
TO: MAYOR J. LEHMAN AND MEMBERS OF COUNCIL

FROM: S. COULTER, MANAGER OF WASTEWATER OPERATIONS

NOTED: J.F. THOMPSON, P.ENG., CMM, PMP, DIRECTOR OF ENVIRONMENTAL SERVICES
R. FORWARD, MBA, M.SC., P.ENG.
GENERAL MANAGER OF INFRASTRUCTURE AND GROWTH MANAGEMENT
C. LADD, CHIEF ADMINISTRATIVE OFFICER

RE: 2016 LAKE SIMCOE REGIONAL AIRPORT ANNUAL COMPLIANCE REPORT
(FILE: A22-AN)

DATE: APRIL 10, 2017

The purpose of this Memorandum is to apprise Members of Council of the compliance status of the 2016 reporting year for the Lake Simcoe Regional Airport (LSRA) sewage works which is operated by the Wastewater Operations Branch of the Environmental Services Department. The Airport's Amended ECA (Environmental Compliance Approval) for the airport sewage works requires that the facility *Owner* (defined in the ECA as the City of Barrie) report annually to the Ministry of Environment and Climate Change (MOECC) within 90 days of the end of the reporting period (calendar 2016). This Memo is confirmation that the report for the year 2016 was indeed submitted to the MOECC on March 30, 2017 in keeping with requirements of the ECA. A copy of the 2016 Annual Report, which has been submitted to MOECC, has been placed in the Councillor's Lounge for Council's perusal.

The LSRA sewage works are located at 224 Line 7 North, Township of Oro-Medonte, and operates under the MOECC's Amended Environmental Compliance Approval (ECA) No. 3223-ADYKC4 dated September 27, 2016. The ECA was amended in 2016 to reflect the construction of a new hangar and new sewage works to service the hangar. More hangars will be constructed in future on adjacent lots located on the airport property.

Existing sewage treatment processes include:

- Septic tanks, pumps, wet wells, force mains, and subsurface disposal systems (located at both older and new sewage works); and
- Waterloo Biofilters (located only at the new works).

The capacity of the old works is 13,044 litres per day while the capacity of the new works is currently 2,700 litres per day. In 2016, the flow capacity in the new works was exceeded on one occasion and on two occasions the flow capacity of the old station was exceeded. The Wastewater Operations Branch has been trying to minimize infiltration and inflow (I and I) into the older works by installing "rain-stoppers" in manholes, raising manhole covers and locating sources of infiltration through camera work. As flow capacities are relatively low, even a running toilet can cause an exceedance if not promptly addressed. More effort will be required in 2017 to reduce I and I to consistently meet flow capacities in the older works. Some effort may also be required to ensure that the new hangar does not allow more than 2,700 litres per day of water into the sewage system.

Raw sewage and biofilter effluent must also be sampled for quality according to ECA requirements. Objectives for the biofilter effluent are also outlined in the ECA. Results of sampling are compared with these objectives in the table below:

LSRA Compliance with Regulated Parameter Objectives

| Regulated Parameter | Concentration Objective | Sample April 12 th , 2016 | Sample October 20 th , 2016 |
|---|-------------------------|--------------------------------------|--|
| Carbonaceous Biological Oxygen Demand – (cBOD ₅) (mg/L) | 10 | 14 | 8 |
| Total Suspended Solids (TSS) (mg/L) | 10 | 20 | 3 |
| Total Nitrate Nitrogen (NH ₃ –N) (mg/L) | 15 | 13.4 | 20.5 |

The data reveal that there are occasional shortfalls in meeting quality objectives. The MOECC has been made aware of these events. These shortfalls are likely due to cold weather or trace de-icing chemicals entering sewage. In general, sewage is coldest in March or April due to melting ice and snow. Cold weather presents challenges for biological sewage systems which, in our view, is why objectives (and not limits) are imposed by the regulator on these sewage works. The airport also uses “prilled urea” for runway de-icing; the slightest amount of which can cause excess nitrate in sewage. This will require vigilance in ensuring that storage of urea not result in contamination of sewage.

A scheduling error resulted in a sample of raw sewage for the old works being delayed until January 2017.

In summary, the operation of the works was generally successful through 2016 with only minor exceptions as noted above. City staff are collaborating with LSRA staff to ensure that these exceptions can be addressed and corrected in 2017.

If you have any questions or require further information please contact Mr. Sandy Coulter, Manager of Wastewater Operations at extension 5826.