

DATE: February 5, 2013

FILE: 5360-20/Comox Valley

TO: Chair and Directors
CVRD Board (Regional Solid Waste)

FROM: Debra Oakman, CMA
Chief Administrative Officer

RE: Update – CVWMC existing landfill closure design – geotechnical information

Purpose

To provide information to the solid waste board concerning the design, schedule, budget and a summary of progress and findings of the geotechnical investigation for the closure of the existing landfill at the Comox Valley Waste Management Centre (CVWMC).

Policy analysis

The Comox Strathcona waste management (CSWM) board, at the September 13th, 2012 meeting authorized staff to execute a contract to EBA Tetra Tech (EBA) for the design of the closure of the existing landfill at CVWMC.

THAT as a result of a competitive process, a contract be awarded to (EBA) Tetra Tech Inc. for updated operations and closure plans for the Comox Valley landfill, in an amount not to exceed \$407,157.12 plus HST.

Executive summary

Compliance with the Minister of Environment (MoE) landfill facility criteria includes scheduling of closure of the existing landfill at the CVWMC and an update to closure documents and long term care financial projections. The Comox Strathcona solid waste management plan (CS-SWMP) includes a landfill expansion on the property of the CVWMC as the designated facility for CSWM disposal over the next twenty years. The closure of the existing landfill includes a design update to the storm water treatment system that will include an attenuation system of ditches and surface water detention ponds for the expanded landfill as well as the closed and capped existing landfill. Thus, some aspects of the engineering design of the landfill expansion, of which that request for proposal (RFP) is scheduled to be issued in the spring of 2013, is connected to the EBA closure contract for the existing landfill.

Project design for closure of the existing landfill by EBA is on schedule although due to two geotechnical technical change orders and a timing issue involving the MoE, the contract end date has been extended from March to August with the final report and construction tender documents now to be presented to the CSWM board at the September 2013 meeting.

Contract work is within budget and generally on schedule. For example, boundary survey, background documents investigation, remaining capacity analysis, landfill gas system design, cover system design and, improvements to the stormwater system and geotechnical work are all on schedule and within budget. Site investigation involving geotechnical work has progressed well with field work being completed in November 2012. However, an expanded geotechnical scope has delayed the final project completion date from March to August as explained in the following Table 1. Highlights of CVWMC landfill closure – geotechnical investigation. This geotechnical

investigation delay in project design completion does not affect the construction schedule for the existing landfill closure or any expansion plans at the CVWMC.

Table 1. Highlights of CVWMC landfill closure – geotechnical investigation

Item	Date	CO Cost	Description
1	October 9 th , 2012	\$58,575	CO-1: delineation and volume of coal waste within the property and review of coal mine records to determine the existence of mine workings and voids below the site property and include findings in geotechnical investigation.
2	January 9 th , 2013	No addition cost	Received: Airspace/capacity determination for existing landfill and the area between the existing landfill and the southwest property boundary.
3	January 28 th , 2013	\$46,910	CO-2: perform a further risk analysis associated with the geologic fault zone within the property; prepare a detailed report to the MoE as to any technical impacts to the capping material selection for the existing landfill and to define any “unstable” areas that the landfill expansion will avoid.

Table 1 – Item discussion includes:

Item 1. CO-1 was requested by the CVRD during the kick-off meeting as an addition to the project geotechnical scope. Coal waste deposits on and adjacent to the CVRD property have been known to exist but the location, chemical composition – environmental threat, physical properties and amounts have remained unknown. Part of the investigation was to determine if coal waste material could be used as part of the liner design which would eliminate the environmental threat of coal waste to the stormwater and groundwater in and near the site. In addition, future coal deposit environmental remediation can be determined.

Also in CO-1 is an in depth investigation to delineate and define the existence of mine workings below the site. This is tied to the project scope requirement to complete MoE required geological liquefaction analysis, a standard requirement for landfill slope closure.

Item 2. Preliminary airspace calculations by EBA show that there is between two and three years of system airspace remaining in the existing landfill. This information does not affect the closure project.

Item 3. During the course of the geotechnical investigation, EBA has determined:

1. The technical risk to the existing landfill closure structures which has been applied to material selection for design slope closure of the existing landfill. Two factors that impacted the geotechnical investigation were delineation of mine workings below the site and, the positioning of a known geologic fault in the bedrock below the site. As a result, the EBA design now includes a low density polyethylene material for slope closure and any hazards to the cover system has been reported to the MoE as low over the required closure period.
2. The fault zone is located in an undeveloped area of the property and passes the existing landfill from the north by northeast towards the south by southwest. The MoE considers this fault zone a technically “unstable” area that must be addressed in the proposal for the upcoming expanded landfill. EBA, in discussion with the MoE has determined the CVWMC landfill expansion will be constructed outside of the “unstable” area instead of near or over the fault zone.

For the CO-2 – EBA, the scope of the technical work includes:

- Information necessary for scope development of the expanded landfill, including the area available for the expanded landfill, which has a target publication date before the June CSWM board meeting.
- Information to enable EBA to complete the location of their design of the existing landfill closure specially, the stormwater system.
- Provide a technical report to the MoE supporting the proposed closure design of the existing landfill and modifications to the conceptual design of the proposed landfill expansion. The technical report is scheduled to be presented to the MoE in March.

Recommendation from the chief administrative officer:

None. This report is for information purposes only.

Respectfully:

D. Oakman

Debra Oakman, CMA
Chief Administrative Officer

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