JOHNSON STREET BRIDGE PROJECT - VICTORIA
MARINE EARLY WORKS
ISSUED FOR TENDER
TENDER No. 11-028

PREPARED BY:

PBA
CONSULTING ENGINEERS
SOIL MANAGEMENT PLAN
Johnson Street Bridge Replacement Project

<table>
<thead>
<tr>
<th>Project Name:</th>
<th>Johnson Street Bridge Replacement Project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Phase:</td>
<td>Telus Duct Relocation</td>
</tr>
<tr>
<td>Date:</td>
<td>August 4, 2011</td>
</tr>
<tr>
<td>Revision:</td>
<td>1</td>
</tr>
<tr>
<td>Work Schedule</td>
<td>Fall 2011</td>
</tr>
<tr>
<td>Contractors:</td>
<td>To Be Determined</td>
</tr>
<tr>
<td>Environmental Contacts:</td>
<td>Michael Doucet, Contaminated Sites (Stantec) 778-772-9899</td>
</tr>
<tr>
<td></td>
<td>Richard Kwan, Contaminated Sites (Stantec) 604-678-3088</td>
</tr>
<tr>
<td></td>
<td>Chaz Whipp, Project Administrator (City of Victoria) 250-590-1238</td>
</tr>
</tbody>
</table>

Scope

Stantec was retained by City of Victoria (CoV) to prepare this Soil Management Plan (SMP) for excess soils removed during preparation activities for the replacement of the Johnson Street Bridge. These preparation activities include the relocation of the Telus communication duct line in anticipation of the bridge construction. The SMP describes the procedures to be followed by the excavation contractor during construction activities, including exporting and importing non-suspect (non-contaminated) soil and metals contaminated soil.

The contractor’s scope of work will be to manage excess soils in accordance with applicable regulations detailed below. This includes excavating soil, transportation, and placement in a stockpile following the procedures below. The CoV will maintain all soils onsite in a stockpile until the bridge construction begins. All soils will then be disposed of offsite as required.

Stantec’s scope of work during preparation activities includes monitoring the excavation of soils and placement of soils at the stockpile area, and sampling soils at designated intervals.

The objective of this SMP is to protect human and environmental health during construction activities which may result from the handling of contaminated material. This SMP includes the proper handling of soil during pre-construction, construction, and post-construction activities. Protective measures include the proper handling of site soils, the acceptability of fill soils from offsite sources, and dust control measures.

Background

Stantec previously completed a Phase I Environmental Site Assessment (ESA), a Phase II ESA and a Soil Management Options report for the Site. The Phase I ESA found the potential for contamination existed at the Site, while sampling during the Phase II ESA and follow-up sampling reported in the Soil Management Options report, confirmed the presence of various metals which exceed the applicable standards. These exceedances are anticipated to be present in the vicinity of the proposed trench where the Telus communication duct will be relocated.

Stantec calculated approximately 1,500 m$^3$ of soil (600 m$^3$ of marine sediment and 900 m$^3$ of non-marine soils) will be removed and require management in accordance with this SMP. If analytical results determine the soils are less than the applicable standard, and the soil meets geotechnical requirements, it may be used as backfill where needed at the Site.

Regulatory Framework

Contaminated soils will be managed in accordance with all acts and regulations, including, but not limited to the BC Environmental Management Act (EMA), Contaminated Sites Regulation (CSR), and Hazardous Waste Regulation (HWR).
SOIL MANAGEMENT PLAN
Johnson Street Bridge Replacement Project

<table>
<thead>
<tr>
<th>Project Name:</th>
<th>Johnson Street Bridge Replacement Project</th>
</tr>
</thead>
</table>

**Pre-Construction (Site Preparation)**

- Establish a 20 m horizontal grid system along the new Telus duct line which will be used for tracking origin of soils excavated. Soil characterization sampling of the soils to be excavated will be conducted based on the grid. A 20 metre horizontal grid will also be established within the fill areas to track where excavated soils are deposited.
- A 6 mil poly liner should be placed in the stockpile area where soils are to be stockpiled, including creating a berm using sand bags along the exterior. If stockpiled soils are within 10 metres of a water body, sediment fencing should be setup to control surface water runoff.

**Construction (Mitigation Measures)**

**Soil Excavation**

- Excavation of approximately 1,500 m³ of soil is required for the relocation of the Telus duct line.
- All excavated soil will be stockpiled onsite in designated areas (to be designated by City of Victoria). These stockpile locations will still be located on City of Victoria property.
- It is understood that marine sediment will be stored on a barge until such time it is moved to shore and unloaded. The marine sediment is expected to sufficiently dry while on the barge.
- All stockpiles should be covered to minimize contact with precipitation, and subsequent erosion.

**Equipment Management**

- All equipment used to handle contaminated soils will require decontamination prior to leaving the site. Decontamination will include the removal of bulk soil build-up on equipment (e.g. buckets, tracks and tires) and water use for decontamination should be limited.

**Backfilling**

Imported soils to be used to backfill excavations must meet the following minimum criteria:

- Soils shall have no visible or olfactory evidence of contamination
- Soils will originate from known sources having no evidence of disposal or releases of hazardous substances, hazardous, toxic or radioactive wastes or any other source of environmental impact (including petroleum hydrocarbons)
- Representative samples will be collected from the imported backfill to ensure it meets environmental standards.

In the event that non-approved backfill soil imported by the Contractor fails to meet the quality requirements provided above, the Contractor will be responsible for all costs associated with the removal and proper disposal of such material.

**Dust Control**

In the event that dust is considered to be of concern to on-site or surrounding receptors, dust suppression techniques will be employed as necessary to mitigate fugitive dust from unvegetated or disturbed areas during the work program. Techniques to be used may include one or more of the following:

- wetting equipment and excavation faces
- spraying water on buckets during excavation and dumping
- hauling materials in properly covered vehicles
- restricting vehicle speed
- covering excavated areas and materials after excavation activity ceases
- reducing the excavation size

All reasonable attempts will be made to keep visible and/or fugitive dust to a minimum.
The fate of the soils will be determined once analytical results are received. By segregating soils based on the areas removed, soils will be classified and disposed of in accordance with the concentrations present. If soils exceed the applicable standards, they will be trucked offsite for disposal at an appropriate facility (based on analytical results).

**Monitoring Activities**

A contaminated sites specialist from Stantec will be present during construction activities. Documentation of the movement of soils will be kept in a soil relocation log which will track soils by the truckload by documenting the volume, location of origin and location of deposition.

**Attachments (Drawings, Pre-Construction Checklist, etc)**

- MMM Group Drawing 5010751-100-C-SKT-0002
- Johnson Street Bridge – Victoria Telus Duct Bank Relocation 70% Design prepared by PBA Consulting Engineers Drawing Package (Drawing E0001 – E0012)

**Reference Documents**

- BC Contaminated Sites Regulation
- BC Environmental Management Act