

Derwent Way Soil Transfer and Barge Loading Facility

Summary of Project

Summit Earthworks is proposing to build and operate a soil transfer and barge loading facility on a lease parcel adjacent to the Derwent Way bridge in the Queensborough area of New Westminster.

This summary is intended to identify the integral components of both the construction and operation of the facility.

Proposed site activities at this facility includes the following:

Transfer of soil to/from site via truck:

1. Trucks carrying materials arrive at designated entry location via Salter Street, proceed through weigh scale, check in with site staff
2. Trucks unload soils to Waste Offload/Storage Area
3. Trucks that have entered the Waste Offload/Storage Area proceed to Wheel Wash station for wheel washing prior to re-entering 'Clean Asphalt Zone'
4. Empty trucks proceed to exit or load soils from Waste Offload/Storage Area for transport to permanent facilities
5. Trucks proceed to weigh scale, check out with site staff
6. Trucks exit via the north entry/exit onto Salter Street

Transfer of soil to barges:

1. Front-end loaders transfer soils from Waste Offload/Storage Area to hopper
2. Soil transfer via hopper onto covered conveyor belt
3. Soils are deposited from conveyor to barge via a telescopic loading spout
4. Loaders move and distribute soils over the barge deck

Maintenance:

1. Minor equipment maintenance, occasional onsite fueling

The conception of this project includes the following:

Construction Methodology

Site Preparation work:

- Clearing and grubbing of the site as required as per the Clearing and Grubbing Plan
- Grading of the site, up to 1m in depth to allow for the installation of the storm drainage
- Excavate depression for material storage area.

- Installation of concrete lock block wall around perimeter of the material storage area and construct an engineer designed roof over the material storage area.
- Pave the truck roads on the site at the material storage area and access to the conveyor loading area. Asphalt surfaces to be contoured to storm drains and collected water will be conveyed to on site water treatment plant.
- Any surface/runoff water from paved areas will be pumped into a temporary storage tank(s) on site prior to being treated for potential contaminants of concern, primarily sediment and pH.
- A truck wheel wash will be installed to eliminate dirt being tracked across the site and deposited on nearby roads.
- A coarse gravel zone within clean areas of the site, which will allow for infiltration of stormwater.
- A truck weigh scale and scale house/site trailer will be placed near the entrance of the site.
- A sound barrier wall will be erected adjacent to the existing SRY rail line along the western site boundary. The height has been reduced to 1.5m to allow for rail sites lines to be maintained.

NOTE: for specific engineering detail please see Tetra Tech Dwg Package - Derwent Way Transfer Station

Details on Piles:

- Piles will be installed for the berthing and bumper dolphins as well as the conveyor towers. The estimated number of piles to be installed is 5. Conveyor design details have been provided along with this summary document.
- The piles installed will be primarily steel. (The total length and final diameter will be determined after confirmation of soil conditions via borehole test logs and confirmed during final review and engineer design). Some of the piles proposed will be concrete filled, steel piles.
- The foreshore and marine piles will be driven from a barge pile driving rig. No rip rap removal is required as all pilings are situated away from the rip rap foreshore.
- All piles will be installed using a pile driving hammer in accordance with the Pile Driving Contractors Association (PDCA) Specification 103-07.
- Upon termination of the lease all piles will be removed (if required) with a vibratory extractor to ensure quick and safe removal of the piles.

Barge Loading - Conveyor Ramp / Marine Structures

- A local, reputable marine construction contractor will be used to construct the conveyor ramp as per the design details. McEllhaney Consulting Services in consultation with TetraTech has prepared the preliminary engineer design. The drawings have been incorporated into the previous Tetra Tech facility design.
- Barge frequency is not expected to exceed 4 barges per month. A typical dry goods barge (scow) is normally loaded within 10 – 12 hours. The on-land hopper will receive bucket loads of dry soils from a front end loader (or similar heavy equipment) which will then deposit soils onto the conveyor and be transported to the barge. A telescopic spout will direct material onto the barge deck and be displaced along the deck with a loader (or similar).

- Scows generally have a solid hull construction and will have the sides sealed for soil containment. They are sealed in various ways, often times using lock blocks to create an outside barrier with a geo membrane liner along all sides. Soils will be loaded dry from the covered waste storage area and along with the relatively short loading / unloading cycles this will prevent the accumulation of water beyond the containment volume of the barge. In the instance that any water accumulation does require further management, a sump pump or trash pump will be placed on the barge to remove excess water and direct it via hoses along the side of the conveyor ramp back to the treatment system onsite.
- Local, licensed tug haulers will transport the barges in and out of the facility in accordance with marine transport rules and regulations.
- Please see technical memo – *Derwent Way Barge Facility, Marine Terminal Operations* for additional details.

Waste Storage / Offload Area

- The proposed 60m x 20m waste storage area, excavated to 1.5m below grade will be constructed to temporarily store soil prior to transport to various waste treatment and disposal facilities. The walls on the east, north and west will extend 2.25m creating a storage capacity of approx. 3000m³.
- Waste Storage/Offload Area to be covered with a pre-manufactured roof structure that is supported on a Lock Block containment wall which will form the foundation of the roof structure. It is understood that engineered drawings are required and that a building permit and adherence to applicable codes along with final inspection and approval will be required as a condition of the permit to operate.
- Waste Storage/Offload Area will be lined with a membrane that extends under the entire storage area, including up the Lock Block containment walls and offload area. The membrane will be underlain and covered with sand to protect the membrane.
- The base of the storage area will be adequately sloped (1% min) to collection drains. The perimeter of the storage area will have drain piping and sump to collect and direct water to the onsite treatment system. Additional stormwater from the roof structure will be directed to the stormwater infiltration system prior to discharge to the ditch.
- A series of monitoring wells will be installed around the Waste Storage/Offload Area and periodic water sampling will be completed to monitor the integrity of the liner.

Gravel Bay Area

- NOTE: This aspect of the project has been removed from the construction and operational plans and therefore is no longer part of the permit application review process.

Utility Installation

- Storm drains and catch basins will be installed to collect rainwater runoff from the site.
- Sump and perimeter drains will collect surface water contained within the material storage area
- Wheel wash will retain water used during truck washing on site
- Two 5,000-gallon on-site storage tanks will be installed. Volume is sufficient to contain and treat stormwater during a water quality event or a storm drainage event. The water in the storage tanks will be treated prior to

discharge via underground infiltration system. (For further information refer to the previously submitted Stormwater Pollution Prevention Plan)

- On-site underground infiltration trench network for treated stormwater discharge
- Proposed 2,500L fuel storage tank for onsite equipment fueling
- No storm or sanitary connections to City of New Westminster are proposed, however a new 200mm culvert will be placed adjacent to the existing culvert that extends under Salter Street. A permit from the City of New Westminster will need to be obtained prior to this work taking place. A separate drawing has been provided outlining the details of this new installation.
- The adjacent lease property to the northwest of the site currently has a metered, 3 phase 600 amp service which will be merged to accommodate the power requirements of the site for lighting, scale and wheel wash operation and the operation of the treatment system. Emergency generator power will be available onsite to provide power in the event of a loss from the local infrastructure.

Traffic Plan and Traffic Impact Assessment

- Truck traffic to enter and exit the site on Salter Street via designated trucks routes only, typically using either the Queensborough Bridge or the Alex Fraser Bridge
- The site anticipates a daily inbound average of 20 – 30 trucks however has the capacity to accommodate a maximum of 60 trucks per day.
- The site traffic will have minimal impact on vehicle delays and queues. All intersections in the vicinity of the site are anticipated to perform well under peak hour traffic conditions.
- Four onsite parking stalls will be adjacent to the scale shack/site office.

Vegetation Plan

- Most trees growing within 10 m of the ordinary high water mark of the Fraser River will be retained, with the exception of the trees and other vegetation at the eastern corner of the property along the Fraser River.
- Prior to any tree removals a nesting survey will need to be conducted. More specific details are provided in the Site Clearing and Grubbing Dwg 03082-03 Rev F and the BioPhysical Assessment & Vegetation Plan Report.
- A screening/landscaping buffer will be installed along the western property boundary so to provide a visual screen of the cleared area and reduce or maintain current noise levels. Buffer will not be more than 4ft high and will not be in the railway sightline.
- One tree species (Swedish columnar aspen) and several native shrubs (i.e., baldhip rose, common snowberry, red-osier dogwood, etc.) have been selected for planting on the property. In addition, willow stakes have been recommended for the rip rap bank so to provide additional screening/buffering.