laboratory certificate); SD-SW** = Field Duplicate Sample of Site 19-SW (June 2022 event SW-SD-01 on laboratory certificate)

Bolded/Shaded = Value exceeds guideline

Table 4 - Analytical Results for Total Metals in Surface Water

Parameter	RDL[!]	Units	Guideline[1]	Site 12-SW						Site 13-SW						Site 14-SW					
Sampling Event				15-Mar-21	6-May-21	4-Aug-21	14-Dec-21	29-Mar-22	21-Jun-22	15-Mar-21	6-May-21	4-Aug-21	14-Dec-21	29-Mar-22	21-Jun-22	15-Mar-21	9-May-21	4-Aug-21	14-Dec-21	29-Mar-22	21-Jun-22
Aluminum[2]	5/10	µg/L	5	-	-	**77.6**	**108**	**101**	**63**	-	-	-	-	-	**46**	-	**286**	**67.3**	**176**	**153**	**61**
Antimony	2/3.00	µg/L	9	-	-	<3.0	<3.0	<2	<2	-	-	-	-	-	<2	-	<2	<3.0	<3.0	<2	<2
Arsenic	2/3.00	µg/L	5	-	-	<3.0	<3.0	<2	<2	-	-	-	-	-	<2	-	<2	<3.0	<3.0	<2	<2
Barium	5/2.00	µg/L	1000	-	-	3.3	<2.0	<5	<5	-	-	-	-	-	<5	-	<5	2.2	<2.0	<5	<5
Beryllium[3]	2/0.50	µg/L	0.15	-	-	<0.50	<0.50	<2	<2	-	-	-	-	-	<2	-	<2	<0.50	<0.50	<2	<2
Bismuth	2	µg/L	–	-	-	<2.0	<2.0	<2	<2	-	-	-	-	-	<2	-	<2	<2.0	<2.0	<2	<2
Boron	5/10	µg/L	1500	-	-	<10	<10	<5	<5	-	-	-	-	-	<5	-	<5	<10	<10	<5	6
Cadmium[4]	0.09/0.017/0.10	µg/L	0.09	-	-	<0.10	<0.10	<0.09	<0.09	-	-	-	-	-	<0.09	-	<0.09	<0.10	<0.10	<0.09	<0.09
Chromium	1/3.0	µg/L	8.9	-	-	<3.0	<3.0	<1	<1	-	-	-	-	-	<1	-	5	3.6	3.1	2	4
Cobalt	1/0.5	µg/L	1	-	-	<0.50	<0.50	<1	<1	-	-	-	-	-	<1	-	<1	<0.50	<0.50	<1	<1
Copper	1	µg/L	2	-	-	<1.0	<1.0	<1	<1	-	-	-	-	-	<1	-	**3**	1.2	1.4	<1	<1
Iron	50	µg/L	300	-	-	275	170	218	74	-	-	-	-	-	178	-	**449**	282	171	247	227
Lead	0.5/1.0	µg/L	1	-	-	<1.0	<1.0	<0.5	<0.5	-	-	-	-	-	<0.5	-	<0.5	<1.0	<1.0	<0.5	<0.5
Manganese	2	µg/L	430	-	-	**970**	44.6	291	98	-	-	-	-	-	69	-	35	24.1	7	64	18
Mercury	0.026	µg/L	0.026	-	-	<0.026	<0.026	<0.026	<0.026	-	-	-	-	-	<0.026	-	**0.609**	<0.026	<0.026	<0.026	<0.026
Molybdenum	2	µg/L	73	-	-	<2.0	<2.0	<2	<2	-	-	-	-	-	<2	-	<2	<2.0	<2.0	<2	<2
Nickel	2/3.0	µg/L	25	-	-	<3.0	<3.0	<2	<2	-	-	-	-	-	<2	-	8	5.4	6.9	4	6
Selenium	1	µg/L	1	-	-	<1.0	<1.0	<1	<1	-	-	-	-	-	<1	-	<1	<1.0	<1.0	<1	<1
Silver	0.1	µg/L	0.25	-	-	<0.10	<0.10	<0.1	<0.1	-	-	-	-	-	<0.1	-	<0.1	<0.10	<0.10	<0.1	<2
Strontium	5	µg/L	21000	-	-	24.5	11.4	9	16	-	-	-	-	-	6	-	19	40.4	9.2	7	26
Thallium	0.1/0.3	µg/L	0.8	-	-	<0.30	<0.30	<2	<2	-	-	-	-	-	<2	-	<0.1	<0.30	<0.30	<0.1	<0.1
Tin	2	µg/L	–	-	-	<2.0	<2.0	<2	<2	-	-	-	-	-	<2	-	<2	<2.0	<2.0	<2	<2
Titanium	2/10.0	µg/L	–	-	-	3.7	<10.0	<2	<2	-	-	-	-	-	<2	-	3	3.6	<10.0	<2	<2
Uranium	0.2/0.50	µg/L	15	-	-	<0.50	<0.50	<0.2	<0.2	-	-	-	-	-	<0.2	-	<0.2	<0.50	<0.50	<0.2	<0.2
Vanadium	2	µg/L	120	-	-	<2.0	<2.0	<2	<2	-	-	-	-	-	<2	-	<2	<2.0	<2.0	<2	<2
Zinc[5]	5/20	ug/L	7.0	-	-	**25.9**	<20	<5	<5	-	-	-	-	-	<5	-	<5	<5.0	<20	<5	<5

Notes:

1=Atlantic Risk-Based Corrective Action (ARBCA) - Ecological Tier I Environmental Quality Standards (EQS) for Surface Water [Freshwater] (2022)

2= RDL for aluminum was higher than the guideline during August 2021 and December 2021 sampling event.

3= RDLs for beryllium were higher than the guideline for all events.

4= RDLs for cadmium for August and December 2021 events were higher than guideline

5= RDL for zinc for December 2021 event was higher than guideline

"-" = no applicable guideline or not analyzed

NA = Not applicable

RDL = Reported Detection Limit; for all events unless otherwise noted (!)
- RDL for aluminum, antimony, arsenic, barium, beryllium, boron, chromium, cobalt, lead, nickel, thallium, and uranium (all events except August and December 2021/August and December 2021)
- RDL for cadmium (all events except for March, August and December, 2021/March 2021/August and December 2021)
- RDL for titanium and zinc (all events except for December, 2021/March 2021/December 2021)

SD-SW* = Field Duplicate Sample of Site 10-SW (June 2022 event SW-SD-02 on laboratory certificate); SD-SW** = Field Duplicate Sample of Site 19-SW (June 2022 event SW-SD-01 on laboratory certificate)

Bolded/Shaded = Value exceeds guideline

Table 4 - Analytical Results for Total Metals in Surface Water

Parameter	RDL[!]	Units	Guideline[1]	Site 15-SW						Site 16-SW						Site 17-SW					
Sampling Event				13-Mar-21	5-May-21	5-Aug-21	3-Dec-21	30-Mar-22	21-Jun-22	14-Mar-21	8-May-21	5-Aug-21	8-Dec-21	30-Mar-22	20-Jun-22	13-Mar-21	8-May-21	5-Aug-21	8-Dec-21	30-Mar-22	20-Jun-22
Aluminum[2]	5/10	µg/L	5	**116.0**	**94.0**	**38.5**	**93.9**	**70**	**38**	**120**	**111**	**56.9**	**187.0**	**90**	**83**	**98**	**88**	**28**	**68**	**75**	**29**
Antimony	2/3.00	µg/L	9	<2	<2	<3.0	<3.0	<2	<2	<2	<2	<3.0	<3.0	<2	<2	<2	<2	<3.0	<3.0	<2	<2
Arsenic	2/3.00	µg/L	5	<2	<2	<3.0	<3.0	<2	<2	<2	2	4.7	<3.0	<2	5	<2	<2	<3.0	<3.0	<2	<2
Barium	5/2.00	µg/L	1000	<5	<5	<2.0	<2.0	<5	<5	<5	<5	<2.0	<2.0	<5	<5	<5	<5	<2.0	<2.0	<5	<5
Beryllium[3]	2/0.50	µg/L	0.15	<2	<2	<0.50	<0.50	<2	<2	<2	<2	<0.50	<0.50	<2	<2	<2	<2	<0.50	<0.50	<2	<2
Bismuth	2	µg/L	-	<2	<2	<2.0	<2.0	<2	<2	<2	<2	<2.0	<2.0	<2	<2	<2	<2	<2.0	<2.0	<2	<2
Boron	5/10	µg/L	1500	<5	<5	<10	<10	<5	<5	<5	<5	<10	<10	<5	<5	<5	<5	<10	<10	<5	<5
Cadmium[4]	0.09/0.017/0.10	µg/L	0.09	<0.017	<0.09	<0.10	<0.10	<0.09	<0.09	<0.017	<0.09	<0.10	<0.10	<0.09	<0.09	<0.017	<0.09	<0.10	<0.10	<0.09	<0.09
Chromium	1/3.0	µg/L	8.9	<1	<1	<3.0	<3.0	<1	<1	<1	<1	<3.0	<3.0	<1	<1	<1	<1	<3.0	<3.0	<1	<1
Cobalt	1/0.5	µg/L	1	<1	<1	<0.50	<0.50	<1	<1	<1	<1	<0.50	<0.50	<1	<1	<1	<1	<0.50	<0.50	<1	<1
Copper	1	µg/L	2	1	1	1.1	<1.0	1	<1	<1	<1	<1.0	<1.0	<1	<1	1	<1	<1.0	<1.0	<1	<1
Iron	50	µg/L	300	**335**	217	86	142	161	222	**447**	**483**	**1000**	**356**	182	**1200**	**326**	279	186	225	160	**322**
Lead	0.5/1.0	µg/L	1	<0.5	<0.5	<1.0	<1.0	<0.5	<0.5	<0.5	<0.5	<1.0	<1.0	<0.5	<0.5	<0.5	<0.5	<1.0	<1.0	<0.5	<0.5
Manganese	2	µg/L	430	41	17	19.7	27.4	50	238	84	95	117	59.5	88	228	66	50	16.1	63.3	57	80
Mercury	0.026	µg/L	0.026	<0.026	**0.628**	<0.026	<0.026	<0.026	<0.026	<0.026	**0.590**	<0.026	<0.026	<0.026	<0.026	<0.026	**0.613**	<0.026	<0.026	<0.026	<0.026
Molybdenum	2	µg/L	73	<2	<2	<2.0	<2.0	<2	<2	<2	<2	<2.0	<2.0	<2	<2	<2	<2	<2.0	<2.0	<2	<2
Nickel	2/3.0	µg/L	25	**33**	<2	<3.0	<3.0	<2	<2	13	<2	<3.0	<3.0	<2	<2	<2	<2	<3.0	<3.0	<2	<2
Selenium	1	µg/L	1	<1	<1	<1.0	<1.0	<1	<1	<1	<1	<1.0	**1.3**	<1	<1	<1	<1	<1.0	**1.1**	<1	<1
Silver	0.1	µg/L	0.25	<0.1	<0.1	<0.10	<0.10	<0.1	<0.1	<0.1	<0.1	<0.10	0.1	<0.1	<0.1	<0.1	<0.1	<0.10	**0.3**	<0.1	<0.1
Strontium	5	µg/L	21000	12	13	16.5	15.9	13	14	10	14	33.2	11.9	7	25	10	13	20.5	11	10	15
Thallium	0.1/0.3	µg/L	0.8	<0.1	<0.1	<0.30	<0.30	<0.1	<2	<0.1	<0.1	<0.30	<0.30	<0.1	<0.1	<0.1	<0.1	<0.30	<0.30	<0.1	<0.1
Tin	2	µg/L	-	<2	<2	<2.0	<2.0	<2	<2	<2	<2	<2.0	<2.0	<2	<2	<2	<2	<20	<2.0	<2	<2
Titanium	2/10.0	µg/L	-	<2	<2	3.6	<10.0	<2	<2	<2	<2	2.6	<10.0	<2	<2	<2	<2	<2.0	<10.0	<2	<2
Uranium	0.2/0.50	µg/L	15	<0.2	<0.2	<0.50	<0.50	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.2	<0.2
Vanadium	2	µg/L	120	<2	<2	<2.0	<2.0	<2	<2	<2	<2	<2.0	<2.0	<2	<2	<2	<2	<2.0	<2.0	<2	<2
Zinc[5]	5/20	ug/L	7.0	<5	<5	<5.0	<20	<5	<5	<5	<5	<5.0	<20	<5	<5	<5	<5	<5.0	<20	<5	<5

Notes:

1=Atlantic Risk-Based Corrective Action (ARBCA) - Ecological Tier I Environmental Quality Standards (EQS) for Surface Water [Freshwater] (2022)

2= RDL for aluminum was higher than the guideline during August 2021 and December 2021 sampling event.

3= RDLs for beryllium were higher than the guideline for all events.

4= RDLs for cadmium for August and December 2021 events were higher than guideline

5= RDL for zinc for December 2021 event was higher than guideline

"-" = no applicable guideline or not analyzed

NA = Not applicable

RDL = Reported Detection Limit; for all events unless otherwise noted (!)
- RDL for aluminum, antimony, arsenic, barium, beryllium, boron, chromium, cobalt, lead, nickel, thallium, and uranium (all events except August and December 2021/August and December 2021)
- RDL for cadmium (all events except for March, August and December, 2021/March 2021/August and December 2021)
- RDL for titanium and zinc (all events except for December, 2021/March 2021/December 2021)

SD-SW* = Field Duplicate Sample of Site 10-SW (June 2022 event SW-SD-02 on laboratory certificate); SD-SW** = Field Duplicate Sample of Site 19-SW (June 2022 event SW-SD-01 on laboratory certificate)

Bolded/Shaded = Value exceeds guideline

Table 4 - Analytical Results for Total Metals in Surface Water

Parameter	RDL[1]	Units	Guideline[1]	Site 18-SW						Site 19-SW						SD-SW**			
Sampling Event				15-Mar-21	6-May-21	5-Aug-21	8-Dec-21	29-Mar-22	19/Jun/22	14-Mar-21	8-May-21	5-Aug-21	8-Dec-21	29-Mar-22	17-Jun-22	5-Aug-21	8-Dec-21	29-Mar-22	17-Jun-22
Aluminum[2]	5/10	µg/L	5	-	-	-	-	-	**42**	**44**	**72**	**45.9**	**71.5**	81	**42**	**50.8**	**72.5**	-	**48**
Antimony	2/3.00	µg/L	9	-	-	-	-	-	<2	<2	<2	<3.0	<3.0	<2	<2	<3.0	<3.0	-	<2
Arsenic	2/3.00	µg/L	5	-	-	-	-	-	<2	<2	<2	<3.0	<3.0	<2	<2	<3.0	<3.0	-	<2
Barium	5/2.00	µg/L	1000	-	-	-	-	-	<5	<5	<5	<2.0	<2.0	<5	<5	<2.0	<2.0	-	<5
Beryllium[3]	2/0.50	µg/L	0.15	-	-	-	-	-	<2	<2	<2	<0.50	<0.50	<2	<2	<0.50	<0.50	-	<2
Bismuth	2	µg/L	–	-	-	-	-	-	<2	<2	<2	<2.0	<2.0	<2	<2	<2.0	<2.0	-	<2
Boron	5/10	µg/L	1500	-	-	-	-	-	<5	<5	<5	<10	<10	<5	<5	<10	<10	-	<5
Cadmium[4]	0.09/0.017/0.10	µg/L	0.09	-	-	-	-	-	<0.09	<0.017	**0.13**	<0.10	<0.10	<0.09	<0.09	<0.10	**0.13**	-	<0.09
Chromium	1/3.0	µg/L	8.9	-	-	-	-	-	1	<1	<1	<3.0	<3.0	<1	<1	<3.0	<3.0	-	<1
Cobalt	1/0.5	µg/L	1	-	-	-	-	-	<1	<1	<1	<0.50	<0.50	<1	<1	<0.50	<0.50	-	<1
Copper	1	µg/L	2	-	-	-	-	-	1	<1	<1	<1.0	<1.0	**3**	<1	<1.0	<1.0	-	<1
Iron	50	µg/L	300	-	-	-	-	-	**356**	205	115	**436**	149	182	90	**454**	143	-	90
Lead	0.5/1.0	µg/L	1	-	-	-	-	-	<0.5	<0.5	<0.5	<1.0	<1.0	<0.5	<0.5	<1.0	<1.0	-	<0.5
Manganese	2	µg/L	430	-	-	-	-	-	145	64	30	**553**	63.1	84	75	**564**	78.3	-	65
Mercury	0.026	µg/L	0.026	-	-	-	-	-	<0.026	<0.026	**0.591**	<0.026	<0.026	<0.026	<0.026	<0.026	<0.026	-	<0.026
Molybdenum	2	µg/L	73	-	-	-	-	-	<2	<2	<2	<2.0	<2.0	<2	<2	<2.0	<2.0	-	<2
Nickel	2/3.0	µg/L	25	-	-	-	-	-	<2	<2	<2	<3.0	<3.0	<2	<2	<3.0	<3.0	-	<2
Selenium	1	µg/L	1	-	-	-	-	-	<1	<1	<1	<1.0	**4.6**	<1	<1	<1.0	**1.1**	-	<1
Silver	0.1	µg/L	0.25	-	-	-	-	-	<0.1	<0.1	<0.1	<0.10	<0.10	<0.1	<0.1	<0.10	<0.10	-	<0.1
Strontium	5	µg/L	21000	-	-	-	-	-	15	8	7	11.2	10	8	7	14.6	8.8	-	8
Thallium	0.1/0.3	µg/L	0.8	-	-	-	-	-	<0.1	<0.1	<0.1	<0.30	<0.30	<0.1	<0.1	<0.30	<0.30	-	<0.1
Tin	2	µg/L	–	-	-	-	-	-	<2	<2	<2	<2.0	<2.0	<2	<2	<2.0	<2.0	-	<2
Titanium	2/10.0	µg/L	–	-	-	-	-	-	<2	<2	<2	2	<10.0	<2	<2	4.4	<10.0	-	<2
Uranium	0.2/0.50	µg/L	15	-	-	-	-	-	<0.2	<0.2	<0.2	<0.50	<0.50	<0.2	<0.2	<0.50	<0.50	-	<0.2
Vanadium	2	µg/L	120	-	-	-	-	-	<2	<2	<2	<2.0	<2.0	<2	<2	<2.0	<2.0	-	<2
Zinc[5]	5/20	ug/L	7.0	-	-	-	-	-	<5	<5	<5	<5.0	<20	<5	6	<5.0	<20	-	<5

Notes:

1=Atlantic Risk-Based Corrective Action (ARBCA) - Ecological Tier I Environmental Quality Standards (EQS) for Surface Water [Freshwater] (2022)

2= RDL for aluminum was higher than the guideline during August 2021 and December 2021 sampling event.

3= RDLs for beryllium were higher than the guideline for all events.

4= RDLs for cadmium for August and December 2021 events were higher than guideline

5= RDL for zinc for December 2021 event was higher than guideline

"-" = no applicable guideline or not analyzed

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RDL = Reported Detection Limit; for all events unless otherwise noted (!)
- RDL for aluminum, antimony, arsenic, barium, beryllium, boron, chromium, cobalt, lead, nickel, thallium, and uranium (all events except August and December 2021/August and December 2021)
- RDL for cadmium (all events except for March, August and December, 2021/March 2021/August and December 2021)
- RDL for titanium and zinc (all events except for December, 2021/March 2021/December 2021)

SD-SW* = Field Duplicate Sample of Site 10-SW (June 2022 event SW-SD-02 on laboratory certificate); SD-SW** = Field Duplicate Sample of Site 19-SW (June 2022 event SW-SD-01 on laboratory certificate)

Bolded/Shaded = Value exceeds guideline

Table 4 - Analytical Results for Total Metals in Surface Water

Parameter	RDL[!]	Units	Guideline[1]	Site 20-SW						Site 21 - SW						Site 22 - SW					
Sampling Event				15-Mar-21	5-May-21	4-Aug-21	3-Dec-21	28-Mar-22	18-Jun-22	15-Mar-21	6-May-21	4-Aug-21	3-Dec-21	30-Mar-22	22-Jun-22	15-Mar-21	6-May-21	4-Aug-21	3-Dec-21	30-Mar-22	22-Jun-22
Aluminum[2]	5/10	µg/L	5	**120**	**111**	**53.3**	**217**	**85**	**39**	-	**95**	**47.4**	**61.4**	**83**	**39.0**	-	-	-	-	-	-
Antimony	2/3.00	µg/L	9	<2	<2	<3.0	<3.0	<2	<2	-	<2	<3.0	<3.0	<2	<2	-	-	-	-	-	-
Arsenic	2/3.00	µg/L	5	<2	<2	<3.0	<3.0	<2	<2	-	<2	<3.0	<3.0	<2	<2	-	-	-	-	-	-
Barium	5/2.00	µg/L	1000	<5	<5	<2.0	4.5	<5	<5	-	<5	<2.0	<2.0	<5	<5	-	-	-	-	-	-
Beryllium[3]	2/0.50	µg/L	0.15	<2	<2	<0.50	<0.50	<2	<2	-	<2	<0.50	<0.50	<2	<2	-	-	-	-	-	-
Bismuth	2	µg/L	–	<2	<2	<2.0	<2.0	<2	<2	-	<2	<2.0	<2.0	<2	<2	-	-	-	-	-	-
Boron	5/10	µg/L	1500	<5	5	<10	<10	<5	6	-	<5	<10	<10	<5	<5	-	-	-	-	-	-
Cadmium[4]	0.09/0.017/0.10	µg/L	0.09	<0.017	<0.09	<0.10	<0.10	<0.09	<0.09	-	<0.09	<0.10	<0.10	<0.09	<0.09	-	-	-	-	-	-
Chromium	1/3.0	µg/L	8.9	2	3	<3.0	<3.0	2	2	-	<1	<3.0	<3.0	<1	<1	-	-	-	-	-	-
Cobalt	1/0.5	µg/L	1	<1	<1	<0.50	<0.50	<1	<1	-	<1	<0.50	<0.50	<1	<1	-	-	-	-	-	-
Copper	1	µg/L	2	1	1	1.7	1.3	<1	1	-	<1	1.4	<1.0	<1	2	-	-	-	-	-	-
Iron	50	µg/L	300	299	**325**	200	**683**	166	264	-	225	**378**	133	162	82	-	-	-	-	-	-
Lead	0.5/1.0	µg/L	1	<0.5	<0.5	<1.0	<1.0	<0.5	<0.5	-	<0.5	<1.0	<1.0	<0.5	<0.5	-	-	-	-	-	-
Manganese	2	µg/L	430	148	48	23.8	218	47	210	-	33	100	22.3	46	37	-	-	-	-	-	-
Mercury	0.026	µg/L	0.026	<0.026	**0.593**	<0.026	<0.026	<0.026	<0.026	-	**0.586**	<0.026	<0.026	<0.026	<0.026	-	-	-	-	-	-
Molybdenum	2	µg/L	73	<2	<2	<2.0	<2.0	<2	<2	-	<2	<2.0	<2.0	<2	<2	-	-	-	-	-	-
Nickel	2/3.0	µg/L	25	7	4	<3.0	7.5	4	5	-	<2	<3.0	<3.0	<2	<2	-	-	-	-	-	-
Selenium	1	µg/L	1	<1	<1	**2.8**	**1.6**	<1	<1	-	<1	<1.0	<1.0	<1	<1	-	-	-	-	-	-
Silver	0.1	µg/L	0.25	<0.1	<0.1	<0.10	<0.10	<0.1	<0.1	-	<0.1	<0.10	<0.10	<0.1	<0.1	-	-	-	-	-	-
Strontium	5	µg/L	21000	12	14	16	17.9	12	18	-	13	23.6	11.2	11	12	-	-	-	-	-	-
Thallium	0.1/0.3	µg/L	0.8	<0.1	<0.1	<0.30	<0.30	<0.1	<2	-	<0.1	<0.30	<0.30	<0.1	<2	-	-	-	-	-	-
Tin	2	µg/L	–	<2	<2	<2.0	<2.0	<2	<2	-	<2	<2.0	<2.0	<2	<2	-	-	-	-	-	-
Titanium	2/10.0	µg/L	–	<2	<2	<2.0	<10.0	<2	<2	-	<2	<2.0	<10.0	<2	<2	-	-	-	-	-	-
Uranium	0.2/0.50	µg/L	15	<0.2	<0.2	<0.50	<0.50	<0.2	<0.2	-	<0.2	<0.50	<0.50	<0.2	<0.2	-	-	-	-	-	-
Vanadium	2	µg/L	120	<2	<2	<2.0	<2.0	<2	<2	-	<2	<2.0	<2.0	<2	<2	-	-	-	-	-	-
Zinc[5]	5/20	ug/L	7.0	<5	<5	<5.0	<20	<5	<5	-	<5	<5.0	<20	<5	<5	-	-	-	-	-	-

Notes:

1=Atlantic Risk-Based Corrective Action (ARBCA) - Ecological Tier I Environmental Quality Standards (EQS) for Surface Water [Freshwater] (2022)

2= RDL for aluminum was higher than the guideline during August 2021 and December 2021 sampling event.

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- RDL for cadmium (all events except for March, August and December, 2021/March 2021/August and December 2021)
- RDL for titanium and zinc (all events except for December, 2021/March 2021/December 2021)

SD-SW* = Field Duplicate Sample of Site 10-SW (June 2022 event SW-SD-02 on laboratory certificate); SD-SW** = Field Duplicate Sample of Site 19-SW (June 2022 event SW-SD-01 on laboratory certificate)

Bolded/Shaded = Value exceeds guideline

Table 4 - Analytical Results for Total Metals in Surface Water

Parameter	RDL[1]	Units	Guideline[1]	Site 23 - SW						Site 24 - SW					
Sampling Event				15-Mar-21	6-May-21	4-Aug-21	3-Dec-21	30-Mar-22	19-Jun-22	15-Mar-21	6-May-21	4-Aug-21	3-Dec-21	30-Mar-22	19-Jun-22
Aluminum[2]	5/10	µg/L	5	-	-	-	-	-	**39**	-	-	-	-	-	**25**
Antimony	2/3.00	µg/L	9	-	-	-	-	-	<2	-	-	-	-	-	<2
Arsenic	2/3.00	µg/L	5	-	-	-	-	-	<2	-	-	-	-	-	<2
Barium	5/2.00	µg/L	1000	-	-	-	-	-	<5	-	-	-	-	-	<5
Beryllium[3]	2/0.50	µg/L	0.15	-	-	-	-	-	<2	-	-	-	-	-	<2
Bismuth	2	µg/L	–	-	-	-	-	-	<2	-	-	-	-	-	<2
Boron	5/10	µg/L	1500	-	-	-	-	-	<5	-	-	-	-	-	<5
Cadmium[4]	0.09/0.017/0.10	µg/L	0.09	-	-	-	-	-	<0.80	-	-	-	-	-	<0.09
Chromium	1/3.0	µg/L	8.9	-	-	-	-	-	<1	-	-	-	-	-	<1
Cobalt	1/0.5	µg/L	1	-	-	-	-	-	<1	-	-	-	-	-	<1
Copper	1	µg/L	2	-	-	-	-	-	<1	-	-	-	-	-	<1
Iron	50	µg/L	300	-	-	-	-	-	<50	-	-	-	-	-	<50
Lead	0.5/1.0	µg/L	1	-	-	-	-	-	<0.5	-	-	-	-	-	<0.5
Manganese	2	µg/L	430	-	-	-	-	-	28	-	-	-	-	-	20
Mercury	0.026	µg/L	0.026	-	-	-	-	-	<0.026	-	-	-	-	-	<0.026
Molybdenum	2	µg/L	73	-	-	-	-	-	<2	-	-	-	-	-	<2
Nickel	2/3.0	µg/L	25	-	-	-	-	-	<2	-	-	-	-	-	<2
Selenium	1	µg/L	1	-	-	-	-	-	<1	-	-	-	-	-	<1
Silver	0.1	µg/L	0.25	-	-	-	-	-	<0.1	-	-	-	-	-	<0.1
Strontium	5	µg/L	21000	-	-	-	-	-	17	-	-	-	-	-	20
Thallium	0.1/0.3	µg/L	0.8	-	-	-	-	-	<2	-	-	-	-	-	<2
Tin	2	µg/L	–	-	-	-	-	-	<2	-	-	-	-	-	<2
Titanium	2/10.0	µg/L	–	-	-	-	-	-	<2	-	-	-	-	-	<2
Uranium	0.2/0.50	µg/L	15	-	-	-	-	-	<0.2	-	-	-	-	-	<0.2
Vanadium	2	µg/L	120	-	-	-	-	-	<2	-	-	-	-	-	<2
Zinc[5]	5/20	ug/L	7.0	-	-	-	-	-	<5	-	-	-	-	-	<5

Notes:

1=Atlantic Risk-Based Corrective Action (ARBCA) - Ecological Tier I Environmental Quality Standards (EQS) for Surface Water [Freshwater] (2022)

2= RDL for aluminum was higher than the guideline during August 2021 and December 2021 sampling event.

3= RDLs for beryllium were higher than the guideline for all events.

4= RDLs for cadmium for August and December 2021 events were higher than guideline

5= RDL for zinc for December 2021 event was higher than guideline

"-" = no applicable guideline or not analyzed

NA = Not applicable

RDL = Reported Detection Limit; for all events unless otherwise noted (!)
- RDL for aluminum, antimony, arsenic, barium, beryllium, boron, chromium, cobalt, lead, nickel, thallium, and uranium (all events except August and December 2021/August and December 2021)
- RDL for cadmium (all events except for March, August and December, 2021/March 2021/August and December 2021)
- RDL for titanium and zinc (all events except for December, 2021/March 2021/December 2021)

SD-SW* = Field Duplicate Sample of Site 10-SW (June 2022 event SW-SD-02 on laboratory certificate); SD-SW** = Field Duplicate Sample of Site 19-SW (June 2022 event SW-SD-01 on laboratory certificate)

Bolded/Shaded = Value exceeds guideline

Table 5 - Analytical Results for Available Metals in Sediment

Parameter	RDL	Units	Guideline[1]	Site 1-SED						Site 2-SED					
			Sample Date	14-Mar-21	7-May-21	6-Aug-21	8-Dec-21	31-Mar-22	19-Jun-22	14-Mar-21	8-May-21	6-Aug-21	8-Dec-21	31-Mar-22	17-Jun-22
Aluminum	10/8740/10/1000	mg/kg	-	-	11100	11100	12900	10300	12200	22600	14600	15300	20600	17000	16600
Antimony	0.8/1	mg/kg	25	-	<1	<1	1.1	<1	<1	<1	<1	<1	<0.8	<1	<1
Arsenic	1	mg/kg	17	-	**52**	**59**	**49**	**30**	**48**	**91**	**75**	**51**	**79**	**71**	**90**
Barium	2/1/5	mg/kg	-	-	22	20	30.3	15	34	41	41	36	88.6	62	74
Beryllium	0.4/1/2	mg/kg	-	-	<2	<2	0.5	<2	<1	<2	<2	<2	0.5	<2	<1
Boron	5/2	mg/kg	-	-	<2	<2	<5	<2	4	<2	<2	3	<5	<2	12
Cadmium	0.5/0.3	mg/kg	3.5	-	<0.3	<0.3	<0.5	<0.3	<0.3	<0.3	<0.3	<0.3	<0.5	<0.3	<0.3
Chromium	5/2	mg/kg	90	-	19	22	25	18	25	30	32	32	33	27	35
Cobalt	0.5/1	mg/kg	-	-	13	15	14.2	11	17	25	28	22	18.9	19	26
Copper	1/2	mg/kg	197	-	18	14	12.9	12	14	7	9	8	8.3	8	8
Iron	50/24400/500/5000	mg/kg	43766	-	29900	34100	36100	25900	36200	**53600**	43200	36500	**54200**	**48800**	**51800**
Lead	1/0.5	mg/kg	91.3	-	7.6	8.0	11	8.5	14.2	6.2	6.3	6.7	9	8.5	10.5
Lithium	0.5/5	mg/kg	-	-	21	21	22.8	26	23	53	38	33	40.6	42	37
Manganese	2/780/50/20	mg/kg	1100	-	**2510**	**2590**	**2400**	**1200**	**2370**	**7430**	**2870**	**4340**	**1320**	**1500**	**7600**
Mercury	0.05/0.03	mg/kg	0.486	-	<0.05	<0.03	0.05	<0.03	0.03	<0.05	<0.05	<0.03	0.04	<0.03	<0.03
Molybdenum	0.5/2	mg/kg	-	-	<2	<2	1.6	<2	2	5	5	3	5.2	4	5
Nickel	1/2	mg/kg	75	-	33	35	35	32	41	59	53	52	54	51	60
Selenium	0.8/1	mg/kg	2	-	<1	<1	<0.8	<1	<1	<1	<1	<1	<0.8	<1	<1
Silver	0.5	mg/kg	0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Strontium	50/5	mg/kg	-	-	8	8	10	6	<50	12	9	12	7	5	<50
Thallium	0.5/0.1	mg/kg	-	-	<0.1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.1	0.1
Tin	1/2	mg/kg	-	-	3	2	<1	3	3	3	3	3	<1	4	4
Uranium	0.5/0.1	mg/kg	-	-	0.6	0.6	1.02	0.5	1	0.5	0.6	0.5	0.97	0.7	0.9
Vanadium	0.4/2	mg/kg	-	-	20	23	24.1	21	26	32	30	24	30.9	29	34
Zinc	5	mg/kg	315	-	57	63	65	54	72	120	109	98	117	105	132

Notes:
1=Atlantic Risk Based Corrective Action (ARBCA) - Ecological Tier I Environmental Quality Standards (EQS) for Sediment [Freshwater Sediment] (2022)

"-" = no applicable guideline or not analyzed

NA = Not applicable

RDL = Reported Detection Limit; for all events unless otherwise noted (!)
- RDL for aluminium (March 2021 and December 2021/Site 11-SED for May 2021/August 2021 and March 2022/June 2022
- RDL for antimony, boron, cadmium, chromium, cobalt, copper, lead, lithium, molybdenum, nickel, selenium, thallium, tin, vanadium (December 2021/all other events)
- RDL for barium and beryllium (December 2021/June 2022/all other events)
- RDL for iron and manganese (March 2021, August 2021 and March 2022/Site 11-SED for May 2021/December 2021/June 2022)
- RDL for mercury (March 2021 and May 2021/all other events)
- RDL for strontium (/June 2022/all other events)

SD-SW* = Field Duplicate Sample of Site 10-SW (June 2022 event SW-SD-02 on laboratory certificate); SD-SW** = Field Duplicate Sample of Site 19-SW (June 2022 event SW-SD-01 on laboratory certificate)

Bolded/Shaded = Value exceeds guideline

Table 5 - Analytical Results for Available Metals in Sediment

Parameter	RDL	Units	Guideline[1]	Site 3-SED						Site 4-SED					
			Sample Date	14-Mar-21	7-May-21	3-Aug-21	5-Dec-21	29-Mar-22	18-Jun-22	12-Mar-21	7-May-21	3-Aug-21	5-Dec-21	29-Mar-22	18-Jun-22
Aluminum	10/8740/10/1000	mg/kg	-	-	14400	16100	20100	11500	13100	15200	15400	19200	20400	9800	14000
Antimony	0.8/1	mg/kg	25	-	<1	<1	1	1	<1	<1	1	<1	2	1	<1
Arsenic	1	mg/kg	17	-	**114**	**18**	**79**	**56**	**213**	**80**	**192**	**101**	**174**	**82**	**64**
Barium	2/1/5	mg/kg	-	-	680	39	204	105	57	29	114	68	73	33	160
Beryllium	0.4/1/2	mg/kg	-	-	<2	<2	0.6	<2	<1	<2	<2	<2	0.7	<2	<1
Boron	5/2	mg/kg	-	-	<2	<2	<5	<2	21	<2	<2	<2	<5	<2	9
Cadmium	0.5/0.3	mg/kg	3.5	-	1.1	<0.3	<0.5	<0.3	<0.3	<0.3	<0.3	<0.3	<0.5	<0.3	<0.3
Chromium	5/2	mg/kg	90	-	27	29	33	20	26	21	29	30	27	15	29
Cobalt	0.5/1	mg/kg	-	-	59	12	20	15	15	12	24	18	15	9	17
Copper	1/2	mg/kg	197	-	15	11	15	13	7	6	10	11	9	7	17
Iron	50/24400/500/5000	mg/kg	43766	-	**46100**	33500	**45000**	36500	**46200**	31000	**48100**	**52500**	43500	23100	**47700**
Lead	1/0.5	mg/kg	91.3	-	14.1	6.3	13.0	11	9.6	5.4	10.2	7.5	10.0	5.3	15.6
Lithium	0.5/5	mg/kg	-	-	26	30	34	25	29	36	28	31	35	21	26
Manganese	2/780/50/20	mg/kg	1100	-	**55900**	**5360**	**10400**	**8290**	**3570**	**2410**	**8340**	**8310**	**4030**	**2790**	**9930**
Mercury	0.05/0.03	mg/kg	0.486	-	<0.05	<0.03	0.05	0.03	<0.03	<0.05	<0.05	<0.03	0.06	<0.03	<0.03
Molybdenum	0.5/2	mg/kg	-	`	6	<2	2.8	3	4	2	5	4	4	2	3
Nickel	1/2	mg/kg	75	-	**88**	41	56	28	50	43	58	49	55	30	48
Selenium	0.8/1	mg/kg	2	-	<1	<1	<0.8	<1	<1	<1	<1	<1	<0.8	<1	<1
Silver	0.5	mg/kg	0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Strontium	50/5	mg/kg	-	-	50	8	15	7	<50	17	16	11	19	9	<50
Thallium	0.5/0.1	mg/kg	-	-	0.4	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.1	0.2
Tin	1/2	mg/kg	-	-	5	3	<1	3	4	4	4	3	<1	3	4
Uranium	0.5/0.1	mg/kg	-	-	0.6	0.5	0.9	0.7	1	0.7	1.0	1.1	1.3	0.6	1.1
Vanadium	0.4/2	mg/kg	-	-	30	96	28	30	31	23	27	109	25	15	30
Zinc	5	mg/kg	315	-	190	72	115	51	113	80	120	120	131	71	83

Notes:
1=Atlantic Risk Based Corrective Action (ARBCA) - Ecological Tier I Environmental Quality Standards (EQS) for Sediment [Freshwater Sediment] (2022)

"-" = no applicable guideline or not analyzed

NA = Not applicable

RDL = Reported Detection Limit; for all events unless otherwise noted (!)
- RDL for aluminium (March 2021 and December 2021/Site 11-SED for May 2021/August 2021 and March 2022/June 2022
- RDL for antimony, boron, cadmium, chromium, cobalt, copper, lead, lithium, molybdenum, nickel, selenium, thallium, tin, vanadium (December 2021/all other events)
- RDL for barium and beryllium (December 2021/June 2022/all other events)
- RDL for iron and manganese (March 2021, August 2021 and March 2022/Site 11-SED for May 2021/December 2021/June 2022)
- RDL for mercury (March 2021 and May 2021/all other events)
- RDL for strontium (/June 2022/all other events)

SD-SW* = Field Duplicate Sample of Site 10-SW (June 2022 event SW-SD-02 on laboratory certificate); SD-SW** = Field Duplicate Sample of Site 19-SW (June 2022 event SW-SD-01 on laboratory certificate)

Bolded/Shaded = Value exceeds guideline

Table 5 - Analytical Results for Available Metals in Sediment

Parameter	RDL	Units	Guideline[1]	Site 5-SED						Site 6-SED					
			Sample Date	14-Mar-21	5-May-21	4-Aug-21	8-Dec-21	28-Mar-22	18-Jun-22	12-Mar-21	6-May-21	3-Aug-21	13-Dec-21	28-Mar-22	18-Jun-22
Aluminum	10/8740/10/1000	mg/kg	-	23600	15500	8160	28200	-	-	-	-	13700	-	-	-
Antimony	0.8/1	mg/kg	25	<1	<1	<1	1.4	-	-	-	-	<1	-	-	-
Arsenic	1	mg/kg	17	**293**	**69**	**68**	**397**	-	-	-	-	**44**	-	-	-
Barium	2/1/5	mg/kg	-	37	109	91	193	-	-	-	-	81	-	-	-
Beryllium	0.4/1/2	mg/kg	-	<2	<2	<2	2.2	-	-	-	-	<2	-	-	-
Boron	5/2	mg/kg	-	<2	<2	<2	<5	-	-	-	-	<2	-	-	-
Cadmium	0.5/0.3	mg/kg	3.5	<0.3	<0.3	0.3	<0.5	-	-	-	-	0.8	-	-	-
Chromium	5/2	mg/kg	90	**113**	23	33	54	-	-	-	-	16	-	-	-
Cobalt	0.5/1	mg/kg	-	35	20	12	22.3	-	-	-	-	10	-	-	-
Copper	1/2	mg/kg	197	37	16	46	50.6	-	-	-	-	12	-	-	-
Iron	50/24400/500/5000	mg/kg	43766	126000	36600	**54000**	**155000**	-	-	-	-	12300	-	-	-
Lead	1/0.5	mg/kg	91.3	6.4	8.3	7.1	19	-	-	-	-	8.9	-	-	-
Lithium	0.5/5	mg/kg	-	62	33	<5	27.8	-	-	-	-	11	-	-	-
Manganese	2/780/50/20	mg/kg	1100	**3100**	**7680**	**3320**	**3170**	-	-	-	-	1100	-	-	-
Mercury	0.05/0.03	mg/kg	0.486	<0.05	<0.05	0.15	0.19	-	-	-	-	0.08	-	-	-
Molybdenum	0.5/2	mg/kg	-	9	2	6	19.8	-	-	-	-	2	-	-	-
Nickel	1/2	mg/kg	75	**113**	52	27	68	-	-	-	-	39	-	-	-
Selenium	0.8/1	mg/kg	2	<1	<1	<1	2.9	-	-	-	-	<1	-	-	-
Silver	0.5	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	<0.5	-	-	-
Strontium	50/5	mg/kg	-	10	13	16	17	-	-	-	-	49	-	-	-
Thallium	0.5/0.1	mg/kg	-	<0.1	<0.1	<0.1	<0.5	-	-	-	-	0.1	-	-	-
Tin	1/2	mg/kg	-	3	3	7	2	-	-	-	-	2	-	-	-
Uranium	0.5/0.1	mg/kg	-	0.8	0.6	2.6	3.89	-	-	-	-	1.6	-	-	-
Vanadium	0.4/2	mg/kg	-	54	25	78	36.8	-	-	-	-	89	-	-	-
Zinc	5	mg/kg	315	**467**	112	244	**443**	-	-	-	-	107	-	-	-

Notes:
1=Atlantic Risk Based Corrective Action (ARBCA) - Ecological Tier I Environmental Quality Standards (EQS) for Sediment [Freshwater Sediment] (2022)

"-" = no applicable guideline or not analyzed

NA = Not applicable

RDL = Reported Detection Limit; for all events unless otherwise noted (!)
- RDL for aluminium (March 2021 and December 2021/Site 11-SED for May 2021/August 2021 and March 2022/June 2022
- RDL for antimony, boron, cadmium, chromium, cobalt, copper, lead, lithium, molybdenum, nickel, selenium, thallium, tin, vanadium (December 2021/all other events)
- RDL for barium and beryllium (December 2021/June 2022/all other events)
- RDL for iron and manganese (March 2021, August 2021 and March 2022/Site 11-SED for May 2021/December 2021/June 2022)
- RDL for mercury (March 2021 and May 2021/all other events)
- RDL for strontium (/June 2022/all other events)

SD-SW* = Field Duplicate Sample of Site 10-SW (June 2022 event SW-SD-02 on laboratory certificate); SD-SW** = Field Duplicate Sample of Site 19-SW (June 2022 event SW-SD-01 on laboratory certificate)

Bolded/Shaded = Value exceeds guideline

Table 5 - Analytical Results for Available Metals in Sediment

Parameter	RDL	Units	Guideline[1]	Site 7-SED						Site 8-SED					
			Sample Date	12-Mar-21	6-May-21	3-Aug-21	13-Dec-21	28-Mar-22	18-Jun-22	12-Mar-21	8-May-21	4-Aug-21	13-Dec-21	28-Mar-22	20-Jun-22
Aluminum	10/8740/10/1000	mg/kg	-	-	-	6340	-	-	-	-	15400	15700	17500	-	15700
Antimony	0.8/1	mg/kg	25	-	-	<1	-	-	-	-	<1	<1	<0.8	-	<1
Arsenic	1	mg/kg	17	-	-	**47**	-	-	-	-	**102**	**27**	**49**	-	**92**
Barium	2/1/5	mg/kg	-	-	-	81	-	-	-	-	188	67	46.8	-	148
Beryllium	0.4/1/2	mg/kg	-	-	-	<2	-	-	-	-	<2	<2	0.5	-	<1
Boron	5/2	mg/kg	-	-	-	<2	-	-	-	-	3	<2	<5	-	26
Cadmium	0.5/0.3	mg/kg	3.5	-	-	1.0	-	-	-	-	0.5	<0.3	<0.5	-	<0.3
Chromium	5/2	mg/kg	90	-	-	11	-	-	-	-	29	25	29	-	26
Cobalt	0.5/1	mg/kg	-	-	-	8	-	-	-	-	42	15	13.3	-	22
Copper	1/2	mg/kg	197	-	-	16	-	-	-	-	23	15	11.5	-	21
Iron	50/24400/500/5000	mg/kg	43766	-	-	8310	-	-	-	-	41700	38400	40800	-	**45600**
Lead	1/0.5	mg/kg	91.3	-	-	16.3	-	-	-	-	12.8	8.1	11.0	-	17.5
Lithium	0.5/5	mg/kg	-	-	-	5	-	-	-	-	34	30	26.1	-	28
Manganese	2/780/50/20	mg/kg	1100	-	-	**3980**	-	-	-	-	**15200**	**5050**	**2640**	-	**8570**
Mercury	0.05/0.03	mg/kg	0.486	-	-	0.12	-	-	-	-	<0.05	<0.03	0.03	-	0.03
Molybdenum	0.5/2	mg/kg	-	-	-	3	-	-	-	-	4	<2	1.6	-	2
Nickel	1/2	mg/kg	75	-	-	51	-	-	-	-	**83**	37	40	-	61
Selenium	0.8/1	mg/kg	2	-	-	2	-	-	-	-	<1	<1	<0.8	-	<1
Silver	0.5	mg/kg	0.5	-	-	<0.5	-	-	-	-	<0.5	<0.5	<0.5	-	<0.5
Strontium	50/5	mg/kg	-	-	-	77	-	-	-	-	26	7	8	-	<50
Thallium	0.5/0.1	mg/kg	-	-	-	<0.1	-	-	-	-	<0.1	<0.1	<0.5	-	0.1
Tin	1/2	mg/kg	-	-	-	2	-	-	-	-	3	3	<1	-	4
Uranium	0.5/0.1	mg/kg	-	-	-	1.9	-	-	-	-	0.6	0.7	0.8	-	1
Vanadium	0.4/2	mg/kg	-	-	-	83	-	-	-	-	34	106	27.4	-	27
Zinc	5	mg/kg	315	-	-	79	-	-	-	-	208	77	69	-	156

Notes:
1=Atlantic Risk Based Corrective Action (ARBCA) - Ecological Tier I Environmental Quality Standards (EQS) for Sediment [Freshwater Sediment] (2022)

"-" = no applicable guideline or not analyzed

NA = Not applicable

RDL = Reported Detection Limit; for all events unless otherwise noted (!)
- RDL for aluminium (March 2021 and December 2021/Site 11-SED for May 2021/August 2021 and March 2022/June 2022
- RDL for antimony, boron, cadmium, chromium, cobalt, copper, lead, lithium, molybdenum, nickel, selenium, thallium, tin, vanadium (December 2021/all other events)
- RDL for barium and beryllium (December 2021/June 2022/all other events)
- RDL for iron and manganese (March 2021, August 2021 and March 2022/Site 11-SED for May 2021/December 2021/June 2022)
- RDL for mercury (March 2021 and May 2021/all other events)
- RDL for strontium (/June 2022/all other events)

SD-SW* = Field Duplicate Sample of Site 10-SW (June 2022 event SW-SD-02 on laboratory certificate); SD-SW** = Field Duplicate Sample of Site 19-SW (June 2022 event SW-SD-01 on laboratory certificate)

Bolded/Shaded = Value exceeds guideline

Table 5 - Analytical Results for Available Metals in Sediment

Parameter	RDL	Units	Guideline[1]	Site 9-SED						Site 10-SED					
			Sample Date	14-Mar-21	5-May-21	6-Aug-21	5-Dec-21	28-Mar-22	17-Jun-22	14-Mar-21	5-May-21	5-Aug-21	3-Dec-21	30-Mar-22	19-Jun-22
Aluminum	10/8740/10/1000	mg/kg	-	24100	18000	20300	24200	23500	18800	22700	8260	21100	25900	19500	21300
Antimony	0.8/1	mg/kg	25	<1	<1	<1	<0.8	<1	<1	<1	<1	<1	<0.8	<1	<1
Arsenic	1	mg/kg	17	9	16	13	**20**	**20**	12	16	**23**	10	12	**22**	**44**
Barium	2/1/5	mg/kg	-	8	13	8	33.4	37	26	13	22	16	51	27	43
Beryllium	0.4/1/2	mg/kg	-	<2	<2	<2	<0.4	<2	<1	<2	<2	<2	1	<2	<1
Boron	5/2	mg/kg	-	<2	<2	<2	<5	<2	11	<2	<2	<2	<5	<2	<2
Cadmium	0.5/0.3	mg/kg	3.5	<0.3	<0.3	<0.3	<0.5	<0.3	<0.3	<0.3	<0.3	<0.3	<0.5	<0.3	<0.3
Chromium	5/2	mg/kg	90	42	46	47	48	53	47	37	38	35	58	40	54
Cobalt	0.5/1	mg/kg	-	19	21	19	21.6	19	23	23	26	18	31	21	34
Copper	1/2	mg/kg	197	8	8	8	9	32	8	14	43	10	55	9	15
Iron	50/24400/500/5000	mg/kg	43766	39800	37900	40900	41800	34600	42300	38100	21300	39900	**47700**	42100	**56200**
Lead	1/0.5	mg/kg	91.3	3.6	3.3	4.1	7.0	14.5	5.6	8.0	7.5	4.3	17.0	6.1	12.6
Lithium	0.5/5	mg/kg	-	64	54	50	64.8	50	46	68	49	47	89	61	55
Manganese	2/780/50/20	mg/kg	1100	1110	**2290**	**2690**	**3220**	652	**3960**	**2000**	478	**2510**	1020	**2720**	**4110**
Mercury	0.05/0.03	mg/kg	0.486	<0.05	<0.05	<0.03	0.04	0.06	<0.03	<0.05	<0.05	<0.03	0.06	<0.03	<0.03
Molybdenum	0.5/2	mg/kg	-	<2	<2	<2	1.3	4	<2	<2	3	<2	2.4	<2	2
Nickel	1/2	mg/kg	75	66	66	64	74	**87**	71	71	74	53	**97**	73	**92**
Selenium	0.8/1	mg/kg	2	<1	<1	<1	<0.8	1	<1	<1	<1	<1	<0.8	<1	<1
Silver	0.5	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Strontium	50/5	mg/kg	-	8	9	8	11	7	<50	7	9	<5	10	6	<50
Thallium	0.5/0.1	mg/kg	-	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1
Tin	1/2	mg/kg	-	3	3	3	<1	3	3	3	3	2	<1	3	4
Uranium	0.5/0.1	mg/kg	-	0.3	0.4	0.4	1.2	0.9	0.8	0.4	1.2	0.5	3.3	0.4	0.9
Vanadium	0.4/2	mg/kg	-	31	31	31	33.5	34	33	27	25	91	43	29	38
Zinc	5	mg/kg	315	90	97	94	133	91	106	93	78	86	115	110	145

Notes:
1=Atlantic Risk Based Corrective Action (ARBCA) - Ecological Tier I Environmental Quality Standards (EQS) for Sediment [Freshwater Sediment] (2022)

"-" = no applicable guideline or not analyzed

NA = Not applicable

RDL = Reported Detection Limit; for all events unless otherwise noted (!)
- RDL for aluminium (March 2021 and December 2021/Site 11-SED for May 2021/August 2021 and March 2022/June 2022
- RDL for antimony, boron, cadmium, chromium, cobalt, copper, lead, lithium, molybdenum, nickel, selenium, thallium, tin, vanadium (December 2021/all other events)
- RDL for barium and beryllium (December 2021/June 2022/all other events)
- RDL for iron and manganese (March 2021, August 2021 and March 2022/Site 11-SED for May 2021/December 2021/June 2022)
- RDL for mercury (March 2021 and May 2021/all other events)
- RDL for strontium (/June 2022/all other events)

SD-SW* = Field Duplicate Sample of Site 10-SW (June 2022 event SW-SD-02 on laboratory certificate); SD-SW** = Field Duplicate Sample of Site 19-SW (June 2022 event SW-SD-01 on laboratory certificate)

Bolded/Shaded = Value exceeds guideline

Table 5 - Analytical Results for Available Metals in Sediment

Parameter	RDL	Units	Guideline[1]	SD-SED			Site 11-SED					
			Sample Date	14-Mar-21	5-May-21	19-Jun-22	15-Mar-21	6-May-21	4-Aug-21	13-Dec-21	29-Mar-22	20-Jun-22
Aluminum	10/8740/10/1000	mg/kg	-	23100	21800	19600	17600	18300	20800	16800.00	13500	19600
Antimony	0.8/1	mg/kg	25	<1	<1	<1	<1	<1	<1	1.2	1	<1
Arsenic	1	mg/kg	17	16	**34**	**32**	**35**	**101**	16	**33**	**34**	**157**
Barium	2/1/5	mg/kg	-	13	21	35	24	350	45	21.9	19	233
Beryllium	0.4/1/2	mg/kg	-	<2	<2	<1	<2	<2	<2	0.5	<2	<1
Boron	5/2	mg/kg	-	<2	<2	7	<2	<2	<2	<5	<2	39
Cadmium	0.5/0.3	mg/kg	3.5	<0.3	<0.3	<0.3	<0.3	1.3	<0.3	<0.5	<0.3	0.4
Chromium	5/2	mg/kg	90	38	51	48	24	31	28	24	23	33
Cobalt	0.5/1	mg/kg	-	23	32	28	18	119	21	12.4	13	58
Copper	1/2	mg/kg	197	17	48	17	24	39	26	23.5	24	21
Iron	50/24400/500/5000	mg/kg	43766	37900	**45500**	**46800**	38800	43400	32200	43200	42700	**78200**
Lead	1/0.5	mg/kg	91.3	7.1	7.2	10	9.7	14.5	11.2	13	10.7	26.9
Lithium	0.5/5	mg/kg	-	66	76	55	39	45	33	25.8	35	33
Manganese	2/780/50/20	mg/kg	1100	**1950**	**1120**	**3100**	**2430**	**44300**	**4060**	**1220**	**1760**	**16300**
Mercury	0.05/0.03	mg/kg	0.486	<0.05	<0.05	<0.03	<0.05	<0.05	0.04	0.05	<0.03	0.03
Molybdenum	0.5/2	mg/kg	-	<2	<2	<2	<2	7	<2	1.3	<2	7
Nickel	1/2	mg/kg	75	**77**	**90**	**83**	38	**131**	37	39	39	72
Selenium	0.8/1	mg/kg	2	<1	<1	<1	<1	<1	<1	<0.8	<1	<1
Silver	0.5	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Strontium	50/5	mg/kg	-	7	8	<50	6	34	9	5	<5	<50
Thallium	0.5/0.1	mg/kg	-	<0.1	<0.1	<0.1	<0.1	0.2	<0.1	<0.5	<0.1	0.2
Tin	1/2	mg/kg	-	3	3	3	3	3	3	<1	4	4
Uranium	0.5/0.1	mg/kg	-	0.4	1.0	0.9	0.6	0.5	0.7	1.15	0.8	1.4
Vanadium	0.4/2	mg/kg	-	27	32	32	25	41	110	24.2	25	32
Zinc	5	mg/kg	315	95	99	130	64	215	66	76	67	144

Notes:
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NA = Not applicable

RDL = Reported Detection Limit; for all events unless otherwise noted (!)
- RDL for aluminium (March 2021 and December 2021/Site 11-SED for May 2021/August 2021 and March 2022/June 2022
- RDL for antimony, boron, cadmium, chromium, cobalt, copper, lead, lithium, molybdenum, nickel, selenium, thallium, tin, vanadium (December 2021/all other events)
- RDL for barium and beryllium (December 2021/June 2022/all other events)
- RDL for iron and manganese (March 2021, August 2021 and March 2022/Site 11-SED for May 2021/December 2021/June 2022)
- RDL for mercury (March 2021 and May 2021/all other events)
- RDL for strontium (/June 2022/all other events)

SD-SW* = Field Duplicate Sample of Site 10-SW (June 2022 event SW-SD-02 on laboratory certificate); SD-SW** = Field Duplicate Sample of Site 19-SW (June 2022 event SW-SD-01 on laboratory certificate)

Bolded/Shaded = Value exceeds guideline

Table 5 - Analytical Results for Available Metals in Sediment

Parameter	RDL	Units	Guideline[1]	Site 12-SED						Site 13-SED					
			Sample Date	15-Mar-21	6-May-21	4-Aug-21	14-Dec-21	29-Mar-22	21-Jun-22	15-Mar-21	6-May-21	4-Aug-21	14-Dec-21	29-Mar-22	21-Jun-22
Aluminum	10/8740/10/1000	mg/kg	-	-	-	27800	26700	15800	18700	-	-	-	-	-	17800
Antimony	0.8/1	mg/kg	25	-	-	<1	<0.8	<1	<1	-	-	-	-	-	<1
Arsenic	1	mg/kg	17	-	-	10	**51**	**27**	**33**	-	-	-	-	-	**31**
Barium	2/1/5	mg/kg	-	-	-	247	364	536	142	-	-	-	-	-	133
Beryllium	0.4/1/2	mg/kg	-	-	-	<2	0.9	<2	<1	-	-	-	-	-	<1
Boron	5/2	mg/kg	-	-	-	<2	<5	<2	30	-	-	-	-	-	52
Cadmium	0.5/0.3	mg/kg	3.5	-	-	0.8	0.6	1.1	<0.3	-	-	-	-	-	<0.3
Chromium	5/2	mg/kg	90	-	-	44	40	26	42	-	-	-	-	-	38
Cobalt	0.5/1	mg/kg	-	-	-	88	63	89	38	-	-	-	-	-	59
Copper	1/2	mg/kg	197	-	-	27	13	10	8	-	-	-	-	-	10
Iron	50/24400/500/5000	mg/kg	43766	-	-	**95800**	**144000**	**83300**	**83000**	-	-	-	-	-	**84800**
Lead	1/0.5	mg/kg	91.3	-	-	20.0	33.0	20.5	28.5	-	-	-	-	-	24.6
Lithium	0.5/5	mg/kg	-	-	-	47	36	38	41	-	-	-	-	-	35
Manganese	2/780/50/20	mg/kg	1100	-	-	**87800**	**38200**	**92500**	**18700**	-	-	-	-	-	**29800**
Mercury	0.05/0.03	mg/kg	0.486	-	-	<0.03	<0.03	<0.03	<0.03	-	-	-	-	-	<0.03
Molybdenum	0.5/2	mg/kg	-	-	-	7	7	5	5	-	-	-	-	-	3
Nickel	1/2	mg/kg	75	-	-	**98**	74	**98**	67	-	-	-	-	-	73
Selenium	0.8/1	mg/kg	2	-	-	<1	1.2	<1	<1	-	-	-	-	-	<1
Silver	0.5	mg/kg	0.5	-	-	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	<0.5
Strontium	50/5	mg/kg	-	-	-	50	33	92	<50	-	-	-	-	-	<50
Thallium	0.5/0.1	mg/kg	-	-	-	0.1	<0.5	0.1	<0.1	-	-	-	-	-	<0.1
Tin	1/2	mg/kg	-	-	-	3	<1	3	4	-	-	-	-	-	5
Uranium	0.5/0.1	mg/kg	-	-	-	0.5	0.9	0.4	0.7	-	-	-	-	-	0.7
Vanadium	0.4/2	mg/kg	-	-	-	147	48	35	44	-	-	-	-	-	38
Zinc	5	mg/kg	315	-	-	198	139	228	121	-	-	-	-	-	170

Notes:
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NA = Not applicable

RDL = Reported Detection Limit; for all events unless otherwise noted (!)
- RDL for aluminium (March 2021 and December 2021/Site 11-SED for May 2021/August 2021 and March 2022/June 2022
- RDL for antimony, boron, cadmium, chromium, cobalt, copper, lead, lithium, molybdenum, nickel, selenium, thallium, tin, vanadium (December 2021/all other events)
- RDL for barium and beryllium (December 2021/June 2022/all other events)
- RDL for iron and manganese (March 2021, August 2021 and March 2022/Site 11-SED for May 2021/December 2021/June 2022)
- RDL for mercury (March 2021 and May 2021/all other events)
- RDL for strontium (/June 2022/all other events)

SD-SW* = Field Duplicate Sample of Site 10-SW (June 2022 event SW-SD-02 on laboratory certificate); SD-SW** = Field Duplicate Sample of Site 19-SW (June 2022 event SW-SD-01 on laboratory certificate)

Bolded/Shaded = Value exceeds guideline

Table 5 - Analytical Results for Available Metals in Sediment

Parameter	RDL	Units	Guideline[1]	Site 14-SED						Site 15-SED					
			Sample Date	15-Mar-21	9-May-21	4-Aug-21	14-Dec-21	29-Mar-22	21-Jun-22	13-Mar-21	5-May-21	5-Aug-21	3-Dec-21	30-Mar-22	21-Jun-22
Aluminum	10/8740/10/1000	mg/kg	-	-	14300	18100	23100	19500	22200	24900	21400	19700	29800	20800	17000
Antimony	0.8/1	mg/kg	25	-	<1	<1	<0.8	<1	<1	<1	<1	<1	<0.8	<1	<1
Arsenic	1	mg/kg	17	-	**57**	15	**48**	**34**	**24**	**30**	**70**	**30**	**49**	**66**	**24**
Barium	2/1/5	mg/kg	-	-	36	18	42.7	36	40	8	105	196	84.2	63	30
Beryllium	0.4/1/2	mg/kg	-	-	<2	<2	0.4	<2	<1	<2	<2	<2	0.7	<2	<1
Boron	5/2	mg/kg	-	-	<2	4	<5	<2	22	<2	<2	<2	<5	<2	16
Cadmium	0.5/0.3	mg/kg	3.5	-	<0.3	<0.3	<0.5	<0.3	<0.3	<0.3	0.6	0.4	<0.5	<0.3	<0.3
Chromium	5/2	mg/kg	90	-	**111**	**855**	**240**	**145**	**118**	41	59	36	54	58	32
Cobalt	0.5/1	mg/kg	-	-	43	51	36.9	38	41	16	30	39	26.9	28	12
Copper	1/2	mg/kg	197	-	27	43	25	26	26	18	26	28	44	40	6
Iron	50/24400/500/5000	mg/kg	43766	-	32000	40900	**57800**	**46100**	**54200**	**53900**	**55100**	**44600**	**59800**	**54300**	40800
Lead	1/0.5	mg/kg	91.3	-	9.1	12.3	16	12.9	16.7	12.2	9.1	10.8	14	16.7	4.8
Lithium	0.5/5	mg/kg	-	-	53	27	32.3	45	42	73	68	44	65.5	54	29
Manganese	2/780/50/20	mg/kg	1100	-	**1970**	**1910**	**2770**	**2730**	**2430**	916	**10600**	**23100**	**4250**	**9040**	**2680**
Mercury	0.05/0.03	mg/kg	0.486	-	<0.05	<0.03	0.03	<0.03	<0.03	<0.05	<0.05	<0.03	0.07	0.05	<0.03
Molybdenum	0.5/2	mg/kg	-	-	4	4	3.7	3	2	<2	2	2	2.2	4	<2
Nickel	1/2	mg/kg	75	-	**263**	**314**	**238**	**245**	**228**	58	**153**	**88**	**102**	**92**	48
Selenium	0.8/1	mg/kg	2	-	<1	<1	<0.8	<1	<1	<1	<1	<1	<0.8	1	<1
Silver	0.5	mg/kg	0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Strontium	50/5	mg/kg	-	-	11	6	12	10	<50	6	17	34	13	10	<50
Thallium	0.5/0.1	mg/kg	-	-	<0.1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1	0.1	<0.5	<0.1	<0.1
Tin	1/2	mg/kg	-	-	3	3	<1	3	3	3	3	3	<1	3	3
Uranium	0.5/0.1	mg/kg	-	-	0.5	0.7	0.97	0.6	0.9	0.4	0.5	0.5	0.99	0.8	0.3
Vanadium	0.4/2	mg/kg	-	-	46	229	34.2	35	39	31	38	90	31.3	32	21
Zinc	5	mg/kg	315	-	111	66	81	88	91	84	193	100	132	68	76

Notes:
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"-" = no applicable guideline or not analyzed

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RDL = Reported Detection Limit; for all events unless otherwise noted (!)
- RDL for aluminium (March 2021 and December 2021/Site 11-SED for May 2021/August 2021 and March 2022/June 2022
- RDL for antimony, boron, cadmium, chromium, cobalt, copper, lead, lithium, molybdenum, nickel, selenium, thallium, tin, vanadium (December 2021/all other events)
- RDL for barium and beryllium (December 2021/June 2022/all other events)
- RDL for iron and manganese (March 2021, August 2021 and March 2022/Site 11-SED for May 2021/December 2021/June 2022)
- RDL for mercury (March 2021 and May 2021/all other events)
- RDL for strontium (/June 2022/all other events)

SD-SW* = Field Duplicate Sample of Site 10-SW (June 2022 event SW-SD-02 on laboratory certificate); SD-SW** = Field Duplicate Sample of Site 19-SW (June 2022 event SW-SD-01 on laboratory certificate)

Bolded/Shaded = Value exceeds guideline

Table 5 - Analytical Results for Available Metals in Sediment

Parameter	RDL	Units	Guideline[1]	Site 16-SED						Site 17-SED					
			Sample Date	14-Mar-21	8-May-21	5-Aug-21	8-Dec-21	30-Mar-22	20-Jun-22	13-Mar-21	8-May-21	5-Aug-21	8-Dec-21	30-Mar-22	20-Jun-22
Aluminum	10/8740/10/1000	mg/kg	-	21900	18800	19100	22200	18300	19200	-	18100	15200	22600	16900	15600
Antimony	0.8/1	mg/kg	25	<1	<1	<1	<0.8	<1	<1	-	<1	<1	<0.8	<1	<1
Arsenic	1	mg/kg	17	**41**	**31**	11	**51**	**33**	**40**	**-**	**30**	15	**38**	**26**	**55**
Barium	2/1/5	mg/kg	-	22	43	14	50	28	32	-	29	126	54.3	24	182
Beryllium	0.4/1/2	mg/kg	-	<2	<2	<2	0.5	<2	<1	-	<2	<2	0.5	<2	<1
Boron	5/2	mg/kg	-	<2	<2	<2	<5	<2	8	-	<2	<2	<5	2	35
Cadmium	0.5/0.3	mg/kg	3.5	<0.3	<0.3	<0.3	<0.5	<0.3	<0.3	-	<0.3	<0.3	<0.5	<0.3	<0.3
Chromium	5/2	mg/kg	90	60	57	47	59	50	55	-	44	31	50	35	45
Cobalt	0.5/1	mg/kg	-	24	27	15	24.8	21	24	-	21	119	20.5	17	23
Copper	1/2	mg/kg	197	12	15	7	11	10	12	-	14	21	10.5	11	15
Iron	50/24400/500/5000	mg/kg	43766	**43800**	43200	34000	**52300**	39600	**49100**	-	42900	**62000**	**51400**	39500	**47500**
Lead	1/0.5	mg/kg	91.3	6.7	5.4	4.3	10	7.3	9.7	-	6.9	24.7	11	6.9	12.1
Lithium	0.5/5	mg/kg	-	79	67	50	57.5	64	55	-	49	27	47	49	38
Manganese	2/780/50/20	mg/kg	1100	**3460**	**5250**	891	**4360**	**3330**	**3140**	-	**3110**	**18900**	**4850**	**2690**	**6420**
Mercury	0.05/0.03	mg/kg	0.486	<0.05	<0.05	<0.03	0.03	<0.03	<0.03	-	<0.05	<0.03	0.05	<0.03	<0.03
Molybdenum	0.5/2	mg/kg	-	<2	<2	<2	1.8	<2	<2	-	<2	<2	2.4	<2	2
Nickel	1/2	mg/kg	75	**77**	**77**	49	74	67	73	-	64	40	68	69	61
Selenium	0.8/1	mg/kg	2	<1	<1	<1	<0.8	<1	<1	-	<1	<1	<0.8	<1	<1
Silver	0.5	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5
Strontium	50/5	mg/kg	-	10	12	6	11	8	<50	-	10	11	7	6	<50
Thallium	0.5/0.1	mg/kg	-	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1	-	<0.1	0.1	<0.5	<0.1	0.1
Tin	1/2	mg/kg	-	3	3	2	<1	3	3	-	3	3	<1	3	4
Uranium	0.5/0.1	mg/kg	-	0.5	0.6	0.5	1.03	0.5	0.8	-	0.4	0.5	0.92	0.5	0.7
Vanadium	0.4/2	mg/kg	-	29	29	84	28.6	25	29	-	34	110	34.6	29	32
Zinc	5	mg/kg	315	107	112	78	110	94	111	-	92	68	101	92	96

Notes:
1=Atlantic Risk Based Corrective Action (ARBCA) - Ecological Tier I Environmental Quality Standards (EQS) for Sediment [Freshwater Sediment] (2022)

"-" = no applicable guideline or not analyzed

NA = Not applicable

RDL = Reported Detection Limit; for all events unless otherwise noted (!)
- RDL for aluminium (March 2021 and December 2021/Site 11-SED for May 2021/August 2021 and March 2022/June 2022
- RDL for antimony, boron, cadmium, chromium, cobalt, copper, lead, lithium, molybdenum, nickel, selenium, thallium, tin, vanadium (December 2021/all other events)
- RDL for barium and beryllium (December 2021/June 2022/all other events)
- RDL for iron and manganese (March 2021, August 2021 and March 2022/Site 11-SED for May 2021/December 2021/June 2022)
- RDL for mercury (March 2021 and May 2021/all other events)
- RDL for strontium (/June 2022/all other events)

SD-SW* = Field Duplicate Sample of Site 10-SW (June 2022 event SW-SD-02 on laboratory certificate); SD-SW** = Field Duplicate Sample of Site 19-SW (June 2022 event SW-SD-01 on laboratory certificate)

Bolded/Shaded = Value exceeds guideline

Table 5 - Analytical Results for Available Metals in Sediment

Parameter	RDL	Units	Guideline[1]	Site 18-SED						Site 19-SED					
			Sample Date	15-Mar-21	6-May-21	5-Aug-21	8-Dec-21	31-Mar-22	19-Jun-22	14-Mar-21	8-May-21	5-Aug-21	8-Dec-21	31-Mar-22	17-Jun-22
Aluminum	10/8740/10/1000	mg/kg	-	-	-	-	-	-	15100	28400	20200	15000	30200	18900	22500
Antimony	0.8/1	mg/kg	25	-	-	-	-	-	<1	<1	<1	<1	<0.8	<1	<1
Arsenic	1	mg/kg	17	-	-	-	-	-	**19**	16	**25**	9	5	**34**	3
Barium	2/1/5	mg/kg	-	-	-	-	-	-	16	14	26	7	16.4	56	14
Beryllium	0.4/1/2	mg/kg	-	-	-	-	-	-	<1	<2	<2	<2	<0.4	<2	<1
Boron	5/2	mg/kg	-	-	-	-	-	-	14	<2	<2	<2	<5	<2	7
Cadmium	0.5/0.3	mg/kg	3.5	-	-	-	-	-	<0.3	<0.3	<0.3	<0.3	<0.5	<0.3	<0.3
Chromium	5/2	mg/kg	90	-	-	-	-	-	36	41	36	25	50	30	43
Cobalt	0.5/1	mg/kg	-	-	-	-	-	-	15	19	25	10	16.7	20	15
Copper	1/2	mg/kg	197	-	-	-	-	-	9	6	5	4	9.8	4	13
Iron	50/24400/500/5000	mg/kg	43766	-	-	-	-	-	37300	**44500**	**41700**	28700	**52200**	42500	**45600**
Lead	1/0.5	mg/kg	91.3	-	-	-	-	-	6.7	3.5	3.1	2.2	8	4.6	11.5
Lithium	0.5/5	mg/kg	-	-	-	-	-	-	36	84	56	40	72.2	57	55
Manganese	2/780/50/20	mg/kg	1100	-	-	-	-	-	1080	**3080**	**3170**	637	711	**6530**	700
Mercury	0.05/0.03	mg/kg	0.486	-	-	-	-	-	<2	<0.05	<0.05	<0.03	<0.03	<0.03	0.04
Molybdenum	0.5/2	mg/kg	-	-	-	-	-	-	49	<2	<2	<2	0.6	<2	<2
Nickel	1/2	mg/kg	75	-	-	-	-	-	<1	59	51	34	62	53	58
Selenium	0.8/1	mg/kg	2	-	-	-	-	-	<0.5	<1	<1	<1	<0.8	<1	<1
Silver	0.5	mg/kg	0.5	-	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Strontium	50/5	mg/kg	-	-	-	-	-	-	<0.1	9	5	<5	7	8	<50
Thallium	0.5/0.1	mg/kg	-	-	-	-	-	-	3	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1
Tin	1/2	mg/kg	-	-	-	-	-	-	0.6	3	3	<2	<1	4	4
Uranium	0.5/0.1	mg/kg	-	-	-	-	-	-	27	0.4	0.4	0.3	1.01	0.5	0.7
Vanadium	0.4/2	mg/kg	-	-	-	-	-	-	72	33	29	20	37.3	25	33
Zinc	5	mg/kg	315	-	-	-	-	-	<0.03	98	89	60	107	94	92

Notes:
1=Atlantic Risk Based Corrective Action (ARBCA) - Ecological Tier I Environmental Quality Standards (EQS) for Sediment [Freshwater Sediment] (2022)

"-" = no applicable guideline or not analyzed

NA = Not applicable

RDL = Reported Detection Limit; for all events unless otherwise noted (!)
- RDL for aluminium (March 2021 and December 2021/Site 11-SED for May 2021/August 2021 and March 2022/June 2022
- RDL for antimony, boron, cadmium, chromium, cobalt, copper, lead, lithium, molybdenum, nickel, selenium, thallium, tin, vanadium (December 2021/all other events)
- RDL for barium and beryllium (December 2021/June 2022/all other events)
- RDL for iron and manganese (March 2021, August 2021 and March 2022/Site 11-SED for May 2021/December 2021/June 2022)
- RDL for mercury (March 2021 and May 2021/all other events)
- RDL for strontium (/June 2022/all other events)

SD-SW* = Field Duplicate Sample of Site 10-SW (June 2022 event SW-SD-02 on laboratory certificate); SD-SW** = Field Duplicate Sample of Site 19-SW (June 2022 event SW-SD-01 on laboratory certificate)

Bolded/Shaded = Value exceeds guideline

Table 5 - Analytical Results for Available Metals in Sediment

Parameter	RDL	Units	Guideline[1]	SD-SED				Site 20-SED					
			Sample Date	5-Aug-21	8-Dec-21	31-Mar-22	17-Jun-22	15-Mar-21	5-May-21	4-Aug-21	3-Dec-21	28-Mar-22	18-Jun-22
Aluminum	10/8740/10/1000	mg/kg	-	21800	30100	19400	25900	2400	19600	17800	25900	19000	16700
Antimony	0.8/1	mg/kg	25	<1	<0.8	<1	<1	<1	<1	<1	<0.8	<1	<1
Arsenic	1	mg/kg	17	**19**	5	**20**	3	11	**73**	5	**21**	17	**34**
Barium	2/1/5	mg/kg	-	16	13.9	26	14	18	13	20	73.1	50	45
Beryllium	0.4/1/2	mg/kg	-	<2	<0.4	<2	<1	<2	<2	<2	<0.4	<2	<1
Boron	5/2	mg/kg	-	<2	<5	<2	13	<2	3	<2	<5	<2	29
Cadmium	0.5/0.3	mg/kg	3.5	<0.3	<0.5	<0.3	<0.3	<0.3	<0.3	<0.3	<0.5	<0.3	<0.3
Chromium	5/2	mg/kg	90	36	51	32	43	78	**823**	**136**	**128**	**112**	**138**
Cobalt	0.5/1	mg/kg	-	17	16.8	16	14	20	54	21	28.9	21	29
Copper	1/2	mg/kg	197	5	9.2	5	10	11	58	20	11.5	8	11
Iron	50/24400/500/5000	mg/kg	43766	42100	**53800**	40900	**49000**	39800	**56900**	26900	43600	38400	43200
Lead	1/0.5	mg/kg	91.3	3.1	9	3.9	10.4	3.9	13.4	8.8	6	4.6	10.5
Lithium	0.5/5	mg/kg	-	58	73.8	57	51	64	48	34	50.3	51	43
Manganese	2/780/50/20	mg/kg	1100	**2540**	714	**2960**	804	**1380**	925	825	**3230**	**1490**	**1940**
Mercury	0.05/0.03	mg/kg	0.486	<0.03	0.04	<0.03	0.04	<0.05	<0.05	0.07	0.05	<0.03	<0.03
Molybdenum	0.5/2	mg/kg	-	<2	0.6	<2	<2	<2	4	<2	0.8	<2	<2
Nickel	1/2	mg/kg	75	51	63	50	54	**122**	**443**	**165**	**253**	**136**	**129**
Selenium	0.8/1	mg/kg	2	<1	<0.8	<1	<1	<1	<1	<1	<0.8	<1	<1
Silver	0.5	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Strontium	50/5	mg/kg	-	5	7	<5	<50	11	13	6	13	10	<50
Thallium	0.5/0.1	mg/kg	-	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1
Tin	1/2	mg/kg	-	3	<1	3	4	3	3	3	<1	3	3
Uranium	0.5/0.1	mg/kg	-	0.4	0.86	0.4	0.6	0.5	0.7	0.7	0.72	0.5	1.1
Vanadium	0.4/2	mg/kg	-	29	38.3	27	32	31	49	99	27.7	28	32
Zinc	5	mg/kg	315	91	108	89	88	93	86	62	109	88	96

Notes:
1=Atlantic Risk Based Corrective Action (ARBCA) - Ecological Tier I Environmental Quality Standards (EQS) for Sediment [Freshwater Sediment] (2022)

"-" = no applicable guideline or not analyzed

NA = Not applicable

RDL = Reported Detection Limit; for all events unless otherwise noted (!)
- RDL for aluminium (March 2021 and December 2021/Site 11-SED for May 2021/August 2021 and March 2022/June 2022
- RDL for antimony, boron, cadmium, chromium, cobalt, copper, lead, lithium, molybdenum, nickel, selenium, thallium, tin, vanadium (December 2021/all other events)
- RDL for barium and beryllium (December 2021/June 2022/all other events)
- RDL for iron and manganese (March 2021, August 2021 and March 2022/Site 11-SED for May 2021/December 2021/June 2022)
- RDL for mercury (March 2021 and May 2021/all other events)
- RDL for strontium (/June 2022/all other events)

SD-SW* = Field Duplicate Sample of Site 10-SW (June 2022 event SW-SD-02 on laboratory certificate); SD-SW** = Field Duplicate Sample of Site 19-SW (June 2022 event SW-SD-01 on laboratory certificate)

Bolded/Shaded = Value exceeds guideline

Table 5 - Analytical Results for Available Metals in Sediment

Parameter	RDL	Units	Guideline[1]	Site 21-SED						Site 22-SED					
			Sample Date	15-Mar-21	6-May-21	4-Aug-21	3-Dec-21	28-Mar-22	21-Jun-22	15-Mar-21	6-May-21	4-Aug-21	3-Dec-21	28-Mar-22	18-Jun-22
Aluminum	10/8740/10/1000	mg/kg	-	-	20800	28500	29900	-	19600	-	-	-	-	-	-
Antimony	0.8/1	mg/kg	25	-	<1	<1	<0.8	-	<1	-	-	-	-	-	-
Arsenic	1	mg/kg	17	-	**32**	**18**	**57**	-	**52**	-	-	-	-	-	-
Barium	2/1/5	mg/kg	-	-	45	62	41.7	-	39	-	-	-	-	-	-
Beryllium	0.4/1/2	mg/kg	-	-	<2	<2	0.4	-	<1	-	-	-	-	-	-
Boron	5/2	mg/kg	-	-	<2	<2	<5	-	28	-	-	-	-	-	-
Cadmium	0.5/0.3	mg/kg	3.5	-	<0.3	<0.3	<0.5	-	<0.3	-	-	-	-	-	-
Chromium	5/2	mg/kg	90	-	44	51	55	-	52	-	-	-	-	-	-
Cobalt	0.5/1	mg/kg	-	-	21	24	19.9	-	20	-	-	-	-	-	-
Copper	1/2	mg/kg	197	-	11	12	11.3	-	13	-	-	-	-	-	-
Iron	50/24400/500/5000	mg/kg	43766	-	**46300**	**54400**	**57200**	-	**46500**	-	-	-	-	-	-
Lead	1/0.5	mg/kg	91.3	-	4.5	4.5	8.0	-	9.1	-	-	-	-	-	-
Lithium	0.5/5	mg/kg	-	-	50	61	49.4	-	49	-	-	-	-	-	-
Manganese	2/780/50/20	mg/kg	1100	-	**4130**	**7000**	**3450**	-	**3030**	-	-	-	-	-	-
Mercury	0.05/0.03	mg/kg	0.486	-	<0.05	<0.03	0.07	-	<0.03	-	-	-	-	-	-
Molybdenum	0.5/2	mg/kg	-	-	<2	<2	1.9	-	<2	-	-	-	-	-	-
Nickel	1/2	mg/kg	75	-	**78**	74	73	-	**88**	-	-	-	-	-	-
Selenium	0.8/1	mg/kg	2	-	<1	<1	<0.8	-	<1	-	-	-	-	-	-
Silver	0.5	mg/kg	0.5	-	<0.5	<0.5	<0.5	-	<0.5	-	-	-	-	-	-
Strontium	50/5	mg/kg	-	-	5	8	7	-	<50	-	-	-	-	-	-
Thallium	0.5/0.1	mg/kg	-	-	<0.1	<0.1	<0.5	-	<0.1	-	-	-	-	-	-
Tin	1/2	mg/kg	-	-	3	3	<1	-	5	-	-	-	-	-	-
Uranium	0.5/0.1	mg/kg	-	-	0.4	0.6	0.8	-	0.8	-	-	-	-	-	-
Vanadium	0.4/2	mg/kg	-	-	31	121	29	-	34	-	-	-	-	-	-
Zinc	5	mg/kg	315	-	130	134	130	-	116	-	-	-	-	-	-

Notes:
1=Atlantic Risk Based Corrective Action (ARBCA) - Ecological Tier I Environmental Quality Standards (EQS) for Sediment [Freshwater Sediment] (2022)

"-" = no applicable guideline or not analyzed

NA = Not applicable

RDL = Reported Detection Limit; for all events unless otherwise noted (!)
- RDL for aluminium (March 2021 and December 2021/Site 11-SED for May 2021/August 2021 and March 2022/June 2022
- RDL for antimony, boron, cadmium, chromium, cobalt, copper, lead, lithium, molybdenum, nickel, selenium, thallium, tin, vanadium (December 2021/all other events)
- RDL for barium and beryllium (December 2021/June 2022/all other events)
- RDL for iron and manganese (March 2021, August 2021 and March 2022/Site 11-SED for May 2021/December 2021/June 2022)
- RDL for mercury (March 2021 and May 2021/all other events)
- RDL for strontium (/June 2022/all other events)

SD-SW* = Field Duplicate Sample of Site 10-SW (June 2022 event SW-SD-02 on laboratory certificate); SD-SW** = Field Duplicate Sample of Site 19-SW (June 2022 event SW-SD-01 on laboratory certificate)

Bolded/Shaded = Value exceeds guideline

Table 5 - Analytical Results for Available Metals in Sediment

Parameter	RDL	Units	Guideline[1]	Site 23-SED						Site 24-SED					
			Sample Date	15-Mar-21	6-May-21	4-Aug-21	3-Dec-21	28-Mar-22	19-Jun-22	15-Mar-21	6-May-21	4-Aug-21	3-Dec-21	28-Mar-22	19-Jun-22
Aluminum	10/8740/10/1000	mg/kg	-	-	-	-	-	-	16800	-	-	-	-	-	14400
Antimony	0.8/1	mg/kg	25	-	-	-	-	-	<1	-	-	-	-	-	<1
Arsenic	1	mg/kg	17	-	-	-	-	-	**53**	-	-	-	-	-	**35**
Barium	2/1/5	mg/kg	-	-	-	-	-	-	36	-	-	-	-	-	48
Beryllium	0.4/1/2	mg/kg	-	-	-	-	-	-	<1	-	-	-	-	-	<1
Boron	5/2	mg/kg	-	-	-	-	-	-	3	-	-	-	-	-	3
Cadmium	0.5/0.3	mg/kg	3.5	-	-	-	-	-	<0.3	-	-	-	-	-	<0.3
Chromium	5/2	mg/kg	90	-	-	-	-	-	35	-	-	-	-	-	33
Cobalt	0.5/1	mg/kg	-	-	-	-	-	-	14	-	-	-	-	-	17
Copper	1/2	mg/kg	197	-	-	-	-	-	17	-	-	-	-	-	18
Iron	50/24400/500/5000	mg/kg	43766	-	-	-	-	-	39700	-	-	-	-	-	39500
Lead	1/0.5	mg/kg	91.3	-	-	-	-	-	13	-	-	-	-	-	15.2
Lithium	0.5/5	mg/kg	-	-	-	-	-	-	32	-	-	-	-	-	31
Manganese	2/780/50/20	mg/kg	1100	-	-	-	-	-	**1790**	-	-	-	-	-	**3380**
Mercury	0.05/0.03	mg/kg	0.486	-	-	-	-	-	<0.03	-	-	-	-	-	0.03
Molybdenum	0.5/2	mg/kg	-	-	-	-	-	-	<2	-	-	-	-	-	3
Nickel	1/2	mg/kg	75	-	-	-	-	-	53	-	-	-	-	-	45
Selenium	0.8/1	mg/kg	2	-	-	-	-	-	<1	-	-	-	-	-	<1
Silver	0.5	mg/kg	0.5	-	-	-	-	-	<0.5	-	-	-	-	-	<0.5
Strontium	50/5	mg/kg	-	-	-	-	-	-	<50	-	-	-	-	-	<50
Thallium	0.5/0.1	mg/kg	-	-	-	-	-	-	<0.1	-	-	-	-	-	<0.1
Tin	1/2	mg/kg	-	-	-	-	-	-	5	-	-	-	-	-	4
Uranium	0.5/0.1	mg/kg	-	-	-	-	-	-	0.9	-	-	-	-	-	1.7
Vanadium	0.4/2	mg/kg	-	-	-	-	-	-	33	-	-	-	-	-	33
Zinc	5	mg/kg	315	-	-	-	-	-	80	-	-	-	-	-	75

Notes:
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NA = Not applicable

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- RDL for aluminium (March 2021 and December 2021/Site 11-SED for May 2021/August 2021 and March 2022/June 2022
- RDL for antimony, boron, cadmium, chromium, cobalt, copper, lead, lithium, molybdenum, nickel, selenium, thallium, tin, vanadium (December 2021/all other events)
- RDL for barium and beryllium (December 2021/June 2022/all other events)
- RDL for iron and manganese (March 2021, August 2021 and March 2022/Site 11-SED for May 2021/December 2021/June 2022)
- RDL for mercury (March 2021 and May 2021/all other events)
- RDL for strontium (/June 2022/all other events)

SD-SW* = Field Duplicate Sample of Site 10-SW (June 2022 event SW-SD-02 on laboratory certificate); SD-SW** = Field Duplicate Sample of Site 19-SW (June 2022 event SW-SD-01 on laboratory certificate)

Bolded/Shaded = Value exceeds guideline

Table 6 - Results of Laboratory Analysis of Petroleum Hydrocarbons in Surface Water

Parameters	RDL[!]	Units	Guideline[1]	Site 1-SW						Site 2-SW					
				14-Mar-21	7-May-21	6-Aug-21	8-Dec-21	31-Mar-22	19-Jun-22	14-Mar-21	8-May-21	6-Aug-21	8-Dec-21	31-Mar-22	17-Jun-22
Benzene	0.001	mg/L	2.1	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Toluene	0.001	mg/L	0.77	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Ethylbenzene	0.001	mg/L	0.32	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Xylenes	0.002	mg/L	0.33	-	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
C6-C10 (less BTEX)	0.01	mg/L	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
>C10-C16 Hydrocarbons	0.05	mg/L	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
>C16-C21 Hydrocarbons	0.10/0.05	mg/L	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	0.11	<0.05	<0.05	<0.05	<0.05	<0.05
>C21-C32 Hydrocarbons	0.1	mg/L	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1
Modified TPH - Tier I[2]	0.1	mg/L	1.5/0.1/0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	**0.3**	<0.1	<0.1	<0.1	<0.1	<0.1
Sediment	-	-	-	-	NO	TRACE	TRACE	TRACE	TRACE	NO	NO	NO	NO	NO	TRACE
Resemblance Comment	-	-	-	-	NR	NR	NR	NR	NR	WFOR, LR	NR	NR	NR	NR	NR
Return to Baseline at C32[3]	-	-	-	-	YES	YES	YES	Y	Y	YES	YES	YES	YES	Y	Y

Notes:

1 = Atlantic Risk-Based Corrective Action (ARBCA) - Ecological Tier I Environmental Quality Standards (EQS) for Surface Water [Freshwater] (2022). Screening level for Gas/Diesel_#2/#6 oil_lube.

2 = Modified TPH = TPH C_6 - C_{32} (excluding BTEX)

3 = Atlantic PIRI analytical method does not analyze for >C32. Laboratory certificate indicates (Yes or No) whether chromatogram for each sample returns to baseline after C32. Samples are considered to have returned to baseline if the area from C32-C36 is less than 10% of the area from C10-C32.

"-" = no applicable guideline or not analyzed

RDL = Reported Detection Limit; for all events unless otherwise noted (!)
- RDL for >C16-C21 Hydrocarbons (March 2021/all other events)

SD-SW* = Field Duplicate Sample of Site 10-SW (June 2022 event SW-SD-02 on laboratory certificate); SD-SW** = Field Duplicate Sample of Site 19-SW (June 2022 event SW-SD-01 on laboratory certificate)

Bolded/Shaded = Value exceeds guideline

Resemblance

WFOF/R - Weathered Fuel Oil Fraction/Range

NR - No resemblance

LR - Lube Range

Table 6 - Results of Laboratory Analysis of Petroleum Hydrocarbons in Surface Water

Parameters	RDL[!]	Units	Guideline[1]	Site 3-SW						Site 4-SW					
				14-Mar-21	7-May-21	3-Aug-21	5-Dec-21	29-Mar-22	18-Jun-22	12-Mar-21	7-May-21	3-Aug-21	5-Dec-21	29-Mar-22	18-Jun-22
Benzene	0.001	mg/L	2.1	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Toluene	0.001	mg/L	0.77	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Ethylbenzene	0.001	mg/L	0.32	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Xylenes	0.002	mg/L	0.33	-	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
C6-C10 (less BTEX)	0.01	mg/L	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
>C10-C16 Hydrocarbons	0.05	mg/L	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
>C16-C21 Hydrocarbons	0.10/0.05	mg/L	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	<0.05	<0.05	<0.05	<0.05
>C21-C32 Hydrocarbons	0.1	mg/L	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1
Modified TPH - Tier I[2]	0.1	mg/L	1.5/0.1/0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	**0.2**	<0.1	<0.1	<0.1	<0.1	<0.1
Sediment	-	-	-	-	NO	TRACE	NO	TRACE	TRACE	NO	NO	TRACE	NO	TRACE	NO
Resemblance Comment	-	-	-	-	NR	NR	NR	NR	NR	LR	NR	NR	NR	NR	NR
Return to Baseline at C32[3]	-	-	-	-	YES	YES	YES	Y	Y	YES	YES	YES	YES	Y	Y

Notes:

1 = Atlantic Risk-Based Corrective Action (ARBCA) - Ecological Tier I Environmental Quality Standards (EQS) for Surface Water [Freshwater] (2022). Screening level for Gas/Diesel_#2/#6 oil_lube.

2 = Modified TPH = TPH C_6 - C_{32} (excluding BTEX)

3 = Atlantic PIRI analytical method does not analyze for >C32. Laboratory certificate indicates (Yes or No) whether chromatogram for each sample returns to baseline after C32. Samples are considered to have returned to baseline if the area from C32-C36 is less than 10% of the area from C10-C32.

"-" = no applicable guideline or not analyzed

RDL = Reported Detection Limit; for all events unless otherwise noted (!)
- RDL for >C16-C21 Hydrocarbons (March 2021/all other events)

SD-SW* = Field Duplicate Sample of Site 10-SW (June 2022 event SW-SD-02 on laboratory certificate); SD-SW** = Field Duplicate Sample of Site 19-SW (June 2022 event SW-SD-01 on laboratory certificate)

Bolded/Shaded = Value exceeds guideline

Resemblance

WFOF/R - Weathered Fuel Oil Fraction/Range

NR - No resemblance

LR - Lube Range

Table 6 - Results of Laboratory Analysis of Petroleum Hydrocarbons in Surface Water

Parameters	RDL[!]	Units	Guideline[1]	Site 5-SW						Site 6-SW					
				14-Mar-21	5-May-21	4-Aug-21	8-Dec-21	30-Mar-22	20-Jun-22	12-Mar-21	6-May-21	3-Aug-21	13-Dec-21	31-Mar-22	20-Jun-22
Benzene	0.001	mg/L	2.1	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Toluene	0.001	mg/L	0.77	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Ethylbenzene	0.001	mg/L	0.32	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Xylenes	0.002	mg/L	0.33	<0.002	<0.002	<0.002	<0.002	<0.002	-	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
C6-C10 (less BTEX)	0.01	mg/L	-	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
>C10-C16 Hydrocarbons	0.05	mg/L	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
>C16-C21 Hydrocarbons	0.10/0.05	mg/L	-	0.1	<0.05	<0.05	<0.05	<0.05	-	<0.10	<0.05	<0.05	<0.05	<0.05	<0.05
>C21-C32 Hydrocarbons	0.1	mg/L	-	0.2	<0.1	<0.1	<0.1	<0.1	-	0.2	<0.1	<0.1	<0.1	<0.1	<0.1
Modified TPH - Tier I[2]	0.1	mg/L	1.5/0.1/0.1	**0.3**	<0.1	<0.1	<0.1	<0.1	-	**0.2**	<0.1	<0.1	<0.1	<0.1	<0.1
Sediment	-	-	-	TRACE	TRACE	TRACE	NO	TRACE	-	NO	NO	TRACE	TRACE	TRACE	TRACE
Resemblance Comment	-	-	-	WFOF, LR	NR	NR	NR	NR	-	LR	NR	NR	NR	NR	NR
Return to Baseline at C32[3]	-	-	-	YES	YES	YES	YES	Y	-	YES	YES	YES	YES	Y	Y

Notes:

1 = Atlantic Risk-Based Corrective Action (ARBCA) - Ecological Tier I Environmental Quality Standards (EQS) for Surface Water [Freshwater] (2022). Screening level for Gas/Diesel_#2/#6 oil_lube.

2 = Modified TPH = TPH C_6 - C_{32} (excluding BTEX)

3 = Atlantic PIRI analytical method does not analyze for >C32. Laboratory certificate indicates (Yes or No) whether chromatogram for each sample returns to baseline after C32. Samples are considered to have returned to baseline if the area from C32-C36 is less than 10% of the area from C10-C32.

"-" = no applicable guideline or not analyzed

RDL = Reported Detection Limit; for all events unless otherwise noted (!)
- RDL for >C16-C21 Hydrocarbons (March 2021/all other events)

SD-SW* = Field Duplicate Sample of Site 10-SW (June 2022 event SW-SD-02 on laboratory certificate); SD-SW** = Field Duplicate Sample of Site 19-SW (June 2022 event SW-SD-01 on laboratory certificate)

Bolded/Shaded = Value exceeds guideline

Resemblance

WFOF/R - Weathered Fuel Oil Fraction/Range

NR - No resemblance

LR - Lube Range

Table 6 - Results of Laboratory Analysis of Petroleum Hydrocarbons in Surface Water

Parameters	RDL[!]	Units	Guideline[1]	Site 7-SW						Site 8-SW					
				12-Mar-21	6-May-21	3-Aug-21	13-Dec-21	31-Mar-22	20-Jun-22	12-Mar-21	8-May-21	4-Aug-21	13-Dec-21	29-Mar-22	20-Jun-22
Benzene	0.001	mg/L	2.1	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Toluene	0.001	mg/L	0.77	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Ethylbenzene	0.001	mg/L	0.32	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Xylenes	0.002	mg/L	0.33	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
C6-C10 (less BTEX)	0.01	mg/L	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
>C10-C16 Hydrocarbons	0.05	mg/L	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
>C16-C21 Hydrocarbons	0.10/0.05	mg/L	-	<0.10	<0.05	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	<0.05	<0.05	<0.05	<0.05
>C21-C32 Hydrocarbons	0.1	mg/L	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Modified TPH - Tier I[2]	0.1	mg/L	1.5/0.1/0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Sediment	-	-	-	NO	NO	TRACE	TRACE	TRACE	TRACE	NO	NO	TRACE	NO	TRACE	TRACE
Resemblance Comment	-	-	-	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Return to Baseline at C32[3]	-	-	-	YES	YES	YES	YES	Y	Y	YES	YES	YES	YES	Y	Y

Notes:

1 = Atlantic Risk-Based Corrective Action (ARBCA) - Ecological Tier I Environmental Quality Standards (EQS) for Surface Water [Freshwater] (2022). Screening level for Gas/Diesel_#2/#6 oil_lube.

2 = Modified TPH = TPH C_6 - C_{32} (excluding BTEX)

3 = Atlantic PIRI analytical method does not analyze for >C32. Laboratory certificate indicates (Yes or No) whether chromatogram for each sample returns to baseline after C32. Samples are considered to have returned to baseline if the area from C32-C36 is less than 10% of the area from C10-C32.

"-" = no applicable guideline or not analyzed

RDL = Reported Detection Limit; for all events unless otherwise noted (!)
- RDL for >C16-C21 Hydrocarbons (March 2021/all other events)

SD-SW* = Field Duplicate Sample of Site 10-SW (June 2022 event SW-SD-02 on laboratory certificate); SD-SW** = Field Duplicate Sample of Site 19-SW (June 2022 event SW-SD-01 on laboratory certificate)

Bolded/Shaded = Value exceeds guideline

Resemblance

WFOF/R - Weathered Fuel Oil Fraction/Range

NR - No resemblance

LR - Lube Range

Table 6 - Results of Laboratory Analysis of Petroleum Hydrocarbons in Surface Water

Parameters	RDL[!]	Units	Guideline[1]	Site 9-SW						Site 10-SW					
				14-Mar-21	5-May-21	6-Aug-21	5-Dec-21	28-Mar-22	17-Jun-22	14-Mar-21	5-May-21	5-Aug-21	3-Dec-21	30-Mar-22	19-Jun-22
Benzene	0.001	mg/L	2.1	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Toluene	0.001	mg/L	0.77	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Ethylbenzene	0.001	mg/L	0.32	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Xylenes	0.002	mg/L	0.33	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
C6-C10 (less BTEX)	0.01	mg/L	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
>C10-C16 Hydrocarbons	0.05	mg/L	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
>C16-C21 Hydrocarbons	0.10/0.05	mg/L	-	<0.10	<0.05	<0.05	<0.05	<0.05	<0.05	0.14	<0.05	<0.05	<0.05	<0.05	<0.05
>C21-C32 Hydrocarbons	0.1	mg/L	-	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	0.3	<0.1	<0.1	<0.1	<0.1	<0.1
Modified TPH - Tier I[2]	0.1	mg/L	1.5/0.1/0.1	**0.2**	<0.1	<0.1	<0.1	<0.1	<0.1	**0.5**	<0.1	<0.1	<0.1	<0.1	<0.1
Sediment	-	-	-	TRACE	TRACE	TRACE	NO	TRACE	TRACE	TRACE	NO	TRACE	NO	TRACE	TRACE
Resemblance Comment	-	-	-	LR	NR	NR	NR	NR	NR	WFOF, LR	NR	NR	NR	NR	NR
Return to Baseline at C32[3]	-	-	-	YES	YES	YES	YES	Y	Y	YES	YES	YES	YES	Y	Y

Notes:

1 = Atlantic Risk-Based Corrective Action (ARBCA) - Ecological Tier I Environmental Quality Standards (EQS) for Surface Water [Freshwater] (2022). Screening level for Gas/Diesel_#2/#6 oil_lube.

2 = Modified TPH = TPH C_6 - C_{32} (excluding BTEX)

3 = Atlantic PIRI analytical method does not analyze for >C32. Laboratory certificate indicates (Yes or No) whether chromatogram for each sample returns to baseline after C32. Samples are considered to have returned to baseline if the area from C32-C36 is less than 10% of the area from C10-C32.

"-" = no applicable guideline or not analyzed

RDL = Reported Detection Limit; for all events unless otherwise noted (!)
- RDL for >C16-C21 Hydrocarbons (March 2021/all other events)

SD-SW* = Field Duplicate Sample of Site 10-SW (June 2022 event SW-SD-02 on laboratory certificate); SD-SW** = Field Duplicate Sample of Site 19-SW (June 2022 event SW-SD-01 on laboratory certificate)

Bolded/Shaded = Value exceeds guideline

Resemblance

WFOF/R - Weathered Fuel Oil Fraction/Range

NR - No resemblance

LR - Lube Range

Table 6 - Results of Laboratory Analysis of Petroleum Hydrocarbons in Surface Water

Parameters	RDL[!]	Units	Guideline[1]	SD-SW*			Site 11-SW					
				14-Mar-21	5-May-21	19-Jun-22	15-Mar-21	6-May-21	4-Aug-21	13-Dec-21	29-Mar-22	20-Jun-22
Benzene	0.001	mg/L	2.1	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	<0.001
Toluene	0.001	mg/L	0.77	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	<0.001
Ethylbenzene	0.001	mg/L	0.32	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	<0.001
Xylenes	0.002	mg/L	0.33	<0.002	<0.002	<0.002	<0.002	-	<0.002	<0.002	<0.002	<0.002
C6-C10 (less BTEX)	0.01	mg/L	-	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	<0.01
>C10-C16 Hydrocarbons	0.05	mg/L	-	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05
>C16-C21 Hydrocarbons	0.10/0.05	mg/L	-	<0.10	<0.05	<0.05	0.14	-	<0.05	<0.05	<0.05	<0.05
>C21-C32 Hydrocarbons	0.1	mg/L	-	0.2	<0.1	<0.1	0.3	-	<0.1	<0.1	<0.1	<0.1
Modified TPH - Tier I[2]	0.1	mg/L	1.5/0.1/0.1	**0.2**	<0.1	<0.1	**0.4**	-	<0.1	<0.1	<0.1	<0.1
Sediment	-	-	-	TRACE	NO	NO	NO	-	NO	NO	TRACE	TRACE
Resemblance Comment	-	-	-	LR	NR	NR	WFOF, LR	-	NR	NR	NR	NR
Return to Baseline at C32[3]	-	-	-	YES	YES	Y	YES	-	YES	YES	Y	Y

Notes:

1 = Atlantic Risk-Based Corrective Action (ARBCA) - Ecological Tier I Environmental Quality Standards (EQS) for Surface Water [Freshwater] (2022). Screening level for Gas/Diesel_#2/#6 oil_lube.

2 = Modified TPH = TPH C_6 - C_{32} (excluding BTEX)

3 = Atlantic PIRI analytical method does not analyze for >C32. Laboratory certificate indicates (Yes or No) whether chromatogram for each sample returns to baseline after C32. Samples are considered to have returned to baseline if the area from C32-C36 is less than 10% of the area from C10-C32.

"-" = no applicable guideline or not analyzed

RDL = Reported Detection Limit; for all events unless otherwise noted (!)
- RDL for >C16-C21 Hydrocarbons (March 2021/all other events)

SD-SW* = Field Duplicate Sample of Site 10-SW (June 2022 event SW-SD-02 on laboratory certificate); SD-SW** = Field Duplicate Sample of Site 19-SW (June 2022 event SW-SD-01 on laboratory certificate)

Bolded/Shaded = Value exceeds guideline

Resemblance

WFOF/R - Weathered Fuel Oil Fraction/Range

NR - No resemblance

LR - Lube Range

Table 6 - Results of Laboratory Analysis of Petroleum Hydrocarbons in Surface Water

Parameters	RDL[!]	Units	Guideline[1]	Site 12-SW						Site 13-SW					
				15-Mar-21	6-May-21	4-Aug-21	14-Dec-21	29-Mar-22	21-Jun-22	15-Mar-21	6-May-21	4-Aug-21	14-Dec-21	29-Mar-22	21-Jun-22
Benzene	0.001	mg/L	2.1	-	-	<0.001	<0.001	<0.001	<0.001	-	-	-	-	-	<0.001
Toluene	0.001	mg/L	0.77	-	-	<0.001	<0.001	<0.001	<0.001	-	-	-	-	-	<0.001
Ethylbenzene	0.001	mg/L	0.32	-	-	<0.001	<0.001	<0.001	<0.001	-	-	-	-	-	<0.001
Xylenes	0.002	mg/L	0.33	-	-	<0.002	<0.002	<0.002	<0.002	-	-	-	-	-	<0.002
C6-C10 (less BTEX)	0.01	mg/L	-	-	-	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	<0.01
>C10-C16 Hydrocarbons	0.05	mg/L	-	-	-	<0.05	<0.05	<0.05	<0.05	-	-	-	-	-	<0.05
>C16-C21 Hydrocarbons	0.10/0.05	mg/L	-	-	-	<0.05	<0.05	<0.05	<0.05	-	-	-	-	-	<0.05
>C21-C32 Hydrocarbons	0.1	mg/L	-	-	-	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	<0.1
Modified TPH - Tier I[2]	0.1	mg/L	1.5/0.1/0.1	-	-	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	<0.1
Sediment	-	-	-	-	-	TRACE	NO	TRACE	TRACE	-	-	-	-	-	TRACE
Resemblance Comment	-	-	-	-	-	NR	NR	NR	NR	-	-	-	-	-	NR
Return to Baseline at C32[3]	-	-	-	-	-	YES	YES	Y	Y	-	-	-	-	-	Y

Notes:

1 = Atlantic Risk-Based Corrective Action (ARBCA) - Ecological Tier I Environmental Quality Standards (EQS) for Surface Water [Freshwater] (2022). Screening level for Gas/Diesel_#2/#6 oil_lube.

2 = Modified TPH = TPH C_6 - C_{32} (excluding BTEX)

3 = Atlantic PIRI analytical method does not analyze for >C32. Laboratory certificate indicates (Yes or No) whether chromatogram for each sample returns to baseline after C32. Samples are considered to have returned to baseline if the area from C32-C36 is less than 10% of the area from C10-C32.

"-" = no applicable guideline or not analyzed

RDL = Reported Detection Limit; for all events unless otherwise noted (!)
- RDL for >C16-C21 Hydrocarbons (March 2021/all other events)

SD-SW* = Field Duplicate Sample of Site 10-SW (June 2022 event SW-SD-02 on laboratory certificate); SD-SW** = Field Duplicate Sample of Site 19-SW (June 2022 event SW-SD-01 on laboratory certificate)

Bolded/Shaded = Value exceeds guideline

Resemblance

WFOF/R - Weathered Fuel Oil Fraction/Range

NR - No resemblance

LR - Lube Range

Table 6 - Results of Laboratory Analysis of Petroleum Hydrocarbons in Surface Water

Parameters	RDL[!]	Units	Guideline[1]	Site 14-SW						Site 15-SW					
				15-Mar-21	9-May-21	4-Aug-21	14-Dec-21	29-Mar-22	21-Jun-22	13-Mar-21	5-May-21	5-Aug-21	3-Dec-21	30-Mar-22	21-Jun-22
Benzene	0.001	mg/L	2.1	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Toluene	0.001	mg/L	0.77	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Ethylbenzene	0.001	mg/L	0.32	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Xylenes	0.002	mg/L	0.33	-	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
C6-C10 (less BTEX)	0.01	mg/L	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
>C10-C16 Hydrocarbons	0.05	mg/L	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	0.06	<0.05	<0.05	<0.05	<0.05	<0.05
>C16-C21 Hydrocarbons	0.10/0.05	mg/L	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	0.17	<0.05	<0.05	<0.05	<0.05	<0.05
>C21-C32 Hydrocarbons	0.1	mg/L	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	0.3	<0.1	<0.1	<0.1	<0.1	<0.1
Modified TPH - Tier I[2]	0.1	mg/L	1.5/0.1/0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	**0.5**	<0.1	<0.1	<0.1	<0.1	<0.1
Sediment	-	-	-	-	TRACE	TRACE	TRACE	TRACE	TRACE	NO	NO	NO	NO	TRACE	TRACE
Resemblance Comment	-	-	-	-	NR	NR	NR	NR	NR	WFOF, LR	NR	NR	NR	NR	NR
Return to Baseline at C32[3]	-	-	-	-	YES	YES	YES	Y	Y	YES	YES	YES	YES	Y	Y

Notes:

1 = Atlantic Risk-Based Corrective Action (ARBCA) - Ecological Tier I Environmental Quality Standards (EQS) for Surface Water [Freshwater] (2022). Screening level for Gas/Diesel_#2/#6 oil_lube.

2 = Modified TPH = TPH C_6 - C_{32} (excluding BTEX)

3 = Atlantic PIRI analytical method does not analyze for >C32. Laboratory certificate indicates (Yes or No) whether chromatogram for each sample returns to baseline after C32. Samples are considered to have returned to baseline if the area from C32-C36 is less than 10% of the area from C10-C32.

"-" = no applicable guideline or not analyzed

RDL = Reported Detection Limit; for all events unless otherwise noted (!)
- RDL for >C16-C21 Hydrocarbons (March 2021/all other events)

SD-SW* = Field Duplicate Sample of Site 10-SW (June 2022 event SW-SD-02 on laboratory certificate); SD-SW** = Field Duplicate Sample of Site 19-SW (June 2022 event SW-SD-01 on laboratory certificate)

Bolded/Shaded = Value exceeds guideline

Resemblance

WFOF/R - Weathered Fuel Oil Fraction/Range

NR - No resemblance

LR - Lube Range

Table 6 - Results of Laboratory Analysis of Petroleum Hydrocarbons in Surface Water

Parameters	RDL[!]	Units	Guideline[1]	Site 16-SW						Site 17-SW					
				14-Mar-21	8-May-21	5-Aug-21	8-Dec-21	30-Mar-22	20-Jun-22	13-Mar-21	8-May-21	5-Aug-21	8-Dec-21	30-Mar-22	20-Jun-22
Benzene	0.001	mg/L	2.1	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Toluene	0.001	mg/L	0.77	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Ethylbenzene	0.001	mg/L	0.32	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Xylenes	0.002	mg/L	0.33	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
C6-C10 (less BTEX)	0.01	mg/L	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
>C10-C16 Hydrocarbons	0.05	mg/L	-	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
>C16-C21 Hydrocarbons	0.10/0.05	mg/L	-	0.15	<0.05	<0.05	<0.05	<0.05	<0.05	0.14	<0.05	<0.05	<0.05	<0.05	<0.05
>C21-C32 Hydrocarbons	0.1	mg/L	-	0.3	<0.1	<0.1	<0.1	<0.1	<0.1	0.3	<0.1	<0.1	<0.1	<0.1	<0.1
Modified TPH - Tier I[2]	0.1	mg/L	1.5/0.1/0.1	**0.5**	<0.1	<0.1	<0.1	<0.1	<0.1	**0.5**	<0.1	<0.1	<0.1	<0.1	<0.1
Sediment	-	-	-	TRACE	NO	TRACE	NO	TRACE	TRACE	TRACE	NO	NO	NO	TRACE	TRACE
Resemblance Comment	-	-	-	WFOF, LR	NR	NR	NR	NR	NR	WFOF, LR	NR	NR	NR	NR	NR
Return to Baseline at C32[3]	-	-	-	YES	YES	YES	YES	Y	Y	YES	YES	YES	YES	Y	Y

Notes:

1 = Atlantic Risk-Based Corrective Action (ARBCA) - Ecological Tier I Environmental Quality Standards (EQS) for Surface Water [Freshwater] (2022). Screening level for Gas/Diesel_#2/#6 oil_lube.

2 = Modified TPH = TPH C_6 - C_{32} (excluding BTEX)

3 = Atlantic PIRI analytical method does not analyze for >C32. Laboratory certificate indicates (Yes or No) whether chromatogram for each sample returns to baseline after C32. Samples are considered to have returned to baseline if the area from C32-C36 is less than 10% of the area from C10-C32.

"-" = no applicable guideline or not analyzed

RDL = Reported Detection Limit; for all events unless otherwise noted (!)
- RDL for >C16-C21 Hydrocarbons (March 2021/all other events)

SD-SW* = Field Duplicate Sample of Site 10-SW (June 2022 event SW-SD-02 on laboratory certificate); SD-SW** = Field Duplicate Sample of Site 19-SW (June 2022 event SW-SD-01 on laboratory certificate)

Bolded/Shaded = Value exceeds guideline

Resemblance

WFOF/R - Weathered Fuel Oil Fraction/Range

NR - No resemblance

LR - Lube Range

Table 6 - Results of Laboratory Analysis of Petroleum Hydrocarbons in Surface Water

Parameters	RDL[!]	Units	Guideline[1]	Site 18-SW						Site 19-SW					
				15-Mar-21	6-May-21	5-Aug-21	8-Dec-21	29-Mar-22	19-Jun-22	14-Mar-21	8-May-21	5-Aug-21	8-Dec-21	29-Mar-22	17-Jun-22
Benzene	0.001	mg/L	2.1	-	-	-	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Toluene	0.001	mg/L	0.77	-	-	-	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Ethylbenzene	0.001	mg/L	0.32	-	-	-	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Xylenes	0.002	mg/L	0.33	-	-	-	-	-	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
C6-C10 (less BTEX)	0.01	mg/L	-	-	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
>C10-C16 Hydrocarbons	0.05	mg/L	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
>C16-C21 Hydrocarbons	0.10/0.05	mg/L	-	-	-	-	-	-	<0.05	0.14	<0.05	<0.05	<0.05	<0.05	<0.05
>C21-C32 Hydrocarbons	0.1	mg/L	-	-	-	-	-	-	<0.1	0.3	<0.1	<0.1	<0.1	<0.1	<0.1
Modified TPH - Tier I[2]	0.1	mg/L	1.5/0.1/0.1	-	-	-	-	-	<0.1	**0.4**	<0.1	<0.1	<0.1	<0.1	<0.1
Sediment	-	-	-	-	-	-	-	-	NO	NO	NO	TRACE	NO	TRACE	TRACE
Resemblance Comment	-	-	-	-	-	-	-	-	NR	WFOF, LR	NR	NR	NR	NR	NR
Return to Baseline at C32[3]	-	-	-	-	-	-	-	-	Y	YES	YES	YES	YES	Y	Y

Notes:

1 = Atlantic Risk-Based Corrective Action (ARBCA) - Ecological Tier I Environmental Quality Standards (EQS) for Surface Water [Freshwater] (2022). Screening level for Gas/Diesel_#2/#6 oil_lube.

2 = Modified TPH = TPH C_6 - C_{32} (excluding BTEX)

3 = Atlantic PIRI analytical method does not analyze for >C32. Laboratory certificate indicates (Yes or No) whether chromatogram for each sample returns to baseline after C32. Samples are considered to have returned to baseline if the area from C32-C36 is less than 10% of the area from C10-C32.

"-" = no applicable guideline or not analyzed

RDL = Reported Detection Limit; for all events unless otherwise noted (!)
- RDL for >C16-C21 Hydrocarbons (March 2021/all other events)

SD-SW* = Field Duplicate Sample of Site 10-SW (June 2022 event SW-SD-02 on laboratory certificate); SD-SW** = Field Duplicate Sample of Site 19-SW (June 2022 event SW-SD-01 on laboratory certificate)

Bolded/Shaded = Value exceeds guideline

Resemblance

WFOF/R - Weathered Fuel Oil Fraction/Range

NR - No resemblance

LR - Lube Range

Table 6 - Results of Laboratory Analysis of Petroleum Hydrocarbons in Surface Water

Parameters	RDL[!]	Units	Guideline[1]	SD-SW**				Site 20-SW					
				5-Aug-21	8-Dec-21	29-Mar-22	17-Jun-22	15-Mar-21	5-May-21	4-Aug-21	3-Dec-21	28-Mar-22	18-Jun-22
Benzene	0.001	mg/L	2.1	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Toluene	0.001	mg/L	0.77	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Ethylbenzene	0.001	mg/L	0.32	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Xylenes	0.002	mg/L	0.33	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
C6-C10 (less BTEX)	0.01	mg/L	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
>C10-C16 Hydrocarbons	0.05	mg/L	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
>C16-C21 Hydrocarbons	0.10/0.05	mg/L	-	<0.05	<0.05	<0.05	<0.05	0.12	<0.05	<0.05	<0.05	<0.05	<0.05
>C21-C32 Hydrocarbons	0.1	mg/L	-	<0.1	<0.1	<0.1	<0.1	0.3	<0.1	<0.1	<0.1	<0.1	<0.1
Modified TPH - Tier I[2]	0.1	mg/L	1.5/0.1/0.1	<0.1	<0.1	<0.1	<0.1	**0.4**	<0.1	<0.1	<0.1	<0.1	<0.1
Sediment	-	-	-	NO	TRACE	NO	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE
Resemblance Comment	-	-	-	NR	NR	NR	NR	WFOF, LR	NR	NR	NR	NR	NR
Return to Baseline at C32[3]	-	-	-	YES	YES	Y	Y	YES	YES	YES	YES	Y	Y

Notes:

1 = Atlantic Risk-Based Corrective Action (ARBCA) - Ecological Tier I Environmental Quality Standards (EQS) for Surface Water [Freshwater] (2022). Screening level for Gas/Diesel_#2/#6 oil_lube.

2 = Modified TPH = TPH C_6 - C_{32} (excluding BTEX)

3 = Atlantic PIRI analytical method does not analyze for >C32. Laboratory certificate indicates (Yes or No) whether chromatogram for each sample returns to baseline after C32. Samples are considered to have returned to baseline if the area from C32-C36 is less than 10% of the area from C10-C32.

"-" = no applicable guideline or not analyzed

RDL = Reported Detection Limit; for all events unless otherwise noted (!)
- RDL for >C16-C21 Hydrocarbons (March 2021/all other events)

SD-SW* = Field Duplicate Sample of Site 10-SW (June 2022 event SW-SD-02 on laboratory certificate); SD-SW** = Field Duplicate Sample of Site 19-SW (June 2022 event SW-SD-01 on laboratory certificate)

Bolded/Shaded = Value exceeds guideline

Resemblance

WFOF/R - Weathered Fuel Oil Fraction/Range

NR - No resemblance

LR - Lube Range

Table 6 - Results of Laboratory Analysis of Petroleum Hydrocarbons in Surface Water

Parameters	RDL[!]	Units	Guideline[1]	Site 21-SW						Site 22-SW					
				15-Mar-21	6-May-21	4-Aug-21	3-Dec-21	30-Mar-22	21-Jun-22	15-Mar-21	6-May-21	4-Aug-21	3-Dec-21	30-Mar-22	21-Jun-22
Benzene	0.001	mg/L	2.1	-	<0.001	<0.001	<0.001	<0.001	<0.001	-	-	-	-	-	-
Toluene	0.001	mg/L	0.77	-	<0.001	<0.001	<0.001	<0.001	<0.001	-	-	-	-	-	-
Ethylbenzene	0.001	mg/L	0.32	-	<0.001	<0.001	<0.001	<0.001	<0.001	-	-	-	-	-	-
Xylenes	0.002	mg/L	0.33	-	<0.002	<0.002	<0.002	<0.002	<0.002	-	-	-	-	-	-
C6-C10 (less BTEX)	0.01	mg/L	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-
>C10-C16 Hydrocarbons	0.05	mg/L	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	-	-	-
>C16-C21 Hydrocarbons	0.10/0.05	mg/L	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	-	-	-
>C21-C32 Hydrocarbons	0.1	mg/L	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
Modified TPH - Tier I[2]	0.1	mg/L	1.5/0.1/0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
Sediment	-	-	-	-	NO	NO	NO	TRACE	TRACE	-	-	-	-	-	-
Resemblance Comment	-	-	-	-	NR	NR	NR	NR	NR	-	-	-	-	-	-
Return to Baseline at C32[3]	-	-	-	-	YES	YES	YES	Y	Y	-	-	-	-	-	-

Notes:

1 = Atlantic Risk-Based Corrective Action (ARBCA) - Ecological Tier I Environmental Quality Standards (EQS) for Surface Water [Freshwater] (2022). Screening level for Gas/Diesel_#2/#6 oil_lube.

2 = Modified TPH = TPH C_6 - C_{32} (excluding BTEX)

3 = Atlantic PIRI analytical method does not analyze for >C32. Laboratory certificate indicates (Yes or No) whether chromatogram for each sample returns to baseline after C32. Samples are considered to have returned to baseline if the area from C32-C36 is less than 10% of the area from C10-C32.

"-" = no applicable guideline or not analyzed

RDL = Reported Detection Limit; for all events unless otherwise noted (!)
- RDL for >C16-C21 Hydrocarbons (March 2021/all other events)

SD-SW* = Field Duplicate Sample of Site 10-SW (June 2022 event SW-SD-02 on laboratory certificate); SD-SW** = Field Duplicate Sample of Site 19-SW (June 2022 event SW-SD-01 on laboratory certificate)

Bolded/Shaded = Value exceeds guideline

Resemblance

WFOF/R - Weathered Fuel Oil Fraction/Range

NR - No resemblance

LR - Lube Range

Table 6 - Results of Laboratory Analysis of Petroleum Hydrocarbons in Surface Water

Parameters	RDL[!]	Units	Guideline[1]	Site 23-SW						Site 24-SW					
				15-Mar-21	6-May-21	4-Aug-21	3-Dec-21	30-Mar-22	19-Jun-22	15-Mar-21	6-May-21	4-Aug-21	3-Dec-21	30-Mar-22	19-Jun-22
Benzene	0.001	mg/L	2.1	-	-	-	-	-	<0.001	-	-	-	-	-	<0.001
Toluene	0.001	mg/L	0.77	-	-	-	-	-	<0.001	-	-	-	-	-	<0.001
Ethylbenzene	0.001	mg/L	0.32	-	-	-	-	-	<0.001	-	-	-	-	-	<0.001
Xylenes	0.002	mg/L	0.33	-	-	-	-	-	<0.002	-	-	-	-	-	<0.002
C6-C10 (less BTEX)	0.01	mg/L	-	-	-	-	-	-	<0.01	-	-	-	-	-	<0.01
>C10-C16 Hydrocarbons	0.05	mg/L	-	-	-	-	-	-	<0.05	-	-	-	-	-	<0.05
>C16-C21 Hydrocarbons	0.10/0.05	mg/L	-	-	-	-	-	-	<0.05	-	-	-	-	-	<0.05
>C21-C32 Hydrocarbons	0.1	mg/L	-	-	-	-	-	-	<0.1	-	-	-	-	-	<0.1
Modified TPH - Tier I[2]	0.1	mg/L	1.5/0.1/0.1	-	-	-	-	-	<0.1	-	-	-	-	-	<0.1
Sediment	-	-	-	-	-	-	-	-	TRACE	-	-	-	-	-	TRACE
Resemblance Comment	-	-	-	-	-	-	-	-	NR	-	-	-	-	-	NR
Return to Baseline at C32[3]	-	-	-	-	-	-	-	-	Y	-	-	-	-	-	Y

Notes:

1 = Atlantic Risk-Based Corrective Action (ARBCA) - Ecological Tier I Environmental Quality Standards (EQS) for Surface Water [Freshwater] (2022). Screening level for Gas/Diesel_#2/#6 oil_lube.

2 = Modified TPH = TPH C_6 - C_{32} (excluding BTEX)

3 = Atlantic PIRI analytical method does not analyze for >C32. Laboratory certificate indicates (Yes or No) whether chromatogram for each sample returns to baseline after C32. Samples are considered to have returned to baseline if the area from C32-C36 is less than 10% of the area from C10-C32.

"-" = no applicable guideline or not analyzed

RDL = Reported Detection Limit; for all events unless otherwise noted (!)
- RDL for >C16-C21 Hydrocarbons (March 2021/all other events)

SD-SW* = Field Duplicate Sample of Site 10-SW (June 2022 event SW-SD-02 on laboratory certificate); SD-SW** = Field Duplicate Sample of Site 19-SW (June 2022 event SW-SD-01 on laboratory certificate)

Bolded/Shaded = Value exceeds guideline

Resemblance

WFOF/R - Weathered Fuel Oil Fraction/Range

NR - No resemblance

LR - Lube Range

Table 7 - Results of Laboratory Analysis of Petroleum Hydrocarbons in Sediment

Parameters	RDL[!]	Units	Guideline[1]	Site 1-SED						Site 2-SED					
				14-Mar-21	7-May-21	6-Aug-21	8-Dec-21	31-Mar-22	19-Jun-22	14-Mar-21	8-May-21	6-Aug-21	8-Dec-21	31-Mar-22	17-Jun-22
Benzene	0.03/0.02	mg/kg	1.2	-	<0.03	<0.03	<0.02	<0.02	<0.02	<0.03	<0.03	<0.03	<0.02	<0.02	<0.02
Toluene	0.04	mg/kg	1.4	-	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Ethylbenzene	0.03	mg/kg	1.2	-	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Xylenes	0.05	mg/kg	1.3	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
C6-C10 (less BTEX)	3	mg/kg	-	-	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
>C10-C16 Hydrocarbons	15	mg/kg	-	-	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15
>C16-C21 Hydrocarbons	15	mg/kg	-	-	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15
>C21-C32 Hydrocarbons	15	mg/kg	-	-	<15	<15	26	<15	<15	<15	<15	<15	28	<15	<15
Modified TPH - Tier I[2]	15	mg/kg	15/25/43	-	<15	<15	**26**	<15	<15	<15	<15	<15	**28**	<15	<15
Silica Gel Clean-up[3]	-	-	-	-	-	Yes	-	-	-	Yes	-	Yes	-	-	-
Resemblance Comment	-	-	-	-	NR	NR	UC	NR	NR	NR	NR	NR	UC	NR	NR
Return to Baseline at C32[4]	-	-	-	-	Yes	Yes	Yes	Y	Y	Yes	Yes	Yes	Yes	Y	Y

Notes:

1 = Atlantic Risk-Based Corrective Action (ARBCA) - Ecological Tier I Environmental Quality Standards (EQS) for Surface Water [Freshwater] (2022). Screening level for Gas/Diesel_#2/#6 oil_lube.

2 = Modified TPH = TPH C_6 - C_{32} (excluding BTEX)

3 = Silica gel cleanup was used to remove organic interferences from sample extract during March, August 2021 events

4 = Atlantic PIRI analytical method does not analyze for >C32. Laboratory certificate indicates (Yes or No) whether chromatogram for each sample returns to baseline after C32. Samples are considered to have returned to baseline if the area from C32-C36 is less than 10% of the area from C10-C32.

"-" = no applicable guideline or not analyzed

RDL = Reported Detection Limit; for all events unless otherwise noted (!)
- RDL for benzene (March, May and August 2021/all other events)

RDL - Reportable Detection Limit

UC - Unidentified Compounds

SD-SW* = Field Duplicate Sample of Site 10-SW (June 2022 event SW-SD-02 on laboratory certificate); SD-SW** = Field Duplicate Sample of Site 19-SW (June 2022 event SW-SD-01 on laboratory certificate)

Bolded/Shaded = Value exceeds guideline

Resemblance

UC - Unidentified Compounds (identified concentrations of hydrocarbons do not resemble petroleum products; inferred to have a biogenic source.

NR - No resemblance

LOF - Lube Oil Fraction

LR - Lube Range

Table 7 - Results of Laboratory Analysis of Petroleum Hydrocarbons in Sediment

Parameters	RDL[!]	Units	Guideline[1]	Site 3-SED						Site 4-SED					
				14-Mar-21	7-May-21	3-Aug-21	5-Dec-21	29-Mar-22	18-Jun-22	12-Mar-21	7-May-21	3-Aug-21	5-Dec-21	29-Mar-22	18-Jun-22
Benzene	0.03/0.02	mg/kg	1.2	-	<0.03	<0.03	<0.02	<0.02	<0.02	<0.03	<0.03	<0.03	<0.02	<0.02	<0.02
Toluene	0.04	mg/kg	1.4	-	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Ethylbenzene	0.03	mg/kg	1.2	-	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Xylenes	0.05	mg/kg	1.3	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
C6-C10 (less BTEX)	3	mg/kg	-	-	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
>C10-C16 Hydrocarbons	15	mg/kg	-	-	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15
>C16-C21 Hydrocarbons	15	mg/kg	-	-	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15
>C21-C32 Hydrocarbons	15	mg/kg	-	-	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15
Modified TPH - Tier I[2]	15	mg/kg	15/25/43	-	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15
Silica Gel Clean-up[3]	-	-	-	-	-	Yes	-	-	-	Yes	-	Yes	-	-	-
Resemblance Comment	-	-	-	-	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Return to Baseline at C32[4]	-	-	-	-	Yes	Yes	Yes	Y	Y	Yes	Yes	Yes	Yes	Y	Y

Notes:

1 = Atlantic Risk-Based Corrective Action (ARBCA) - Ecological Tier I Environmental Quality Standards (EQS) for Surface Water [Freshwater] (2022). Screening level for Gas/Diesel_#2/#6 oil_lube.

2 = Modified TPH = TPH C_6 - C_{32} (excluding BTEX)

3 = Silica gel cleanup was used to remove organic interferences from sample extract during March, August 2021 events

4 = Atlantic PIRI analytical method does not analyze for >C32. Laboratory certificate indicates (Yes or No) whether chromatogram for each sample returns to baseline after C32. Samples are considered to have returned to baseline if the area from C32-C36 is less than 10% of the area from C10-C32.

"-" = no applicable guideline or not analyzed

RDL = Reported Detection Limit; for all events unless otherwise noted (!)
- RDL for benzene (March, May and August 2021/all other events)

RDL - Reportable Detection Limit

UC - Unidentified Compounds

SD-SW* = Field Duplicate Sample of Site 10-SW (June 2022 event SW-SD-02 on laboratory certificate); SD-SW** = Field Duplicate Sample of Site 19-SW (June 2022 event SW-SD-01 on laboratory certificate)

Bolded/Shaded = Value exceeds guideline

Resemblance

UC - Unidentified Compounds (identified concentrations of hydrocarbons do not resemble petroleum products; inferred to have a biogenic source.

NR - No resemblance

LOF - Lube Oil Fraction

LR - Lube Range

Table 7 - Results of Laboratory Analysis of Petroleum Hydrocarbons in Sediment

Parameters	RDL[!]	Units	Guideline[1]	Site 5-SED						Site 6-SED					
				14-Mar-21	5-May-21	4-Aug-21	8-Dec-21	29-Mar-22	18-Jun-22	12-Mar-21	6-May-21	3-Aug-21	13-Dec-21	29-Mar-22	18-Jun-22
Benzene	0.03/0.02	mg/kg	1.2	-	<0.03	<0.03	<0.02	-	-	-	-	<0.03	-	*	*
Toluene	0.04	mg/kg	1.4	-	<0.04	<0.04	<0.04	-	-	-	-	<0.04	-	*	*
Ethylbenzene	0.03	mg/kg	1.2	-	<0.03	<0.03	<0.03	-	-	-	-	<0.03	-	*	*
Xylenes	0.05	mg/kg	1.3	-	<0.05	<0.05	<0.05	-	-	-	-	<0.05	-	*	*
C6-C10 (less BTEX)	3	mg/kg	-	-	<3	<3	<3	-	-	-	-	<3	-	*	*
>C10-C16 Hydrocarbons	15	mg/kg	-	-	<15	678	<15	-	-	-	-	33	-	*	*
>C16-C21 Hydrocarbons	15	mg/kg	-	-	<15	283	41	-	-	-	-	58	-	*	*
>C21-C32 Hydrocarbons	15	mg/kg	-	-	<15	363	205	-	-	-	-	105	-	*	*
Modified TPH - Tier I[2]	15	mg/kg	15/25/43	-	<15	**1320**	**246**	-	-	-	-	**196**	-	*	*
Silica Gel Clean-up[3]	-	-	-	-	-	Yes	-	-	-	-	-	Yes	-	*	*
Resemblance Comment	-	-	-	-	NR	UC	UC	-	-	-	-	NR	-	*	*
Return to Baseline at C32[4]	-	-	-	-	Yes	Yes	Yes	-	-	-	-	Yes	-	*	*

Notes:

1 = Atlantic Risk-Based Corrective Action (ARBCA) - Ecological Tier I Environmental Quality Standards (EQS) for Surface Water [Freshwater] (2022). Screening level for Gas/Diesel_#2/#6 oil_lube.

2 = Modified TPH = TPH C_6 - C_{32} (excluding BTEX)

3 = Silica gel cleanup was used to remove organic interferences from sample extract during March, August 2021 events

4 = Atlantic PIRI analytical method does not analyze for >C32. Laboratory certificate indicates (Yes or No) whether chromatogram for each sample returns to baseline after C32. Samples are considered to have returned to baseline if the area from C32-C36 is less than 10% of the area from C10-C32.

"-" = no applicable guideline or not analyzed

RDL = Reported Detection Limit; for all events unless otherwise noted (!)
- RDL for benzene (March, May and August 2021/all other events)

RDL - Reportable Detection Limit

UC - Unidentified Compounds

SD-SW* = Field Duplicate Sample of Site 10-SW (June 2022 event SW-SD-02 on laboratory certificate); SD-SW** = Field Duplicate Sample of Site 19-SW (June 2022 event SW-SD-01 on laboratory certificate)

Bolded/Shaded = Value exceeds guideline

Resemblance

UC - Unidentified Compounds (identified concentrations of hydrocarbons do not resemble petroleum products; inferred to have a biogenic source.

NR - No resemblance

LOF - Lube Oil Fraction

LR - Lube Range

Table 7 - Results of Laboratory Analysis of Petroleum Hydrocarbons in Sediment

Parameters	RDL[!]	Units	Guideline[1]	Site 7-SED						Site 8-SED					
				12-Mar-21	6-May-21	3-Aug-21	13-Dec-21	29-Mar-22	18-Jun-22	12-Mar-21	8-May-21	4-Aug-21	13-Dec-21	28-Mar-22	20-Jun-22
Benzene	0.03/0.02	mg/kg	1.2	-	-	<0.03	-	-	-	<0.03	<0.03	<0.03	<0.02	-	<0.02
Toluene	0.04	mg/kg	1.4	-	-	<0.04	-	-	-	<0.04	<0.04	<0.04	<0.04	-	<0.04
Ethylbenzene	0.03	mg/kg	1.2	-	-	<0.03	-	-	-	<0.03	<0.03	<0.03	0.03	-	<0.03
Xylenes	0.05	mg/kg	1.3	-	-	<0.05	-	-	-	<0.05	<0.05	<0.05	0.09	-	<0.05
C6-C10 (less BTEX)	3	mg/kg	-	-	-	<3	-	-	-	<3	<3	<3	<3	-	<3
>C10-C16 Hydrocarbons	15	mg/kg	-	-	-	47	-	-	-	<15	<15	<15	<15	-	<15
>C16-C21 Hydrocarbons	15	mg/kg	-	-	-	107	-	-	-	<15	<15	<15	<15	-	<15
>C21-C32 Hydrocarbons	15	mg/kg	-	-	-	233	-	-	-	<15	<15	<15	<15	-	<15
Modified TPH - Tier I[2]	15	mg/kg	15/25/43	-	-	**387**	-	-	-	<15	<15	<15	<15	-	<15
Silica Gel Clean-up[3]	-	-	-	-	-	Yes	-	-	-	Yes	-	Yes	-	-	-
Resemblance Comment	-	-	-	-	-	UC	-	-	-	NR	NR	NR	NR	-	NR
Return to Baseline at C32[4]	-	-	-	-	-	Yes	-	-	-	Yes	Yes	Yes	Yes	-	Y

Notes:

1 = Atlantic Risk-Based Corrective Action (ARBCA) - Ecological Tier I Environmental Quality Standards (EQS) for Surface Water [Freshwater] (2022). Screening level for Gas/Diesel_#2/#6 oil_lube.

2 = Modified TPH = TPH C_6 - C_{32} (excluding BTEX)

3 = Silica gel cleanup was used to remove organic interferences from sample extract during March, August 2021 events

4 = Atlantic PIRI analytical method does not analyze for >C32. Laboratory certificate indicates (Yes or No) whether chromatogram for each sample returns to baseline after C32. Samples are considered to have returned to baseline if the area from C32-C36 is less than 10% of the area from C10-C32.

"-" = no applicable guideline or not analyzed

RDL = Reported Detection Limit; for all events unless otherwise noted (!)
- RDL for benzene (March, May and August 2021/all other events)

RDL - Reportable Detection Limit

UC - Unidentified Compounds

SD-SW* = Field Duplicate Sample of Site 10-SW (June 2022 event SW-SD-02 on laboratory certificate); SD-SW** = Field Duplicate Sample of Site 19-SW (June 2022 event SW-SD-01 on laboratory certificate)

Bolded/Shaded = Value exceeds guideline

Resemblance

UC - Unidentified Compounds (identified concentrations of hydrocarbons do not resemble petroleum products; inferred to have a biogenic source.

NR - No resemblance

LOF - Lube Oil Fraction

LR - Lube Range

Table 7 - Results of Laboratory Analysis of Petroleum Hydrocarbons in Sediment

Parameters	RDL[!]	Units	Guideline[1]	Site 9-SED						Site 10-SED					
				14-Mar-21	5-May-21	6-Aug-21	5-Dec-21	28-Mar-22	17-Jun-22	14-Mar-21	5-May-21	5-Aug-21	3-Dec-21	30-Mar-22	19-Jun-22
Benzene	0.03/0.02	mg/kg	1.2	<0.03	<0.03	<0.03	<0.02	<0.02	<0.02	<0.03	<0.03	<0.03	<0.02	<0.02	<0.02
Toluene	0.04	mg/kg	1.4	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Ethylbenzene	0.03	mg/kg	1.2	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Xylenes	0.05	mg/kg	1.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
C6-C10 (less BTEX)	3	mg/kg	-	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
>C10-C16 Hydrocarbons	15	mg/kg	-	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15
>C16-C21 Hydrocarbons	15	mg/kg	-	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15
>C21-C32 Hydrocarbons	15	mg/kg	-	<15	<15	<15	<15	21	<15	<15	<15	<15	<15	<15	<15
Modified TPH - Tier I[2]	15	mg/kg	15/25/43	<15	<15	<15	<15	**21**	<15	<15	<15	<15	<15	<15	<15
Silica Gel Clean-up[3]	-	-	-	Yes	-	Yes	-	-	-	Yes	-	Yes	-	-	-
Resemblance Comment	-	-	-	NR	NR	NR	NR	LR	NR	NR	NR	NR	NR	NR	NR
Return to Baseline at C32[4]	-	-	-	Yes	Yes	Yes	Yes	Y	Y	Yes	Yes	Yes	Yes	Y	Y

Notes:

1 = Atlantic Risk-Based Corrective Action (ARBCA) - Ecological Tier I Environmental Quality Standards (EQS) for Surface Water [Freshwater] (2022). Screening level for Gas/Diesel_#2/#6 oil_lube.

2 = Modified TPH = TPH C_6 - C_{32} (excluding BTEX)

3 = Silica gel cleanup was used to remove organic interferences from sample extract during March, August 2021 events

4 = Atlantic PIRI analytical method does not analyze for >C32. Laboratory certificate indicates (Yes or No) whether chromatogram for each sample returns to baseline after C32. Samples are considered to have returned to baseline if the area from C32-C36 is less than 10% of the area from C10-C32.

"-" = no applicable guideline or not analyzed

RDL = Reported Detection Limit; for all events unless otherwise noted (!)
- RDL for benzene (March, May and August 2021/all other events)

RDL - Reportable Detection Limit

UC - Unidentified Compounds

SD-SW* = Field Duplicate Sample of Site 10-SW (June 2022 event SW-SD-02 on laboratory certificate); SD-SW** = Field Duplicate Sample of Site 19-SW (June 2022 event SW-SD-01 on laboratory certificate)

Bolded/Shaded = Value exceeds guideline

Resemblance

UC - Unidentified Compounds (identified concentrations of hydrocarbons do not resemble petroleum products; inferred to have a biogenic source.

NR - No resemblance

LOF - Lube Oil Fraction

LR - Lube Range

Table 7 - Results of Laboratory Analysis of Petroleum Hydrocarbons in Sediment

Parameters	RDL[!]	Units	Guideline[1]	SD-SED*			Site 11-SED					
				14-Mar-21	5-May-21	19-Jun-22	15-Mar-21	6-May-21	4-Aug-21	13-Dec-21	29-Mar-22	20-Jun-22
Benzene	0.03/0.02	mg/kg	1.2	<0.03	<0.03	<0.02	<0.03	<0.03	<0.03	<0.02	<0.02	<0.02
Toluene	0.04	mg/kg	1.4	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Ethylbenzene	0.03	mg/kg	1.2	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Xylenes	0.05	mg/kg	1.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
C6-C10 (less BTEX)	3	mg/kg	-	<3	<3	<3	<3	<3	<3	<3	<3	<3
>C10-C16 Hydrocarbons	15	mg/kg	-	<15	<15	<15	<15	<15	<15	<15	<15	<15
>C16-C21 Hydrocarbons	15	mg/kg	-	<15	<15	<15	<15	<15	<15	<15	<15	<15
>C21-C32 Hydrocarbons	15	mg/kg	-	<15	<15	<15	<15	<15	41	<15	<15	<15
Modified TPH - Tier I[2]	15	mg/kg	15/25/43	<15	<15	<15	<15	<15	**41**	<15	<15	<15
Silica Gel Clean-up[3]	-	-	-	Yes	-	-	Yes	-	Yes	-	-	-
Resemblance Comment	-	-	-	NR	NR	NR	NR	NR	UC	NR	NR	NR
Return to Baseline at C32[4]	-	-	-	Yes	Yes	Y	Yes	Yes	Yes	Yes	Y	Y

Notes:

1 = Atlantic Risk-Based Corrective Action (ARBCA) - Ecological Tier I Environmental Quality Standards (EQS) for Surface Water [Freshwater] (2022). Screening level for Gas/Diesel_#2/#6 oil_lube.

2 = Modified TPH = TPH C_6 - C_{32} (excluding BTEX)

3 = Silica gel cleanup was used to remove organic interferences from sample extract during March, August 2021 events

4 = Atlantic PIRI analytical method does not analyze for >C32. Laboratory certificate indicates (Yes or No) whether chromatogram for each sample returns to baseline after C32. Samples are considered to have returned to baseline if the area from C32-C36 is less than 10% of the area from C10-C32.

"-" = no applicable guideline or not analyzed

RDL = Reported Detection Limit; for all events unless otherwise noted (!)
- RDL for benzene (March, May and August 2021/all other events)

RDL - Reportable Detection Limit

UC - Unidentified Compounds

SD-SW* = Field Duplicate Sample of Site 10-SW (June 2022 event SW-SD-02 on laboratory certificate); SD-SW** = Field Duplicate Sample of Site 19-SW (June 2022 event SW-SD-01 on laboratory certificate)

Bolded/Shaded = Value exceeds guideline

Resemblance

UC - Unidentified Compounds (identified concentrations of hydrocarbons do not resemble petroleum products; inferred to have a biogenic source.

NR - No resemblance

LOF - Lube Oil Fraction

LR - Lube Range

Table 7 - Results of Laboratory Analysis of Petroleum Hydrocarbons in Sediment

Parameters	RDL[!]	Units	Guideline[1]	Site 12-SED						Site 13-SED					
				15-Mar-21	6-May-21	4-Aug-21	14-Dec-21	29-Mar-22	21-Jun-22	15-Mar-21	6-May-21	4-Aug-21	14-Dec-21	29-Mar-22	21-Jun-22
Benzene	0.03/0.02	mg/kg	1.2	-	-	<0.03	<0.02	<0.02	<0.02	-	-	-	-	-	<0.02
Toluene	0.04	mg/kg	1.4	-	-	<0.04	<0.04	<0.04	<0.04	-	-	-	-	-	<0.04
Ethylbenzene	0.03	mg/kg	1.2	-	-	<0.03	<0.03	<0.03	<0.03	-	-	-	-	-	<0.03
Xylenes	0.05	mg/kg	1.3	-	-	<0.05	<0.05	<0.05	<0.05	-	-	-	-	-	<0.05
C6-C10 (less BTEX)	3	mg/kg	-	-	-	<3	<3	<3	<3	-	-	-	-	-	<3
>C10-C16 Hydrocarbons	15	mg/kg	-	-	-	<15	<15	<15	<15	-	-	-	-	-	<15
>C16-C21 Hydrocarbons	15	mg/kg	-	-	-	<15	<15	<15	<15	-	-	-	-	-	<15
>C21-C32 Hydrocarbons	15	mg/kg	-	-	-	<15	<15	<15	<15	-	-	-	-	-	<15
Modified TPH - Tier I[2]	15	mg/kg	15/25/43	-	-	<15	<15	<15	<15	-	-	-	-	-	<15
Silica Gel Clean-up[3]	-	-	-	-	-	Yes	-	-	-	-	-	-	-	-	-
Resemblance Comment	-	-	-	-	-	NR	NR	NR	NR	-	-	-	-	-	NR
Return to Baseline at C32[4]	-	-	-	-	-	Yes	Yes	Y	Y	-	-	-	-	-	Y

Notes:

1 = Atlantic Risk-Based Corrective Action (ARBCA) - Ecological Tier I Environmental Quality Standards (EQS) for Surface Water [Freshwater] (2022). Screening level for Gas/Diesel_#2/#6 oil_lube.

2 = Modified TPH = TPH C_6 - C_{32} (excluding BTEX)

3 = Silica gel cleanup was used to remove organic interferences from sample extract during March, August 2021 events

4 = Atlantic PIRI analytical method does not analyze for >C32. Laboratory certificate indicates (Yes or No) whether chromatogram for each sample returns to baseline after C32. Samples are considered to have returned to baseline if the area from C32-C36 is less than 10% of the area from C10-C32.

"-" = no applicable guideline or not analyzed

RDL = Reported Detection Limit; for all events unless otherwise noted (!)
- RDL for benzene (March, May and August 2021/all other events)

RDL - Reportable Detection Limit

UC - Unidentified Compounds

SD-SW* = Field Duplicate Sample of Site 10-SW (June 2022 event SW-SD-02 on laboratory certificate); SD-SW** = Field Duplicate Sample of Site 19-SW (June 2022 event SW-SD-01 on laboratory certificate)

Bolded/Shaded = Value exceeds guideline

Resemblance

UC - Unidentified Compounds (identified concentrations of hydrocarbons do not resemble petroleum products; inferred to have a biogenic source.

NR - No resemblance

LOF - Lube Oil Fraction

LR - Lube Range

Table 7 - Results of Laboratory Analysis of Petroleum Hydrocarbons in Sediment

Parameters	RDL[!]	Units	Guideline[1]	Site 14-SED						Site 15-SED					
				15-Mar-21	9-May-21	4-Aug-21	14-Dec-21	29-Mar-22	21-Jun-22	13-Mar-21	5-May-21	5-Aug-21	3-Dec-21	30-Mar-22	21-Jun-22
Benzene	0.03/0.02	mg/kg	1.2	-	<0.03	<0.03	<0.02	<0.02	<0.02	<0.03	<0.03	<0.03	<0.02	<0.02	<0.02
Toluene	0.04	mg/kg	1.4	-	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Ethylbenzene	0.03	mg/kg	1.2	-	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Xylenes	0.05	mg/kg	1.3	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
C6-C10 (less BTEX)	3	mg/kg	-	-	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
>C10-C16 Hydrocarbons	15	mg/kg	-	-	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15
>C16-C21 Hydrocarbons	15	mg/kg	-	-	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15
>C21-C32 Hydrocarbons	15	mg/kg	-	-	<15	<15	<15	<15	<15	<15	<15	<15	<15	52	<15
Modified TPH - Tier I[2]	15	mg/kg	15/25/43	-	<15	<15	<15	<15	<15	<15	<15	<15	<15	**52**	<15
Silica Gel Clean-up[3]	-	-	-	-	-	Yes	-	-	-	Yes	-	Yes	-	-	-
Resemblance Comment	-	-	-	-	NR	NR	NR	NR	NR	NR	NR	NR	NR	LOF	NR
Return to Baseline at C32[4]	-	-	-	-	Yes	Yes	Yes	Y	Y	Yes	Yes	Yes	Yes	Y	Y

Notes:

1 = Atlantic Risk-Based Corrective Action (ARBCA) - Ecological Tier I Environmental Quality Standards (EQS) for Surface Water [Freshwater] (2022). Screening level for Gas/Diesel_#2/#6 oil_lube.

2 = Modified TPH = TPH C_6 - C_{32} (excluding BTEX)

3 = Silica gel cleanup was used to remove organic interferences from sample extract during March, August 2021 events

4 = Atlantic PIRI analytical method does not analyze for >C32. Laboratory certificate indicates (Yes or No) whether chromatogram for each sample returns to baseline after C32. Samples are considered to have returned to baseline if the area from C32-C36 is less than 10% of the area from C10-C32.

"-" = no applicable guideline or not analyzed

RDL = Reported Detection Limit; for all events unless otherwise noted (!)
- RDL for benzene (March, May and August 2021/all other events)

RDL - Reportable Detection Limit

UC - Unidentified Compounds

SD-SW* = Field Duplicate Sample of Site 10-SW (June 2022 event SW-SD-02 on laboratory certificate); SD-SW** = Field Duplicate Sample of Site 19-SW (June 2022 event SW-SD-01 on laboratory certificate)

Bolded/Shaded = Value exceeds guideline

Resemblance

UC - Unidentified Compounds (identified concentrations of hydrocarbons do not resemble petroleum products; inferred to have a biogenic source.

NR - No resemblance

LOF - Lube Oil Fraction

LR - Lube Range

Table 7 - Results of Laboratory Analysis of Petroleum Hydrocarbons in Sediment

Parameters	RDL[!]	Units	Guideline[1]	Site 16-SED		Site 16-SED				Site 17-SED					
				14-Mar-21	8-May-21	5-Aug-21	8-Dec-21	30-Mar-22	20-Jun-22	13-Mar-21	8-May-21	5-Aug-21	8-Dec-21	30-Mar-22	20-Jun-22
Benzene	0.03/0.02	mg/kg	1.2	<0.03	<0.03	<0.03	<0.02	<0.02	<0.02	-	<0.03	<0.03	<0.02	<0.02	<0.02
Toluene	0.04	mg/kg	1.4	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	-	<0.04	<0.04	<0.04	<0.04	<0.04
Ethylbenzene	0.03	mg/kg	1.2	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	-	<0.03	<0.03	<0.03	<0.03	<0.03
Xylenes	0.05	mg/kg	1.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05
C6-C10 (less BTEX)	3	mg/kg	-	<3	<3	<3	<3	<3	<3	-	<3	<3	<3	<3	<3
>C10-C16 Hydrocarbons	15	mg/kg	-	<15	<15	<15	<15	<15	<15	-	<15	<15	<15	<15	<15
>C16-C21 Hydrocarbons	15	mg/kg	-	<15	<15	<15	<15	<15	<15	-	<15	<15	<15	<15	<15
>C21-C32 Hydrocarbons	15	mg/kg	-	<15	<15	<15	<15	<15	<15	-	<15	<15	35	<15	<15
Modified TPH - Tier I[2]	15	mg/kg	15/25/43	<15	<15	<15	<15	<15	<15	-	<15	<15	35	<15	<15
Silica Gel Clean-up[3]	-	-	-	Yes	-	Yes	-	-	-	-	-	Yes	-	-	-
Resemblance Comment	-	-	-	NR	NR	NR	NR	NR	NR	-	NR	NR	UC	NR	NR
Return to Baseline at C32[4]	-	-	-	Yes	Yes	Yes	Yes	Y	Y	-	Yes	Yes	Yes	Y	Y

Notes:

1 = Atlantic Risk-Based Corrective Action (ARBCA) - Ecological Tier I Environmental Quality Standards (EQS) for Surface Water [Freshwater] (2022). Screening level for Gas/Diesel_#2/#6 oil_lube.

2 = Modified TPH = TPH C_6 - C_{32} (excluding BTEX)

3 = Silica gel cleanup was used to remove organic interferences from sample extract during March, August 2021 events

4 = Atlantic PIRI analytical method does not analyze for >C32. Laboratory certificate indicates (Yes or No) whether chromatogram for each sample returns to baseline after C32. Samples are considered to have returned to baseline if the area from C32-C36 is less than 10% of the area from C10-C32.

"-" = no applicable guideline or not analyzed

RDL = Reported Detection Limit; for all events unless otherwise noted (!)
- RDL for benzene (March, May and August 2021/all other events)

RDL - Reportable Detection Limit

UC - Unidentified Compounds

SD-SW* = Field Duplicate Sample of Site 10-SW (June 2022 event SW-SD-02 on laboratory certificate); SD-SW** = Field Duplicate Sample of Site 19-SW (June 2022 event SW-SD-01 on laboratory certificate)

Bolded/Shaded = Value exceeds guideline

Resemblance

UC - Unidentified Compounds (identified concentrations of hydrocarbons do not resemble petroleum products; inferred to have a biogenic source.

NR - No resemblance

LOF - Lube Oil Fraction

LR - Lube Range

Table 7 - Results of Laboratory Analysis of Petroleum Hydrocarbons in Sediment

Parameters	RDL[!]	Units	Guideline[1]	Site 18-SED						Site 19-SED					
				15-Mar-21	6-May-21	5-Aug-21	8-Dec-21	30-Mar-22	19-Jun-22	14-Mar-21	8-May-21	5-Aug-21	8-Dec-21	31-Mar-22	17-Jun-22
Benzene	0.03/0.02	mg/kg	1.2	-	-	-	-	-	<0.02	<0.03	<0.03	<0.03	<0.02	<0.02	<0.02
Toluene	0.04	mg/kg	1.4	-	-	-	-	-	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Ethylbenzene	0.03	mg/kg	1.2	-	-	-	-	-	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Xylenes	0.05	mg/kg	1.3	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
C6-C10 (less BTEX)	3	mg/kg	-	-	-	-	-	-	<3	<3	<3	<3	<3	<3	<3
>C10-C16 Hydrocarbons	15	mg/kg	-	-	-	-	-	-	<15	<15	<15	<15	<15	<15	<15
>C16-C21 Hydrocarbons	15	mg/kg	-	-	-	-	-	-	<15	<15	<15	<15	<15	<15	<15
>C21-C32 Hydrocarbons	15	mg/kg	-	-	-	-	-	-	<15	<15	<15	<15	30	<15	59
Modified TPH - Tier I[2]	15	mg/kg	15/25/43	-	-	-	-	-	<15	<15	<15	<15	**30**	<15	**59**
Silica Gel Clean-up[3]	-	-	-	-	-	-	-	-	-	Yes	-	Yes	-	-	-
Resemblance Comment	-	-	-	-	-	-	-	-	NR	NR	NR	NR	UC	NR	LR,UC
Return to Baseline at C32[4]	-	-	-	-	-	-	-	-	Y	Yes	Yes	Yes	Yes	Y	Y

Notes:

1 = Atlantic Risk-Based Corrective Action (ARBCA) - Ecological Tier I Environmental Quality Standards (EQS) for Surface Water [Freshwater] (2022). Screening level for Gas/Diesel_#2/#6 oil_lube.

2 = Modified TPH = TPH C_6 - C_{32} (excluding BTEX)

3 = Silica gel cleanup was used to remove organic interferences from sample extract during March, August 2021 events

4 = Atlantic PIRI analytical method does not analyze for >C32. Laboratory certificate indicates (Yes or No) whether chromatogram for each sample returns to baseline after C32. Samples are considered to have returned to baseline if the area from C32-C36 is less than 10% of the area from C10-C32.

"-" = no applicable guideline or not analyzed

RDL = Reported Detection Limit; for all events unless otherwise noted (!)
- RDL for benzene (March, May and August 2021/all other events)

RDL - Reportable Detection Limit

UC - Unidentified Compounds

SD-SW* = Field Duplicate Sample of Site 10-SW (June 2022 event SW-SD-02 on laboratory certificate); SD-SW** = Field Duplicate Sample of Site 19-SW (June 2022 event SW-SD-01 on laboratory certificate)

Bolded/Shaded = Value exceeds guideline

Resemblance

UC - Unidentified Compounds (identified concentrations of hydrocarbons do not resemble petroleum products; inferred to have a biogenic source.

NR - No resemblance

LOF - Lube Oil Fraction

LR - Lube Range

Table 7 - Results of Laboratory Analysis of Petroleum Hydrocarbons in Sediment

Parameters	RDL[!]	Units	Guideline[1]	SD-SED**				Site 20-SED					
				5-Aug-21	8-Dec-21	31-Mar-22	17-Jun-22	15-Mar-21	5-May-21	4-Aug-21	3-Dec-21	28-Mar-22	18-Jun-22
Benzene	0.03/0.02	mg/kg	1.2	<0.03	<0.02	<0.02	<0.02	<0.03	<0.03	<0.03	<0.02	<0.02	<0.02
Toluene	0.04	mg/kg	1.4	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Ethylbenzene	0.03	mg/kg	1.2	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Xylenes	0.05	mg/kg	1.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
C6-C10 (less BTEX)	3	mg/kg	-	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
>C10-C16 Hydrocarbons	15	mg/kg	-	<15	<15	<15	<15	<15	<15	35	<15	<15	<15
>C16-C21 Hydrocarbons	15	mg/kg	-	<15	<15	<15	<15	<15	<15	32	<15	<15	<15
>C21-C32 Hydrocarbons	15	mg/kg	-	<15	44	<15	73	<15	<15	37	<15	<15	<15
Modified TPH - Tier I[2]	15	mg/kg	15/25/43	<15	44	<15	**73**	<15	<15	**104**	<15	<15	<15
Silica Gel Clean-up[3]	-	-	-	Yes	-	-	-	Yes	-	Yes	-	-	-
Resemblance Comment	-	-	-	NR	UC	NR	LR,UC	NR	NR	UC	NR	NR	NR
Return to Baseline at C32[4]	-	-	-	Yes	Yes	Y	Y	Yes	Yes	Yes	Yes	Y	Y

Notes:

1 = Atlantic Risk-Based Corrective Action (ARBCA) - Ecological Tier I Environmental Quality Standards (EQS) for Surface Water [Freshwater] (2022). Screening level for Gas/Diesel_#2/#6 oil_lube.

2 = Modified TPH = TPH C_6 - C_{32} (excluding BTEX)

3 = Silica gel cleanup was used to remove organic interferences from sample extract during March, August 2021 events

4 = Atlantic PIRI analytical method does not analyze for >C32. Laboratory certificate indicates (Yes or No) whether chromatogram for each sample returns to baseline after C32. Samples are considered to have returned to baseline if the area from C32-C36 is less than 10% of the area from C10-C32.

"-" = no applicable guideline or not analyzed

RDL = Reported Detection Limit; for all events unless otherwise noted (!)
- RDL for benzene (March, May and August 2021/all other events)

RDL - Reportable Detection Limit

UC - Unidentified Compounds

SD-SW* = Field Duplicate Sample of Site 10-SW (June 2022 event SW-SD-02 on laboratory certificate); SD-SW** = Field Duplicate Sample of Site 19-SW (June 2022 event SW-SD-01 on laboratory certificate)

Bolded/Shaded = Value exceeds guideline

Resemblance

UC - Unidentified Compounds (identified concentrations of hydrocarbons do not resemble petroleum products; inferred to have a biogenic source.

NR - No resemblance

LOF - Lube Oil Fraction

LR - Lube Range

Table 7 - Results of Laboratory Analysis of Petroleum Hydrocarbons in Sediment

Parameters	RDL[!]	Units	Guideline[1]	Site 21-SED						Site 22-SED					
				15-Mar-21	6-May-21	4-Aug-21	3-Dec-21	28-Mar-22	18-Jun-22	15-Mar-21	6-May-21	4-Aug-21	3-Dec-21	28-Mar-22	21-Jun-22
Benzene	0.03/0.02	mg/kg	1.2	-	<0.03	<0.03	<0.02	-	<0.02	-	-	-	-	-	-
Toluene	0.04	mg/kg	1.4	-	<0.04	<0.04	<0.04	-	<0.04	-	-	-	-	-	-
Ethylbenzene	0.03	mg/kg	1.2	-	<0.03	<0.03	<0.03	-	<0.03	-	-	-	-	-	-
Xylenes	0.05	mg/kg	1.3	-	<0.05	<0.05	<0.05	-	<0.05	-	-	-	-	-	-
C6-C10 (less BTEX)	3	mg/kg	-	-	<3	<3	<3	-	<3	-	-	-	-	-	-
>C10-C16 Hydrocarbons	15	mg/kg	-	-	<15	<15	<15	-	<15	-	-	-	-	-	-
>C16-C21 Hydrocarbons	15	mg/kg	-	-	<15	<15	<15	-	<15	-	-	-	-	-	-
>C21-C32 Hydrocarbons	15	mg/kg	-	-	<15	<15	<15	-	<15	-	-	-	-	-	-
Modified TPH - Tier I[2]	15	mg/kg	15/25/43	-	<15	<15	<15	-	<15	-	-	-	-	-	-
Silica Gel Clean-up[3]	-	-	-	-	-	Yes	-	-	-	-	-	-	-	-	-
Resemblance Comment	-	-	-	-	NR	NR	NR	-	NR	-	-	-	-	-	-
Return to Baseline at C32[4]	-	-	-	-	Yes	Yes	Yes	-	Y	-	-	-	-	-	-

Notes:

1 = Atlantic Risk-Based Corrective Action (ARBCA) - Ecological Tier I Environmental Quality Standards (EQS) for Surface Water [Freshwater] (2022). Screening level for Gas/Diesel_#2/#6 oil_lube.

2 = Modified TPH = TPH C_6 - C_{32} (excluding BTEX)

3 = Silica gel cleanup was used to remove organic interferences from sample extract during March, August 2021 events

4 = Atlantic PIRI analytical method does not analyze for >C32. Laboratory certificate indicates (Yes or No) whether chromatogram for each sample returns to baseline after C32. Samples are considered to have returned to baseline if the area from C32-C36 is less than 10% of the area from C10-C32.

"-" = no applicable guideline or not analyzed

RDL = Reported Detection Limit; for all events unless otherwise noted (!)
- RDL for benzene (March, May and August 2021/all other events)

RDL - Reportable Detection Limit

UC - Unidentified Compounds

SD-SW* = Field Duplicate Sample of Site 10-SW (June 2022 event SW-SD-02 on laboratory certificate); SD-SW** = Field Duplicate Sample of Site 19-SW (June 2022 event SW-SD-01 on laboratory certificate)

Bolded/Shaded = Value exceeds guideline

Resemblance

UC - Unidentified Compounds (identified concentrations of hydrocarbons do not resemble petroleum products; inferred to have a biogenic source.

NR - No resemblance

LOF - Lube Oil Fraction

LR - Lube Range

Table 7 - Results of Laboratory Analysis of Petroleum Hydrocarbons in Sediment

Parameters	RDL[!]	Units	Guideline[1]	Site 23-SED						Site 24-SED					
				15-Mar-21	6-May-21	4-Aug-21	3-Dec-21	28-Mar-22	19-Jun-22	15-Mar-21	6-May-21	4-Aug-21	3-Dec-21	28-Mar-22	19-Jun-22
Benzene	0.03/0.02	mg/kg	1.2	-	-	-	-	-	<0.02	-	-	-	-	-	<0.02
Toluene	0.04	mg/kg	1.4	-	-	-	-	-	<0.04	-	-	-	-	-	<0.04
Ethylbenzene	0.03	mg/kg	1.2	-	-	-	-	-	<0.03	-	-	-	-	-	<0.03
Xylenes	0.05	mg/kg	1.3	-	-	-	-	-	<0.05	-	-	-	-	-	<0.05
C6-C10 (less BTEX)	3	mg/kg	-	-	-	-	-	-	<3	-	-	-	-	-	<3
>C10-C16 Hydrocarbons	15	mg/kg	-	-	-	-	-	-	<15	-	-	-	-	-	<15
>C16-C21 Hydrocarbons	15	mg/kg	-	-	-	-	-	-	<15	-	-	-	-	-	<15
>C21-C32 Hydrocarbons	15	mg/kg	-	-	-	-	-	-	<15	-	-	-	-	-	<15
Modified TPH - Tier I[2]	15	mg/kg	15/25/43	-	-	-	-	-	<15	-	-	-	-	-	<15
Silica Gel Clean-up[3]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Resemblance Comment	-	-	-	-	-	-	-	-	NR	-	-	-	-	-	NR
Return to Baseline at C32[4]	-	-	-	-	-	-	-	-	Y	-	-	-	-	-	Y

Notes:

1 = Atlantic Risk-Based Corrective Action (ARBCA) - Ecological Tier I Environmental Quality Standards (EQS) for Surface Water [Freshwater] (2022). Screening level for Gas/Diesel_#2/#6 oil_lube.

2 = Modified TPH = TPH C_6 - C_{32} (excluding BTEX)

3 = Silica gel cleanup was used to remove organic interferences from sample extract during March, August 2021 events

4 = Atlantic PIRI analytical method does not analyze for >C32. Laboratory certificate indicates (Yes or No) whether chromatogram for each sample returns to baseline after C32. Samples are considered to have returned to baseline if the area from C32-C36 is less than 10% of the area from C10-C32.

"-" = no applicable guideline or not analyzed

RDL = Reported Detection Limit; for all events unless otherwise noted (!)
- RDL for benzene (March, May and August 2021/all other events)

RDL - Reportable Detection Limit

UC - Unidentified Compounds

SD-SW* = Field Duplicate Sample of Site 10-SW (June 2022 event SW-SD-02 on laboratory certificate); SD-SW** = Field Duplicate Sample of Site 19-SW (June 2022 event SW-SD-01 on laboratory certificate)

Bolded/Shaded = Value exceeds guideline

Resemblance

UC - Unidentified Compounds (identified concentrations of hydrocarbons do not resemble petroleum products; inferred to have a biogenic source.

NR - No resemblance

LOF - Lube Oil Fraction

LR - Lube Range