



Pesticide Use Permit Application under *the Integrated Pest Management Act*

FORM REFERENCE CODE: EPD-IPM-10v2

INSTRUCTIONS:

Use this form to apply for a pesticide use permit under the *Integrated Pest Management Act* and Regulation. Pesticide use must not proceed unless a permit has been issued.

The permitting process consists of several steps that require the submission of an application form, map and fee, followed by meetings with ministry staff to receive guidance on the consultation process and required documentation. If you have questions, you are encouraged to contact ministry staff by email at IPMPBC@gov.bc.ca.

HOW TO SUBMIT:

Please submit this form and maps via email to IPMPBC@gov.bc.ca with the subject line "Pesticide Use Permit Application". If large files prevent email submission, please use the ministry's File Transfer Service at <http://www.env.gov.bc.ca/csd/imb/soft/soft.shtml>.

There is an application fee of \$1000 that is due upon submission of this application. The fee is non-refundable after a permit application number has been issued. Please see Section 12 for payment information.

Alternatively, you may mail your application to:

Regional Operations Branch IPM Program
Ministry of Environment & Climate Change Strategy
PO Box 9377 Stn Prov Govt
Victoria, BC V8W 9M6

Section 1: Applicant Information

Applicant Type	<input checked="" type="checkbox"/> Business <input type="checkbox"/> Individual <input type="checkbox"/> Government			1
Company Legal Name <i>as registered with the BC Registrar of Companies</i> OR Individual's Full Legal Name	Grieg Seafood BC Ltd.			2
Doing Business As <i>if applicable</i>				3
Incorporation Number <i>as registered with the BC Registrar of Companies (if applicable)</i>	BC1147456			4
Legal Address <i>as registered with BC Registrar of Companies</i>	Unit # / Street 106-1180 Ironwood Street			5
	City Campbell River	Province BC	Postal Code V9W 5P7	6
Mailing Address	<input checked="" type="checkbox"/> Same as Legal Address			7
	Unit # / Street			8
	City	Province	Postal Code	9

Section 2: Contact Information for the Applicant

Contact's Last Name	Tomkinson		1
Contact's First Name	Sam		2
Contact's Title	Regulatory Specialist		3
Contact Numbers <i>(999) 999-9999</i>	Phone 2502860838	Mobile 2503273918	7
Email Address	sam.tomkinson@griegseafood.com		8

Section 3: Authorized Agent ("the Agent")

The Applicant may authorize an Agent to deal with the ministry directly on future aspects of this application. An Agent is a person who is not an employee of the Applicant. ***This section must be completed in full if an Agent is used.***

Agent's Type	<input type="checkbox"/> Business <input type="checkbox"/> Individual <input type="checkbox"/> Government			1
Agent's Company Legal Name <i>as registered with the BC Registrar of Companies (if applicable)</i>				2
Doing Business As <i>if applicable</i>				3
Agent's Last Name				4
Agent's First Name				5
Agent's Title				6
Contact Numbers <i>(999) 999-9999</i>	Phone	Mobile		7
Email Address				8
Mailing Address	Unit # / Street			9
	City	Province	Postal Code	10

In this section:

"Applicant" means the Applicant as identified in section 1 of this application form, and

"Agent" means the Agent as identified in section 3 of this application form.

I/we (the Applicant) hereby authorize the above-named Agent to deal with the ministry directly on all aspects of this application. I/we (the Applicant) understand and agree with the terms and conditions in Section 12 of this application form.

Applicant's Full Name		1
Signature of the Applicant		2
Date signed <i>(YYYY / MM / DD)</i>		3

Section 4: Owner or Manager of the Treatment Location

Name of the owner or manager of the treatment location

Treatment locations are leased from the Province of BC through Licence of Occupation.

Section 5: Description of Proposed Pesticide Use

Please provide a brief overview of the proposed pesticide use.

Pest(s) to be controlled and the importance of the pest control program	<p>Topical removal of sea lice – <i>Lepeophtheirus salmonis</i> Refer to the addendum for more information.</p>	<p>1</p>
Proposed Integrated Pest Management elements (including pest prevention and identification, monitoring program, treatment thresholds, post-treatment evaluation) and the rationale for the proposed pesticide use	<p>The pest control product, Paramove 50, will only be administered with a receipt of a Pesticide Use Permit and as per the IPMA. Only personnel certified to administer and use H₂O₂ will apply the product. A certified Pesticide Applicator will be present for the entire duration of treatments. Paramove 50 will only be used in accordance with the directions on the product label or in accordance with the Research Authorization (attached) at the concentration dosage directed by the company veterinarian. Paramove 50 application will take place in either a well boat or tarp designed specifically for this purpose. Application time will be a maximum of 30 minutes. Water quality, temperature and dissolved oxygen conditions will be checked prior to start and throughout treatments. Oxygen will be monitored and added as needed.</p> <p>Well boat treatment, completed by the Ronja Islander, will require fish to be crowded, seined, and loaded into one of two 900m³ capacity wells. The targeted density within the well is calculated based on fish size, well size, and desired density of biomass. The maximum allowable density in kg/m³ will be determined by Site Management and Fish Health staff. Typical treatments with ideal environmental conditions will target 70-80kg/m³ with a tolerance to load \pm 2-3% of the desired density. Fish will be loaded equally into each well, water parameters within the wells and in the loading pocket will be monitored/recorded continuously. Once the desired concentration of fish is on board, Paramove 50 will be added to the wells in the amount needed to treat fish at the prescribed concentration. Under normal circumstances, treatment time will be 20 minutes with a desired dose of 1200ppm of Paramove 50. These specifications are subject to modifications based on fish welfare, environmental conditions, and fish health recommendations at the time. During the treatments, Fish Health staff on board the well boat will perform titrations to ensure target treatment dosage has been achieved. After maximum dosing time, vessel holds will be flushed with sea water to neutralize the H₂O₂.</p>	<p>2</p>

	<p> Titrations will continue for a period after the dosage time to ensure both wells flush consistently. Hydrogen Peroxide reacts quickly and breaks down into water and oxygen (H_2O and O_2) without creating harmful by-products. Through flushing the wells and introducing new sea water, the H_2O_2 rapidly disintegrates and is neutralized. When all H_2O_2 has been neutralized, below 300ppm, and fish behavior is normal, fish will be pumped back into net pens. To ensure efficacious treatments, the well boat must remain adjacent to the system during treatment and flushing unless otherwise previously specified. The sophisticated sea lice recapture technology on the Ronja Islander is designed to catch and remove all lice stages. All water in the wells is continuously filtered through 150μm krone filters and additional backflush travels to sock filters at 100μm. Any unfiltered lice remain in the well until the wells are emptied for disinfection. Lice in the wells are rendered immobile, non-infectious, or non-viable, depending on the life stage (Johnson, S.C et al. 1993, Jones et al. ACDRP, upcoming). Lice are disposed of according to Grieg's "SOP – Mortality Collection and Storage". </p> <p> Tarpaulin treatment will require fish to be crowded in a shallowed net pen. A tarp will encompass the net pen, hold sea water, and be securely tied in place. Conditions within the tarpaulin will be monitored closely, oxygen will be added, and dispersion and diffusion equipment utilized as needed. Once fish are settled and water is circulating within the tarp, Paramove 50 will be added, and water monitored to ensure prescribed concentration within the tarp. Staff will check fish behavior and titrate every 8 minutes. After maximum contact time, tarp will be removed, and air circulation will continue to run help and neutralize H_2O_2. Well boat technology is significantly more advanced and efficient than tarpaulin treatments and will likely always be the primary method of application of Paramove 50. </p>	
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Section 6: Proposed Start and End Date of Pesticide Use

Please provide the proposed start and end date of pesticide use. The maximum term of a permit is three years.

Start date (YYYY / MM / DD)	2023-06-01	1
End date (YYYY / MM / DD)	2026-07-01	2
Timing of pesticide applications (i.e. time of the year and duration)	Year round, each treatment is about 1-2 weeks in length	3
Anticipated number of applications per year	Generally treatments are 2-3 per farm, however there have been times when 6 treatments are required.	4

Section 7: Geographic Area to be Treated

You will need to submit a digital map with this application form. Your map must identify the gross boundaries of the treatment area, communities, and geographic features applicable to the proposed pesticide use. At a minimum, maps must be provided in PDF format. Additional acceptable formats include .kmz or kml.

In addition to your digital map, please describe the area of the proposed pesticide use below. The description must be consistent with the attached maps and include the names of the communities or landmarks and all regional districts encompassed by the geographic boundaries of the treatment area.

Finfish aquaculture sites (Lutes and Esperanza) located near Esperanza Inlet near Zeballos on the West Coast of Vancouver Island.

Section 8: Type of Pesticide Use

Please check the category below that corresponds with your intended pesticide use.

- a) ☐ Permit-restricted pesticide
- b) ☐ Aerial application of a pesticide
- c) ☒ Use of a pesticide in or on a body of water
- d) ☐ Use of a pesticide on public land as required under a license or confirmation
- e) ☐ Use of a pesticide under a confirmation or licence requiring an exemption from the applicable prescribed standards in Division 7, Part 2 of Integrated Pest Management Regulation

If you checked category(e) above, please indicate:

Existing licence or confirmation number for which an exemption is required	877-0007-19/22	1
Section of the regulated standard requiring an exemption		2
Proposed alternative terms and conditions		3

Section 9: Pesticide Information

Please list all pesticides, including adjuvants, proposed for use under this permit.

Pesticide Trade Name	Active Ingredient	Registration Number under the Federal <i>Pest Control Products Act</i> (P.C.P. No)	Application Rate	Treatment Area (ha)	Quantity (kg)
Interlox Paramove 50	Hydrogen Peroxide	31393	1200 mg/l	14.45	645,223
	(H2O2)				

Section 10: Pesticide Application Methods

Please check all applicable proposed pesticide application methods.

1. Broadcast

☐

Aerial

☐

Backpack sprayer

☐

Power nozzle

☐

Boom Sprayer

2. Selective Treatment

☐

Backpack sprayer

☐

Stem injection

☐

Wipe-on

3. ☒ Immersion Bath

4. ☐ Other

If you checked the category “Other” above, please specify the methods proposed.

Section 11: Declaration and Signature

By completing this application form for a permit, the Applicant understands and agrees with the following terms and conditions:

1. In this section:

“Administrator” means the administrator appointed under IPMA Section 9;

“Applicant” means the applicant as identified in section 1 of this application form;

“IPMA” means the *Integrated Pest Management Act*, S.B.C. 2003, c. 58, as amended or replaced from time to time;


“FOIPPA” means the Freedom of Information and Protection of Privacy Act, R.S.B.C. 1996, c. 165, as amended or replaced from time to time;

“Province” means Her Majesty the Queen in Right of British Columbia;

“Regulatory Document” means:

- a) this application form,
- b) any document that the Applicant submits or causes to be provided submitted to the Province or the Administrator in support of this application, and
- c) any document that the Applicant submitted or causes to be submitted to the Administrator or the Province pursuant to
 - i. the permit;
 - ii. any regulation made under IPMA that regulates the pesticide use described above; or
 - iii. any order issued under IPMA directed against the Applicant that is related to the pesticide use described above.

2. In consideration of the Province receiving this application, subject to paragraph 3, the Applicant hereby irrevocably authorizes the Province to publish on the B.C. government website the entirety of any Regulatory Document.
3. Despite paragraph 2, if the Applicant clearly identifies on the face of a Regulatory Document that the Regulatory Document, or clearly identified portions of it, are confidential and provides in writing with the document a rationale for why the document or portion thereof could not be disclosed under FOIPPA, the Applicant does not consent to the Province publishing the document or any portion of it if, in the opinion of the Administrator, the document or portion could not be disclosed under FOIPPA, if it were subject to a request under section 5 of FOIPPA.
4. In consideration of the Province receiving this application, the Applicant agrees that it will indemnify and save harmless the Province and the Province's employees and agents from any claim for infringement of copyright or other intellectual property rights that the Province or any of the Province's employees or agents may sustain, incur, suffer or be put to at any time that arise from the publication of a Regulatory Document.
5. The Applicant certifies that the information provided in this application form is true, complete and accurate, and acknowledges that the submission of insufficient information may result in this application being returned causing delays in the application review process.

I am:	<input checked="checked" type="checkbox"/> The Applicant <input type="checkbox"/> The Agent	1
Full Name (Name of the Applicant, or name of the Agent)	Sam Tomkinson	2
Signature:		3
Date signed: (YYYY / MM / DD)	2023-02-23	4

Section 12: Payment of Fees

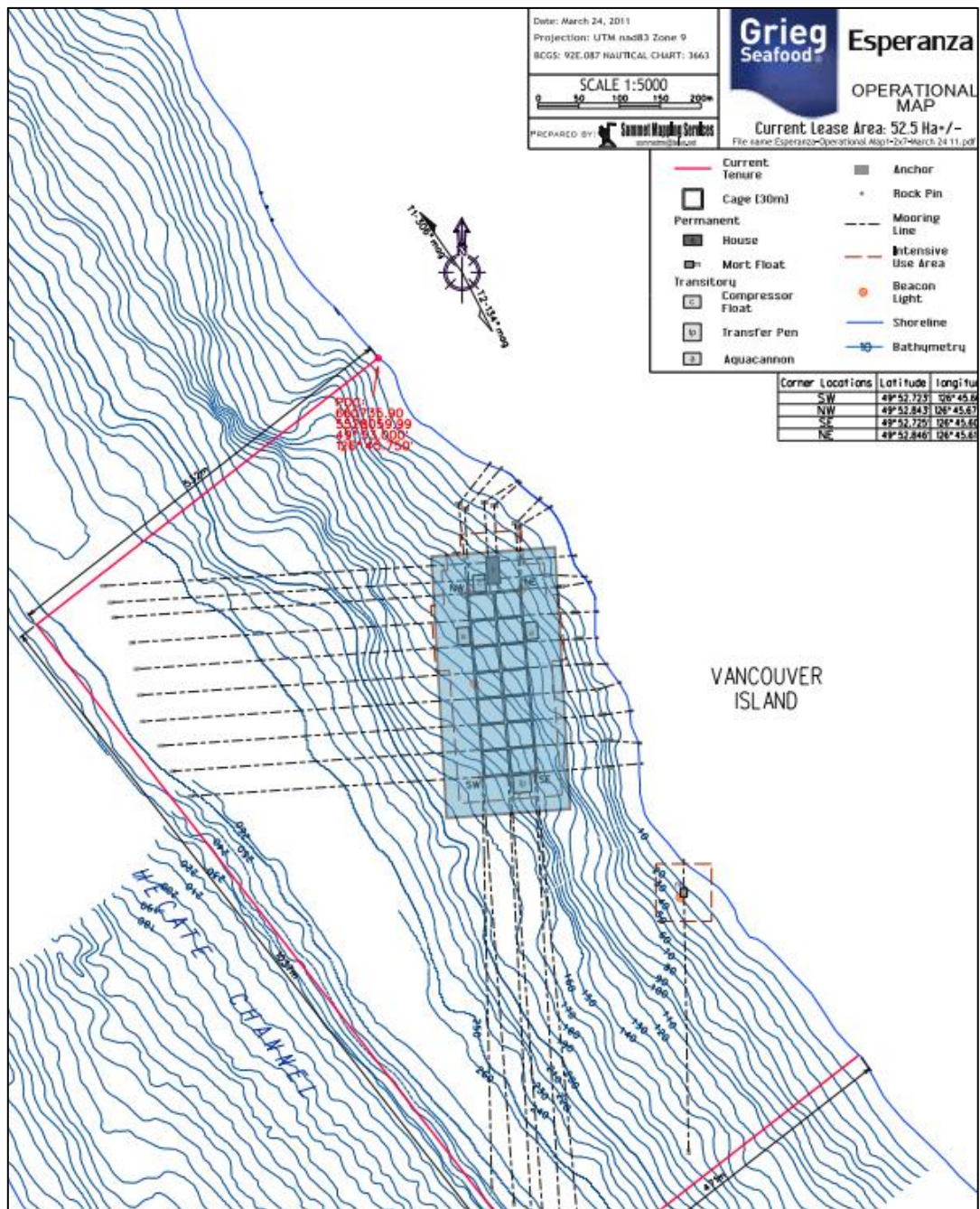
The application fee is \$1000 CAD. No PST or GST is required.
 The fee is non-refundable after a permit application number has been issued.

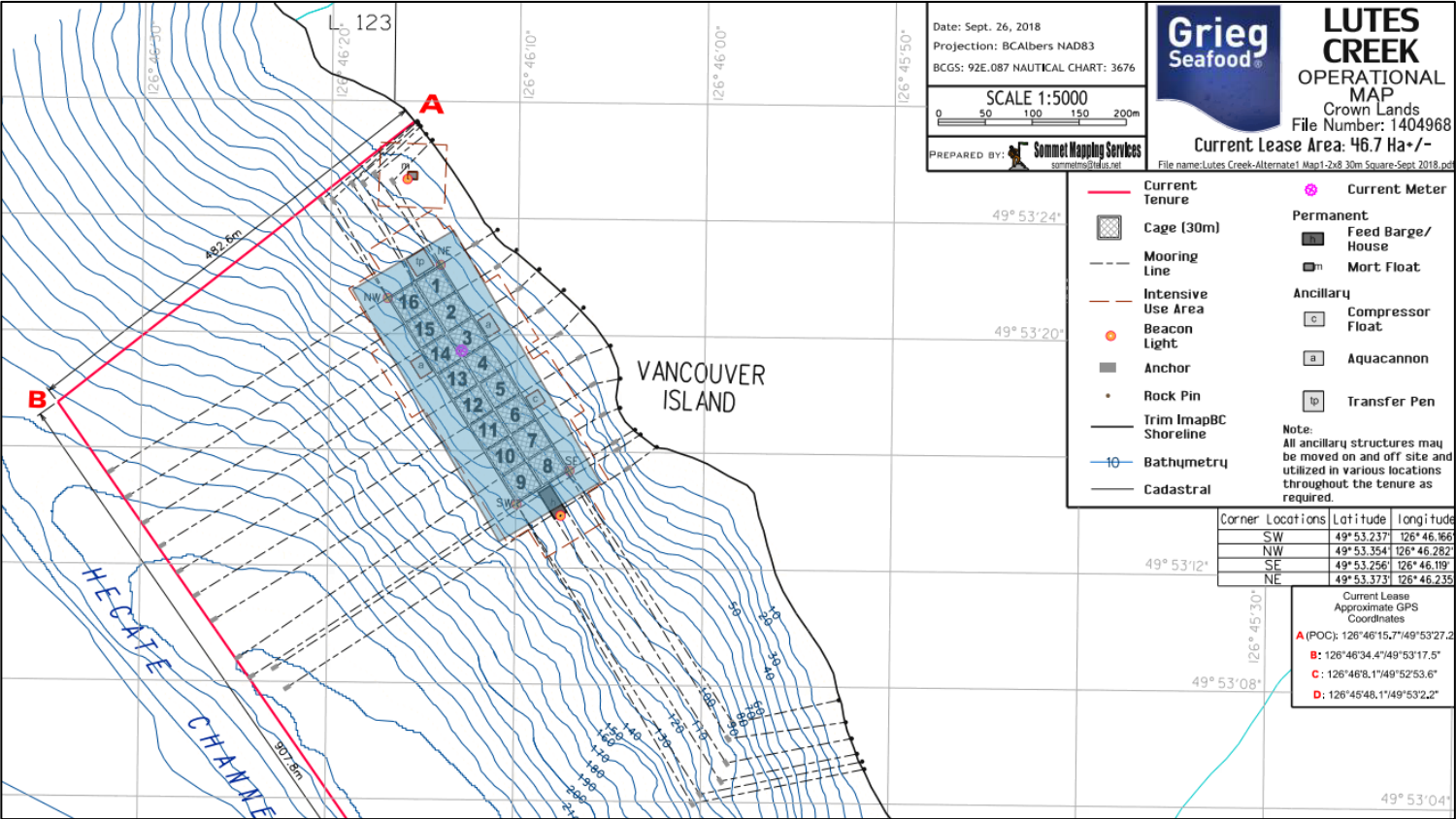
<input type="checkbox"/> I would like a call-back to pay by credit card	Currently, there is no electronic payment system for credit card transactions. Please complete the following to arrange for a call-back to collect credit card payment information. DO NOT ENTER CREDIT CARD INFORMATION HERE OR SEND BY EMAIL.		1
	Name of cardholder		2
	Phone number (999) 999-9999		3
<input checked="" type="checkbox"/> I am submitting my cheque or money order via mail/courier	Cheques or money orders not received within 10 business days may result in your application being returned as incomplete. In addition to submitting this application form electronically, please send a printed copy along with your cheque or money order.		4
	<i>Mail:</i>	Ministry of Environment & Climate Change Strategy Regional Operations Branch IPM Program PO Box 9377 Stn Prov Govt Victoria, BC V8W 9M6	
	<i>Courier:</i>	Ministry of Environment & Climate Change Strategy Environmental Protection Division Regional Operations Branch IPM Program 3 rd Floor, 525 Superior Street Victoria, BC V8V 0C5	
<input type="checkbox"/> I have questions about the application fees and would like a call-back for consultation	Name		5
	Phone number (999) 999-9999		6

Grieg Seafood Sites for PUP



Approximate Treatment Areas





Addendum

Sea lice are parasitic copepods (Copepoda, Caligidae) found in the marine environment. There are two genera, *Lepeophtheirus* and *Caligus*, which are commonly found on both wild and farmed salmonids. The dominant species in British Columbia waters is *Lepeophtheirus salmonis*. In a life cycle, the copepod goes through 2 larval stages (naupulii, copepodid) before entering a chalimus stage denoted by a specialized frontal filament that is used to attach to the host. Upon reaching the pre-adult stage the louse becomes motile before finally morphing into reproductive adults. Lice are readily transferred from wild adult returning salmon in late summer and early fall. Lice levels, survival and fecundity are influenced by a number of factors including adult wild returns (more adult wild returning salmon = more lice), salinity (lower salinity = fewer lice as sea lice do not tolerate lower salinity), temperature (higher temperatures = faster lice growth and reduced life cycles), oceanographic factors impacting distribution, and presence of filter feeders such as mussels that feed on lice and other natural zooplankton. To limit the interaction between out-migrating smolts and the fish on the farm, lice levels are monitored as required in the conditions of the Marine Finfish Aquaculture Licence issued under the Fisheries Act (at a minimum). If at any time the lice levels rise above an average of 3.0 motile lice (pre-adults and adults) per fish sampled, mitigation measures must be implemented to reduce the levels. Lice levels routinely increase late summer and early fall with returning adult Pacific salmon.

When levels reach an average of 3 motile sea lice per fish, a treatment using the active ingredient Emamectin Benzoate has historically been used effectively. Any effective integrated pest management plan, including all farmed animals and crops, requires coordinated treatments, coordinated fallowing, and alternation of treatment classes. Grieg Seafood already coordinates treatments and fallow sites and uses a mechanical treatment vessel. An alternative product such as hydrogen peroxide is a useful tool, to ensure we responsibly manage pests such as sea lice in the Esperanza and Lutes facilities.

Training

Staff that will help lead the application of Paramove 50™ will be Grieg's Veterinarian, Operations Manager and crew, and the facility manager. Grieg employees have been successfully conducting Paramove 50 treatments in tarps and well boats since 2017.

The following training was provided to ensure the safe and effective application of Paramove 50™. Additional training for new staff is conducted as needed.

Two courses are required for staff involved in the treatments

- Hydrogen Peroxide Health and Safety
- Pesticide Applicator (Aquaculture - Marine – Hydrogen Peroxide Only)

Storage and Application

Paramove 50™ will be stored off-site in a fenced secure location prior to application at farms. Safe and secure storage during transport and use in appropriate and inspected containers will ensure the containment of Paramove 50™.