

Harbour Resource Partners - Revalidation of Price and Schedule for McLoughlin Point Wastewater Treatment Plant Project - CRD RFP #MC – 300 – Attachment E Odour Control

Report Context

The CRD has been planning wastewater treatment for the Core Area for over 30 years. During this time a significant number of reports have been prepared and/or reviewed to assess options and provide information to further planning.

In May 2016 a Project Board was established to define and implement wastewater treatment for the Core Area. The Project Board heard delegations and presentations from the public, industry professionals, and a CRD Director. The Project Board Chair and Vice Chair also met with staff from the CRD, all of the Core Area municipalities, and with Esquimalt and Songhees Nations representatives. The Project Board reviewed the previous technical work and extensive public commentary and developed a methodology to review and evaluate all options. This methodology included evaluation of a large number of options to identify a short list that best addressed the Project goals.

In September 2016 the Project Board presented its recommendation for wastewater treatment and on September 14, 2016 the CRD Board approved the Wastewater Treatment Project (the Project).

A significant number of the reports that have been prepared and/or reviewed still serve as useful background information, but not all of the reports are applicable to the Project. To respond to several recent public inquiries regarding topics of interest, the CRD has prepared a synopsis of reports along with a summary of the applicability of the report to the Project. The document summary is available here:

https://www.crd.bc.ca/docs/default-source/wastewater-planning-2014/2017-05-30-summary-of-documents-related-to-topics-of-interest.pdf?sfvrsn=a1a738ca_12.

The document summary does not provide a comprehensive list of reports completed as part of wastewater treatment planning for the Core Area, it is a compilation of a number of reports related to key topics of interest: odour; seabed pipeline; bluffs and shoreline; geotechnical; and noise.

Purpose of this Report

This document was prepared as part of early discussions with the preferred proponent for McLoughlin following completion of the Business Case in September 2016. At the time of the preparation of this report, the design of the odour control system and odour modelling was still in the very preliminary stages and the design had not advanced.



Applicability to Project

This document is no longer applicable as the design has since been advanced. An atmospheric dispersion model has been created by Harbour Resource Partners (the Contractor for the McLoughlin Point Wastewater Treatment Plant) based on the design of the facility. The CRD has provided the output of the modelling on its website and at public meetings.



Attachment E

Odour Control System Description

Odour Control System Description

Odour control for the facility and impact on the surrounding community was addressed extensively in our proposal. HRP's assessment shows that if the exhaust stacks are 2 metres above the Odour Control Room, the maximum impact to the land is approximately 3.9 Odour Units (OU) for a 10-min average which is better than the desired value of 5 OU. We have also assessed the impacts at a house located 78 metres to the West and a house located 52 metres to the Southwest of the plant as illustrated in Figure 2.7-11. The impacts at both locations are less than 1 OU. The exhaust stacks are recommended to be at least 2m above the roof of the odour control room in order to prevent foul air from re-entering the building through air intakes such as windows and louvers. The impact on the eastern property boundary is 9.4 OU. No dwelling is expected in this area and the odour impacts in this area should not be considered for compliance assessment. However, if the odour impacts at the water body are subject to the desirable value of 5 OU, the exhaust stacks need to be 14 m above the roof of the Odour Control Room. Please see **Figure E.1** for a graphical representation of Odour Unit readings in general proximity to the plant.

Excerpt from Original Proposal:

xi. odour control system including redundancy

Foul air is collected from high odour concentration areas and low odour concentration areas. The high concentration areas include: primary inclined plate settler tanks and channels, DensaDeg tanks and channels, MBBR and the sludge holding tank. Low concentration areas include: the fine screens room and BAF cells. High concentration foul air will be collected using FRP piping with volume dampers to control flow. Foul air will be collected under a slight vacuum and sent first through the biological trickling filters and then discharged to the carbon adsorbers. The two biological trickling filters include a recirculation system and nutrient addition system. Foul air from the low concentration areas is collected under a slight vacuum and discharged through the carbon adsorber.

A total of two biological trickling filters and three carbon adsorbers will be provided and configured in a manner to provide the maximum operator flexibility.

The biological trickling filter exhaust fans are 37,380 m³/hr and the carbon adsorber exhaust fan is 40,775 m³/hr.

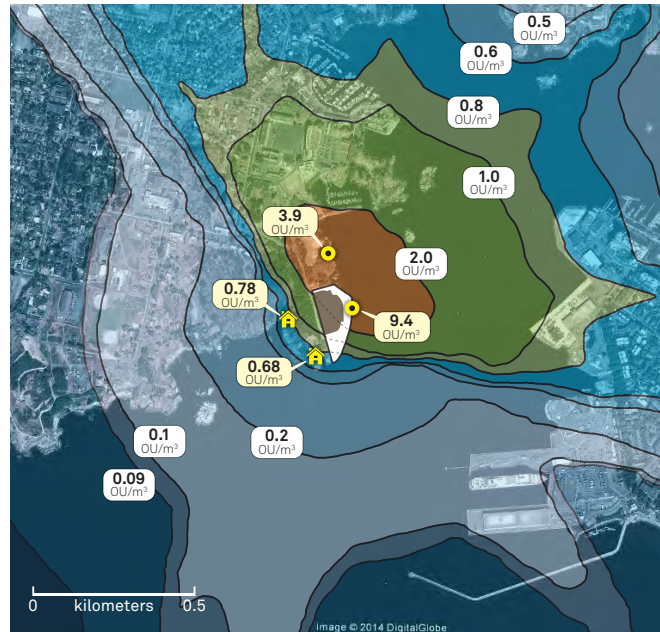


Figure E.1

Odour Unit Readings Near Plant