



WEEKLY SITE ACTIVITIES UPDATE REPORT

Client: Ministry of Environment and Climate Change

Project: Landfill Closure Activities at Cobble Hill Holdings, 460 Stebbings Rd Near Shawnigan Lake, BC

Dates: Includes work from September 25, 2017 to September 29, 2017

COMMENTS:

Staffing - In general, the staffing consisted of 5 labourers, 2 equipment operators, 1 supervisor as well as Todd Mizuik (Allterra). The requirements for a QP were initially not being met, but after an on site meeting with the MOE on Sept 27, the QP requirement was met. The QP representatives were provided by either Sperling Hansen Associates (SHA) or Island Engineering. An additional Allterra staff member was on site on September 29 to help construct the leachate storage facility roof. In addition, a liner repair crew was on site from September 27 through 29, inclusive.

Equipment - Consisted of 1-966 Cat loader, 1-450 Hitachi excavator, 1-320 Cat excavator (September 25 only), Bobcat with broom attachment (September 27-29)

Work Performed:

-A total of five test pits were excavated; along the northern toe of the PEA in each of the three cells, one additional location in the western cell at the request of a local citizen group, and one along the south edge of the PEA below the run-on ditch. Clay thicknesses along the northern toe ranged from 0.7-1.0 m. GHD collected clay samples on behalf of the MOE for lab testing. In addition, Frontier Geosciences, retained by GHD on behalf of the MOE, was on site to perform a ground penetrating radar survey around the perimeter of the PEA to help confirm the presence of the clay layer. GHD will be preparing a supplemental report documenting observations and clay test results.

- Four existing monitoring wells were sampled. The three new monitoring wells and the creek were dry. The sample location IDs and parameters analyzed should be confirmed upon MOE receipt of a report from Allterra.

- The Leachate Storage and Detection Facility has been constructed. The Leachate Conveyance Piping has been connected to the PEA piping but no flow from the PEA was observed by GHD.

- The conveyance piping was placed, connected to the PEA and tanks, and the trench was backfilled and compacted, including the installation of a tracer wire/tape.

- The backfilled area of the Contact Water Containment Pond was seeded.

- The Soil Management Area was cleaned manually with brooms and with a bobcat with a broom attachment. A 6 mil poly liner was used to cover the soil and sandbags were placed around the edges of the liner to secure it.



WEEKLY SITE ACTIVITIES UPDATE REPORT

Client: Ministry of Environment and Climate Change

Project: Landfill Closure Activities at Cobble Hill Holdings, 460 Stebbings Rd Near Shawnigan Lake, BC

Dates: Includes work from September 25, 2017 to September 29, 2017

- The three Seepage Blanket Monitoring Wells were installed. There was no evidence of water at the base of the wells.
- Repairs to the PEA liner were completed and tested.
- The PEA Crest Ditch Ballasting was completed with geotextile and tires.

Similar to last week, the weather was reasonably cooperative. There were several days of rain but nothing substantial and prolonged, and which did not cause delays. There were observers on most days standing on the outside of the site fence observing the work.

Similar to last week, no water was observed in the creek.

MOE representatives were on site on September 27 to tour the facility with Allterra, SHA and GHD and inspect items related to the Spill Prevention Order. They discussed:

- construction schedule
- presence of a qualified professional (QP) on site
- presence of clay and thickness in the test pit areas
- soil sampling locations
- washing and sweeping of the SMA (which is expected to be further elaborated in SHA's report)

GHD and MOE met with several citizens standing outside the site fence. One of the citizens questioned whether the western test pit was in the cell 1C (the 3rd cell). GHD offered to ask Allterra to see if they could dig another pit to confirm the presence of the clay further to the west. Following GHD's discussion with Allterra, Allterra indicated they would dig another hole on Friday time permitting. (This was later completed.)



WEEKLY SITE ACTIVITIES UPDATE REPORT

Client: Ministry of Environment and Climate Change

Project: Landfill Closure Activities at Cobble Hill Holdings, 460 Stebbings Rd Near Shawnigan Lake, BC

Dates: Includes work from September 25, 2017 to September 29, 2017

Work Task	Activity	Performed By	Equipment		Personnel		Discrepancies to Spill Prevention Order (SPO)
			Type	Hours	Number	Total hrs	
SPO - Secondary Clay Liner Investigation	The Secondary Clay Liner Investigation was completed with 3 test pits excavated at the toe of the PEA - one in each cell - and an additional test pit excavated when clay was observed during the excavation of the run-on ditch on the south side of the PEA. At the request of the local citizen group, an additional pit was excavated 10 metres west of the western test pit to confirm the presence of clay (which it was at a depth of 0.5 metres and a thickness of 0.5 metres). The confirmed clay liner thicknesses along the toe from east to west was 0.7m, 1.0m, and 1.0m. Depth of clay at the test pit along the south edge was unconfirmed. GHD collected clay samples on behalf of the MOE for lab testing. In addition, Frontier Geosciences, retained by GHD on behalf of the MOE, was on site to perform a ground penetrating radar survey around the perimeter of the PEA to help confirm the presence of the clay layer. GHD will be preparing a supplemental report with testing results.	Allterra (test pits) GHD (clay sampling)	450 excavator	3	2	3	



WEEKLY SITE ACTIVITIES UPDATE REPORT

Client: Ministry of Environment and Climate Change

Project: Landfill Closure Activities at Cobble Hill Holdings, 460 Stebbings Rd Near Shawnigan Lake, BC

Dates: Includes work from September 25, 2017 to September 29, 2017

<i>Work Task</i>	<i>Activity</i>	<i>Performed By</i>	<i>Equipment</i>		<i>Personnel</i>		<i>Discrepancies to Spill Prevention Order (SPO)</i>
			<i>Type</i>	<i>Hours</i>	<i>Number</i>	<i>Total hrs</i>	
SPO - Monthly Sampling	GHD observed the four monitoring wells being sampled. The three new monitoring wells at the toe of the PEA were dry. GHD observed that sampling activities were performed. The sample location IDs and parameters analyzed should be confirmed upon MOE receipt of a report from Allterra.	A subconsultant to Allterra			1	3	



WEEKLY SITE ACTIVITIES UPDATE REPORT

Client: Ministry of Environment and Climate Change

Project: Landfill Closure Activities at Cobble Hill Holdings, 460 Stebbings Rd Near Shawnigan Lake, BC

Dates: Includes work from September 25, 2017 to September 29, 2017

Work Task	Activity	Performed By	Equipment		Personnel		Discrepancies to Spill Prevention Order (SPO)
			Type	Hours	Number	Total hrs	
SPO - Semi-Monthly Status Reports	A weekly progress report was provided to the MOE on Sept 30, 2017 for the period of Sept 21-30, 2017. Information provided included work completed, upcoming work, current schedule of remaining work, deviations from the Detailed Construction Plan (not using water to clean the SMA so water isn't re-introduced into contained soils, and using tires instead of gravel and sand bags in the PEA crest ditching due to availability and to minimize foot traffic on liner), photographs, contact water pond waste acceptance certificates and forms, and liner quality control (QC) testing results. GHD notes the following clarifications related to the work listed in the report: for item 1b, GHD collected clay samples from three of the PEA toe test pits (the fourth test pit was for visual observation only per request from a citizen); for item 1c, GHD also collected a Shelby tube clay sample in a test pit along the south edge of the PEA; and item 5b, GHD observed that the liner remains on site contained in a roll-off box.	Sperling Hansen Associates					



WEEKLY SITE ACTIVITIES UPDATE REPORT

Client: Ministry of Environment and Climate Change

Project: Landfill Closure Activities at Cobble Hill Holdings, 460 Stebbings Rd Near Shawnigan Lake, BC

Dates: Includes work from September 25, 2017 to September 29, 2017

Work Task	Activity	Performed By	Equipment		Personnel		Discrepancies to Spill Prevention Order (SPO)
			Type	Hours	Number	Total hrs	
SPO - Qualified Professional on Site	Partial attendance. 1 hour each on Sept 25 and 26. All day on Sept 27, 28, 29	Island Engineering Sperling Hansen Assoc			4	36	QP requirements not met
Material Procurement/Delivery	Material for leachate facility roof was delivered. Bobcat was delivered. 320 excavator was demobilized.	Allterra					
Leachate Storage and Detection Facility	The liner was placed into the facility and secured to the fourth row of lock blocks with wood 2x4s and Hilti bolts. A wooden frame supporting a poly liner was constructed over the facility; the liner was secured to the outside of the lock blocks with wood 2x4s and Hilt bolts to inhibit precipitation intrusion.	Allterra	450 excavator 966 loader	13	21	97	



WEEKLY SITE ACTIVITIES UPDATE REPORT

Client: Ministry of Environment and Climate Change

Project: Landfill Closure Activities at Cobble Hill Holdings, 460 Stebbings Rd Near Shawnigan Lake, BC

Dates: Includes work from September 25, 2017 to September 29, 2017

Work Task	Activity	Performed By	Equipment		Personnel		Discrepancies to Spill Prevention Order (SPO)
			Type	Hours	Number	Total hrs	
Leachate Conveyance Piping	The conveyance piping was placed, connected to the PEA and tanks, and the trench was backfilled and compacted, including the installation of a tracer wire/tape 150 mm over the pipes. A soil berm was built over the pipe to protect it from any future heavy traffic. Pipe was laid to a 2.4% grade based on the contractor's measurements with a laser level. No cleanouts were installed (SHA explained that there was sufficient access to the pipes in their weekly report discussed above).	Allterra	450 excavator 966 loader	24	22	77	
SPO - High Level Alarm	Not yet installed.						
Decommission Contact Water Containment Pond	The backfilled area was seeded. The liner that was removed last week remains stored in a roll-off box pending off-site disposal.				1	0.5	



WEEKLY SITE ACTIVITIES UPDATE REPORT

Client: Ministry of Environment and Climate Change

Project: Landfill Closure Activities at Cobble Hill Holdings, 460 Stebbings Rd Near Shawnigan Lake, BC

Dates: Includes work from September 25, 2017 to September 29, 2017

Work Task	Activity	Performed By	Equipment		Personnel		Discrepancies to Spill Prevention Order (SPO)
			Type	Hours	Number	Total hrs	
Stockpile and Cover SMA Soil	The Soil Management Area was cleaned manually with brooms and with a bobcat with a broom attachment. A 6 mil poly liner was used to cover the soil and sandbags were placed around the edges of the liner to secure it. No leaks from the covered soil was observed.	Allterra	Bobcat 966 loader 320 excavator	21	24	78	
Install Shallow Seepage Blanket Monitoring Wells	The three Seepage Blanket Monitoring Wells were installed per the design. There was no evidence of water at the base of the wells. Depth-to-bottom measurements were: west well - 3.53m, center well - 3.28m, east well - 3.99m. SHA indicated to GHD that they will identify the well locations and depths in their status report to the MOE. 1 lock block was placed adjacent to each well instead of 2. Compaction testing was not completed.	Allterra	450 excavator	9	3	9	
PEA Liner Repairs	Repairs to the PEA liner were completed and tested. SHA indicated to GHD that they will identify the repair locations and quality control test results in a report to the MOE.	Allterra subcontractor	450 excavator 966 loader	6	11	54	



WEEKLY SITE ACTIVITIES UPDATE REPORT

Client: Ministry of Environment and Climate Change

Project: Landfill Closure Activities at Cobble Hill Holdings, 460 Stebbings Rd Near Shawnigan Lake, BC

Dates: Includes work from September 25, 2017 to September 29, 2017

<i>Work Task</i>	<i>Activity</i>	<i>Performed By</i>	<i>Equipment</i>		<i>Personnel</i>		<i>Discrepancies to Spill Prevention Order (SPO)</i>
			<i>Type</i>	<i>Hours</i>	<i>Number</i>	<i>Total hrs</i>	
PEA Crest Ditch Ballasting	The PEA Crest Ditch Ballasting was completed with a non-woven geotextile and tires (tires were used instead of sand bags).	Allterra	320 excavator	2	6	22	
Run-On Ditching	none observed						

TOTAL TIME DURING REPORTING PERIOD: 78 474.5

TOTAL TIME FOR PROJECT: 160 793.5



WEEKLY SITE ACTIVITIES UPDATE REPORT

Client: Ministry of Environment and Climate Change

Project: Landfill Closure Activities at Cobble Hill Holdings, 460 Stebbings Rd Near Shawnigan Lake, BC

Dates: Includes work from September 25, 2017 to September 29, 2017

Item	Description	Comments	Meets Specs		Discrepancies to Spill Prevention Order (SPO)
			Yes	No	
Material inspected					
	<u>Leachate Storage and Detection Facility</u>				
	Liner securement and Hilti bolts	Liner was secured to the fourth row of lock blocks with wood 2x4s and Hilti bolts	X		
	Storage Tank area roof	Enclosed roof - wooden frame supporting poly liner that is secured to outside of lock blocks with wood 2x4s and Hilti bolts	X		
	<u>Leachate Conveyance Piping</u>				
	Warning tape and tracer wire		X		
	Cleanouts	Not installed as discussed in SHA's weekly report mentioned above			
	Backfill (clean granular fill)	Sieve test results have not been received to confirm that this material meets the specifications.			
	<u>High Level Alarm</u>				
	High level alarm with float switches	Not installed yet			
	<u>Decommissioning Contact Water Pond</u>				
	Seed		X		
	<u>Stockpile and Cover SMA Soil</u>				
	Sand bags		X		



WEEKLY SITE ACTIVITIES UPDATE REPORT

Client: Ministry of Environment and Climate Change
 Project: Landfill Closure Activities at Cobble Hill Holdings, 460 Stebbings Rd Near Shawnigan Lake, BC
 Dates: Includes work from September 25, 2017 to September 29, 2017

Item	Description	Comments	Meets Specs		Discrepancies to Spill Prevention Order (SPO)
			Yes	No	
	<u>Install Shallow Seepage Blanket MWs</u> 100-mm dia PVC pipe - solid riser 100-mm dia PVC pipe - perforated 25-50mm clean drain rock Non-woven geotextile Drain rock for seepage wells Low-permeability on-site soil backfill Lock blocks		X		
	<u>PEA Crest ditching ballasting</u> Non-woven geotextile Coarse gravel Sand bags	Not used Tires used in lieu of sand bags	X		
Quality Control Testing Completed	Liner QC test results were provided in SHA's weekly report as discussed above. SHA's weekly report also listed QC activities performed by the QP.				



WEEKLY SITE ACTIVITIES UPDATE REPORT

Client: Ministry of Environment and Climate Change
 Project: Landfill Closure Activities at Cobble Hill Holdings, 460 Stebbings Rd Near Shawnigan Lake, BC
 Dates: Includes work from September 25, 2017 to September 29, 2017

Item	Description	Comments	Meets Specs		Discrepancies to Spill Prevention Order (SPO)
			Yes	No	
Schedule (in SPO or Closure Plan)					
SPO	Construction Activities commenced by August 28, 2017				Undetermined - information not provided to GHD
SPO	One test pit completed by September 30, 2017		X		Four test pits were completed
SPO	Construction Activities completed by October 31, 2017				All construction activities discussed in the Detailed Construction Plan have not been completed as of September 29, 2017, as discussed above. Whether they are completed as of October 31, 2017 is beyond the schedule of this Weekly Site Activities Update Report.
SPO	Install high water level alarm by October 31, 2017				Installation of the high water alarm has not been completed as of September 29, 2017, as discussed above. Whether it is installed as of October 31, 2017 is beyond the schedule of this Weekly Site Activities Update Report.
SPO	Monthly sampling (surface & groundwater locations by Aug 31 and seepage blanket wells by Oct 31)				Undetermined - sampling was observed. Compliance to SPO can be determined upon receipt of report from SHA.
SPO	Leachate volumes collected, stored, and transported submitted by the 15th & 30th		X	X	Sept 30th report rec'd on Oct 2 (previous reports rec'd on time)

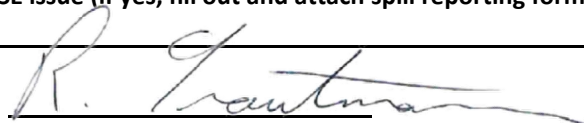


WEEKLY SITE ACTIVITIES UPDATE REPORT

Client: Ministry of Environment and Climate Change
 Project: Landfill Closure Activities at Cobble Hill Holdings, 460 Stebbings Rd Near Shawnigan Lake, BC
 Dates: Includes work from September 25, 2017 to September 29, 2017

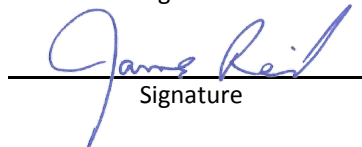
Item	Description	Comments	Meets Specs		Discrepancies to Spill Prevention Order (SPO)
			Yes	No	
SPO	Semi-Monthly Status Reports by the 15th & 30th commencing when closure activities commence			X	Status report discussed above did not address QP's part-time presence on site
SPO	Sample Leak Detection Tank monthly when liquid is present		n/a - no liquid present		
CP	Sample Leachate Tanks during leachate removal		n/a - no liquid present		
Spill Observed beyond Site Boundary, or potential HSE issue (if yes, fill out and attach spill reporting form/s)					
None observed					

Completed by: Reinhard Trautmann
 Name


 Signature

October 4, 2017
 Date

Reviewed by: James Reid
 Name


 Signature

October 4, 2017
 Date