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## PART 1 - GENERAL

### 1.1 DESCRIPTION

- .1 This specification section includes the requirements for dredging, and disposal of dredged materials.
- .2 Under this contract, PSPC will only accept sounding depths done by PSPC survey crew for final verification of the required grade depth. Any sounding depths shallower than 0.1m of the required grade depth will have to be re-dredged by the Contractor until the proper depth is achieved.
- .3 All dredging is considered Class "B" dredging. Refer to subsection 1.3 for the definition of Class "B" dredging. Note that there will be no dredging permitted atop the existing infrastructure. In addition, there will be no dredge roads permitted in the harbour or channel.

### 1.2 INSPECTION OF SITE

- .1 Contractor to visit site of work and become thoroughly familiar with extent and nature of work and conditions affecting work before bidding. Contractor is to note that this location is very exposed to ice, wind and sea swells and dredging operations will be limited due to weather conditions. Dredging will also take place in a river.

### 1.3 DEFINITIONS

- .1 Dredging: excavating, transporting and disposing of underwater materials.
- .2 Class A material: solid rock requiring drilling and blasting to loosen, and boulders or rock fragments of individual volumes 6 m<sup>3</sup> or more.
- .3 Class B material: loose or shale rock, silt, sand, quick sand, mud, shingle, gravel, clay, sand, gumbo, large boulders, hardpan and debris of individual volumes less than 6 m<sup>3</sup>.

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- .4 Obstructions: material other than Class A, having individual volumes of 6 m<sup>3</sup> or more.
- .5 CMPM: cubic metres place measurement.
- .6 Debris: pieces of wood, wire rope, scrap steel, pieces of concrete and other waste materials.
- .7 Estimated quantity:
  - .1 Volume of material calculated to be above grade and within specified limits shown on the drawings.
- .8 Chart Datum: permanently established plane from which soundings or tide heights are referenced, usually Lowest Normal Tide (LNT).
- .9 Lowest Normal Tide (LNT): plane so low that tide will seldom fall below it.
- .10 Cleared Area: area of dredging accepted as achieving the required grade and verified by a PWGSC survey.

#### 1.4 REGULATORY REQUIREMENTS

- .1 There are strict environmental procedures that must be followed during the Work.
- .2 Comply with municipal, provincial and national codes and regulations relating to project.

#### 1.5 SCHEDULING

- .1 Submit to Departmental Representative, within 2 weeks after acceptance of bid, schedule of work including time periods during which each operation involved in Work will be undertaken. At time of submission of schedule, meet with Departmental Representative to review schedule.
- .2 Adhere to schedule and take immediate action to correct any slippage by effectively altering operations or mobilizing other

equipment. Notify Departmental Representative of corrective action to be taken.

#### 1.6 LOCATION

- .1 Work comprises dredging of areas as indicated on the drawing. Contractor to become familiar with the distance to the dredging limits, and plan his dredging methodology accordingly. All measures required to achieve the dredge depths and limits shown on the drawing are the responsibility of the Contractor. There will be no dredging permitted atop any of the existing infrastructure. In addition, there will be no temporary dredge roads permitted in the harbour or channel.

#### 1.7 INTERFERENCE TO NAVIGATION

- .1 Be familiar with vessel movements and fishery activities in area affected by dredging operations. Plan and execute Work in manner that will not interfere with fishing operations, marine operations and construction activities at wharf site.
- .2 Departmental Representative will not be responsible for loss of time, equipment, material or any other cost related to interference with moored vessels in harbour or due to other Contractor's operations.
- .3 Keep the Marine Communications and Traffic Services' Centre, Fisheries and Oceans Canada, informed of dredging operations in order that necessary Notices to Mariners will be issued.

#### 1.8 DATUM, WATER GAUGES AND TARGETS

- .1 Elevations used in this specification and contract drawings are in metres referred to Canadian Hydrographic Services Survey datum.
- .2 Areas to be dredged are to be referenced to vertical bench marks for each location of dredging as indicated.

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| <u>1.9 FLOATING PLANT</u>                  | .1 | Dredges or other floating plants to be employed on this Work, to be of Canadian registry, make or manufacture, or, must receive certificate of qualification from Industry Canada, Aerospace, Defence and Marine Branch and this certificate to accompany bid submission.  |
| <u>1.10 SITE INFORMATION</u>               | .1 | Results of most recent soundings and uplands elevations are included on the drawings. This data will be used for all calculations for quantity purposes. If the contractor wishes to perform own survey, a written notice must be submitted to the Departmental Representative (at least 7 days notice) so PWGSC can verify the sounding survey before the commencement of any work. |
|  | .2 | Take necessary steps to become fully familiar with potential inclement weather and sea conditions in this area.  |
| <u>1.11 SURVEY REQUIREMENTS</u>            | .1 | Provide, at own expense, survey vessel, equipment and crew to set up and maintain control for location of dredge limits and to sound areas immediately after dredging to verify that grade depth has been attained. Areas are to be sounded to provide sounding printout display of at least 2 x 2 m UTM grid to approval of Departmental Representative.                            |
| <u>1.12 SURVEYS AND ACCEPTANCE OF WORK</u> | .1 | No area will be dredged prior to Departmental Representative and Contractor's mutual acceptance of the existing sounding and topographical survey data included on the drawings.   |
|  | .2 | A survey will be undertaken by Departmental Representative upon completion of dredging. Survey will confirm if dredging is completed as specified and whether area can be  |

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considered cleared area. Survey will be by electronic sweep equipment. Survey plan at 1:250 plotting least of minimum depths obtained in this survey will identify areas requiring reworking to obtain following elevations using least of minimum mode.

- .3 Contractor to re-dredge as necessary to remove all material which is found to be above grade using the least of minimum mode elevations as specified herein.
- .4 One additional survey will be undertaken at Departmental Representative's cost, for those areas not meeting acceptance criteria for dredging. All additional surveys required to clear areas will be undertaken by the Departmental Representative at Contractor's cost.

#### 1.13 MEASUREMENT FOR PAYMENT

- .1 Dredging: Dredging will be measured in cubic metres, determined from existing seabed elevation established from the current sounding survey down to grade depth elevation within pay limits shown on drawings. Note that under this contract PSPC will only accept the soundings done by the PSPC survey crew to +/- 0.1m of the required grade (and these will be the pay limits). Quantities will be determined by a sounding survey performed by the PWGSC Survey Crew after dredging survey is completed by using electronic sounding and DPGS positioning equipment. The Departmental Representative will verify that the Contractor has performed dredging to the specified grade depth. No payment will be made for over-dredging. PWGSC will conduct an interim and final survey. The Contractor will formally request at least seven (7) days in advance that the final after-dredging survey be performed upon completion of dredging. The survey will be dependent on the weather. If the survey and inspection shows that all material has not

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been removed, the Contractor is to re-dredge to obtain grade depth. The Contractor will perform a sounding survey, using a method approved by the Departmental Representative to verify that the specified dredge depth has been obtained. The Departmental Representative will then perform a third survey for final verification of dredge depth. This third sounding survey and any subsequent surveys will be at the cost of the Contractor.

- .2 Contractor responsible for disposing the dredged materials off-site to an approved site. Contractor responsible for all tipping fees at the approved site.
- .3 No separate payment will be made for Contractor's survey vessel, equipment and crew or diving services.
- .4 There will be no additional payment for delays and/or downtime for vessel traffic, fishery operations, marine operations, during periods when no dredging is permitted. Contractor should contact the Harbour Authority to determine schedules of operations.
- .5 There will be no additional payment for downtime and for delays caused by vessel traffic or other activities associated with the site operations.
- .6 Removal of infilling material that occurs during dredging operations will be the Contractors responsibility. This will not be measured for payment.
- .7 No separate payment will be made for sweeping.
- .8 Payment will include disposal of all dredge material, using water tight boxes, at the approved disposal site. Contractor to take

appropriate actions to ensure any excess water or saturated material in dump truck boxes is contained, truck boxes are to be covered and truck tires must be washed down also prior to leaving work site. PWGSC will only pay for the tender quantities and any over dredging cost of material and dumping fees will be the responsibility of the contractor.

- .9 Removal of infilling material because of weather conditions, site conditions, river currents or the contractors methodology of dredging will not be measured for payment.
- .10 Contractor may be required to install containment/silt boom around the area or the entire site as he completes the dredging. There will be no additional payment for this.
- .11 In the event of a spill during transportation, the contractor shall be responsible for the immediate clean-up and must notify the Departmental Representative and appropriate authorities immediately. There will be no additional payment for this.
- .12 Any material over-dredged outside applicable limits of 0.1m will not be measured (reference subsection 1.13.1).
- .13 Contractor will level off the disposal site as directed by the Departmental Representative. There will be no additional payment for this.

## PART 2 - PRODUCTS

### 2.1 DREDGING EQUIPMENT

- .1 Contractor to determine required equipment necessary to dredge material specified.

### PART 3 - EXECUTION

#### 3.1 GENERAL

- .1 Mark floating equipment with lights in accordance with the provisions of the Canada Shipping Act Collision Regulations and Notices to Mariners.
- .2 Place and maintain buoys, markers and lights required to define work.
- .3 Lay out Work from control points and baselines established by Departmental Representative. Be responsible for accuracy of Work relative to established bench marks and baseline. Provide and maintain electronic position fixing and distance measuring equipment, laser transits and such other equipment as normally required for accurate dredging control.
- .4 Establish and maintain water level gauges or tide boards in order that proper depth of dredging can be determined. Locate gauges and tide boards so as to be clearly visible.
- .5 Establish and maintain on-land targets for location and definition of designated dredge area limits. Targets to be suitable for control of dredging operations and locating soundings. Remove targets on completion of Work.
- .6 Dredge area to grade depths indicated on the drawing.
- .7 Dredge side slopes (which are measured for payment) are shown on the drawings.
- .8 Remove materials above specified grade depths within limits indicated. Material removed from below grade depth or outside specified area is not part of Work.

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- .9 Remove shoaling which occurs as a result of Work at no expense to Canada.
- .10 Remove material cast-over in surrounding area and dispose of it as dredged material. Do not cast-over material unless authorized by Departmental Representative.
- .11 Remove infilling in dredge areas which occurs prior to acceptance by Departmental Representative.
- .12 Immediately notify Departmental Representative upon encountering object which might be classified as obstruction. By-pass object after clearly marking its location and continue Work.
- .13 Dredging or equipment will not be permitted on the existing wharf infrastructure.
- .14 Dispose of all dredged material as noted on the drawings.
- .15 All trucks used in the transportation of dredged material to have tail gates with seals in good working order so as to prevent leakage of material or water from the truck. Truck boxes must be covered prior to leaving the site. Any trucks failing to meet these requirements will be rejected.
- .16 Dredged material that is saturated with water must be drained back into the dredged area prior to leaving site for off-site disposal. Contractor to take appropriate actions to ensure any excess water or saturated material in dump truck boxes is contained.
- .17 Dredged material must not be loaded from any areas on the existing wharf infrastructure.
- .18 If required by the Regulatory agencies, the Contractor to install containment/silt boom

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around area dredging or the entire site as he completes the dredging.

- .19 Do not dredge material from areas lying within 1.5m of existing structure unless authorized by Departmental Representative.
- .20 Sweep dredged areas on completion of dredging to confirm that grade depth has been achieved.
- .21 Sweeping equipment may consist of heavy steel beam suspended from scow or any necessary equipment to sweep at required grade depth of other approved method. Beam to be capable of adjustment and calibration and approved by Departmental Representative.
- .22 If, as result of incomplete Work, additional verification of depths by sounding or sweeping becomes necessary, additional costs involved shall be paid by Contractor.
- .23 Re-dredge unsatisfactory Work and verify depths with additional sounding or sweeping to approval of Departmental Representative.
- .24 Co-operate with Departmental Representative on inspection of Work and provide assistance requested. On request of Departmental Representative, furnish use of such boats, equipment, labour and materials forming ordinary and usual party of dredging plant as may be reasonably necessary to inspect and supervise Work.

### 3.2 DISPOSAL OF DREDGED.1 MATERIAL

Dispose of dredged material at the approved site in manner approved by Departmental Representative, using water tight truck boxes. Contractor is responsible for obtaining and payment of all dumping and disposal fees of the dredged material at the approved disposal site. Contractor to take appropriate actions to ensure any excess water in dump truck boxes is contained, truck

boxes must be covered and truck tires must be wash clean of any dredged material prior to leaving work site. Contractor will level off disposal site after completion of disposal.

<u>3.3 DREDGING IN VICINITY OF STRUCTURES</u>	.1	Do not dredge material from areas lying within 1.5m of existing structure unless authorized by Departmental Representative.
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<u>3.4 SWEEPING</u>	.1	Sweep dredged areas on completion of dredging to confirm that grade depth has been achieved.
	.2	Sweeping equipment may consist of heavy steel beam suspended from scow or any necessary equipment to sweep at required grade depth or other approved method. Beam to be capable of adjustment and calibration and approved by Departmental Representative.
	.3	If, as result of incomplete Work, additional verification of depths by sounding or sweeping becomes necessary, additional costs involved shall be paid by Contractor.

<u>3.5 RE-DREDGING</u>	.1	Re-dredge unsatisfactory Work and verify depths with additional sounding or sweeping to approval of Departmental Representative.
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<u>3.6 COOPERATION AND ASSISTANCE TO DEPARTMENTAL REPRESENTATIVE</u>	.1	Co-operate with Departmental Representative on inspection of Work and provide assistance requested.
	.2	On request of Departmental Representative, furnish use of such boats, equipment, labour and materials forming ordinary and usual part of dredging plant as may be reasonably necessary to inspect and supervise Work. Volume of material transported in partially filled trucks or scows will be determined by Departmental Representative.