STAFF REPORT

File No.: SS-RZ-2019.1
X-Ref SS-TUP-2018.2

DATE OF MEETING:	April 10, 2025
TO:	Salt Spring Island Local Trust Committee
FROM:	Oluwashogo Garuba, Planner 2 Salt Spring Island Team
COPY:	Chris Hutton, Regional Planning Manager
SUBJECT:	OCP Amendment and Rezoning Applicant: Nick Williams & Emily Myers Location: 248 Upper Ganges Road

RECOMMENDATION

1. **That the Salt Spring Island Local Trust Committee Bylaw No. 544, cited as "Salt Spring Island Official Community Plan Bylaw No. 434, 2008, Amendment No. 1, 2025" be read a first time.**

2. **That the Salt Spring Island Local Trust Committee amend Draft Bylaw No. 545, cited as "Salt Spring Island Land Use Bylaw, 1999, Amendment No. 3, 2025" be read a first time.**

3. **That the Salt Spring Island Local Trust Committee request staff to refer Proposed Bylaw No's. 544 and 545 to Advisory Planning Committee, First Nations, organizations, and agencies as identified in this staff report dated April 10, 2025 (SS-RZ-2019.1).**

4. **That the Salt Spring Island Local Trust Committee has reviewed the Islands Trust Policy Statement Directives Only Checklist and determined that Bylaw No. 544 cited as "Salt Spring Island Official Community Plan Bylaw No. 434, 2008, Amendment No. 1, 2025" is not contrary to or at variance with the Islands Trust Policy Statement.**

5. **That the Salt Spring Island Local Trust Committee has reviewed the Islands Trust Policy Statement Directives Only Checklist and determined that Bylaw No. 545 cited as "Salt Spring Island Land Use Bylaw No. 355, 1999, Amendment No. 3, 2025" is not contrary to or at variance with the Islands Trust Policy Statement.**

REPORT SUMMARY

This staff report proposes amendments to the Salt Spring Island Land Use Bylaw No. 355 and the Salt Spring Island Official Community Plan No. 434 (OCP) to make lawful the General Employment operation – boat and equipment repair and personal services – a hair salon currently operating as a home based business. Staff recommends that the Salt Spring Island Local Trust Committee (SS LTC) consider first reading of the draft bylaws (Attachments No. 1 & 2), direct staff to refer them to agencies and First Nations and consider the application in relation to the Islands Trust Policy Statement.

BACKGROUND

This report follows a preliminary staff report to the December 15, 2020 meeting of the LTC where the following resolutions were passed (preliminary staff report including site context, photos, and correspondence can be found on the Salt Spring Island Current Applications webpage):

SS-2020-182
It was MOVED and SECONDED,
That the Salt Spring Island Local Trust Committee request that the applicant submit to Islands Trust the following:

a. A report from a Professional Engineer providing water quality analysis that demonstrates that the surface water and groundwater from each proposed water supply source or well is potable or can be made potable (as defined in Schedule H of Land Use Bylaw No. 355 and Guidelines for Canadian Drinking Water Quality) with a treatment system customarily used in a single-family dwelling, and include a plan of the subject property indicating each well location where a water sample was taken, and a statement that the water samples upon which the water quality analysis was performed were unadulterated samples taken from the locations indicated on the plan.
b. A report from a Professional Engineer providing a statement regarding the adherence to construction standards in the Groundwater Protection Regulation for each surface water supply source.
c. A report from a Professional Engineer demonstrating a rainwater storage, treatment and delivery system for potable water designed in accordance with Canadian Standards Association rainwater harvesting system standard CSA B805-18 capable of supplying potable water of an amount sufficient for all proposed General Employment uses.
d. A report from a Professional Engineer commenting on compliance with, and implementation of all recommendations of the attached storm water management plan (2015). The updated report should include any further action necessary to address the possibility of hazardous material spill.
e. An Assessment Report, completed by a Professional Engineer or Geoscientist, which identifies following aspects of the existing dug well:
    i. Vulnerability to surface contamination;
    ii. Distance and interference to other wells, surrounding land uses and waste
    water disposal fields;
    iii. Potential impacts to groundwater;
    iv. Sustainability on a year round basis;
    v. Any other relevant information as determined by the professional (248 Upper
    Ganges Road).

CARRIED

SS-2020-183
It was MOVED and SECONDED,
that the Salt Spring Island Local Trust Committee request staff to prepare a draft bylaw to amend the Salt Spring Island Official Community Plan Bylaw No. 434, 2008 to add Lot A, Section 4, Range 4 East, North Salt Spring Island, Cowichan District, Plan 42183 to Map 19 – Development Permit Area 2 – Non-Village Commercial and Industrial and to change the Designation from Residential Neighbourhoods to General Employment and Commercial Services (248 Upper Ganges Road).

CARRIED

SS-2020-184

It was MOVED and SECONDED,

That the Salt Spring Island Local Trust Committee request staff to prepare a draft bylaw to amend the Salt Spring Island Land Use Bylaw No. 355, 1999, to rezone Lot A, Section 4, Range 4 East, North Salt Spring Island, Cowichan District, Plan 42183 from Residential 7 to a General Employment zone variant permitting at minimum, the following uses:

a. Boat building, servicing and repairs;

b. Rental, repair, sales, and service of equipment, machinery, boats, and vehicles;

c. One accessory dwelling and one home based business accessory to the dwelling unit.

It was MOVED and SECONDED,

That item c be amended as follows: Replace "One accessory dwelling and one home based business accessory to the dwelling unit" with "One accessory dwelling and personal services business accessory to the dwelling unit" (248 Upper Ganges Road).

CARRIED

The question was called on the amended motion.

SS-2020-185
It was MOVED and SECONDED,
that the Salt Spring Island Local Trust Committee request staff to prepare a draft bylaw to amend the Salt Spring Island Land Use Bylaw No. 355, 1999, to rezone Lot A, Section 4, Range 4 East, North Salt Spring Island, Cowichan District, Plan 42183 from Residential 7 to a General Employment zone variant permitting at minimum, the following uses:

a. Boat building, servicing and repairs;
b. Rental, repair, sales, and service of equipment, machinery, boats, and vehicles;
c. One accessory dwelling and one personal services business accessory to the dwelling unit (248 Upper Ganges Road).

CARRIED

The applicant has since provided potable water assessment report, updated storm water management plan report and assessment report.

ANALYSIS

Policy/Regulatory

The SS LTC is unfettered in its consideration of an OCP amendment and rezoning and may choose to request more information, proceed more incrementally, or defer the application.

Islands Trust Policy Statement:

An assessment of the proposed application relative to the Islands trust Policy statement was undertaken and it was determined that it is consistent with the Policy statement. The Policy Statement Directives Only

Checklist, in accordance with section 1.9 of the "Policy Statement Implementation" portion of the Islands Trust Policy and Procedures Manual, can be found in Attachment 3.

Official Community Plan:

OCP Land Use Designations

See staff report of December 02, 2020 for full discussion of proposal to amend the Land Use Designation of subject property from Residential Neighbourhood (RN) to General Employment (GE).

Applicable OCP Policies

See Appendix 3 of staff report of December 02, 2020 for complete OCP policy review as it pertains to this application.

Development Permit Areas

Draft Bylaw 544 proposes including subject property in Development Permit Area 2 in order to reduce the potential conflicts between large new commercial and general employment development and neighbouring properties.

Land Use Bylaw:

See staff report of December 02, 2020 for full discussion of proposal to vary the subject property zone from Residential 7 (R7) to General Employment 3 (GE3) zone variant that will permit the proposed uses.

Issues and Opportunities

See staff report of December 02, 2020 for detailed discussion of issues and opportunities associated with this application. The applicant has provided documents that addressed the issues (mainly water quality and quantity) that were discussed in the previous staff report.

Consultation

No referrals have been conducted at time of this report; referral of bylaws to agencies and First Nations typically occurs at time of first reading such that there is a bylaw on which to provide comment.

This application also requires an OCP amendment. As per Section 475 of the Local Government Act, the LTC must provide at least one opportunity for consultation with "persons, organizations and authorities it considers will be affected". At time of consideration of this initial report, the LTC should determine if consultation should be early and ongoing – which would require additional consultation beyond that identified by staff. Staff have not identified any issues that would require additional consultation.

At time of this report, staff consider that all neighbours within 100 meters of the subject property as well as the following organizations and authorities may have interests affected by the proposal and should be included in the referral process:

First Nations
Cowichan Tribes
Halalt First Nation
Lyackson First Nation
Pauquachin First Nation
Penelakut Tribe
Semiahmoo First Nation
Stz'uminus First Nation
Ts'uubaa-Asatx First Nation
Tsartlip First Nation
Tsawout First Nation
Tsawwassen First Nation
Tseycum First Nation

Adjacent Local Trust Committees and Municipalities
Galiano Island Local Trust Committee
Mayne Island Local Trust Committee
North Pender Island Local Trust Committee
Thetis Island Local Trust Committee
Cowichan Valley Regional District

Provincial Agencies
BC Assessment Authority
Front Counter BC

Regional Agencies
Capital Regional District
CRD – SSI Building Inspection

Non-Agency Referrals
BC Ambulance Service
RCMP
SSI Fire-Rescue
Salt Spring Island Coast Salish Society

No correspondence has been received at the time of preparing this report, but may be received before or during the LTC meeting. Correspondence may be sent to ssiinfo@islandstrust.bc.ca.

Protocols

No protocols, Memorandums of Understanding (MOUs) or Letters of Understanding (LOU) have been identified as relevant to this application.

Rationale for Recommendation

As outlined in the December 12, 2020 staff report, the proposed OCP and LUB amendment is supported by various OCP policies. The applicant has also addressed the water quality and quantity issues discussed. Based on these, staff therefore recommend that the LTC read the proposed Bylaw Nos. 544 and 545 for a first time.

ALTERNATIVES

Offer feasible alternatives to the staff recommendation, noting any significant implications and recommended resolution wording. The LTC may consider the following alternatives to the staff recommendation:

1. **Amend the Draft Bylaw Nos. 544 and 545**
   The SS LTC may wish to amend the draft LUB. If selecting this alternative, the SS LTC should describe the specific amendment. Recommended wording for resolution:
   a. *That Salt Spring Island Local Trust Committee amend Bylaw No. 545, cited as ""Salt Spring Island Land Use Bylaw No. 355, 1999, Amendment No. 3, 2025", by [list amendments…].*
   b. *That Salt Spring Island Local Trust Committee amend Bylaw No. 544, cited as ""Salt Spring Island Official Community Plan Bylaw No. 434, 2008, Amendment No. 1, 2025", by [list amendments…].*

c. *That Salt Spring Island Local Trust Committee Bylaw No. 545, cited as "Salt Spring Island Land Use Bylaw No. 355, 1999, Amendment No. 3, 2025", be read a first time, as amended.*
d. *That Salt Spring Island Local Trust Committee Bylaw No. 544, cited as ""Salt Spring Island Official Community Plan Bylaw No. 434, 2008, Amendment No. 1, 2025", be read a first time, as amended.*

2. Deny the application

The LTC may deny the application. If this alternative is selected, the LTC should state the reasons for denial. Recommended wording for the resolution is as follows:

That the Salt Spring Island Local Trust Committee deny application SS-RZ-2019.1 for the following reasons...

3. Receive for information

The LTC may receive the application for information.

NEXT STEPS

If the recommended resolutions are accepted, draft Bylaw Nos. 544 & 545 will be read a first time. The referral and public consultation will also be conducted and the application will return to SS LTC for further consideration, second and third reading.

Submitted By:	Oluwashogo Garuba, A/Planner 2	March 27, 2025
Concurrence:	Chris Hutton, Regional Planning Manager	April 2, 2025

ATTACHMENTS

1. Draft Bylaw 544 (OCP)
2. Draft Bylaw 545 (LUB)
3. Islands Trust Policy Statement Directive Policies
4. Groundwater protection report dated February 28, 2025
5. Spill containment drainage report dated January 15, 2025
6. Potable water assessment report dated January 2025

ATTACHMENT 1

SALT SPRING ISLAND LOCAL TRUST COMMITTEE
BYLAW NO. 544

A BYLAW TO AMEND SALT SPRING ISLAND OFFICIAL COMMUNITY PLAN
BYLAW NO. 434, 2008

The Salt Spring Island Local Trust Committee enacts in open meeting assembled as follows:

1. CITATION

   This Bylaw may be cited for all purposes as "Salt Spring Island Official Community Plan Bylaw No. 434, 2008, Amendment No. 1, 2025".

2. SCHEDULES

   Salt Spring Island Official Community Plan No. 434, cited as "Salt Spring Island Official Community Plan Bylaw No. 434, 2008" is amended as shown on Schedule 1, attached to and forming part of this bylaw.

3. SEVERABILITY

   If any provision of this Bylaw is for any reason held to be invalid by a decision of any Court of competent jurisdiction, the invalid provision must be severed from the Bylaw and the decision that such provision is invalid must not affect the validity of the remaining provisions of the Bylaw.

READ A FIRST TIME THIS _____ DAY OF _____ 20____

PUBLIC HEARING HELD THIS _____ DAY OF _____ 20____

READ A SECOND TIME THIS _____ DAY OF _____ 20____

READ A THIRD TIME THIS _____ DAY OF _____ 20____

APPROVED BY THE EXECUTIVE COMMITTEE OF THE ISLANDS TRUST
THIS _____ DAY OF _____ 20____

APPROVED BY THE MINISTER MUNICPAL AFFAIRS AND HOUSING
THIS _____ DAY OF _____ 20____

ADOPTED THIS _____ DAY OF _____ 20____

_____ _____

Chair **Secretary**

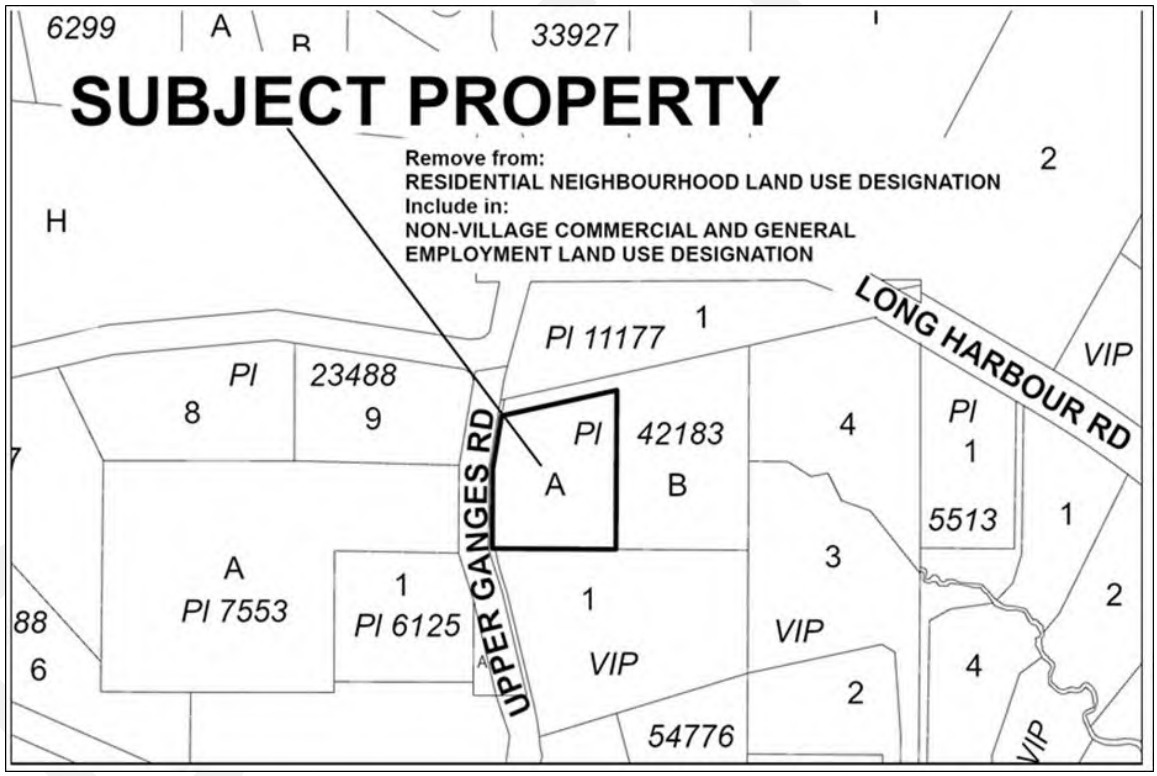
SALT SPRING ISLAND LOCAL TRUST COMMITTEE
BYLAW NO. 544

SCHEDULE 1

1. Schedule "A", Volume 2 is amended as follows:

   1.1 Map 1 – Plan Area with Land and Shoreline Use Designation is amended by including LOT A, SECTION 4, RANGE 4 EAST, NORTH SALT SPRING ISLAND, COWICHAN DISTRICT, PLAN 42183, in the Non-Village Commercial and General Employment Land Use Designation as shown on Plan No. 1 of this bylaw.

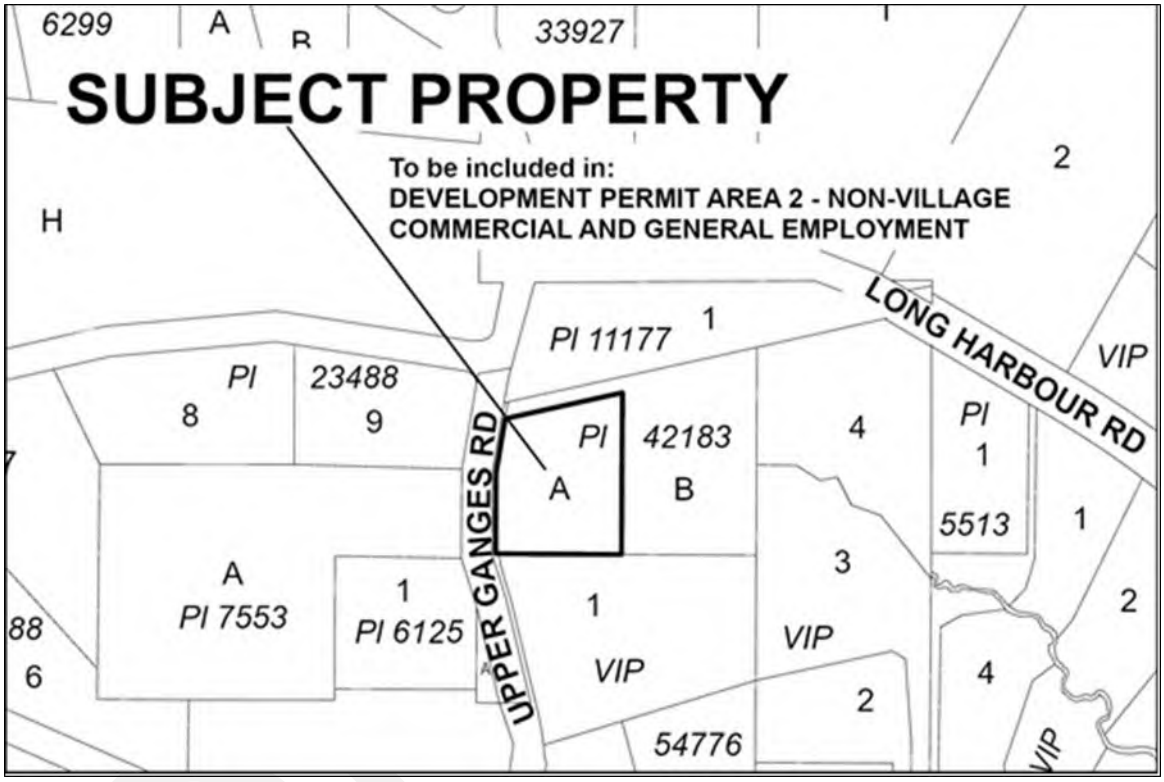
PLAN NO 1



2. Schedule "A", Volume 2 is amended as follows:

1.1 Map 19 – Development Permit Area 2 – Non-Village Commercial and General Employment is amended by including LOT A, SECTION 4, RANGE 4 EAST, NORTH SALT SPRING ISLAND, COWICHAN DISTRICT, PLAN 42183, as shown on Plan No. 1 of this bylaw.

PLAN NO. 1



ATTACHMENT 2

SALT SPRING ISLAND LOCAL TRUST COMMITTEE
BYLAW NO. 545

A BYLAW TO AMEND SALT SPRING ISLAND LAND USE BYLAW, 1999

The Salt Spring Island Local Trust Committee, being the Trust Committee having jurisdiction in respect of the Salt Spring Island Local Trust Area under the *Islands Trust Act,* enacts as follows:

1. Citation

   This bylaw may be cited for all purposes as "Salt Spring Island Land Use Bylaw, 1999, Amendment No. 3, 2025".

2. Salt Spring Island Local Trust Committee Bylaw No. 355, cited as "Salt Spring Island Land Use Bylaw, 1999," is amended as follows:

   2.1 Schedule "1" – Zoning Map, is amended by changing the zoning classification of LOT A, SECTION 4, RANGE 4 EAST, NORTH SALT SPRING ISLAND, COWICHAN DISTRICT, PLAN 42183 from Residential 7 (R7) to General Employment 3 variant b (GE3 (b)), as shown on Plan No. 1 attached to and forming part of this bylaw, and by making such alterations to Schedule "1" to Bylaw No. 355 as are required to effect this change.

   2.2 By adding the following within Section 9.7.5 – Exceptions in Particular Locations:

   "Zone Variation – GE3(b)
   (16) The following accessory use is permitted:
   (a) One accessory dwelling and one personal services business accessory to the dwelling unit (248 Upper Ganges Road)."

   2.3 By adding in Section 9.7.7 (16) and making such consequential numbering alterations to effect this change.

3. SEVERABILITY

   If any provision of this Bylaw is for any reason held to be invalid by a decision of any Court of competent jurisdiction, the invalid provision must be severed from the Bylaw and the decision that such provision is invalid must not affect the validity of the remaining provisions of the Bylaw.

READ A FIRST TIME THIS _____ DAY OF _____ 20____

PUBLIC HEARING HELD THIS _____ DAY OF _____ 20____

READ A SECOND TIME THIS _____ DAY OF _____ 20____

READ A THIRD TIME THIS _____ DAY OF _____ 20____

APPROVED BY THE EXECUTIVE COMMITTEE OF THE ISLANDS TRUST THIS
_____ DAY OF _____ 20____

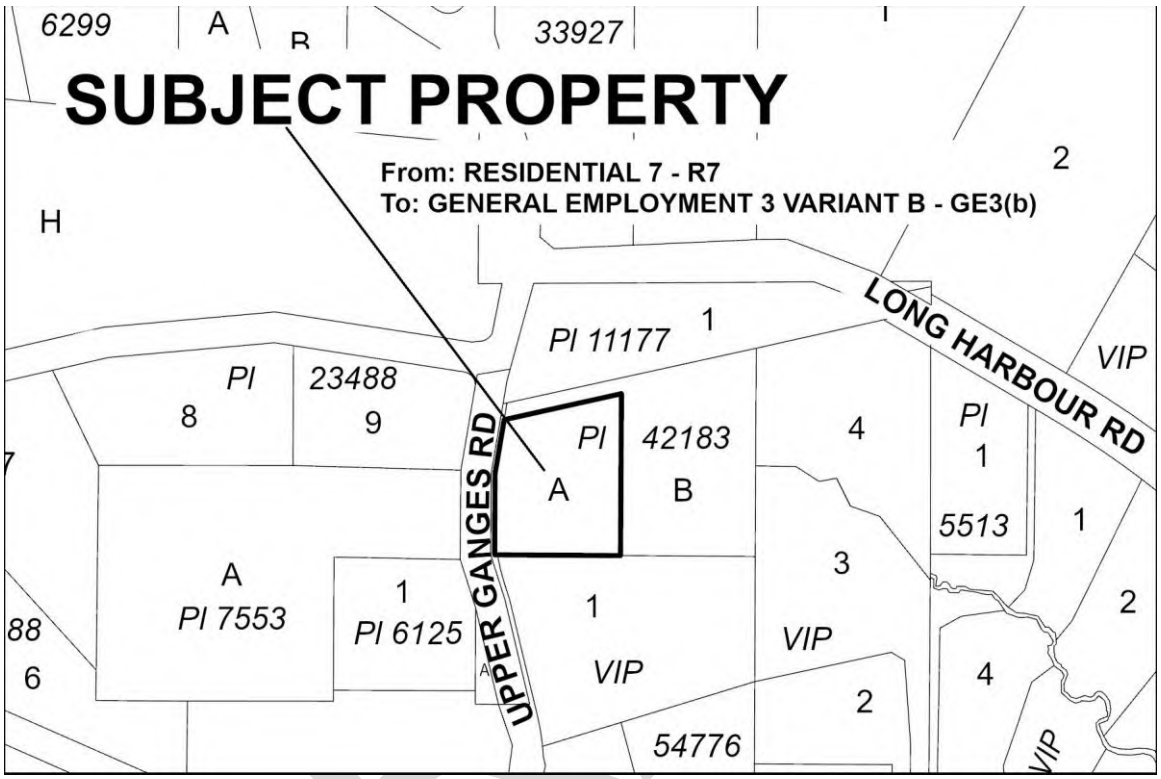
ADOPTED THIS _____ DAY OF _____ 20____

_____ _____

Chair **Secretary**

SALT SPRING ISLAND LOCAL TRUST COMMITTEE
BYLAW NO. 545

Plan No. 1



ATTACHMENT 3

ISLANDS TRUST POLICY STATEMENT DIRECTIVES ONLY CHECKLIST

File No.: SS-RZ-2019.1
Bylaw No. 544 & 545
File Name: 248 Upper Ganges Rd

PURPOSE

To provide staff with the Directives Only Checklist to highlight issues addressed in staff reports and as a means to ensure Local Trust Committees address certain matters in their official community plans and regulatory bylaws, Island Municipalities address certain matters in their official community plans, and to reference any relevant sections of the Policy Statement.

POLICY STATEMENT

The Policy Statement is comprised of several parts. Parts I and II outline the purpose, the Islands Trust object, and Council's guiding principles. Parts III, IV and V contain the goals and policies relevant to ecosystem preservation and protection, stewardship of resources and sustainable communities.

There are three different kinds of policies within the Policy Statement as follows:

- Commitments of Trust Council which are statements about Council's position or philosophy on various matters;
- Recommendations of Council to other government agencies, non-government organizations, property owners, residents and visitors; and
- Directive Policies which direct Local Trust Committees and Island Municipalities to address certain matters.

DIRECTIVES ONLY CHECKLIST

The Policy Statement Directives Only Checklist is based on the directive policies from the Policy Statement (Consolidated April 2003) which require Local Trust Committees to address certain matters in their official community plans and regulatory bylaws and Island Municipalities to address certain a matters in their official community plans in a way that implements the policy of Trust Council.

Staff will use the Policy Statement Checklist (Directives Only) to review Local Trust Committee and Island Municipality bylaw amendment applications and proposals to ensure consistency with the Policy Statement. Staff will add the appropriate symbol to the table as follows:

✓ if the bylaw is consistent with the policy from the Policy Statement, or
✗ if the bylaw is inconsistent (contrary or at variance) with a policy from the Policy Statement, or
N/A if the policy is not applicable.

PART III: POLICIES FOR ECOSYSTEM PRESERVATION AND PROTECTION

CONSISTENT	NO.	DIRECTIVE POLICY
	3.1	**Ecosystems**
✓	**3.1.3**	Local Trust Committees and Island Municipalities shall, in their official community plans and regulatory bylaws, address the identification and protection of the environmentally sensitive areas and significant natural sites, features and landforms in their planning area.
✓	**3.1.4**	Local Trust Committees and Island Municipalities shall, in their official community plans and regulatory bylaws, address the planning, establishment, and maintenance of a network of protected areas that preserve the representative ecosystems of their planning area and maintain their ecological integrity.
✓	**3.1.5**	Local Trust Committees and Island Municipalities shall, in their official community plans and regulatory bylaws, address the regulation of land use and development to restrict emissions to land, air and water to levels not harmful to humans or other species.
	3.2	**Forest Ecosystems**
✓	**3.2.2**	Local Trust Committees and Island Municipalities shall, in their official community plans and regulatory bylaws, address the protection of unfragmented forest ecosystems within their local planning areas from potentially adverse impacts of growth, development, and land-use.
	3.3	**Freshwater and Wetland Ecosystems and Riparian Zones**
N/A	**3.3.2**	Local Trust Committees and Island Municipalities shall, in their official community plans and regulatory bylaws, address means to prevent further loss or degradation of freshwater bodies or watercourses, wetlands and riparian zones and to protect aquatic wildlife.
	3.4	**Coastal and Marine Ecosystems**
N/A	**3.4.4**	Local Trust Committees and Island Municipalities shall, in their official community plans and regulatory bylaws, address the protection of sensitive coastal areas.
N/A	**3.4.5**	Local Trust Committees and Island Municipalities shall, in their official community plans and regulatory bylaws, address the planning for and regulation of development in coastal regions to protect natural coastal processes.

PART IV: POLICIES FOR THE STEWARDSHIP OF RESOURCES

CONSISTENT	NO.	DIRECTIVE POLICY
	4.1	**Agricultural Land**
N/A	**4.1.4**	Local Trust Committees and Island Municipalities shall, in their official community plans and regulatory bylaws, address the identification and preservation of agricultural land for current and future use.
N/A	**4.1.5**	Local Trust Committees and Island Municipalities shall, in their official community plans and regulatory bylaws, address the preservation, protection, and encouragement of farming, the sustainability of farming, and the relationship of farming to other land uses.
N/A	**4.1.6**	Local Trust Committees and Island Municipalities shall, in their official community plans and regulatory bylaws, address the use of adjacent properties to minimize any adverse affects on agricultural land.
CONSISTENT	**NO.**	**DIRECTIVE POLICY**
N/A	**4.1.7**	Local Trust Committees and Island Municipalities shall, in their official community plans and regulatory bylaws, address the design of road systems and servicing corridors to avoid agricultural lands unless the need for roads outweighs agricultural considerations, in which case appropriate mitigation measures shall be required to derive a net benefit to agriculture.
N/A	**4.1.8**	Local Trust Committees and Island Municipalities shall, in their official community plans and regulatory bylaws, address land uses and activities that support the economic viability of farms without compromising the agriculture capability of agricultural land.
N/A	**4.1.9**	Local Trust Committees and Island Municipalities shall, in their official community plans and regulatory bylaws, address the use of Crown lands for agricultural leases.
	4.2	**Forests**
	4.2.6	Local Trust Committees and Island Municipalities shall, in their official community plans and regulatory bylaws, address the need to protect the ecological integrity on a scale of forest stands and landscapes.
N/A	**4.2.7**	Local Trust Committees and Island Municipalities shall, in their official community plans and regulatory bylaws, address the retention of large land holdings and parcel sizes for sustainable forestry use, and the location and construction of roads, and utility and communication corridors to minimize the fragmentation of forests.
N/A	**4.2.8**	Local Trust Committees and Island Municipalities shall, in their official community plans and regulatory bylaws, address the designation of forest ecosystem reserves where no extraction will take place to ensure the preservation of native biological diversity.
CONSISTENT	**NO.**	**DIRECTIVE POLICY**

	4.3	**Wildlife and Vegetation**
	4.4	**Freshwater Resources**
✓	**4.4.2**	Local Trust Committees and Island Municipalities shall, in their official community plans and regulatory bylaws, address measures that ensure neither the density nor intensity of land use is increased in areas which are known to have a problem with the quality or quantity of the supply of freshwater, water quality is maintained, and existing, anticipated and seasonal demands for water are considered and allowed for.
✓	**4.4.3**	Local Trust Committees and Island Municipalities shall, in their official community plans and regulatory bylaws, address measures that ensure water use is not to the detriment of in-stream uses
	4.5	**Coastal Areas and Marine Shorelands**
N/A	**4.5.8**	Local Trust Committees and Island Municipalities shall, in their official community plans and regulatory bylaws, address the needs and locations for marine dependent land uses.
N/A	**4.5.9**	Local Trust Committees and Island Municipalities shall, in their official community plans and regulatory bylaws, address the compatibility of the location, size and nature of marinas with the ecosystems and character of their local planning areas.
N/A	**4.5.10**	Local Trust Committees and Island Municipalities shall, in their official community plans and regulatory bylaws, address the location of buildings and structures so as to protect public access to, from and along the marine shoreline and minimize impacts on sensitive coastal environments.
N/A	**4.5.11**	Local Trust Committees and Island Municipalities shall, in their official community plans and regulatory bylaws, address opportunities for the sharing of facilities such as docks, wharves, floats, jetties, boat houses, board walks and causeways.
	4.6	**Soils and Other Resources**
N/A	**4.6.3**	Local Trust Committees and Island Municipalities shall, in their official community plans and regulatory bylaws, address the protection of productive soils.

PART V: POLICIES FOR SUSTAINABLE COMMUNITIES

CONSISTENT	NO.	DIRECTIVE POLICY
	5.1	**Aesthetic Qualities**
N/A	**5.1 3**	Local Trust Committees and Island Municipalities shall, in their official community plans and regulatory bylaws, address the protection of views, scenic areas and distinctive features contributing to the overall visual quality and scenic value of the Trust Area.
	5.2	**Growth and Development**
✓	**5.2.3**	Local Trust Committees and Island Municipalities shall, in their official community plans and regulatory bylaws, address policies related to the aesthetic, environmental and social impacts of development.
✓	**5.2.4**	Local Trust Committees and Island Municipalities shall, in their official community plans and regulatory bylaws, address any potential growth rate and strategies for growth management that ensure that land use is compatible with preservation and protection of the environment, natural amenities, resources and community character.
✓	**5.2.5**	Local Trust Committees and Island Municipalities shall, in their official community plans and regulatory bylaws, address means for achieving efficient use of the land base without exceeding any density limits defined in their official community plans.
✓	**5.2.6**	Local Trust Committees and Island Municipalities shall, in their official community plans and regulatory bylaws, address the identification of areas hazardous to development, including areas subject to flooding, erosion or slope instability, and strategies to direct development away from such hazards.
	5.3	**Transportation and Utilities**
N/A	**5.3.4**	Local Trust Committees and Island Municipalities shall, in their official community plans and regulatory bylaws, address the development of a classification system of rural roadways, including scenic or heritage road designations, in recognition of the object of the Islands Trust.
N/A	**5.3.5**	Local Trust Committees and Island Municipalities shall, in their official community plans and regulatory bylaws, address the impacts of road location, design, construction and systems.
N/A	**5.3.6**	Local Trust Committees and Island Municipalities shall, in their official community plans and regulatory bylaws, address the designation of areas for the landing of emergency helicopters.
N/A	**5.3.7**	Local Trust Committees and Island Municipalities shall, in their official community plans and regulatory bylaws, address the development of land use patterns that encourage establishment of bicycle paths and other local and inter-community transportation systems that reduce dependency on private automobile use.
	5.4	**Disposal of Waste**
N/A	**5.4.4**	Local Trust Committees and Island Municipalities shall, in their official community plans and regulatory bylaws, address the identification of acceptable locations for the disposal of solid waste.
CONSISTENT	NO.	DIRECTIVE POLICY

	5.5	**Recreation**
N/A	**5.5.3**	Local Trust Committees and Island Municipalities shall, in their official community plans and regulatory bylaws, address the prohibition of destination gaming facilities such as casinos and commercial bingo halls.
N/A	**5.5.4**	Local Trust Committees and Island Municipalities shall, in their official community plans and regulatory bylaws, address the location and type of recreational facilities so as not to degrade environmentally sensitive areas, and the designation of locations for marinas, boat launches, docks and anchorages so as not to degrade sensitive marine or coastal areas.
N/A	**5.5.5**	Local Trust Committees and Island Municipalities shall, in their official community plans and regulatory bylaws, address the identification of sites providing safe public access to beaches, the identification and designation of areas of recreational significance, and the designation of locations for community and public boat launches, docks and anchorages.
N/A	**5.5.6**	Local Trust Committees and Island Municipalities shall, in their official community plans and regulatory bylaws, address the identification and designation of areas for low impact recreational activities and discourage facilities and opportunities for high impact recreational activities.
N/A	**5.5.7**	Local Trust Committees and Island Municipalities shall, in their official community plans and regulatory bylaws, address the planning for bicycle, pedestrian and equestrian trail systems.
	5.6	**Cultural and Natural Heritage**
N/A	**5.6.2**	Local Trust Committees and Island Municipalities shall, in their official community plans and regulatory bylaws, address the identification, protection, preservation and enhancement of local heritage.
N/A	**5.6.3**	Local Trust Committees and Island Municipalities shall, in their official community plans and regulatory bylaws, address the preservation and protection of the heritage value and character of historic coastal settlement patterns and remains.
	5.7	**Economic Opportunities**
✓	**5.7.2**	Local Trust Committees and Island Municipalities shall, in their official community plans and regulatory bylaws, address economic opportunities that are compatible with conservation of resources and protection of community character.
	5.8	**Health and Well-being**
N/A	**5.8.6**	Local Trust Committees and Island Municipalities shall, in their official community plans and regulatory bylaws, address their community's current and projected housing requirements and the long-term needs for educational, institutional, community and health-related facilities and services, as well as the cultural and recreational facilities and services.

	POLICY STATEMENT COMPLIANCE
✓	***In compliance with Trust Policy***
	Not in compliance with Trust Policy for the following reasons:

Mid Isle Marine Wells
Groundwater Protection Measures

Gooding Hydrology
dgooding@saltspring.com

February 28, 2025

Nick Williams,
Mid Isle marine
Saltspring Island, BC

Re: Groundwater Protection at 248 Upper Ganges Road, Saltspring Island

Two wells were assessed at the Mid Isle Marine property; a 150 foot (45.7 m) deep drilled well and a 7.2 m deep excavated 'dug' well.

Drilled Well:
The drilled well has an adequate stick-up (>0.3 m). There are no potential sources of surface runoff contamination on the short uphill side of the well, and the ground surface near the well is sloped away from the well to prevent any surface runoff from pooling around the well and potentially infiltrating and contaminating the well. This is an older (1991) well, and when first viewed prior to the well pumping test had no well cap, allowing leaves, bugs or other foreign matter to enter the well. It has now been properly capped and protected (Photo 1). It is unknown from either the well drilling log record or visual assessment what depth of any surface seal may have been put around the pipe below ground level.

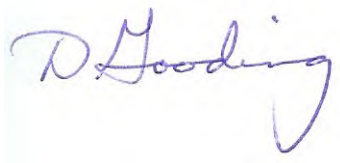
For the immediately foreseeable future, with all planned water uses, the dug well and the large amount of storage from rainwater capture will meet all needs, without use of this well, which has good volume but poor water quality. Test results show the presence of coliforms from the past period without a well cap, and this well should be disinfected prior to use and treatment for potable water. The surface seal on this older well also may require maintenance if it is to be put into active use.

Photo 1: Drilled well head

Dug well:

There is no mention of excavated or 'dug' wells in the Groundwater Protection Regulation. Therefore this well was assessed as to the intent of the regulation, which is the protection of the groundwater in the well from contamination from surface water flow or the entry of foreign matter into the well. The majority of the approximately 60 m of hill slope uphill of the dug well consists of roof top, where precipitation is collected and piped to cisterns. This leaves only a narrow strip of around 15 m of slope uphill of the well draining towards the well. The ground surface is contoured such that any surface flow is diverted away from the concrete well casing, which has a minimum 0.3 m stick-up, and a well fitted cover preventing the entrance of foreign material (photo 2). This well meets the intent of the regulation.

Photo 2: Dug well



Dave Gooding, P.Eng.
Permit to Practice1005011

ATTACHMENT 5

Gooding Hydrology
dgooding@saltspring.com

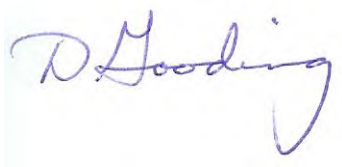
November 22, 2018

Nick Williams
Mid Isle Marine
Saltspring Island, BC

Re: Completion of spill containment drainage system at Mid Isle Marine, 248 Upper Ganges Rd, Saltspring Island

An inspection was made of the completed spill containment drainage system at Mid Isle Marine on November 21, 2018. As had been previously discussed with the property owners, the system had been constructed to a design partially modified from the system proposed in the October 2015 Gooding Hydrology drainage study. Instead of a semi-permeable layer of compacted driveway crush on the potential oil or gas spill work and upper parking areas adjacent to the shops, a concrete pad has been poured in that area, with a shallow curb and gutter drain along the downhill edge. This enables the collection of any spills before they can reach the lower parking area. Stormwater from the work areas is directed into a grated catchment trough, and with flow from the inside workshop pad drain, and from a grate in the lower parking area, is piped to an oil-water separation tank, as in the previous design. Utilizing concrete for the shop floor and outside working areas adjacent to the shop, instead of compacted driveway crushed rock, is an improvement on the original design.

Gooding Hydrology certifies the spill catchment stormwater drainage system at Mid Isle Marine as functional and completed.



Dave Gooding, P.Eng.

ATTACHMENT 6

Gooding
Hydrology

POTABLE WATER ASSESSMENT
for
248 Upper Ganges Road, SSI

For
Mid Isle Marine
Saltspring Island B.C.

By
Dave Gooding, P.Eng.
Gooding Hydrology
Saltspring Island

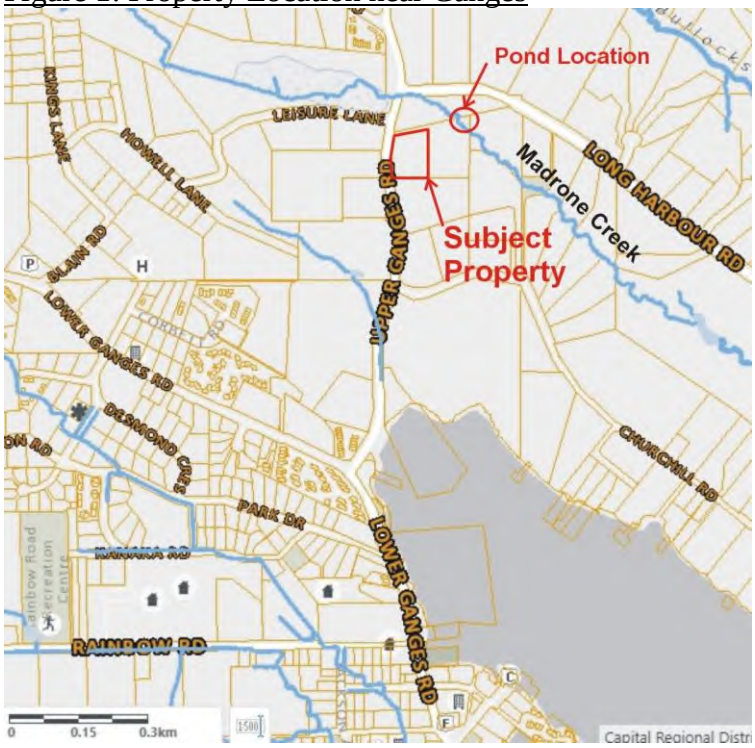
October 2022
Revised January 2025

Gooding Hydrology
dgooding@saltspring.com

Background

As a part of a rezoning application, Mid Isle Marine at 248 Upper Ganges Road is required to prove an adequate supply of potable water (with treatment if necessary). The requirement by Islands Trust (IT) is 4000 liters/day (Lpd). Gooding Hydrology was retained to assess the availability of potable water.

Figure 1: Property Location near Ganges



Currently the Mid Isle Marine office and break room, the residence, and the home based business are supplied with water from the 7 meter deep excavated shallow well, with the addition of bottled water for drinking. The shop needs have been supplied by collected rainwater stored in the combined 7,000 liter storage in the cisterns located near the shop. This water system has been adequate to supply the year round water needs on the property as it is currently operated.

Water System to meet Bylaw Requirements

The water system to meet the requirements of the IT bylaws for the proposed rezoning has been added to, is more complex, and incorporates four sources of water and additional storage. The resulting system more than meets the daily volume requirement.

Water Sources:

1. Currently not utilized 150 ft deep drilled well.
2. The 7 m deep excavated well.
3. Existing utilized roof rainwater catchment, with potential for additional roof area to be added, and additional storage.
4. Water license allocation from an in-stream pond on Madrone (Madrona) Creek.

The elements of the water supply system are shown in figure 2 below.

Gooding Hydrology
dgooding@saltspring.com

Figure 2: Water supply system

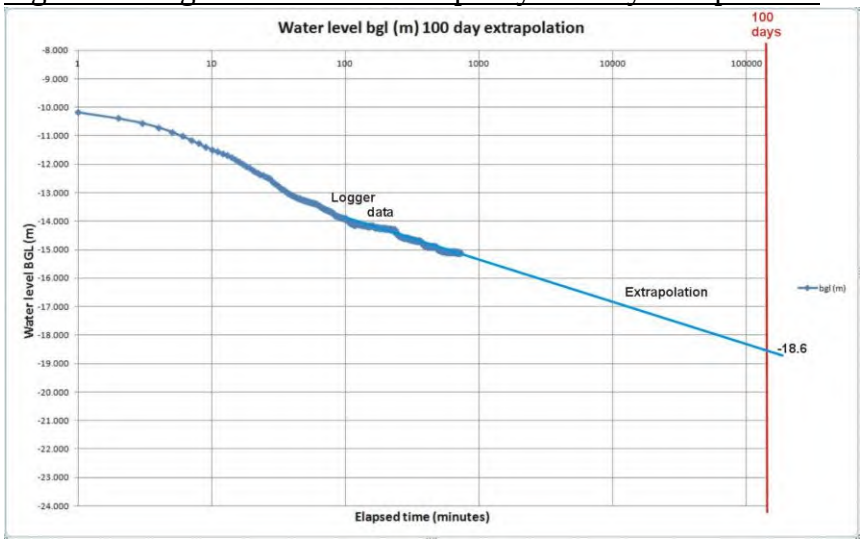
Water from the roof rainwater collection will be gravity fed to the 80,000 liters of storage on the southeast corner of the property. Some of the rainwater, for direct untreated use in the shop, will be used to fill the 36,000 liters of storage on the north edge of the property, near the shop. Water from the larger storage area, the dug and drilled wells, and the Madrone Creek storage pond will all be pumped to the treatment and distribution outbuilding. Water from the creek storage can also be directed to top up the cistern storage in the spring when rainfall is tapering off.

Water Quantities

1. Drilled Well

The drilled well was found on the BC Groundwater (BCGW) database as tag #64566, a 150 ft (45.7 m) deep drilled well through 35 ft of overburden into sandstone. A 12 hour pump test was performed October 7, 2021 by Stream Line Plumbing, supervised by Gooding Hydrology, at a pump rate of 3 liters per minute (Lpm). At this pump rate the well was only drawn down 5 m in 12 hours. Recovery was good, with the well recovering 70% in the 3 hours after the pumping. Well driller's log and pump test manual data (confirmed with sensor data) is attached in appendix 1.

Figure 3: Long term drilled well capacity 100 day extrapolation



A semi-log graph of the well test data is extrapolated to 100 days, and the drawdown at 100 days estimated. Specific capacity, in Lpm/meter, is calculated by dividing the test flow rate by the 100 day drawdown. Multiplying the specific capacity by 70 % (safety factor) of the available drawdown gives a theoretical well capacity. If this is above the tested flow rate, the long term yield or well capacity is rated as the well test flow rate.

100 day drawdown = 18.6 m bgl-9.98 m bgl static level = 8.62 m from figure 3 above.
Average pump rate = 3 L/min
Specific capacity = Avg pump rate / 100 day drawdown = 3/8.62= 0.348 L/min/m

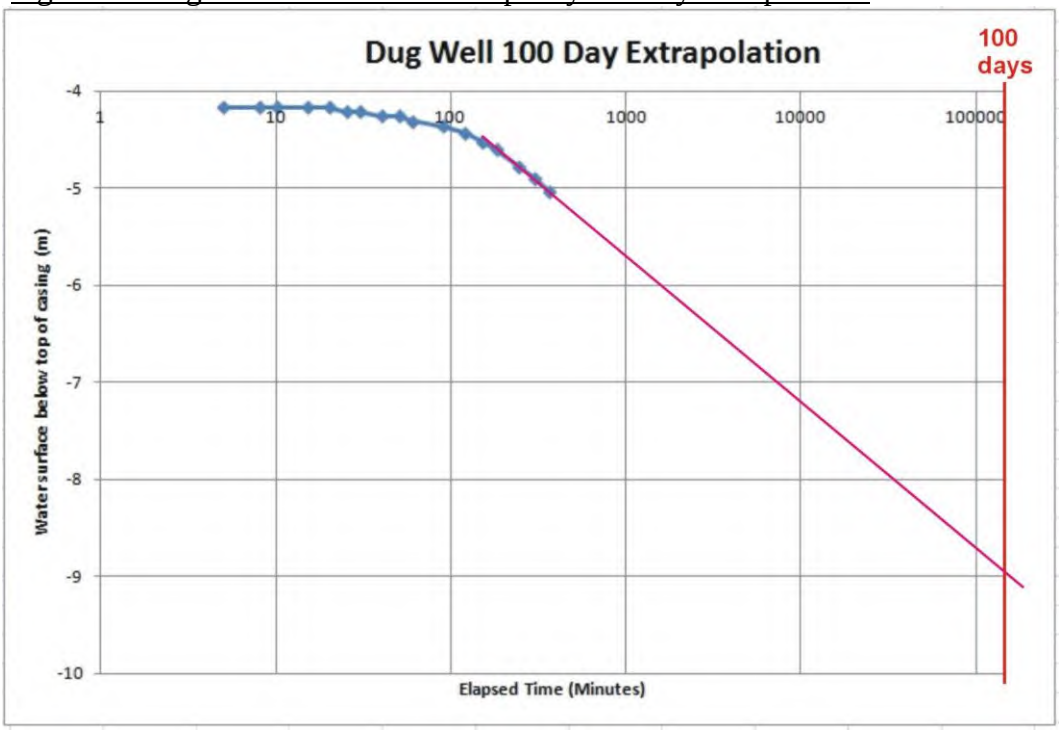
Well depth 150 m (BCGW database). The main water bearing strata is at 140 ft = 42.7 m, with static level at 9.98 m.
Available drawdown = 42.7- 9.98 = 32.72 m
Long term well capacity = specific capacity x available drawdown x 70%
= 0.348 L/min/m x 32.72 m x 0.7 = 7.97 L/min

Theoretical capacity is around 8 L/min, however this well test can only certify that the pump tested rate of 3 L/min is available for an extended period of time. 3 L/min is 4320 L/day. Note that this test was performed near the end of a relatively extreme drought period.

2. Excavated (Dug) Well

The excavated well is 7.2 m deep with an inside diameter of 1.2 m. As the well draws from the shallow groundwater in the overburden, on top of the bedrock, static water level will vary with the water table through the year. A 6 hour pump test, shorter in order to avoid drawing down local water table coming into the dry period of the year, was performed on June 5, 2022.

Figure 4: Long term excavated well capacity 100 day extrapolation



100 day drawdown = 9 – 4.12 = 4.88 m
Average pump rate = 4 L/min
Specific capacity = Avg pump rate / 100 day drawdown = 4/4.88 = 0.82 L/min/m
Available drawdown = 6.9 – 4.12 = 2.78 m
Long term well capacity = specific capacity x available drawdown x 70%
= 0.82 L/min/m x 2.78 m x 0.7 = 2.28 x 70% = 1.6 L/min
1.6 Lpm is 2300 liters per day, determined at a period of the year between the rainy wet season and the dry season of summer and early fall.

It is problematic to determine a year round capacity for this well. This pump test was performed near the beginning of the dry season. It would be safe to certify that for 8 months of the year the well has a long term capacity of over 2,000 Lpd. However, by the later part of the dry period of the year capacity may fall to as low as 500 Lpd.

3. Rainwater Harvest

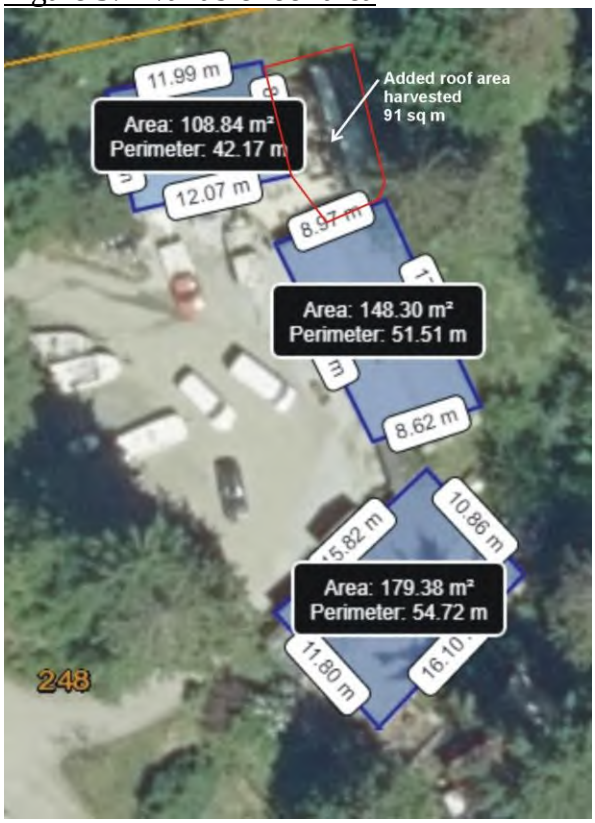
In the analysis of how much daily water rainfall catchment could supply, the quantity figure which is important is the yearly quantity available, as the rainfall captured during the rainy season must supply the whole year.

Rainfall

Yearly rainfall records for St Mary Lake on SSI from 1976 to 2006 in an average year of 974 mm and for the 1 in 5 year low rainfall of 742 mm. CRD gives a figure of 1000 mm. Canadian CMHC's 2012 'Guidelines for Residential Rainwater Harvesting Systems Handbook' recommends using a figure of 20% for losses due to evaporation, cleaning, etc. This gives us yearly rainfall available of approximately:
Average year: 800 mm or 0.8 m
1 in 5 dry year: 600 mm or 0.6 m

Amount which can be harvested

Figure 5: Available roof area



The roof area currently harvested is approximately 348 sq m, the shop, storage and office/sales areas. With the addition of the south residence roof, once it is reroofed with metal, the total area possible is 528 sq m.

The amount of rainwater which can be harvested from that roof area is:

Current:
Average year: 0.8 m x 348 sq m = 278 cu m = 0.76 cu m/day = 760 L/day
1 in 5 dry year: 0.6 m x 348 sq m = 209 cu m = 0.57 cu m/day = 570 L/day
Potential:
Average year: 0.8 m x 528 sq m = 422 cu m = 1.16 cu m/day = 1160 L/day
1 in 5 dry year: 0.6 m x 528 sq m = 317 cu m = 0.87 cu m/day = 870 L/day

Storage for dry season
In this calculation it is assumed no rainfall between May 1 and Sept 30. While the result is an over-estimate of storage required, many summer rainfalls are quite light, and after wetting of the roof, evaporation, and diverting of the first cleansing flush, many summers will produce only a small quantity of usable rainwater harvest. This means that stored rainfall will be used over a five month period, or 150 days. Therefore, each cubic meter (1000 liters) of stored rainwater would supply 6.7 liters of water per day for 150 days. A less conservative estimate is also included, assuming 120 days between harvestable rainwater occurrence.
Available Storage
Main tank farm 11 x 10,000 liter tanks =110,000 liters or 110 cu m
Shop cisterns an 18,000 liter, 10,000 liter tank, and a 8,000 litre tank =36,000 litres or 36 cubic meters.
Total cistern water storage on site is 146,000 liters or 146 cubic meters.
This storage supplies 973 liters per day for 150 days, or 1216 Lpd for 120 days.

4. Water License on Madrone (Madrona) Creek
The water license to store up to 0.5 acre-ft (617 cu m) of water in an in-stream pond on Madrone Creek, and withdraw 500 gallons (2272.5 liters) daily, throughout the year, is attached as appendix 2. The storage pond and stream above and below were inspected on August 5, 2022. Approximately 150 cubic meters of water were stored, with a trickle of flow coming into the pond and none escaping over the spillway. Depth of water stored was approximately 1 m. The top of the dam itself is around 1.5 m above the current spillway elevation, which is now only about 0.5 m above the downstream bed level, which appears to have been lowered to comply with current dam safety regulations. With improvements to the dam to comply with safety regulations, the spillway could be raised another meter, enabling the storage of an additional 200 cu m of water. This would enable withdrawal of 1 cu m (1000 liters) of water per day for 150 dry period days while still allowing release of 0.25 cu m (250 liters) per day to instream flows over that period.

Madrone Creek is a fish stream, and as currently constructed withdrawals during the summer months should be limited in order to provide as much instream flow between the dam and estuary as possible. 2000 Lpd could be withdrawn from this source during the 6 months of high stream flow. A benefit to Mid Isle Marine's water supply would be to use this source during the spring, before stream flow drops significantly, to 'top up' the rainwater storage tanks to ensure they are full going into the dry summer/early fall months.

Summary of Daily Water Quantity Available
Table 1: Daily water available

Liters per day	Drilled Well	Dug Well	Creek Storage	Rainwater
Year round	4320			**970
Wet 8 months	4320	2300	2272	**970
Dry 4 months	4320	500	*1000	970

*potential with dam improvements **with 'top up' to cisterns from creek

With the multiple sources, there is more than enough water available to meet even the unrealistically high IT requirement of 4000 Lpd.

Water Quality

MB Labs test results of water samples from the drilled well, dug well, and creek storage are attached as appendix 3. IT specified parameters tested for are shown in table 2 below, with those parameters not meeting standards in red.

Table 2: Islands Trust Schedule H Results

Water Quality Parameter	Standard	Drilled well	Dug well	Creek
Arsenic	10 ug/l	<0.5 ug/l	<0.5 mg/l	<0.5 mg/l
Chloride	250 mg/l	ND	14.6 mg/l	15.8 mg/l
Fecal Coliform	0/100 ml	0/100 ml	0/100 ml	20/100 ml
Fluoride	1.5 mg/l	1.04 mg/l	0.069 mg/l	0.103 mg/l
Hardness (as CaCO3)	80-100 mg/l	483 mg/l	89.8 mg/l	58.8 mg/l
Iron	0.3 mg/l	0.639 mg/l	0.169 mg/l	0.467 mg/l
Manganese	0.05 mg/l	0.174 mg/l	0.069 mg/l	0.035 mg/l
Nitrate	45 mg/l	ND	0.146 mg/l	0.016 mg/l
pH	6.5-8.5	7.9	6.81	7.48
Residual Chlorine*	0 mg/l	ND	ND	ND
Sodium	200 mg/l	2470 mg/l	8.51 mg/l	14.3 mg/l
Sulphate	500 mg/l	1052 mg/l	10.5 mg/l	10.9 mg/l
Total Coliforms	0/100 ml	14/100 ml	0/100 ml	600/100 ml
Total Dissolved Solids	500 mg/l	6496 mg/l	131 mg/l	108 mg/l
Turbidity	1 NTU	26.2 NTU	2.03 NTU	4.37 NTU

ND- none detected *test strip

The excavated well has the best quality water tested, with only a slightly higher than CDWG standards manganese concentration and turbidity, neither of which are health concerns. Though not lab tested, the rainwater harvested will be easily treated by standard rainwater filtering and UV treatment to be made potable. Rainwater harvested and used in the shop for washing or testing would not require treatment. The creek water also requires chlorination or UV treatment, which is to be expected from a stream flowing through a rural residential and farming watershed.

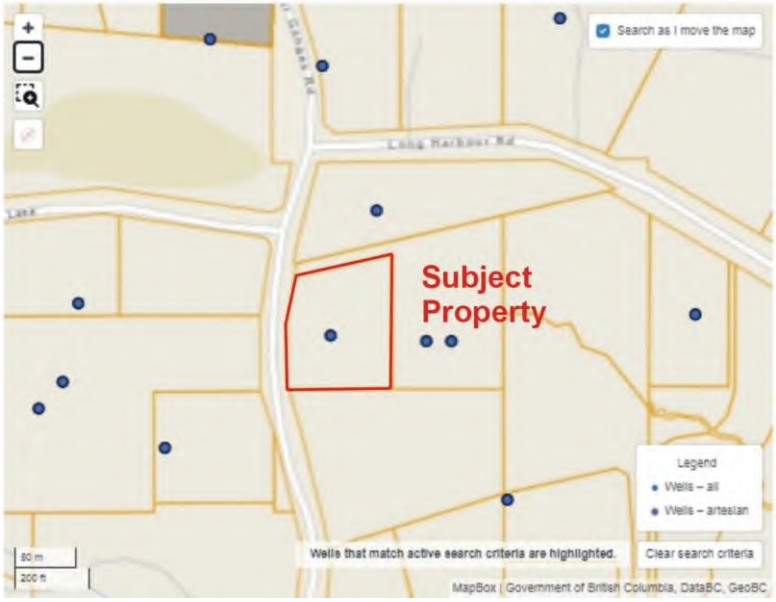
The drilled well has been sitting uncapped and unused for years, with vegetation falling into it, as can be seen from the non-fecal coliform count and dissolved solids. It is now properly capped. The water is very hard, and if any is used to supplement the other sources, would require softening and treatment by reverse osmosis, as well as disinfection.

Effects on Neighbouring Wells

The property to the south is serviced by village water. There are no other shallow dug wells nearby which the dug well on the subject property could affect. The well depths on the property to the east are 115 ft (water at 81 to 90 ft) and 60 ft (water at 45 to 60 ft) deep, at a distance of around 80 and 100 m from the subject property's 23.6 ft deep dug

well. Although they also draw water from the sand/gravel overburden, it is very unlikely either would be significantly affected by withdrawals from the shallow dug well.
The well on the property to the north is 115 ft deep, at a distance of over 110 m from the subject property's drilled well #1. There is no information on its depth of overburden or bedrock on the BC well database. It is rated as having a relatively high yield by the driller (4 gpm). As drilled well #1 on the subject property requires more treatment than the other sources, it will only be used to supplement the other sources when necessary. Currently it is not utilized at all. Withdrawals from drilled well #1 could not be reasonably expected to significantly affect this drilled well on the neighbor to the north. To the west the nearest wells are between 150 and 200 m distant from drilled well #1, and could also not reasonably be expected to be significantly affected by withdrawals from well #1, should they occur.

Figure 6: Neighboring wells from BC Groundwater database



Conclusions
There is an adequate supply of water which can be made potable by methods in use in residences on the island to meet the Islands Trust's 4000 Lpd requirement for this rezoning.

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
D. D. GOODING

Dave Gooding, P.Eng.

Appendix 1: Well #1 (tag 64566) Driller's Log

Location Information

Street Address: CHURCHILL RD
Town/City: GANGES

Legal Description:

Lot	A
Plan	21925
District Lot	
Block	
Section	3
Township	
Range	4E
Land District	16
Property Identification Description (PID)	

Description of Well Location:

Geographic Coordinates - North American Datum of 1983 (NAD 83)
Latitude: 48.864015 **Longitude:** -123.500727
UTM Easting: 463276 **UTM Northing:** 5412460
Zone: 10 **Coordinate Acquisition Code:** (20 m accuracy) Digitized from 1:5,000 mapping

Well Activity

Activity	Work Start Date	Work End Date	Drilling Company	Date Entered
Legacy record	1991-12-20		Tri-K Drilling	August 13th 2003 at 8:44 AM

Well Work Dates

Start Date of Construction	End Date of Construction	Start Date of Alteration	End Date of Alteration	Start Date of Decommission	End Date of Decommission
1991-12-20					

Well Completion Data

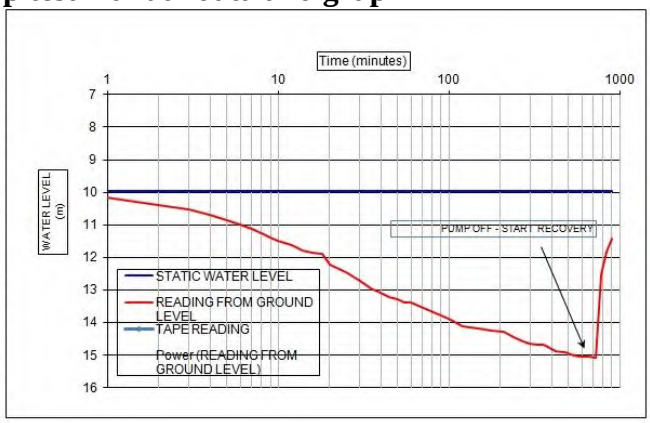
Total Depth Drilled:
Finished Well Depth: 150 ft bgl
Final Casing Stick Up:
Depth to Bedrock: 35 feet bgl
Ground elevation:
Estimated Well Yield: 0.3 USgpm
Well Cap:
Well Disinfected Status: Not Disinfected
Drilling Method: Other
Method of determining elevation: Unknown
Static Water Level (BTOC):
Artesian Flow:
Artesian Pressure (head):
Artesian Pressure (PSI):
Orientation of Well: VERTICAL

Lithology

From (ft bgl)	To (ft bgl)	Raw Data	Description	Moisture	Colour	Hardness	Observations	Water Bearing Flow Estimate (USGPM)
0	35	SANDY GRAVEL WITH A TRACE OF CLAY						
35	150	SANDSTONE						
35	150	WATER AT 60 FT TRICKLE 140 FT 1/2 GPM						
150	150	DEPTH OF WELL 41 FT CASING						

Well #1 (tag 64566) Drilled Well Pump test manual data and graph

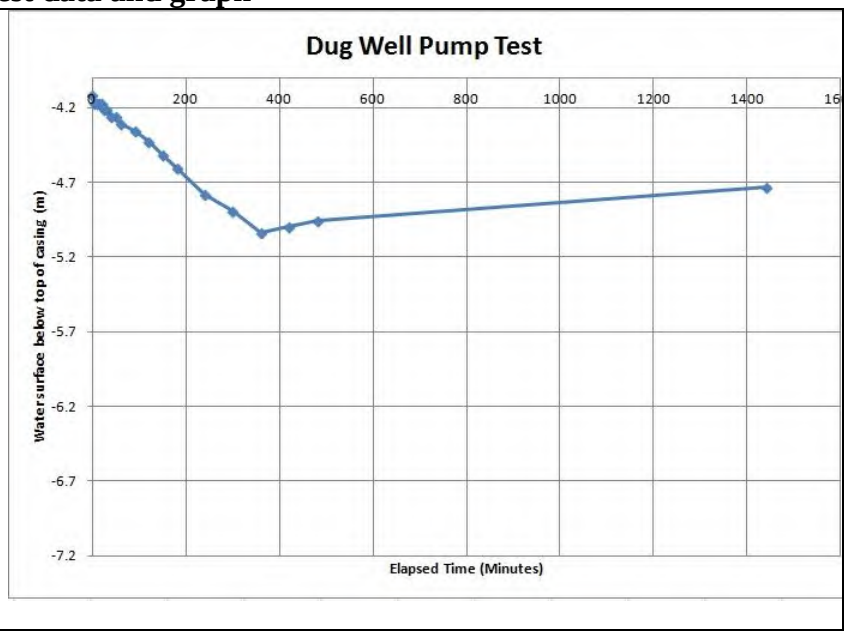
DATE	ELAPSED TIME (MINUTES)	STATIC LEVEL	READING FROM GROUND LEVEL	TAPE READING
2021-10-07 8:44	0	9.98	9.98	
2021-10-07 8:45	1	9.98	10.15	
2021-10-07 8:46	2	9.98	10.38	
2021-10-07 8:47	3	9.98	10.54	
2021-10-07 8:48	4	9.98	10.70	
2021-10-07 8:49	5	9.98	10.85	
2021-10-07 8:50	6	9.98	11.00	
2021-10-07 8:51	7	9.98	11.14	
2021-10-07 8:52	8	9.98	11.27	
2021-10-07 8:53	9	9.98	11.38	
2021-10-07 8:54	10	9.98	11.50	
2021-10-07 8:56	12	9.98	11.63	
2021-10-07 8:58	14	9.98	11.78	
2021-10-07 9:00	16	9.98	11.85	
2021-10-07 9:02	18	9.98	11.90	
2021-10-07 9:04	20	9.98	12.21	
2021-10-07 9:09	25	9.98	12.44	
2021-10-07 9:14	30	9.98	12.72	
2021-10-07 9:19	35	9.98	12.94	
2021-10-07 9:24	40	9.98	13.10	
2021-10-07 9:29	45	9.98	13.22	
2021-10-07 9:34	50	9.98	13.29	
2021-10-07 9:39	55	9.98	13.38	
2021-10-07 9:44	60	9.98	13.40	
2021-10-07 10:24	100	9.98	13.88	
2021-10-07 10:44	120	9.98	14.13	
2021-10-07 11:14	150	9.98	14.19	
2021-10-07 11:44	180	9.98	14.26	
2021-10-07 12:14	210	9.98	14.28	
2021-10-07 12:44	240	9.98	14.44	
2021-10-07 13:15	271	9.98	14.58	
2021-10-07 13:44	300	9.98	14.64	
2021-10-07 14:15	331	9.98	14.67	
2021-10-07 14:44	360	9.98	14.69	
2021-10-07 15:44	420	9.98	14.88	
2021-10-07 16:44	480	9.98	14.91	
2021-10-07 17:44	540	9.98	15.02	
2021-10-07 18:44	600	9.98	15.05	
2021-10-07 19:44	660	9.98	15.05	
2021-10-07 20:44	720	9.98	15.07	
2021-10-07 21:44	780	9.98	12.53	<------- START RECOVERY
2021-10-07 22:44	840	9.98	11.84	
2021-10-07 23:44	900	9.98	11.43	



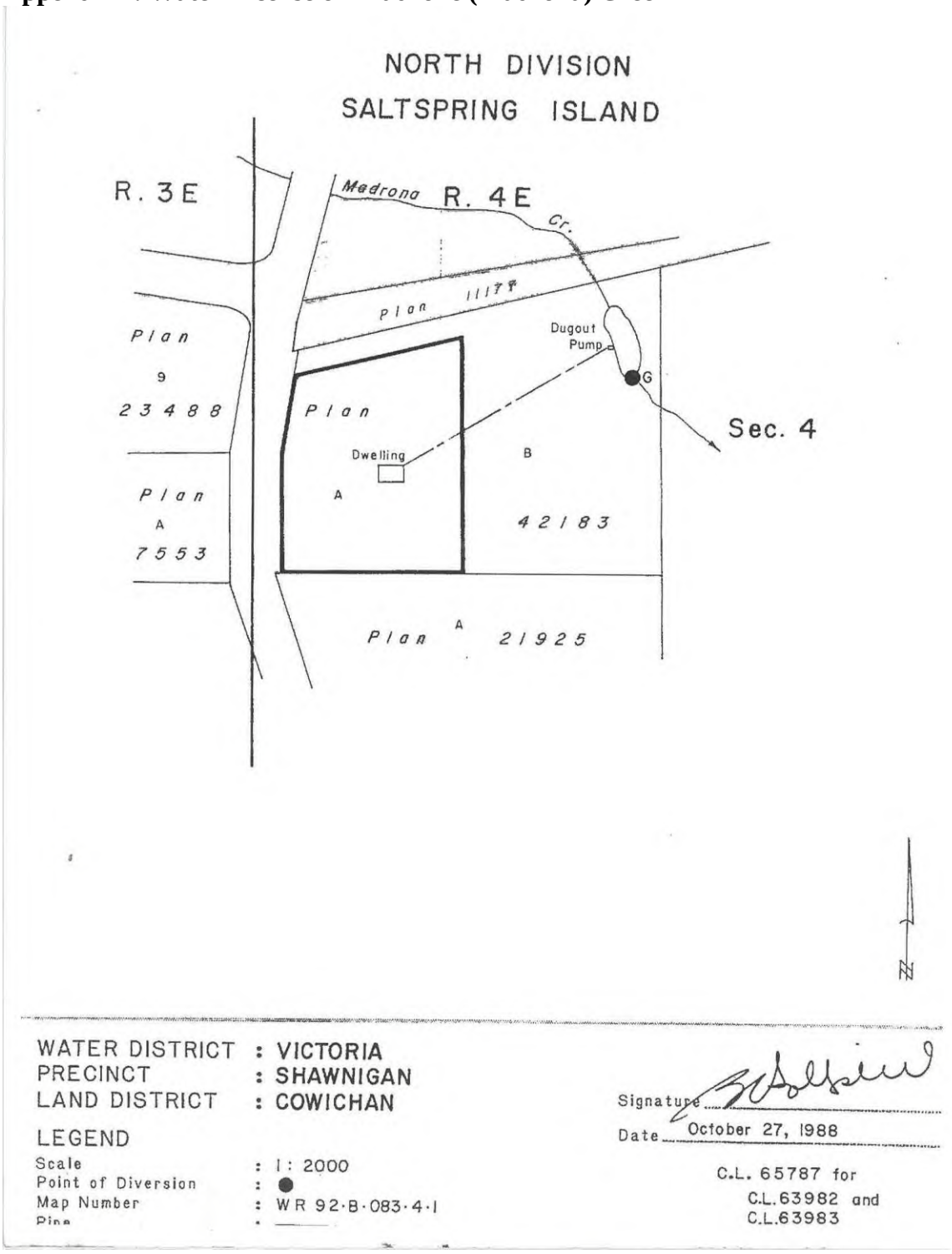
REMARKS:

Excavated Well pump test data and graph

Mid Isle Marine	
Dug Well Pump Test	
05-Jun-22	
I.D. 1.2 m	7.17 m deep
Start time 12:55	Static 4.12 m BCL
Flow 4 L/min	
Elapsed time (min)	Wat lev bel case (m)
0	-4.12
5	-4.17
8	-4.17
10	-4.17
15	-4.17
20	-4.17
25	-4.215
30	-4.215
40	-4.26
50	-4.26
60	-4.31
90	-4.36
120	-4.43
150	-4.52
180	-4.605
240	-4.78
300	-4.895
360	-5.035 shut off
420	-4.995
480	-4.96
1440	-4.73



Appendix 2: Water License on Madrone (Madrona) Creek



Gooding Hydrology
dgooding@saltspring.com

Patrick G. Mussell of P.O. Box 718, Ganges, B.C., V0S 1E0

is hereby authorized to store, divert, and use water as follows:

(a) The source of the water-supply is Madrona Creek and storage is in the creek.

(b) The storage structure and the point of diversion are located as shown on the attached plan.

(c) The date from which this licence shall have precedence is 27th May, 1985.

(d) The purposes for which this licence is issued are storage and domestic.

(e) The maximum quantity of water which may be stored is 0.5 acre foot and the maximum quantity of water which may be diverted for domestic purpose is 500 gallons a day.

(f) The period of the year during which the water may be stored and used for domestic purpose is the whole year.

(g) The land upon which the water is to be used and to which this licence is appurtenant is Lot A, Section 4, Range 4 East, North Division, Saltspring Island, Cowichan District, Plan 42183.

(h) The works authorized to be constructed are dugout, diversion structure, pump and pipe, which shall be located approximately as shown on the attached plan.

(i) The construction of the said works shall be completed and the water beneficially used on or before the 31st day of December, 1991.

(j) This licence authorizes the use of water for domestic purpose in one dwelling located approximately as shown on the attached plan.

(k) This licence is issued in substitution in part, of Conditional Water Licences 63982 and 63983.

B. Hollingshead
Regional Water Manager

Appendix 3: Water Quality Lab Tests
1. Drilled Well

Client/Code

Streamline Plumbing
*A
1650 Fulford-Ganges Rd
Salt Spring Island, BC
V8K 2A8
TEL: (250) 653-2026
streamlineplumbing@shaw.ca

Date 13Oct21 2:25p No. W164278
Source New Well
Type of Sample water
No. of Samples 1
Comments Arrival temp.: 8.1C

Sample: Mid Isl Marine, Nick Williams, 248 Upper Ganges Rd

Site Code	Date	Time	CFU/100 ml TC	T-NC	CFU/100 ml FC	F-NC	CFU/100 mL E.coli
Deep Well	13Oct21	08:45a	1400	3000	0	228	0

WATER DISTRICT SCREEN

Sample	Date	Time	Lactose Fermentors	Coliforms Total	Fecal	E.coli	Total Aeromonas	Sulfur Reducing/ Iron Bacteria	Yeast/Fungi	TPC*
Deep Well	13Oct21	08:45a	30.0	14.0	ND	ND	ND	present/ ND	ND / ND	2384

* all counts are colony forming units per milli-litre

TC = total coliform bacteria FC = fecal coliform bacteria (aka Thermotolerant Coliforms)
NC = non-coliform bacteria ND = none detected
TPC = total plate count- spread plate method - 35C/48hr TGEA FDA/BAM 9th ed, Oct 2020
CFU = colony forming units

Results may be adversely affected if samples are submitted to the laboratory more than 24 to 30 hours after collection.

E. coli = Escherichia coli, FDA/BAM 9th ed, Oct 2020
Bergy's Manual of Systematic Bacteriology vol 1, AOAC 1984; J.Clin.Micro., J.Intern.Syste.Bact.

Comments:
For Interpretation of Results:
Total, Fecal Coliforms or E.coli present greater than 0 CFU/100mL (0 CFU/mL):
IF Coliform numbers exceed safe limits for drinking water- water is not suitable for drinking without treatment.

Total Non-coliform bacteria (=Lactose Fermentors) equal to or greater than 200 CFU/100mL (2.0 CFU/mL):
IF the number organisms present exceed recommended guidelines for drinking water; treatment is strongly recommended.

If Total Plate Count bacteria are -
A) greater than 100 CFU/mL:
high numbers of microbial organisms indicate that this water supply should be monitored on a seasonal basis.
B) greater than 500 CFU/mL:
the number of organisms present exceed recommended guidelines for drinking water; treatment is strongly recommended.

- see following page for chemistry results -

W. Riggs
Sr. Microbiologist

MB LABS LTD.
ANALYTICAL & TESTING SERVICES P.O. BOX 2103, SIDNEY, B.C. V8L 3S6 TEL: (250) 656-1334 EMAIL: info@mblabs.com

Client/Code

Streamline Plumbing
*A
1650 Fulford-Ganges Rd
Salt Spring Island, BC
V8K 2A8
TEL: (250) 653-2026
streamlineplumbing@shaw.ca

Date 130ct21 2:25p No. W164278 pg2
Source New Well
Type of Sample water
No. of Samples 1
Comments Arrival temp.: 8.1C

Sample: Mid Isl Marine, Nick Williams, 248 Upper Ganges Rd - Deep Well 130ct21 08:45a

ELEMENTS		SAMPLE	UNITS	Maximum Limits Permissible In Drinking Water*
1) Aluminium	Al	0.011	mg/L	no limit listed
2) Antimony	Sb	<0.500	ug/L	6.00 ug/L
3) Arsenic	As	<0.500	ug/L	10.0 ug/L
4) Barium	Ba	0.023	mg/L	1.00 mg/L
5) Beryllium	Be	<0.003	mg/L	no limit listed
6) Boron	B	0.963	mg/L	5.00 mg/L
7) Cadmium	Cd	<0.010	ug/L	5.00 ug/L
8) Calcium	Ca	121	mg/L	200 mg/L
9) Chromium	Cr	<0.003	mg/L	0.050 mg/L
10) Cobalt	Co	<0.005	mg/L	no limit listed
11) Copper	Cu	<0.008	mg/L	1.00 mg/L
12) Gold	Au	<0.040	mg/L	no limit listed
13) Iron	Fe	0.639	mg/L	0.300 mg/L
14) Lanthanum	La	<0.020	mg/L	no limit listed
15) Lead	Pb	1.50	ug/L	5.00 ug/L
16) Magnesium	Mg	44.0	mg/L	50.0 mg/L
17) Manganese	Mn	0.174	mg/L	0.120 MAC 0.020 AO
18) Mercury	Hg	<0.010	ug/L	1.00 ug/L
19) Molybdenum	Mo	<0.005	mg/L	no limit listed
20) Nickel	Ni	<0.004	mg/L	no limit listed
21) Phosphorus	P	<0.010	mg/L	no limit listed
22) Potassium	K	17.0	mg/L	no limit listed
23) Scandium	Sc	<0.050	mg/L	no limit listed
24) Selenium	Se	<0.500	ug/L	5.0 ug/L
25) Silicon	Si	2.71	mg/L	no limit listed
26) Silver	Ag	<0.010	mg/L	no limit listed
27) Sodium	Na	2470	mg/L	200 mg/L
28) Strontium	Sr	3.27	mg/L	no limit listed
29) Tin	Sn	<0.020	mg/L	no limit listed
30) Titanium	Ti	<0.010	mg/L	no limit listed
31) Tungsten	W	<0.050	mg/L	no limit listed
32) Vanadium	V	<0.010	mg/L	no limit listed
33) Zinc	Zn	0.004	mg/L	5.00 mg/L
Hardness (mg/L $CaCO_3$)		483	mg/L	>300 mg/L = very hard
pH		7.90	units	7.0 to 10.5

* As per Canadian or B.C. Health Act Safe Drinking Water Regulation BC Reg 230/92, & 390 Sch 120, 2001. Task Force of Canadian Council of Resource & Envir. Ministers Guidelines for Canadian Drinking Water Quality, 2019.

Comments:
Iron: high amounts of Iron can cause staining of laundry, porcelain and plumbing fixtures; can produce an undesirable taste. Essential for health.
Manganese: not considered to be toxic; high amounts of Manganese can cause staining of laundry, porcelain and plumbing fixtures; may produce an undesirable taste.
Sodium: essential for health; usually from salt-water intrusion, water softeners & some mineral deposits.

MB LABS LTD.
ANALYTICAL & TESTING SERVICES

R. Bilodeau

H. Hartmann

P.O. BOX 2103, SIDNEY, B.C. V8L 3S6 TEL: (250) 656-1334 EMAIL: info@mblabs.com

Client/Code

Streamline Plumbing
*A
1650 Fulford-Ganges Rd
Salt Spring Island, BC
V8K 2A8
TEL: (250) 653-2026
streamlineplumbing@shaw.ca

Date 130ct21 2:25p No. W164278 pg3
Source New Well
Type of Sample water
No. of Samples 1
Comments Arrival temp.: 8.1C

Sample: Mid Isl Marine, Nick Williams, 248 Upper Ganges Rd

SAMPLE	DATE	TIME	Alkalinity (mg/L)	NH_3-N (mg/L)	Cl^- (mg/L)	Colour (TCU)	E.C. (mS/cm)
Deep Well	130ct21	08:45a	165	1.52	ND	13.0	11.2
Lab Blank			ND	ND	ND	ND	ND
S_o			0.100	0.254 ug/L	0.015	0.300	0.300
REF. VALUE			100	10.0	10.0	5.00	147
STD ± 2SD			96.5 ± 8.22	9.80 ± 1.01	10.6 ± 0.960	4.90 ± 0.520	141 ± 12.8

SAMPLE	DATE	TIME	CORROSIVITY (Is @20C)	F^- (mg/L)	S^{2-} (ug/L)	TKN (mg/L)	NO_3-N (ug/L)
Deep Well	130ct21	08:45a	0.813	1.04	ND	1.52	ND
Lab Blank				ND	ND	ND	ND
S_o				0.007	0.007	0.012	0.160
REF. VALUE				1.00	50.0	1.00	1.00
STD ± 2SD				1.08 ± 0.079	48.9 ± 0.476	1.03 ± 0.066	1.09 ± 0.688

SAMPLE	DATE	TIME	NO_2-N (ug/L)	SO_4^{2-} (mg/L)	T.O.C. (mg/L)	T&L (mg/L)	TDS (mg/L)
Deep Well	130ct21	08:45a	ND	1052	9.06	0.149	6496
Lab Blank			ND	ND	ND	ND	ND
S_o			0.300	0.075	0.300	0.040	0.010
REF. VALUE			10.0	10.0	5.00	1.00	2000
STD ± 2SD			10.6 ± 0.799	10.8 ± 0.78	5.05 ± 0.399	1.03 ± 0.066	1890 ± 170

SAMPLE	DATE	TIME	Turbidity (NTU)	UVT (%)
Deep Well	130ct21	08:45a	26.2	58.4
Lab Blank			ND	ND
S_o			0.015	0.003
REF. VALUE			40.0	90.0
STD ± 2SD			40.4 ± 0.399	90.2 ± 0.200

SD = standard deviation; REF VALUE = primary or secondary reference material
STD = secondary standard calibrated to primary standard reference material
S_o = standard deviation at zero analyte concentration; method detection limit is generally considered to be 3x S_o value
ND = none detected n/a = not applicable

MB LABS LTD
R. Bilodeau
Analytical Chemist

H. Hartmann
Sr.Analytical Chemist

ANALYTICAL & TESTING SERVICES P.O. BOX 2103, SIDNEY, B.C. V8L 3S6 TEL: (250) 656-1334 EMAIL: info@mblabs.com

2. Water Quality Lab Tests: Shallow Excavated Well and Madrona Creek Storage

Client/Code

Mid Isle Marine
Nick Williams
248 Upper Ganges Rd
SSI, BC

TEL: 250 931-4020
midislemarine@shaw.ca

Date 26Apr22 3:21p No. W167736
Source Well
Type of Sample water
No. of Samples 2

Comments Arrival temp.: 10.0C
Pd B1066

Site Code	Date	Time	CFU/100 ml TC	T-NC	CFU/100 ml FC	F-NC	CFU/100 mL E.coli
1 Water Storage	26Apr22		600	7400	20	16	0
2 Shallow Well	26Apr22		0	38	0	0	0

WATER DISTRICT SCREEN

Sample	Date	Time	Lactose Fermentors	Coliforms Total	Fecal	E.coli	Total Aeromonas	Sulfur Reducing/ Iron Bacteria	Yeast/Fungi	TPC*
1 Water Storage	26Apr22		74.0	6.00	0.20	ND	ND	present/ ND	ND / ND	912
2 Shallow Well	26Apr22		0.38	ND	ND	ND	ND	ND / ND	ND / ND	152

* all counts are colony forming units per milli-litre

TC = total coliform bacteria FC = fecal coliform bacteria (aka Thermotolerant Coliforms)
NC = non-coliform bacteria ND = none detected
TPC = total plate count- spread plate method - 35C/48hr TGEA FDA/BAM 9th ed, Oct 2020
CFU = colony forming units

Results may be adversely affected if samples are submitted to the laboratory more than 24 to 30 hours after collection.

E. coli = Escherichia coli, FDA/BAM 9th ed, Oct 2020
Bergy's Manual of Systematic Bacteriology vol 1, AOAC 1984; J.Clin.Micro., J.Intern.Systm.Bact.

Comments:
For Interpretation of Results:
Total, Fecal Coliforms or E.coli present greater than 0 CFU/100mL (0 CFU/mL):
IF Coliform numbers exceed safe limits for drinking water- water is not suitable for drinking without treatment.

Total Non-coliform bacteria (=Lactose Fermentors) equal to or greater than 200 CFU/100mL (2.0 CFU/mL):
IF the number organisms present exceed recommended guidelines for drinking water; treatment is strongly recommended.

If Total Plate Count bacteria are -
A) greater than 100 CFU/mL:
high numbers of microbial organisms indicate that this water supply should be monitored on a seasonal basis.
B) greater than 500 CFU/mL:
the number of organisms present exceed recommended guidelines for drinking water; treatment is strongly recommended.

- see following page for chemistry results -

W. Riggs
Sr. Microbiologist

MB LABS LTD.
ANALYTICAL & TESTING SERVICES P.O. BOX 2103, SIDNEY, B.C. V8L 1Y0

MB LABORATORIES LTD.
TEL: (250) 656-1334 EMAIL: info@mblabs.com

Client/Code

Mid Isle Marine
Nick Williams
248 Upper Ganges Rd
SSI, BC

TEL: 250 931-4020
midislemarine@shaw.ca

Date 26Apr22 3:21p No. W167736 pg2
Source Well
Type of Sample water
No. of Samples 2

Comments Arrival temp.: 10.0C
Pd B1066

Samples: 1) Water Storage 26Apr22 2) Shallow Well 26Apr22

ELEMENTS		1 SAMPLE	2 SAMPLE	UNITS	Maximum Limits Permissible In Drinking Water*
1) Aluminium	Al	0.182	0.144	mg/L	no limit listed
2) Antimony	Sb	<0.500	<0.500	ug/L	6.00 ug/L
3) Arsenic	As	<0.500	<0.500	ug/L	10.0 ug/L
4) Barium	Ba	0.013	0.016	mg/L	2.00 mg/L
5) Beryllium	Be	<0.003	<0.003	mg/L	no limit listed
6) Boron	B	0.581	0.551	mg/L	5.00 mg/L
7) Cadmium	Cd	<0.010	<0.010	ug/L	7.00 ug/L
8) Calcium	Ca	17.1	29.4	mg/L	200 mg/L
9) Chromium	Cr	<0.003	<0.003	mg/L	0.050 mg/L
10) Cobalt	Co	<0.005	<0.005	mg/L	no limit listed
11) Copper	Cu	<0.008	0.078	mg/L	1.00 mg/L
12) Gold	Au	<0.040	<0.040	mg/L	no limit listed
13) Iron	Fe	0.467	0.169	mg/L	0.300 mg/L
14) Lanthanum	La	<0.020	<0.020	mg/L	no limit listed
15) Lead	Pb	<0.500	1.49	ug/L	5.00 ug/L
16) Magnesium	Mg	3.92	3.99	mg/L	50.0 mg/L
17) Manganese	Mn	0.035	0.069	mg/L	0.120 MAC 0.020 AO
18) Mercury	Hg	<0.010	<0.010	ug/L	1.00 ug/L
19) Molybdenum	Mo	<0.005	<0.005	mg/L	no limit listed
20) Nickel	Ni	<0.004	<0.004	mg/L	no limit listed
21) Phosphorus	P	0.048	<0.010	mg/L	no limit listed
22) Potassium	K	1.07	0.700	mg/L	no limit listed
23) Scandium	Sc	<0.050	<0.050	mg/L	no limit listed
24) Selenium	Se	<0.500	<0.500	ug/L	5.0 ug/L
25) Silicon	Si	3.10	7.74	mg/L	no limit listed
26) Silver	Ag	<0.010	<0.010	mg/L	no limit listed
27) Sodium	Na	14.3	8.51	mg/L	200 mg/L
28) Strontium	Sr	0.110	0.140	mg/L	no limit listed
29) Tin	Sn	<0.020	<0.020	mg/L	no limit listed
30) Titanium	Ti	<0.010	<0.010	mg/L	no limit listed
31) Tungsten	W	<0.050	<0.050	mg/L	no limit listed
32) Vanadium	V	<0.010	<0.010	mg/L	no limit listed
33) Zinc	Zn	0.002	0.160	mg/L	5.00 mg/L
Hardness (mg/L $CaCO_3$)		58.8	89.8	mg/L	0-75 mg/L = soft
pH		7.48	6.81	units	7.0 to 10.5

* As per Canadian or B.C. Health Act Safe Drinking Water Regulation BC Reg 230/92, & 390 Sch 120, 2001. Task Force of the Canadian Council of Resource and Environment Ministers - Guidelines for Canadian Drinking Water Quality, 2020.

R. Bilodeau
Analytical Chemist

H. Hartmann
Sr.Analytical Chemist

MB LABS LTD.
ANALYTICAL & TESTING SERVICES P.O. BOX 2103, SIDNEY, B.C. V8L 1Y0

MB LABORATORIES LTD.
TEL: (250) 656-1334 EMAIL: info@mblabs.com

Client/Code

Mid Isle Marine
Nick Williams
248 Upper Ganges Rd
SSI, BC

TEL: 250 931-4020
midislemarine@shaw.ca

Date 26Apr22 3:21p No. W167736 pg3
Source Well
Type of Sample water
No. of Samples 2

Comments Arrival temp.: 10.0C
Pd B1066

Samples: 1) Water Storage 26Apr22 2) Shallow Well 26Apr22

Comments:

Iron: high amounts of Iron can cause staining of laundry, porcelain and plumbing fixtures; can produce an undesirable taste. Essential for health.

Manganese: not considered to be toxic; high amounts of Manganese can cause staining of laundry, porcelain and plumbing fixtures; may produce an undesirable taste.

pH: extremes in pH can lead to corrosion (too low <6.5) or incrustation (too high >8.5) of pipes & plumbing fixtures. Water with low pH allows metals to dissolve into water; water with high pH reduces disinfection efficacy, increases THM & scale formations.

R. Bilodeau
Analytical Chemist

H. Hartmann
Sr.Analytical Chemist

MB LABS LTD.
ANALYTICAL & TESTING SERVICES P.O. BOX 2103, SIDNEY, B.C. V8L 1Y0

MB LABORATORIES LTD.
TEL: (250) 656-1334 EMAIL: info@mblabs.com

Client/Code

Mid Isle Marine
Nick Williams
248 Upper Ganges Rd
SSI, BC

TEL: 250 931-4020
midislemarine@shaw.ca

Date 26Apr22 3:21p No. W167736 pg4
Source Well
Type of Sample water
No. of Samples 2

Comments Arrival temp.: 10.0C
Pd B1066

SAMPLE	DATE	TIME	Alkalinity (mg/L)	NH_3-N (ug/L)	Cl^- (mg/L)	Colour (TCU)	E.C. (uS/cm)
Water Storage	26Apr22		70.0	29.1	15.8	30.8	186
Shallow Well	26Apr22		100	ND	14.6	6.87	226
Lab Blank			ND	ND	ND	ND	ND
S_e			0.100	0.254	0.015	0.300	0.300
REF. VALUE			200	100	100	5.00	147
STD ± 2SD			191 ± 15.6	97.8 ± 7.66	109 ± 8.87	4.99 ± 0.043	142 ± 11.9

SAMPLE	DATE	TIME	CORROSIVITY (Is @20C)	F^- (mg/L)	S^{2-} (ug/L)	TKN (mg/L)	NO_3-N (ug/L)
Water Storage	26Apr22		-0.829	0.103	ND	0.601	16.0
Shallow Well	26Apr22		-1.11	0.069	ND	0.113	146
Lab Blank				ND	ND	ND	ND
S_e				0.007	0.007	0.012	0.160
REF. VALUE				1.00	50.0	1.00	100
STD ± 2SD				1.01 ± 0.082	48.0 ± 4.33	1.09 ± 0.080	104 ± 8.09

SAMPLE	DATE	TIME	NO_2-N (ug/L)	SO_4^{2-} (mg/L)	T.O.C. (mg/L)	T&L (mg/L)	TDS (mg/L)
Water Storage	26Apr22		ND	10.9	11.5	1.04	108
Shallow Well	26Apr22		2.60	10.5	5.27	0.133	131
Lab Blank			ND	ND	ND	ND	ND
S_e			0.300	0.075	0.300	0.070	0.010
REF. VALUE			10.0	100	5.00	1.00	200
STD ± 2SD			10.4 ± 0.780	108 ± 7.99	4.78 ± 0.390	1.04 ± 8.088	198 ± 16.6

...contin\

MB LABS LTD.
ANALYTICAL & TESTING SERVICES P.O. BOX 2103, SIDNEY, B.C. V8L 1Y0 TEL: (250) 656-1334 EMAIL: info@mblabs.com

MB LABORATORIES LTD.