Koutroulides NG@CFB Trenton WENV@Trenton

From: McKay GG@1 ESU@Kingston
Sent: March 4, 2019 9:49 AM
To: Gardner Maj TJ@ADM(IE) RPO(North)@Ottawa-Hull
Cc: Fournier Maj VPC@1 ESU@Kingston; Zanetti K@ADM(IE) RPO(North)@Ottawa-Hull; Koutroulides NG@CFB Trenton WENV@Trenton; Hamill Sgt FE@1ESU@Kingston
Subject: 17-ESU-01 Alert Sewage Treatment Proposal
Attachments: 602-602 Waste Water Terrace Preliminary.pdf

Major Gardner,

As requested, this a preliminary report on options for sewage treatment in Alert to use for the water use licence meeting with the NWB on 28 February .

For package plant primary treatment options, we have been in contact with three different contractors for feasibility of a system given the data we have collected and the constraint of fitting the system in the existing building. Sgt Frank Hamill's summary of submissions from two of the proposing companies states that they can meet our requirements with differing approaches. I have been in contact with a sewage treatment plant design and fabrication company that specializes in applications that can be barged or flown to remote locations. Based on the information we provided, they forwarded a proposal that indicates a sewage treatment system is feasible. These options will include a heat-traced outflow pipe that discharges at the bay to eliminate erosion.

A point to note is the presence of elevated FOG (Fats, Oil and Grease) numbers from samples collected at the sewage outfall that could cause problems with any of the proposed treatment systems. These numbers are despite a regularly maintained and operational grease trap in the kitchen. In communication with the Alert SCEO, it was determined that the garburated food waste is not passing through this grease trap and is suspected to be the cause of the elevated FOG numbers. This disposal process will be required to pass through a grease trap prior to entering the waste stream to ensure the success of any sewage treatment system.

As a back-up to the package plant system, we propose an upgrade to the existing terrace system intended to reduce the surface erosion that is contributing to elevated total suspended solids content at the outflow into the bay. We are proposing the installation of anchored gabion baskets, lined on the uphill side with geofabric to prevent silt infiltration. Gabions would be used to replace the existing soil berms and a gabion wall would be installed along the ridge North of the terrace to channel the flow to the South over the gabion berms. Existing berms would be removed. The attached preliminary drawing indicates the locations of the gabion basket installations.

Greg McKay

Civil Engineering Technologist, 1 Engineer Support Unit
National Defence / Government of Canada
greg.mckay@forces.gc.ca / Tel: 613-541-5010 x 7459

Technologue en génie civil, 1re unité d'appui du Génie
Défense nationale / Gouvernement du Canada
greg.mckay@forces.gc.ca / Tél.: 613-541-5010 x 7459