Deep Water Recovery Ltd. Environmental Management Plan

March 5, 2021
Revision 1 September 10, 2021
Revision 2 September 22, 2021
Revision 3 September 29, 2021

1.0 INTRODUCTION

Castor Consultants Ltd. has been retained by Deep Water Recovery Ltd. (DWRL) to generate a site-specific Environmental Management Plan for their location at 5804 Island Highway South, Union Bay, B.C. to protect the local marine environment and in recognition of the importance and economic value of the aquaculture business in Baynes Sound.

DWRL is very much aware of the shellfish recreational values and the importance of the aquaculture businesses operating in Baynes Sound as indicated on the BC Shellfish Growers Association and Aboriginal Aquaculture Association web sites (www.bcsga.ca and www.aboriginal aquaculture.com). Although greater focus is concentrated on oysters utilizing long line, raft culture (trays), and beach harvesting methods, scallops, mussels, and clams are also a significant revenue stream employing similar farming methods to oysters. It is also recognized that geo-duck is harvested in Baynes Sound from the ocean floor in both intertidal and subtidal areas.

DWRL is engaged in the protection and regeneration of native plant life along its shoreline, which is almost a kilometer in length on the southern side of the industrial zone. DWRL also conducts an annual dive survey with the objective of monitoring the ocean floor and marine life within the boundaries of its water lease. The regeneration and establishment of a healthy marine eco-system is of priority to the company and will be carefully monitored on a continual basis into the future, and the dive survey will be geo-referenced on each occasion and this information will contain a Summary of Findings which will be made available to the government.

DWRL has taken measures to ensure that the management practices of its operation focus strongly on Responsible Environmental Custodianship. DWRL has initiated procedures for non-emergency vessels and barges, before their arrival in Union Bay. All vessels and barges are required to be surveyed by TCB Marine Consulting Services which is headed by Todd Braconnier, who is not only an approved Marine Surveyor by insurance underwriters in Western Canada, but also a qualified and experienced Marine Engineer. The survey is required to identify hydrocarbons or other deleterious substances that may be harmful to the Marine Environment, and to ensure the safe passage of all vessels in transit from their departure point to Union Bay. In the case of barges or vessels that are involved in the finfish aquaculture industry, the survey is needed to ensure that there are no biological contaminants that may be harmful to the aquaculture in Baynes Sound.

In cases where it may not be practically feasible to remove hydrocarbons, it is DWRL's management practice to ensure that all hydrocarbons are removed upon arrival in Union Bay by a licensed and professional company specializing in the safe handling of fuels. DWRL contracts with PETROKLEEN to safely remove all hydrocarbons and clean all fuel tanks eliminating the risk during the haul-out process. All documentation pertaining to the survey of vessels and removal of hydrocarbons will be maintained on-site and available for verification by the government if required.

Although DWRL's operations are primarily on the upland side, precautionary measures have been set inplace such as Oil Boom Containment Curtains (see photographs attached), 2x SORS (Spilled Oil Recovery Systems) which include oil skimmers as well as 24-hour onsite personnel.

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In addition to aquaculture, the current and future tourism development and infrastructure is also an ongoing concern that DWRL is following closely as the company has been approached by both local government and local marine tourism operators for the haul-out and maintenance of Whale Watching & Wildlife Adventure Tours watercraft. Given its close proximity to Denman & Hornby Islands and the 780-acre development site adjacent to DWRL, environmental stewardship will be critical to the future development of Baynes Sound.

DWRL is committed to sharing the information attained from its dive surveys and water testing programs with both the government and the K'omox First Nations, with the view of maintaining and monitoring a healthy marine eco-system for all people who rely on the integrity of Baynes Sound for the sustenance of their livelihood. DWRL is committed to conduct an annual site visit with both the government and the K'omox First Nations for the purposes of information sharing with the objective of maintaining the Baynes Sound marine ecosystem.

It is the intent of DWRL, its affiliates, consultants, suppliers, and subcontractors to take all reasonable and practicable steps in order to prevent the discharge of deleterious material into the environment or to cause any harm to fish or fish habitat.

For background, DWRL's facility provides a vessel decommissioning service for the marine industry on the coast. The vessels come from the local ballast water system, namely the Salish Sea, which includes all of Georgia Strait and Puget Sound. This area is oceanographically contiguous with common water exchange and common biota. The DWRL service decommissions derelict vessels or those at the end of their serviceable life. It is an essential service in that it enables the safe disposal and recycling of vessels that might otherwise release deleterious substances into the marine environment, or become hazards to other vessels in navigable waters. DWRL, through its contract arrangements with clients (e.g. Seaspan), conforms to the international quality management standards ISO14001, which basically encourage risk-based thinking in their on-site practices. Risk-based thinking requires a thought process in which all potential risks are identified before putting any plan into action, if there are inherent risks with a task or activity, risk-based thinking would require that the necessary precautions are put into place with the view of either minimalizing or eliminating the risk of an incident.

DWRL is committed to adhering to all Local, Provincial and Federal Laws including the following:

1) Local Government – Land Use Regulation.
2) Provincial - Environmental Management Act, Water Sustainability Act , Riparian Areas Protection Act.
3) Federal – Fisheries Act, Navigable Protection Act, Canadian Environmental Protection Act, Canada Shipping Act.

2.0 RESPONSIBILITIES

2.1 [redacted] **Phone:** [redacted] **(cell)**

a) Responsible for the implementation of a site Environmental Management Plan.
b) Responsible for the delegation of authority necessary to carry out the elements of that plan.

2.2 [redacted] **Castor Consultants Ltd. Phone:** [redacted] **(cell)**

The Site Manager is responsible for assignment of an environmental monitor. Regular and arbitrary monitoring is to be conducted at the discretion of the monitor. The frequency of the discretionary visits will be reasonable and appropriate. On-site visits will be made during procedural changes, during new activities, prior to cleanout from any sumps, during periods of heavy rainfall, and on any other occasions deemed appropriate. Call-out procedures will be established during work activities; however, the monitor will be 'on-call' as required.

Environmental monitoring reports will be issued to DWRL following each site visit, and to any other agency DWRL identifies as having requested such reports. Additional reports will be issued in the event of unusual situations and/or emergencies.

2.3 [redacted] **Phone:** [redacted] **(cell)**

a) Responsible to identify all Federal, Provincial, Municipal and Owner requirements relating to spill prevention, control and remediation.
b) Responsible to produce and periodically update a potentially hazardous materials inventory upon which site specific procedures will be based.
c) Responsible for documentation and co-ordination of notifications and reports pertaining to spills.
d) Responsible to initiate, oversee and direct activities relating to the prevention and recovery of any accidental release of hazardous materials into the environment
e) Responsible to co-ordinate training of spill response teams.
f) Responsible to liaise and co-ordinate communications and activities with other general and subcontractors, regulators and owner representatives during containment and remedial operations.

2.4 Site Supervisors

a) Responsible to conduct their work in a manner which will reduce the likelihood of environmental spills.
b) Responsible to assist the Spill Response Coordinator in the control and remediation of any accidental spills.
c) Responsible to communicate environmental requirements as well as the elements of spill prevention, control and remediation to their crews through weekly Tool Box meetings or special meetings.

2.5 Employees

a) Responsible to conduct their work in a manner that achieves the required environmental protection and which will reduce the likelihood of accidental spills.
b) Responsible to assist in spill containment and remediation as directed.

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3.0 PROCEDURES

3.1 Materials and Information Inventories

a) DWRL Spill Response Coordinator will cause an inventory to be taken of all materials which if inadvertently released could be hazardous to the environment.
b) This inventory will identify the types of products, their quantities as well as storage and use conditions as outlined in the Material Safety Data Sheet (MSDS).
c) The inventory will be current, will be updated monthly (or more frequently if necessary), and will be posted and made available to the Owner or any agency upon request.
d) The Spills Response Coordinator will retain a personal file of MSDS sheets for material on site.
e) The MSDS sheets will be retained at a known location on site and be accessible for review in accordance with the Workplace Hazardous Materials Information System (WHMIS) legislation.
f) Emergency Spill Kits - The Spill Kits will be deployed as appropriate to the site work areas and be well marked and kept in close proximity to working machinery. A 45-gallon drum or equivalent container capable of storing wasted (i.e. oiled or concrete) materials will be included with each kit. In addition, smaller Spill Kits and sorbent pads will be kept on each major piece of equipment for emergency first response use. Devices capable of blocking flows to culverts or storm drains will be kept adjacent to culverts or storm drains that have potential to receive contaminated water during construction activities.

3.2 Site Plan

a) At this time, fueling and servicing requirements for the site will be done via small fuel totes and / or at the refueling station supplied with spill control materials.

b) Equipment Repairs - Hydraulic oil spills will be locally contained using Spill Kits. In the event of larger oil spills, the Spill Response Coordinator will be notified in accordance with Section 2.4 and 8.0. Primarily equipment repairs will be made on site, with the provision to move equipment off site if necessary. Oil and fuel spills will be contained with sorbent pads and this material will be disposed of in accordance with regulatory requirements.

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4.0 STORM WATER DRAINAGE CONTROL PLAN

The purpose of the Storm Water Drainage Plan is to control runoff from the site and to prevent materials including metal cuttings, welding residue and any other substances from being released into the marine environment or any fish-bearing watercourse.

All storm water and runoff water from the work area will flow to and be collected in the existing sumps located down slope from the work areas; one sump is in the NE corner of the site and a second is located near the site centre just south of the existing groyne. The second sump (settling tanks) is considered the primary sump, as almost all of the water running down the paved area on the site is sloped towards the secondary sump. As an additional method of particulate filtration, a low-rise wall of lock blocks with filter cloth has been added in order to prevent solids from enteringthe first stage of the two stage settling tanks. In addition to the filter cloth and the settling tanks, a series of four Polyethylane tanks with a total capacity of ten thousand litres containing filtration media (sand) is employed as a final method of water filtration. The paved work area has been built to handle heavy equipment and graded to facilitate runoff control to the sumps, all of which were purpose built for the dryland log sort and as such work for the current purpose as well.

Water sampling will be conducted regularly and this is typically performed during periods of rainfall. A detailed methodology is included as a separate attachment with this document.

Routine monitoring and pumping out of the sumps is planned on a regular basis and a record of pump outs will be maintained.

It should be noted that DWRL is subject to a supplier level Environmental performance audit on an annual basis by Seaspan in accordance with their ISO 14001 certification.

5.0 METHODOLOGY

Barges/vessels will be positioned and hauled out of the water up the ramp on inflatable rollers by means of large winches set upland. The DFO approved system of inflatable rollers are pressurized to only 8 lbs resulting in very low impact to the ocean floor, this process requires no permanent infrastructure in the marine environment and does not require the use of lubricants or any other foreign substances that will be harmful to the marine environment. The barges, once out of the water, will be relocated off the ramp onto the paved area for decommissioning.

The vessel owner prior to delivery will have pumped all vessels arriving at the site of bilge water and related hydrocarbon residues. As a precautionary measure barges/vessels will be checked for residues before and after haul-out to ensure suitability before decommissioning to avoid spills. Any residues will be removed and contained in barrels for offsite disposal at an approved waste facility.

Decommissioning the barges/vessels entails cutting the metal, mainly steel and aluminum, structure by means of cutting torches and large hydraulic shears and other related specialized metal cutting equipment.

Once the decommissioning process has been completed the steel will be transferred by way oftruck, and or trailer along the existing groyne and onto a barge utilizing a ramp

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with a sealed surface, ensuring that no deleterious material can be spilled into the marine environment.

Industry standards require that the barge has a perimeter wall, and the recycled material when loaded must be at least 1 meter/3 feet below the leading edge of the wall so as to avoid any material accidentally falling into the marine environment during transit, as well as during the unloading process.

In the event that any material is lost overboard the Company is committed to retrieving the material immediately.

The sump water discharges will be tested quarterly for total and dissolved metals following guidance from the environmental monitor. Sediment materials in the sump will also be tested for total metals and polycyclic aromatic hydrocarbons prior to pump out and disposal at an approved landfill. An approved laboratory will follow the current provincial laboratory methods for the noted parameters. The water quality data generated will be assessed against the provincial and federal water quality guidelines to protect aquatic life
https://www2.gov.bc.ca/gov/content/environment/air-land-water/water/water-quality/water-quality-guidelines/approved-water-quality-guidelines
https://ccme.ca/en/summary-table
Sediment data will be assessed against the Contaminated Sites Regulation numerical standards (Schedules 3.1 to 3.4).
https://www.bclaws.gov.bc.ca/civix/document/id/complete/statreg/375_96_10

A data record will be maintained on site.

On-going Site Maintenance

Site clean up (i.e., shoveling and sweeping, shop-vacuuming) will be an on-going maintenance activity during and after processing of each barge/vessel. The paved deck surface will be kept free of cuttings and associated materials to prevent their entry to storm drains or the adjacent marine environment. Site inspection and clean up will be conducted at the end of the day.

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Solid Waste Management Plan

Trash on the site, including related decommissioning waste (filters, rags, etc) will be collected and disposed of in barrels/dumpsters for off site disposal. The site will be cleaned on a regular basis to prevent the accumulation of excessive solid waste not associated with the metal recycling.

Oily rags, oils and other fluids generated during equipment repairs and maintenance will be collected and disposed of in accordance with applicable standards and regulations. Routine equipment repairs and maintenance will be done within the site area, away from tidewater where possible.

DWRL will adhere to the Environmental Management Act requirements for waste disposal.

Dust Control

In the event that dust becomes a problem on the site, a water spray may be used as a suppressant. Care will be taken to ensure that the amount of water used is insufficient to cause a run-off quality problem. In no event will chemical dust suppressants be used.

DWRL will adhere to the Environmental Management Act requirements for air quality.

6.0 ORIENTATION AND TRAINING

a) The Site Manager will ensure that each new employee or contractor is properly introduced to and instructed on the policies and procedures established by the site's Environmental Management Plan.

b) DWRL's hire-on orientation will include a section on safety and environmental awareness and responsibilities. Each employee will be required to complete the environmental orientation before being permitted to go to work.

c) Environmental issues will be discussed at all safety Tool Box meetings and general safety meetings. In addition, at the start up of all operations that could affect the environment, all affected employees or contractors will be instructed upon specific procedures to protect the surrounding environment.

d) In the unlikely event of an environmental problem or incident, all employees or contractors will be re-instructed and re-trained as deemed necessary by the site's Environmental Monitor and the Site Manager.

e) The Site Superintendent will ensure each employee is made aware of the proper use, handling and storage of materials on site which could present a hazard to the environment, as well as the location, use and limitations of spill containment and recovery equipment.

7.0 SPILLS – NOTIFICATION AND RESPONSE

7.1 Internal Notification

a) All employees on site will be instructed during their initial orientation and subsequently within Tool Box meetings or special meetings to immediately report any and all releases of deleterious materials to the Spill Response Coordinator.

b) The Spill Response Coordinator will be advised of all reports of spilled materials without delay and will attend the scene in order to assess the situation.
c) The Spill Response Coordinator will inform the Environmental Monitor of all reports and activities resulting from an accidental release of deleterious material. Where appropriate, the Spill Response Coordinator will liaise with the Environmental Monitor in the development and implementation of spill response.
d) The Spill Response Coordinator will post an internal and external notification flow chart to be published and posted at the site office.

7.2 External Notification

a) DWRL's Site Manager will be responsible to either initiate or be aware of all external notifications as outlined in the notification flow chart.
b) Owner's Representative and Environmental Monitor will be notified immediately.
c) DWRL's Site Manager will be responsible to notify the Provincial Environment Program and the Department of Fisheries and Oceans (DFO) Radio Room at 604-666-3500 for spills that affect or have potential to affect aquatic resources and if the volume spilled requires mandatory reporting.
d) The Spill Response Coordinator is advised to contact CANUTEC (0-613-996-6666) as soon as possible after an accident so as to utilize their expertise and ability to link response personnel at the scene with individuals and organizations in a position to offer technical advice and/or on site assistance.
e) DWRL's Spill Response Coordinator will maintain a log of all external contacts made which will include the date, time, organization contacted, essence of the notice or information transmitted/received, and whenever possible the name and title of individuals receiving or issuing notification or instructions.
f) DWRL's Spill Response Coordinator will himself or will designate some other competent person to maintain a standby position at the site office in order to monitor spill related communications.

8.0 SPILLS – DISCOVERY AND RESPONSE

On-site Oil Spill and Recovery Equipment:

In addition to the 10 on-site spill kits, DWRL has approximately 800 feet of high-grade industrial oil containment boom in addition to 2 SORS (Spilled-Oil Recovery Systems) with hydraulically operated oil-skimmers.

8.1 Discovery

a) Any employee noticing an environmentally hazardous spill of materials is required to immediately notify their supervisor and/or the Spill Response Coordinator.
b) The person reporting a spill is to attempt to stem the flow if possible by closing valves or by using other available means of containment readily available.

8.2 Response

a) The Spill Response Coordinator shall immediately proceed to the scene where he will make an initial assessment of:
   1. The type of material spilled.
   2. The estimated quantity spilled.
   3. The total quantity which could potentially be involved.

4. The surface area involved or affected.
5. Specific hazards of an imminent nature which may require emergency response groups or other specialized handling.
6. Criteria for containing the spilled material.
7. Determination of personnel and equipment necessary to initiate remedial action and recovery.

b) The Spill Response Coordinator will assess the required manpower and equipment requirements in addition to those available on the site.

c) The Spill Response Coordinator will then directly control all activities relating to the stemming of additional flow or escape, containment and extraction of spilled material and the restoration of the site.

d) The Spill Response Coordinator will ensure that containment and recovery equipment is available on site in such quantities and character as to sufficiently respond to the most serious potential spill condition identified through the materials inventory.

e) The Site Manager will functionally liaise with regulatory agencies and Owner representatives on the scene and keep them informed as to the status of the on-going operations.

9.0 SPILLS – DISPOSAL

a) The disposal of spilled material and/or contaminated soil is governed under provincial legislation. The Site Manager shall maintain a copy of those requirements on site for reference.

b) The Spill Response Coordinator and Site Manager shall determine if the local disposal areas are available and registered for those materials which could be spilled during the course of operations.

c) The Spill Response Coordinator shall establish a listing of available outside contractors with sufficient capability, capacity and disposal permits to accommodate any anticipated need.

10.0 SPILLS – DOCUMENTATION

a) The Spill Response Coordinator or his designate will be responsible to attend the scene in order to collect samples of any spilled materials or contaminated soils as well as to photograph and measure the affected area.

b) The Site Manager will cause a full report to be written within seven (7) days of the completion of remedial activities. All spills and remedial measures will be reported and documented. Reporting will include but not be limited to:

- The reporting person's name and telephone number.
- The name and telephone number of the person who caused the spill.
- The location and time of the spill.
- The type and quantity of the substance spilled.
- The cause and effect of the spill.
- Details of action taken or proposed.
- A description of the spill location and of the area surrounding the spill.
- The details of further action contemplated or required.
- The names of agencies on the scene.
- The names of other persons or agencies advised concerning the spill.
- The chronological sequence of events including internal and external notifications.

- An analysis of the events leading up to the spill and a critique of the internal response and handling of the incident.

c) The Site Manager will provide the Owner with a copy of the report within ten (10) days of completion of remedial activities.

Deep Water Recovery Ltd. Environmental Management Plan

CONTACTS

CANUTEC (CALL COLLECT; SPILL ADVISE)	0-613-996-6666
SPILL CLEAN UP SERVICES:	
BURRARD CLEAN	EMERGENCY 604-294-9116
	NON-EMERGENCY 604-294-6001
ENVIRONMENT CANADA – ENVIRONMENTAL PROTECTION	
EMERGENCY 24 HOURS	1-604-666-6100
PROVINCIAL EMERGENCY PROGRAM (VICTORIA 24 HOURS)	1-800-663-3456
COAST GUARD	1-800-567-5111
PARKSVILLE	250-480-2600
MINISTRY OF ENVIRONMENT	
MINISTRY OF ENVIRONMENT (General)	250-952-5848
WILDLIFE (Emergency)	1-800-663-9453
FISHERIES (DFO)	1-800-465-4336
DFO RADIO ROOM CONTACT	604-666-3500

DWRL:

[redacted]

LOCAL PORT AUTHORITY:

Comox Harbour Authority	250-339-6041

Prepared by

[redacted]

September 22, 2021