



## STANDARD OPERATING PROCEDURE

### Title – Esquimalt Graving Dock Waterlot PROJECT Controls for the Protection of Remediated Areas

EGD SOP No.

GCDocs No.

Resp. Dept.: XXX Services

Original Date: DD MMM YY

Revision No: N/A

Revision Date N/A

Approved by:

#### 1. PURPOSE/SCOPE

The purpose of this SOP is to define the responsibilities and describe the methods of **waterlot PROJECT controls for protection of remediated seabed and shoreline areas**. If these areas are damaged or disturbed, residual contaminated materials may be released, posing a potential hazard to human health and the environment. This procedure provides the information for, and is applicable to, those persons responsible for personnel involved in **any work in or around the waterlot that may affect the seabed or shoreline**, whether they are PSPC employees, EGD tenants/users or PSPC employed contractors.

#### 2. ROLES AND RESPONSIBILITIES

- 2.1 The EGD Director has overall responsibility for: the effective implementation and maintenance of this procedure and to their Operations Managers for supporting them in the procurement of any required equipment.
- 2.2 The EGD Operations Manager is responsible for the effective implementation and maintenance of this procedure: to EGD Supervisors in supporting the waterlot project controls program; and to the EGD Supervisors for supporting them in the procurement of any required equipment.
- 2.3 The PTS Senior Project Manager is responsible for the effective implementation of the waterlot project controls program for all PTS-managed projects.
- 2.4 The EGD Yard Supervisor is responsible for monitoring the effective implementation of the waterlot project controls program.
- 2.5 The Risk Management Coordinator is responsible for ensuring that the waterlot project controls are integrated into risk management procedures and controls.
- 2.6 EGD Employees are responsible for adhering to the waterlot project controls and guidelines. EGD employees are also responsible for the use and management of any required equipment.
- 2.7 Other PSPC employees, including PTS project managers, are responsible for adherence to the waterlot project controls.



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2.8 EGD tenants/users are responsible for adherence to the waterlot project controls.

### 3. PROCEDURE

3.1 Supervisor informs the workers -

3.1.1 Verbally inform the workers about the waterlot project controls.

3.1.2 Verifies that workers are knowledgeable of the controls and their safe implementation.

3.2 Employees start job -

3.2.1 Ensure competence with the waterlot project controls.

#### Project Controls – slope armour rock, kelp beds, and engineered cap areas:

- Apply to any activity that may disturb remediation features such as slope armour rock, kelp bed areas, and engineered cap areas. Activities may include test-hole drilling, installation or removal of pilings, etc.
- 1. Project plans, specifications, construction work plans and environmental protection plans shall include provisions for preventing, monitoring, mitigating, and repairing damage to remediation features, with input from qualified environmental professionals.
- 2. Pre-and post-disturbance underwater video/photographic surveys to document any damage to rock armour or engineered cap materials
- 3. Documentation of potential (pre-disturbance) and actual (post-disturbance) locations on site figures and submission to EGD
- 4. Repair of any significant damage (significance determined by EGD) to rock armour, kelp bed areas, engineered cap materials, or other remediation features as required by EGD
- 5. Documentation of any repairs including underwater video/photographic evidence and figures/drawings
- 6. Geotechnical assessment for any areas of significant damage, or where slope stability has been suspected or observed to be affected
- 7. Health and safety and environmental plans/mitigation measures shall be prepared for potential release of contaminated sediments (anything brought up from below the armour/cap or exposed during the disturbance). I.e. include this risk in standard health and safety plan and environmental protection plan, required for any work.
- 8. Any sediments from these areas that are released, brought up to the seabed surface, brought on to vessels, equipment, or land, or that accumulate in or on equipment shall be collected, and disposed of at a Provincially authorized/licensed waste disposal facility
- 9. Discharge of contaminated, hazardous, or deleterious substances to the environment is not permitted
- 10. Proponent must ensure that any required reviews, authorizations, approvals, or permits are obtained from DFO under the Fisheries Act, or other regulatory agencies, for the project activities.



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11. Prior to any construction, the project proponent must evaluate the potential habitat impacts as part of the Environmental Effects Evaluation (CEAA) for projects on federal lands. Mitigation measures shall include creation of replacement habitat to offset any anticipated habitat loss. The kelp habitat in the EGD Waterlot is part of compensatory habitat that was required under Permit for the EGD Waterlot remediation.

#### Project Controls – open-water sand cover area:

- Minor disturbance to the seabed sand layer in the open-water area, from typical site project activities, is expected and permitted
- 1. Health and safety and environmental plans/mitigation measures shall account for the potential presence of contaminated seabed materials. I.e. include this risk in standard health and safety plan and environmental protection plan, required for any work.
- 2. If significant quantities of seabed sediments from the open-water area are brought on to vessels, equipment, or land, or accumulate in or on equipment, these shall be collected and disposed of at a Provincially authorized/licensed waste disposal facility
- 3. Discharge of contaminated, hazardous, or deleterious substances to the environment is not permitted
- 4. Proponent must ensure that any required reviews, authorizations, approvals, or permits are obtained from DFO under the Fisheries Act, or other regulatory agencies, for the project activities.
- 5. Prior to any construction, the project proponent must evaluate the potential habitat impacts as part of the Environmental Effects Evaluation (CEAA) for projects on federal lands.

#### 3.3 Close-out activities upon job completion –

3.3.1 Any variance from the waterlot project controls for emergency or other reasons must be reported to the Supervisor.

3.3.2 Any damage or disturbance to the seabed and shoreline components must be noted by the worker and reported to the Supervisor.

#### 4. TRAINING

4.1 Persons responsible for carrying out this procedure must have received the following training and certifications:

4.1.1 Verbal instructions from the responsible Supervisor in the requirements of the waterlot project controls and the use of any required equipment.

#### 5. REFERENCES AND FORMS



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#### 5.1 Acts, Regulations and Policies

1. Government of Canada / Treasury Board – Policy on Management of Real Property
2. Government of Canada Fisheries Act (R.S.C., 1985, c. F-14)
3. Canadian Environmental Protection Act, 1999 (S.C. 1999, c. 33)

#### 5.2 Document, Records, and Forms

1. Reference Document - EGD Waterlot Remediation Project Final Site Conditions Summary (attached)
2. Reference Document - EGD Waterlot Remediation Project Final Site Conditions Figure (attached)

March 2017

## **EGD Waterlot Remediation Project – Summary of Final Conditions**

In December 2016 the Government of Canada completed a six-year, \$99.5M project to clean up (remediate) contaminated sediments in the EGD Waterlot, including shorelines and a surrounding buffer zone. The seabed had been contaminated from historical ship repair activities. Contaminated sediments were removed from accessible areas by dredging, and transported off-site for disposal at authorized facilities.

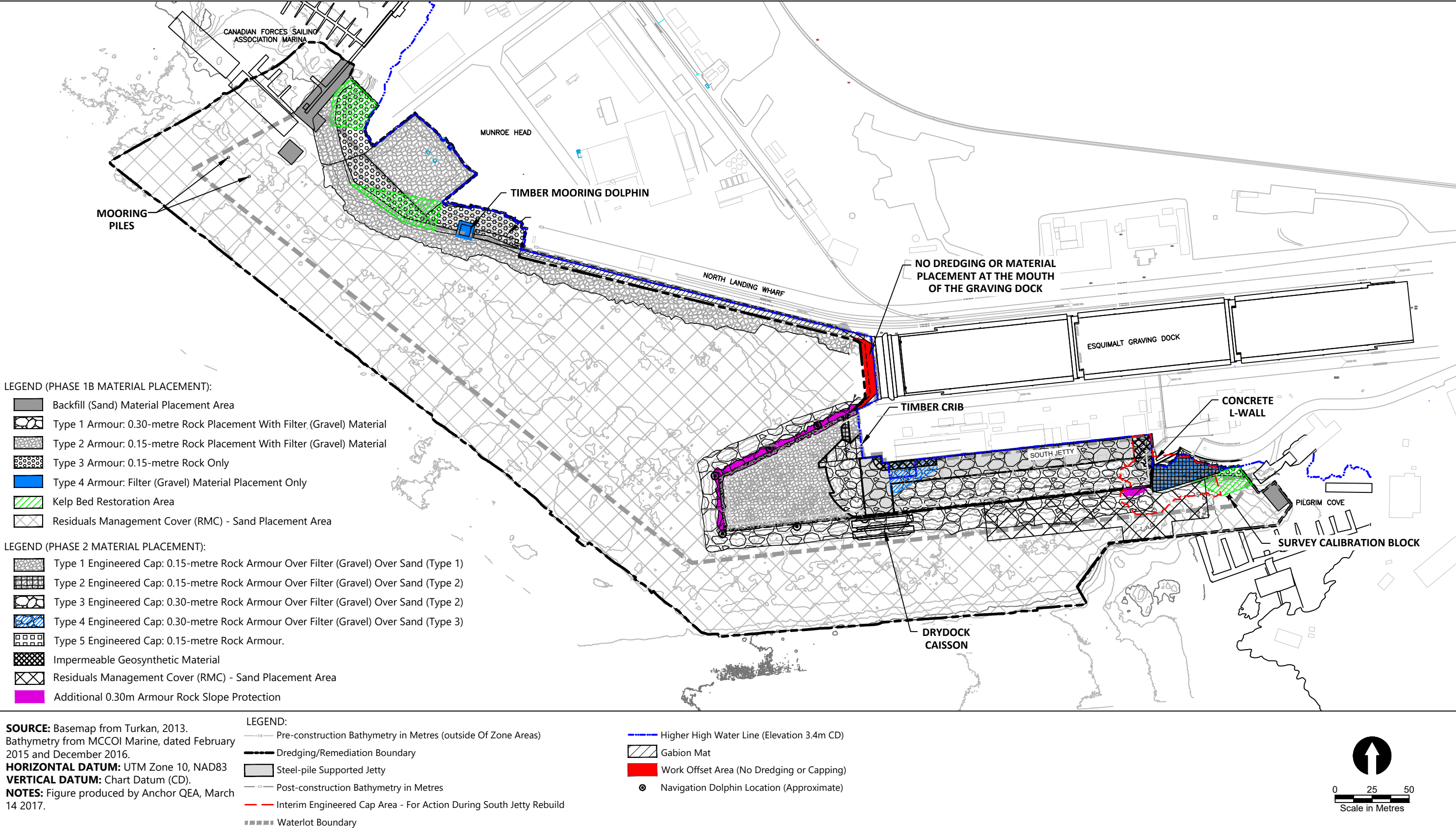
After dredging, clean materials were placed on the seabed and shorelines including:

- Residuals management cover (RMC) sand layer across the open-water area
- Rock armour on sub-tidal and inter-tidal (shoreline) slopes
- Engineered cap material including geo-membrane/sand/filter/rock at the South Jetty under-pier area
- Kelp Bed restoration (rock) material near CFSA, Munroe Head, and Pilgrim Cove

Residual contaminated sediment or soil that could not be removed remains on-site:

- “No-dredge” 7m set-back (from sill) area at the mouth of the drydock; unprotected contaminated sediments
- “No-dredge” 5m set-back area along face of North Landing Wharf; covered by slope armour and gabion mats
- Underneath and around timber dolphin/crib at Poseidon area between North Landing Wharf and Munroe Head; covered by backfill and rock armour
- Random locations throughout open-water area; covered by or mixed in with RMC sand layer
- Underneath armour rock on sub-tidal and inter-tidal slopes that were not dredged or dredged to limited depth:
  - CFSA area shoreline
  - Munroe Head area shoreline and beach (beach was dredged)
  - Poseidon area shoreline
  - North Landing Wharf seabed adjacent to gabion mats
  - Former South Jetty/sheetpile wall perimeter
- “No-dredge” 3m set-back area in front of the South Jetty timber crib; covered with armour rock
- Underneath engineered cap at former South Jetty and East End under-pier area





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Filepath: K:\Projects\0553-Public Works and Government Services Canada\EGD-Phase 2 Design Activities\0553-RP-053 (Sitewide Capping).dwg F1 (No Zones)



**Figure 1**  
**Esquimalt Graving Dock Phase 1B and 2 Material Placement**  
Esquimalt Graving Dock Waterlot Remediation Project (PWGSC Project R.018400) – Final As-built Conditions and Seabed Material Placement Types  
Esquimalt Harbour, British Columbia