Essex-Windsor Solid Waste Authority
Landfill Liaison Committee Meeting
Meeting Notice & Agenda

Meeting Date:	**Wednesday, May 20, 2020 (Meeting date subject to change)**
Time:	**4:30 PM**
Location:	**Meeting to take place via teleconference (no video)**
	Landfill Liaison Committee Members and Staff will receive e-mail notification which will include telephone dialing instructions

Residents wishing to be able to listen in to the meeting are required to send an e-mail request to the Authority's Waste Disposal Manager Tom Marentette at tommarentette@ewswa.org by noon of the meeting date. Telephone dialing instructions will be provided. Residents will be able to listen to the meeting but will not be allowed to participate in the discussions.

List of Business — Page Numbers

1. **Call to Order**
2. **Roll Call of Landfill Liaison Committee Members Present**

   Marc Bondy

   Richard Colenutt

   Joel Gagnon

   Louise Masse

   Richard Meloche

   Susan Morand

   Cara Salustro

   Kim Verbeek
3. **Amendment to Order and Proceedings Policy EW-001 re: Electronic Meetings during a Declaration of Emergency**
4. **Introductions**
5. **Elections of a Chair and Vice Chair for 2020**
   - **Term: January 1, 2020 to December 31, 2020**

6. Declaration of Pecuniary Interest

7. Delegations

8. Approval of the Minutes

A) November 13, 2019 Meeting Minutes 1-6

9. Reports

A) 2019 Annual Waste Diversion Report (EWSWA) 7-34

B) Precipitation Event Monitoring Memo – Q4 2019 (WSP) 35-38

C) Regional Landfill Composting Report 2019 (EWSWA) 39-53

D) Regional Landfill – Fall 2019 Compliance Monitoring and Leachate Management Program Monitoring Tasks 54-59

E) Regional Landfill Quarterly Operations Report – Q3 2019 60-83

F) Regional Landfill Quarterly Operations Report – Q4 2019 84-104

G) Regional Landfill – December 12, 2019 Waste Disposal Site Inspection Report 105-112

H) Extension of Operating Hours re: ECA Condition 4.7 and Condition 4.8 113-117

10. Other Items

A) Covid-19 (Verbal Report)

B) Bird wires (Verbal Report)

C) **2020 Meeting Schedule:**
July 15, 2020
September 16, 2020
November 18, 2020

11. Next Meeting

The next Committee Meeting is scheduled for July 15, 2020.

12. Adjournment

Essex-Windsor Solid Waste Authority
Landfill Liaison Committee
MINUTES

Meeting Date: **Wednesday, November 13, 2019**

Time: **4:30 PM**

Location: **Essex County Civic and Education Centre**

360 Fairview Avenue West Essex – Meeting Room D

Attendance:

Committee Members:	Kim Verbeek - Chair	Town of Essex Representative
	Jack Albert	Resident Representative 2017-2019
	Susan Morand	Resident Representative 2019-2021
	Louise Masse	Resident Representative 2019-2021
EWSWA Staff:	Tom Marentette	Manager of Waste Disposal
	Teresa Policella	Executive Secretary
Absent:	Richard Meloche	Town of Essex Representative
	Marc Bondy	EWSWA Board Representative
	Joel Gagnon – Vice Chair	Resident Representative 2018-2020
	Cara Salustro	Ministry of the Environment Representative
	Dan VanHorn	Waste Disposal Supervisor

1. **Call to Order.**

   The Chair called the meeting to order at 4:32 p.m.

2. **Declaration of Pecuniary Interest**

   The Chair called for any declarations of pecuniary interest and none were noted. She further expressed that should a conflict of a pecuniary nature or other arise at any time during the course of the meeting that it would be noted at that time.

3. **Election of Members to the Landfill Liaison Committee**

   A. **One (1) Position (Full Term January 1, 2020 – December 31, 2022 – 3 years)**

   The Manager of Waste Disposal stated that Mr. Albert's term will end December 31, 2019.

   One three-year position is available for the term January 1, 2020 to December 31, 2022.

Two applications were submitted for the vacancy. The applicants were Mr. James Levy and Mr. Richard Colenutt.

The Committee reviewed the applications and discussions took place.

Ballots were distributed to committee members for a vote. Four votes were received for Mr. Richard Colenutt.

Moved by Louise Masse
Seconded by Susan Morand
THAT Richard Colenutt be appointed to the Landfill Liaison Committee for the 3-year term commencing January 1, 2020 to December 31, 2022.

-Carried Unanimously
24-2019

4. Delegations

There were no delegations present.

5. Approval of the August 7, 2019 Regular Meeting Minutes

Moved by Susan Morand
Seconded by Jack Albert
THAT the Minutes from the Essex-Windsor Solid Waste Authority Landfill Liaison Committee Meeting dated August 7, 2019 be approved and adopted.

-Carried Unanimously
25-2019

6. Reports

A. WSP Report Q3 2019 – Precipitation Event Monitoring Memo dated October 1, 2019

The Manager of Waste Disposal referred to pages 11 through 14 of the agenda package. The report is a summary of surface monitoring data that was prepared by WSP for the 3rd quarter of 2019.

The Manager of Waste Disposal stated that a sampling event was completed for the 3rd quarter of 2019.

The Manager of Waste Disposal stated the memo refers to surface water samples collected from monitoring stations around the site. The analytical results and historical ranges are also provided in the memo. The memo refers to the Provincial Water Quality Objectives being exceeded, but the concentrations were generally similar to the results of previous sampling events. The concentrations were within historical ranges with some minor exceptions for select parameters at some of the monitoring stations. These concentrations are likely naturally occurring and/or are attributed to sediment loading from the surrounding agricultural lands within the drainage ditches.

The Manager also stated that surface runoff from the Landfill property directly to the White Drain is limited to the perimeter berm adjacent to the Drain. There is no discharge to the drain from within the Landfill.

The Waste Disposal Manager noted that the site map included in the report indicates where the surface water monitoring stations are located. A list of historical ranges are provided in the agenda package.

The Waste Disposal Manager asked if there were any questions. None were noted.

Moved by Jack Albert
Seconded by Susan Morand
THAT the WSP Report Q3 2019 – Precipitation Event Monitoring Memo dated October 1, 2019 be received as information.

-Carried Unanimously
26-2019

B. Essex-Windsor Regional Landfill Quarterly Operations Report – Q2 2019

The Manager of Waste Disposal referred to page 18 of the agenda package. He noted that there were no incidents of non-compliance during the second quarter of 2019.

Ms. Masse noted that there was an error in Table 1B on page 18 of the agenda package. The table should compare 2018 and 2019 instead of 2017 and 2018.

The Manager of Waste Disposal referred to page 21 and 22 of the agenda package. He noted that contaminated soil is still a large contributor of the total waste stream.

Ms. Masse asked if fees are charged for bringing in contaminated soil. The Manager of Waste Disposal replied yes.

Ms. Masse asked what the soil was contaminated with? The Manager of Waste Disposal stated that the soil could be impacted by low levels of metals such as arsenic and lead or petroleum hydrocarbons. He stated that a significant portion of the petroleum hydrocarbons dissipate during the landfill process. These parameters or considered non-hazardous materials. All soils for disposal require testing prior to being accepted at the landfill.

Ms. Masse asked if the contaminated soil can be used as cover. The Manager of Waste Disposal stated that the material is used as interim or daily cover only. He noted the native, clean blue/gray clay is also used as interim and final cover material.

Ms. Masse asked if the workers wear masks. The Manager of Waste Disposal stated that masks are available for staff if requested.

The Manager referred to Table 6 on page 22 of the agenda package. The approval issued by the Ministry mandates a minimum compaction rate of 600 kg/m3. The Authority is exceeding the minimum compaction at an approximate rate of 800 kg/m3.

The Manager of Waste Disposal stated that the Authority did not receive any complaints in the second quarter of 2019.

The Manager stated that disposal operations were conducted in Cell 4 North in this quarter.

The Manager stated that composting volumes have increased.

He also noted that the leachate system is functioning as designed.

The Manager of Waste Disposal asked if there were any questions. None were noted.

Moved by Jack Albert
Seconded by Susan Morand
THAT the Essex-Windsor Regional Landfill Quarterly Operations Report Q2-2019 be received as information.

-Carried Unanimously
27-2019

7. Other Items

A. Regional Landfill Tour – Verbal Report

The Manager of Waste Disposal stated a tour of the Regional Landfill was held on September 19, 2019. He stated that a tour was not conducted last year due to on-site cell construction. The tour was conducted during regular operating hours and 27 people attended the tour.

The bus tour was conducted around the perimeter of the site and paused at various points of interest and to answer questions from the attendees. The tour highlighted landfill gas collection and flare, the composting operation, the new construction of Cell 3 South, the litter control fences, monitoring wells, cover materials, odour control and the process of collecting and treating leachate. There were opportunities to smell different areas of the landfill. He stated the overall feedback was positive from everyone in

attendance. It was also noted that an anniversary celebration was held at the recycling centre in Windsor.

Moved by Jack Albert
Seconded by Susan Morand
That the Regional Landfill Tour – Verbal Report be received as information.

-Carried Unanimously
28-2019

B. **Current Landfill Operations Update & Information – Verbal Report**

The Manager of Waste Disposal stated that Cell 3 South if currently being landfilled. The Cell is split into 4 zones. Zones 1 and 2 are currently being landfilled and are filling up quickly. He explained that there is a lot of capacity still left for the next 2-3 years.

Ms. Masse asked if top cover is being done for Cell 2. The Manager of Waste Disposal stated that a portion of Cell 2 has been "top covered" and the balance will be completed landfilling progresses.

Ms. Verbeek asked if Cell 3 North is full. The Manager of Waste Disposal replied no.

Moved by Jack Albert
Seconded by Susan Morand
That the Current Landfill Operations Update & Information – Verbal Report be received as information.

-Carried Unanimously
29-2019

C. **2020 Meeting Schedule**

The 2020 schedule will be distributed with the May 20, 2020 agenda.

Moved by Louise Masse
Seconded by Jack Albert

-Carried Unanimously
30-2019

8. Next Meeting

The next meeting is scheduled for May 20, 2020.

9. Adjournment

The Manager of Waste Disposal thanked Mr. Albert for being a member of the LLC Committee.

Moved by Louise Masse
Seconded by Jack Albert
THAT the Committee stand adjourned at 5:07 PM.

-Carried Unanimously
31-2019

All of which is respectfully submitted.

Kim Verbeek
Chair

Tom Marentette
Manager of Waste Disposal

Essex-Windsor Residential Waste Diversion 2019

Report Date: March 31, 2020

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This document is formatted for accessibility and available in other formats upon request.

Essex-Windsor Residential Waste Diversion

Annual Report for January – December 2019

1 Introduction

The Annual Waste Diversion Report provides information on the waste diversion activities carried out by the Essex-Windsor Solid Waste Authority during 2019 in compliance with Condition 5.2 of the Environmental Assessment Approval for the Essex-Windsor Regional Landfill.

1.1 Residential Waste Diversion Rate 2019

This report also provides the Authority with the ability to track any changes in the percentage of waste diverted through its waste diversion initiatives from year to year.

In 2019, the seven County of Essex municipalities and the City of Windsor delivered 102,452 tonnes of residential waste to the Regional Landfill. During the same time period, 56,047 tonnes of residential waste were diverted from the landfill via the blue and red box recycling program, municipal hazardous or special waste program, composting, and other waste diversion programs. These waste diversion initiatives resulted in a 2019 residential diversion rate of 34.4%. The 2018 diversion rate was 36.3%.

2019 Residential Diversion Rate is calculated as follows:

$$\frac{\text{56,047 Tonnes Diverted (see Table 18, Page 23)}}{\text{102,452 Tonnes of Residential Refuse Collected Curbside + 4,513 Residuals + 56,047 Diverted Tonnes}} = \frac{56{,}047}{163{,}012} \times 100 = 34.4\%$$

2018 Residential Diversion Rate is calculated as follows:

$$\frac{\text{58,750 Tonnes Diverted (see Table 18, Page 23)}}{\text{100,565 Tonnes of Residential Refuse Collected Curbside + 2,440 Residuals + 58,750 Diverted Tonnes}} = \frac{58{,}750}{161{,}755} \times 100 = 36.3\%$$

2 Programs

2.1 Residential Recycling Blue Box Program

The tonnes of residential recyclable materials collected curbside during 2019 totaled 25,426 tonnes. The overall tonnes of recyclables collected in 2019 were slightly lower compared to the 26,011 tonnes collected in 2018.

A monthly summary and comparison of the tonnes collected curbside from the City and the County in 2018 and 2019 is shown in Table 1. Collection of recyclables in the County was carried out under contract in 2019 by Windsor Disposal Services Ltd. Collection of recyclables in Windsor was carried out by Green For Life Environmental Inc.

All materials were processed at the Authority owned Essex-Windsor Material Recovery Facility (MRF), located at E.C. Row and Central Avenue in Windsor where Windsor Disposal Services via contract process delivered materials.

In addition to the residential recyclables collected curbside, 495 tonnes of recyclables were delivered to the Authority's Public Drop Off Depots in 2019. This is down 33% from 2018 where 735 tonnes were delivered.

Table 1: Residential Recycling Blue Box Collection Tonnes by Month Comparison: 2018 with 2019

Month	2019 County of Essex Tonnes	2019 City of Windsor Tonnes	2019 Combined Tonnes	2018 Comparable Tonnes
January	1,099.61	1,075.24	**2,174.85**	2,343.65
February	972.63	917.59	**1,890.22**	1,955.57
March	945.63	932.95	**1,878.58**	2,090.20
April	1,063.56	1,119.42	**2,182.98**	2,038.99
May	1,287.05	1,283.19	**2,570.24**	2,521.74
June	1,007.06	1,031.30	**2,038.36**	2,146.27
July	1,086.20	1,110.90	**2,197.10**	1,980.10
August	1,025.06	1,053.24	**2,078.30**	2,210.14
September	998.25	1,030.87	**2,029.12**	2,039.40
October	1,127.57	1,097.80	**2,225.37**	2,231.67
November	1,040.92	1,032.53	**2,073.45**	2,296.10
December	1,075.17	1,012.20	**2,087.37**	2,156.72
Column Totals:	12,728.71	12,697.23	**25,425.94**	26,010.55

Notes: The County of Essex includes the Town of Amherstburg, the Town of Essex, the Town of Kingsville, the Town of Lakeshore, the Town of LaSalle, the Municipality of Leamington and the Town of Tecumseh.

2.2 Recycling Residual Disposal

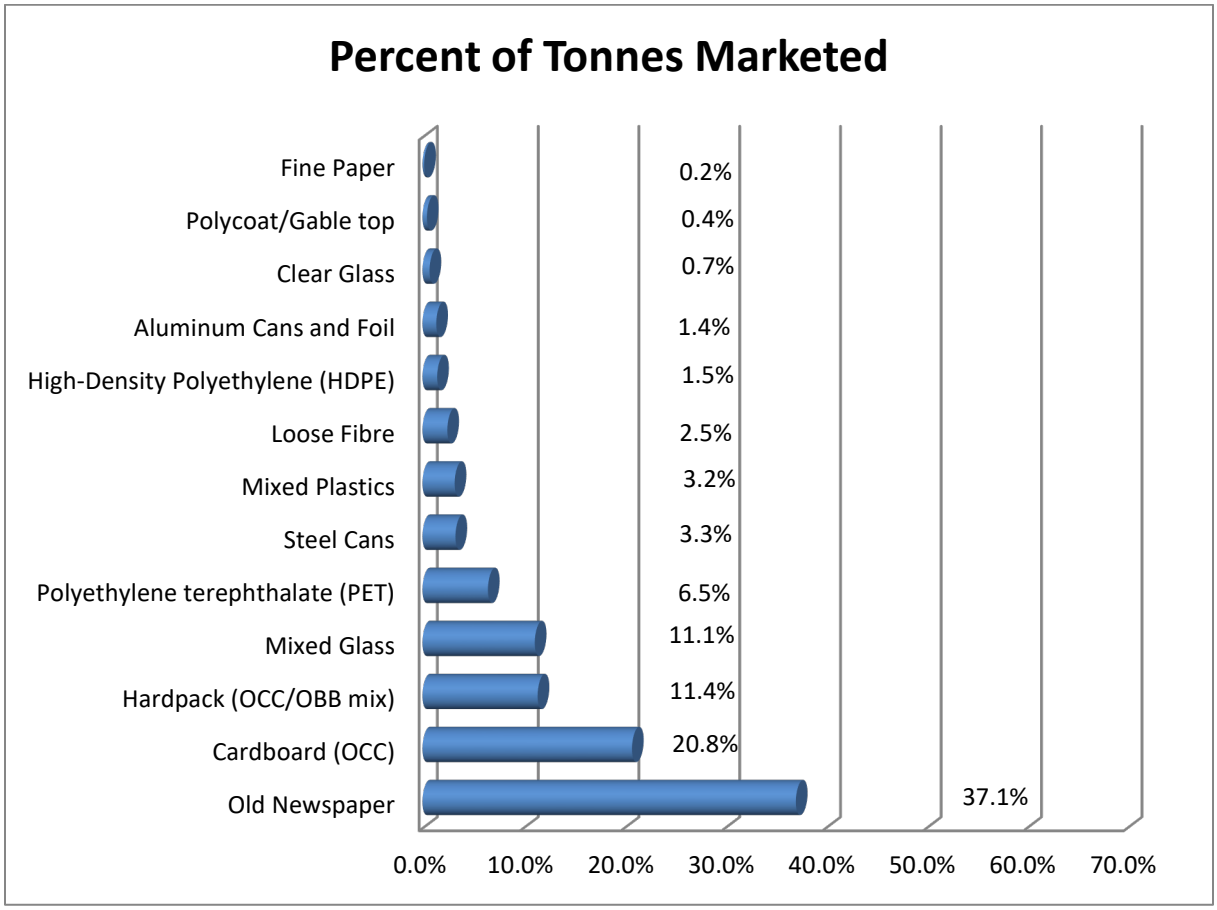
Recycling Residual is the material that is left over after the processing of the recyclable materials are collected and delivered to the MRF. The residuals consist of contaminated materials, non-recyclable materials, and packaging materials used to secure recyclables placed in the recycle box. A total of 4,513.29 tonnes of recycling residuals was disposed of in 2019.

3 Tonnes Marketed

For the purposes of waste diversion calculations, tonnes marketed are used instead of the tonnes collected curbside. The tonnes marketed by material type are shown in Table 2, 3 and 4. The Essex-Windsor Solid Waste Authority markets all materials processed through the MRF, and retains 100% of the revenue from the sale of materials. Revenue from the sale of

material in 2019 was approximately $2,070,666 (see Table 5) representing a basket-of-goods revenue of approximately $101/tonne compared to a basket-of-goods revenue of $134/tonne in 2018. A brief discussion on market conditions and prices for each of the materials follows.

Figure 1: Percent of Tonnes for 2019 Marketed Recyclables



Note: Due to rounding total tonnes marketed does not total 100%.

3.1 Fibres

Old Newspaper (ONP)

Ontario market price trends are published annually by the Continuous Improvement Fund's (CIFs) Price Sheet (January 2020). For 2019, ONP prices started the year at a high of $61 per tonne in January and then declined gradually to finally close out the year at $33 per tonne in December. The EWSWA average price for 2019 was $55 per tonne which is

higher than this provincially published CIF average of $44 per tonne. The EWSWA 2018 average price for ONP was $75 per tonne.

Old Corrugated Cardboard (OCC)

The EWSWA price for old corrugated cardboard again started the year high at $122 per tonne and dropped due to global market conditions to a low of $60 per tonne by the end of 2019. The 2019 EWSWA average price per tonne was $81 compared to $126 in 2018. The Authority's average price of $81 per tonne was just short of the provincial average of $84 per tonne per the CIF Price Sheet- January 2020.

Hardpack (OBB)

(Example: cereal boxes, cardboard)

EWSWA's prices for this cardboard/boxboard mix ranged from a high of $88 to a low of $1 per tonne in 2019. The 2019 EWSWA average price was $17 compared to $89 per tonne in 2018, again as a result of global market conditions. Even though market prices dropped severely in 2019, the Authority's average price of $17 per tonne was slightly lower than the provincial average ($19 per tonne) per the CIF Price Sheet- January 2020.

Fine Paper

Fine paper was sold in 2019 with an average price of $207 per tonne. This is a decrease compared to the $279 per tonne received in 2018 again as a result of the fibre market crisis.

Loose Fibre

As a result of a major equipment changeover in the Fibre MRF in 2019, the Fibre MRF was unable to process incoming delivered materials for a few days. Therefore, all incoming materials during this timeframe to the Fibre MRF were shipped loose to a fibre recycling processor with no charge to the Authority due to fibre market conditions.

3.2 Containers

Steel Cans

The pricing for steel cans ranged from a high of $333 per tonne to a low of $155 per tonne during 2019. The 2019 average price was $248 per tonne compared to $304 per tonne in 2018.

Aluminum Cans and Foil

The pricing for aluminium cans ranged from a high of $1,615 per tonne to a low of $1,338 per tonne. The 2019 average price was $1,477 per tonne compared to $1,761 in 2018. Aluminum foil was sold at an average price of $374 during 2019.

Glass

The average price for clear glass, marketed for new containers, in 2019 was $32 per tonne. This is slightly lower than the 2018 average price of $36 per tonne. Clear glass is the only product that is not marketed FOB (Freight On Board) at the Essex-Windsor MRF. Mixed coloured glass was delivered to the Regional Landfill for use as road base.

Polyethylene terephthalate (PET)

(Example: Plastic Water Bottles)

PET prices ranged from a high of $493 per tonne to a low of $168 per tonne in 2019. The average price was $363 per tonne in 2019 which is lower than the 2018 average price of $438 per tonne.

High-Density Polyethylene (HDPE)

(Example: Laundry Soap Bottles)

HDPE prices ranged from a high of $562 per tonne to a low of $315 per tonne in 2019. The average price was $431 per tonne in 2019 compared to the 2018 average price of $497 per tonne.

Polycoat and Gable Top

(Example: Milk Cartons)

Five loads of polycoat were shipped out in 2019 at an average price of $32 per tonne compared to the average price of $76 per tonne in 2018.

Mixed Plastics

(Example: tubs & lids, clamshells, trays, cups, plastic bottles, excludes polystyrene and plastic film bags)

In 2019, mixed plastic prices ranged from a high of $117 per tonne to a low of $80 per tonne. The average price was $110 per tonne in 2019 compared to the average price of $72 per tonne in 2018.

Table 2: Marketed Fibres Summary Comparison: 2018 versus 2019

Fibre Material	2019 Tonnes	2018 Tonnes	% Change
Old Newspaper (ONP)	7,608	11,472	-33.7%
Cardboard (OCC)	4,269	4,062	5.1%
Hardpack (OCC/OBB mix)	2,346	1,647	42.4%
Fine Paper	36	81	-55.6%
Loose Fibre	507	237	113.9%
Totals:	**14,766**	**17,499**	**-15.6%**

Table 3: Marketed Containers Summary Comparison: 2018 versus 2019

Container Material	2019 Tonnes	2018 Tonnes	% Change
Clear Glass	145	207	-30.0%
Mixed Glass	2,288	2,446	-6.5%
Steel Cans	672	773	-13.1%
Aluminum Cans and Foil	281	298	-5.7%
Polyethylene terephthalate (PET)	1,334	1,554	-14.2%
High-Density Polyethylene (HDPE)	300	312	-3.8%
Polycoat/Gable top	91	97	-6.2%
Mixed Plastics	656	718	-8.6%
Totals:	**5,767**	**6,405**	**-10.0%**

Table 4: Residential Recyclables Marketed Comparison: 2018 versus 2019

Tonnes Marketed	2019 Tonnes	2018 Tonnes
a) Total Tonnes Marketed	20,533	23,904
b) ICI Tonnes	(435)	(746)
Net Marketed Residential Recyclables	20,098	23,158

Notes: a) Total Tonnes Marketed less b) ICI Delivered Tonnes = Net Marketed Residential Recyclables.

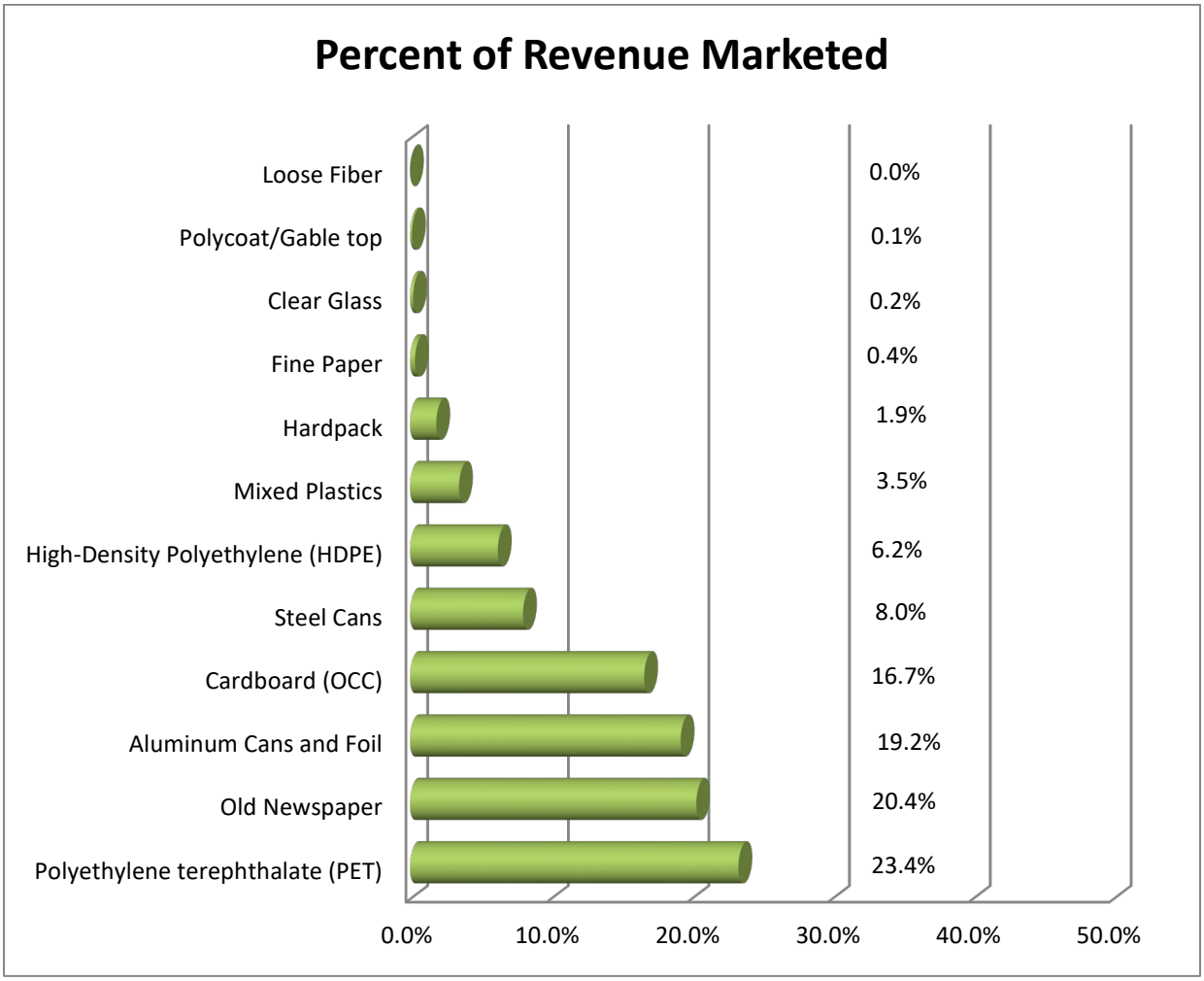
Table 5: Revenue Comparison: 2018 versus 2019

Recyclable Material	2019 Revenue	2018 Revenue
Old Newspaper (ONP#8)	$421,670	$858,637
Cardboard (OCC)	$344,893	$513,125
Hardpack	$38,712	$146,834
Fine Paper	$7,416	$22,470
Loose Fibre	$0	$1,182
Clear Glass	$4,668	$7,407
Steel Cans	$166,520	$235,222
Aluminum Cans and Foil	$398,545	$525,109
Polyethylene terephthalate (PET)	$483,675	$680,412
High-Density Polyethylene (HDPE)	$129,411	$155,100
Polycoat/Gable top	$2,932	$7,330
Mixed Plastics	$72,224	$51,916
Total Revenue	**$2,070,666**	**$3,204,744**

Table 6: Annual Revenue Comparison

Year	Revenue
2014	$3,306,026
2015	$3,101,234
2016	$3,414,055
2017	$4,241,411
2018	$3,204,744
2019	$2,070,666

Figure 2: Percent of Revenue Marketed in 2019



Note: Due to rounding total revenue marketed does not total 100%.

3.3 Markets

While delivered tonnages for 2019 were similar to 2018, there was a significant reduction in revenue generated in 2019 from the recycling markets. Due to import regulations changing in China, the North American recycling markets in 2019 finally hit an all-time low. This impacted domestic markets in 2019 as witnessed by oversaturation with recycling materials and thereby imposing greater demands (e.g., quality specifications enforced, dropping prices) to domestic sellers like EWSWA.

As a result, early in 2019, the fibre markets were hit hardest, as prices fell to an all-time low and eventually stabilized at this new low market price by the end of the year. Container market prices didn't start their decline until late summer. It is important to note that while prices for containers dropped, this decrease was nowhere near the significance of the hardship experienced in the fibre markets in 2019. These significant market changes are reflected in Table 5 on page 9 of this report. More importantly, due to many EWSWA strategies like: pre-establishment in the domestic market, efforts of Waste Diversion staff to produce higher quality materials through continuous improvement efforts and capital investment, and ongoing successful work with buyers and contractors, EWSWA was able to move all materials in 2019.

4 Other Residential Recycling Programs

4.1 White Goods

Since 1991, white goods, such as fridges, stoves, air conditioners, washers, dryers, freezers dishwashers, etc. have been restricted from landfill disposal. In 2019, curbside collection of white goods from County municipalities captured 1,738 white good units (approximately 156 tonnes).

While the City of Windsor did not operate a white goods collection program during 2019 there were also 193 tonnes of white goods delivered to the Public Drop Off Depots for a combined total of approximately 349 tonnes. Using the Resource Productivity & Recovery Authority (RPRA) Municipal Datacall residual percentage of 20%, approximately 279 tonnes of white goods were recycled and diverted. Table 8 details the white goods collection program for each of the municipalities in the County of Essex by month during 2019.

Table 7: Summary of White Goods Diversion for 2019

White Goods Summary	2019 Tonnes
Curbside Collection Converted to Tonnes	156.42
Drop Off Depots	192.92
Total White Goods Tonnes	349.34
Less 20% Residual Calculation Amount	(69.87)
Total Tonnes Recycled and Diverted	**279.47**

Table 8: 2019 White Goods Collected by Month in Municipalities across Essex County

Month	Tecumseh	Essex	LaSalle	Amherstburg	Leamington	Kingsville	Total for Month
January	7	13	22	21	11	24	98
February	8	18	20	29	16	20	111
March	12	15	19	24	14	17	101
April	11	18	32	29	17	20	127
May	18	9	34	29	34	27	151
June	17	25	39	43	24	29	177
July	16	20	32	44	22	28	162
August	22	21	20	32	25	33	153
September	20	30	30	35	26	12	153
October	14	22	42	34	35	28	175
November	28	31	37	42	30	30	198
December	15	26	20	22	17	32	132
Total Units	**188**	**248**	**347**	**384**	**271**	**300**	**1,738**

Notes: 1,738 units with the average weight of 90 kilograms per unit results in diversion of approximately 156.42 tonnes; there was no Tonnes reported for Lakeshore in 2019.

4.2 Tires

In 2019, EWSWA like all other municipalities transitioned their tire recycling program early in the year from the Ontario Tire Stewardship Used Tires Program to the Used Tire program under Resource Productivity and Recovery Authority (RPRA). RPRA's goal is to support a waste-free Ontario, where all resources are reused and recycled through the new Individual Producer Responsibility (IPR) framework. This is due to the Tires Regulation under the Resource Recovery and Circular Economy Act, 2016 (RRCEA) that designated tires as the first material under Ontario's IPR framework to transition.

While automotive tire recycling is now offered at many locations across Essex-Windsor, EWSWA does still collect and recycle used tires through the new RPRA program. In 2019, RPRA Datacall resulted in diversion of approximately 2,830.90 tonnes of used tires in the Essex-Windsor area.

4.3 Scrap Metal

There are 40-yard roll off bins located at the Public Drop-off Depot for collection of ferrous and non-ferrous scrap metal material. The metals are sold through a competitive bid process to local scrap dealers. In 2019, approximately 588.08 tonnes of metals were collected and recycled. While the Authority does not advertise that it accepts other metal household objects besides steel cans in the blue box program, the Authority does receive and does try to capture any metal objects which are called "mixed metal". An additional 71.86 tonnes of mixed metals were received in 2019 for a total of 660 tonnes of scrap metal.

4.4 Electronics Recycling

Under contract to the Authority, Greentec supplies roll off bins for the collection of electronics at the Authority's Public Drop-off Depots. EWSWA staff place the electronic items from the public in these bins. In 2019, a total of 316.61 tonnes of computers, televisions, audio visual equipment, and various electronic items were collected through the Waste Electrical and Electronics Equipment (WEEE) stewardship program. Based on a residual portion of 20%, the total electronics recycled was approximately 253.29 tonnes.

4.5 Deposit/Return Program

The Authority implemented a capture program at its Material Recovery Facility for deposit/return containers (i.e. aluminum beer cans; glass, wine and spirit bottles) that were placed curbside for blue box collection and continued to be successful in 2019. During 2019, approximately 39 tonnes of deposit/return containers were received at the MRF and are included as part of the 2,196.94 tonnes that were diverted throughout Essex-Windsor as part of the Deposit/Return & Stewardship Program. The 2,197 diversion tonnes figure is calculated as part of the 2019 Resource Productivity and Recovery Authority Datacall and is based on the Essex-Windsor population as determined by the latest Statistics Canada Census data.

Table 9: Other Recyclables Comparison: 2018 versus 2019

Recyclable Material	2019 Tonnes	2018 Tonnes	% Change
White Goods (all sites)	279	227	42.73%
Used Tire Program	2,831	2,831	0.00%
Scrap & Mixed Metal	660	644	2.48%
Electronics	253	270	-6.30%
Deposit/Return & Stewardship Program	2,197	2,197	0.00%
Total Other Recyclables	6,220	6,169	1.56%

Note: RPRA Datacall calculation is based on population for Used Tire Program and Deposit/Return & Stewardship Program in the Essex-Windsor area as reported by the Statistics Canada Census. .

5 Residential Organics

5.1 Yard Waste

Grass, leaves, tree trimmings and brush are restricted from disposal at the Essex-Windsor Regional Landfill Site. As a result many local municipalities have established separate collection systems for yard waste, including special collections in January for Christmas trees. Furthermore, individual residents and grounds maintenance contractors also brought yard waste to one of the three yard waste depots operated by the Essex-Windsor Solid Waste Authority in 2019.

The Essex-Windsor area accepts the use of paper bags, wheeled carts, garbage bins and cardboard boxes for the collection of yard waste. Plastic

bags are not accepted. Approximately 30,293 tonnes of yard waste was received in 2019, which a decrease of 12% compared to the 34,435 tonnes delivered in 2018.

Table 10: 2019 Yard Waste Summary for all sites

Material Type	Windsor Public Drop Off	Kingsville Transfer Station 2	Regional Landfill
Municipal Delivered	11,315	1,736	4,374
Residential Delivered	4,969	1,150	163
Total Res. Organics	**16,284**	**2,886**	**4,537**
ICI Organics and Pallets	492	341	5,753
Grand Total (Tonnes)	**16,776**	**3,227**	**10,290**

Note: ICI is Industrial, Commercial and Institutional delivered material type.

Table 11: Yard Waste Tonnes Comparison: 2018 versus 2019

Material Type	2019 Tonnes	2018 Tonnes
Municipal Delivered	17,425	15,959
Residential Delivered	6,282	7,462
Total Res. Organics	**23,707**	**23,421**
ICI Organics and Pallets	6,586	11,014
Grand TOTAL (Tonnes)	**30,293**	**34,435**

Note: ICI is Industrial, Commercial and Institutional delivered material type.

5.2 Screened Compost Sales

The Authority undertakes an in depth process to the organics and yard waste it receives to turn it into saleable, quality compost. The composting process involves grinding up yard waste and placing it in long rows called 'windrows'. The material is turned frequently and the temperature is maintained above 55 degrees Celsius in order to kill any pathogens or weed seeds. Once the compost has matured it is tested, screened, and then sold for use in landscaping, as well as flower and vegetable gardens.

In 2019 compost was sold as bulk (delivered or pick-up), bag your own, and prepackaged items as listed in Table 12.

Table 12: Compost Sales 2019 Summary

Compost Material	Quantity Sold	Tonnes
Delivered	750 cubic yards	441
Bulk Sales	25,251 cubic yards	14,848
Bag Your Own Compost	1,488 bags	40
Prepackaged Garden Gold Compost	11,998 bags	228
		Total: 15,557

Notes: Prepackaged bag weights are based on approximately 19 kg/bag; bag your own compost is approximately 27 kg/bag and bulk compost is approximately 588 kg/cubic yard.

Under contract to the Authority, Frank Dupuis Landscaping and Trucking provided delivery services for the sale of 441 tonnes of bulk compost to local residents. Also 14,848 tonnes in bulk sales were sold to residents and businesses at EWSWA Depots. Additionally, about 11,998 prepackaged bags of compost were sold at the Depots. Many residents also bagged their own compost at one of the depots. The combined total weight of compost sold was approximately 15,557 tonnes. In 2019, compost sales totaled $227,185.

5.3 Backyard Composting

Backyard composters (BYC) with the brand name "The Earth Machine" and "The Green Cone" were sold to Essex-Windsor residents in 2019. The Earth Machine was sold through local Home Hardware stores year-round. Both units were sold during the Truckload Sale held in the City of Windsor. Approximately 37 Earth Machine units were sold through the Home Hardware stores and 217 units were sold during the truckload and miscellaneous sales for a total of 254 units sold in 2019. There were 94 Green Cones sold in 2019. This brings the cumulative total to 752 Green Cones distributed since 2010, which is when they were first introduced to the area. The combined BYC distributed in 2019 was 348 units bringing the total number of units sold since 1988 to 39,881 units.

Current research has indicated that approximately 100 kg/year/BYC is diverted as a result of the backyard composting program. This translates into 3,988 tonnes of organic waste diverted from the landfill through this program. This does not consider homemade composters or composting done independent of the Authority's backyard composting program.

Table 13: Residential Organic Waste Reduction Comparison: 2017 — 2019

Residential Organic Programs	2019 Tonnes	2018 Tonnes	2017 Tonnes
BYC Program	3,988	3,953	3,912
Mulching Blades	1,343	1,343	1,343
Yard Waste (Residential)	23,707	23,421	19,099
Total Residential Organics	29,038	28,717	24,354

Notes: The mulching blade program was no longer directly offered through EWSWA after 2001. Even though mulching blades and mowers are used by residents in the area, it can't be measured for the purposes of this report; therefore, no increase in diversion is indicated.

6 Promotion and Education

6.1 School and Community Presentations

In 2019, Authority staff conducted 24 presentations at various locations where 2,544 people from community groups, events, open houses, schools etc. attended. The emphasis in 2019 presentations was placed on how to reduce, reuse and recycle plastic.

6.2 Special Community Events

Authority staff organized displays and talked to area residents at various special events scheduled at the Horticultural Show, Earth Day Celebrations and the Truckload Sale. There were 65 special events serviced with recycling in 2019. Many special event venues have implemented their own sustainable recycling program throughout the season (April through September) and do not require the per event service offered by EWSWA.

6.3 On-going Public Education Activities

The Authority maintains a Waste Reduction Hotline (1-800-563-3377), a website (www.ewswa.org), and an annual newsletter called EnviroTips which is delivered to each household and is available online.

E-newsletters are also part of the program as they are low cost and reach residents quickly and effectively. The Authority has 2,964 e-newsletter subscribers. Industry standards indicate that a decent open rate is anything between 20-33%. Open rates for e-newsletters are as follows: Truckload Sale 63%; Gold Box, 87%; Waste Reduction Week, 63%.

The EWSWA website (www.ewswa.org) is updated on a regular basis to provide detailed information and public education to residents. Topics covered range from waste management and reduction, to details about waste diversion activities. Residents have access to instructions, tenders, reports, calendars, acceptable recycle box materials, incentives, etc. In 2019 there were approximately 38,000 hits on the website bringing the total hits to 281,077 hits since the launch of the new website in 2012; the monthly average hits in 2019 had a duration of approximately 1.47 minutes. The 'What Goes Where' material search database resulted in 8,598 searches; municipal calendar searches were at 13,396 and PDO, Windsor at 8,164 searches in 2019. In 2019, method of access by device was 53.6% mobile; 39.5% desktop computer and 6.9% tablets.

Recycle Coach is an app which makes recycling and collection schedule information easy to find. The app is continuously developing new programs that combat complacency and gets people re-engaged in recycling. It promotes best practices ideas on better waste management to improve outcomes such as increasing the amount recycled, proper disposal and diversion of solid waste, etc. In 2019, EWSWA made it a priority to promote this app and get local residents onboard with accessing information around solid waste through this app. As a result, increased metrics listed below were noted for Recycle Coach in 2019:

- 9,619 total subscribers
- 130,743 resident interactions in 2019
- 10,895 average monthly resident interactions

EWSWA also continues to maintain a presence in social media sites such as Facebook and Twitter. EWSWA started with 30 Twitter followers in January 2015 and had 755 followers by December 2019. EWSWA has 1,130 followers on Facebook with the highest reach of 17,200 on the "What is the Oops Sticker?" in a 2019 post.

6.4 Gold Star Program

In 2016, the Authority launched a new recycling incentive program aimed at increasing public awareness regarding the red and blue box recycling program. Residents were encouraged to apply for a new "Gold Recycling Box" through a program that evaluated their curbside recycling, provided feedback and rewarded successful recyclers with a gold box. The program's

ultimate objective is to decrease the amount of contamination being put out by residents and thereby decrease the amount of contamination at the MRFs. The program was renewed in 2017 and 2,050 residents registered for the "Gold Star" program. In 2017, 1,000 households were inspected and 604 gold boxes were awarded. In 2018, the fourth round of inspections were undertaken to complete the inspections of all 2,050 residents who registered in 2017. During 2018, 613 gold boxes were awarded. The program continued in 2019 being offered to the first 300 online applicants; 284 gold boxes were awarded in 2019 to keep offering this positive brand to the public.

7 Municipal Hazardous or Special Wastes (MHSW) Program

7.1 MHSW Depots

The Essex-Windsor Solid Waste Authority opened its Windsor MHSW Depot in October 1995. In addition to the Windsor facility, the Authority opened a second MHSW Depot at Transfer Station No. 2 in the Town of Kingsville in 1997. A third depot was opened at the Essex-Windsor Regional Landfill Site in October 2013. The Depots replaced the annual Household Chemical Waste Days held in Essex-Windsor. All facilities were operated year-round in 2019. A total of 596,936 litres and 112,741 kg of MHSW materials were delivered to the sites in 2019. See Table 14 and 15 for details.

Reuse Centre

A Reuse Centre has been operational at the Windsor MHSW facility since 1995.

Paint is distributed in both 1-gallon and 5-gallon pails for reuse. According to the records, 2,785 residents accessed the Reuse Centre and took 57,908 products or approximately 83,516 kg of paint and miscellaneous materials in 2019 compared to 54,555 products or 77,853 kg of reusable materials in 2018.

Demand for the Reuse Centre remains high, however quantities available depend largely on how good the products are that are delivered by households to the facility.

Mercury Roundup Program

In June 2019, the Essex-Windsor Solid Waste Authority launched Mercury Roundup: an initiative designed to divert a toxic chemical—liquid mercury—from the waste stream. In partnership with Scout Environmental, and with funding from the Ontario Trillium Foundation, Essex-Windsor has become one of the first environmentally conscious municipalities to launch the Mercury Roundup program that will expand to six other Ontario municipalities by 2021. Residents who dropped off a product containing mercury received a free digital thermometer. Since June 2019, 118 products were received equalling about 0.6443 kilograms of mercury.

Table 14: Municipal Hazardous or Special Waste for 2019 in Litres

Material	MHSW from Facilities	Reuse Centre Quantities	Total Litres
Adhesives/Flammable Liquids	62,704	20,077	82,781
Aerosols	10,068	1,390	11,458
Antifreeze (Glycol)	9,447	0	9,447
Corrosive Liquid	6,162	343	6,505
Inorganic Acids	1,022	0	1,022
Paints & Coatings	222,554	52,927	275,481
Pesticides	6,600	692	7,292
Waste Oils (hydraulic fluid)	19,500	0	19,500
Recyclable Waste Oil	183,450	0	183,450
Total MHSW Litres	**521,507**	**75,429**	**596,936**

Table 15: Municipal Hazardous or Special Waste for 2019 in Kilograms

Material	MHSW from Facilities	Reuse Centre Quantities	Total Kgs
Car Batteries	30,350	0	30,350
Dry Cell Batteries	3,026	0	3,026
Fire Extinguishers	2,241	0	2,241
Fluorescents/Misc. Lamps/Ballasts	23,635	0	23,635
Inorganic Oxidizers	2,641	8,087	10,728
Mercury (HG items)/Lead	513	0	513
Pharmaceuticals	1,226	0	1,226
Plastic Used Oil Containers	16,991	0	16,991
Propane Cylinders	4,577	0	4,577
Propane Tanks/Misc. Tanks	18,093	0	18,093
Rechargeable & Mixed Batteries	1	0	1
Corrosive Solids (e.g. cement)	471	0	471
Waste Oil Filters	889	0	889
Total MHSW Kilograms	**104,654**	**8,087**	**112,741**

Table 16: MHSW Diversion Comparison: 2018 versus 2019

	2019 Tonnes	2018 Tonnes
MHSW Recycled or Reused	709	723
MHSW not Recycled	(18)	(19)
Total MHSW Diverted	**691**	**704**

7.2 Waste Motor Oil

Waste motor oil is collected curbside with the residential recycling program. As well, residents are able to deliver oil to the MHSW facilities. The quantity of waste motor oil collected during 2019 was 183,450 litres, which is down by 0.8% compared to the 184,950 litres collected in 2018. The quantity of oil collected by month is shown in Table 17 with historical data over four years.

Table 17: Motor Oil Collected (Litres) 2016 through 2019

Month	2019 Litres	2018 Litres	2017 Litres	2016 Litres
January	8,875	10,225	14,680	9,390
February	6,025	4,950	8,700	12,480
March	11,025	13,100	7,311	10,160
April	20,850	20,800	20,320	20,771
May	17,950	22,750	21,600	22,683
June	20,900	16,400	18,400	21,685
July	20,075	20,150	20,575	16,310
August	18,725	16,350	17,300	18,245
September	17,950	15,325	14,450	20,401
October	15,275	18,425	14,900	16,716
November	14,275	13,425	20,200	18,840
December	11,525	13,050	7,950	8,000
Total:	**183,450**	**184,950**	**186,386**	**195,681**

8 Overall Summary of Residential Diversion Quantities

8.1 Residential Waste Diversion

Table 18 summarizes the residential waste diversion activities detailed in this report.

Table 18: Residential Waste Diversion Activity

Residential Waste Diversion Summary	2019 Tonnes	2018 Tonnes
Net Marketed Recyclables-Table 4	20,098	23,158
Other Recycling Programs-Table 9	6,220	6,169
Yard Waste, BYC & Mulching Blades-Table 13	29,038	28,719
MHSW Waste including Motor Oil-Table 16	691	704
Total Residential Tonnes Diverted	**56,047**	**58,750**

For further information please contact the Essex-Windsor Solid Waste Authority Hotline at 1-800-563-3377.

Catherine Copot-Nepszy
Manager, Waste Diversion

Eli Maodus
General Manager

Report prepared by: **Margaret Shires,** Administrative Assistant

MEMO

TO: Mr. Tom Marentette, Waste Manager - Essex Solid Waste Authority (EWSWA)

FROM: Jenna McVitty (WSP)

SUBJECT: **Summary of Surface Water Monitoring Data, 4th Quarter Precipitation Event Monitoring – 2019, Essex-Windsor Regional Landfill (RLF), EWSWA**

DATE: **November 20, 2019**

Please find below a summary of the analytical results and field observations for the 2019 4th Quarter Precipitation Sampling Event as part of the routine compliance monitoring program at the Regional Landfill site for your file.

Regional Landfill – Precipitation Monitoring Data Review:

November 1, 2019, 4th Quarter Sampling Event:

Between approximately 9:30 am on October 30, 2019 and 11 pm on October 31, 2019, approximately 30.5 millimetres (mm) of rain was recorded at the Regional Landfill site. While the 30 mm in 24 hr precipitation event criteria was not met, samples were collected from the site surface water stations for internal review. Surface water samples were collected on November 1, 2019 from the existing designated monitoring stations. The locations of the designated monitoring stations are shown on the attached Figure 1.

The following is a summary of the analytical results for the surface water samples that were collected from the designated monitoring stations during this sampling event.

The samples were collected from existing monitoring stations SW2, SW3, SW9, SW12, and SW13. Monitoring station SW8 was dry at time of sampling. Visible flow was observed at stations SW2, SW3, SW12, and SW13. The surface water at stations SW2, SW9, SW12, and SW13 were observed to be pale brown, and station SW3 was observed to be brown.

Based on the reported analytical results and consistent with previous sampling events, several nutrients and/or metals were detected at low concentrations in the monitoring stations with some parameters slightly exceeding the applicable Provincial Water Quality Objectives (PWQO) and/or the control limits at the respective sampled stations. These parameters include total phosphorus for all sampled stations, ammonia for stations SW2 and SW12, manganese for stations SW2, SW12, and SW13, and copper and iron for station SW3. In addition, field turbidity exceeded the control limit for stations SW3 and SW13.

A summary of the reported analytical results along with the historical ranges for each laboratory tested parameter are presented in the attached Table 1.

Where the PWQO or control limits were exceeded, most reported concentrations fluctuated without a specific trend noted and were within their historical ranges, with the exception of manganese for station SW13. The manganese concentration at station SW13 slightly exceeded its control limit and was above the historical range. It should be noted that as monitoring only began in 2016 for station SW13, there is limited historical data for meaningful comparison at this time. The data will continue to be collected and evaluated.

In general, and similar to previous sampling events, the detected elevated concentrations are likely attributed to nutrient and sediment loading from the surrounding agricultural lands within the drainage ditches where the monitoring stations are located. The slight exceedances at the site may also be associated with the recent construction work of Cell 3S and related sediment loading from the recent topsoil placement and seeding activities throughout the Site.

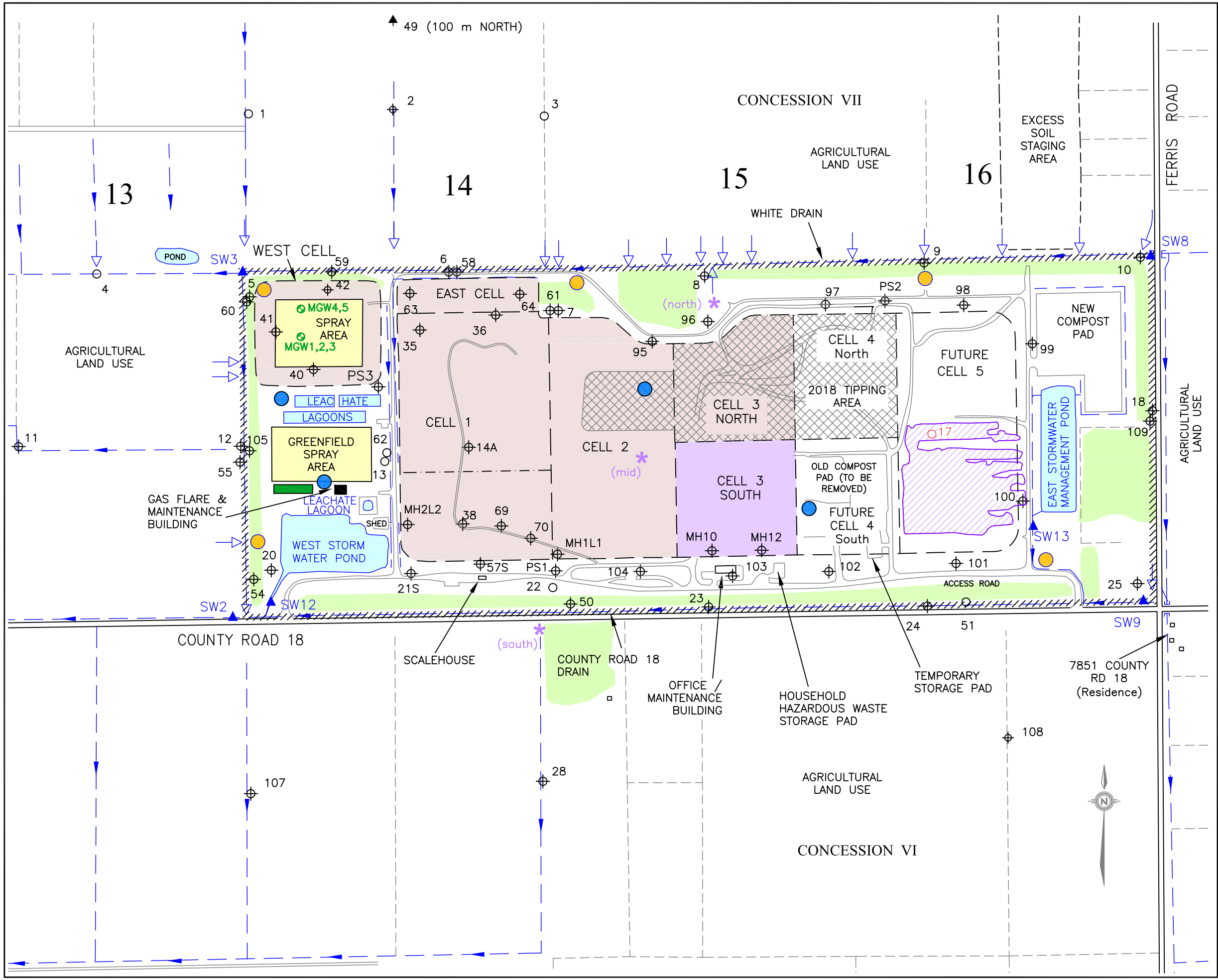
It should be noted that phenols was previously detected in the surface water at the site. However, it was not detected during the November 1, 2019 sampling event.

The reported concentrations for the duplicate surface water sample were within the required relative percent difference (RPD) or were less than five times the reported detection limit. The lab duplicates, method blanks, reference materials, method blank spikes, and matrix spikes were within their required ranges. Therefore, the reported parameter concentrations are considered accurate as reported and do not affect the quality of the data.

Based on the reported concentrations of the primary leachate indicator parameters chloride and boron, for the onsite surface water management ponds, there was no apparent landfill leachate effect on the existing surface water courses at the site. Surface water monitoring will continue in 2019 and 2020 as part of the ongoing routine monitoring activities at the site.

Should you have any questions or require additional information, please feel free to contact us.

Attachments:
- Figure 1, Site Plan
- Table 1, Surface Water General Chemical Results



LEGEND

- REGIONAL LANDFILL PROPERTY BOUNDARY
- WASTE (AS OF END OF 2018)
- CELL 3 SOUTH EXCAVATION
- LAND TREATMENT AREA
- WOODLOT AND/OR VISUAL MITIGATION BERM
- PONDS
- DIRECTION OF SURFACE WATER FLOW
- SURFACE WATER DITCH/DRAIN DISCHARGE POINT
- 18 — MONITORING LOCATION AND DESIGNATION
- PS1 — PUMP STATION AND DESIGNATION
- 51 — INACTIVE MONITORING LOCATION AND DESIGNATION
- 71 — INACTIVE MONITOR NEST TO BE DECOMMISSIONED
- SW9 — SURFACE WATER MONITORING LOCATION AND DESIGNATION
- MGW4,5 — GAS MONITORING WELL LOCATION AND DESIGNATION
- ENVIRONMENTAL CONTROL AREA
- DUST MONITORING STATIONS
- APPROXIMATE TIPPING AREA
- APPROXIMATE LOCATION OF FORMER SLUDGE PITS
- AIR SAMPLING LOCATION - SOURCE
- AIR SAMPLING LOCATION - PERIMETER

NOTES:

1. SITE CONDITIONS BASED ON DECEMBER, 2018 OBSERVATIONS.
2. SIZE AND LOCATION OF TIPPING AREA WILL VARY WITH TIME.
3. "– · — · –" INDICATES DEMARCATION BETWEEN CELL 1 NORTHERN AND SOUTHERN SECTIONS. CELL 1 SOUTHERN SECTION ENGINEERED/RECONSTRUCTED WITH LEACHATE COLLECTOR SYSTEM SIMILAR TO CELL 2, 3N, AND 4N.
4. WELL NESTS 98 AND 101 INSTALLED FEBRUARY 2019.

75 0 150 metres

SITE PLAN

2017 / 2018 BIENNIAL MONITORING PROGRAM
ESSEX-WINDSOR REGIONAL LANDFILL SITE
For Essex-Windsor Solid Waste Authority

DATE: MAY 2019	SCALE: 1:750
PROJECT: 111-53107-02 100	FILE NO.: 111-53107-04 100-7 F1 BMR

wsp

FIGURE 1

TABLE 1
FOURTH QUARTER PRECIPITATION EVENT - SURFACE WATER GENERAL CHEMICAL RESULTS
REGIONAL LANDFILL - 2019 MONITORING PROGRAM

				COUNTY ROAD 18 DRAINAGE DITCH					WHITE DRAIN	WHITE DRAIN	Historical Data Range											
PARAMETER	UNITS	PWQO	ROUTE 1 CONTROL LIMIT	SW2 1-Nov-19	SW9 1-Nov-19	SW12 1-Nov-19	SW13 1-Nov-19	ROUTE 2 CONTROL LIMIT	SW3 1-Nov-19	SW8 1-Nov-19	SW2		SW9		SW12		SW13		SW3		SW8	
											1992-2018		1994-2018		1997-2018		2016-2018		1992-2018		1995-2018	
											Low	High	Low	High	Low	High	Low	High	Low	High	Low	High
FIELD RESULTS																						
pH	units	6.5-8.5	6.5-8.5	8.05	8.09	8.12	8.37	6.5-8.5	8.00	DRY												
Conductivity	uS/cm		2003	970	1730	1030	740	2003	400													
Temperature	°C			8.0	6.4	9.2	7.6		8.9													
Turbidity	NTU		62	35	28	41	**91**	69	**254**													
LABORATORY RESULTS																						
BOD_5	mg/L			<5	<5	<5	<5		<5		<5	75.000	<5	7.000	<5	15.000	<5	<5	<5	8.000	<5	8.000
Conductivity	uS/cm		2297	790	1470	874	603	4602	282		142	1570	101	4790	208	3760	477	989	42	843	130	1860
pH	units	6.5-8.5	8.71	7.82	7.93	7.78	7.78	9.31	7.33		6.11	8.56	7.20	8.40	7.32	8.41	7.20	8.22	6.07	8.17	6.96	8.37
Alkalinity (as $CaCO_3$)	mg/L			152	246	159	121		50		25	218	5	312	70	238	69	125	2	197	3	255
Chloride	mg/L		595	56.6	347	39.5	17.3	657	21.2		9.0	781.0	36.0	1500.0	28.0	1170.0	7.5	26.2	2.4	191.0	40.0	783.0
Nitrate	mg/L			0.33	0.74	0.80	0.19		6.10		<0.25	3.560	<0.25	1.020	<0.25	5.940	<0.25	1.600	<0.25	27.700	<0.25	0.480
Sulphate	mg/L			193	31.3	276	181		35.8		3.7	316.0	0.0	281.0	29.0	305.0	165.0	403.0	6.4	296.0	2.6	190.0
Ammonia (total as N)	mg/L		0.15	**0.27**	<0.02	**0.99**	0.07	0.26	0.09		<0.02	1.58	<0.02	0.81	<0.02	2.23	<0.02	0.14	<0.02	3.55	<0.02	0.15
Phosphorus (total)	mg/L	0.03	0.06	**0.18**	**0.21**	**0.09**	**0.17**	0.27	**1.42**		<0.1	0.93	<0.1	0.47	<0.1	0.40	0.04	0.18	0.05	6.10	<0.1	0.34
Phenols	mg/L	0.001		0.001	<0.001	<0.001	0.001		0.001		<0.00	6.000	<0.001	13.000	<0.001	6.000	<0.001	0.003	<0.001	0.012	<0.001	2.000
Calcium	mg/L			64.8	83.6	80.5	66.3		31.1		15.5	108.0	25.0	215.0	40.1	283.0	54.0	91.8	8.0	95.0	35.5	160.0
Magnesium	mg/L			26.4	14.9	43.8	26.5		9.49		7.37	43.70	6.00	44.10	13.20	55.70	21.60	60.10	0.01	32.00	6.71	34.00
Sodium	mg/L			35.4	194	33.3	9.73		5.77		0.56	157.00	21.20	748.00	20.20	444.00	7.54	23.30	<0.05	75.40	15.60	227.00
Potassium	mg/L			17.1	6.20	19.8	15.6		5.78		4.40	37.60	2.46	13.00	4.70	31.00	3.38	9.57	2.87	23.30	1.39	13.40
Aluminium (dissolved)	mg/L	0.075		0.008	0.015	<0.004	0.005		0.046		<0.004	0.060	<0.004	0.052	<0.004	0.018	<0.004	0.063	0.008	0.150	0.007	0.030
Barium	mg/L			0.047	0.080	0.069	0.052		0.041		0.014	0.101	0.020	0.249	0.020	0.158	0.020	0.041	0.019	0.232	0.027	0.130
Beryllium	mg/L	0.011	<0.005	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	DRY	<0.001	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	<0.001	<0.001
Boron	mg/L	0.200		0.078	0.025	0.157	0.060		0.032		<0.010	0.143	<0.010	0.060	<0.010	0.280	0.038	0.120	<0.010	0.140	<0.010	0.041
Cadmium	mg/L	0.0002	<0.005	<0.0001	<0.0001	<0.0001	<0.0001	<0.005	0.0001		<0.001	0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	<0.001	0.001
Chromium	mg/L		0.01	<0.003	<0.003	<0.003	<0.003	0.01	<0.003		<0.003	0.021	<0.003	0.007	<0.003	0.010	<0.003	0.004	<0.003	0.051	<0.003	0.007
Cobalt	mg/L	0.0009	<0.005	<0.0005	<0.0005	0.0006	0.0007	<0.005	0.0007		<0.0005	0.006	<0.0005	0.001	<0.0005	0.005	<0.0005	0.001	<0.0005	0.010	<0.0005	0.001
Copper	mg/L	0.005	0.02	0.003	0.003	0.002	0.003	0.04	**0.007**		<0.002	0.031	<0.002	0.064	<0.002	0.011	<0.002	0.004	<0.002	0.118	<0.002	0.028
Iron	mg/L	0.30	0.97	0.09	<0.01	0.02	0.06	1.74	**0.96**		0.07	20.60	0.07	1.16	0.24	10.60	0.15	0.73	0.46	32.80	0.05	9.80
Lead	mg/L	0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.002	0.004		<0.001	0.014	<0.001	0.005	<0.001	0.005	<0.001	<0.001	<0.001	0.023	<0.001	0.003
Manganese	mg/L		0.03	**0.034**	0.014	**0.040**	**0.031**	0.05	0.023		<0.002	**0.160**	<0.002	0.211	0.012	0.430	0.009	0.026	0.009	0.207	<0.002	0.380
Molybdenum	mg/L	0.040		0.020	0.003	0.024	0.023		0.002		<0.002	0.038	<0.002	0.027	<0.002	0.040	0.010	0.039	<0.002	0.036	<0.002	0.016
Nickel	mg/L	0.025	0.015	0.004	<0.003	0.006	0.004	0.020	0.005		<0.003	0.022	<0.003	0.007	<0.003	0.018	<0.003	0.004	<0.003	0.100	<0.003	0.030
Silver	mg/L	0.0001	0.004	<0.0001	<0.0001	<0.0001	<0.0001	0.005	<0.0001		<0.0001	0.004	<0.0001	0.002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.001	<0.0001	<0.0001
Strontium	mg/L			1.15	1.98	1.10	0.789		0.154		0.137	2.670	0.482	7.130	0.528	5.560	0.544	0.969	0.044	0.734	0.600	3.770
Tin	mg/L			<0.002	<0.002	<0.002	<0.002		<0.002		<0.002	0.000	<0.002	<0.002	<0.002	0.020	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Titanium	mg/L			0.011	0.012	0.006	0.008		0.007		<0.002	0.410	<0.002	0.050	<0.002	0.119	0.007	0.026	<0.002	0.970	<0.002	0.052
Vanadium	mg/L	0.006		<0.002	0.002	<0.002	<0.002		0.003		<0.002	0.040	<0.002	0.006	<0.002	0.017	<0.002	0.002	<0.002	0.120	<0.002	0.005
Zinc	mg/L	0.020	0.03	0.012	0.006	0.006	0.006	0.04	0.012		<0.005	0.143	<0.005	0.110	<0.005	0.882	<0.005	0.012	<0.005	0.299	<0.005	0.054
Benzene	mg/L										<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Toluene	mg/L										<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	mg/L										<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Total Xylenes	mg/L										<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

NOTES:
1) PWQO denotes Provincial Water Quality Objectives (1994) with updates.
2) "<" denotes the parameter was detected at a concentration less than the method reporting limit (MRL)
3) Shading denotes concentration either exceeds Control Limit or PWQO.
4) Benzene, toluene, ethylbenzene, and total xylenes analyzed during 1st recorded event per year.

Essex-Windsor Solid Waste Authority

ANNUAL REPORT

Essex-Windsor Regional Landfill Composting Operations Report 2019

Report Date: March 31, 2020

Table of Contents

Appendix A

- Map: Compost Pad Site Plan
- Map: Regional Landfill 2019 Site Plan

This document has been formatted for accessibility and is available in other formats upon request.

Regional Landfill Composting Operations Report

Annual Report for January – December 2019

1 Introduction

The Compost Pad is located on the same property as the Essex-Windsor Regional Landfill. The operation is licensed to receive 25,000 tonnes of compostable materials per year. No more than 35,000 tonnes of incoming waste, windrowed waste and finished compost shall be stored on the site at any time. The Essex-Windsor Solid Waste Authority (EWSWA) was responsible for the Compost Pad operation during the period covering this report. Staff of the EWSWA manages the site and operates the weigh scale, provides inspection services, contract administration and maintains the associated records for the site.

1.1 Environmental Compliance Approval

The composting operation is licensed under Environmental Compliance Approval (ECA) No. A 011105 dated August 18th, 1997. In September 2001, November 2004, and August 2016 subsequent amendments were approved which permitted additional quantities of yard waste on the pad to be composted and permitted the addition of a number of new feed stocks to the compost mix. On July 8, 2019 the ECA was further amended to reflect that the compost pad had been relocated to the north-east corner of the landfill site.

As a result of the Ontario Ministry of the Environment, Conservation and Parks (MECP) formerly the Ministry of Environment and Climate Change (MOECC) amendment approved in November 2004, the Compost Pad for the Essex Windsor Regional Landfill was enlarged to accommodate the additional quantities of yard waste approved for composting. In May of 2005, Amico Contracting was commissioned to carry out the Compost Pad Expansion. The work was completed by the end of the summer.

During mid to late 2018 Cell 3 South of the Regional Landfill was constructed. The westerly portion of the compost pad was situated in what was to become Cell 3 South. Similarly, the easterly portion of the compost pad is situated in what will become Cell 4 South. Considering the future construction of Cell 4 South a new pad was constructed at the north-east

corner of the landfill site directly to the east of what will become Cell 5 North. The location is depicted on a map in Appendix A.

1.2 Purpose

The purpose of this report is to fulfill amended condition 31 of the ECA No. A011105, dated September 17, 2001. Condition 31 also states that this report is to be retained on-site and does not need to be submitted to the Ministry.

1.3 Compliance

There were no noncompliance issues during 2019.

2 Inspections, Complaints and Maintenance

2.1 Complaints

A formal complaint process is in place for the Essex-Windsor Regional Landfill and Composting Pad operations. During 2019, one complaint for the site operations were received concerning odour but was not definitively attributed to compost operations.

The family of Terri Colenutt reported odour during the four days prior to their complaint notification on November 26, 2019. The odour was present around 6-7AM each morning. The landfill manager contacted the family and invited them to visit the landfill to better identify the odour but they declined.

2.2 Inspections

The Essex-Windsor Solid Waste Authority provides a full time on site supervisor at the Regional Landfill site. One of the roles of the supervisor is to oversee the compost operation and confirm that all the organics being delivered to the site is inspected as per the ECA. The Authority also employs full time inspectors who inspect all loads of incoming compostable organics for unacceptable material such as plastic bags, refuse etc.

2.3 Maintenance

Staff of the Essex-Windsor Solid Waste Authority carried out the day to day maintenance of the composting area. Some of the duties include picking up litter, snow removal as well as grass and weed cutting.

3 Yard Waste and Compost

3.1 Units of Measure

This report makes use of different units of measure to describe the amounts of the various types of yard waste and compost material. **Tonnes** are used to describe yard waste quantities received from municipalities, businesses and residents because when the material is received at various Authority facilities it is weighed on weighscales. **Cubic metres (m^3)** are used to describe the quantity of compost contained within the windrows on the compost pad at the Regional Landfill because that is how the height, width and length of the windrows are measured. **Cubic yards (yd^3)** are used to describe the quantity of finished compost sold to various customers because the front-end loader bucket used to measure the compost is specified by its cubic yards capacity.

3.2 Yard Waste Quantities

The quantity of decomposing organics and finished compost on the Regional Landfill Compost Pad can vary significantly depending on the time of year and annual weather patterns.

In 2019 an amount of 10,290 tonnes of yard waste was brought directly to the Regional Landfill Composting site by generators of yard waste or their haulers. An additional 16,776 tonnes was transferred to the site from the Authority's Windsor Public Drop-off Depot for a total of 27,066 tonnes of yard waste. As noted previously once the compost is finished decomposing the final product is screened and marketed.

During 2019, as each compost windrow cured, Authority staff measured the amount of compost that was ready to be screened to become the final compost product available for sale. Authority staff measured the length, width and height of the windrows and for all of 2019 it was calculated that 37,810 m^3 of compost was ready to be screened. After the screening process removed the "overs", 28,674 m^3 of finished compost was set aside available for sale. The overs are generally disposed of at the Regional Landfill tipping area but occasionally they are reintroduced into the existing compost rows for further composting depending on the amount of finished compost remaining in the overs.

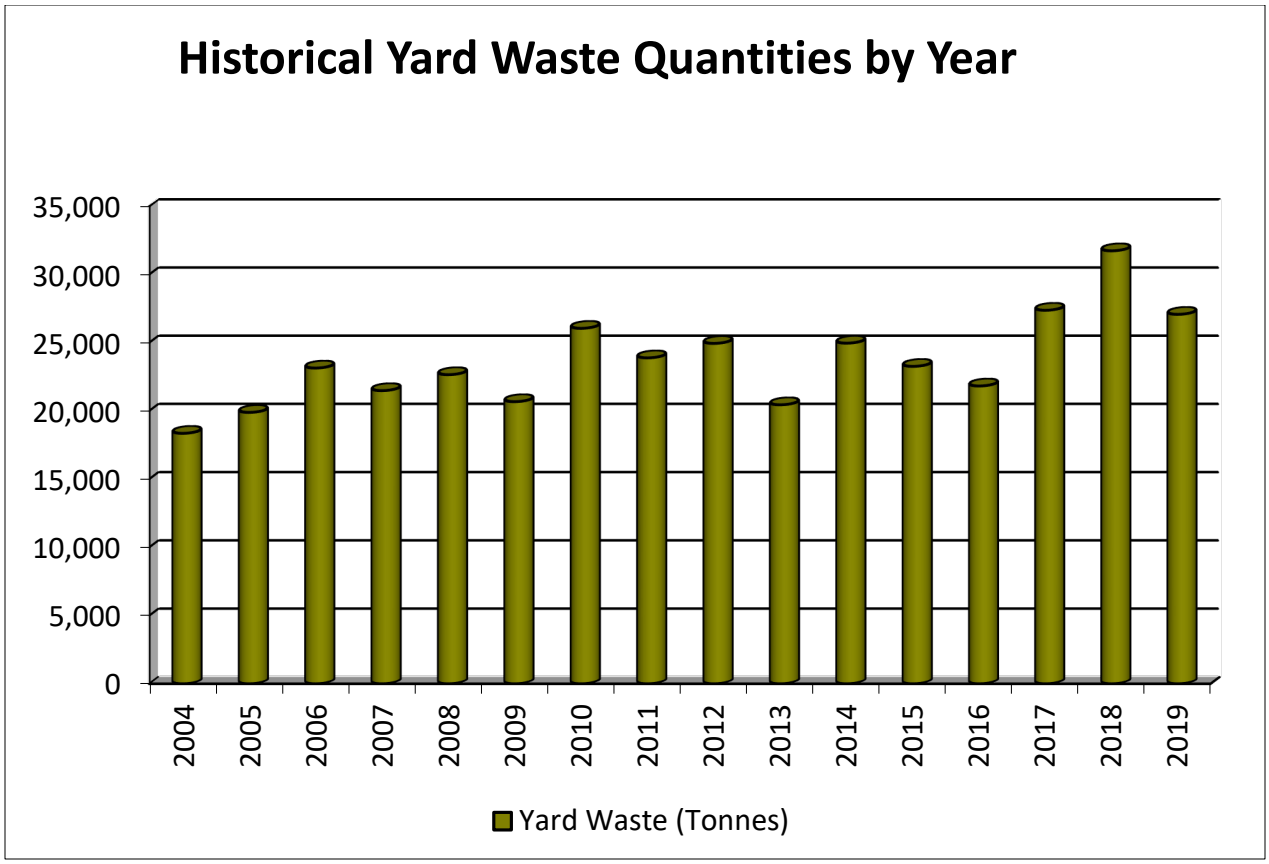


Figure 1: Historical Yard Waste Quantities

3.3 Sale of Compost

After approximately 12 months of processing the yard waste received by the Authority, it is turned into compost. Compost is a nutrient rich organic material which provides many benefits to soil and is essential for healthy plant growth. In 2019 the compost produced at the Regional Landfill was marketed to the public and private sector users in bulk, delivered, sold as "bag your own" and in pre-bagged packaging. The product was sold at the EWSWA depot in Windsor and Transfer Station 2 in Kingsville. The sales for 2019 were as follows:

Table 1: Compost Sales Summary 2019

Compost Material	Quantity	Tonnes
Delivered	750 cubic yards	441
Bulk Sales	25,251 cubic yards	14,848
Bag Your Own Compost	1,488 bags	40
Prepackaged Garden Gold Compost	11,998 bags	228
Totals:	$227,185 Revenue	15,557

Table 1 Notes: Pre-packaged bag weights are based on approximately 18kg/bag; Bag-Your-Own is approximately 27kg/bag; Bulk compost is approximately 588kg/cubic yard.

Delivered Compost Sales

Sales of delivered compost represent, for the most part, sales of larger dump-truck sized loads of compost to residential customers. The Authority engaged Frank Dupuis Landscaping & Trucking to provide the delivery services on behalf of the Authority.

Bulk Compost Sales

Sales of bulk loads of compost represents the sale of larger amounts of compost to those residential customers who attend Authority facilities and purchase pick-up sized loads or trailer sized loads. It also represents sales of compost to larger business customers such as landscaping companies or nurseries who acquire many thousands of yards of compost under take-or-pay agreements with the Authority.

Bag Your Own Compost Sales

Sales of bag-your-own compost represent the sale of compost to those residential customers who attend Authority facilities and purchase compost that they load into one or more large paper bags.

Pre-packaged Compost Sales

Sales of pre-packaged compost represents the sale of compost to those residential customers who attend Authority facilities and purchase compost

which has been pre-packaged by the Authority in sealed smaller plastic bags which are easy to lift, carry and place in gardens at the resident's home.

3.4 Compost Quality

As per Conditions 29 and 30 of the ECA No. A011105 detailed monitoring, inspection and waste tracking logs are being retained on site for a minimum period of two years for review upon request. During 2019, 7 finished compost samples were collected and sent to an accredited lab for analysis. All the samples of finished compost were analyzed for metal concentrations, pathogens, maturity and foreign matter. In all cases the finished compost product exceeded MOECC compost quality criteria and was classified as A Compost as per Canadian Council of Minister of the Environment (CCME) Compost Quality Standards.

Tom Marentette

Manager, Waste Disposal

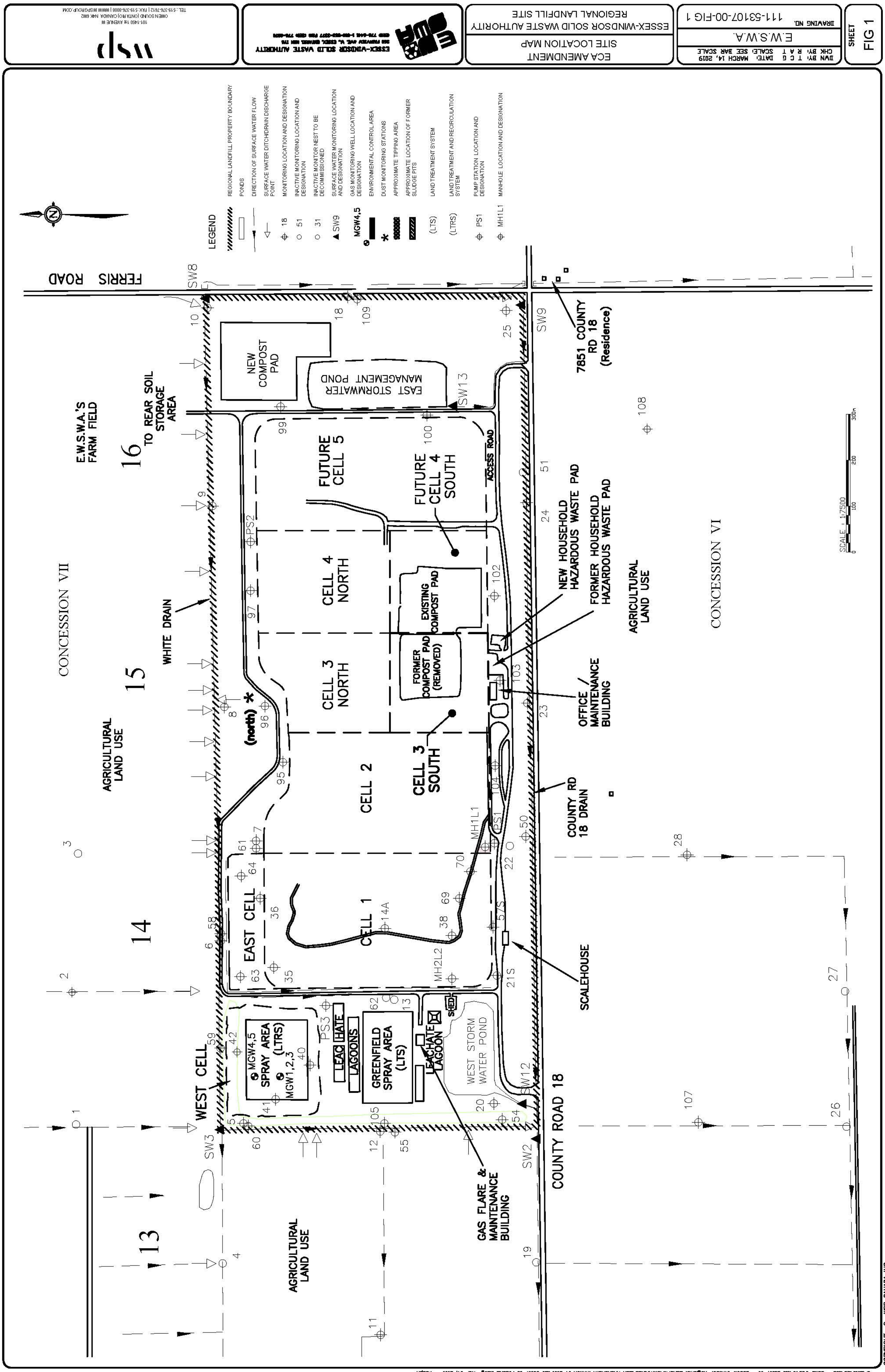
Eli Maodus

General Manager

Report prepared by: **Margaret Shires,** Administrative Assistant

Appendix A

- Map: Compost Site Location Plan
- Map: Regional Landfill 2019 Site Plan



ECA AMENDMENT
SITE LOCATION MAP
ESSEX-WINDSOR SOLID WASTE AUTHORITY
REGIONAL LANDFILL SITE
E.W.S.W.A.
111-53107-00-FIG 1
FIG 1
LEGEND
REGIONAL LANDFILL PROPERTY BOUNDARY
PONDS
DIRECTION OF SURFACE WATER FLOW
SURFACE WATER DITCH/DRAIN DISCHARGE POINT
MONITORING LOCATION AND DESIGNATION
INACTIVE MONITORING LOCATION AND DESIGNATION
INACTIVE MONITOR NEST TO BE DECOMMISSIONED
SURFACE WATER MONITORING LOCATION AND DESIGNATION
GAS MONITORING WELL LOCATION AND DESIGNATION
ENVIRONMENTAL CONTROL AREA
DUST MONITORING STATIONS
APPROXIMATE TIPPING AREA
APPROXIMATE LOCATION OF FORMER SLUDGE PITS
LAND TREATMENT SYSTEM
LAND TREATMENT AND RECIRCULATION SYSTEM
PUMP STATION LOCATION AND DESIGNATION
MANHOLE LOCATION AND DESIGNATION
FERRIS ROAD
COUNTY ROAD 18
CONCESSION VII
CONCESSION VI
E.W.S.W.A.'S FARM FIELD
TO REAR SOIL STORAGE AREA
WHITE DRAIN
AGRICULTURAL LAND USE
NEW COMPOST PAD
EAST STORMWATER MANAGEMENT POND
FUTURE CELL 5
FUTURE CELL 4 SOUTH
ACCESS ROAD
CELL 4 NORTH
EXISTING COMPOST PAD
CELL 3 NORTH
FORMER COMPOST PAD (REMOVED)
CELL 3 SOUTH
CELL 2
CELL 1
EAST CELL
WEST CELL
SPRAY AREA (LTRS)
LEACHATE LAGOONS
GREENFIELD SPRAY AREA (LTS)
LEACHATE LAGOON
WEST STORM WATER POND
SHED
GAS FLARE & MAINTENANCE BUILDING
SCALEHOUSE
OFFICE / MAINTENANCE BUILDING
NEW HOUSEHOLD HAZARDOUS WASTE PAD
FORMER HOUSEHOLD HAZARDOUS WASTE PAD
COUNTY RD 18 DRAIN
7851 COUNTY RD 18 (Residence)
SCALE : 1/7500
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ESSEX-WINDSOR SOLID WASTE AUTHORITY
360 FAIRVIEW AVE. W., ESSEX, ONTARIO. N8M 1Y6
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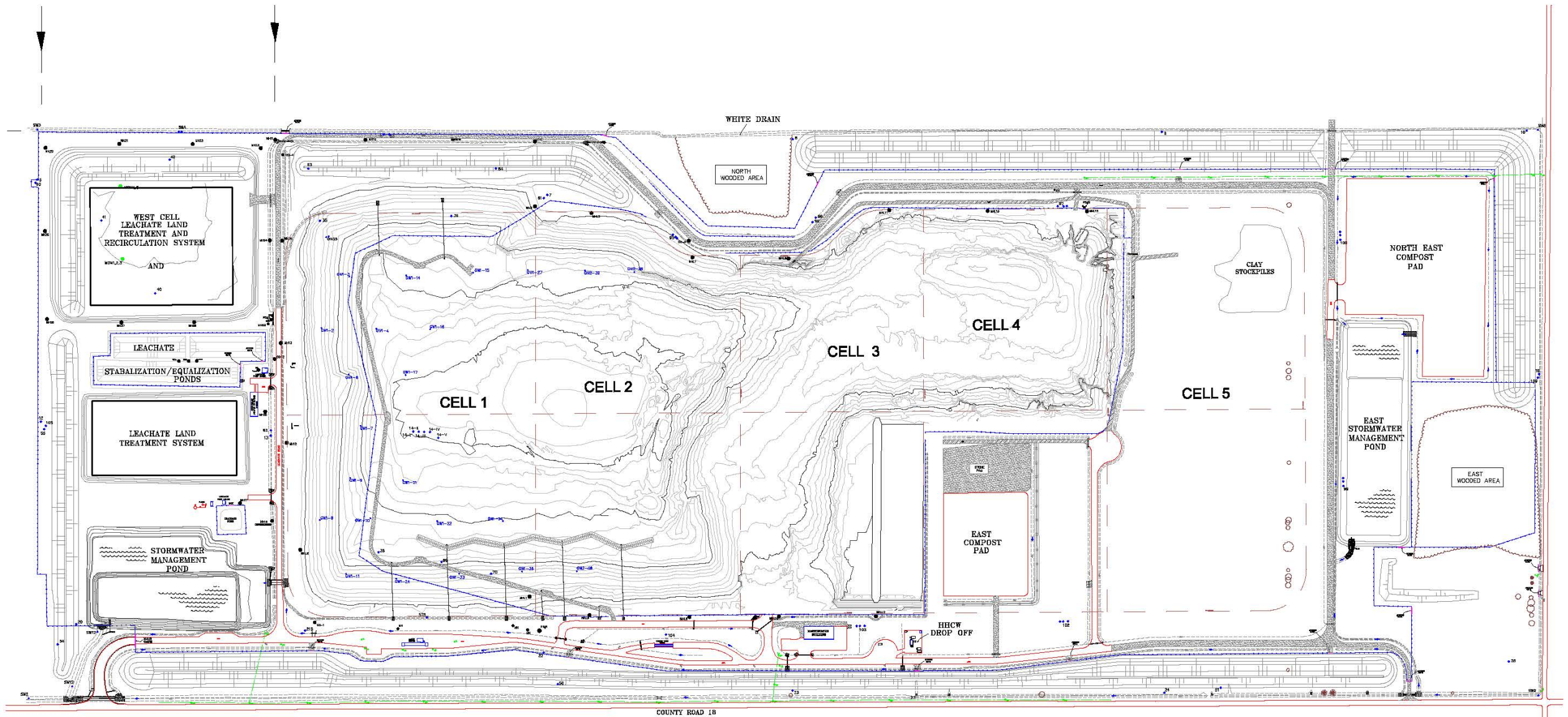

KEY:

Topographical: Roadway; Gravel Roadway; Clay Roadway; Ditch; Berm; Contours; Woodlot; Rip Rap; Building; Cutoff Berms; Surface Water Pond; Access Gate; Fence; Culvert; Hickenbottom Drain

Leachate Collection System: WV Shutoff Valves; LCS Maintenance Hole; LCS Pump Station; Service Maintenance Hole; LCS Underdrain System; Cleanout

Miscellaneous: Sign; Marker post; Monitoring Wells

Hydro: Hydro pole; Light standard; Traffic light

Gas Collection System: Passive flare; Vacuum flare; Gas well

ESSEX - WINDSOR
SOLID WASTE AUTHORITY
REGIONAL LANDFILL
2019 SITE PLAN

AUTOCAD FILE: RLF_2019.dwg

Carlson

DRAWN BY: A.E.B.B. ①

DATE: DEC. 31, 2019

SCALE: AS SHOWN
50 0 50 100

MEMO

TO: Mr. Tom Marentette (Essex-Windsor Solid Waste Authority)

FROM: Jenna McVitty (WSP)
Radwan Tamr (WSP)

SUBJECT: **Summary of Fall 2019 Compliance Monitoring and Leachate Management Program Monitoring Tasks; Essex-Windsor Regional Landfill, EWSWA**

DATE: February 12, 2020

Please find below a summary of the analytical results and field observations for the Fall 2019 compliance sampling and monitoring event at the Regional Landfill for your file. The findings presented in this memo will also be provided in the routine monitoring reporting.

SUMMARY OF THE FALL/OCTOBER MONITORING DATA FOR REGIONAL LANDFILL

GROUNDWATER SAMPLING RESULTS

The following summary is based on the analytical results of the groundwater samples collected from the existing monitors during the October and subsequent verification 2019 events.

- Regularly scheduled groundwater sampling for the October event included monitors in the shallow flow system and upper sand groundwater system.
- It should be noted that the preliminary data analysis includes the comparison of the reported data with established Predictive Standards for each monitor and the applicable Ontario Drinking Water Quality Standards (ODWQS). Selected parameters for predictive standards include the primary leachate indicator parameters chloride and boron as well as sulphate, alkalinity, calcium, magnesium, sodium, potassium, and barium. Chloride and boron have been selected as the primary indicator parameters due to their mobility in groundwater, elevated concentrations in leachate, and representation for larger groups of parameters (chloride for inorganic chemicals and boron for metals).
- Also, and as per the conditions of approval for the Regional Landfill, an exceedance of a predictive standard includes an assessment of the other parameters (including historical data) and a concentration trend analysis to determine if the exceedance is anomalous or related to natural variability. If the exceedance appears potentially landfill related the monitor is to be resampled within 6-8 weeks.
- Monitors that were dry during the October sampling event and could not be sampled included monitors 8-III, 11-V, 28-V, 59A-III, 60-III, 95-III, 97-III, and 105. These monitors will be sampled during the April 2020 event, if possible, based on site conditions at that time.
- Monitors 9-III and 95-I had reported parameters exceeding the established Predictive Standards. for one of the primary indicator parameters, chloride and boron, for the 2019 monitoring period. These

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monitors were resampled in December 2019 for verification/internal review. The location of monitors is shown on the attached site map.

  - Monitor 9-III reported a minor exceedance for boron. The monitor is screened within the Shallow Flow System and is considered a background well as it is located northeast of Cell 4 North. Based on concentration trend analysis for the two primary indicator parameters, chloride remains acceptable at this location and does not appear to be increasing with time. Boron concentrations appear to be fluctuating with time. The October 2019 boron concentration was slightly above the historical range for the monitor. However, given the monitor is a background monitor, the boron concentration is not likely a result of a potential leachate effect at this location during this sampling event.
  - Monitor 95-I reported a minor exceedance for chloride. The monitor is screened within the Upper Sand Flow System, upgradient of the waste, north of Cell 2. Based on concentration trend analysis for the two primary indicator parameters, boron remains acceptable at this location and does not appear to be increasing with time. Chloride concentrations have remained fairly constant with time as well, however, the chloride concentration in October 2019 was slightly above the historical high for this monitor. The detected chloride concentration is not likely a result of a potential leachate effect.

- Multiple exceedances of the ODWQS for sulphate and sodium occurred for the sampled monitors, and alkalinity exceeded the ODWQS for monitors 99-III and 103-III. The reported sulphate, sodium, and alkalinity concentrations were within their respective historical ranges for the sampled monitors. Sulphate, sodium, and alkalinity are not health-related parameters and only affect the aesthetic quality of the water.
- Given there were no ODWQS exceedances of the primary indicator parameters, chloride and boron, the detected sulphate, sodium, and alkalinity exceedances appear to be associated with variable groundwater quality and not likely related to a potential landfill impact.
- Predictive Standards have not been established for Monitors 95-III, 97-I, 98-I/III, 99-I/III, 100-I/III, 101-I/III, 102-I/III, and 103-I/III, due to minimal data sets from recent installation. However, these monitors were compared to the ODWQS as well as concentration trends established from available data acquired since installation. The reported concentrations met the ODWQS standards with the exceptions of sulphate, sodium, and alkalinity, as discussed above. Chloride and boron concentrations for these monitors remained within their respective available limited historical ranges.
- The reported concentrations were non-detect for all monitors that were sampled for benzene, toluene, ethylbenzene, and total xylenes (BTEX), with the exception of monitoring well 98-III where toluene was detected at a concentration of 0.44 ug/L. The reported concentration is well below the ODWQS for toluene (60 ug/L). Monitor 98-III was installed in February 2019. The toluene concentration in April 2019 for Monitor 98-III was detected at a concentration of 0.87 ug/L. Toluene will continue to be monitored at this location as part of the regular compliance monitoring program.

ADDITIONAL GROUNDWATER SAMPLING RESULTS

- Monitors 9-III and 95-I were resampled on December 4, 2019. The Monitors were purged and sampled as per standard operating procedures.
- The reported boron concentration for Monitor 9-III decreased from 0.147 mg/L to 0.096 mg/L in the verification sampling event. The verification sample concentration of 0.096 mg/L meets the established Predictive Standard concentration of 0.145 mg/L for the Monitor. Further evaluation will be completed upon subsequent monitoring events.
- The reported chloride concentration for Monitor 95-I decreased from 99.9 mg/L to 73.1 mg/L in the verification sampling event. The verification sample concentration of 73.1 mg/L meets the established

Predictive Standard concentration of 89 mg/L. Further evaluation will be completed upon subsequent monitoring events.

- No other additional sampling was required.

LEACHATE SAMPLING RESULTS

- A leachate sample was collected from Pump Station PS3 (representative of the leachate produced from the West Cell) as part of the routine compliance monitoring program and leachate management program on October 29, 2019. The reported concentrations were below the laboratory method detection limits for the semi-volatile organic compound (SVOC) and volatile organic compound (VOC) analyzed parameters. The remaining parameters analyzed for the PS3 sample were within their historical ranges, with the exception of nitrate which was above the historical range. The elevated nitrate concentration is likely a result of agricultural run-off. Nitrate will continue to be monitored in the leachate as per the compliance monitoring program.

LEACHATE MANAGEMENT PLAN ECA, LTS AND LTRS OCTOBER 2019 SOIL SAMPLING RESULTS

Composite shallow soil samples from the Environmental Control Area (ECA) were collected at depths of 15 cm, 60 cm, and 125 cm below existing grade surface (bgs) on October 29, 2019 as part of the Leachate Management Program (LMP) and submitted for laboratory analytical chemical analysis.

- Where parameter concentrations exceeded the target guidelines (soil concentration indicators/MECP Standards) they were within their historical range and are considered to be naturally present within the soil at similar concentrations.

Composite shallow soil samples from the Leachate Treatment System (LTS) were collected at depths of 15 cm, 60 cm, and 125 cm bgs on October 29, 2019 as part of the LMP and submitted for analysis.

- Typical target guidelines (soil concentration indicators/MECP Standards) were exceeded within the shallow soil of the LTS for boron, EC, and sodium absorption ratio (SAR) for the 15 cm depth sample, EC, arsenic, molybdenum and nickel for the 60cm depth sample, and EC, arsenic, molybdenum, and nickel within the 125 cm depth sample. Where the exceedances were noted, the concentrations were within their historical ranges, except for EC for the 60 cm and 125 cm depth samples which were slightly above their respective historical ranges.

Composite shallow soil samples from the Land Treatment and Recirculation System (LTRS) were collected at depths of 15 cm, 60 cm and 90 cm bgs on October 29, 2019 as part of the LMP and submitted for analysis.

- Typical target guidelines (soil concentration indicators/MECP Standards) were exceeded within the shallow soil of the LTRS for EC and nickel for the three sample depths, SAR and boron for the 15 cm depth sample, SAR, boron, and molybdenum for the 60 cm depth sample, molybdenum for the 90cm depth sample. Where exceedances were noted, the concentrations were within their historical ranges, with the exceptions of SAR for the 60 cm depth sample.

LEACHATE MANAGEMENT PLAN ECA AND LTS OCTOBER 2019 VEGETATION SAMPLING RESULTS

Vegetation samples were collected on October 30, 2019 from the following areas: 1) the LTS spray area, 2) the LTS trickle area, and 3) the control area south of the LTS spray application area.

Based on the chemical analytical results, the reported concentrations varied for samples from the ECA and the two LTS treatment areas. There is no notable pattern in comparison of the spray area with the trickle area.

In general, concentrations were greater (or similar) in the leachate application areas than in the ECA. The elevated boron concentrations in the vegetation generally corresponded with the detected boron concentrations in the soil samples from each location.

Considering concentration changes with time, the constituent concentrations within the ECA were similar to historical concentrations, with the exception of the concentration of phosphorus which was slightly elevated compared to recent and historical concentration data. The increased phosphorus concentration may be associated with the decay of organic material such as plant material. The elevated TKN concentrations noted in 2018 decreased in 2017 and returned to typical concentrations as noted in previous years.

The chemical concentrations within the vegetation tissue analytical results for the two LTS treatments areas were generally similar to recent years and within their historical ranges, with the exceptions of phosphorus for the spray area and TKN for the trickle area. The reported concentrations are likely associated with the variable soil conditions at the sampled locations.

LAB QUALITY ASSURANCE/QUALITY CONTROL (QA/QC) RESULTS

The groundwater, leachate and shallow soil duplicate field samples were collected in 2019 by WSP and submitted to AGAT laboratory for chemical analysis.

Groundwater:

- There were no issues with the reported groundwater QA/QC laboratory analytical results.

Leachate:

- Total Organic Carbon concentration for the duplicate leachate sample differed to the original sample by greater than 20% relative percent difference. However, there were no QA/QC violations reported by the laboratory in the certificate of analysis. The lab duplicates, method blanks, reference materials, method blank spikes, and matrix spikes were within their required ranges. Therefore, the reported chemical data for the leachate samples is considered accurate as reported and does not affect the quality of the data.

Soil:

- Several parameters for the duplicate soil sample differed to the original sample by greater than 35% relative percent difference. However, there were no QA/QC violations reported by the laboratory in the certificate of analysis. The lab duplicates, method blanks, reference materials, method blank spikes, and matrix spikes were within their required ranges. Therefore, the reported chemical data for the soil samples is considered accurate as reported and does not affect the quality of the data.

SUMMARY OF MONTHLY DUST AND AMBIENT AIR MONITORING DATA

DUST MONITORING

Dust samples in 2019 were collected on January 10, February 8, March 8, April 3, May 8, June 11, July 9, August 8, September 11, October 9, November 6, and December 6 by EWSWA and submitted to Bureau Veritas laboratory for analysis. A total of three samples were collected by EWSWA from the three designated sampling locations each month (representative of a month-long period).

Based on the analytical results, the reported concentrations were below the acceptable level for dust fall ambient air quality of 7.0 g/m^2/month over 30 days or 4.6 g/m^2 over one year.

AMBIENT AIR SCREENING AT LANDFILL PERIMETER

Ambient air was monitored for methane (%LEL, %volume), volatile organic compounds (VOCs, ppm), and oxygen (O_2, % volume) at each designated monitoring location.

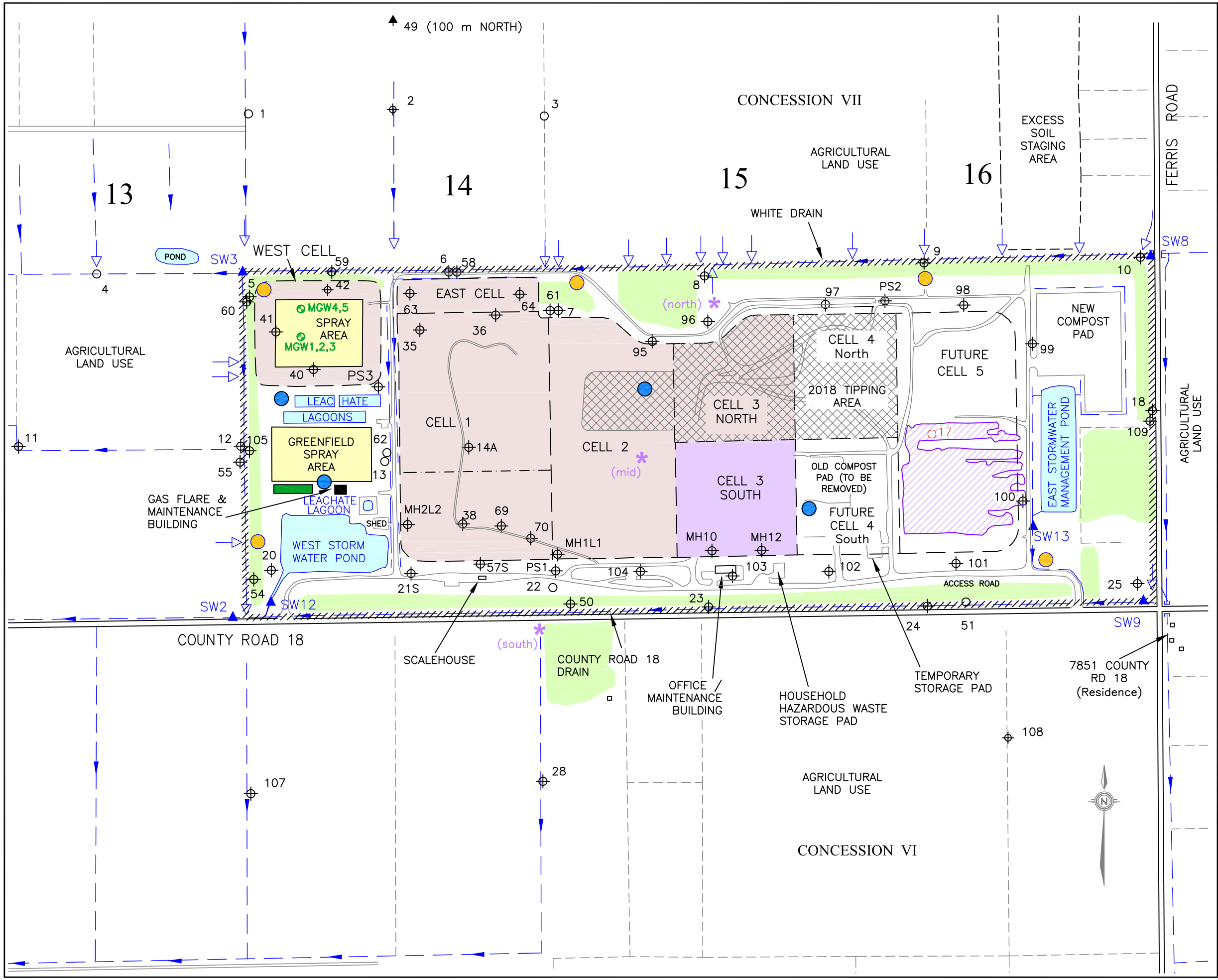
- Readings were collected on October 11, 2019.
- Weather was 19 deg. C, mostly sunny with light wind in the southeast direction as per the WeatherLink station recording.
- The recorded methane and VOC readings were below the laboratory method detection limit. The recorded O_2 readings were considered normal for the site ambient air.

SUMMARY OF METAL FLUFF DATA

Meatal fluff samples of auto shredder fluff imported to the landfill were collected by EWSWA's staff in 2019 on January 10, February 8, March 8, April 3, May 8, June 11, July 9, August 13, September 11, October 9, November 6, and December 6. The samples were submitted to Eurofins laboratory for toxicity characteristic leaching procedure (TCLP) analysis. The Eurofins laboratory reports were provided to EWSWA staff and WSP for review. WSP reviewed the reports for significant discrepancies from available historical data. In general, the TCLP results were in compliance with O.Reg. 558 Schedule 4. This analysis is required by EWSWA as part f their current waste approval process.

Attachments:

Figure 1: Site Plan



LEGEND

- REGIONAL LANDFILL PROPERTY BOUNDARY
- WASTE (AS OF END OF 2018)
- CELL 3 SOUTH EXCAVATION
- LAND TREATMENT AREA
- WOODLOT AND/OR VISUAL MITIGATION BERM
- PONDS
- DIRECTION OF SURFACE WATER FLOW
- SURFACE WATER DITCH/DRAIN DISCHARGE POINT
- 18 — MONITORING LOCATION AND DESIGNATION
- PS1 — PUMP STATION AND DESIGNATION
- 51 — INACTIVE MONITORING LOCATION AND DESIGNATION
- 71 — INACTIVE MONITOR NEST TO BE DECOMMISSIONED
- SW9 — SURFACE WATER MONITORING LOCATION AND DESIGNATION
- MGW4,5 — GAS MONITORING WELL LOCATION AND DESIGNATION
- ENVIRONMENTAL CONTROL AREA
- DUST MONITORING STATIONS
- APPROXIMATE TIPPING AREA
- APPROXIMATE LOCATION OF FORMER SLUDGE PITS
- AIR SAMPLING LOCATION - SOURCE
- AIR SAMPLING LOCATION - PERIMETER

NOTES:

1. SITE CONDITIONS BASED ON DECEMBER, 2018 OBSERVATIONS.
2. SIZE AND LOCATION OF TIPPING AREA WILL VARY WITH TIME.
3. "– · — · –" INDICATES DEMARCATION BETWEEN CELL 1 NORTHERN AND SOUTHERN SECTIONS. CELL 1 SOUTHERN SECTION ENGINEERED/RECONSTRUCTED WITH LEACHATE COLLECTOR SYSTEM SIMILAR TO CELL 2, 3N, AND 4N.
4. WELL NESTS 98 AND 101 INSTALLED FEBRUARY 2019.

75 0 150 metres

SITE PLAN

2017 / 2018 BIENNIAL MONITORING PROGRAM
ESSEX-WINDSOR REGIONAL LANDFILL SITE
For Essex-Windsor Solid Waste Authority

DATE: MAY 2019	SCALE: 1:750
PROJECT: 111-53107-02 100	FILE NO.: 111-53107-04 100-7 F1 BMR

wsp

FIGURE 1

Essex-Windsor Solid Waste Authority

Essex-Windsor Regional Landfill

Quarterly Operations Report

Report Date Range: July - September, 2019

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Appendix

- Precipitation Charts
- Contact Form
- Report Distribution

This document is available in other formats upon request

Essex-Windsor Regional Landfill

Quarterly Operations Report for July – September, 2019

1 Introduction

The Essex-Windsor Regional Landfill Site is located in part of Lot 14, 15, and 16, Concession 7, in the Town of Essex. The Site is licensed by the Ontario Ministry of Environment under Environmental Compliance Approval No. A011101 (September 28, 1995).

2 Compliance

There were no incidents of non-compliance during the third quarter of 2019.

3 Waste Disposal Operations

3.1 Waste Quantities

The waste quantities disposed of during the third quarter of 2018 and 2019 were as follows:

Table 1A: Waste Quantities and Average Daily Waste for 2018 and 2019

Month	2018 Waste (Tonnes)	2018 Daily Waste (average)	2019 Waste (Tonnes)	2019 Daily Waste (average)
July	25,231.09	1,009	21,007.59	808
August	21,683.01	834	24,020.39	924
September	17,093.15	712	19,335.92	806

Table 1B: Waste Vehicles by Month and Daily Average for 2018 and 2019

Month	2018 Waste Vehicles	2018 Vehicles/Day (average)	2019 Waste Vehicles	2019 Vehicles/Day (average)
July	1,763	71	1,587	63
August	1,558	60	1,794	69
September	1,239	50	1,490	60

3.2 Special Waste

The special waste quantities disposed of during the third quarter of 2019 were as follows:

Table 2: Special Waste Loads for 2019

Month	Bleaching Clay Loads
July	13
August	13
September	2

Table 3A: Sewage Sludge Tonnes for 2019

Month	Essex	Amherstburg	Leamington	Kingsville	Windsor	Total Tonnes
July	0.00	127.87	0.00	116.75	8.75	**253.37**
Aug.	13.65	118.23	0.00	121.68	0.00	**253.56**
Sep.	15.20	117.72	0.00	119.63	0.00	**252.55**

Table 3B: Sewage Sludge Tonnes for 2018

Month	Essex	Amherstburg	Leamington	Kingsville	Windsor	Total Tonnes
July	33.41	93.25	301.72	71.33	0.00	**499.71**
Aug.	30.54	107.09	46.42	120.95	0.00	**305.00**
Sep.	36.62	69.83	0.00	120.92	0.00	**227.37**

The following loads of Asbestos were disposed of at the Regional Landfill during the third quarter:

July 2019

There were 14 loads of Asbestos during the month of July. WDS brought two loads, one from a residence in Amherstburg and one from Ford Motor of Canada, Windsor. Coxon Towing brought nine loads; five loads from Windsor residences, one load from Windsor Salt, one from a residence in Belle River, one from Canada Post, Belle River and one from Hotel Dieu Hospital, Windsor. Enviro Disposal brought three loads; one from DNC Insulation, Lakeshore, one from Kingsville Curling Club and one from the University of Windsor.

August 2019

There were 14 loads of Asbestos disposed of in August. WDS brought three loads; two from Lakeshore residences and one from a Harrow residence. Coxon Towing brought four loads; two from Windsor residences, one from a Kingsville residence and one from University of Windsor. Enviro Disposal brought seven loads; four from an Amherstburg residence, one from a residence in Lakeshore, one from a Windsor residence and one from a Kingsville residence.

September 2019

There were a total of 8 loads disposed of at the Landfill during September. WDS brought one load from a Lakeshore residence. Coxon Towing brought five loads; one from Assumption Church, Windsor, three from Windsor residences and one from a LaSalle residence. Enviro Disposal brought two loads; one from Paul Martin Building, Windsor and one from a Windsor residence.

3.3 Waste Diversion from Refuse

The Scale Clerk, Waste Inspectors and equipment operators are required to question waste haulers about the nature of the wastes being disposed of, and to look for suspicious, unauthorized, or banned materials present in a load. If waste of this type is brought to the site by a licensed commercial hauler the material is not landfilled. It is removed and diverted to either the MHSW area or appropriate onsite storage/collection area.

Table 4: Waste Units Diverted from the Landfill

Source of Loads	Material Type	July	August	September
County Towing	Tires	0	2	0
County Towing	Electronics	2	0	0
County Towing	MHSW	0	0	1
Transfer Station	Tires	1	2	1
Transfer Station	Electronics	1	0	0
Transfer Station	MHSW	0	0	0
Coxon Towing	Tires	2	0	0
Coxon Towing	Appliances or Electronics	0	0	0

Source of Loads	Material Type	July	August	September
Double Diamond	Refrigerants	1	0	0
WDS	Metal	0	0	1
WDS	Tires	5	6	3
WDS	MHSW	1	2	2
WDS	Refrigerants	0	0	1
WDS	Appliances or Electronics	4	5	6
Total Units Banned:		17	17	15

Table 5A: 2019 Waste Stream Analysis by Month (Tonnes)

Material Type	July	August	September
Municipally Delivered Refuse	2,233.65	2,090.22	2,015.37
Municipal Clean Up	0.06	20.27	3.80
Recycling Fibre Residual	156.85	339.22	296.92
Municipal Construction/Demo	0.00	0.00	0.00
Pollution Control Grit	133.46	69.43	95.83
Municipal Sewage Sludge	253.37	253.56	252.55
Residentially delivered Refuse	4.67	4.12	1.41
Residentially Construction/Demo	0.97	0.09	0.66
Residentially delivered Shingles	0.47	0.39	0.00
Charitable Organizations	5.09	18.65	5.71
Contaminated Soil	118.31	2,314.38	1,706.96
Vines-Greenhouse	4,449.01	4,736.03	2,734.94
Greenhouse - Waste	1,008.60	1,066.23	796.74
IC&I Delivered Refuse	2,058.96	2,664.30	1,738.81
IC&I Construction/Demolition	277.39	713.54	444.20
IC&I Shingles	37.09	21.95	40.27
Asbestos	40.66	57.28	19.35
Transfer Stations	10,228.98	9,650.73	9,182.40
Grand Totals:	21,007.59	24,020.39	19,335.92

Table 5A Notes: Transfer Station refuse includes Windsor Transfer Station 1 and Kingsville Transfer Station 2.

Table 5B: 2019 Waste Stream Analysis by Quarter and Percent

Material Type	Q3 Tonnes	Percent of Total Waste
Municipally Delivered Refuse	6,339.24	9.85%
Municipal Clean Up	24.13	0.04%
Recycling Fibre Residual	792.99	1.23%
Municipal Construction/Demo	0.00	0.00%
Pollution Control Grit	298.72	0.46%
Municipal Sewage Sludge	759.48	1.18%
Residential delivered refuse	10.20	0.02%
Residentially Construction/Demo	1.72	0.00%
Residentially delivered Shingles	0.86	0.00%
Charitable Organizations	29.45	0.05%
Contaminated Soil	4,139.65	6.43%
Vines-Greenhouse	11,919.98	18.52%
Greenhouse - Waste	2,871.57	4.46%
IC&I Delivered Refuse	6,462.07	10.04%
IC&I Construction/Demolition	1,435.13	2.23%
IC&I Shingles	99.31	0.15%
Asbestos	117.29	0.18%
Transfer Stations	29,062.11	45.15%
Grand Totals:	64,363.90	100%

Table 5B Notes: Transfer Station refuse includes Windsor Transfer Station 1 and Kingsville Transfer Station 2.

3.4 Compaction

The compaction rate performance criterion is 600 kg/m^3. The compaction rates and relation to the performance criteria is as follows:

Table 6: Compaction Results for Third Quarter 2019

Month	Compaction kg/m3	Criteria Percentage
July	776.30	+ 29.4%
August	806.48	+34.4%
September	759.30	+26.6%

4 Complaints

There were no complaints during the third quarter of 2019. On August 8, 2019, Terri Colenutt contacted the Waste Disposal Manager to compliment the efforts taken to reduce odour issues. Though there were some slight odours noted overall, she indicated a vast improvement and nothing to complain about.

5 Site Development and Maintenance

5.1 Development of Disposal Areas

Disposal operations were conducted in Cell 4 North. Cell 3 South construction started approximately the third week of May.

5.2 Vegetation

Grass cuts of slopes and cells were completed as required during this quarter.

5.3 Drainage

There was no activity during this quarter.

5.4 Roads and Site Maintenance

The water truck and the front end loader were used as required to maintain the roads during the months of July through September.

5.5 Composting Area

There were 304 loads of compost brought in July totalling 3,392.22 tonnes, 238 loads in August totalling 2,958.01 tonnes and 210 loads in September totalling 1,830.53 tonnes.

5.6 Cover Material

The site received the following quantities to use as cover material during this quarter:

Table 7A: 2019 Cover Material Tonnage for Third Quarter

Cover Material Type	July	August	September
Auto Shredder Fluff	2,465.17	2,643.53	2,465.79
Alternate Daily Cover	312.33	1,117.80	3,069.99
Total Tonnes:	2,777.50	3,761.33	5,535.78

Table 7B: 2019 Cover Material Loads for Third Quarter

Cover Material Type	July	August	September
Auto Shredder Fluff	66	70	66
Alternate Daily Cover	22	44	107
Total Loads:	88	114	173

5.7 Other Activities

There were no other activities noted this quarter.

6 Leachate Management

6.1 Leachate Quantities

There was 12,823.34 tonnes leachate hauled off site in July, 4,166.76 tonnes in August and 3,975.95 tonnes in September.

6.2 Leachate System Maintenance

Systems were cut bi-weekly to control invasive Johnson grass and help Reed Canary Grass to spread.

6.3 Leachate Land Application

The leachate application systems operations and quantities are as follows:

West Cell Spray System

During the month of July, the system was operated for 5 days and 474 m^3 was applied. In August 1,443 m^3 were applied over 15 days and in September, 518 m^3 were applied over 8 days. A total of 2,435 m^3 was applied to the area during the third quarter.

Leachate Land Treatment System (Spray)

During the third quarter the system was not operated due to significant weather and operational breakdowns. The system is expected to be fully operational in 2020.

Leachate Land Treatment System (Trickle)

During the third quarter the system was not operated as previously stated.

7 Monitoring Programs

7.1 Ground Water and Surface Water Monitoring

There were no storm events recorded at the Regional Landfill during the third quarter sampling was completed following a combined precipitation of 26.2 mm September 11 and 12, 2019. Ground water levels were monitored August 12 and 13, 2019. Pond chemistry was collected July 31, August 13 and September 10, 2019.

7.2 Leachate Monitoring

Leachate level samples were collected on July 29, August 27 and September 10, 2019 by WSP.

7.3 Precipitation Monitoring

The precipitation quantities were as follows:

Table 8: Precipitation Comparison 2018 and 2019

Month	2018 millimetres	2019 millimetres	Percent Change
July	6.8	58.9	766.2%
August	20.5	64.0	212.2%
September	69.9	78.0	11.6%

7.4 Other Monitoring Programs

The West Cell gas monitoring was completed July 29, August 27, and September 10, 2019.

Public Relations

A landfill tour was conducted on September 19, 2019.

Bird Control Program

The Bird Control System is functioning as designed.

Tom Marentette
Manager, Waste Disposal

Dan Van Horn

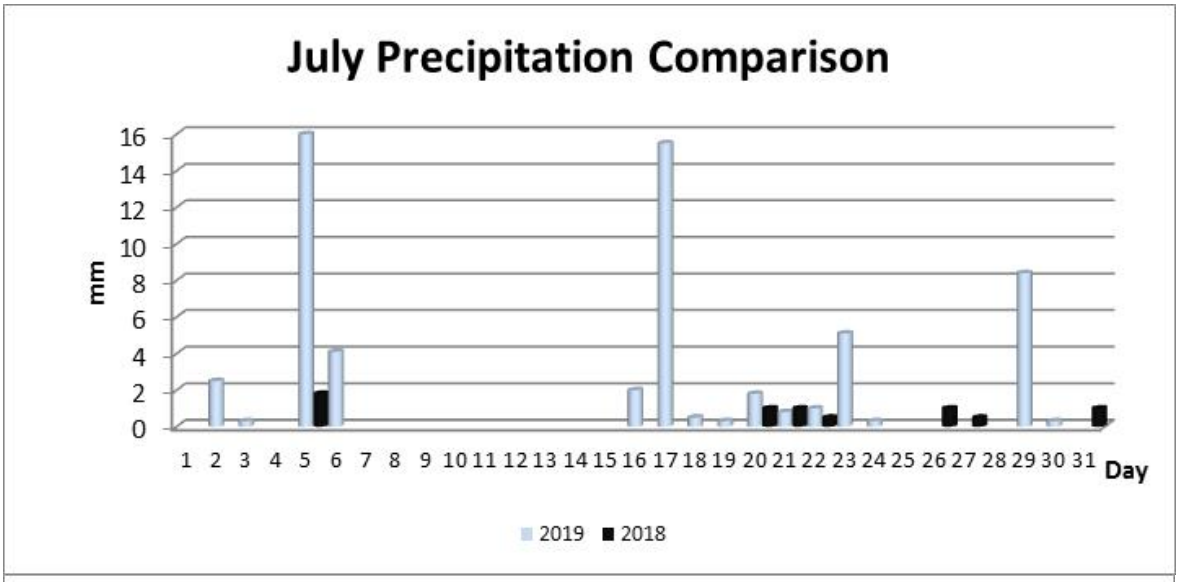
Supervisor, Waste Disposal

Report prepared by:

Margaret Shires, Administrative Assistant

Appendix

- Precipitation Monitoring
- Contact Form
- Report Distribution


July Precipitation Comparison
mm
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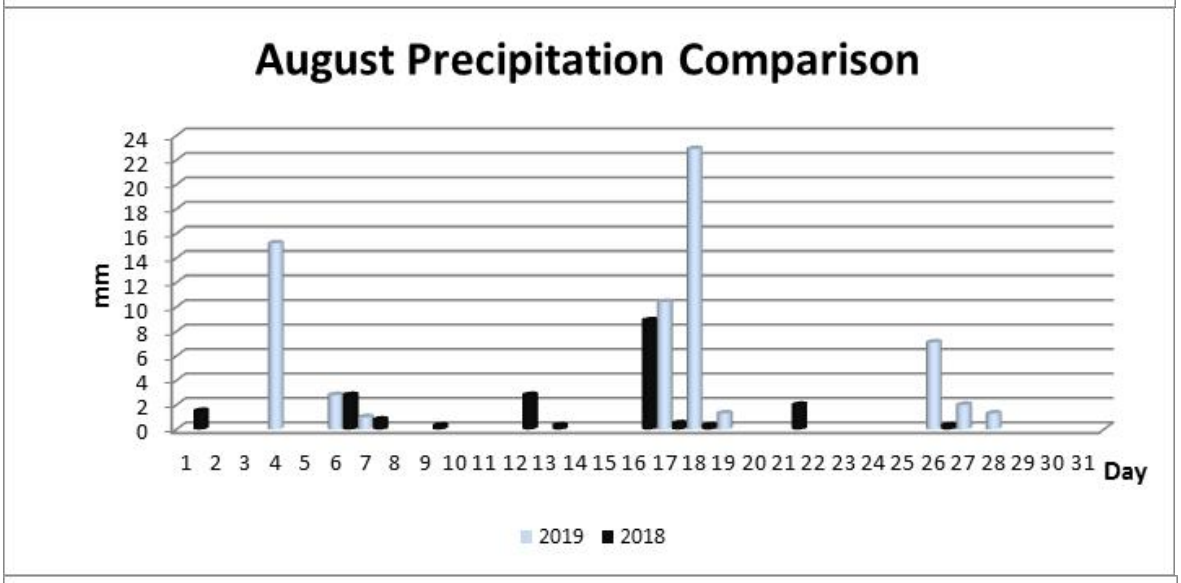
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Day
2019 2018


August Precipitation Comparison
mm
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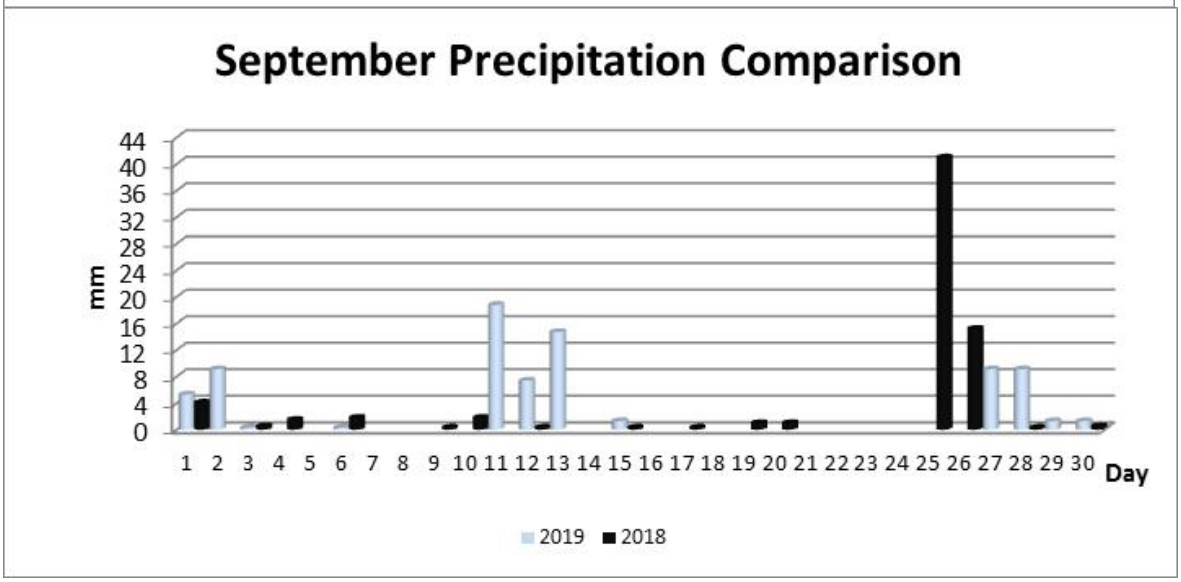
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Day
2019 2018


September Precipitation Comparison
mm
0 4 8 12 16 20 24 28 32 36 40 44
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
Day
2019 2018

Essex-Windsor Solid Waste Authority
360 Fairview Ave. West, Suite 211 Essex, ON N8M 3G4
ph: 519-776-6441 f: 519-776-6370
tf: 1-800-563-3377 / tty: 1-877-624-4832
email: ask@ewswa.org / web: www.ewswa.org

Complaint Form

Details of Complaint

Date of Occurrence: August 8, 2019 **Time of Occurrence:** 8:00 am

Complainant Name: Terri Colenutt

Address: Ferris Sideroad

Phone Number: 519-551-1737 **Email:** None

New Complaint: ☐ **Repeat Complaint:** ☒

Nature of Complaint: ☐ Debris, ☒ Odour, ☐ Dust, ☐ Noise, ☐ Mud on the Road, ☐ Service, ☒ Other, Compliment.

Location of Occurrence (Please Include Map where relevant): See attached

Complaint Received By: Tom Marentette **Date Complaint Received:** Aug. 8, 2019

Description of Occurrence:

Hi Tom, it's Terri Colenutt calling back on the Ferris Side Road, just calling about the dump. just wanted to put a call in, I have been thinking about it for months now to thank you, we hardly have any smells at all anymore. We had slight odour this morning and one last week but nothing to complain about so I just wanted to thank you and I appreciate whatever you've done down there and have a good day, okay, thanks.

Weather Conditions at location at time of Occurrence: not applicable

Action Taken

Forwarded to: Tom Marentette **Date Forwarded:** August 8, 2019

Resolution: Noted and filed.

Follow Up Required: ☐ Yes ☒ No

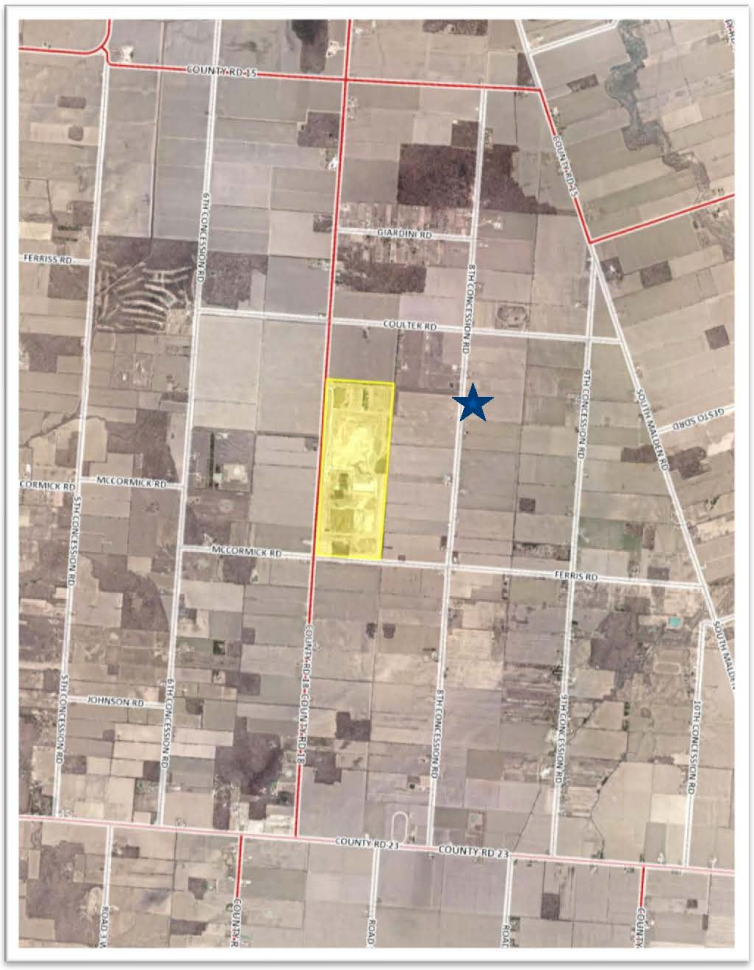
Complainant Contacted with Resolution: ☒ Yes ☐ No

Contacted By:

Map of Regional Landfill Area

(Please indicate on the map the location related to the complaint)

Notes:



Report Distribution

- Landfill Liaison Committee Chairperson
- WSP Canada, Inc.

Essex-Windsor Solid Waste Authority

Essex-Windsor Regional Landfill

Quarterly Operations Report

Report Date Range: October – December, 2019

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- Precipitation Charts
- Complaint Form
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Essex-Windsor Regional Landfill

Quarterly Operations Report for October - December, 2019

1 Introduction

The Essex-Windsor Regional Landfill Site is located in part of Lot 14, 15, and 16, Concession 7, in the Town of Essex. The Site is licensed by the Ontario Ministry of Environment under Environmental Compliance Approval No. A011101 (September 28, 1995).

2 Compliance

There were no incidents of non-compliance during the fourth quarter of 2019.

3 Waste Disposal Operations

3.1 Waste Quantities

The waste quantities disposed of during the fourth quarter of 2018 and 2019 were as follows:

Table 1A: Waste Quantities and Average Daily Waste for 2018 and 2019

Month	2018 Waste (Tonnes)	2018 Daily Waste (average)	2019 Waste (Tonnes)	2019 Daily Waste (average)
October	20,638.96	794	20,839.74	802
November	30,286.81	1,165	48,473.70	1,861
December	29,250.33	1,219	44,458.03	1,853

Table 1B: Waste Vehicles by Month and Daily Average for 2018 and 2019

Month	2018 Waste Vehicles	2018 Vehicles/Day (average)	2019 Waste Vehicles	2019 Vehicles/Day (average)
October	1,596	64	1,626	65
November	2,200	85	3,083	119
December	2,114	88	2,920	122

3.2 Special Waste

The special waste quantities disposed of during the fourth quarter of 2019 were as follows:

Table 2: Special Waste Loads for 2019

Month	Bleaching Clay Loads
October	8
November	5
December	9

Table 3A: Sewage Sludge Tonnes for 2019

Month	Essex	Amherstburg	Windsor	Kingsville	Total Tonnes
October	30.30	142.50	22.33	138.46	**333.59**
November	36.29	98.02	0.00	99.84	**234.15**
December	31.33	68.75	0.00	131.51	**231.59**

Table 3B: Sewage Sludge Tonnes for 2018

Month	Essex	Amherstburg	Windsor	Kingsville	Total Tonnes
October	37.45	90.30	0.00	106.56	**234.31**
November	55.28	61.40	0.00	91.40	**208.08**
December	23.86	91.55	0.00	125.87	**241.28**

The following loads of Asbestos were disposed of at the Regional Landfill during the fourth quarter:

October 2019

There were 4 loads of Asbestos during the month of October. Coxon Towing brought two loads, both from Windsor residences. Sterling Ridge Contracting brought two loads both from sewer work in Kingsville.

November 2019

There were 13 loads of Asbestos disposed of in November. Coxon Towing brought seven loads; one from a Windsor residence, one from a Lakeshore residence and five from Hotel Dieu Hospital, Windsor. WDS brought three loads; two from Windsor residences and one from a Leamington residence.

Enviro Disposal brought three loads; two from Windsor residences and one from R.C. White/multiple locations.

December 2019

There was a total of 7 loads disposed of at the Landfill during December. Coxon Towing brought three loads all from Windsor residences. WDS brought four loads; two from a Leamington residence, one from Hiram Walkers, Windsor and one from Ford Motor of Canada, Windsor.

3.3 Waste Diversion from Refuse

The Scale Clerk, Waste Inspector and the Contractor's employees are required to question waste haulers about the nature of the wastes being disposed of, and to look for suspicious, unauthorized, or banned materials present in a load. If wastes of this type are brought to the site by a licensed commercial hauler the material is not landfilled and is returned with the hauler for proper disposal or recycling.

Table 4: 2019 Waste Units Diverted from the Landfill

Source of Loads	Material Type	October	November	December
County Towing	Appliances or Electronics	0	0	1
County Towing	Tires	0	0	1
Transfer Station 1	Appliances or Electronics	2	0	0
Transfer Station 1	Tires	2	0	1
Nature Fresh	Tires	0	0	1
Nature Fresh	Appliances or Electronics	0	1	0
Dimena Construction	Appliances or Electronics	0	2	0
WDS	Car Battery	0	1	0
WDS	Tires	1	1	0
WDS	Propane Tank	1	0	0
WDS	Appliances or Electronics	6	3	4
Total Units Banned:		12	8	8

Table 5A: 2019 Waste Stream Analysis by Month (Tonnes)

Material Type	October	November	December
Municipally Delivered Refuse	2,241.45	1,961.67	1,822.86
Municipal Clean Up	0.96	3.06	1.48
Recycling Fibre Residual	225.88	120.92	281.64
Municipal Construction/Demo	0.00	0.00	0.00
Pollution Control Grit	123.31	69.05	77.09
Municipal Sewage Sludge	333.59	234.15	231.59
Residentially delivered Refuse	0.70	0.82	1.84
Res. Construction/Demolition	0.00	0.00	0.00
Res. Shingles	1.12	0.00	0.00
Charitable Organizations	11.27	7.16	8.57
Contaminated Soil	1,808.50	16,314.74	16,144.84
Vines-Greenhouse	3,015.56	17,111.23	14,668.05
Greenhouse - Waste	976.35	1,669.19	1,324.09
IC&I Delivered Refuse	1,926.67	2,231.06	1,729.76
IC&I Construction/Demolition	375.76	305.13	191.37
IC&I Shingles	20.38	8.23	1.67
Asbestos	9.09	88.82	7.31
Transfer Stations	9,769.15	8,255.47	7,965.87
Grand Totals:	20,839.74	48,380.70	44,458.03

Table 5A Notes: Transfer Station refuse includes Windsor Transfer Station 1 and Kingsville Transfer Station 2.

Table 5B: 2019 Waste Stream Analysis by Quarter and Percent

Material Type	Q4 Tonnes	Percent of Total Waste
Municipally Delivered Refuse	6,025.98	5.30%
Municipal Clean Up	5.50	0.00%
Recycling Fibre Residual	628.44	0.55%
Municipal Construction/Demo	0.00	0.00%
Pollution Control Grit	269.45	0.24%
Municipal Sewage Sludge	799.33	0.70%
Residentially delivered Refuse	3.36	0.00%
Res. Construction/Demolition	0.00	0.00%
Res. Shingles	1.12	0.00%
Charitable Organizations	27.00	0.02%
Contaminated Soil	34,268.08	30.15%
Vines-Greenhouse	34,794.84	30.61%
Greenhouse - Waste	3,969.63	3.49%
IC&I Delivered Refuse	5,887.49	5.18%
IC&I Construction/Demolition	872.26	0.77%
IC&I Shingles	30.28	0.03%
Asbestos	105.22	0.09%
Transfer Stations	25,990.49	22.86%
Grand Totals:	113,678.47	100.00%

Table 5B Notes: Transfer Station refuse includes Windsor Transfer Station 1 and Kingsville Transfer Station 2.

3.4 Compaction

The compaction rate performance criterion is 600 kg/m^3. The compaction rates and relation to the performance criteria is as follows:

Table 6: Compaction Results for Third Quarter 2019

Month	Compaction kg/m3	Criteria Percentage
October	759.30	26.6%
November	791.16	31.9%
December	773.20	28.9%

4 Complaints

There was one complaint during the fourth quarter of 2019. The family of Terri Colenutt reported odour during the four days prior to their complaint notification on November 26, 2019. The odour was present around 6-7AM each morning. The landfill manager contacted the family and invited them to visit the landfill to better identify the odour but they declined.

5 Site Development and Maintenance

5.1 Development of Disposal Areas

Disposal operations were conducted in Cell 4 North.

5.2 Vegetation

Grass cuts of slopes were not required during this quarter.

5.3 Drainage

There was no unscheduled activity during this quarter.

5.4 Roads and Site Maintenance

The water truck and the front end loader were used as required to maintain the roads during the months of October through December.

5.5 Composting Area

There were 222 loads of ground yard waste from the Material Recovery Facility brought in October totalling 3,025.21 tonnes, 252 loads in November totalling 4,142.73 tonnes and 171 loads in December totalling 3,120.67 tonnes.

5.6 Cover Material

The site received the following quantities to use as cover material during this quarter:

Table 7A: 2019 Cover Material Tonnage for Fourth Quarter

Cover Material Type	October	November	December
Auto Shredder Fluff	2,687.24	2,498.61	2,652.84
Alternate Daily Cover	282.58	74.61	101.79
Clay	0.00	0.00	0.00
Total Tonnes:	2,969.82	2,573.22	2,754.63

Table 7B: 2019 Cover Material Loads for Fourth Quarter

Cover Material Type	October	November	December
Auto Shredder Fluff	72	69	73
Alternate Daily Cover	26	10	13
Clay	0	0	0
Total Loads:	98	79	86

5.7 Other Activities

There were no other activities to note for the fourth quarter.

6 Leachate Management

6.1 Leachate Quantities

There were 5,290.67 tonnes leachate hauled off site in October, 5,704.75 tonnes hauled off site during November and 3,670.47 tonnes during the month of December.

6.2 Leachate System Maintenance

There was no unscheduled system maintenance required during this quarter.

6.3 Leachate Land Application

During the 4th quarter of 2019 there was no leachate applied to the land (spray) area or to the land (trickle) application area. The West Cell land application spray system was operated for two days during the fourth quarter and 97 m^3 was applied. All leachate application areas were winterized on October 21 and 22, 2019.

7 Monitoring Programs

7.1 Ground Water and Surface Water Monitoring

There was a storm event recorded at the Regional Landfill during the fourth quarter on October 30-31, 2019 totalling 30.5 mm over the two days and sampling was completed by WSP.

Ground water well sampling was completed October 9 to 17, 2019. Ground water levels and well status was completed October 8, 9, and December 19, 2019.

7.2 Leachate Monitoring

Leachate level samples were collected on October 11, November 19 and December 19, 2019 by WSP.

7.3 Precipitation Monitoring

The precipitation quantities were as follows:

Table 8: Precipitation Comparison 2018 and 2019

Month	2018 millimetres	2019 millimetres	Percent Change
October	99.5	101.7	2.2%
November	93.1	17.5	-81.2%
December	54.5	29.1	-46.6%

7.4 Other Monitoring Programs

Vegetation sampling, soil sampling, West Cell gas monitoring and pump station sampling was all done during October by WSP.

Public Relations

There were no public relations activities during the fourth quarter.

Bird Control Program

The Bird Control System is functioning as designed.

Tom Marentette
Manager, Waste Disposal

Dan Van Horn

Supervisor, Waste Disposal

Report prepared by:

Margaret Shires, Administrative Assistant

Appendix A

Complaint Form

Precipitation

Report Distribution

Essex-Windsor Solid Waste Authority
360 Fairview Ave. West, Suite 211 Essex, ON N8M 3G4
ph: 519-776-6441 f: 519-776-6370
tf: 1-800-563-3377 / tty: 1-877-624-4832
email: ask@ewswa.org / web: www.ewswa.org

Complaint Form

Details of Complaint

Date of Occurrence: November 26, 2019 **Time of Occurrence:** 8:04 am

Complainant Name: Terri Colenutt **Address:** Ferris Sideroad

Phone Number: 519-551-1737 **Email:** None

New Complaint: ☐ **Repeat Complaint:** ☒

Nature of Complaint: ☐ Debris, ☒ Odour, ☐ Dust, ☐ Noise, ☒ Mud on the Road, ☐ Service, ☐ Other _____

Location of Occurrence (Please Include Map where relevant): See attached

Complaint Received By: Tom Marentette **Date Complaint Received:** Nov 26, 2019

Description of Occurrence: Son has been saying for the past 4 days about 6-7am that it really smells around our house. Just thought I would let you know.

Weather Conditions at location at time of Occurrence: Dry, sunny, temp 45 deg F.

Action Taken

Forwarded to: Tom Marentette **Date Forwarded:** Nov 26, 2019

Resolution: Returned phone call on Nov. 26, 2019 at 10:05 am

Spoke with Terri Colenutt. She will ask Son what type of smell so that we may better follow up. Invited them to the Landfill to identify smell, but declined.

Follow Up Required: ☐ Yes ☒ No

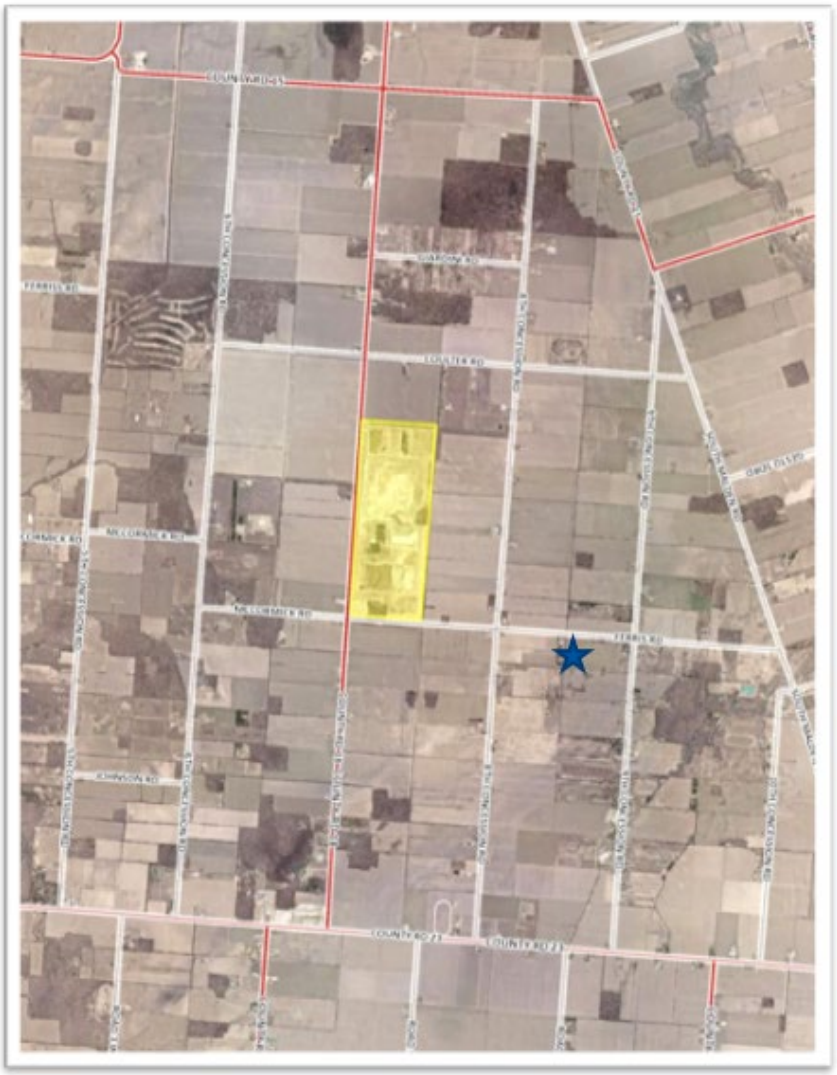
Complainant Contacted with Resolution: ☒ Yes ☐ No

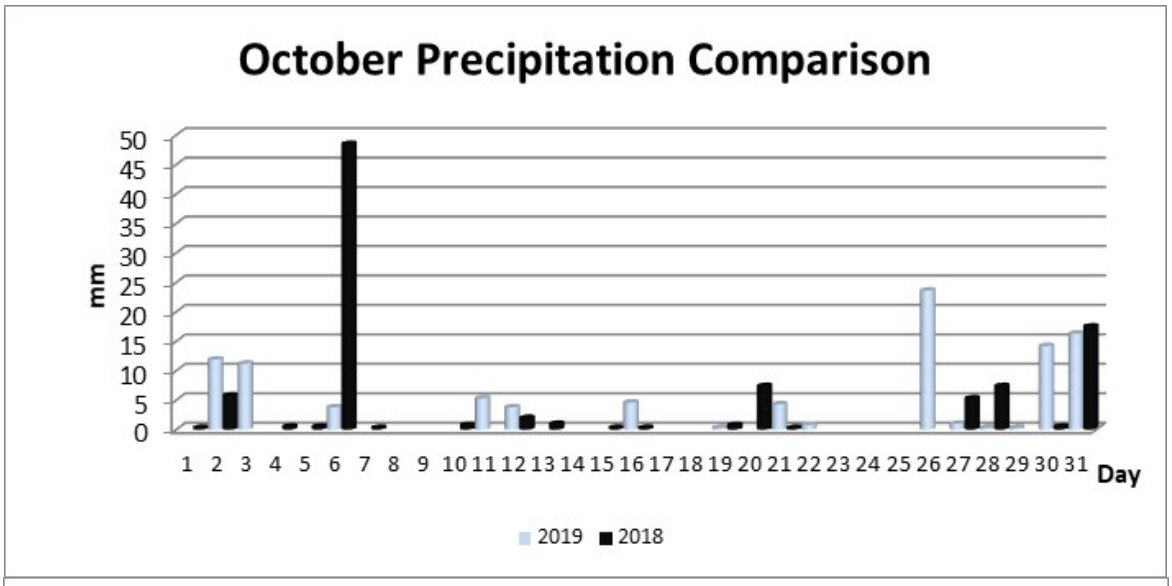
Contacted By: Tom M.

Map of Regional Landfill Area

(Please indicate on the map the location related to the complaint)

Notes:




October Precipitation Comparison
mm
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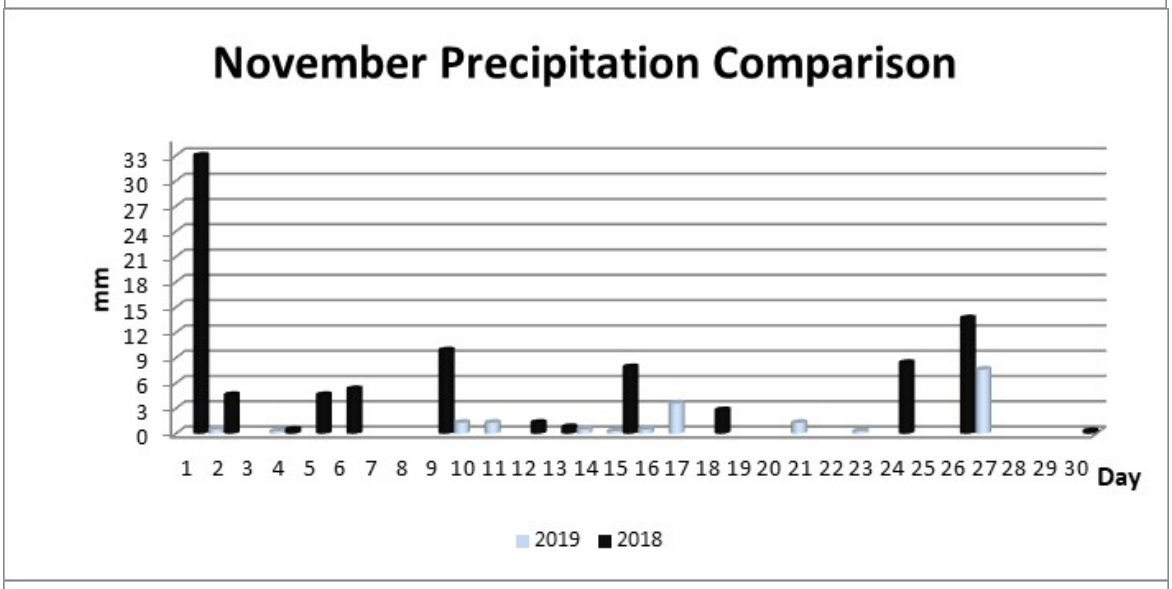
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Day
2019
2018


November Precipitation Comparison
mm
33
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1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
Day
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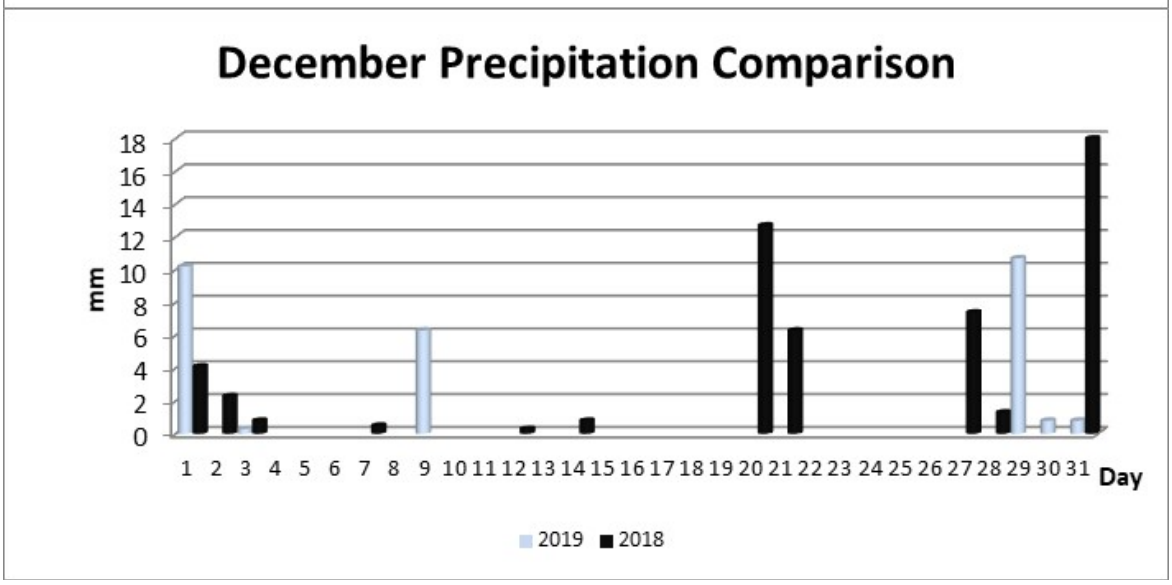
2018


December Precipitation Comparison
mm
18
16
14
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10
8
6
4
2
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Day
2019
2018

Report Distribution

Landfill Liaison Committee Chairperson

WSP Canada, Inc.

Ontario

Ministry of the Environment, Conservation and Parks
Ministère de l'Environnement, de la Protection de la nature et des Parcs

Solid Non-Hazardous Waste Disposal Site Inspection Report

Client:	Essex-Windsor Solid Waste Authority Mailing Address: Suite 211 - 360 Fairview Ave W, Essex, Ontario, Canada, N8M 3G4 Physical Address: Suite 211 - 360 Fairview Ave W, Essex, Town, County of Essex, Ontario, Canada, N8M 3G4 Telephone: (519)776-6441, Extension: 1226, FAX: (519)776-5183, email: emaodus@ewswa.org Client #: 6232-9HRNJC, Client Type: Municipal Government		
Inspection Site Address:	Essex-Windsor Regional Landfill Site Address: 7700 Essex County Road 18 R.R. # 3 Cottam, Essex, Town, County of Essex, N0R 1B0 District Office: Windsor GeoReference: Map Datum: NAD27, Zone: 17, UTM Easting: 344806, UTM Northing: 4661156, , LIO GeoReference: Zone: 17, UTM Easting: 356598.94, UTM Northing: 4663560.5, Latitude: 42.11104, Longitude: -82.73452 Site #: 1538-4FERLF		
Contact Name:	Tom Marentette	**Title:**	Waste Disposal Manager
Contact Telephone:	(519)776-7941 **ext**1961	**Contact Fax:**	
Last Inspection Date:	2016/12/15		
Inspection Start Date:	2019/12/10	**Inspection Finish Date:**	2019/12/10
Region:	Southwestern		

1.0 INTRODUCTION

An inspection was conducted as part of a planned pro-active inspection program. This facility was assessed for compliance with Environmental Compliance Approval(s) relevant to the waste disposal site and applicable environmental legislation. The site inspection consisted of a brief overview of the operations at this facility. The focus on the inspection was limited to the sections/conditions of the Environmental Compliance Approval(s) specified in this inspection report. This site was previously inspected in 2016. This inspection period consists of the years 2016 to 2018.

The Composting Facility at this site is approved under Environmental Compliance Approval A011105. This inspection report does not include an assessment of this aspect of the site.

Landfill operational and monitoring information contained in this inspection report and referenced below was obtained from the following documents submitted by or on behalf of the Waste Authority:
- Essex-Windsor Regional Landfill Site, Operations Reports for 2016, 2017 and 2018 prepared by the Essex-Windsor Solid Waste Authority.
- Essex-Windsor Solid Waste Authority Waste Diversion Annual Report 2018, prepared by the Essex-Windsor Solid Waste Authority.
- Essex-Windsor Regional Landfill - 2015/2016 and 2017/2018 Biennial Monitoring Reports, Essex-Windsor Solid Waste Authority, prepared by WSP dated March 17, 2017 and May 31, 2019 respectively.
- Essex-Windsor Regional Landfill Annual Landfill Leachate Management Program, prepared by WSP for 2016, 2017 and 2018.

On December 10, 2019, Ministry of the Environment, Conservation and Parks (MECP) Officer Cara Salustro conducted a solid non-hazardous waste disposal site inspection at the Essex-Windsor Regional Landfill Site located at 7700 Essex County Road #18 in Essex (Site). The Site Representative(s) present during the site inspection was Tom Marentette, Waste Disposal Manager for the Essex-Windsor Solid Waste Authority (Authority).

2.0 INSPECTION OBSERVATIONS

Certificate of Approval Number(s):
A011101 - Certificate of Approval for a Waste Disposal Site issued November 5, 1982 and updated with a detailed certificate on September 28, 1995. Various Notice of amendments have been issued to this certificate.

A011105 - Certificate of Approval for a Waste Disposal Site issued September 18, 1989 and amended to a waste disposal site (processing) on August 15, 1997. This Certificate and amendments issued are for collection and composting of waste.

Amended Environmental Compliance Approval (ECA) No A011101, issued April 3, 2017 which revokes Approval No. A011101 issued on September 28, 1995. There were approximately 23 amendment notices associated with the revoked approval . The recent amended ECA consolidates all previous notices as per field alert IDS ref : 3799-A6ER9G.

Both the September 1995 and April 2017 are relevant for this inspection and will be used to access compliance for this inspection period (2016-2018) however conditions from the April 3, 2017 ECA only are referenced in this report.

2.1 FINANCIAL ASSURANCE:

Specifics:
The Essex Regional Landfill is exempt from the requirement for financial assurance as it is a municipal landfill site.

2.2 APPROVED AREA OF THE SITE:

Specifics:
The following conditions of ECA A011101 deal with **Landfill Operations** requirements applicable to the approved site area:
4.5. (1) The total site area shall be 123.5 hectares.
(2)The Total waste disposal fill area shall be 64.5 hectares which includes 58 hectares of new waste disposal area.
(5)There shall be buffer area of a minimum 100 meters between the edge of the new fill area and the property boundary for a total buffer area of 58.5 hectares. The buffer area shall not be used for the disposal of waste.
(6)The final contours of the site are not to exceed those shown in the end use plan.

The landfill is 123 hectares with a waste footprint of 58 hectares. The disposal area is divided into five cells. Each cell has specific disposal and capacity areas.
Cell 1 has a disposal area of 1,707,000, was opened in 1997 and as of 2018 had approximately 1,418,487 tonnes of waste in-situ.
Cell 2 has a disposal area of 2,834,000, was opened in 2002 and as of 2018 had approximately 2,102,477 tonnes of waste in-situ.
Cell 3 has a disposal area of 2,675,000, was opened in 2012 and as of 2018 had approximately 496,953 tonnes of waste in-situ.
Cell 4 has a disposal area of 2,969,000, was opened to 2016, and has received 438,531 tonnes of waste to date.
Cell 4 South and Cell 5 North and South have not been developed. Cell 3 South was under construction in 2018.
During the site visit it appeared that landfilling was occurring within the site approved footprint. There was no waste observed being deposited in the buffer areas. The current tipping area is occurring in Cell 3 South.

2.3 APPROVED CAPACITY:

Specifics:
The following conditions of ECA A011101 deal with **Landfill Operations** requirements applicable to the approved site capacity:

4.5 (3)The Final waste disposal fill area footprint and site contours shall provide a capacity of 12,200,000 cubic meters of landfill volume (including waste, daily and interim cover material); and
(4)The total capacity as identified in Condition No. 4.5 (3) does not include the final cover.
The total volume capacity of disposal areas (Cells 1-5) is reported to be 12,800,000 cubic meters (including cover

material), 58 hectares.

The Essex-Windsor Regional Landfill Site Operations Reports report the total waste received at the Regional Landfill as follows:
2016 - 250,698.66 tonnes
2017 - 245,440.17 tonnes
2018 - 248,040.32 tonnes
The average daily quantity delivered to the site are as follows:
2016 - 824 tonnes
2017 - 809 tonnes
2018 - 818 tonnes
The total waste landfilled was reported to be 4,456,460.38 tonnes (5,749,081 cubic meters) with a remaining volume of 6,450,919 tonnes at the end of 2018. The site is reported to be at approximately 69% of the design operation capacity.

4.6.The Site service area shall be the Province of Ontario. No waste shall be received for disposal at this Site from outside the approved service area.
In 2007 the site service area was expanded to include the Province of Ontario. The Essex-Windsor Regional Landfill Site Annual Operations Reports report the total waste received at this site was collected for the most part from Essex-Windsor and Chatham-Kent.

4.7.Waste shall only be accepted at the Site during the following time periods:
(i) Monday- Friday - 8:00 a.m. to 5:00 p.m; and
(ii) Saturday - 8:00 am to 1:00 p.m or such reduced hours as identified by Essex- Windsor
(iii) The Site will be closed all Sundays and Statutory holidays.
4.8.The landfill may open one hour earlier and two hours later than the waste disposal operating hours on Monday to Friday, for purposes other than disposal of waste. The landfill may open one hour earlier and one hour later than the waste disposal operating hours on Saturday for purposes of the application of daily cover only.
The Site Representative indicated that these hours of operations are not fully being complied with. The Regional Landfill accepts appointments for “special loads” (7:00 am – 7:30 am) for the disposal of asbestos from demolition projects. Additionally, the Site Representative reports that due to the increased demands they have responded to requests to process trucks at as early as approximately 7:30 am.

By no later than April 8, 2020, the Authority shall apply for an amendment to ECA No. A011101 if the hours of operations at this site are to be extended.

5.24.Quantities of dewatered sewage sludges that may be received for disposal shall be limited to no more that 2% by tonnage of the total waste received at the site.
The Essex-Windsor Regional Landfill Site Annual Operations Reports report that the amount of sludge disposed was 0.9% in 2016; 1.6% in 2017; and 1.3% in 2018 of the total waste stream.

5.11.A minimum compaction rate of 600 kilograms (0.600 tonnes) of waste per cubic meter shall be maintained.
The Essex-Windsor Regional Landfill Site Annual Operations Reports report that monthly compaction surveys of the site are carried out by staff to provide accurate volume analysis. The average compaction of waste for the Regional Landfill for 2011 was 804 kg/m3; 2017 was 810 kg/m3; and 2018 was 786 kg/m3. This is greater than the minimum acceptable compaction criterion of 600 kg/m3.

2.4 ACCESS CONTROL:

Specifics:
Access to the site is controlled by an attendant in a scale house at the entrance of the Site. The Site is enclosed by a perimeter fence and berms that surround the site. Full-time site inspectors are present at the landfill to ensure unacceptable waste is not deposited.

2.5 COVER MATERIAL:

Specifics:
The following conditions of ECA A011101 deal with **Landfill Operations** requirements applicable to cover material:

5.32.Daily Cover - By the end of each working day, the entire working face shall be compacted and covered with a minimum thickness of 150 mm of soil cover or an approved thickness of alternative cover material.
5.33.No lime stabilised sewage sludge shall be used as cover material. Lime stabilised sewage sludge may be used

as a top soil amendment to assist in the establishment of the vegetative layer.
5.34.The foundry sands to be used as alternative daily cover satisfy the definition of non-hazardous solid industrial waste as defined in Reg 347 of the Environmental Protection Act ; and
5.35.The foundry sands to be used as alternative daily cover material are transported to the site in accordance with Condition 4.13
The Site Representative reports that foundry sands are no longer being used as a daily cover. Shredder fluff and soil is used at this time.

5.36. Auto Shredder Fluff is permitted for use as a daily cover material at the site, all in accordance with Items 13,14, 15, and 16 of Schedule "A". Samples of the daily cover material are to be taken on a monthly basis and submitted for analysis of Ontario Regulation 558 Schedule IV Inorganics and PCBs. Auto Shredder Fluff is to confirm with the specifications of a non-hazardous waste under Ontario Regulation 558.

The Essex-Windsor Regional Landfill Site Annual Operations Reports indicate that samples of Shredder Fluff were taken on a monthly basis and submitted for analysis of Ontario Regulation 558 Schedule IV Inorganics and PCBs as required and in every case the Auto Shredder Fluff samples conformed with the specifications of a non-hazardous waste under Regulation 558. The Site Representative stated that these results will be included in future biennial reports.

5.37.In areas where landfilling has been temporarily discontinued for six (6) months or more, a minimum thickness of 300 mm of soil cover or an approved thickness of alternative cover material shall be placed.
The Site Representative reports that this requirement is being followed.

2.6 WASTE BURNING:

Specifics:
5.5.Burning of waste is not permitted at the Site.
There was no indication of burning at this site at the time of the inspection.

2.7 GROUNDWATER/SURFACEWATER IMPACT:

Specifics:
There were not obvious evidence of groundwater/surface water impacts at the time of the inspection.

Conditions 8.6 and 8.7 of ECA A011101 specifies the requirements for **surfacewater/groundwater** monitoring. Biennial Monitoring Reports are required to be submitted to the ministry.

The ground and surface water monitoring results are discussed in Annual Operations Reports, and the Essex-Windsor Regional Landfill Site Biennial Monitoring Program Reports. There were no adverse effects on groundwater or surfacewater quality reported.

2.8 LEACHATE CONTROL SYSTEM:

Specifics:
Condition 8.8 of ECA A011101 specifies the requirements for **leachate management** monitoring. Condition 9 outlines the requirements for leachate treatment.

The leachate treatment system monitoring results are discussed in Annual Operations Reports, the Essex-Windsor Regional Landfill Site Biennial Monitoring Program Reports and the Annual Leachate Management Plan Reports. There were no detectable effects reported from the current operations of the leachate treatment areas at the landfill on groundwater and surface water quality.

Leachate control consists of a perimeter collection system for the west cell and the old waste within Cell 1. An under drain system located under the southern section of Cell 1, Cell 2 and Cell 3 North and South. The entire leachate collection system is drained/pumped to one of three leachate collection ponds at the landfill site. Leachate from the landfill is currently managed through two methods including land applied into existing landfilled waste on site and/or collected by a tanker truck and taken to the Lou Romano Pollution Control Plant for treatment.

Condition 9.1(b) states that application rates of leachate are not to exceed 10 millimetres of leachate per day less daily precipitation.
The Site Representative indicated that this rate is not exceeded.

The Essex-Windsor Regional Landfill Site Annual Operations Reports report the total leachate managed at the Regional Landfill as follows:
2016 - 34,523.47 cubic meters total, with 26,102.47 cubic meters of it trucked off site
2012 - 51.441.84 cubic meters total, with 42,344.84 cubic meters of it trucked off site
2018 - 67,375.50 cubic meters total, with 61,596.50 cubic meters of it trucked off site
An increase in leachate has been noted may be attributed partially due to weather and possible attenuation effect. The Site Representative suggested other causes could be during cell construction they had to mine the garbage and expose the face to construct the cell.

Condition 9.4 states that cleaning of the leachate collection system shall be conducted by power flushing of the system and vacuuming of the sumps at least once every two years.
The leachate systems at this site are flushed and cleaned at least once every two years.

Condition 9.12 states that by no later than December 31, 2018, a plan to phase out the Spray Irrigation system shall be submitted to the Director, Environmental Approval Branch for approval to phase out the Spray Irrigation System at the Site.
On December 18, 2018
Condition 9.13 states that by no later than December 31, 2018, an updated report for the operation and monitoring of the Drip Irrigation System shall be submitted to the Director, Environmental Approval Branch.
A letter dated December 18, 2018 prepared by WSP was submitted to the Environmental Assessment and Permissions Branch (EAPB) on behalf of the Authority. This letter was submitted pursuant to the requirements in Conditions 9.12 and 9.13. A letter dated March 28, 2019 from EAPB was sent advising the Authority that the requirements of Conditions 9.12 and 9.13 were not satisfied and an application for approval would have to be submitted to request to continue to spray irrigate. An application for approval was submitted on May 15, 2019 and Notice 2 to continue spray irrigation was issued on July 8, 2019.

2.9 METHANE GAS CONTROL SYSTEM:

Specifics:
The gas management system at the Essex-Windsor Regional Landfill consists of a vacuum flare.

The Authority continues to look at options for utilizing landfill gas. Currently landfill gas is not being harnessed for energy.

Conditions 10 of ECA A011101 specifies the requirements for **landfill gas** monitoring.

Condition 10.1 requires that a gas monitoring program to monitor the lateral subsurface migration of methane gas will be carried out at the perimeter soil monitors in February and August of each year, and in leachate monitors prior to purging for each leachate sampling event.

The landfill gas monitoring results are discussed in Annual Operations Reports, and the Essex-Windsor Regional Landfill Site Biennial Monitoring Program Reports. Combustible gas monitoring results reported indicate that combustible gas is present within the old waste of Cell 1, the former East Cell and the West Cell. The report suggested that based on these results no potential for hazards were identified to residences or structures however, access to the closed an open waste footprint is restricted to adequately trained site personnel.

Condition 8.10, 8.11, 8.12 and 8.13 of ECA A011101 specified the requirements for an **air monitoring program** at this site.
Condition 8.14 requires that the sampling program shall be carried out beginning in 2017 and every fifth year thereafter starting in 2017.
In 2017 an air monitoring program was implemented pursuant to this condition.

The air monitoring results are discussed in Annual Operations Reports, and the Essex-Windsor Regional Landfill Site Biennial Monitoring Program Reports. In summary, no exceedances of the target list of compounds were reported, and the majority of the reported parameters were below the detection limits with the exception of o and m&p Xylene. However, the total Xylenes met the ministry standard. No further exceedances were reported therefore no further actions or remedial measures were recommended by the consultant. The air monitoring program will be performed every five years as required.

2.10 OTHER WASTES:

Specifics:

*Condition 5.10 of ECA A011101 specifies the types of **waste types** to be received at the Site for disposal. These wastes include Domestic, Commercial, Institutional, non-hazardous solid industrial, agricultural (limited to miscellaneous debris from agricultural activities) and Dewatered Sewage Sludge generated within Service Area shall be accepted at the Site for landfilling.*

Agricultural waste (greenhouse waste) is accepted at the Site. The ECA includes "agricultural" waste and limits it to miscellaneous debris from agricultural activities. The Annual Operations Report reports that 22.3% of the waste accepted at the Site was vines from greenhouses in 2018 and 16.1% in 2017.

Condition 2.2 of the ECA specifies unacceptable waste types.

There was no evidence of unapproved waste being deposited at the time of the inspection. The Site Representative indicated that the waste types deposited at the landfill are limited to those that are permitted by the ECA. If wastes not permitted for disposal are brought to the Site by a hauler they are removed and relocated for proper disposal and/or recycling. The Authority employs a waste inspector to inspect waste loads for unacceptable material.

Condition 17.0 of ECA A011101 specifies the requirements of waste diversion activities for solid non-hazardous waste including electrical and electronic equipment. Condition 18 of ECA A011101 specifies the requirements for the operation of a Household Hazardous Waste (HHW) depot. Waste diversion activities include refrigerant appliances, blue box recyclable, scrap metal, tires, waste electrical and electronic equipment and household hazardous waste.

The Site Representative reports that all white goods received are tagged by a licensed technician to indicate that the equipment no longer contains refrigerants in accordance with Ontario Regulation 463/10.

Compliance with all the conditions pertaining to waste diversion activities was not evaluated as part of this inspection.

3.0 REVIEW OF PREVIOUS NON-COMPLIANCE ISSUES

A review of the Integrated Divisional System and Windsor Area Office files did not identify any known outstanding non-compliance issues related to this inspection.

4.0 SUMMARY OF INSPECTION FINDINGS (HEALTH/ENVIRONMENTAL IMPACT)

Was there any indication of a known or anticipated human health impact during the inspection and/or review of relevant material, related to this Ministry's mandate?
No

Specifics:

Was there any indication of a known or anticipated environmental impact during the inspection and/or review of relevant material ?
No

Specifics:

Was there any indication of a known or suspected violation of a legal requirement during the inspection and/or review of relevant material which could cause a human health impact or environmental impairment ?
No

Specifics:

Was there any indication of a potential for environmental impairment during the inspection and/or the review of relevant material ?
No

Specifics:

Was there any indication of minor administrative non-compliance?
Yes

Specifics:
The Authority has operated outside of the time periods permitted by ECA No. A011101, Condition 4.7.

5.0 ACTION(S) REQUIRED

The following action in required:

1. By no later than April 8, 2020, the Authority shall apply for an amendment to ECA No. A011101 if the hours of operation at this Site are to be extended.

Please see "Other Inspection Findings" in Section 6 below for other suggested actions and findings.

6.0 OTHER INSPECTION FINDINGS

Condition 5 of the Environmental Assessment Approval dated 1995 to the Essex-Windsor Solid Waste Authority states the following:
5.1 Essex-Windsor shall make every reasonable effort to divert waste from disposal to at least meet or exceed:
a) the provincial waste diversion target of 50% by the year 2000 calculated according to the waste diversion regulations, using 1987 as the base year for calculations;
b) the 60% diversion target by the year 2019, as established by Essex Windsor in the Waste Management Master Plan adopted in October 1993.

The "Essex-Windsor Residential Waste Diversion Report 2018 dated March 28, 2019" reports a residential diversion rate of 36.3% therefore the waste diversion target of 60% is not being met. The Authority submitted the attached "Essex-Windsor Solid Waste Authority Administrative Report, dated May 2, 2019" that speaks to the MECP's discussion paper on the proposal on reducing litter and waste in our communities. **The Authority shall continue to give consideration to an action plan as to how the waste diversion rate of 60% as detailed in the Environmental Assessment Approval dated 1995 will be met.**

Given the large quantities (22%) of greenhouse vines accepted at this Site the Authority may consider reviewing not only the existing approval but also any applications for approval or EA documents submitted as part of the approval process to determine if the waste types (ie greenhouse/agricultural) are adequately reflected and approved. **Consideration may be given for an application for amendment if necessary for any changes in the approved waste types (ie greenhouse/agricultural waste).**

The Essex-Windsor Regional Landfill Site 2017/2018 Biennial Monitoring Program Report prepared by WSP dated May 31, 2019 and the Essex-Windsor Regional Landfill Annual Landfill Leachate Management Program Report dated 2018 prepared by WSP has been sent to MECP Technical Support staff for review and comments. Any comments received will be forwarded to the Authority. The last review was completed of the 2013/2014 Biennial Report.

7.0 INCIDENT REPORT

Applicable
5487-BL4LZ4

8.0 ATTACHMENTS

MECP RL Inspection Notes December 10 2019 - Final Response-Jan 23-2020.pdf; REPORT - Provincial Discussion Paper May 2, 2019.pdf

PREPARED BY:
Environmental Officer:
Name: **Cara Salustro**
District Office: **Windsor Area Office**
Date: **2020/01/30**
Signature

REVIEWED BY:
District Supervisor:
Name: **Shawn Howard**
District Office: **Windsor Area Office**
Date: **2020/01/31**

Signature:

File Storage Number: SI ES ES Z18 - 610

Note:
"This inspection report does not in any way suggest that there is or has been compliance with applicable legislation and regulations as they may apply to this facility. It is, and remains, the responsibility of the owner and/or the operating authority to ensure compliance with all applicable legislative and regulatory requirements"

Essex-Windsor Solid Waste Authority
Administrative Report

May 1, 2020

To:	**The Chair and Members of the Landfill Liaison Committee**
From:	**Tom Marentette, Manager of Waste Disposal**
Meeting Date:	**Wednesday, May 20, 2020**
RE:	**AMENDING OPERATING HOURS - REGIONAL LANDFILL**

Purpose

The purpose of this report is to advise the Landfill Liaison Committee that the Authority intends to submit an application to the MECP to amend the Environmental Compliance Approval to amend the Monday – Friday start time at the Regional Landfill from 8:00am to 7:00am.

Background

As the Committee is aware, Condition 2.1.1. (c) of the ECA for the Regional Landfill states:

2.1.1. Purpose

The purpose of the LLC shall be to review and make comment on any activities associated with the Essex-Windsor Regional Landfill Site, and shall include, but not necessarily be limited to, the following:

(c) Compliance of EA/EPA conditions of Approval:

Since 2017, for reasons described in the Discussion section below, the Regional Landfill has begun its operating day at 7:00am but these hours have not been formally documented within the ECA.

The Authority's intention is to submit an application to the MECP to amend Condition 4.7.(i) to allow for the receipt of waste starting at 7:00am as opposed to 8:00am.

It is Authority Administration's observation that such an amendment will not serve to adversely impact the environment nor the health of neighbouring property owners.

Discussion

The following two (2) conditions of ECA A011101 dated April 3, 2017 deal with the hours of operation applicable to the Regional Landfill Site;

4.7. Waste shall only be accepted at the Site during the following time periods:
(i) Monday- Friday - 8:00 a.m. to 5:00 p.m. ; and
(ii) Saturday - 8:00 a.m. to 1:00 p.m. or such reduced hours as identified by Essex - Windsor
(iii) The Site will be closed all Sundays and Statutory holidays.

4.8. The landfill may open one hour earlier and two hours later than the waste disposal operating hours on Monday to Friday, for purposes other than disposal of waste. The landfill may open one hour earlier and one hour later than the waste disposal operating hours on Saturday for purposes of the application of daily cover only.

To accommodate increasing demand for safe disposal of “special loads” such as asbestos from abatement and demolition projects, the Regional Landfill has been scheduling disposal of these loads by appointment between the hours of 7:00 am and 7:30 am. Early morning scheduling of these loads allows equipment operators time to prepare a suitable disposal area and for health and safety reasons ensures that EWSWA waste inspectors are not exposed unnecessarily to these materials. This schedule also allows for adequate time for these loads to be properly covered prior to the receipt of regular waste.

On days that no special loads are scheduled, the Regional Landfill has allowed for the receipt of waste one (1) hour earlier (7:00 am) than stated in the ECA, in order to accommodate increased volumes of waste from the City of Windsor transfer station and heavy demand from other waste haulers. On a number of occasions more recently, the Regional Landfill has experienced long delays for trucks entering the facility due to an influx in the amount of trucks disposing of contaminated soil from various large infrastructure projects. Delays at the landfill may affect municipal collection schedules.

Therefore, the Essex-Windsor Solid Waste Authority will be requesting administrative approval from the MECP to amend the current ECA to allow for a one (1) hour increase in daily operating hours at the Regional Landfill. This amendment to the operating hours will be to accommodate early morning appointments for “special loads” and/or the receipt of regular waste haulers, Monday to Friday - 7:00 a.m. to 5:00 p.m. All other operation restrictions will remain the same.

Process to Amend the Environmental Compliance Approval

The process to be undertaken to amend the ECA for the site hours is as follows:

1. At some date following the May 20, 2020 meeting of the LLC a letter will be sent to all property owners as listed in Schedule “A” of the compensation agreement for the Regional Landfill. Schedule “A” lists those owners of property which is within 0-1,609 metres (1 mile) of the Regional Landfill and those properties along County Road 18 between the Regional Landfill and County Rd. 23 (Arner Townline). The letter will serve to advise the property owners of the Authority’s intent and to further advise the property owners that if they have any comment on the Authority’s intention that they submit their comments in writing to the Ministry with a copy to the Authority.

2. Submission of an amendment application to the Ministry.

3. Authority Administration to prepare an information report to the Authority Board to advise them of the submission of the amendment application to the Ministry.

Recommendation

For the information of the Landfill Liaison Committee

SUBMITTED BY

Tom Marentette, Manager of Waste Disposal

Attachment:
Draft of Letter to be sent to Property owners listed in Schedule “A” of the compensation agreement for the Regional Landfill

Essex-Windsor Solid Waste Authority
360 Fairview Ave. West, Suite 211 Essex, ON N8M 3G4
ph: 519-776-6441 f: 519-776-6370
tf: 1-800-563-3377 / tty: 1-877-624-4832
email: ask@ewswa.org / web: www.ewswa.org

Click here to enter a date.

File
Sent By Mail

Dear Property Owner,

Subject: EWSWA requesting the Ministry of the Environment, Conservation and Parks to amend operating hour conditions of the Regional Landfill Environmental Compliance Approval (ECA)

This letter is being sent to those property owners as listed in Schedule "A" of the compensation agreement for the Regional Landfill. Schedule "A" lists those owners of property which is within 0-1,609 metres (1 mile) of the Regional Landfill and those properties along County Road 18 between the Regional Landfill and County Rd. 23 (Arner Townline).

The purpose of this letter is to advise you that the EWSWA wishes to amend the hours of operation within the Environmental Compliance Approval (ECA) for the site

The following amendment is being requested:

Site Hours

ECA CONDITION 4.7 SITE HOURS - CURRENTLY STATES:

Waste shall only be accepted at the Site during the following time periods:

(i) Monday- Friday - **8:00 a.m.** to 5:00 p.m.; and

(ii) Saturday - 8:00 a.m. to 1:00 p.m. or such reduced hours as identified by Essex - Windsor

(iii) The Site will be closed all Sundays and Statutory holidays.

THE REQUEST IS TO AMEND THE HOURS TO:

(i) Monday- Friday - **7:00 a.m.** to 5:00 p.m.

All other conditions are to remain the same

The Authority has been operating under the above hours since 2017 but these hours have not been formally documented within the ECA.

REASONS FOR REQUESTED CHANGE TO SITE HOURS:

To accommodate increasing demand for safe disposal of “special loads” such as asbestos from abatement and demolition projects, the Regional Landfill has been scheduling disposal of these loads by appointment between the hours of 7:00 am and 7:30 am. Early morning scheduling of these loads allows equipment operators time to prepare a suitable disposal area and for health and safety reasons, ensures that EWSWA waste inspectors are not exposed unnecessarily to these materials. This schedule also provides adequate time for these loads to be properly covered prior to the receipt of regular waste.

On days that no special loads are scheduled, the Regional Landfill has allowed for the receipt of waste one (1) hour earlier (7:00 am) than stated in the ECA, in order to accommodate increased volumes of waste from the City of Windsor transfer station and heavy demand from other waste haulers. On a number of occasions more recently, the Regional Landfill has experienced long delays for trucks entering the facility due to an influx in the amount of trucks disposing of contaminated soil from various large infrastructure projects. Delays at the landfill may affect municipal collection schedules.

If you wish to comment on the Authority’s amendment application you can do so in writing by _____ to:

Ministry of the Environment, Conservation and Parks
Attention Director
Environmental Approvals Access and Service Integration Branch
135 St. Clair West 1st Floor
Toronto, ON M4V 1P5

If you do send a letter to the director please send a copy of your letter by e-mail or mail to:

EWSWA
Attn: Eli Maodus, General Manager
360 Fairview Ave. West
Suite 211
Essex, ON N8M 3G4
emaodus@ewswa.org

Thank you for your attention to this letter

Ilija Maodus
General Manager

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