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REPORT TO CORE AREA LIQUID WASTE MANAGEMENT COMMITTEE
MEETING OF WEDNESDAY, MARCH 26, 2025

SUBJECT **Core Area Wastewater Treatment Plant Odour Mitigation Update**

ISSUE SUMMARY

To provide an update on the Core Area Odour Mitigation Strategy, a summary of actions taken and planned projects moving forward.

BACKGROUND

The McLoughlin Point Wastewater Treatment Plant (MPWWTP) was designed in accordance with the Project Agreement, which included treatment of all odour-laden air before discharge to the environment. All exhausted air at and beyond the plant boundary property line and the shoreline should have a maximum odour concentration of five odour units per cubic meter (OU/m^3). MPWWTP has a sophisticated air collection and handling system, with carbon treatment to manage odour-laden air from the process systems. Despite the state-of-the-art odour control systems, MPWWTP has generated complaints from neighbouring communities since commissioning. As a result, the Capital Regional District (CRD) committed to continued monitoring of the odour control system performance and discharges, and to work directly with equipment suppliers to seek opportunities to further increase potential odour removal.

An internal audit of the odour collection and treatment systems, as well as an analysis of the previous odour complaints, completed at the end of 2022, outlined the odour mitigation steps for future years. These tasks included an odour assessment using dispersion modelling, odour collection upgrades, revisions to plant maintenance procedures, and a recommendation for further review of findings to validate the approach.

Results from the odour modelling work completed by WSP Canada Inc. confirmed the maximum odour concentration at the plant property boundary remains below five OU/m^3 during normal plant operations. During plant maintenance work, when tank covers are removed, odour concentrations at the plant property boundary and within the surrounding community were observed to exceed the maximum five OU/m^3. Staff continue to log and investigate all odour complaints from the community. This information is used to further inform the modelling and understanding of the impact of maintenance activities on odour dispersion.

Odour Complaints and Public Engagement

In 2024, there were 73 odour complaints received, and each odour complaint was investigated to establish the nature of the odour.

Table 1: Summary of Wastewater Odour Complaints Received

Year	Total Odour Incidents	Number of unique complaints
2018	11	11
2019	19	19
2020	29	27
2021	222	69
2022	101	29
2023	149	46
2024	73	33

Odour complaints were received from CRD residents across the region for concerns related to infrastructure in the Core Area, Saanich Peninsula, Southern Gulf Islands, and at least three directly attributed to non-CRD infrastructure. Historically, several odour complaints were attributed to 16 identified cross connections within the City of Victoria collection system. In 2024, the City of Victoria undertook repairs in Barnard Park eliminating cross connections and mitigating a significant odour source.

Of the 73 odour complaints in 2024, staff estimate that 62 were attributed to the Core Area system. Of those 62 complaints, 49 were directly attributed to MPWWTP and 13 attributed to the conveyance system.

Staff continue to engage the Esquimalt Liaison Committee (ELC) on the odour mitigation strategy and ongoing odour concerns. In addition, the ELC is proactively informed of potential odour generating maintenance work. In 2025 semi-annual meetings are scheduled with this committee (February 27 and September 25), with two operational updates provided May 22 and November 27.

Administrative Improvements

As maintenance activities have been identified as the primary source of odour exceedances outside of the plant property boundary, staff continue to refine and optimize the scheduling and execution of maintenance activities to minimize potential odours.

- Standard operating procedures now require a review of these factors to align potential odour-causing maintenance activities with more favorable atmospheric conditions.
- Improved procedures focused on reducing the required time covers are removed. When covers must be removed, operators track odour conditions and increase the application of an odour neutralizing compound (Ecosorb), now aided with an industrial dispersion fan.

The drop in complaints received in 2024 has been aided by administrative improvements and is projected to improve as numerous equipment upgrades are scheduled to complete later in 2025.

2025 Backwash Tank Maintenance

Through the treatment process at MPWWTP, the dirty backwash tank slowly accumulates a granular material used in the biological aerated filters. The design of the plant requires maintenance on a 4–5-year cycle to ensure efficient treatment operation and reduce the risk of odour generation. To access this infrastructure, CRD staff will need to bypass secondary treatment at the facility, resulting in effluent that has undergone primary treatment exiting the outfall into the Salish Sea for 21 days. Permission to proceed with the project required both federal and provincial approval, including notification to First Nations and the public. This will be the largest maintenance project since commissioning in January 2021 and is set to begin on March 26, 2025. For eight days starting March 29, 2025 staff anticipate the potential for increased localized odour generation while staff and contractors work continuously day and night. During this scheduled maintenance, CRD staff will utilize every administrative improvement developed over the last three years to mitigate the odour impact.

2025 System Upgrades

Infrastructure work scheduled for 2025, to improve the system performance and reduce odour emissions, includes:

- Secondary Odour Control System Upgrades: Reduced moisture through the pre-filter improves odour elimination and extends the lifespan of the product and reduces maintenance activities.
- Densadeg No. 1 Scum Removal System: Improved scum removal eliminates an odour source and reduces the required frequency of Plant Maintenance.
- MBBR Odour Extraction Ducting Improvements: The addition of mist eliminators and increasing the duct diameter will improve odour extraction from the MBBR tank.
- Dirty Backwash Tank Odour Treatment System Upgrade: Upgrading the current passive system to a larger fan unit.

Future 2026 Improvements

- Collection system full-service odour control system.
- Upgrades to the primary odour control system mist eliminator.
- Additional odour extraction points for plate settlers and Densadegs.

CONCLUSION

The Capital Regional District recognizes that while operating under normal conditions the McLoughlin Point Wastewater Treatment Plant (MPWWTP) odour control system is fully functional and operating as per design specifications; however, additional system improvements are being made, according to the MPWWTP Odour Control System Review and Assessment. In 2025 and 2026, this odour mitigation project work will continue to improve regular plant operation and reduce the community odour impact from plant maintenance.

RECOMMENDATION

There is no recommendation, this report is for information only.

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