



MINISTRY OF ENVIRONMENT AND CLIMATE CHANGE STRATEGY

PESTICIDE USE PERMIT

No. 869-0011-19/22

Pursuant to Section 6 of the Integrated Pest Management Act

**MOWI Canada West Inc.
124-1334 Island Highway
Campbell River, BC V9W 8C9**

is authorized to use pesticides subject to the conditions listed below. Contravention of any of these conditions is a violation of the *Integrated Pest Management Act* and may result in prosecution.

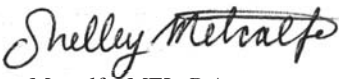
Purpose of the Permit

1. This permit has been issued for the management of post-chalimus stage sea lice (*Lepeophtheirus spp* and *Caligus spp*) on farmed Atlantic salmon at ten separate aquaculture facilities operations in the Queen Charlotte Strait area near Port Hardy as shown on the attached maps. The permit authorizes the use of the pesticide Interlox Paramove 50 (active ingredient hydrogen peroxide) administered using the well-boat or tarpaulin treatment methods. This use is authorized as part of an integrated pest management program for sea lice management and is necessary as part of an effective resistance management strategy for chemotherapeutant use at these sites.

Treatment Dates

2. The pesticide use described herein may be conducted from seven days after the date of publication of the permit, as described in condition 4, until the permit expires on **April 24, 2023**.

Date Issued: April 24, 2020



Shelley Metcalfe, MEL, P.Ag.
Authorization Section Head, Industry and IPM
for Administrator – *Integrated Pest Management Act*



Notifications and Access to Project Information

3. To allow inspection by the public, within seven days of permit issuance, the permit holder must post a copy of the permit on the MOWI Canada West website and make a copy available for viewing by any member of the public at the MOWI Canada West office at 124-1334 Island Highway, Campbell River, BC. The permit must remain accessible at these locations as described above until one week after the permit has expired.
4. Within 15 days of issuance of the permit, the permit holder must publish a notice in the North Island Gazette. The published notice must contain the following information:
 - (a) Name, address and telephone number of the permit holder;
 - (b) Permit number;
 - (c) Purpose of pesticide use;
 - (d) Pesticide(s) to be used (trade name, P.C.P. No. and active ingredient);
 - (e) Method of pesticide application;
 - (f) Map(s) showing the location of the treatment area;
 - (g) Projected dates of project commencement and completion;
 - (h) Information on where copies of the permit and map of the treatment area may be examined in detail; and
 - (i) Information on how and when the public can contact the permit holder to obtain any permitted pesticide use and related integrated pest management information.
5. The permit holder must conduct any additional notification with other parties, as agreed upon with those parties during the consultation process.
6. At least 24 hours prior to any pesticide use, the permit holder must post signs advising of the upcoming pesticide use at the access points to each facility being treated. These postings must be maintained for the duration of the pesticide use. The signs must be waterproof, be a minimum of 279 mm by 432 mm in size (i.e. 11" x 17"), and have the heading "Pesticide Use Notice" (in 25 mm lettering) and contain, at a minimum, the following information:
 - (a) The trade names and active ingredients of each pesticide to be used;
 - (b) The date or range of dates for the pesticide use;
 - (c) Precautions to be taken by all employees needed to minimize exposure to the pesticides and residues;
 - (d) The Pesticide Use Permit number; and
 - (e) How to obtain additional information about the pesticide or pesticide use.

Date Issued: April 24, 2020


Shelley Metcalfe, MEL, P.Ag.
Authorization Section Head, Industry and IPM
for Administrator – Integrated Pest Management Act



7. The permit holder must make detailed information on the proposed, current and past pesticide use under this permit readily available to anyone that accesses or uses the general area adjacent to the treated areas. Treatment information must be of sufficient detail to allow the accurate delineation of areas where pesticide use has or will occur.
8. The permit holder must ensure that all personnel involved in the project are:
 - a) notified of this permit;
 - b) provided a copy of the permit; and
 - c) familiar with the terms and conditions of the permit and any permit amendments prior to any pesticide use.
9. At least seven days before conducting each pesticide treatment authorized under this permit, the permit holder must provide a treatment notice to ipmreporting@gov.bc.ca that includes the location, application method, date and approximate time of treatment. Immediate notification will be provided when a pending treatment has been cancelled, delayed or deferred.

Authorized Pesticides

10. The pesticide listed below is approved for use under the terms of this permit. The permit holder must utilize the lowest effective application rates where treatment objectives may still be achieved.


Trade Name	Active Ingredient (a.i.)	Product P.C.P. No.	Application Rate of Interlox Paramove 50 (g/L)	Maximum Total Number of Treatments (per pen per year)	Maximum Number of Tarpaulin Treatments (per pen per year)
Interlox Paramove 50	Hydrogen Peroxide	31393	2.4 -3.6	6	2

As per the above table, the permit holder is authorized to conduct a maximum of six Interlox Paramove 50 treatments per pen per year, of which a maximum of two treatments may be conducted using the tarpaulin method.

Target Pest Species, Treatment Area and Purpose

11. Pesticide use must be for the sole purpose of treating post-chalimus stage sea lice (*Lepeophtheirus spp* and *Caligus spp*) on farmed Atlantic salmon at the ten locations identified on the maps accompanying this permit.

Date Issued: April 24, 2020


Shelley Metcalfe, MEL, P.Ag.
Authorization Section Head, Industry and IPM
for Administrator – Integrated Pest Management Act



Integrated Pest Management Requirements

12. The permit holder must make all reasonable efforts to remove moribund fish as necessary.
13. The permit holder must follow the procedures outlined in the 'Marine Harvest Integrated Pest Management Plan – December 2017' (or most current version) for correctly identifying sea lice and monitoring populations of *Lepeophtheirus spp* and *Caligus spp*. The permit holder must ensure that the document is kept current throughout the duration of the permit.
14. The permit holder must verify one of the following circumstances exist before conducting treatment:
 - a) A pre-established threshold of motile *Lepeophtheirus* sea lice per fish per site has been exceeded. (This may be a threshold required to maintain compliance with the company's Marine Finfish Aquaculture Licence under the *Fisheries Act*, or it may be established by the veterinarian responsible for fish stock health to achieve management objectives, or it may be established as part of an Area Based Management Plan.); or
 - b) When treatment of sea lice is deemed necessary by the veterinarian responsible for fish stock health to prevent the infestation of a site when fish are being moved between pens, or for other management objectives.
15. After each pesticide application, the permit holder must monitor sea lice populations in accordance with the permit holder's 'Marine Harvest Integrated Pest Management Plan – December 2017' (or most current version) to determine the effectiveness of the pesticide application.
16. The permit holder must undertake ongoing research efforts to investigate the feasibility of additional sea lice control methods, including, but not limited to, the use of mechanical removal technology, cleaner fish, and freshwater treatments.

Restrictions and Monitoring

17. The permit holder must ensure pesticide-treated waters from well-boats is released only while the vessel is in motion, and in locations that are a minimum of 200m away from shore, in order to minimize any impact on non-target organisms.
18. For all well-boat applications, the permit holder must employ a filtration system and make reasonable attempts to recover dislodged sea lice during treatment.

Date Issued: April 24, 2020

Shelley Metcalfe
Shelley Metcalfe, MEL, P.Ag.
Authorization Section Head, Industry and IPM
for Administrator – Integrated Pest Management Act



19. The permit holder is limited to a maximum of 2 tarpaulin treatments per pen per year.
20. For all tarpaulin applications, the permit holder must employ a sea lice recapture device, consisting of a collection trough, water pumps, and a screen to capture dislodged sea lice, and make reasonable attempts to recover dislodged sea lice during treatment.
21. The permit holder must visually monitor for any potential impacts to non-target organisms during the release of pesticide-treated waters from either the well-boat or tarpaulin treatment methods.
22. For tarpaulin treatments only, the permit holder must conduct water sampling to determine levels of hydrogen peroxide in the water both inside and outside the pen, at various times post-treatment, in accordance with the following guidelines:
 - a) Number of samples required
For each location, depth, and time described below, one water sample is required.
 - b) Depth of samples
For each sample location, water samples within the pen must be taken at two different depths: 1m and 5m. For each sample location, water samples outside of the pen must be taken at three different depths: 1m, 5m, and 20m.
 - c) Timing of sampling
Both within and outside of the pen, samples at each sampling location and depth must be collected at regular intervals of not more than 30 minutes post-treatment, to document the clearance of hydrogen peroxide from in and around the pen. Sampling at each location and depth may stop once a “not detectable” result is obtained.
 - d) Location of samples
Within the pen, the sample locations may be chosen by the permit holder. Outside of the pen, water samples will be taken at the outside edge of the treated pen (at the three depths of 1m, 5m, and 20m) and at 30m from the edge of the pen (samples also taken at the three depths of 1m, 5m, and 20m). The location of sampling at the edge of the PPD will align with the direction of the prevailing current. If hydrogen peroxide is detected at any location or depth, sampling will be repeated at regular intervals of not more than 30 minutes until a ‘not detectable’ result is obtained. In addition, if hydrogen peroxide is detected at the location 30m from the pen, an additional sample location 45m beyond the 30m location must be added. Sampling at this location will continue



at regular intervals of not more than 30 minutes until a 'not detectable' result is obtained.

23. Pesticide use must be conducted under the direction of a provincially-licensed veterinarian, by applicators with valid certificates in the *marine aquaculture* category, and in accordance with any additional treatment-specific training required by the pesticide manufacturer.
24. The permit holder must ensure that a copy of the certificate of all certified applicators conducting the pesticide use is at or near the treatment location during the pesticide use.
25. The permit holder must comply with the requirements of the label for the pesticide used.
26. The permit holder must comply with all applicable regulations under the *Integrated Pest Management Act*.
27. This permit is not transferable without the written approval of the Administrator.

Record Keeping

28. For each treatment location and day of pesticide use under this permit, the permit holder must keep a record containing the following information:
 - a) the treatment location;
 - b) the name and certificate number(s) of the pesticide applicator certificate holder(s) who used the pesticide;
 - c) the date and time of the pesticide use;
 - d) the pre- and post-treatment sea lice monitoring results;
 - e) the specific threshold and/or justification for the pesticide application determined by the veterinarian responsible for fish stock health;
 - f) the trade name of the pesticide used and its registration number under the federal Pest Control Product Act;
 - g) the method and rate of application and the total quantity used;
 - h) the water temperature and direction of the tide at the time of the release of treated water from the well-boat (if that is the method used);
 - i) direction and speed of the well-boat at the time of release of treated water;
 - j) the distance from shore of the well-boat at the time the treated water is released;
 - k) the details of impacts (if any observed) on non-target organisms during the release of pesticide-treated waters; and
 - l) for tarpaulin treatments only, the results of the water monitoring requirements specified in condition 22.

Date Issued: April 24, 2020

Shelley Metcalfe
Shelley Metcalfe, MEL, P.Ag.
Authorization Section Head, Industry and IPM
for Administrator – *Integrated Pest Management Act*

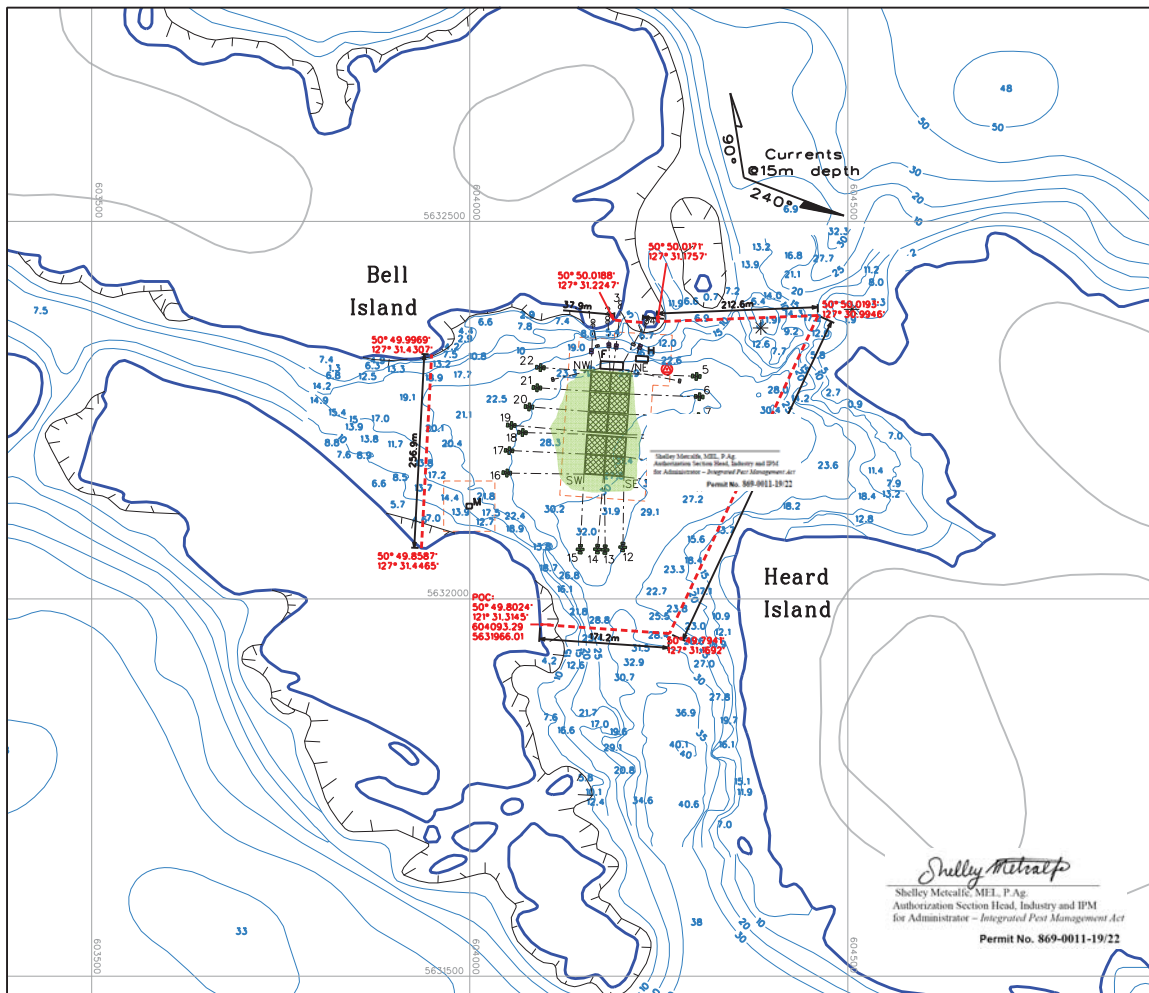


Reporting

29. An annual report for each calendar year must be sent via email to ipmreporting@gov.bc.ca on or before January 31 of the next calendar year. The first report is due January 31, 2021. The report must include the following information:
30. The total quantity of Interlox Paramove 50 used in the calendar year at all sites.
31. For each aquaculture facility site treated with Interlox Paramove 50:
- a. Date or date range of treatments, if treatments for one site were conducted over multiple days
 - b. For well-boat treatments, total number of well-boat loads
 - c. For tarpaulin treatments, total number of pens treated
 - d. Average load biomass (kgs)
 - e. Pre-treatment sea lice levels
 - f. Post-treatment sea lice levels
 - g. % efficacy of the treatment
 - h. Total volume of water treated
 - i. Total quantity of Interlox Paramove 50 used
 - j. For tarpaulin treatments, the results of the water monitoring requirements specified in condition 22
32. A summary statement indicating what, if any, effects on non-target organisms were observed during any of the treatments.
33. A summary of the sea lice re-capture efforts conducted, including an estimate of the percent of dislodged sea lice captured for all treatments.
34. A summary of any non-chemical treatments for sea lice control conducted, including the type and number of non-chemical treatments conducted in the calendar year.
35. A summary of the number of SLICE (active ingredient emamectin benzoate) treatments conducted at all sites, including the date ranges associated with these treatments and the volume of SLICE used for each treatment.
36. A summary of the ongoing research efforts by the permit holder to investigate the feasibility of additional non-chemical sea lice control methods, including, but not limited to, the use of mechanical removal technology, cleaner fish, and freshwater treatments.



30. The permit holder must report any effects on non-target organisms observed as a result of the release of pesticide-treated waters from the pen or the well-boat as soon as practicable to the Administrator via ipmreporting@gov.bc.ca.
31. Upon request from the Administrator, the permit holder must provide water treatment calculations and dose rates associated with the planned or undertaken pesticide use .
32. Pesticide spills that result in impacts not authorized by or consistent with this permit, must be immediately reported to the Emergency Management BC at 1-800-663-3456. Spill-affected areas must be immediately evaluated and cleaned-up/decontaminated as appropriate. As soon as practicable, the permit holder must provide the Administrator with reports via email to ipmreporting@gov.bc.ca on the nature of the spill, any impacts as well as any clean-up/ decontamination activities planned or undertaken.
33. If the permit holder believes that the permit holder or another person has contravened the *Integrated Pest Management Act* or Regulation in a manner involving the release of pesticide into the environment, the permit holder must give written notice to the Administrator as soon as practicable.
34. If the permit holder believes that non-compliance with any of the terms and conditions of this permit has occurred, the permit holder must give written notice to the Administrator as soon as practicable. The permit holder must undertake actions, to the satisfaction of the Administrator, to evaluate the potential impact of the non-compliance on human health and/or the environment.



BELL ISLAND Site Reference Number: 892 **CONTAINMENT ARRAY** **MANAGEMENT PLAN** CURRENT AREA OF LEASE: 15.8Ha

Buildings	Farm Features	Water Features
Feed Shed 98' X 32.8', 30mX10m	Mooring Line	Shoreline
House	Mooring Block Single 700kg Double	Depth (Meter) 1.7
Mort Float	Mooring Block Single 1500kg	Streams
	Mooring Block Single 2000kg quadruple	Salmonid Streams
	1 1/2" Double Shore Pin	Rock
	Operational Pen 55m Square	Boundaries
	Non Operational Pen 55m Square	Current Lease Boundary
	Proposed Drift Area	Park Boundary
		Other Lease Boundary
		Intensive Use Area
		Environmental Features
		Current Meter Location
		Primary Current Direction 2006
		Secondary Current Direction 2008

Management Plan SW 50° 49.907' - 127° 31.283' location Coordinates: NW 50° 49.985' - 127° 31.253' SE 50° 49.903' - 127° 31.217' NE 50° 49.985' - 127° 31.205'

THIS MAP HAS THE UTM GRID
USE THE BATHYMETRIC CHART FOR THE EXACT MAGNETIC DECLINATION
All Latitude and Longitude are Degree-Decimal Minutes
Plot anchor and mooring block locations based on as-built information (March 2010)

Reference Map: 92L
Base Map: 92L003
Bathymetry Base Chart: 3549

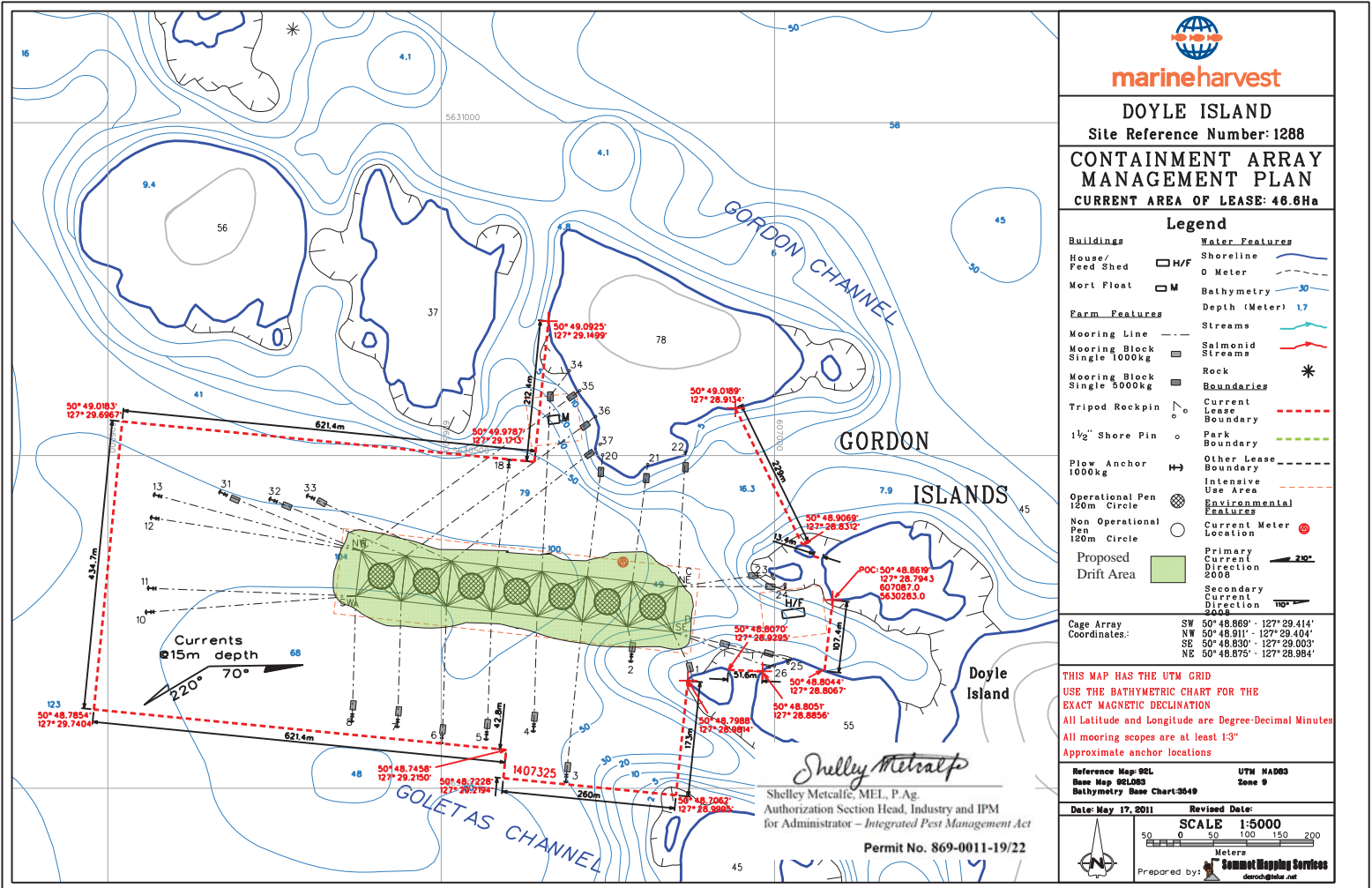
Date: May 18, 2011

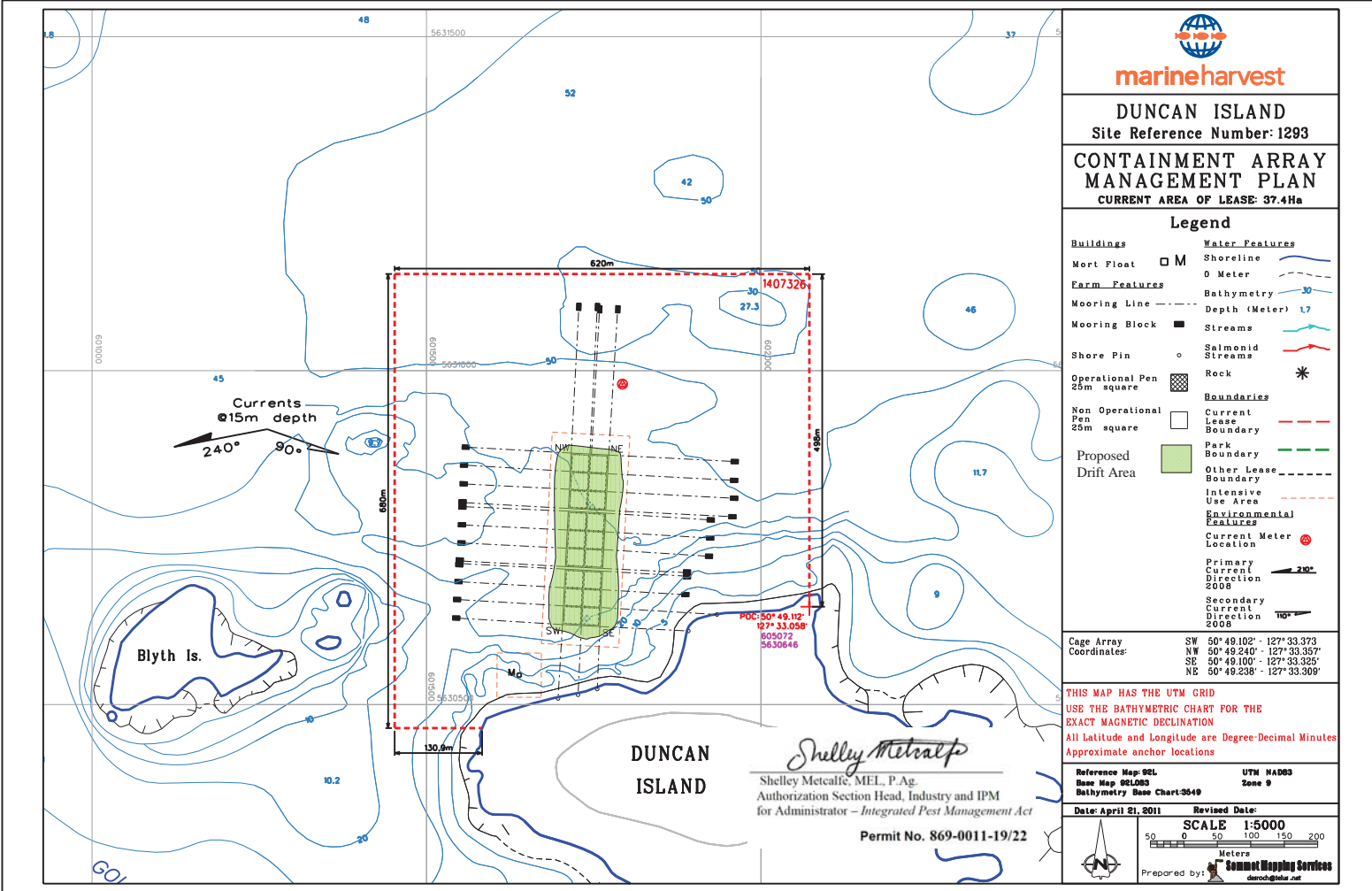
Revised Date:

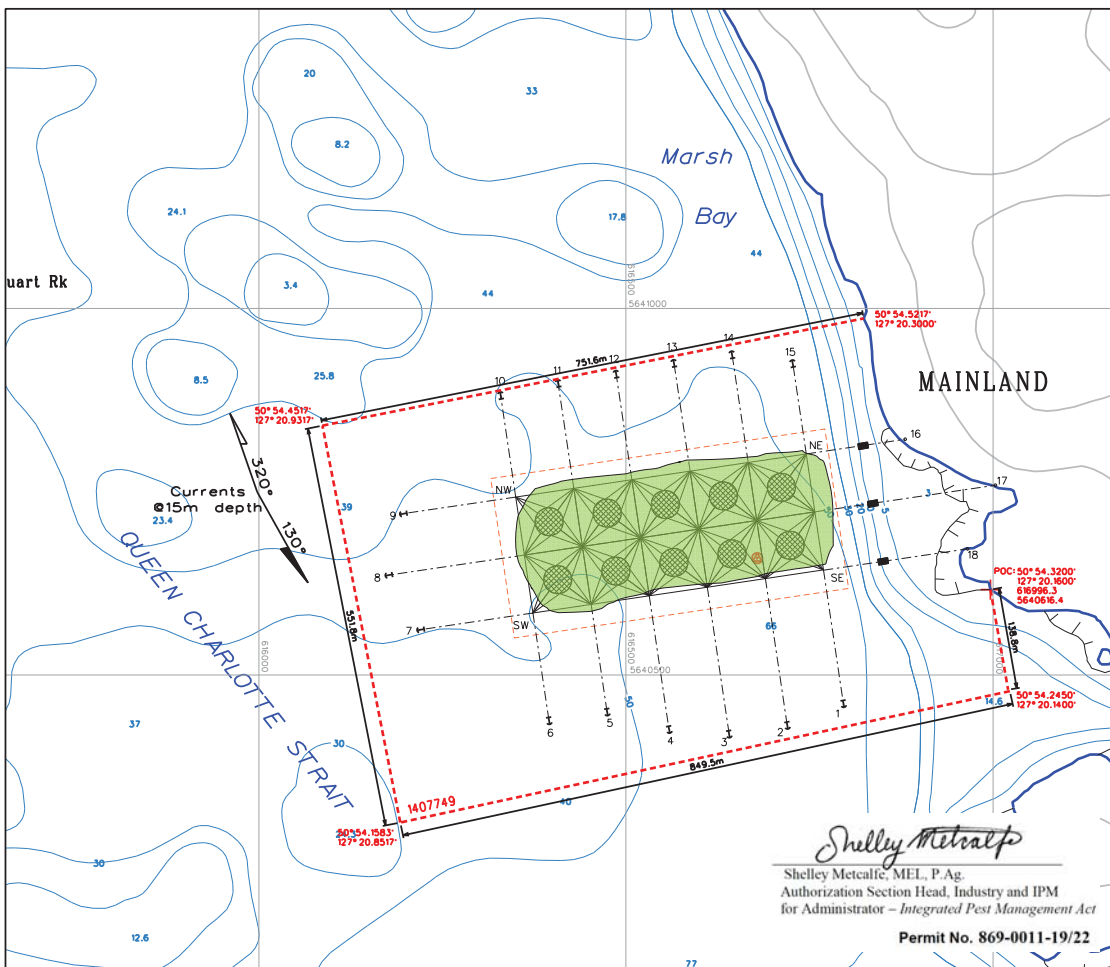
SCALE 1:5000

UTM: 49QUG
Zone 9

Prepared by: Summit Mapping Services
darrch@skm.net







MARSH BAY
Site Reference Number: 1351

CONTAINMENT ARRAY
MANAGEMENT PLAN
CURRENT AREA OF LEASE: 44.7Ha

Legend

Farm Features	Water Features
Mooring Line	Shoreline
Mooring Block	0 Meter
Plow Anchor	Bathymetry
Shore Pin	Depth (Meter) 1.7
Operational Pen 120m Circle	Streams
Non Operational Pen 120m Circle	Salmonid Streams
Proposed Drift Area	Rock
	Boundaries
	Current Lease Boundary
	Park Boundary
	Other Lease Boundary
	Intensive Use Area
	Environmental Features
	Current Meter Location
	Primary Current Direction 2000
	Secondary Current Direction 2000

Management Plan location Coordinates:	SW 50° 54.310' 127° 20.692'
	NW 50° 54.398' 127° 20.709'
	SE 50° 54.337' 127° 20.353'
	NE 50° 54.423' 127° 20.370'

THIS MAP HAS THE UTM GRID
USE THE BATHYMETRIC CHART FOR THE EXACT MAGNETIC DECLINATION
All Latitude and Longitude are Degree-Decimal Minutes
Approximate anchor locations

Reference Map: 02L	UTM NAD83
Base Map: 02L004	Zone 8
Bathymetry Base Chart: 3548	

Date: Feb. 21, 2012	Revised Date:
---------------------	---------------

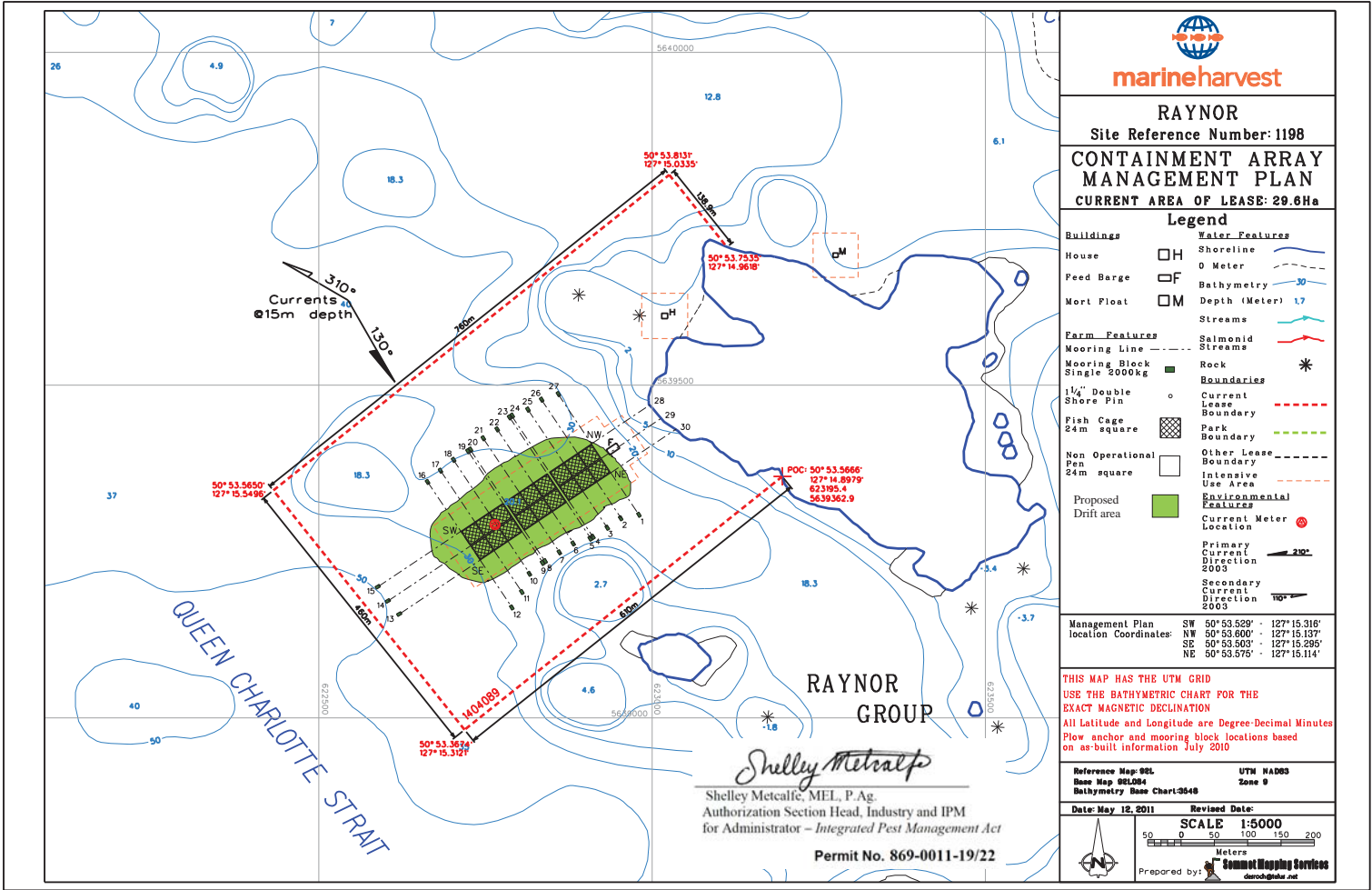
SCALE 1:5000

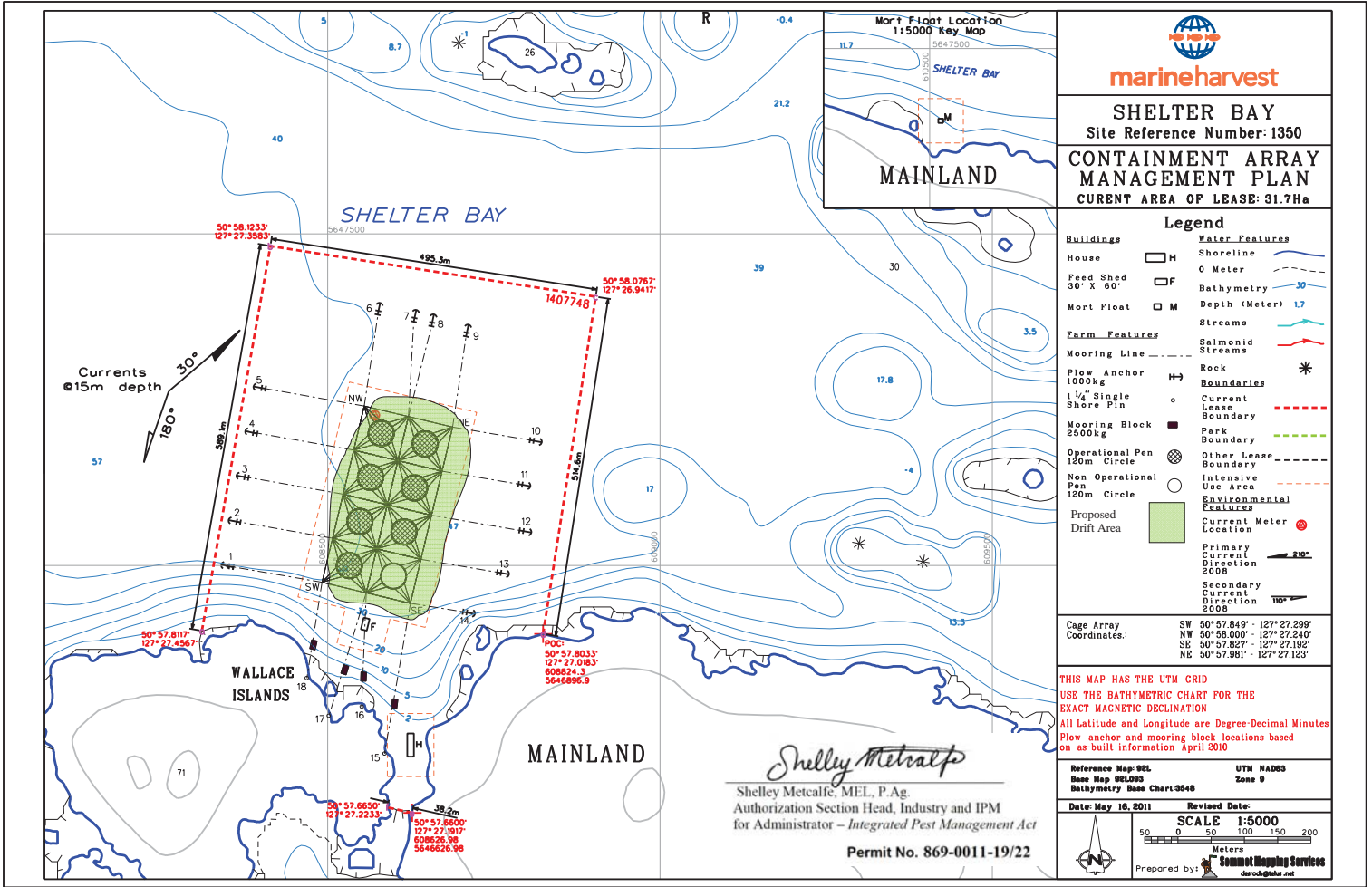
Meters

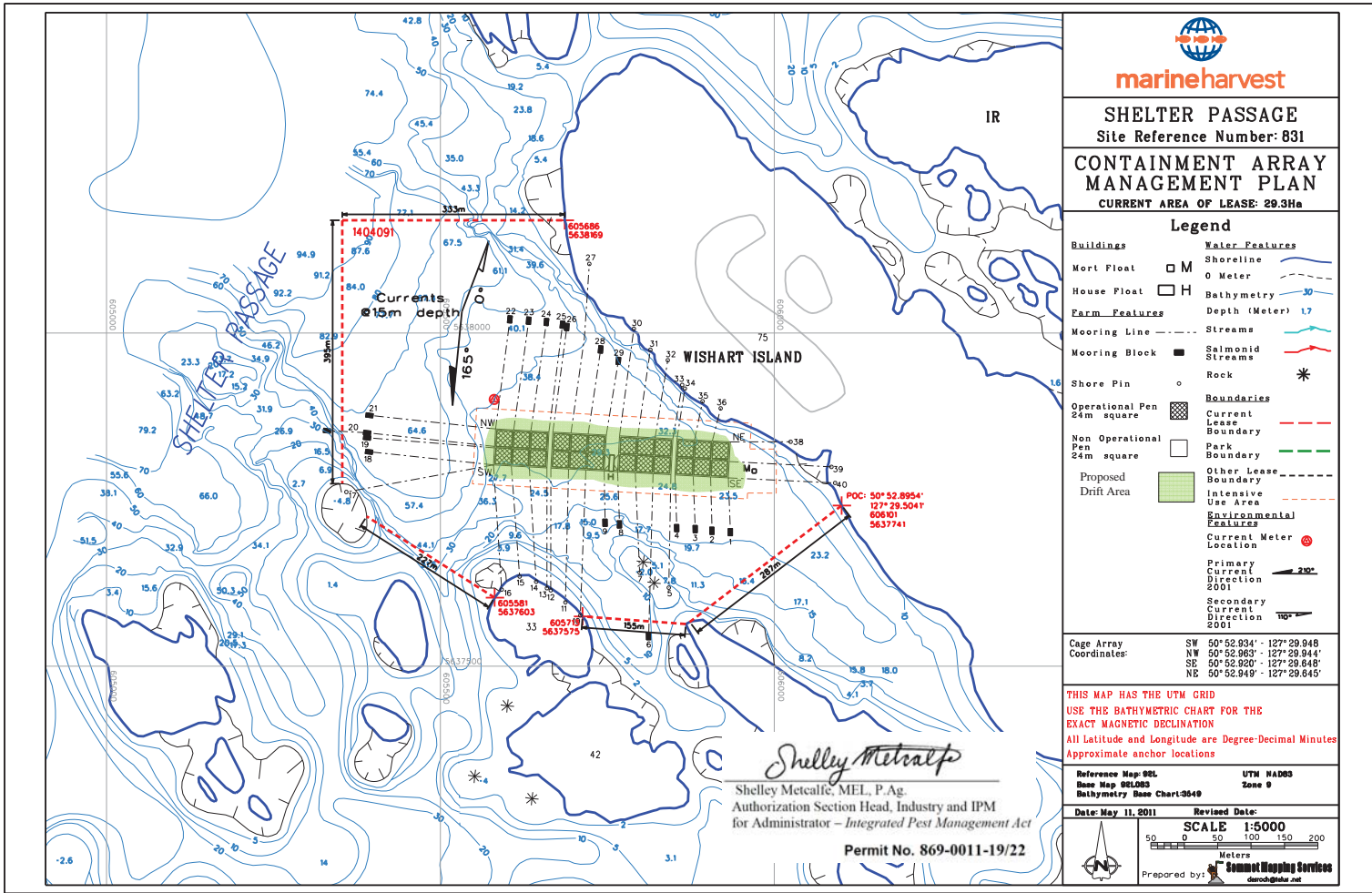
Prepared by: Summit Mapping Services

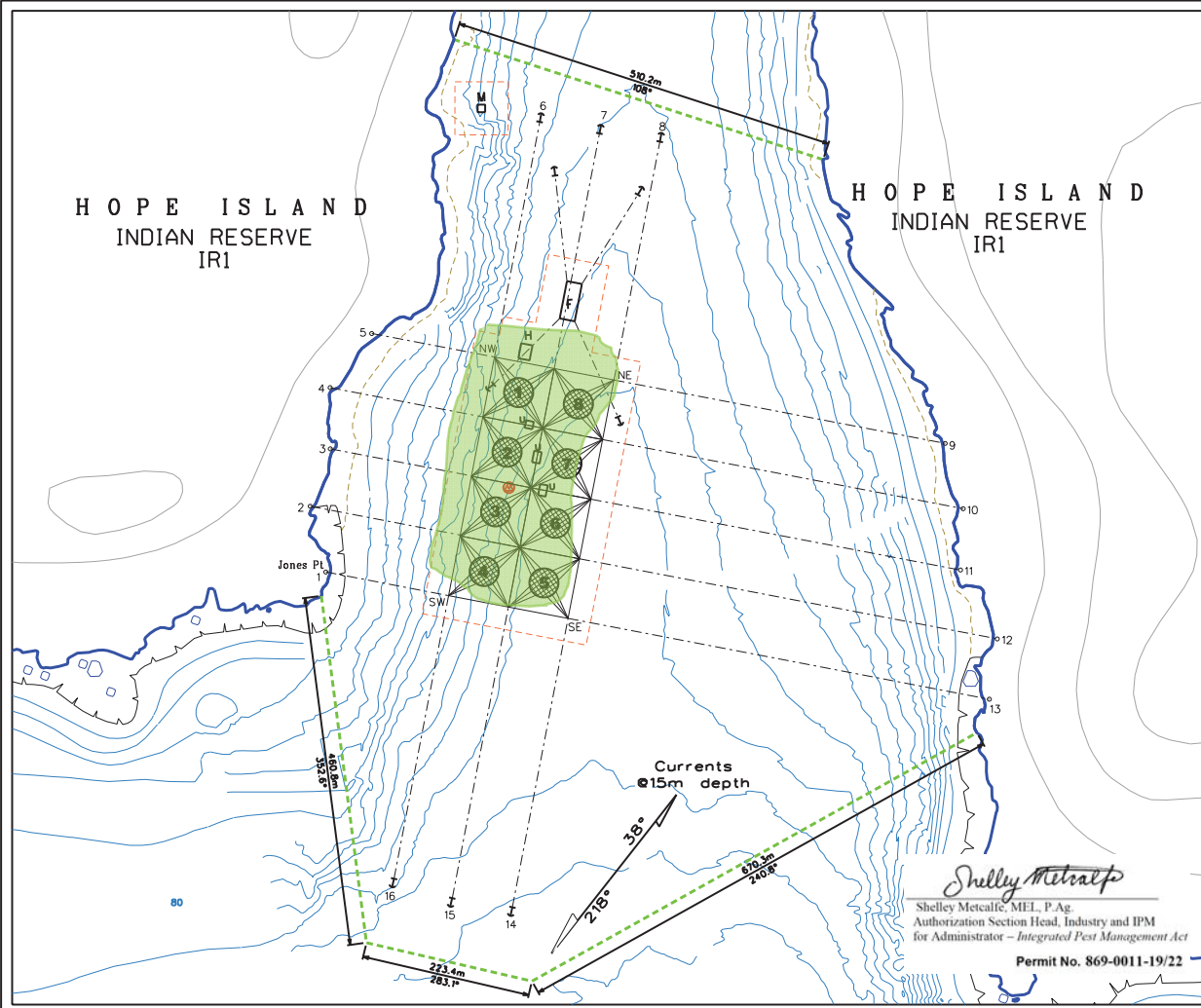
Shelley Metcalfe, M.E.L., P.Ag.
Authorization Section Head, Industry and IPM
for Administrator - Integrated Pest Management Act

Permit No. 869-0011-19/22









Ghi ya
(Bull Harbour)

7053.

Site Reference Number:

**TOP VIEW
OPERATIONAL DIAGRAM**
CURRENT AREA OF LEASE: 76.6Ha

Legend

Farm Features	Water Features
Mooring Line	Shoreline
Shore Pin	0 Meter
Plow Anchor	Bathymetry
Operational Pen 120m Circle	Depth (Meter) 1.7
Non Operational Pen 120m Circle	Streams
Floats/Barges	Salmonid Streams
Utility	Rock
Feed barge	Proposed Lease Boundary
House	Intensive Use Area
Proposed Drift Area	Environmental Features
	Current Meter Location
	Primary Current Direction 2008
	Secondary Current Direction 2008

Cage Array Coordinates:
SW 50°53.994' - 127°56.393'
NW 50°54.163' - 127°56.338'
SE 50°53.976' - 127°56.260'
NE 50°54.145' - 127°56.204'

THIS MAP HAS THE UTM GRID
USE THE BATHYMETRIC CHART FOR THE
EXACT MAGNETIC DECLINATION
All Latitude and Longitude are Degree-Decimal Minutes
Approximate anchor locations

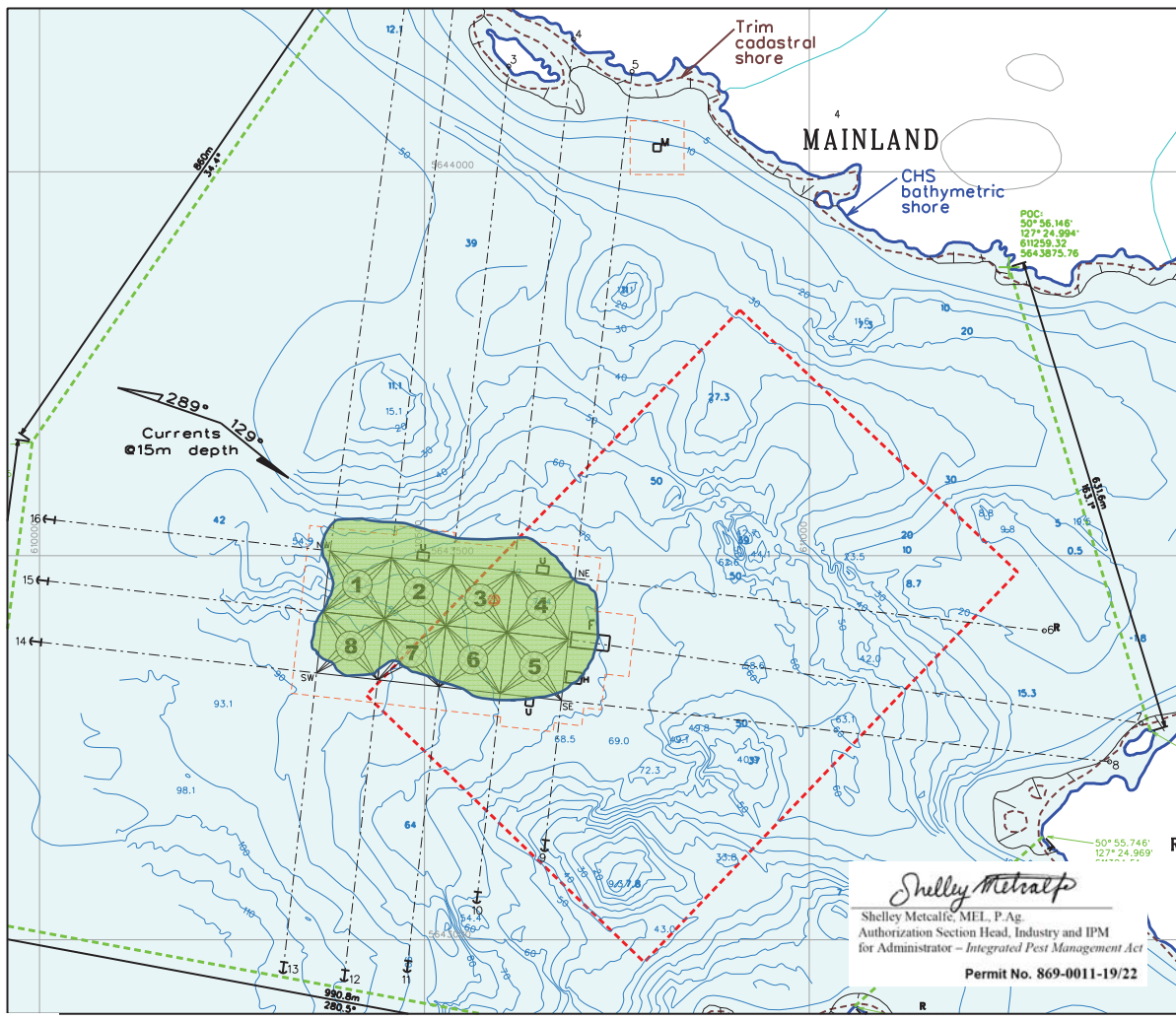
Reference Map: 92L UTM NAD83
Base Map: 92L081-92L091 Zone 9
Bathymetry Base Chart: 3549

Date: Dec. 13, 2013

SCALE 1:5000

50 0 50 100 150 200 Meters

Prepared by: Summit Mapping Services



Robertson Island
 (Main Lease)
 Site Reference Number: 1382

TOP VIEW OPERATIONAL DIAGRAM
 CURRENT AREA OF LEASE: 35.0Ha
 PROPOSED AREA OF LEASE: 149.2Ha

Legend	
Farm Features	Water Features
Mooring Line	Shoreline
Mooring Block	0 Meter
Plow Anchor	Bathymetry
Shore Pin	Depth (Meter) 1.7
Operational Pen 120m circle	Streams
Non Operational Pen 120m circle	Salmonid Streams
Plants/Barges	Rock
Utility (10m x 10m)	Boundaries
Utility (2-10m x 15m)	Current Lease Boundary
Feed barge (20m x 50m)	Proposed Lease Boundary
House (15m x 20m)	Intensive Use Area
Mert	Environmental Features
Proposed Drift Area	Current Meter Location
	Primary Current Direction 2014
	Secondary Current Direction 2014

THIS MAP HAS THE UTM GRID
 USE THE BATHYMETRIC CHART FOR THE EXACT MAGNETIC DECLINATION
 All Latitude and Longitude are Degree-Decimal Minutes
 Approximate anchor locations

Management Plan Location Coordinates: SW 50°55.871' - 127°25.771' NW 50°55.957' - 127°25.753' SE 50°55.848' - 127°25.501' NE 50°55.934' - 127°25.482'

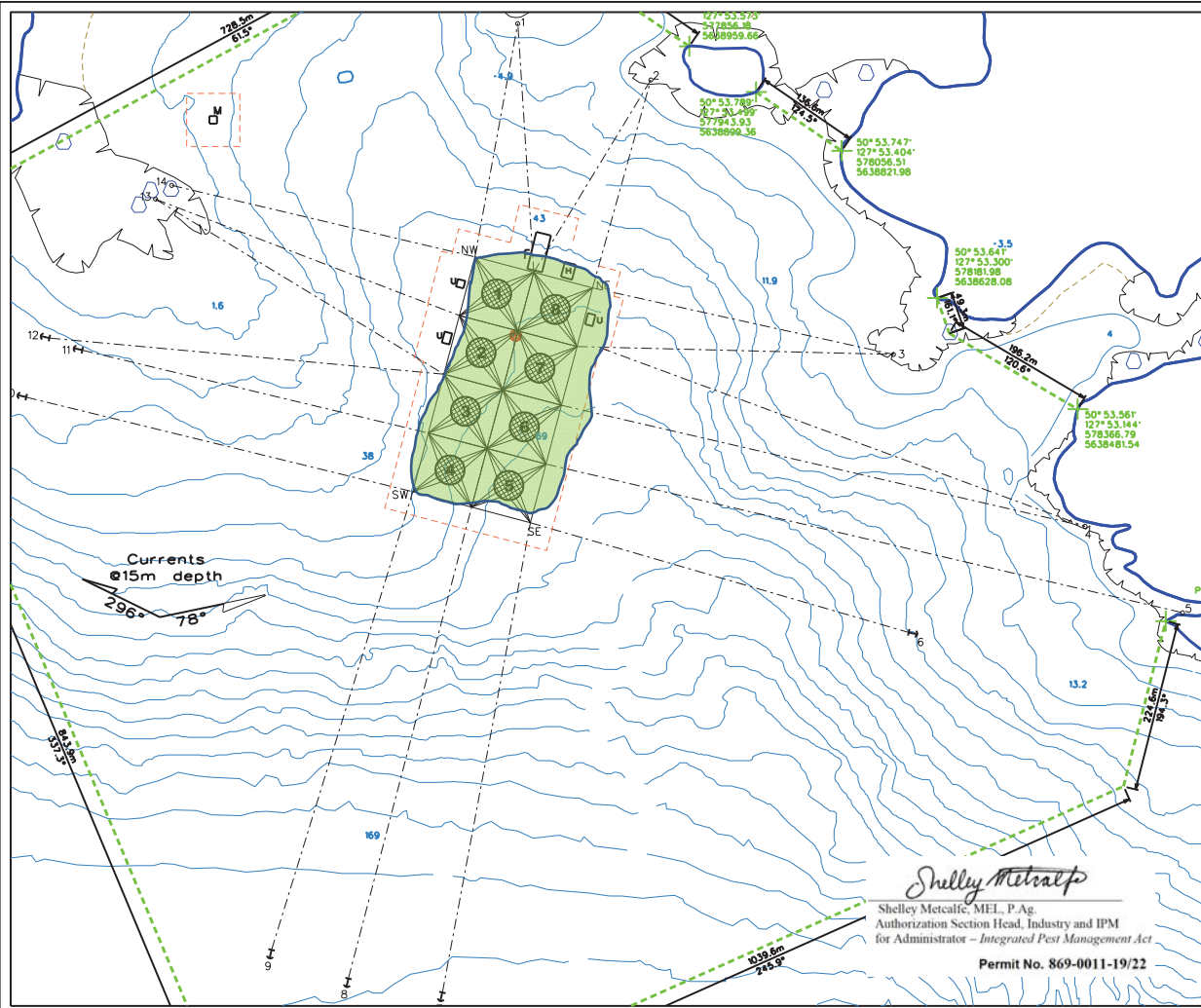
Reference Map: 02L UTM: NAD83 Zone 0
 Base Map: 02L003
 Bathymetry: Base Chart: 3646

Date: June 6, 2014

SCALE 1:5000
 50 0 50 100 150 200 Meters

Prepared by: **Sommet Mapping Services**
 sommetmapping.com

Shelley Metcalfe
 Shelley Metcalfe, MEL, P. Ag.
 Authorization Section Head, Industry and IPM
 for Administrator - Integrated Pest Management Act
 Permit No. 869-0011-19/22



Wanx talis
(Heath Bay)

7054

Site Reference Number:
**TOP VIEW
OPERATIONAL DIAGRAM**
PROPOSED AREA OF LEASE: 163.67Ha

Legend

- | Farm Features | Water Features |
|---------------------|----------------------------------|
| Mooring Line | Shoreline |
| Shore Pin | 0 Meter |
| Plow Anchor | Bathymetry |
| Operational Pen | Depth (Meter) |
| 180m Circle | Streams |
| Non Operational Pen | Salmonid Streams |
| 120m Circle | Rock |
| Floats/Barges | Boundaries |
| Utility | Proposed Lease Boundary |
| Feed barge | Intensive Use Area |
| House | Environmental Features |
| Mar | Current Meter Location |
| Proposed Drift Area | Primary Current Direction 2008 |
| | Secondary Current Direction 2008 |

Cage Array Coordinates:
SW 50°53.509' - 127°53.891'
NW 50°53.675' - 127°53.817'
SE 50°53.486' - 127°53.760'
NE 50°53.652' - 127°53.686'

THIS MAP HAS THE UTM GRID
USE THE BATHYMETRIC CHART FOR THE
EXACT MAGNETIC DECLINATION
All Latitude and Longitude are Degree-Decimal Minutes
Approximate anchor locations

Reference Map: DEL
Base Map: DEL001-DEL001
Bathymetry Base Chart: 3649

UTM NADES
Zone 0

Date: Dec. 13, 2013

SCALE 1:5000
50 0 50 100 150 200
Meters
Prepared by: Summit Mapping Services
dsmith@summitmapping.com